
AWS Data Exchange User Guide



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Table of Contents

What is AWS Data Exchange?	1
What is an AWS Data Exchange product?	1
Malware prevention	2
Supported data sets	2
Accessing AWS Data Exchange	2
Subscribers	2
Providers	3
Pricing	3
Supported Regions	3
Related services	3
Setting up	5
Sign up for AWS	5
Create an IAM user	5
Using Open Data on AWS data sets	7
Getting started with Open Data on AWS data sets using the AWS Data Exchange console	7
Step 1: Find an Open Data on AWS data set	8
Step 2: Use an Open Data on AWS data set	8
Getting started with Open Data on AWS data sets without an AWS account	8
Step 1: Find an Open Data on AWS data set	9
Step 2: Use an Open Data on AWS data set	9
Subscribing to data products	10
Related topics	10
Product subscriptions	11
Data sets and revisions	12
Data dictionaries and samples	12
Getting started	13
Step 1: Set up AWS Data Exchange	13
Step 2: Browse the catalog	13
Step 3: (Optional) Request a recommendation for a data product	14
Step 4: (Optional) Evaluate products containing data dictionaries and samples	14
Step 5: Subscribe to and access a product	16
Subscribing to a product	16
Subscribe to and access a product containing file-based data	17
Subscribe to and access a product containing APIs	19
Subscribe to and access a product containing Amazon Redshift data sets	22
Viewing and downloading a data dictionary (if included)	24
Subscription verification for subscribers	24
Completing a subscription request	24
Reviewing your pending subscription requests	25
Email notifications	25
Sharing license subscriptions in an organization	25
Prerequisites for license sharing	26
Viewing your licenses	26
Sharing your licenses	26
Bring Your Own Subscription (BYOS) offers	27
Private products and offers	27
Managing subscriptions	28
Viewing your subscriptions	28
Turning subscription auto-renewal on or off	29
Unsubscribing from a product	29
Tutorial: Subscribe to AWS Data Exchange Heartbeat	29
.....	29
Subscribing to AWS Data Exchange Heartbeat	30
Tutorial: Subscribe to AWS Data Exchange for APIs	31

Subscribing to AWS Data Exchange for APIs (Test Product)	31
Using AWS Data Exchange for APIs (Test Product)	32
Tutorial: Subscribe to Worldwide Event Attendance	33
Subscribing to Worldwide Event Attendance (Test Product)	34
Querying Worldwide Event Attendance (Test Product) data on Amazon Redshift (console)	34
Querying Worldwide Event Attendance (Test Product) data on Amazon Redshift (SQL)	35
Providing data products	36
Extended Provider Program (EPP)	37
Programmatic access	37
Related topics	37
Publishing guidelines	37
Product details	39
Product visibility	39
Sensitive categories of information	39
Product name	41
Product logo	41
Support contact	41
Product categories	41
Short description	41
Long description	41
Revision access rules	42
Data dictionaries	43
Samples	43
Getting started	44
Step 1: Confirm your eligibility	44
Step 2: Register to be a provider	45
Step 3: Confirm eligibility of your data	46
Publishing a new product	46
Publishing a product containing file-based data	46
Publishing a product containing APIs	50
Publishing a product containing Amazon Redshift data sets	62
Product description templates	66
Generic long description template	66
Financial services long description template	67
Healthcare and life sciences long description template	69
Marketing and advertising long description template	71
Media and entertainment long description template	72
Public sector long description template	73
Retail and location long description template	75
Updating products	76
Updating product and offer details	76
Updating a data dictionary	78
Updating a sample	78
Updating custom metadata	79
Publishing a new data set revision	79
Unpublish a product	80
Removing a revision	81
Revoking revisions	81
Creating offers	84
Offer pricing	84
US sales and use tax	85
Data Subscription Agreement	85
Refund policy	85
Subscription verification	85
Offer auto-renewal	85
Viewing subscriptions	86
Custom offers	86

Subscription verification	89
Email notifications	89
Viewing subscription verification requests	90
Editing a subscription verification request	90
Approve or decline requests	90
Provider financials on AWS Marketplace	91
Payments	92
US sales and use tax	92
AWS Marketplace seller reports	92
Subscriber refund requests	92
Data in AWS Data Exchange	93
Assets	93
Asset structure	93
Asset types	94
Revisions	95
Revision structure	95
Data sets	96
Owned data sets	96
Entitled data sets	96
Data set types	96
AWS Regions and data sets	97
Data set structure	97
Data set best practices	98
Tags	98
Jobs in AWS Data Exchange	99
Job properties	99
AWS Regions and jobs	100
Importing assets	100
Importing assets from an S3 bucket	100
Importing assets from a signed URL	101
Importing assets from an Amazon API Gateway API	102
Importing assets from an AWS Data Exchange datashare for Amazon Redshift	104
Exporting assets	104
Exporting assets to an S3 bucket	105
Exporting assets to a signed URL	106
Exporting revisions	108
Exporting revisions to an S3 bucket (AWS SDKs)	108
Exporting revisions to an S3 bucket as a provider (console)	109
Exporting revisions to an S3 bucket as a subscriber (console)	109
Automatically exporting revisions to an S3 bucket as a subscriber	109
Key patterns when exporting revisions	113
Quotas	114
Service quotas	114
Service endpoints	114
Export and import job guidelines	114
Constraints for resource fields	115
Security	116
Data protection	116
Encryption at rest	117
Encryption in transit	117
Restrict access to content	117
Identity and access management	117
Authentication	117
Access control	118
API permissions reference	123
AWS managed policies	127
Logging and monitoring	136

Monitoring	136
Amazon EventBridge events	136
Logging AWS Data Exchange API calls with AWS CloudTrail	145
Compliance validation	147
PCI DSS compliance	148
Resilience	148
Infrastructure security	148
VPC endpoints (AWS PrivateLink)	149
Considerations for AWS Data Exchange VPC endpoints	149
Creating an interface VPC endpoint for AWS Data Exchange	149
Creating a VPC endpoint policy for AWS Data Exchange	150
AWS Marketplace Catalog API	151
.....	151
AddDataSets	151
Tutorial: Adding new data sets to a published data product	151
AddDataSets exceptions	154
Document history	155
AWS glossary	163

What is AWS Data Exchange?

AWS Data Exchange is a service that makes it easy for AWS customers to find, subscribe to, and use third-party data in the AWS Cloud.

As a subscriber, you can find and subscribe to thousands of products from qualified data providers. Then, you can use the AWS Data Exchange console or APIs to create, view, manage, and access data sets for use across a variety of AWS analytics and machine learning services. Anyone with an AWS account can be an AWS Data Exchange subscriber. For information about becoming a subscriber, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

For providers, AWS Data Exchange eliminates the need to build and maintain any data delivery, entitlement, or billing technology. Providers in AWS Data Exchange have a secure, transparent, and reliable channel to reach AWS customers and grant existing customers their subscriptions more efficiently. The process for becoming an AWS Data Exchange provider requires a few steps to determine eligibility. For more information, see [Providing data products on AWS Data Exchange \(p. 36\)](#).

In addition, anyone, with or without an AWS account, can find and use publicly available data sets that are part of the [Open Data on AWS](#) program. For more information, see [Using Open Data on AWS data sets \(p. 7\)](#).

Topics

- [What is an AWS Data Exchange product? \(p. 1\)](#)
- [Malware prevention \(p. 2\)](#)
- [Supported data sets \(p. 2\)](#)
- [Accessing AWS Data Exchange \(p. 2\)](#)
- [Pricing \(p. 3\)](#)
- [Supported Regions \(p. 3\)](#)
- [Related services \(p. 3\)](#)

What is an AWS Data Exchange product?

A product is the unit of exchange in AWS Data Exchange that is published by a provider and made available for use to subscribers. When a provider publishes a product, that product is listed on the AWS Data Exchange product catalog as well as AWS Marketplace after being reviewed by AWS against our guidelines and terms and conditions. Each product you publish is uniquely identified by its product ID.

Note

When a product is initially created and published, all pre-existing finalized revisions within its data sets are published at the same time.

With AWS Data Exchange, providers publish data products and subscribers subscribe to those products.

Providers can publish and view their products using the AWS Data Exchange console. Providers can also list and view the details of their existing products using the AWS Marketplace Catalog API.

A product has the following parts:

- **Product details** – This information includes name, descriptions (both short and long), logo image, and support contact information. Providers complete the product details.
- For more information as a subscriber, see [Product subscriptions \(p. 11\)](#).

- For more information as a provider, see [Product details \(p. 39\)](#).
- **Product offers** – Offers define the terms that subscribers are agreeing to when they subscribe to a product. To make a product available on AWS Data Exchange, providers must define a public offer. This offer includes prices and durations, data subscription agreement, refund policy, and the option to create custom offers.
 - For more information as a subscriber, see [Private products and offers \(p. 27\)](#) and [Bring Your Own Subscription \(BYOS\) offers \(p. 27\)](#)
 - For more information as a provider, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
- **Data sets** – A product can contain one or more data sets. A data set in AWS Data Exchange is a dynamic set of data which is versioned through the use of revisions. Each revision can contain multiple assets. The provider can decide which revisions within a data set are published to a product. The provider creates owned data sets, and a subscriber can get access to entitled data sets through a product subscription. When a subscriber subscribes to a product, they get access to the product's data sets and some or all of the revisions that have been published to that product for the duration of their subscription.
 - For more information as a subscriber, see [Data sets and revisions \(p. 12\)](#)
 - For more information as a provider, see [Data in AWS Data Exchange \(p. 93\)](#).

Malware prevention

Security and compliance is a shared responsibility between you and AWS. To promote a safe, secure, and trustworthy service for everyone, AWS Data Exchange scans all S3 object files published by providers before they are made available to subscribers. If AWS detects malware, the affected asset is removed.

Important

AWS Data Exchange does not guarantee that the data you consume as a subscriber is free of any potential malware. We encourage that you conduct your own additional due diligence to ensure compliance with your internal security controls. You can find anti-malware and security products in AWS Marketplace.

Supported data sets

AWS Data Exchange takes a responsible approach to facilitating data transactions by promoting transparency through use of the service. AWS Data Exchange reviews permitted data types, restricting products that are not permitted. Providers are limited to distributing data sets that meet the legal eligibility requirements set forth in the Terms and Conditions for AWS Marketplace Sellers.

For more information about permitted data types, see [Publishing guidelines \(p. 37\)](#).

Important

As an AWS customer, you are encouraged to conduct your own additional due-diligence to ensure compliance with any applicable data privacy laws. If you suspect that a product or other resources on AWS Data Exchange are being used for abusive or illegal purposes, report it using the [Report Amazon AWS abuse form](#).

Accessing AWS Data Exchange

Subscribers

As a subscriber, you can explore available AWS Data Exchange products through the following options:

- [AWS Data Exchange console](#) (**Browse catalog**)
- [AWS Marketplace catalog](#)

Providers

As an existing provider, you can access AWS Data Exchange through the following options:

- Directly through the [AWS Data Exchange console](#) (**Publish data**)
- Programmatically using the following APIs:
 - **AWS Data Exchange API** – Use the API operations to create, view, update, and delete data sets and revisions. You can also use these API operations to import and export assets to and from those revisions. For more information, see the [AWS Data Exchange API Reference](#).
 - **AWS Marketplace Catalog API** – Use the API operations to view and update products on AWS Data Exchange and AWS Marketplace. For more information, see the [AWS Marketplace Catalog API Reference](#).

Pricing

Your AWS Data Exchange subscriptions are displayed in the currency you specified for your AWS account. You can change your preferred currency for your AWS account in the AWS Billing and Cost Management console. For instructions, see [Changing which currency you use to pay your bill](#) in the *AWS Billing User Guide*.

Note

Changing your preferred currency changes your remittance instructions. To view updated remittance instructions, see your AWS Marketplace invoice or view the **Account Settings** page in the [AWS Billing and Cost Management](#) console.

For pricing information, see [AWS Data Exchange pricing](#).

Supported Regions

AWS Data Exchange has a single, globally available product catalog offered by providers. Subscribers can see the same catalog regardless of which AWS Region they are using. The resources underlying the product (data sets, revisions, assets) are regional resources that you manage programmatically or through the AWS Data Exchange console in supported Regions. For information about which Regions are supported, see [Global Infrastructure Region Table](#).

Related services

The following services are related to AWS Data Exchange:

- **Amazon S3** – One supported asset type for data sets is Amazon S3 object snapshots. Subscribers can export data sets to Amazon S3 programmatically. For more information, see [What Is Amazon S3?](#) in the *Amazon Simple Storage Service User Guide*.
- **Amazon API Gateway** – Another supported asset type for data sets is APIs. Subscribers can call the API programmatically, call the API from the AWS Data Exchange console, or download the OpenAPI specification file. For more information, see [What is Amazon API Gateway?](#) in the *Amazon API Gateway Developer Guide*.

- **Amazon Redshift** – AWS Data Exchange supports Amazon Redshift data sets. Subscribers can get read-only access to query the data in Amazon Redshift without extracting, transforming, and loading data. For more information, see [Getting started with Amazon Redshift](#) in the *Amazon Redshift Getting Started Guide* and [Amazon Redshift system overview](#) in the *Amazon Redshift Database Developer Guide*.
- **AWS Marketplace** – AWS Data Exchange allows data sets to be published as products on AWS Marketplace. AWS Data Exchange providers must be registered as AWS Marketplace sellers, and can use the AWS Marketplace Management Portal or the AWS Marketplace Catalog API. For information about becoming an AWS Marketplace subscriber, see [What Is AWS Marketplace?](#) in the *AWS Marketplace Buyer Guide*. For information about becoming an AWS Marketplace seller, see [What Is AWS Marketplace?](#) in the *AWS Marketplace Seller Guide*.

Setting up AWS Data Exchange

Before you can use any AWS service, including AWS Data Exchange, you must complete the following tasks:

Topics

- [Sign up for AWS](#) (p. 5)
- [Create an IAM user](#) (p. 5)

Sign up for AWS

If you do not have an AWS account, complete the following steps to create one.

To sign up for an AWS account

1. Open <https://portal.aws.amazon.com/billing/signup>.
2. Follow the online instructions.

Part of the sign-up procedure involves receiving a phone call and entering a verification code on the phone keypad.

When you sign up for an AWS account, an *AWS account root user* is created. The root user has access to all AWS services and resources in the account. As a security best practice, [assign administrative access to an administrative user](#), and use only the root user to perform [tasks that require root user access](#).

Create an IAM user

To create an administrator user, choose one of the following options.

Choose one way to manage your administrator	To	By	You can also
In IAM Identity Center (Recommended)	Use short-term credentials to access AWS. This aligns with the security best practices. For information about best practices, see Security best practices in IAM in the <i>IAM User Guide</i> .	Following the instructions in Getting started in the <i>AWS IAM Identity Center (successor to AWS Single Sign-On) User Guide</i> .	Configure programmatic access by Configuring the AWS CLI to use AWS IAM Identity Center (successor to AWS Single Sign-On) in the <i>AWS Command Line Interface User Guide</i> .

Choose one way to manage your administration	To	By	You can also
In IAM (Not recommended)	Use long-term credentials to access AWS.	Following the instructions in Creating your first IAM admin user and user group in the <i>IAM User Guide</i> .	Configure programmatic access by Managing access keys for IAM users in the <i>IAM User Guide</i> .

Note

Only AWS accounts that are registered to provide data products on AWS Marketplace and AWS Data Exchange can create products.

Using Open Data on AWS data sets

The [Open Data on AWS](#) program is a collection of over 300 free, publicly available data sets. You can use AWS Data Exchange to find Open Data on AWS data sets, along with other no-cost and paid products, all in one place.

The Open Data on AWS data sets that are available using AWS Data Exchange are part of the following affiliated programs:

- **Open Data Sponsorship Program** – This AWS program covers the cost of storage for publicly available high-value cloud-optimized datasets.
- **Amazon Sustainability Data Initiative (ASDI)** – This AWS program minimizes the cost and time required to acquire and analyze large sustainability datasets.

Anyone can search and find these free Open Data on AWS data sets, with or without an AWS account, no subscription required.

Anyone can analyze and build services on top of an Open Data data set by using compute and data analytics services including Amazon Elastic Compute Cloud (Amazon EC2), Amazon Athena, AWS Lambda, and Amazon EMR.

Note

Unless specifically stated in the applicable data set documentation, data sets that are available through the Registry of Open Data on AWS are not provided and maintained by AWS. Data sets are provided and maintained by a variety of third parties under a variety of licenses. To determine if a data set can be used for your application, check data set licenses and related documentation.

The following topics explain how to get started with Open Data on AWS data sets.

Topics

- [Getting started with Open Data on AWS data sets using the AWS Data Exchange console \(p. 7\)](#)
- [Getting started with Open Data on AWS data sets without an AWS account \(p. 8\)](#)

Getting started with Open Data on AWS data sets using the AWS Data Exchange console

The following topics describe how you can find and use an Open Data on AWS data set on AWS Data Exchange by using the AWS Data Exchange console. You must have an AWS account to complete this process.

The process has the following steps:

Steps

- [Step 1: Find an Open Data on AWS data set \(p. 8\)](#)
- [Step 2: Use an Open Data on AWS data set \(p. 8\)](#)

Step 1: Find an Open Data on AWS data set

To find an Open Data on AWS data set on AWS Data Exchange

1. Sign in to the AWS Management Console and open the [AWS Data Exchange console](#).
2. In the left navigation pane, for **Discover data products**, choose **Browse catalog**.
3. For **Refine results**, do one of the following:
 - a. For the **Affiliated programs** filter, select one or both of the following options:
 - **AWS Open Data Sponsorship Program**
 - **Amazon Sustainability Data Initiative**
 - b. (Optional) For the **Contract type** filter, select **Open Data Licenses** to see all publicly available affiliated and non-affiliated data sets.

For more information, see [Browse the catalog \(p. 13\)](#).

4. (Optional) Enter a term or phrase in the search bar, and then choose **Search**.

A list of Open Data on AWS data sets that match the search terms appears.

5. Select an Open Data on AWS data set and view its details page.

The information on the details page includes a description, resources on AWS, usage examples, and links.

- a. (Optional) In the **Provided by** information, choose the link to the provider's information to view more information about the provider.
- b. (Optional) For **Labels**, choose a label to view a list of similar products.

Step 2: Use an Open Data on AWS data set

To use an Open Data on AWS data set

1. On the product details page, choose the **Resources on AWS** tab.
2. Copy the Amazon Resource Name (ARN) that is displayed under **Amazon Resource Name (ARN)**.
3. For **AWS CLI Access (No AWS account required)**, choose the **AWS CLI** link.

The AWS Command Line Interface (AWS CLI) documentation opens.

4. Read the documentation to learn how to use the AWS CLI to make calls to your AWS services from the command line.

For more information, see the [AWS Command Line Interface User Guide](#).

Getting started with Open Data on AWS data sets without an AWS account

The following topics describe how you can find and use Open Data on AWS data sets without an AWS account. The process has the following steps:

Steps

- [Step 1: Find an Open Data on AWS data set \(p. 9\)](#)

- [Step 2: Use an Open Data on AWS data set \(p. 9\)](#)

Step 1: Find an Open Data on AWS data set

To find an Open Data on AWS data set

1. Go to [AWS Data Exchange](#) and then choose **Browse 3,000+ third-party data sets**.

The AWS Marketplace catalog appears, with the **AWS Data Exchange** delivery method and the **AWS Open Data Sponsorships Program** and **Amazon Sustainability Data Initiative** affiliated programs selected.

2. (Optional) For the **Contract type** filter, select **Open Data Licenses** to see all publicly available affiliated and non-affiliated data sets.
3. (Optional) Enter a term or phrase in the **Search** bar.

A list of Open Data on AWS data sets that match the search terms appears.

4. Select an Open Data data set and view its details page.

The information on the details page includes a description, resources on AWS, usage examples, and links.

- a. (Optional) In the **Provided by** information, choose the link to the provider's information to view more information about the provider.
- b. (Optional) For **Labels**, choose a label to view a list of similar products.

Step 2: Use an Open Data on AWS data set

To use an Open Data on AWS data set

1. On the product details page, choose the **Resources on AWS** tab.
2. Copy the Amazon Resource Name (ARN) that is displayed under **Amazon Resource Name (ARN)**.
3. For **AWS CLI Access (No AWS account required)**, choose the **AWS CLI** link.

The AWS Command Line Interface (AWS CLI) documentation opens.

4. Read the documentation to learn how to use the AWS CLI to make calls to your AWS services from the command line.

For more information, see the [AWS Command Line Interface User Guide](#).

Subscribing to data products on AWS Data Exchange

At a high level, this is how to subscribe to data products using AWS Data Exchange:

1. **Potential subscriber registers on AWS** – You must sign up for AWS and create an AWS Identity and Access Management (IAM) user before you can use AWS Data Exchange. For more information, see [Setting up](#) (p. 5).
2. **Potential subscriber browses the catalog** – Products are published on AWS Data Exchange and are also available on AWS Marketplace. You can find products and review the associated public or custom offers and product details. If the provider has issued a private offer to your account, the product is available on the **My product offers** page of the AWS Data Exchange console.
3. **(Optional) Potential subscriber submits a request for a subscription** – The provider can choose to enable subscription verification. If they do so, you must request a subscription to the product. For more information, see [Subscription verification for subscribers](#) (p. 24).
4. **Subscriber subscribes to the product** – If you subscribe to a paid product, you are billed on your AWS bill. You get access to the entitled data set.
5. **Subscriber uses the product** – You have access to the product data sets according to the terms of the data subscription agreement. You can export the associated assets to Amazon Simple Storage Service (Amazon S3) or you can use jobs with a signed URL. For more information, see [Jobs in AWS Data Exchange](#) (p. 99).
6. **Request a data product recommendation** – If you are not able to find a product in the catalog, you can use the **Request data product** page in the AWS Data Exchange console to request personalized recommendations from the AWS Data Exchange Data Discovery Team. For more information, see [Request a recommendation for a data product](#) (p. 14).

Note

When subscribing to data products from some non-US sellers, you might also receive a tax invoice from the seller. For more information, see [Tax Help - AWS Marketplace Sellers](#).

Related topics

- [Product subscriptions](#) (p. 11)
- [Getting started as a subscriber](#) (p. 13)
- [Subscribe to and access a product](#) (p. 16)
- [Subscription verification for subscribers](#) (p. 24)
- [Sharing license subscriptions in an organization](#) (p. 25)
- [Bring Your Own Subscription \(BYOS\) offers](#) (p. 27)
- [Private products and offers](#) (p. 27)
- [Tutorial: Subscribe to AWS Data Exchange Heartbeat on AWS Data Exchange](#) (p. 29)
- [Tutorial: Subscribe to AWS Data Exchange for APIs \(Test Product\) on AWS Data Exchange](#) (p. 31)
- [Tutorial: Subscribe to Worldwide Event Attendance \(Test Product\) on AWS Data Exchange](#) (p. 33)

- [Data in AWS Data Exchange \(p. 93\)](#)

Product subscriptions

All AWS Data Exchange products are subscription-based. When you subscribe to a product, you agree to the product's offer terms, including the price, duration, payment schedule, data subscription agreement, and refund policy. When you subscribe to a product, you pay according to the payment schedule chosen by the provider for the duration that you subscribed to.

Important

The data subscription agreement (DSA) sets forth the provider's terms and conditions for the data product. The use of any data product subscribed to on AWS Data Exchange must also be in compliance with the AWS Customer Agreement or other agreement governing your use of AWS services.

Note

Data products that are part of the [Open Data on AWS](#) program are free for anyone to use and do not require a subscription. For more information, see [Using Open Data on AWS data sets \(p. 7\)](#).

Each product's public offer terms can contain one or more price and duration combinations. When you subscribe to a product, you can choose the duration of the subscription. You can also choose whether you would like to enable auto-renewal for that subscription, if the provider has enabled it for the product.

Important

If the data provider has indicated that the product contains any categories of sensitive or personal data, for example, mobile IDs, it will be displayed with the product details. For more information about the categories of sensitive data, see [Sensitive categories of information \(p. 39\)](#).

If the data provider has indicated that the product contains protected health information (PHI) subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), you may not export the product's data sets into your AWS account unless such AWS account is designated as a HIPAA account (as defined in the AWS Business Associate Addendum found in [AWS Artifact](#)).

After a subscription is processed and active, it appears on your AWS bill according to the payment schedule as part of your AWS Marketplace charges. For more information, see [AWS Marketplace Paying for Products](#).

During the duration of your subscription, you can view and access all the product's data sets. You can also export the data sets' assets in jobs. For more information, see [Jobs in AWS Data Exchange \(p. 99\)](#). Once a subscription has expired, you can no longer view or export the data sets.

Note

For information about data sets and revisions, including details about what you have access to in your subscription, see [Data sets and revisions \(p. 12\)](#).

If a provider decides to unpublish a product, you still have access to the data sets as long as your subscription is active. However, you cannot auto-renew the subscription when it expires.

You can view all of your active product subscriptions and auto-renewal status on the **Subscriptions** page of the AWS Data Exchange console. For more information, see [Managing subscriptions \(p. 28\)](#).

Important

If you enable auto-renew, and the product's offer terms have changed at the time of renewal, then the new product offer terms (including new price and new DSA) apply. This ensures that you keep access to the data regardless of potential changes to offer terms.

Visit the **Entitled data sets** page to find and access all of your entitled data sets in a specific AWS Region, based on your active subscriptions.

When you subscribe to a data product, we might share your contact information with the provider. For more information, see [Security on AWS Marketplace](#) in the *AWS Marketplace Buyer Guide*.

When you purchase a data product on AWS Data Exchange that has an upfront commitment, you will receive an invoice from Amazon Web Services (AWS) immediately. You can see charges for each data product by name in the Detail section of the invoice. You will receive separate bills for usage of AWS infrastructure and analytics services such as Amazon Simple Storage Service (Amazon S3) or Amazon Athena. You can read more about AWS Billing and Cost Management in [Paying for products](#) in the *AWS Marketplace Buyer Guide*.

Data sets and revisions

Every product in AWS Data Exchange is made up of one or more data sets, each with one or more revisions. Data sets in AWS Data Exchange are typically different data, and revisions are newer or modified versions of the same data. For more information about data sets and revisions, see [Data in AWS Data Exchange \(p. 93\)](#).

Each revision may contain all the data for the data set (updated for the revision), or just the new data since the previous revision. It is even possible that each revision has completely different data. What data to provide in each revision is up to the data provider.

When you subscribe to a product, you have access to all data sets in the product. When the data provider creates the offer, they give you access to 0 or more historical revisions, up to all historical revisions. They can also give you access to future revisions that are made available during your subscription period. The terms of the subscription are shown on the product details page in the AWS Data Exchange console.

After you subscribe to a product containing Amazon S3 objects, you can manually export each revision or asset individually, or you can select to automatically export new revisions to your Amazon S3 buckets (up to 5 buckets maximum) when the provider publishes new revisions. For more information, see [Subscribe to and access a product containing file-based data \(p. 17\)](#). For more information about how to export revisions, see [Exporting revisions \(p. 108\)](#).

After you subscribe to a product containing an Amazon API Gateway API, you can view and invoke the data provider's API. For more information, see [Subscribe to and access a product containing APIs \(p. 19\)](#).

After you subscribe to a product containing Amazon Redshift data sets, you get access to query the data in Amazon Redshift. For more information, see [Subscribe to and access a product containing Amazon Redshift data sets \(p. 22\)](#).

Data dictionaries and samples

Some products have data sets that include data dictionaries and samples. To help you determine whether you want to subscribe to the product, you can view and download the data dictionaries and samples before you subscribe to it.

A *data dictionary* is a visual representation of the contents of a data set. It includes details about what columns are included and their meaning.

Samples are pieces of data that reflect the data that you would receive after you subscribe to the product. Samples can be any file type supported by Amazon S3.

For more information about how to discover a product that contains data dictionaries and samples, see [Browse the catalog \(p. 13\)](#).

For more information about how to evaluate a product using data dictionaries and samples, see [Evaluate products containing data dictionaries and samples \(p. 14\)](#).

Getting started as a subscriber

The following topics describe the complete process of becoming a data product subscriber on AWS Data Exchange using the AWS Data Exchange console. The process has the following steps:

Steps

- [Step 1: Set up AWS Data Exchange \(p. 13\)](#)
- [Step 2: Browse the catalog \(p. 13\)](#)
- [Step 3: \(Optional\) Request a recommendation for a data product \(p. 14\)](#)
- [Step 4: \(Optional\) Evaluate products containing data dictionaries and samples \(p. 14\)](#)
- [Step 5: Subscribe to and access a product \(p. 16\)](#)

Step 1: Set up AWS Data Exchange

Before you can use AWS Data Exchange, you must sign up for AWS and create an AWS Identity and Access Management (IAM) user. For more information, see [Setting up AWS Data Exchange \(p. 5\)](#).

To set up AWS Data Exchange

1. Sign up for an AWS account. For more information, see [Sign up for AWS \(p. 5\)](#).
2. Create an IAM user. For more information, see [Create an IAM user \(p. 5\)](#).

Step 2: Browse the catalog

You can find products and review the associated public or custom offers and product details on both AWS Marketplace and AWS Data Exchange.

If the provider has issued a private offer to your account, the product is available on the **My product offers page** of the AWS Data Exchange console. For more information, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

To browse the catalog

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, under **Discover data products**, choose **Browse catalog**.
3. Enter a term or phrase in the **Search** bar and then choose **Search**.
4. (Optional) Under **Browse catalog**, enter in a word or phrase and then choose **Search** to view results matching your query.
5. (Optional) Under **Refine results**, choose from one of the specific **Categories** to browse specific data products.
6. (Optional) Under **Refine results**, use the **Data available through** filter and select:
 - **Amazon S3** to find products containing file-based data
 - **Amazon Redshift** to find products containing Amazon Redshift datashares
 - **API** to find products containing APIs

7. Select a product from the list of returned results and review its product details page.

Step 3: (Optional) Request a recommendation for a data product

If you're unable to find a product in the catalog, you can request personalized recommendations from the [AWS Data Exchange Data Discovery Team](#).

To request a data product recommendation

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, under **Discover data products**, choose **Request data product**.
3. On the **Request data product** page, for **Details**, enter a **Data description**.
4. (Optional) Expand **Additional details - optional** and complete the fields as directed.
 - a. Select one or more **Product categories**.
 - b. Enter an **Example data product URL**.
 - c. For **Data set type**, choose from **Amazon S3 object**, **Amazon API Gateway API**, or **Amazon Redshift datashare**.
 - d. Enter specific details about the product you want including **Delivery cadence**, **Example data product URL**, **Subscription start date**, **Subscription length**, and **Subscription budget**.
 - e. If the **Data set type** you chose is Amazon API Gateway API, under **Subscription budget**, select **Including metered costs**.
5. For **Data providers**, choose from a list of **Existing providers** or enter the name of **Other providers**. Then indicate whether you have an existing relationship with the providers.
6. Choose **Submit**.

You should receive a response from the AWS Data Exchange Data Discovery Team within 2 business days.

Step 4: (Optional) Evaluate products containing data dictionaries and samples

A provider might include a data dictionary and samples of the data set with their product. To help you determine if the product's data set will meet your needs, you can view and download the data dictionary and samples before you subscribe. For more information, see [Data dictionaries and samples \(p. 12\)](#).

You can perform the following actions to help with your evaluation of a product's data sets:

- [View a data dictionary \(p. 14\)](#)
- [Download a data dictionary \(p. 15\)](#)
- [View and download all data dictionaries \(p. 15\)](#) (for products containing multiple data sets)
- [Preview a sample \(p. 15\)](#)
- [Download a sample \(p. 16\)](#)

Viewing a data dictionary

A provider can add one data dictionary per data set that you can view.

To view a data dictionary

1. On the product detail page, choose the **Data dictionary and samples** tab.
2. View the data dictionary in one of the following ways:
 - Scroll down to the product **Overview** section to see the data dictionary under **View data dictionaries**.
 - Choose the **Data dictionaries and samples** tab, expand a data set row, choose the option button next to a data dictionary, and then choose **View all data dictionaries**.
3. (Optional) Enter a keyword or phrase into the **Search** bar to search across all data sets and all tables.
4. (Optional) Modify your search and filters as necessary.

Downloading a data dictionary

A provider can add one data dictionary per data set that you can download.

To download a data dictionary

1. On the product detail page, choose the **Data dictionary and samples** tab.
2. Expand the data set row by choosing the expand icon (plus icon to the left of the data set name).
3. Choose the option button next to a data dictionary name.
4. Choose **Download**.

The data dictionary file is downloaded to your computer.

Viewing and downloading all data dictionaries

If the product has multiple data sets, the provider might add a data dictionary for each data set. To evaluate all the data sets, you might want to view and download all data dictionaries .

To view and download all data dictionaries

1. On the product detail page, choose the **Data dictionary and samples** tab.
2. Choose **View all data dictionaries**.
3. In the **View data dictionaries** dialog box, choose the **Download (CSV)** to download the .csv file.

The .csv file is downloaded to your computer.

4. Choose **Close** to close the dialog box.

Previewing a sample

To preview a sample

1. On the product detail page, choose the **Data dictionary and samples** tab.
2. Expand the data set by choosing the expand icon (plus icon to the left of the data set name)
3. Choose the option button next to a sample name.
4. Choose **Preview sample (CSV only)** to preview the sample.
 - a. (Optional) In the preview dialog box, choose **Download** to download the CSV file.

The CSV file is downloaded to your computer.

- b. Choose **Close** to close the dialog box.

Downloading a sample

To download a sample

1. On the product detail page, choose the **Data dictionary and samples** tab.
2. Expand the data set by choosing the expand icon (plus icon to the left of the data set name)
3. Choose the option button next to a sample name.
4. Choose **Download**.

The sample is downloaded to your computer.

Step 5: Subscribe to and access a product

After you discover a product in the AWS Data Exchange catalog and determine that it meets your needs, you can subscribe to the product and then access the product.

If you subscribe to a paid product, you are billed on your AWS bill. You get access to the entitled data set. For more information, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

For more information about how to subscribe to products containing different types of data sets, see the following:

- [Subscribe to and access a product containing file-based data \(p. 17\)](#)
- [Subscribe to and access a product containing APIs \(p. 19\)](#)
- [Subscribe to and access a product containing Amazon Redshift data sets \(p. 22\)](#)

Subscribe to and access a product

The following topics describe the process of subscribing to and accessing a product on AWS Data Exchange using the AWS Data Exchange console.

Topics

- [Subscribe to and access a product containing file-based data \(p. 17\)](#)
- [Subscribe to and access a product containing APIs \(p. 19\)](#)
- [Subscribe to and access a product containing Amazon Redshift data sets \(p. 22\)](#)
- [Viewing and downloading a data dictionary \(if included\) \(p. 24\)](#)

Note

By subscribing to a product, you agree that your use of the product is subject to the provider's offer terms including pricing information and data subscription agreement (DSA). You also agree and acknowledge that AWS may share information about the transaction (including your payment terms and product usage metrics) with the respective seller, reseller, or underlying provider, as applicable, in accordance with the [AWS Privacy Notice](#). AWS will issue invoices and collect payments from you on behalf of the provider through your AWS account.

Your use of AWS services remains subject to the AWS Customer Agreement or other agreement with AWS governing your use of such services.

Subscribe to and access a product containing file-based data

The following topics describe the complete process of subscribing to and accessing a product containing file-based data on AWS Data Exchange by using the AWS Data Exchange console.

For information about how to evaluate a product before subscribing, see [Evaluate products containing data dictionaries and samples \(p. 14\)](#).

The process has the following steps:

Steps

- [Step 1: Subscribing to a product containing the file-based data \(p. 17\)](#)
- [Step 2: Accessing a product containing file-based data \(p. 18\)](#)

To practice subscribing to and accessing a product containing file-based data, see the [Tutorial: Subscribe to AWS Data Exchange Heartbeat on AWS Data Exchange \(p. 29\)](#).

Step 1: Subscribing to a product containing the file-based data

If you subscribe to a paid product, you are billed on your AWS bill. You get access to all entitled data sets. For more information, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

To subscribe to a product containing the file-based data

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, under **Discover data products**, choose **Browse catalog**.
3. Under **Refine results**, use the **Data available through** filter and select **Amazon S3** to find products containing file-based data.

For more information, see [Browse the catalog \(p. 13\)](#).

4. Select a data product containing an Amazon S3 object, and view its product detail page.

The information on the product detail page includes a product description, the provider's contact information, and the details of the product's public offer. The public offer information includes price and durations, the data subscription agreement (DSA), and the refund policy. You can view the names of the data sets included in the product and the AWS Regions in which they are available. You can also continue to browse other product detail pages by choosing a product (blue text) under **Similar products**.

If the provider has issued a custom offer to your account (for example, a [private offer \(p. 27\)](#) or [Bring Your Own Subscription \(BYOS\) offer \(p. 27\)](#)), you see those details, too.

5. In the top right corner, choose **Continue to subscribe**.
6. Choose your preferred price and duration combination, choose whether to enable auto-renewal for the subscription, and review the offer details, including the DSA.

Note

Some products require subscription verification. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

7. Review the pricing information, choose the pricing offer, and then choose **Subscribe**.

Note

If you subscribe to a paid product, you are prompted to confirm your decision to subscribe.

8. Under **Data sets included with your subscription**, view the listed **Data sets**.

After the subscription finishes processing, you can choose a data set (blue link) to access your entitled data or choose **View subscription** to view your subscription.

9. (Optional) For **Set up exports - optional**, select the check boxes for the data sets that contain the revisions that you want to export. Selecting a data set will prepare its most recently published revision to be exported.
 - a. Choose a **Simple** destination option to select an Amazon Simple Storage Service (Amazon S3) bucket location or choose **Advanced** to configure an Amazon S3 key naming pattern. This choice determines where your revisions will be exported. For more information about using key patterns, see [Key patterns when exporting revisions \(p. 113\)](#).
 - b. For **Auto-export future revisions**, choose whether to turn on or turn off automatic revision export:
 - **On** - All future revisions will always be exported.
 - **Off** - Only one export of the most recent revision will be exported.
 - c. Choose the **Encryption** options, and review the **Amazon S3 pricing**.

Note

If you choose to export using AWS Key Management Service (AWS KMS) encryption, make sure your account has the correct AWS Identity and Access Management (IAM) permissions to create and revoke grants on the AWS KMS key you choose. Without these permissions, automatic export will fail.

- d. Choose **Export** to export the data to Amazon S3, or choose **Skip** if you prefer to wait and export or download later. For more information about how to export data after subscribing, see [\(Optional\) Exporting data \(p. 19\)](#).

Note

It can take a few minutes for your subscription to become active after you choose **Subscribe**. If you choose **Export** before the subscription is active, you are prompted to wait until it is complete.
After your subscription is active, your export will begin.
Navigating away from this page prior to your subscription becoming active will not prevent the subscription from processing. It will prevent your data export from occurring.

Step 2: Accessing a product containing file-based data

After you successfully subscribe to a product, you have access to the product data sets according to the terms of the data subscription agreement (DSA).

The following topic describes how to access a product containing file-based data.

Viewing data sets, revisions, and assets

To view the data sets, revisions, and assets

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, choose **Subscriptions**, and then choose your product.
3. View the data sets that are part of the product under **Entitled data sets**.
4. Choose a data set.

5. View the **Data set overview**, **Auto-export job destinations** (S3 products only), the **Revisions**, and the **Description** of the data set.

For more information, see [Data in AWS Data Exchange \(p. 93\)](#).

6. Choose a revision.

Revisions are listed from latest to oldest.

7. View the **Revision overview**, **Assets**, and the **Jobs** that have been performed.

For information about exporting file-based assets, see [Exporting assets to an S3 bucket as a subscriber \(console\) \(p. 106\)](#).

(Optional) Exporting data

After your subscription is active, you can set up your Amazon S3 bucket to receive assets that you export.

You can export the associated assets to Amazon S3 or you can use jobs with a signed URL.

If you want export or download your data at a later time, including getting new revisions, see [Exporting assets to an S3 bucket as a subscriber \(console\) \(p. 106\)](#)

Important

We recommend that you consider Amazon S3 security features when exporting data to Amazon S3. See [Security best practices for Amazon S3](#) for general guidelines and best practices.

For more information about how to export data, see [Exporting assets \(p. 104\)](#) and [Exporting revisions \(p. 108\)](#).

Subscribe to and access a product containing APIs

The following topics describe the complete process of subscribing to and accessing a product containing APIs on AWS Data Exchange by using the AWS Data Exchange console.

For information about how to evaluate a product before subscribing, see [Evaluate products containing data dictionaries and samples \(p. 14\)](#).

The process has the following steps:

Steps

- [Step 1: Subscribing to a product containing APIs \(p. 19\)](#)
- [Step 2: Accessing an API product \(p. 20\)](#)

To practice subscribing to and accessing a product containing APIs, see the [Tutorial: Subscribe to AWS Data Exchange for APIs \(Test Product\) on AWS Data Exchange \(p. 31\)](#).

Step 1: Subscribing to a product containing APIs

If you subscribe to a paid product, you're billed on your AWS bill. You get access to all entitled data sets. For more information, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

A provider might include metered costs to their product containing APIs. If a provider decreases metered costs, the price decrease goes into effect immediately. If the provider increases metered costs, and you're an existing subscriber, the price increase goes into effect on the first day of the month, 90 days after the price increase was submitted OR upon renewal (whichever is sooner). An email is sent to existing subscribers when the price change is submitted.

Example

For example, assume that a provider submits a metered cost price increase on May 10. Existing subscribers receive an email about the price change. The price increase goes into effect on September 1.

To subscribe to a product containing APIs

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, under **Discover data products**, choose **Browse catalog**.
For more information, see [Browse the catalog \(p. 13\)](#).
3. Under **Refine results**, use the **Data available through** filter and select **API** to find products containing APIs.

For more information, see [Browse the catalog \(p. 13\)](#).

4. Select a product containing APIs, and view its product detail page.

The information on the product detail page includes a product description, the provider's contact information, and the details of the product's public offer. The public offer information includes price and durations, metered costs (if included), the data subscription agreement (DSA), and the refund policy. You can view the names of the data sets included in the product and the AWS Regions in which they are available. You can also continue to browse other product detail pages by choosing a product (blue text) under **Similar products**.

If the provider has issued a custom offer to your account (for example, a [private offer \(p. 27\)](#) or [Bring Your Own Subscription \(BYOS\) offer \(p. 27\)](#)), you see those details, too.

- a. Under **Public offer**, view the **API metered costs** (if included).
 - b. (Optional) In the **Metered cost calculator**, choose **Select metered cost** and then enter the number of units to display an example of the cost.
5. In the top right corner, choose **Continue to subscribe**.
 6. Choose your preferred price and duration combination, choose whether to enable auto-renewal for the subscription, and review the offer details, including the DSA.

Note

Some products require subscription verification. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

7. Review the pricing information, choose the pricing offer, and then choose **Subscribe**.

Note

If you subscribe to a paid product, you're prompted to confirm your decision to subscribe.

8. Under **Data sets included with your subscription**, view the listed **Data sets**.

After the subscription finishes processing, you can choose a data set (blue link) to access your entitled data or choose **View subscription** to view your subscription.

Step 2: Accessing an API product

The following topics provide details about how to access a product that includes API data sets:

Topics

- [Viewing an API \(p. 21\)](#)
- [Downloading the API specification \(p. 21\)](#)
- [Making an API call \(console\) \(p. 21\)](#)
- [Making an API call \(AWS CLI\) \(p. 21\)](#)

Viewing an API

To view an API

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose a data set.
4. Under the **Revisions** tab, choose a revision.
5. Under **API assets**, choose the API.
6. View the **Asset overview**.
7. Follow the guidance in the **Integration notes** to call the API.

Downloading the API specification

To download the API specification

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose a data set.
4. Under the **Revisions** tab, choose a revision.
5. Under **API assets**, choose the API.
6. On the **OpenAPI 3.0 specification**, choose **Download API specification**.

The specification is downloaded onto your local computer. You can then export the asset to a third-party tool for SDK generation.

Making an API call (console)

You can call a single endpoint in the AWS Data Exchange console.

To make an API call from the console

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose a data set.
4. Under the **Revisions** tab, choose a revision.
5. Under **API assets**, choose the API.
6. For **Integration notes**:
 - a. Choose **Copy** to use the **Base URL**.
 - b. Choose **Copy** to use the **Code structure**.
 - c. Follow the information provided in the specification documentation to call the API.

Making an API call (AWS CLI)

To make an API call (AWS CLI)

- Use the `send-api-asset` command to call the API.

```
$ aws dataexchange send-api-asset \
```

```
--asset-id $ASSET_ID \  
--data-set-id $DATA_SET_ID \  
--revision-id $REVISION_ID \  
--body "... " \  
{  
  "headers": {  
    ...  
  },  
  "body": "..."  
}
```

Subscribe to and access a product containing Amazon Redshift data sets

Overview for subscribers

An Amazon Redshift data set is a data set that contains AWS Data Exchange datashares for Amazon Redshift. Datashares give you read-only access to the tables, views, schemas, and user-defined functions that a data provider adds to the datashare.

As a data subscriber, you can find and subscribe to products containing Amazon Redshift data sets. After your subscription starts, you get access to query the data in Amazon Redshift without extracting, transforming, and loading data. You lose access to a product's datashares after your subscription expires.

Consider the following:

- If you are a subscriber, you must have an encrypted Amazon Redshift cluster running on an RA3 instance to query to Amazon Redshift data on AWS Data Exchange. For more information, see the [Amazon Redshift Database Developer Guide](#).
- It may take a few minutes to access the datashares after your subscription starts.

The following sections describe the complete process of becoming an Amazon Redshift datashare product subscriber on AWS Data Exchange by using the AWS Data Exchange console.

For information about how to evaluate a product before subscribing, see [Evaluate products containing data dictionaries and samples \(p. 14\)](#).

The process has the following steps:

Steps

- [Step 1: Subscribing to products containing Amazon Redshift data sets \(p. 22\)](#)
- [Step 2: Accessing the AWS Data Exchange datashares for Amazon Redshift \(p. 23\)](#)

To practice subscribing to and accessing a product containing Amazon Redshift data sets, see the [Tutorial: Subscribe to Worldwide Event Attendance \(Test Product\) on AWS Data Exchange \(p. 33\)](#).

Step 1: Subscribing to products containing Amazon Redshift data sets

If you subscribe to a paid product, you're billed on your AWS bill. You get access to all data sets included in the product. For more information, see [Subscribing to data products on AWS Data Exchange \(p. 10\)](#).

To subscribe to a product containing Amazon Redshift data sets

1. Open and sign in to the [AWS Data Exchange console](#).

2. In the left side navigation pane, under **Discover data products**, choose **Browse catalog**.

For more information, see [Browse the catalog \(p. 13\)](#).

3. Under **Refine results**, use the **Data available through** filter and select **Amazon Redshift** to find products containing Amazon Redshift datashares.

For more information, see [Browse the catalog \(p. 13\)](#).

4. Select a product and view its product detail page.

The information on the product detail page includes a product description, the provider's contact information, and the details of the product's public offer. The public offer information includes price and duration, the data subscription agreement (DSA), and the refund policy. You can view the names of the data sets included in the product and the AWS Regions in which they are available. You can also continue to browse other product detail pages by choosing a product (blue text) under **Similar products**.

If the provider has issued a custom offer to your account (for example, a [private offer \(p. 27\)](#) or [Bring Your Own Subscription \(BYOS\) offer \(p. 27\)](#), you see those details, too.

Important

Be sure to review the date, time, and duration of the cluster's maintenance window. During the maintenance window, you will not have access to the datashare.

5. In the top right corner, choose **Continue to subscribe**.
6. Review the **Product offer**, the **Subscription terms**, the **Data sets** that are included in the offer, and the **Support information**.
7. Choose whether to enable **Offer auto-renewal** for the subscription

Note

Some products require subscription verification. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

8. Choose **Subscribe**.

Note

If you subscribe to a paid product, you're prompted to confirm your decision to subscribe.

9. Under **Data sets included with your subscription**, view the listed **Data sets**.

After the subscription finishes processing, you can choose a data set (blue link) to access your entitled data or choose **View subscription** to view your subscription.

Step 2: Accessing the AWS Data Exchange datashares for Amazon Redshift

You have access to the product's data sets according to the terms of the data subscription agreement (DSA). As a subscriber, your subscription to a product that includes AWS Data Exchange datashares for Amazon Redshift gives you read-only access to the tables, views, schemas, and functions within the datashare.

With a subscription, you can do the following:

- Query data without having to extract, transform, or load data.
- Access the latest provider data as soon as the provider updates it.

For more information, see [Working with AWS Data Exchange datashares](#) in the *Amazon Redshift Database Developer Guide*.

Note

You lose access to a product's datashares after your subscription expires.

For more information about how to subscribe to an Amazon Redshift data set, see [Tutorial: Subscribe to Worldwide Event Attendance \(Test Product\) on AWS Data Exchange \(p. 33\)](#).

Viewing and downloading a data dictionary (if included)

Providers can attach data dictionaries to products that contain file-based data, APIs, or Amazon Redshift data sets. The following procedures describe how to view and download a data dictionary if one is included in the subscribed product.

For more information about data dictionaries and samples, see [Data dictionaries and samples \(p. 12\)](#).

To view and download a data dictionary

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. On the **Entitled data page**, expand a product and choose a data set.
4. On the data set details page, choose the **Data dictionary** tab.
 - View the data dictionary on the **Data dictionary** tab.
 - Download the data dictionary by choosing **Download** and then saving the file to your computer.

Subscription verification for subscribers

For various reasons, including compliance or regulatory reasons, some data providers might choose to restrict access to their products using subscription verification. When you subscribe to these data products, you are required to submit additional information about who you are and your intended use case. The provider reviews this information before approving subscriptions. Subscription verification is required for any publicly available products that contain personally identifiable data.

Topics

- [Completing a subscription request \(p. 24\)](#)
- [Reviewing your pending subscription requests \(p. 25\)](#)
- [Email notifications \(p. 25\)](#)

Completing a subscription request

For products that require subscription verification, when you choose **Continue to subscribe** on a product page, a **Complete subscription request** page appears. You must complete the request before you can subscribe to this product.

To complete a subscription request

1. On the **Complete subscription request** page, review and choose the product offer (if more than one offer is available).
2. Review the **Subscription terms**, included **Data sets**, **Support information**, and **Refund policy**.
3. Choose if you want to renew the offer automatically when it expires.
4. Complete the **Subscription request form** with the following information:
 - Your AWS account ID (added automatically)
 - Your **Company name**

- Your **Name**
 - Your **Email address**
 - Your **Intended use case** for the data product, along with any other comments that the provider might find useful when reviewing the subscription request
5. Choose **Send subscription request to provider**.

After you submit your request, the provider has up to 45 days to approve or decline your request.

Reviewing your pending subscription requests

To review your pending subscription requests

1. Open and sign in to the [AWS Data Exchange console](#).
2. Choose **Subscriptions**.
3. Choose **Subscription requests**.
4. Review the status of your pending subscription requests.

Each subscription request is uniquely identified by its ID. The ID is visible to both the provider and the subscriber. You can use the subscription request ID to identify the request in your communications with the provider.

After a provider approves your request, the subscription appears on the **Subscriptions** page.

Note

You can cancel a pending subscription request at any time as long as it hasn't expired or already been processed.

Email notifications

You receive an email notification to your AWS account email address when your request is approved, declined, or when it expires. Although most subscription request status changes result in an email notification, the delivery of these emails is on a best-effort basis.

Note

You will not receive email notifications for subscription request status changes that you have initiated yourself (for example, cancelling a subscription).

Sharing license subscriptions in an organization

When you subscribe to AWS Data Exchange products, an agreement is created that grants you license to use those products. If your AWS account is a member of an organization, you can share that license for AWS Data Exchange products with the other accounts in that organization.

Note

For more information about AWS Organizations, see the [AWS Organizations User Guide](#).

The following topics outline the process of sharing the licenses across accounts.

Topics

- [Prerequisites for license sharing \(p. 26\)](#)
- [Viewing your licenses \(p. 26\)](#)
- [Sharing your licenses \(p. 26\)](#)

Prerequisites for license sharing

Before you can share licenses for data products, you must first set up license sharing for your organization. Complete the following tasks to set up license sharing for your organization:

- Give AWS Marketplace permission to manage licenses on your behalf so that it can create the associated license grants when you purchase or share your licenses. For more information, see [Service-linked roles for AWS Marketplace](#) in the *AWS Marketplace Buyer Guide*.
- Set up AWS License Manager for first use. For more information, see [Getting started with AWS License Manager](#) in the *AWS License Manager User Guide*.

Viewing your licenses

The following topics outline the process of viewing your licenses.

Topics

- [Viewing all licenses \(p. 26\)](#)
- [Viewing a single license \(p. 26\)](#)

Viewing all licenses

You can use the AWS License Manager console to view all of the licenses for AWS Data Exchange products that you purchased.

To view all licenses for your subscribed products

1. Sign in to the [AWS Management Console](#).
2. Open the [AWS License Manager console](#).
3. In the left navigation pane, choose **Granted licenses**.
4. View all the licenses for your subscribed products.

Viewing a single license

You can use the AWS Data Exchange console to view a single license for an AWS Data Exchange product that you purchased.

To view a license for a single subscription

1. Sign in to the [AWS Data Exchange console](#).
2. Under **My subscriptions**, choose **Subscriptions**.
3. Choose a subscription.
4. Under **License**, choose a link.
5. View the details on the **License detail** page.

Sharing your licenses

You can manage and share your licenses with other accounts in your organization by using AWS License Manager.

For more details about using License Manager with AWS managed licenses, see [Granted licenses](#) and [Seller issued licenses](#) in the *AWS License Manager User Guide*.

Bring Your Own Subscription (BYOS) offers

As a subscriber, you might want to migrate your existing data subscriptions to AWS Data Exchange. Bring your own subscription (BYOS) functionality allows you to migrate and fulfill existing subscriptions with participating data providers at no additional cost.

With BYOS offers, any billing relationship between providers and subscribers continues. BYOS offers are not subject to fulfillment fees. As a subscriber, you receive an AWS Marketplace invoice for the subscription with no charge for a fulfillment fee.

Because the subscription lifecycle starts outside of AWS Data Exchange, the workflow for migrating the existing subscriptions to AWS Data Exchange using BYOS requires collaboration between the provider and subscriber.

Important

With BYOS offers, you're migrating a subscription that predates the availability of this product on AWS. AWS might verify your BYOS offer with the existing subscription agreement. If AWS cannot verify your BYOS offer, the offer and entitlements can be revoked without notice.

Before creating or accepting a BYOS offer on AWS Data Exchange, the provider and subscriber should perform the following steps together:

Prerequisites

1. The provider and the subscriber contact each other about implementing a BYOS AWS Data Exchange solution.
2. The subscriber provides the AWS account ID that they want to use to subscribe to data products on AWS Data Exchange.

The subscriber accepts the BYOS offer as follows.

To accept a BYOS offer

1. Sign in to the AWS Data Exchange console.
2. In the left navigation pane, from **Discover data products**, choose **My product offers**.
3. Select the offer to which you would like to subscribe. You can use the filter at the top of the page to choose between **All products**, **Private products**, and **Public products**.
4. Choose **Continue to subscribe**.
5. Review the terms of the offer, the data subscription agreement, and the included data sets.
6. If you accept the terms of the offer, review and accept the acknowledgement, and then choose **Subscribe**.

Private products and offers

Data providers can provide a product to you that isn't available to the general public, or they can offer their product at terms that are different from the publicly available offer terms. A private offer can be different from the public offer in any dimension, including price, duration, payment schedule, data subscription agreement, or refund policy.

Note

Unlike Bring Your Own Subscription (BYOS) offers, private offers are not required to be based on an existing subscription that predates the product's availability on AWS Data Exchange.

The provider must create a custom offer for your AWS account ID to target the offer to you. If a private offer hasn't been extended to you, you can request one by contacting a provider using the contact information on the details page of the public offer.

As a subscriber, you can accept a private offer as follows.

To accept a private offer

1. Sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, from **Discover data products**, choose **My product offers**.
3. Find the product offer you are looking for in the list. You can filter at the top of the page to choose between **All products**, **Private products**, or **Public products**.
4. Select the offer to which you want to subscribe.
 - a. Under **Custom offers**, view the **API metered costs** (if included).
 - b. (Optional) In the **Metered cost calculator**, choose **Select metered cost** and enter the number of units to display an example of the cost.
5. Choose **Continue to subscribe**.
6. Review the terms of the offer, the payment schedule, the data subscription agreement, and the included data sets.

Note

To accept a private offer with a multiple payment schedule, you must be on invoice billing terms. You can [create a support ticket](#) if you want to switch to invoice billing terms. Private offers with a multiple payment schedule are not eligible for automatic renewal.

7. If you accept the terms of the offer, review and accept the acknowledgement, and then choose **Subscribe**.

Note

Your account is automatically invoiced according to the dates specified in the payment schedule.

Managing subscriptions

The following topics describe how to manage your subscriptions in AWS Data Exchange.

Topics

- [Viewing your subscriptions \(p. 28\)](#)
- [Turning subscription auto-renewal on or off \(p. 29\)](#)
- [Unsubscribing from a product \(p. 29\)](#)

Viewing your subscriptions

To view your subscriptions

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, choose **Subscriptions**.
3. View the list of your subscriptions.

Turning subscription auto-renewal on or off

To turn subscription auto-renewal on or off

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, choose **Subscriptions**, and then choose your product.
3. On the product detail page, under **Renewal terms**, turn on **Auto-renewal** or turn off **Auto-renewal**.

A success message appears, confirming your updated renewal settings.

Unsubscribing from a product

Note

If you require immediate removal of a subscription, contact AWS Data Exchange Customer Support by using the [AWS Support Center](#).

To unsubscribe from a product

1. Open and sign in to the [AWS Data Exchange console](#).
2. In the left navigation pane, under **My subscriptions**, choose **Subscriptions**.
3. Select the subscription from which you want to unsubscribe.
4. Under **Renewal terms**, turn off the **Auto-renewal enabled** option.
5. Do not export any more data, and let the subscription run its course.

Note

For paid products, consult the provider's refund policy. Contact the provider for any exceptions.

Tutorial: Subscribe to AWS Data Exchange Heartbeat on AWS Data Exchange

AWS Data Exchange Heartbeat (Test product) is a free product that subscribers can use to understand how to interact with an AWS Data Exchange product subscription. You can use it for testing purposes and to get familiar with the AWS Data Exchange API and concepts.

AWS Data Exchange Heartbeat contains a single data set named **Heartbeat**. Approximately every 15 minutes, a new revision is published to this data set.

Example content of a revision

Each new revision contains two assets:

- Epoch asset
- Manifest asset

Epoch asset

Each AWS Data Exchange Heartbeat revision contains a JSON file Amazon Simple Storage Service (Amazon S3) object that contains a single array. The array's name is `TimestampsSinceLastRevision`, and its value is a list of each UNIX Epoch second that has elapsed since the last revision.

The name of the asset is in the form `Epoch{start}-{end}.json` where `{start}` and `{end}` represent the Epoch seconds corresponding to the period of time covered by the revision.

Manifest asset

Each AWS Data Exchange Heartbeat revision contains a JSON file S3 object that contains metadata about the revision and the schema of the Epoch asset JSON file. The name of the asset is in the form `Manifest{start}-{end}.json` where `{start}` and `{end}` represent the Epoch seconds corresponding to the period of time covered by the revision. The following example shows the content of a manifest file.

```
{
  "manifestSchemaVersion": "1.0",
  "schema": "{
    \"type\": \"object\",
    \"properties\": {
      \"TimestampsSinceLastRevision\": {
        \"type\": \"array\",
        \"description\": \"List of epoch timestamps in seconds.\",
        \"items\": {
          \"type\": \"number\",
          \"description\": \"Epoch timestamp in seconds.\"
        }
      }
    }
  }",
  "startTimestamp": 1554898111,
  "endTimestamp": 1554905311,
  "numberOfTimestamps": 7201
}
```

Subscribing to AWS Data Exchange Heartbeat on AWS Data Exchange

The following procedure shows how to browse the AWS Data Exchange catalog to find and subscribe to AWS Data Exchange Heartbeat.

To find and subscribe to AWS Data Exchange Heartbeat

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Discover data products**, choose **Browse catalog**.
3. From the search bar, enter **AWS Data Exchange Heartbeat** and press **Enter**.
4. Choose the **AWS Data Exchange Heartbeat** product to view its details page.
 - a. (Optional) To view the data dictionary, scroll down to the product **Overview** section to see the data dictionary under **Data dictionaries**.
 - b. (Optional) To download the data dictionary, choose the **Data dictionary and samples** tab, choose the option button next to **Data dictionary**, and then choose **Download**.
 - c. (Optional) To download the sample, choose the option button next to the sample name (**Heartbeat manifest sample.json**), and then choose **Download**.
5. In the top right corner, choose **Continue to subscribe**.
6. Choose your preferred price and duration combination, choose whether to enable auto-renewal for the subscription, and review the offer details, including the data subscription agreement.

Note

AWS Data Exchange Heartbeat doesn't require subscription verification, but some products do. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

7. Review the pricing information, choose the pricing offer, and then choose **Subscribe**.

Note

AWS Data Exchange Heartbeat is a free product. If you subscribe to a paid product, you are prompted to confirm your decision to subscribe.

8. On the **Set up your first export** page, select the check boxes for the data sets containing the revisions you would like to export. Selecting a data set will prepare its most recently published revision to be exported.
9. Choose an Amazon S3 bucket location or configure an Amazon S3 key naming pattern. This will determine where your revisions will be exported. For more information about using key patterns, see [Key patterns when exporting revisions \(p. 113\)](#).
10. Choose **Export** to export the data to Amazon S3, or choose **Skip** if you'd rather wait and export or download later.

Note

It can take a few minutes for your subscription to become active after you choose **Subscribe**.

If you choose **Export** before the subscription is active, you are prompted to wait until it is complete. After your subscription is active, your export will begin.

Navigating away from this page prior to your subscription becoming active will not prevent the subscription from processing. It will prevent your data export from occurring.

Tutorial: Subscribe to AWS Data Exchange for APIs (Test Product) on AWS Data Exchange

AWS Data Exchange for APIs (Test Product) is a free product that is made available to subscribers to understand how to interact with an AWS Data Exchange product containing API data sets. You can use this product for testing purposes and to learn how to make API calls to providers in order to retrieve API-based data.

AWS Data Exchange for APIs (Test Product) contains an API data set named **AWS Data Exchange for APIs (Test Product)** that is in the US East (N. Virginia) Region.

Subscribing to AWS Data Exchange for APIs (Test Product) on AWS Data Exchange

The following procedure shows how to browse the AWS Data Exchange catalog to find and subscribe to AWS Data Exchange for APIs (Test Product).

To find and subscribe to AWS Data Exchange for APIs (Test Product)

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Discover data products**, choose **Browse catalog**.
3. From the search bar, enter **AWS Data Exchange for APIs** and press **Enter**.
4. Choose the **AWS Data Exchange for APIs (Test Product)** and view its details page.
 - (Optional) To download the sample, choose the **Data dictionary and samples** tab, choose the option button next to the sample name (**ADX for APIs sample.json**), and then choose **Download**.
5. In the top right corner, choose **Continue to subscribe**.

6. Choose the **Product offer**.

Note

AWS Data Exchange for APIs (Test Product) is a free product.

7. Review the **Subscription terms**, **Data sets**, and **Support information**.
8. Choose whether to enable **Offer auto-renewal** for the subscription.

Note

AWS Data Exchange for APIs (Test Product) doesn't require subscription verification, but some products do. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

9. Choose **Subscribe**.

It can take a few minutes for your subscription to become active after you choose **Subscribe**. Navigating away from this page before your subscription becomes active will not prevent the subscription from processing.

Using AWS Data Exchange for APIs (Test Product)

You can interact with AWS Data Exchange for APIs (Test Product) in the following ways:

Topics

- [Viewing the API \(p. 32\)](#)
- [Downloading the API specification \(p. 32\)](#)
- [Making an API call \(p. 33\)](#)

Viewing the API

To view the API

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose the product titled **AWS Data Exchange for APIs (Test Product)** and then choose the **AWS Data Exchange for APIs** data set.
4. Under the **Revisions** tab, choose a revision.
5. Under **API assets**, choose the API.
6. View the **Asset overview**.
7. Follow the guidance in the **Integration notes** to call the API.

Downloading the API specification

To download the API specification

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose the product titled **AWS Data Exchange for APIs (Test Product)** and then choose the **AWS Data Exchange for APIs** data set.
4. Under the **Revisions** tab, choose a revision.
5. Under **API assets**, choose the API.

6. On the **OpenAPI 3.0 specification**, choose **Download API specification**.

The specification is downloaded onto your local computer. You can then export the asset to a third-party tool for SDK generation.

Making an API call

You can call a single endpoint in the AWS Data Exchange console.

To make an API call from the console

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Choose the product titled **AWS Data Exchange for APIs (Test Product)** and then choose the **AWS Data Exchange for APIs** data set.
4. Under the **Revisions** tab, choose the revision.
5. Under **API assets**, choose the API.

You will see the sample **Code structure** and **OpenApi 3.0 specification** to structure your API request, which you can use in the AWS Command Line Interface to call the API.

6. Under **Integration notes**, choose **Copy** to copy the **Code structure** and then paste it into the AWS CLI.
7. Replace the sample values with the parameter key-value pairs you need using the information in the specification documentation.

Following is a sample API request for **AWS Data Exchange for APIs (Test Product)**.

```
aws dataexchange send-api-asset \  
  --data-set-id 8d494cba5e4720e5f6072e280daf70a8 \  
  --revision-id b655d5be3da04fcbdca21a5a2932d789 \  
  --asset-id 8550cfab16b444a794402f2c3f11eae1 \  
  --method POST \  
  --path "someresource" \  
  --query-string-parameters 'param1=value1,param2=value2' \  
  --request-headers 'header=header_value' \  
  --body "{\"body_param\":\"body_param_value\"}"
```

Tutorial: Subscribe to Worldwide Event Attendance (Test Product) on AWS Data Exchange

Worldwide Event Attendance (Test Product) is a free product that helps subscribers understand how to subscribe to and interact with an AWS Data Exchange product containing Amazon Redshift data sets. You can use this product for testing purposes and to learn how to query, analyze, and build applications within minutes.

Worldwide Event Attendance (Test Product) contains an Amazon Redshift data set named **Worldwide Event Data (Test Data)** that is in the US East (N. Virginia) AWS Region.

Note

A subscription to this product might require Amazon Redshift cluster infrastructure, which could incur extra costs. To query the Amazon Redshift data, an Amazon Redshift cluster running on an RA3 instance is required.

You use the AWS Data Exchange console to find and subscribe to Worldwide Event Attendance (Test Product). Then, you can use either the Amazon Redshift console or SQL commands to query the datashare.

Subscribing to Worldwide Event Attendance (Test Product) on AWS Data Exchange

The following procedure shows how to browse the AWS Data Exchange catalog to find and subscribe to Worldwide Event Attendance (Test Product).

To find and subscribe to Worldwide Event Attendance (Test Product)

1. Open and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Discover data products**, choose **Browse catalog**.
3. From the search bar, enter **Worldwide Event Attendance (Test Product)** and press **Enter**.
4. Choose the **Worldwide Event Attendance (Test Product)** to view its details page.
 - a. (Optional) To view the data dictionary, scroll down to the product **Overview** section to see the data dictionary under **Data dictionaries**.
 - b. (Optional) To download the data dictionary, choose the **Data dictionary and samples** tab, choose the option button next to **Data dictionary**, and then choose **Download**.
 - c. (Optional) To preview the sample, choose the option button next to the sample name (**Worldwide Event Attendance Sample.csv**), and then choose **Preview sample (CSV only)**.
 - d. (Optional) To download the sample, choose the option button next to the sample name (**Worldwide Event Attendance Sample.csv**), and then choose **Download**.

If you are previewing the sample, you can also choose **Download** in the sample preview dialog box.
5. In the top right corner, choose **Continue to subscribe**.
6. Choose your preferred price and duration combination, choose whether to enable auto-renewal for the subscription, and review the offer details, including the data subscription agreement.

Note

Worldwide Event Attendance (Test Product) doesn't require subscription verification, but some products do. For more information, see [Subscription verification for subscribers \(p. 24\)](#).

7. Review the pricing information, choose the pricing offer, and then choose **Subscribe**.

Note

Worldwide Event Attendance (Test Product) is a free product. If you subscribe to a paid product, you are prompted to confirm your decision to subscribe.

It can take a few minutes for your subscription to become active after you choose **Subscribe**.

Navigating away from this page prior to your subscription becoming active will not prevent the subscription from processing.

Querying Worldwide Event Attendance (Test Product) data on Amazon Redshift (console)

The following procedure shows how to set up and query the datashare using the Amazon Redshift console.

To query Worldwide Event Attendance (Test Product) data on Amazon Redshift (console)

1. Open and sign in to the Amazon Redshift console.
2. Choose **Clusters**, and choose your existing RA3 cluster.
3. Choose the **Datashares** tab.
4. Select the datashare you want to create the database from.
5. Under **Subscriptions to AWS Data Exchange datashares**, choose **Create database from datashare**.
6. In **Create database from datashare**, enter the **Database name** for your new database, and then choose **Create**.
7. Choose the **Marketplace** icon on the navigation pane, and open the **Query editor**.
8. Under **Resources**, select a database and a schema.
9. Run the following SQL query.

```
select * from database.schema.table
```

Querying Worldwide Event Attendance (Test Product) data on Amazon Redshift (SQL)

The following procedure shows how to set up and query the datashare using the SQL commands.

To query Worldwide Event Attendance (Test Product) data on Amazon Redshift (SQL)

1. To find the datashare, run the following command.

```
SHOW DATASHARES [ LIKE 'namepattern' ]
```

This command lists all datashares, including the one from Worldwide Event Attendance (Test Product), in addition to the provider's account_id and namespace. For more information, see [Show Datashares](#) in the *Amazon Redshift Database Developer Guide*.

2. Run the following command to create a database from the datashare.

```
CREATE DATABASE database_name  
  
FROM DATASHARE datashare_name OF ACCOUNT account_id NAMESPACE namespace_guid
```

For more information, see [Create Database](#) in the *Amazon Redshift Database Developer Guide*.

3. Run the following SQL query.

```
select * from database.schema.table
```

Providing data products on AWS Data Exchange

At a high level, this is how to use AWS Data Exchange as a provider:

1. **Potential provider registers to be a provider** – Registering allows you to list products on AWS Data Exchange and make them available on AWS Marketplace. For more information, see [Step 2: Register to be a provider \(p. 45\)](#).
2. **The data is eligible to be published on AWS Data Exchange** – You're limited to distributing data sets that meet the legal eligibility requirements set forth in the Terms and Conditions for AWS Marketplace Sellers. For more information about the types of permitted data, see [Publishing guidelines \(p. 37\)](#).
3. **Provider creates a data set, a revision, and imports assets** – You can create data sets through the AWS Data Exchange console or API. Then, you can create revisions in the data set, and add assets to that revision. For more information, see [Data in AWS Data Exchange \(p. 93\)](#).
4. **Provider creates a product and its offer** – To create a product, you must provide product details, include one or more data sets, and optionally provide public offer details. For more information, see [Publishing a new product \(p. 46\)](#).
 - **Products containing Amazon S3 objects** – When an owned data set containing S3 objects is published in a product, AWS Data Exchange creates a copy of the data set. Subscribers can access that copy of the data set as an entitled data set.
 - **Products containing Amazon API Gateway APIs** – When an owned data set containing Amazon API Gateway APIs is published in a product, AWS Data Exchange allows requests to the AWS Data Exchange endpoint to proxy through to your Amazon API Gateway API. Subscribers can view the API and download the API specification as an entitled data set. Subscribers can also call the API through the AWS Data Exchange console.
 - **Products containing Amazon Redshift data sets** – When an owned data set containing Amazon Redshift data sets is published in a product, AWS Data Exchange allows requests to the AWS Data Exchange endpoint to proxy through to your Amazon Redshift datashare. Subscribers can have read-only access to the tables, views, schemas, and user-defined functions that you've added to the datashare.
5. **(Optional) Provider enables subscription verification** – If you enable subscription verification, subscribers must request a subscription to your product. This gives you an opportunity to review potential subscribers before they access your data sets. For more information, see [Subscription verification for providers \(p. 89\)](#).
6. **(Optional) Provider creates custom offers for the product** – In addition to a public offer, you can create custom offers, including private and Bring Your Own Subscription (BYOS) offers, for select customers. For more information, see [Creating custom offers \(p. 86\)](#).
7. **(Optional) Provider publishes new revision** – You can update dynamic data sets over time by creating a new revision using the AWS Data Exchange API or console. These revisions can then be published. For more information, see [Revisions \(p. 95\)](#) or [Updating products \(p. 76\)](#).
8. **Provider reviews reports through the AWS Marketplace Management Portal** – Reports are available to all registered AWS Marketplace sellers and are released on a regular cadence (daily, weekly, or monthly). For more information, see [Provider financials on AWS Marketplace \(p. 91\)](#).
9. **Provider receives funds distributed by AWS Marketplace** – For more information, see [Provider financials on AWS Marketplace \(p. 91\)](#).

Extended Provider Program (EPP)

The Extended Provider Program (EPP) is a program for qualified data providers to publish data products containing sensitive categories of personal information and/or personal information that is not otherwise publicly available.

Providers seeking to participate in the EPP must complete an additional review process by the AWS Data Exchange team. For more information about eligibility for the Extended Provider Program, send an email message to <aws-data-exchange-support@amazon.com>.

For more information about publishing guidelines for data providers who are enrolled in the EPP, see [Publishing guidelines \(p. 37\)](#).

Programmatic access

If you're using AWS Data Exchange programmatically, there are two different sets of resources with two different APIs:

- **AWS Data Exchange API** – Use these API operations to create, view, update, and delete data sets and revisions. You can also use these API operations to import and export assets to and from those revisions. For more information, see the [AWS Data Exchange API Reference](#).
- **AWS Marketplace Catalog API** – Used by providers to view and update products on AWS Data Exchange and AWS Marketplace. For more information, see the [AWS Marketplace Catalog API Reference](#).

Before you become a data product provider on AWS Data Exchange, review the following topic:

- [Setting up AWS Data Exchange \(p. 5\)](#)

After you review this topic, you're ready to get started.

Related topics

- [Publishing guidelines \(p. 37\)](#)
- [Product details \(p. 39\)](#)
- [Getting started as a provider \(p. 44\)](#)
- [Publishing a new product \(p. 46\)](#)
- [Product description templates \(p. 66\)](#)
- [Updating products \(p. 76\)](#)
- [Creating an offer for AWS Data Exchange products \(p. 84\)](#)
- [Data in AWS Data Exchange \(p. 93\)](#)

Publishing guidelines

The following guidelines outline restrictions for listing products on AWS Data Exchange. As a provider, you're responsible for complying with these guidelines and the [Terms and Conditions for AWS Marketplace Sellers](#) and the [AWS Customer Agreement](#). AWS may update these guidelines from time

to time. AWS removes any product that breaches these guidelines and may suspend the provider from future use of the service.

In addition to accepting and following the guidelines under the Terms and Conditions for AWS Marketplace Sellers, providers must abide by the following publishing guidelines for data products.

AWS Data Exchange publishing guidelines for data products

1. Your data products may not contain any illegal content, viruses, malware, or any other material that is harmful to others.
2. Your data products may not include information that can be used to identify any person, unless that information is already legally available to the public. Permitted examples include newspaper articles, open court records, public company filings, or public online profiles.
3. The following categories of information must be aggregated or anonymized so that no person in your data product can be identified: biometric or genetic data, health, racial or ethnic origin, political opinions, religious or philosophical beliefs, sex or sexual orientation, trade union membership, personal payment or financial information (for example, credit history), or other similar categories of sensitive information.
 - Some examples of data sets that can be included on AWS Data Exchange – Historic stock prices for public companies, names of judges and their court opinions, and aggregated or anonymized research findings from pharmaceutical drug studies.
 - Some examples of data sets that are prohibited on AWS Data Exchange – Lists of names organized by race, geo-location data that can be used to identify a person, and protected health information under the Health Insurance Portability and Accountability Act of 1996 (HIPAA).
4. You should carefully consider how subscribers may and may not use your data products, and you should clearly include this information in your Data Subscription Agreement (DSA).
5. Product listing descriptions must be accurate, contain valid contact information, and note if any data has been aggregated or anonymized.
6. You may not use AWS Data Exchange to promote any other products or solutions not listed on AWS Marketplace, except for products or solutions that are not compatible with AWS Marketplace.
7. You are limited to distributing data sets that meet the legal eligibility requirements set forth in the Terms and Conditions for AWS Marketplace Sellers. If you breach these terms in any way, the prohibited product is removed from AWS Data Exchange and you might be suspended from the service.
8. If you're listing an API data set in a product:
 - You must first integrate your API with Amazon API Gateway. For more information about how to integrate your REST API with API Gateway, see [Working with REST APIs](#) in the *API Gateway Developer Guide*.
 - You must respond to support-related questions from subscribers about the data product in 1 business day. Not following this guideline may result in your products being removed from AWS Data Exchange.
9. Logos, DSAs, and other attachments added to your product might be stored separately from where your actual data products sits.

Note

Providers who are enrolled in the Extended Provider Program are subject to the restrictions set forth in the Extended Provider Program Addendum to the Terms and Conditions for AWS Marketplace Providers which are supplemental to guidelines 2 and 3 above. For more information, see [Extended Provider Program \(EPP\)](#) (p. 37).

If you have questions about the eligibility of your data set:

- Contact [AWS Support](#).
- Send an email message to aws-data-exchange-support@amazon.com.

- Access the [AWS Support Dashboard](#) and create a case in the AWS Management Console.

After you've reviewed the publishing guidelines for data products on AWS Data Exchange, and you've confirmed that your data set can be listed, you can create your product.

Product details

When you publish a product on the AWS Data Exchange console, you must provide the product's details. This section covers some best practices to consider when you're preparing product details.

Topics

- [Product visibility](#) (p. 39)
- [Sensitive categories of information](#) (p. 39)
- [Product name](#) (p. 41)
- [Product logo](#) (p. 41)
- [Support contact](#) (p. 41)
- [Product categories](#) (p. 41)
- [Short description](#) (p. 41)
- [Long description](#) (p. 41)
- [Revision access rules](#) (p. 42)
- [Data dictionaries](#) (p. 43)
- [Samples](#) (p. 43)

Product visibility

When you create a product, you choose its visibility. **Product visibility** can be either **Public** or **Private**:

- **Public** – The product is visible in the public catalog in the AWS Data Exchange console and AWS Marketplace. Public products must have a public offer associated with them, and they might also have custom offers.
- **Private** – The product is *not* publicly visible in the public catalogs of either AWS Data Exchange or AWS Marketplace, and can only have custom offers created for it. Only the specific accounts for whom you have created a custom offer can see the product and subscribe to it. Subscribers can view custom offers created for them on their **My product offers** tab of AWS Data Exchange.

Note

You can't modify the visibility of a product after it has been created.

For more information about creating a product (with either public or private visibility), see [Step 5: Publish a new product](#) (p. 48).

Sensitive categories of information

When you create a product, you must specify whether your product contains any personal data or sensitive categories of information.

Sensitive categories of information include: biometric or genetic data; health data; racial or ethnic origin; political opinions; religious or philosophical beliefs; sex or sexual orientation; trade union membership; personal payment or financial information (for example, credit history); or other similar categories of information.

Personal data is data that identifies or can be used to identify a natural person.

Before accepting a private offer, prospective subscribers will be alerted on the product detail page that your product contains sensitive categories of personal information and/or personal information that is not otherwise publicly available.

As part of the process described in [Step 5: Publish a new product \(p. 48\)](#), you choose the options for your product's **Sensitive information** configuration. Choose one of the following options:

- **Option 1 – No personal data that is not otherwise publicly available, and no sensitive categories of information**

Choose this option if your product does not contain any personal data that is not otherwise publicly available, and no sensitive categories of information.

Examples include financial market data, weather patterns, or public company filings.

- **Option 2 – No personal data but contains sensitive categories of information**

Choose this option if your product contains non-personal sensitive information.

Examples include aggregated diversity data or anonymized financial data.

- **Option 3 – Personal data (i) with sensitive categories of information and/or (ii) not otherwise publicly available and does not include Protected Health Information (PHI) under the Health Insurance Portability and Accountability Act of 1996 (HIPAA)**

Choose this option if your product contains personal data that is not otherwise publicly available. The product must not include protected health information (PHI) subject to HIPAA.

Examples include PII such as email addresses, Social Security numbers, biometrics, or mobile IDs.

Note

This option is only available to eligible providers enrolled in the Extended Provider Program who have agreed to the Extended Provider Program Addendum to the Terms and Conditions for AWS Marketplace Providers. For more information, see [Extended Provider Program \(EPP\) \(p. 37\)](#).

- **Option 4 – Protected Health Information (PHI) subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA)**

Choose this option if your product contains protected health information (PHI) subject to HIPAA.

Examples include PHI such as patient information disclosed by a covered entity.

Important

Option 4 is only available for private products. Public products may not contain such data.

Note

Option 4 is only available to the following eligible providers:

- Eligible providers enrolled in the Extended Provider Program who have agreed to the Extended Provider Program Addendum to the Terms and Conditions for AWS Marketplace Providers. For more information, see [Extended Provider Program \(EPP\) \(p. 37\)](#).
- Eligible providers who have agreed to the AWS Business Associate Addendum, as well as the AWS Data Exchange Addendum to the AWS Business Associate Addendum.

Warning

If you are not enrolled in the Extended Provider Program, listing a product with data or information described in Option 3 and Option 4 is a violation of our [Publishing guidelines \(p. 37\)](#). AWS removes any product that breaches these guidelines and can suspend the provider from future use of the service.

For more information about creating a product and setting the sensitivity status of the data, see [Step 5: Publish a new product \(p. 48\)](#).

Product name

Subscribers will search for the names of products, so make your product name something meaningful.

Product logo

The product logo appears in the AWS Data Exchange product catalog on the console and on AWS Marketplace. The supported formats for the logo are .png, .jpg, and .jpeg.

Support contact

As a provider, you must include valid contact information. This can be a managed email alias or case management system link for customers to use to get help when they have questions about your product. We strongly recommend that you don't use a personal email address because the address is publicly visible.

Product categories

All products fit into one or more categories. By specifying up to two categories for your product, you help subscribers filter and find your products in AWS Data Exchange and AWS Marketplace.

Short description

The product short description text appears on the tiles in the product catalog portion of the AWS Data Exchange console. We recommend that you provide a concise description of your product for this field.

Long description

Subscribers see the product long description in the product detail page after the product is published. We recommend that you list the product's features, benefits, usage, and other information specific to the product.

Product information in the description must accurately represent the data being provided to subscribers. This includes data coverage (for example, 30,000 financial instruments or 10,000 location coordinates) and data set update frequency (for example, daily updates or weekly updates).

Note

You can use Markdown templates as a starting point for the long description of a number of popular product types. For more information, see [Product description templates \(p. 66\)](#).

Product description additional information

In order to make your product description compelling to prospective subscribers, we recommend you add the following information to your product description:

- *Data due diligence questionnaire (DDQ)* – Typically includes responses to questions regarding the firm selling a data set. Examples of the information in a DDQ includes the process that a provider goes through to collect the data, or quality control procedures and questions regarding regulatory compliance.
- *Data set schemas* – Provide prospective users with detailed descriptions of the structure and format of your data sets. Examples of the information in a data set schema include the identification of a primary key, field names, field definitions, expected output types for each field (for example, string, integer), and acceptable enumerations for each field (for example, 0%–100%).

- *Trial product listings* – Many prospective subscribers request trials of data sets before paying for a subscription. Trial products can be published on AWS Data Exchange for subscribers to subscribe to like regular paid products.
- *Sample files* – Sample files are typically smaller versions, or older, out-of-date versions of full production data sets. These sample files give prospective users insights into the outputs they can expect before purchasing a subscription.
- *Product fact sheets* – These can be documents, web links, or both to provide subscribers with more granular statistics on the coverage of your data sets, typical use cases for your data sets, and any other factors that differentiate your data sets.

For information about adding links in the description, see [Include links in your product description \(p. 42\)](#).

Include links in your product description

The long description for an AWS Data Exchange product supports Markdown, which allows you to include links in your product's details page. The following procedure shows you how to add links to websites in your AWS Data Exchange product description.

To include embedded links in your product listing

1. Log into the AWS console and navigate to an [Amazon S3 bucket](#) that your AWS Data Exchange user account has access to. The contents of this bucket are publicly readable.
2. Upload the files (for example, documents such as PDF files or Microsoft Excel files) that you want to include in your product listing into the Amazon Simple Storage Service (Amazon S3) bucket. After the upload is complete, make sure you set the file or files to have public read access permissions.
3. Choose one of the uploaded files. In the **Overview** tab, you will see a URL for the file. Copy the URL to your clipboard.
4. Open the [AWS Data Exchange console](#).
5. Choose the product you want to update, and then choose **Edit**.
6. From **Product Description**, use the following Markdown formats to link to relevant files (using the URL link you copied previously) or to another URL, like your website.
 - To link to a file stored in an S3 bucket:

```
**_[File name](Object URL from Amazon S3)_**
```


Description of the object.
 - To link to a trial product listing on AWS Data Exchange:

```
**_[Website Title](URL)_**
```


Description of the website.
7. Choose **Save Changes**. After a few minutes your AWS Data Exchange product listing page should be updated with the new links.

Revision access rules

Revision access rules specify which revisions subscribers can access when they subscribe to your product. You choose options for subscribers to get historical and future revisions.

- *Historical revision options* – Historical revisions are revisions that you published prior to the subscription start date. You have three options for historical revisions:

- **All pre-existing revisions published prior to subscription** – Give your subscribers access to all historical revisions.
- **A fixed number of trailing revisions published prior to subscription** – You choose how many historical revisions your subscribers have access to (from 1 to 100).
- **No historical revisions** – Your subscribers get no access to historical revisions. With this option, your subscribers will initially have no data available, until you publish your next revision after their subscription starts.
- *Future revision options* – Future revisions are revisions that you publish after subscription start. You have two options for future revisions:
 - **All future revisions published during subscription duration** – Give your subscribers access to all revisions that you publish until their subscription expires.
 - **No future revisions** – Your subscribers get no access to future revisions.

Note

You can't choose both **No historical revisions** and **No future revisions**. That would create a product with no revisions and no data.

Data dictionaries

A *data dictionary* is a visual representation of the contents of your data set.

Subscribers can view and download a data dictionary before they subscribe to your product to evaluate if your product meets their needs.

You can add one data dictionary to each data set, with a maximum size of 1 MB. The accepted file type for a data dictionary is .csv.

When you create a data dictionary, you include details about what columns are included in the data set and their meaning. Your data dictionary must conform to the AWS Data Exchange data dictionary template. You can download the **blank data dictionary template** from the AWS Data Exchange console. AWS Data Exchange also provides an **example data dictionary** for you to view as an example.

Note

A data dictionary is attached to a product and associated with a data set. If you want to have more than one data dictionary for potential subscribers to evaluate, you can create two or more versions of the same product with the same data sets. Then, add a different data dictionary to each product.

For more information about how to add a data dictionary to a product, see [Publishing a new product](#) (p. 46).

Samples

A *sample* is a small part of the data in your product that is intended to show what the entire data set is like.

Subscribers can view and download samples before they subscribe to your product to evaluate if your product meets their needs.

You can upload up to 10 samples to each data set with a maximum size of 50 MB. The accepted file formats for samples are any file type accepted by Amazon S3. Samples in .csv format can be previewed.

Note

Samples are attached to a product and associated with a data set. If you want to have more than 10 samples for potential subscribers to evaluate, you can create two or more versions of the same product with the same data sets. Then, add up to 10 samples to each product.

For more information about how to add a sample to a product, see [Publishing a new product \(p. 46\)](#).

Getting started as a provider

The following topics describe the complete process of becoming a data product provider on AWS Data Exchange using the AWS Data Exchange console. The process has the following steps:

Steps

- [Step 1: Confirm your eligibility \(p. 44\)](#)
- [Step 2: Register to be a provider \(p. 45\)](#)
- [Step 3: Confirm eligibility of your data \(p. 46\)](#)

Step 1: Confirm your eligibility

Before you can register, you must meet the following requirements to confirm your eligibility.

Requirements for publishing data products

Whether you charge for your AWS Data Exchange data product, you're selling that product on AWS Marketplace. To create and offer data products, you must:

- Have a defined customer support process and support organization.
- Provide a means to keep data regularly updated and free of vulnerabilities.
- Follow best practices and guidelines when marketing your product.
- Be an AWS customer in good standing and meet the requirements in the terms and conditions for AWS Marketplace sellers and for AWS Data Exchange providers.
- Be a permanent resident or citizen in an [eligible jurisdiction \(p. 44\)](#), or a business entity organized or incorporated in one of those areas.
- To provide data products, you must also request on-boarding through the [Create case](#) wizard for AWS Support. The AWS Data Exchange team will contact you to complete the qualification and registration process.

Additionally, if you want to offer products and charge for them, you must provide the following information:

- You must provide tax and bank account information. For US-based entities, a W-9 form and a banking account from a US-based bank are required.
- Non-US sellers are required to provide a W-8 form, value-added tax (VAT) or goods and services tax (GST) registration number, and US bank information. If you don't have a US bank account, you can register for a virtual US bank account from [Hyperwallet](#).

Eligible jurisdictions for AWS Data Exchange products

To provide data products on AWS Data Exchange, you must be a permanent resident or citizen in one of the following countries or SARs, or a business entity organized or incorporated therein:

- Australia¹
- Bahrain¹²
- European Union (EU) member state¹

- Hong Kong SAR
- Israel¹²
- Japan²³
- New Zealand¹
- Norway¹²
- Qatar
- Switzerland¹²
- United Arab Emirates (UAE)¹²
- United Kingdom (UK)¹
- United States (US)

¹ Providers of paid products in these countries must provide VAT registration information in country of establishment.

² If you, as a provider, are located in the same country as the subscriber, you may be responsible for tax invoicing, collections, and remittances. Please consult with your tax advisor.

³ Providers based in Japan have an obligation to self-account for the Japan Consumption Tax (JCT) on the listing fee charges.

For more information about VAT, invoicing, and your tax obligations as a provider, see [AWS Marketplace Sellers](#) on [Amazon Web Service Tax Help](#).

Step 2: Register to be a provider

To use AWS Data Exchange as a provider, you must be a registered seller on AWS Marketplace and be qualified by the AWS Data Exchange team. When you register an account as an AWS Marketplace seller, the account is the seller of record for your products and is used for reporting and disbursement. All products and their public offers are discoverable on AWS Data Exchange and AWS Marketplace.

Important

You can't change the AWS account that you use to list a product on AWS Marketplace. Only data sets owned by that account can be included in products published by that account. Only AWS accounts that are registered to provide data products on AWS Marketplace and AWS Data Exchange can publish products.

To register as a provider for AWS Data Exchange and AWS Marketplace

1. From your web browser, open the [AWS Marketplace Management Portal](#).
2. Choose **Register now** to open the registration wizard.
3. Confirm your company or full name, and review the Terms and Conditions. If you agree to them, choose **I have read and agree to these terms**.
4. On the **Account Settings** page, choose **Add** to add a public profile.
5. (Optional) If you want to submit paid products to AWS Marketplace or AWS Data Exchange, you must provide your tax and banking information. On the **Account Settings** page, from the **Provide tax and banking information** tab, choose **Start** to complete the tax and banking wizard. This submits your tax and banking information in the AWS Marketplace Management Portal.

Note

We strongly recommend that you sign and submit the tax form electronically. Otherwise, you must print, complete the signature section, and mail a hard copy of the tax form to the address provided in the tax information interview. This delays the registration process.

6. In addition to being a registered AWS Marketplace seller, you must submit an AWS Data Exchange qualification request. Access the [AWS Support Dashboard](#) and create a case in the AWS Management

Console. The AWS Data Exchange team will contact you to complete the qualification and registration process.

Step 3: Confirm eligibility of your data

To confirm the eligibility of your data, review the [Publishing guidelines \(p. 37\)](#).

If you have questions about the eligibility of your data set, contact [AWS Support](#).

You can create your product after you've reviewed the publishing guidelines for data products on AWS Data Exchange, and you've confirmed that your data set can be listed.

Publishing a new product

The following topics describe the process of publishing a new product on AWS Data Exchange by using the AWS Data Exchange console.

Topics

- [Publishing a product containing file-based data \(p. 46\)](#)
- [Publishing a product containing APIs \(p. 50\)](#)
- [Publishing a product containing Amazon Redshift data sets \(p. 62\)](#)

The following video explains more about how to publish a new data product on AWS Data Exchange.

Publishing a product containing file-based data

The following topics describe the process of creating a data set and publishing a new product containing file-based data on AWS Data Exchange by using the AWS Data Exchange console. The process has the following steps:

Steps

- [Step 1: Create assets \(p. 46\)](#)
- [Step 2: Create a data set \(p. 47\)](#)
- [Step 3: Create a revision \(p. 47\)](#)
- [Step 4: Import assets to a revision \(p. 47\)](#)
- [Step 5: Publish a new product \(p. 48\)](#)
- [Step 6: \(Optional\) Copy a product \(p. 50\)](#)

Step 1: Create assets

Assets are the *data* in AWS Data Exchange. For more information, see [Assets \(p. 93\)](#).

Before you create and publish a new file-based data product, you must:

1. Create your files.

AWS Data Exchange supports all file types.

2. Store your files as objects in Amazon S3 or on your local computer.

For more information about storing files in Amazon S3, see the [Amazon S3 User Guide](#).

Step 2: Create a data set

Data sets in AWS Data Exchange are dynamic and are versioned using revisions, with each revision containing at least one asset. For more information, see [Data in AWS Data Exchange \(p. 93\)](#).

To create a data set

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, under **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose **Create data set** to open the **Data set creation steps** wizard.
4. In **Select data set type**, choose **Amazon S3 object**.
5. In **Define data set**, enter a **Name** and **Description** for your data set. For more information, see [Data set best practices \(p. 98\)](#).
6. (Optional) Under **Add tags – optional**, add tags.
7. Choose **Create data set**.

Step 3: Create a revision

In the following procedure, you create a revision after you've created a data set in the AWS Data Exchange console. For more information, see [Revisions \(p. 95\)](#).

To create a revision

1. On the **Data set overview** section of the data set details page:
 - a. (Optional) Choose **Edit name** to edit information about your data set.
 - b. (Optional) Choose **Delete** to delete the data set.
2. In the **Revisions** section, choose **Create revision**.
3. Under **Define revision**, provide an optional comment for your revision that describes the purpose of the revision.
4. (Optional) Under **Add tags – optional**, add tags associated with the resource.
5. Choose **Create revision**.
6. Review, edit, or delete your changes from the previous step.

Step 4: Import assets to a revision

In the following procedure, you import data assets, and then finalize the revision in the AWS Data Exchange console. For more information, see [Assets \(p. 93\)](#).

To import assets to the revision

1. Under the **Jobs** section of the data set details page, choose either **Import from Amazon S3** or **Upload** (to upload from your computer), depending on where the data assets for the data set are currently stored.
2. Follow the prompts, depending on your selection. A job is started to import your asset into your data set.
3. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.
4. If you have more data to add, repeat Step 1.
5. In **Revision overview**, review your revision and its assets.

6. Choose **Finalize revision**.

You have successfully finalized a revision for a data set.

You can edit or delete a revision before you add it to a product.

Topics

- [Edit a revision \(p. 48\)](#)
- [Delete a revision \(p. 48\)](#)

Edit a revision

To edit the revision after you've finalized it

1. In **Revision overview**, choose **De-finalize**.

You see a message that the revision is no longer in the finalized state.

2. To edit the revision, from **Revision overview**, choose **Actions, Edit**.
3. Make your changes, and then choose **Update**.
4. Review your changes, and then choose **Finalize**.

Delete a revision

To delete the revision after you've finalized it

1. In **Revision overview**, choose **Delete**.
2. Type **DeLeTe** in the **Delete revision** dialog box, and then choose **Delete**.

Warning

This deletes the revision and all of its assets. This action cannot be undone.

Step 5: Publish a new product

After you've created at least one data set and finalized a revision with assets, you're ready to publish that data set as a part of a product. For more information, see [Product details \(p. 39\)](#). Make sure that you have all required details about your product and offer.

To publish a new product

1. In the left navigation pane of the [AWS Data Exchange console](#), under **Publish data**, choose **Products**.
2. From **Products**, choose **Publish new product** to open the **Publish new product** wizard.
3. In the **Product visibility** section, choose your product's **Product visibility options** and **Sensitive information** configuration, and then choose **Next**. For more information, see [Product visibility \(p. 39\)](#) and [Sensitive categories of information \(p. 39\)](#).
4. In the **Add data** section, under **Owned data sets**, select the check boxes next to the data sets you want to add, and then choose **Add selected**.

Note

The data sets you choose must have a finalized revision. Data sets without finalized revisions can't be added.

- a. Go to **Selected data sets** to review your selections.

You can review the **Name** of the data set, the **Type** of data set, and the timestamp of when the data set was **Last updated**.

- b. Go to **Select revision access rules**, choose the revision access rules that you want to set for data sets included in this product, and then choose **Next**. For more details, see [Revision access rules \(p. 42\)](#).
5. In the **Define product** section, under **Product overview**, enter information about your product, including the **Product name**, **Product logo**, **Support contact** information, and **Product categories**.

For more information, see [Product details \(p. 39\)](#).

6. (Optional) In the **Define product** section, under **Data dictionaries and samples – optional**, choose a data set by selecting the option button next to the data set name and then choose **Edit**.
 - a. In the **Edit** dialog box, under **Upload data dictionary**, choose **Add file** to upload a new data dictionary.

You can choose one data dictionary, in .csv format, with a maximum size of 1 MB.

- b. Choose a saved data dictionary from your computer, and then choose **Open**.

The data dictionary .csv file appears on the **Edit** dialog box.

Note

Your data dictionary must conform to the AWS Data Exchange data dictionary template. If you don't have a saved data dictionary to upload, you can choose either the **blank data dictionary template** link or the **example data dictionary** link in the AWS Data Exchange console.

- c. Choose **Data dictionary preview** to preview it.
 - d. Under **Samples - optional**, choose **Upload samples**, choose a sample from your computer, and then choose **Open**.

The samples appear on the **Edit** dialog box.

Note

You can upload up to 10 samples with a maximum size of 50 MB. Samples in .csv format can be previewed.

- e. Enter a description for each sample that will be visible on the product detail page.
 - f. Choose **Save**.
7. Under **Product definition**, enter a **Short description** and a **Long description** of your product.

If you want to use a template for your long description, select **Apply template**, choose your template type, and then fill out the template with your specific product details.

8. Choose **Next**.
9. Configure your offer.

- If you're creating a public offer, in the **Add public offer** section, configure your offer. All AWS Data Exchange products with visibility set to **Public** require a public offer.
 1. Choose your **Pricing and access duration** options for the subscription.
 2. Choose your US sales tax settings, data subscription agreement (DSA), and refund policy.
 3. (Optional) Set **Subscription verification**, which enables you to control who can subscribe to this product. For more information, see [Subscription verification for providers \(p. 89\)](#).
 4. Choose your **Offer auto-renewal** option. For more information, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
 5. Choose **Next**.
- If you're creating a private offer, configure the offer details in the **Add custom offer** section.

1. In the **Subscriber account information** section, add at least one subscriber account to which you want to extend the offer.
2. Choose your **Pricing and access duration** options for the subscription.
3. Choose the **Offer expiration date** by which the subscriber must accept the offer.
4. Choose your US sales tax settings, data subscription agreement (DSA), and refund policy.
5. Choose your **Offer auto-renewal** option. For more information, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
6. Choose **Next**.
10. In the **Review & publish** section, review your product information and then expand the **Product page preview** to see how it will look after it's published.
11. If you're sure that you want to make the product and public offer visible and available to everyone, choose **Publish**.

You've now completed the manual portion of publishing a data product with a public offer. AWS Data Exchange prepares and publishes your product. On the **Product overview** page, the status of your product is **Awaiting approval** and then changes to **Published** after it's published.

Step 6: (Optional) Copy a product

After you have created your first product, you can copy its details and public offers to create a new product.

Note

You can copy a public, private, published, or unpublished product. Custom offers associated with the product will not be copied, but public offers will be copied.

To copy a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the button next to the product you want to copy.
4. Select the **Actions** dropdown, and then choose **Create copy**.
5. Continue through the **Publish a new product** workflow, with details already filled in, based on the product you chose in Step 3. For more information, see [Step 5: Publish a new product \(p. 48\)](#).

Publishing a product containing APIs

Overview

The following topics describe the process of creating a REST API data set and publishing a new product that contains APIs on AWS Data Exchange. You can complete the process by using either the AWS Data Exchange console or the AWS Command Line Interface.

After you have set up your Amazon API Gateway REST API, you can create a new API data set in AWS Data Exchange. You can then create a revision, and add API assets.

Creating and publishing an API asset allows subscriber requests to an AWS Data Exchange endpoint to proxy through to your API Gateway API. You can then add this data set to a product and add pricing. Then, subscribers can view your product and subscribe to it in the AWS Marketplace catalog and the AWS Data Exchange catalog.

AWS Data Exchange features are available including revision access rules, private products, private offers, and subscription verification.

You can choose only contract-based pricing, metered cost pricing (where the contract pricing is \$0), or a combination of metered and contract pricing.

You can choose standard metered costs, or you can specify a custom metered cost. There are three types of standard metered costs available:

- Per API request
- Per successful API request
- Per unit of data transferred in bytes

Note

Metered costs apply to all API data sets in a product. Therefore, if you want to charge different prices for the same dimension for different API data sets, we recommend that you create these data sets in different products.

The process has the following steps:

Steps

- [Prerequisites \(p. 51\)](#)
- [Step 1: Update the API resource policy \(p. 53\)](#)
- [Step 2: Create an API data set \(p. 53\)](#)
- [Step 3: Create a revision \(p. 54\)](#)
- [Step 4: Add API assets to a revision \(p. 55\)](#)
- [Step 5: Publish a new product containing APIs \(p. 58\)](#)
- [Step 6: \(Optional\) Copy a product \(p. 61\)](#)

Prerequisites

Before you can publish a product containing APIs, you must meet the following prerequisites:

- Before you can use any AWS service, including AWS Data Exchange, you must sign up for AWS and create an AWS Identity and Access Management (IAM) user account. For more information, see [Setting up AWS Data Exchange \(p. 5\)](#).
- To create products on AWS Data Exchange, you must register your AWS account as an AWS Marketplace Seller. Use this account to create your data sets. The account with the API Gateway resource doesn't need to be in the same account that is creating the data sets.
- Your REST API must be on Amazon API Gateway with an integration that uses an appropriate request and response model for accessing your data, such as Amazon DynamoDB or AWS Lambda. For more information, see [Developing a REST API in API Gateway](#) and [Working with REST APIs](#) in the *Amazon API Gateway Developer Guide*.

Note

Only public API Gateway APIs are supported.

- Your API Gateway REST API must be able to authenticate and authorize calls from the AWS Data Exchange service principal. Every request from AWS Data Exchange to your API uses the Signature Version 4 (SigV4) protocol signed with AWS Data Exchange credentials. AWS Data Exchange works with custom domains and domain key mappings.

Note

AWS Data Exchange doesn't support Amazon Cognito, No-Auth, and AWS Lambda authorizers.

- If your API Gateway REST API uses a custom identity system for authentication and authorization, configure it to use IAM authentication and import an OpenAPI schema describing your API. AWS

Data Exchange will invoke your API Gateway REST API with its own service credentials and include subscriber information such as account ID.

- Your API Gateway REST API is responsible for integrating with your backend. To do this, do one of the following:
 - Attach a long-lived authentication token to every request that comes through your API Gateway REST API that the backend can verify.
 - Use API Gateway to invoke a Lambda function that can generate credentials and invoke your API.

Your API is invoked per the [API integration request specification \(p. 52\)](#).

For more information, see the following topics:

Topics

- [API data set security \(p. 52\)](#)
- [API integration request specification \(p. 52\)](#)
- [Header forwarding \(p. 52\)](#)

API data set security

AWS Data Exchange encrypts traffic end to end using Transport Layer Security (TLS) 1.2. All metadata is encrypted at rest. AWS Data Exchange will not store subscriber requests or the responses from your backend. We only extract metering metadata necessary for billing.

API integration request specification

An API on AWS Data Exchange passes through all headers (except for the headers listed in [Header forwarding \(p. 52\)](#)), body, http method, path, and query strings as-is from the customer request and appends the following headers.

```
// These headers help prevent Confused Deputy attacks. They enable the SourceAccount
// and SourceArn variables in IAM policies.
'x-amz-source-account': ACCOUNT_ID,
'x-amz-source-arn': `arn:aws:dataexchange:${REGION}:${OWNER_ACCOUNT_ID}:data-sets/
${DATA_SET_ID}/revisions/${REVISION_ID}/assets/${ASSET_ID}`,

// These headers identify the API Asset in Data Exchange.
'x-amzn-dataexchange-asset-id': ASSET_ID,
'x-amzn-dataexchange-data-set-id': DATA_SET_ID,
'x-amzn-dataexchange-revision-id': REVISION_ID,

// This header identifies the Data Exchange Product.
'x-amzn-dataexchange-product-id': PRODUCT_ID,

// This header identifies the caller of Data Exchange. It will contain subscriber
// information.
'x-amzn-dataexchange-requester-account-id': REQUESTER_ACCOUNT_ID,

// Providers can attach custom metadata in the form of key/value pairs
// to a particular subscription. We will send these key/value pairs as stringified
// JSON.
'x-amz-dataexchange-subscription-metadata': STRINGIFIED_METADATA,
```

Header forwarding

AWS Data Exchange removes any headers related to authentication or namespaced to Amazon prior to forwarding it to a provider backend. Specifically, AWS Data Exchange removes:

- Authentication header

- Any headers that begin with x-amz

The host header will be overwritten as a consequence of the proxying.

Step 1: Update the API resource policy

If you have an Amazon API Gateway REST API that meets the [Prerequisites \(p. 51\)](#), you must update your API resource policy to grant AWS Data Exchange the ability to invoke your API when a subscriber makes a request to get your API's schema.

To update your API resource policy

1. Add the following policy to your API's resource policy:

```
{
  "Effect": "Allow",
  "Principal": {"Service": "dataexchange.amazonaws.com"},
  "Action": "execute-api:Invoke",
  "Resource": "*",
  "Condition": {"StringEquals": {"aws:SourceAccount": "<account-id>"}}
}
```

2. Replace account-id with the account that will be creating the API data set.

The account with the API Gateway resource does not need to be in the same account that is creating the data set.

This policy restricts these permissions to calls made by the AWS Data Exchange service principal and requires that only your account can authorize AWS Data Exchange to integrate with your API.

Note

If you have a resource policy that explicitly denies AWS Data Exchange from doing this invocation, you must remove or limit this deny.

You're now ready to [create an API data set \(p. 53\)](#).

Step 2: Create an API data set

Data sets in AWS Data Exchange are dynamic and are versioned using revisions, with each revision containing at least one asset. For more information, see [Data in AWS Data Exchange \(p. 93\)](#).

You use either the AWS Data Exchange console or the AWS Command Line Interface to create an API data set:

- [Creating an API data set \(console\) \(p. 53\)](#)
- [Creating an API data set \(AWS CLI\) \(p. 54\)](#)

Creating an API data set (console)

To create an API data set (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. On the left side navigation pane, under **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose **Create data set** to open the **Data set creation steps** wizard.
4. In **Select data set type**, choose **Amazon API Gateway API**.

5. In **Define data set**, enter a **Name** and **Description** for your data set. For more information, see [Data set best practices](#) (p. 98).
6. (Optional) Under **Add tags – optional**, add tags.
7. Choose **Create**.

You are now ready to create a revision.

Creating an API data set (AWS CLI)

To create an API data set (CLI)

1. Use the `create-data-set` command to create an API data set:

```
$ aws dataexchange create-data-set \
--asset-type API_GATEWAY_API \
--description 'Data Set Description' \
--name 'Data Set Name'

{
  "Arn": "arn:aws:dataexchange:us-east-1:123456789012:data-sets/$DATA_SET_ID",
  "AssetType": "API_GATEWAY_API",
  "CreatedAt": "2021-09-11T00:16:46.349000+00:00",
  "Description": "Data Set Description",
  "Id": "$DATA_SET_ID",
  "Name": "Data Set Name",
  "Origin": "OWNED",
  "UpdatedAt": "2021-09-11T00:16:46.349000+00:00"
}
```

2. Note the new Asset Type of `API_GATEWAY_API`.

You are now ready to create a revision.

Step 3: Create a revision

In the following procedure, you create a revision after you've created a data set. For more information, see [Revisions](#) (p. 95).

You use either the AWS Data Exchange console or the AWS Command Line Interface to create a revision:

- [Creating a revision \(console\)](#) (p. 54)
- [Creating a revision \(AWS CLI\)](#) (p. 55)

Creating a revision (console)

To create a revision (console)

1. On the **Data set overview** section of the data set details page:
 - a. (Optional) Choose **Edit name** to edit information about your data set.
 - b. (Optional) Choose **Delete** to delete the data set.
2. On the **Revisions** section, choose **Create revision**.
3. Under **Define revision**, provide an optional comment for your revision that describes the purpose of the revision.
4. (Optional) Under **Add tags – optional**, add tags associated with the resource.
5. Choose **Create revision**.

6. Review, edit, or delete your changes from the previous step.

You are now ready to [add API assets to the revision \(p. 55\)](#).

Creating a revision (AWS CLI)

To create a revision (AWS CLI)

1. Use the create-revision command to create a revision:

```
$ aws dataexchange create-revision \
--data-set-id $DATA_SET_ID \
--comment 'First Atlas Revision'
{
  "Arn": "arn:aws:dataexchange:us-east-1:123456789012:data-sets/$DATA_SET_ID/revisions/
$REVISION_ID",
  "Comment": "First Atlas Revision",
  "CreatedAt": "2021-09-11T00:18:49.160000+00:00",
  "DataSetId": "$DATA_SET_ID",
  "Finalized": false,
  "Id": "$REVISION_ID",
  "UpdatedAt": "2021-09-11T00:18:49.160000+00:00"
}
```

2. [Add the API assets to the revision \(p. 55\)](#).

Note

You will need to know the ID of the API Gateway REST API you want to import as well as the stage.

Step 4: Add API assets to a revision

API assets contain the information subscribers need to make calls to your API. For more information, see [Assets \(p. 93\)](#).

In the following procedure, you import data assets, and then finalize the revision.

You use either the AWS Data Exchange console or the AWS CLI to add assets to a revision:

- [Adding API assets to a revision \(console\) \(p. 55\)](#)
- [Adding API assets to a revision \(AWS CLI\) \(p. 57\)](#)

Adding API assets to a revision (console)

To add assets to the revision (console)

1. Under the **API assets** section of the data set details page, choose **Add API stage**.
2. Under **Select API stage**, for **Amazon API Gateway API**, enter an API in the input box or choose one of the following from the drop-down list:
 - **API in another AWS account** – this is a cross account API that you have been given permission to access.
 - **In this AWS account** – this is an API in your AWS account.
 - a. If you chose **API in another AWS account**, enter the API ID and the API **Stage name** in the input boxes.

- b. If you chose **In this AWS account**, choose the **API Stage name** from the drop-down list

Note

You can create a new API stage by choosing **Create new** and following the steps in the **Create new API on Amazon API Gateway** modal. Once the new stage has been created, repeat Step 2.

- 3. Under **Advanced configuration – optional**, you can choose to **Connect existing Amazon API Gateway usage plan** to use the throttling and quota limits as defined in the existing usage plan, and enter the **API key**.
- 4. Under **Document API for subscribers**, provide details about the API that the subscribers will see after they subscribe to your product.
 - a. For **API name**, enter a name that subscribers can use to identify the API asset.

Note

If an **In this AWS account** was selected, the **API name** is automatically populated, which you can modify if necessary.

If a **API in another AWS account** was selected, the **API name** is populated with a default name, which you should modify to so the subscriber can easily understand what it is.

- b. For **OpenAPI 3.0 specification**, either:
 - i. Enter or copy and paste the OpenAPI 3.0 specification file.
 - ii. Choose **Import from .JSON file**, and then select the .json file from your local computer to import.

The imported specification appears in the box.
 - iii. Choose **Import from Amazon API Gateway**, and then choose a specification to import.

The imported specification appears in the box.
- c. For **Additional documentation - optional**, enter any additional information that is useful for the subscriber to know about your API. Markdown is supported.

Note

You can't edit the OpenAPI specification and additional documentation after you add this asset to a revision.

If you want to update this information, and the revision is not finalized, you can replace the asset.

If you want to update this information, and the revision is finalized, you can create a new revision with the updated asset.

- 5. Choose **Add API stage**.

A job is started to import your asset (in this case, the API) into your data set.

Note

If you do not have an API on Amazon API Gateway, you will be prompted to create one.

- 6. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.
- 7. If you have more APIs to add, repeat Step 2.
- 8. Under **Revision overview**, review your revision and its assets.
- 9. Choose **Finalize**.

You have successfully finalized a revision for a data set.

You can [edit a revision \(p. 58\)](#) or [delete a revision \(p. 58\)](#) before you add it to a product.

You are now ready to [publish a new API data product \(p. 58\)](#).

Adding API assets to a revision (AWS CLI)

You can add API assets by running an `IMPORT_ASSET_FROM_API_GATEWAY_API` job.

To add API assets to a revision (AWS CLI):

1. Use the `create-job` command to add API assets to the revision:

```
$ aws dataexchange create-job \
--type IMPORT_ASSET_FROM_API_GATEWAY_API \
--details '{"ImportAssetFromApiGatewayApi": {
{"DataSetId": "$DATA_SET_ID", "RevisionId": "$REVISION_ID", "ApiId": "$API_ID", "Stage": "$API_STAGE", "ProtocolType": "REST", "ApiEndpoint": "string", "ApiKey": "string", "ApiName": "string", "ApiDescription": "string", "ApiSpecificationDownloadUrl": "string", "ApiSpecificationDownloadUrlExpiresAt": "string"}
},
"Id": "$JOB_ID",
"State": "WAITING",
"Type": "IMPORT_ASSET_FROM_API_GATEWAY_API",
"UpdatedAt": "2021-09-11T00:38:19.875000+00:00"
}'

$ aws dataexchange start-job --job-id $JOB_ID
$ aws dataexchange get-job --job-id $JOB_ID
{
  "Arn": "arn:aws:dataexchange:us-east-1:0123456789012:jobs/$JOB_ID",
  "CreatedAt": "2021-09-11T00:38:19.875000+00:00",
  "Details": {
    "ImportAssetFromApiGatewayApi": {
      "ApiId": "$API_ID",
      "DataSetId": "$DATA_SET_ID",
      "ProtocolType": "REST",
      "RevisionId": "$REVISION_ID",
      "Stage": "$API_STAGE",
      "ApiEndpoint": "string",
      "ApiKey": "string",
      "ApiName": "string",
      "ApiDescription": "string",
      "ApiSpecificationDownloadUrl": "string",
      "ApiSpecificationDownloadUrlExpiresAt": "string"
    },
    "Id": "$JOB_ID",
    "State": "COMPLETED",
    "Type": "IMPORT_ASSET_FROM_API_GATEWAY_API",
    "UpdatedAt": "2021-09-11T00:38:52.538000+00:00"
  }
}
```

2. Use the `list-revision-assets` command to confirm that the new asset was created properly:

```
$ aws dataexchange list-revision-assets \
--data-set-id $DATA_SET_ID \
--revision-id $REVISION_ID
{
```

```
"Assets": [
  {
    "Arn": "arn:aws:dataexchange:us-east-1:123456789012:data-sets/$DATA_SET_ID/
revisions/$REVISION_ID/assets/$ASSET_ID",
    "AssetDetails": {
      "ApiGatewayApiAsset": {
        "ApiEndpoint": "https://$API_ID.execute-api.us-east-1.amazonaws.com/
$API_STAGE",
        "ApiId": "$API_ID",
        "ProtocolType": "REST",
        "Stage": "$API_STAGE"
      }
    },
    "AssetType": "API_GATEWAY_API",
    "CreatedAt": "2021-09-11T00:38:52.457000+00:00",
    "DataSetId": "$DATA_SET_ID",
    "Id": "$ASSET_ID",
    "Name": "$ASSET_ID/$API_STAGE",
    "RevisionId": "$REVISION_ID",
    "UpdatedAt": "2021-09-11T00:38:52.457000+00:00"
  }
]
```

You are now ready to [publish the API data product \(p. 58\)](#).

Edit a revision

To edit the revision after you've finalized it

1. On the **Revision overview**, choose **De-finalize**.

You see a message that the revision is no longer in the finalized state.

2. To edit the revision, from **Revision overview**, choose **Actions, Edit**.
3. Make your changes, and then choose **Update**.
4. Review your changes and then choose **Finalize**.

Delete a revision

To delete the revision after you've finalized it

1. On the **Revision overview**, choose **Delete**.
2. Type **Delete** in the **Delete revision** dialog box, and then choose **Delete**.

Warning

This deletes the revision and all of its assets. This action cannot be undone.

Step 5: Publish a new product containing APIs

After you've created at least one data set and finalized a revision with assets, you're ready to publish that data set as a part of a product. For more information, see [Product details \(p. 39\)](#). Make sure that you have all required details about your product and offer.

You use the AWS Data Exchange console or the AWS Marketplace Catalog API to publish a new product containing APIs. For more information about how to publish a new product using the AWS Marketplace Catalog API, see [Using AWS Data Exchange with the AWS Marketplace Catalog API \(p. 151\)](#).

- [Publishing a new product containing APIs \(console\) \(p. 59\)](#)

Publishing a new product containing APIs (console)

To publish a new product containing APIs

1. From the left navigation pane of the [AWS Data Exchange console](#), under **Publish data**, choose **Products**.
2. From **Products**, choose **Publish new product** to open the **Publish new product** wizard.
3. In **Product visibility**:
 - a. Choose your product's **Product visibility options** as either **Public** or **Private**.

All AWS Data Exchange products with visibility set to **Public** require a public offer.

For more information, see [Product visibility \(p. 39\)](#).
 - b. Choose your product's **Sensitive information** configuration.

For more information, see [Sensitive categories of information \(p. 39\)](#).
 - c. Choose **Next**.
4. In **Add data**:
 - a. Under **Owned data sets**, select the check boxes next to the data sets you want to add, and then choose **Add selected**.

Note
The data sets you choose must have a finalized revision. Data sets without finalized revisions aren't added.
 - b. Go to **Selected data sets** to review your selections.

You can review the **Name** of the data set, the **Type** of data set, and the timestamp of when the data set was **Last updated**.
 - c. Go to **Select revision access rules**, and choose the revision access rules that you want to set for data sets included in this product.

For more information, see [Revision access rules \(p. 42\)](#).
 - d. Choose **Next**.
5. In **Define product**:
 - a. Under **Product overview**, enter information about your product, including the **Product name**, **Product logo**, **Support contact** information, and **Product categories**.

For more information, see [Product details \(p. 39\)](#).
 - b. (Optional) Under **Data dictionaries and samples – optional**, choose a data set by selecting the option button next to the data set name and then choose **Edit**.
 - i. In the **Edit** dialog box, choose **Upload** to upload a new data dictionary.

You can choose one data dictionary, in .csv format, with a maximum size of 1 MB.
 - ii. Choose a saved data dictionary from your computer and then choose **Open**.

The data dictionary .csv file appears on the **Edit** dialog box.

Note
Your data dictionary must conform to the AWS Data Exchange data dictionary template. If you don't have a saved data dictionary to upload, you can choose either the **blank data dictionary template** link or the **example data dictionary** link in the AWS Data Exchange console.
 - iii. Choose **Data dictionary preview** to preview the data dictionary.

- iv. Under **Samples - optional**, choose **Upload samples**, choose a sample from your computer, and then choose **Open**.

The samples appear on the **Edit** dialog box.

Note

You can upload up to 10 samples with a maximum size of 50 MB. Samples in .csv format can be previewed.

- v. Enter a description for each sample that will be visible on the product detail page.
 - vi. Choose **Save**.
6. Under **Product definition**, enter a **Short description** and a **Long description** of your product.

If you want to use a template for your long description, select **Apply template**, choose your template type, and then fill out the template with your specific product details.

7. Choose **Next**.
8. Configure your offer in either **Add public offer** (for public offer) or **Add custom offer** (for private offers):

All AWS Data Exchange products with visibility set to **Public** require a public offer.

- a. For private offers only:
 - i. Choose one of the listed **Offer types**: **Private offer**, **Renewed private offer**, or **Bring Your Own Subscription (BYOS)**.
 - ii. In the **Subscriber account information** section, add at least one subscriber account to which you want to extend the offer.
- b. Choose your **Pricing and access duration** options for the subscription.
- c. For **Metered costs - optional**, choose **Add**.
 - i. For **Add metered cost**, select the type of cost for the API call from the **Type** list:
 - **Per API request**
 - **Per successful API request**
 - **Per unit of data transferred in bytes**
 - **New custom metered cost**
 - ii. Enter or update the **Cost display name**, which is visible on the subscriber's invoice.
 - iii. If you're using a **Pre-defined metered cost**, the **Key** is automatically generated, can't be edited, and doesn't need to be sent back in the response header.
 - iv. If you're creating a **New custom metered cost**, enter the **Key**, which is the identifier for the metered cost in the API response header (15 characters maximum).

This **Key** should be sent back as part of the x-amz-dataexchange-metering response header.

Example Custom key

If you have a custom key called **VertexCount** and another custom key called **EdgeCount**, the "x-amz-dataexchange-metering" response header could have a value of VertexCount=3, EdgeCount=10 or you could return two separate header lines:

x-amz-dataexchange-metering: VertexCount=3

x-amz-dataexchange-metering: EdgeCount=10

- v. Enter the price the subscriber is charged per unit in **Price / unit**.

- vi. (Optional) Enter the number of units to display an example of the cost in the **Metered cost calculator**.
- vii. (Optional) Enter a brief **Description** of the metered cost that appears on the product detail page.
- viii. Choose **Add**.
- ix. (Optional) Repeat to add additional metered costs.

The order of the metered costs appears on the product detail page. You can't reorder them.

Note

After the offer is created, you can edit the price and description of a metered cost. For more information, see [Updating product and offer details \(p. 76\)](#).

- d. For private offers only, choose the **Offer expiration date** by which the subscriber must accept the offer.
- e. Choose your **Tax settings**, **Data subscription agreement (DSA)**, and **Refund policy**.
- f. (Optional) For public offers only, set **Subscription verification**, which enables you to control who can subscribe to this product. For more information, see [Subscription verification for providers \(p. 89\)](#).
- g. Choose your **Offer auto-renewal** option. For more information, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
- h. Choose **Next**.
9. In the **Review & publish** section, review your product information.
 - a. Expand the **Product page preview** to see how the product page will look after publication.
 - b. (Optional) Choose the **Edit** button in any section to edit that section.
10. If you're sure that you want to make the product and public offer visible and available to everyone, choose **Publish**.

You've now completed the manual portion of publishing a data product with a public offer. AWS Data Exchange prepares and publishes your product.

On the **Product overview** page, the status of your product is **Awaiting approval** and then changes to **Published** after it's published.

Step 6: (Optional) Copy a product

After you have created your first product, you can copy its details and public offers to create a new product.

Note

You can copy a public, private, published, or unpublished product. Custom offers associated with the product will not be copied, but public offers will be copied.

To copy a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the button next to the product you want to copy.
4. Select the **Actions** dropdown, and then choose **Create copy**.
5. Continue through the **Publish a new product** workflow, with details already filled in, based on the product you chose in Step 3. For more information, see [Step 5: Publish a new product \(p. 48\)](#).

Publishing a product containing Amazon Redshift data sets

Overview

An Amazon Redshift data set contains AWS Data Exchange datashares for Amazon Redshift. When customers subscribe to a product containing datashares, they are granted read-only access to the tables, views, schemas, and user-defined functions that a data provider adds to the datashare.

As a data provider, you create an AWS Data Exchange for Amazon Redshift datashare in your cluster. Then, you add to the datashare the schemas, tables, views, and user-defined functions that you want the subscribers to access. You then import the datashare to AWS Data Exchange, create a data set, add it to a product, and publish the product. Subscribers are granted access to the datashare upon subscription.

The subscriber's cluster must have an encrypted Amazon Redshift cluster running on an RA3 instance to query to Amazon Redshift data. For more information, see the [Amazon Redshift Database Developer Guide](#).

After you have set up your Amazon Redshift datashare in Amazon Redshift, you can create a new Amazon Redshift data set in AWS Data Exchange. You can then create a revision, and add Amazon Redshift datashare assets. This allows requests to the AWS Data Exchange endpoint to proxy through to your Amazon Redshift datashare. You can then add this data set to a product and add pricing. Then, prospective subscribers can view your product and subscribe to it in the AWS Data Exchange catalog.

The following topics describe the process of creating an Amazon Redshift data set and publishing a new product with Amazon Redshift data sets using the AWS Data Exchange console. The process has the following steps:

Steps

- [Step 1: Create an Amazon Redshift datashare asset \(p. 62\)](#)
- [Step 2: Create an Amazon Redshift data set \(p. 63\)](#)
- [Step 3: Create a revision \(p. 63\)](#)
- [Step 4: Add Amazon Redshift datashare assets to a revision \(p. 63\)](#)
- [Step 5: Publish a new product containing Amazon Redshift data sets \(p. 64\)](#)
- [Step 6: \(Optional\) Copy a product \(p. 65\)](#)

Step 1: Create an Amazon Redshift datashare asset

Assets are the data in AWS Data Exchange. For more information, see [Assets \(p. 93\)](#).

To create an Amazon Redshift datashare asset

1. Create a datashare within your Amazon Redshift cluster (must be RA3 type and encrypted).

For more information about how to create a datashare, see *Working with AWS Data Exchange datashares as a producer* in the [Amazon Redshift Database Developer Guide](#).

Note

We recommend setting your datashare as publicly accessible. If you do not, customers with publicly accessible clusters will not be able to consume your data.

2. [Step 2: Create an Amazon Redshift data set \(p. 63\)](#).

Step 2: Create an Amazon Redshift data set

An Amazon Redshift data set includes AWS Data Exchange datashares for Amazon Redshift. For more information, see [Amazon Redshift data set \(p. 97\)](#).

To create an Amazon Redshift data set

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. On the left side navigation pane, under **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose **Create data set** to open the **Data set creation steps** wizard.
4. In **Select data set type**, choose **Amazon Redshift datashare**.
5. In **Define data set**, enter a **Name** and **Description** for your data set. For more information, see [Data set best practices \(p. 98\)](#).
6. Under **Add tags – optional**, add tags.
7. Choose **Create**.

Step 3: Create a revision

In the following procedure, you create a revision after you've created a data set in the AWS Data Exchange console. For more information, see [Revisions \(p. 95\)](#).

To create a revision

1. On the **Data set overview** section of the data set details page:
 - a. (Optional) Choose **Edit name** to edit information about your data set.
 - b. (Optional) Choose **Delete** to delete the data set.
2. On the **Revisions** section, choose **Create revision**.
3. Under **Define revision**, provide an optional comment for your revision that describes the purpose of the revision.
4. Under **Add tags – optional**, add tags associated with the resource.
5. Choose **Create**.
6. Review, edit, or delete your changes from the previous step.

Step 4: Add Amazon Redshift datashare assets to a revision

In the following procedure, you add Amazon Redshift datashare assets to a revision, and then finalize the revision in the AWS Data Exchange console. For more information, see [Assets \(p. 93\)](#).

To add assets to the revision

1. Under the **AWS Data Exchange datashares for Amazon Redshift** section of the data set details page, choose **Add datashares**.
2. Under **AWS Data Exchange datashares for Amazon Redshift**, select the datashares and then choose **Add datashare(s)**.

Note

You can add up to 20 datashares to a revision.

A job is started to import your assets into your revision.

3. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

4. If you have more data to add, repeat Step 1.
5. Under **Revision overview**, review your revision and its assets.
6. Choose **Finalize**.

You have successfully finalized a revision for a data set.

You can [edit \(p. 48\)](#) or [delete a revision \(p. 48\)](#) before you add it to a product.

Step 5: Publish a new product containing Amazon Redshift data sets

After you've created at least one data set and finalized a revision with assets, you're ready to publish a product with Amazon Redshift data sets. For more information, see [Product details \(p. 39\)](#). Make sure that you have all required details about your product and offer.

To publish a new product containing Amazon Redshift data sets

1. From the left navigation pane of the [AWS Data Exchange console](#), under **Publish data**, choose **Products**.
2. From **Products**, choose **Publish new product** to open the **Publish new product** wizard.
3. In the **Product visibility** section, choose your product's **Product visibility options** and **Sensitive information** configuration, and then choose **Next**. For more information, see [Product visibility \(p. 39\)](#) and [Sensitive categories of information \(p. 39\)](#).
4. In the **Add data** section, under **Owned data sets**, select the check boxes next to the data sets that you want to add, and then choose **Add selected**.

Note

The data sets you choose must have a finalized revision. Data sets without finalized revisions won't be added.

- a. Go to **Selected data sets** to review your selections.

You can review the **Name** of the data set, the **Type** of data set, and the timestamp of when the data set was **Last updated**.

- b. Go to **Select revision access rules**, choose the revision access rules that you want to set for data sets included in this product, and then choose **Next**.

For more details, see [Revision access rules \(p. 42\)](#).

5. In the **Define product** section, under **Product overview**, enter information about your product, including the **Product name**, **Product logo**, **Support contact** information, and **Product categories**.

For more information, see [Product details \(p. 39\)](#).

6. (Optional) In the **Define product** section, under **Data dictionaries and samples – optional**, choose a data set by selecting the option button next to the data set name and then choose **Edit**.

For more information, see [Data dictionaries \(p. 43\)](#) and [Samples \(p. 43\)](#).

- a. In the **Edit** dialog box, under **Upload data dictionary**, choose **Add file** to upload a new data dictionary.

You can choose one data dictionary, in .csv format, with a maximum size of 1 MB.

- b. Choose a saved data dictionary from your computer and then choose **Open**.

The data dictionary .csv file appears on the **Edit** dialog box.

Note

Your data dictionary must conform to the AWS Data Exchange data dictionary template. If you don't have a saved data dictionary to upload, you can choose either

the **blank data dictionary template** link or the **example data dictionary** link in the AWS Data Exchange console.

- c. Choose **Data dictionary preview** to preview it.
- d. Under **Samples - optional**, choose **Upload samples**, choose a sample from your computer, and then choose **Open**.

The samples appear on the **Edit** dialog box.

Note

You can upload up to 10 samples with a maximum size of 50 MB. Samples in .csv format can be previewed.

- e. Enter a description for each sample that will be visible on the product detail page.
 - f. Choose **Save**.
7. Under **Product definition**, enter a **Short description** and a **Long description** of your product.

If you want to use a template for your long description, select **Apply template**, choose your template type, and then fill out the template with your specific product details.
 8. Choose **Next**.
 9. Configure your offer.
 - If you are creating a public offer, in the **Add public offer** section, configure your offer. All AWS Data Exchange products with visibility set to **Public** require a public offer.
 1. Choose your **Pricing and access duration** options for the subscription.
 2. Choose your US sales tax settings, data subscription agreement (DSA), and refund policy.
 3. (Optional) Set **Subscription verification**, which enables you to control who can subscribe to this product. For more information, see [Subscription verification for providers \(p. 89\)](#).
 4. Choose your **Offer auto-renewal** option. For more information, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
 5. Choose **Next**.
 - If you are creating a private offer, configure the offer details in the **Add custom offer** section.
 1. In the **Subscriber account information** section, add at least one subscriber account to which you want to extend the offer.
 2. Choose your **Pricing and access duration** options for the subscription.
 3. Choose the **Offer expiration date** by which the subscriber must accept the offer.
 4. Choose your US sales tax settings, data subscription agreement (DSA), and refund policy.
 5. Choose your **Offer auto-renewal** option. For more information, see [Creating an offer for AWS Data Exchange products \(p. 84\)](#).
 6. Choose **Next**.
 10. In the **Review & publish** section, review your product information and then expand the **Product page preview** to see how it will look after it's published.
 11. If you're sure that you want to make the product and public offer visible and available to everyone, choose **Publish**.

You've now completed the manual portion of publishing a data product with a public offer. AWS Data Exchange prepares and publishes your product. On the **Product overview** page, the status of your product is **Awaiting approval** and then changes to **Published** after it's published.

Step 6: (Optional) Copy a product

After you have created your first product, you can copy its details and public offers to create a new product.

Note

You can copy a public, private, published, or unpublished product. Custom offers associated with the product will not be copied, but public offers will be copied.

To copy a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the button next to the product you want to copy.
4. Select the **Actions** dropdown, and then choose **Create copy**.
5. Continue through the **Publish a product** workflow, with details already filled in, based on the product you chose in Step 3. For more information, see [Step 5: Publish a new product \(p. 48\)](#).

Product description templates

When listing a product on AWS Data Exchange, you should include a long description that contains all the information necessary for subscribers to understand what your product offers. For more information about the product long description, see [Long description \(p. 41\)](#).

This section contains Markdown templates that you can use as a starting point for the long description of a number of popular product types.

You can copy and paste the content below in your long description and use the sections that apply to your data product.

Generic long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
----|-----
Update Frequency | ADD INFO HERE
Data Source(s) | ADD INFO HERE
Original Publisher of data | ADD INFO HERE
Data Creation Date | ADD INFO HERE
Data Modification Date | ADD INFO HERE
Geographic coverage | ADD INFO HERE
Time period coverage | ADD INFO HERE
Is historical data "point-in-time" | YES OR NO
Data Set(s) Format(s) | ADD INFO HERE
Raw or scraped data | ADD INFO HERE
Key Fields | ADD INFO HERE
Key Words | ADD INFO HERE
Number of companies/brands covered | ADD INFO HERE
```



```
---
## Key Data Points
Key data points include:

* Key Data Point:
* Key Data Point:

---
## Additional Information

* [Data Source] (ADD LINK HERE)
* [Data Due Diligence Questionnaire] (ADD LINK HERE)
* [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)

---
## Pricing Information
If you would like to tell your subscribers that you would like them to inquire for custom pricing (ie you price based on other variables), you can explain here.

---
## Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product. Are there exemptions that need to be linked in order for the data product to be published?

---
## Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

---
## Need Help?
* If you have questions about our products, contact us using the support information below.

---
## About Your Company
Provide a description and/or link about your company
* [Company Fact Sheet] (ADD LINK HERE)
```

Financial services long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
-----|-----
```

Update Frequency | *YOUR INFO HERE*
Data Source(s) | *YOUR INFO HERE*
Original Publisher of data | *YOUR INFO HERE*
Data Creation Date | *YOUR INFO HERE*
Data Modification Date | *YOUR INFO HERE*
Geographic coverage | *YOUR INFO HERE*
Time period coverage | *YOUR INFO HERE*
Is historical data "point-in-time" | *YES OR NO*
Data Set(s) Format(s) | *YOUR INFO HERE*
Raw or scraped data | *YOUR INFO HERE*
Key Fields | *YOUR INFO HERE*
Key Words | *YOUR INFO HERE*
Number of companies/brands covered | *YOUR INFO HERE*
Standard entity identifiers | *YOUR INFO HERE, EXAMPLE BELOW*

examples include(include your identifier above then delete this section)
* CUSIP Number: A unique identification number assigned to all stocks and registered bonds in the US & Canada
* ISIN: An International Securities Identification Number that uniquely identifies a specific securities issue (a series of stocks/bonds offered to raise funds from investors)
* RIC: The Reuters Instrument Code is used to identify financial instruments/indices used in Refinitiv financial information networks
* Bloomberg ID: 12-digit alpha-numeric ID used to identify securities
* D-U-N-S Number: 9-digit identifier assigned to businesses by Dun & Bradstreet

Tables
If this section is applicable, you can make a table and include information such as:

<i>Description</i>	<i>Identifier</i>	<i>Format</i>	<i>Frequency</i>
<i>FX FWD</i>	<i>FIGI</i>	<i>.CSV</i>	<i>Intraday</i>
<i>USD Deposits</i>	<i>CUSIP</i>	<i>.txt</i>	<i>End of Day</i>
<i>Interest Rate Swaps</i>	<i>ISIN</i>	<i>.json</i>	<i>Daily</i>
<i>Basis Swaps</i>	<i>CUSIP</i>	<i>.xml</i>	<i>Intraday</i>

Key Data Points
Examples of key data points include:

- * Symbol: Ticker symbol for the security*
- * Exchange: Exchange MIC identifier*
- * Currency: Trading currency code*
- * Open: Opening price for the day*
- * High: High price for the day*
- * Low: Low price for the day*
- * Last: Last price for the day*
- * Volume: Trading volume for the day*
- * Split Ratio: Ratio of new number of shares to old on the effective date*
- * Cash Dividend: Cash dividend amount on the ex-dividend date*
- * Dividend amount:*
- * Extra dividends:*
- * Total dividends paid this year:*
- * Effective dates:*
- * Textual descriptions of special dividends:*
- * Dividend Currency: Currency for the cash dividend*

Additional Information

- * [Data Source] (ADD LINK HERE)*
- * [Data Due Diligence Questionnaire] (ADD LINK HERE)*
- * [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)*

```
---
## Pricing Information
If you would like to tell your subscribers that you would like them to inquire for custom pricing (ie you price based on other variables), you can explain here.

---
## Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product. Are there exemptions that need to be linked in order for the data product to be published?

---
## Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

---
## Need Help?
* If you have questions about our products, contact us using the support information below.

---
## About Your Company
Provide a description and/or link about your company
* [Company Fact Sheet] (ADD LINK HERE)
```

Healthcare and life sciences long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
----|-----
Update Frequency | YOUR INFO HERE
Data Source(s) | YOUR INFO HERE
Original Publisher of data | YOUR INFO HERE
Data Creation Date | YOUR INFO HERE
Data Modification Date | YOUR INFO HERE
Geographic coverage | YOUR INFO HERE
Time period coverage | YOUR INFO HERE
Is historical data "point-in-time" | YES OR NO
Data Set(s) Format(s) | YOUR INFO HERE
Raw or scraped data | YOUR INFO HERE
Key Fields | YOUR INFO HERE
```

Key Words | *YOUR INFO HERE*
Number of companies/brands covered | *YOUR INFO HERE*

Key Data Points
Key data points include:

- * Key Data Point:*
- * Key Data Point:*

Use Cases for the Data Set
Provide a handful of use-cases or guidance of best ways to utilize the data product.

Target Therapeutic Area / Disease Focus
Provide an overview of which therapeutic areas, diagnoses, procedures, medications, and more can be analyzed in the data listing, and can other data for different therapeutic areas be sourced.

Data Engineering Overview
Provide an overview of how the raw data was engineered. Questions to answer:

- * What data models were applied?*
- * What standards / terminologies applied?*
- * Was NLP post-processing used in the curation of the data?*

Additional Information

- * [Data Source] (ADD LINK HERE)*
- * [Data Due Diligence Questionnaire] (ADD LINK HERE)*
- * [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)*

Pricing Information
If you would like to tell your subscribers that you would like them to inquire for custom pricing (ie you price based on other variables), you can explain here.

Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product. Are there exemptions that need to be linked in order for the data product to be published?

Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

Need Help?
** If you have questions about our products, contact us using the support information below.*

About Your Company
Provide a description and/or link about your company

- * [Company Fact Sheet] (ADD LINK HERE)*

Marketing and advertising long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
----|-----
Update Frequency | YOUR INFO HERE
Data Source(s) | YOUR INFO HERE
Original Publisher of data | YOUR INFO HERE
Data Creation Date | YOUR INFO HERE
Data Modification Date | YOUR INFO HERE
Geographic coverage | YOUR INFO HERE
Time period coverage | YOUR INFO HERE
Is historical data "point-in-time" | YES OR NO
Data Set(s) Format(s) | YOUR INFO HERE
Raw or scraped data | YOUR INFO HERE
Key Fields | YOUR INFO HERE
Key Words | YOUR INFO HERE
Number of companies/brands covered | YOUR INFO HERE
Data Channels | Examples include web devices, mobile devices, CTV devices, offline purchases, household data, B2B data

---
## Data Set Specification
The following are examples of data set specifications that you may include if applicable:

The data sets are updated at midnight EST daily.
Custom data cuts are available if desired.

---
## Additional Information

* [Data Source] (ADD LINK HERE)
* [Data Due Diligence Questionnaire] (ADD LINK HERE)
* [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)

---
## Pricing Information
If you would like to tell your subscribers that you would like them to inquire for custom pricing (ie you price based on other variables), you can explain here.

---
## Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product.
Are there exemptions that need to be linked in order for the data product to be published?

---
```

```
## Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

---
## Need Help?
* If you have questions about our products, contact us using the support information below.

---
## About Your Company
Provide a description and/or link about your company
* [Company Fact Sheet] (ADD LINK HERE)
```

Media and entertainment long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
----|-----
Update Frequency | ADD INFO HERE
Data Source(s) | ADD INFO HERE
Original Publisher of data | ADD INFO HERE
Data Creation Date | ADD INFO HERE
Data Modification Date | ADD INFO HERE
Geographic coverage | ADD INFO HERE
Time period coverage | ADD INFO HERE
Is historical data "point-in-time" | YES OR NO
Data Set(s) Format(s) | ADD INFO HERE
Raw or scraped data | ADD INFO HERE
Key Fields | ADD INFO HERE
Key Words | ADD INFO HERE
Number of companies/brands covered | ADD INFO HERE

---
Table format examples

## Data Set(s) Inventory

File Description | Format | Initial Size | Revision Frequency | Revision Type
----|-----

New Text Archives | .CSV | 100 GB | Hourly | Incremental
Image Library | .JSON | 1.5 TB | Weekly | Incremental
Ratings | .JSON | 50 MB | Every 5 Min | Republish

---
```

```
## Key Data Points
Examples of key data points include:

* Publisher or Studio
* Title
* Artist Name
* Producer Name
* Director Name
* Distributor
* Distribution Channel
* Release Date
* Publish Date
* Format
* Operating System
* Sale Price
* Number of Transactions
* Number of Streams
* Average rating
* Designated Market Area (DMA)
* Zip or Postal Code

---
## Additional Information

* [Data Source] (ADD LINK HERE)
* [Data Due Diligence Questionnaire] (ADD LINK HERE)

* [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)

---
## Pricing Information
If you would like to tell your subscribers that you would like them to inquire for custom pricing (i.e., you price based on other variables), you can explain here.

---
## Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product.
Are there exemptions that need to be linked in order for the data product to be published?

---
## Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

---
## Need Help?
* If you have questions about our products, contact us using the support information below.

---
## About Your Company
Provide a description and/or link about your company
* [Company Fact Sheet] (ADD LINK HERE)
```

Public sector long description template

```
---
## PRODUCT TITLE Data Product Overview
```

Instructions: Provide a description of the data product and what it contains in this section.

Applicable Industries for Data Product Usage

Provide a list of industries that this data product is applicable to.

Use Cases

Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

Metadata

Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value

----|-----

Update Frequency | *YOUR INFO HERE*

Data Source(s) | *YOUR INFO HERE*

Original Publisher of data | *YOUR INFO HERE*

Data Creation Date | *YOUR INFO HERE*

Data Modification Date | *YOUR INFO HERE*

Geographic coverage | *YOUR INFO HERE*

Time period coverage | *YOUR INFO HERE*

Is historical data "point-in-time" | *YES OR NO*

Data Set(s) Format(s) | *YOUR INFO HERE*

Raw or scraped data | *YOUR INFO HERE*

Key Fields | *YOUR INFO HERE*

Key Words | *YOUR INFO HERE*

Number of companies/brands covered | *YOUR INFO HERE*

Additional Information

* [Data Source] (*ADD LINK HERE*)

* [Data Due Diligence Questionnaire] (*ADD LINK HERE*)

* [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (*ADD LINK HERE*)

Pricing Information

If you would like to tell your subscribers that you would like them to inquire for custom pricing (ie you price based on other variables), you can explain here.

Regulatory and Compliance Information

If this section is applicable, provide an overview of the regulatory guidance and compliance for use of this product. Are there exemptions that need to be linked in order for the data product to be published?

Subscription Verification Request Information

If you are enabling subscription verification for your products, you may elect to indicate the information that you will require from the prospective subscriber i.e., EIN number, # of applications, # of users, # of Regions, etc.

Need Help?

** If you have questions about our products, contact us using the support information below.*

About Your Company

Provide a description and/or link about your company
** [Company Fact Sheet] ADD LINK HERE*

Retail and location long description template

```
---
## PRODUCT TITLE Data Product Overview
Instructions: Provide a description of the data product and what it contains in this section.

---
## Use Cases
Instructions: Provide a handful of use-cases or guidance of best ways to utilize the data product.

---
## Metadata
Instructions: Provide metadata of your data using a table. Examples include but are not limited to:

Description | Value
----|-----
Update Frequency | YOUR INFO HERE
Data Source(s) | YOUR INFO HERE
Original Publisher of data | YOUR INFO HERE
Data Creation Date | YOUR INFO HERE
Data Modification Date | YOUR INFO HERE
Geographic coverage | YOUR INFO HERE
Time period coverage | YOUR INFO HERE
Is historical data "point-in-time" | YES OR NO
Data Set(s) Format(s) | YOUR INFO HERE
Raw or scraped data | YOUR INFO HERE
Key Fields | YOUR INFO HERE
Key Words | YOUR INFO HERE
Number of companies/brands covered | YOUR INFO HERE
Data Channels | Examples include web devices, mobile devices, CTV devices, offline purchases, household data, B2B data

---
## Data Set Specification
The following are examples of data set specifications that you can include if applicable:

The data sets are updated at midnight EST daily.
The data sets are tied to a home address, and attributes correspond to the household level.
Provider processes opt-outs on a daily basis and remove records from future files.
Custom data cuts are available if desired.

---
## Additional Information

* [Data Source] (ADD LINK HERE)
* [Data Due Diligence Questionnaire] (ADD LINK HERE)
* [Link to Corresponding ADX Trial Product/ Link to Corresponding ADX Paid Product] (ADD LINK HERE)

---
## Pricing Information
```

```
If you would like to tell your subscribers that you would like them to inquire for custom pricing
(i.e., you price based on other variables), you can explain here.

---
## Regulatory and Compliance Information
If this section is applicable, provide an overview of the regulatory guidance and compliance
for use of this product. Are there exemptions that need to be linked in order for the data product
to be published?

---
## Subscription Verification Request Information
If you are enabling subscription verification for your products, you may elect to indicate
the information that you will require from the prospective subscriber i.e., EIN number,
# of applications, # of users, # of Regions, etc.

---
## Need Help?
* If you have questions about our products, contact us using the support information
below.

---
## About Your Company
Provide a description and/or link about your company
* [Company Fact Sheet] (ADD LINK HERE)
```

Updating products

The following sections describe how to update your AWS Data Exchange products. The instructions assume that you're a provider who is familiar with [Data in AWS Data Exchange \(p. 93\)](#). After you publish a product, you can edit the product's details and its public offer. You can also update the underlying data sets by publishing new revisions to subscribers. For more information, see [Revisions \(p. 95\)](#).

Topics

- [Updating product and offer details \(p. 76\)](#)
- [Updating a data dictionary \(p. 78\)](#)
- [Updating a sample \(p. 78\)](#)
- [Updating custom metadata \(p. 79\)](#)
- [Publishing a new data set revision \(p. 79\)](#)
- [Unpublish a product \(p. 80\)](#)
- [Removing a revision \(p. 81\)](#)
- [Revoking revisions \(p. 81\)](#)

Updating product and offer details

After you publish a product, you can use the AWS Data Exchange console to edit the product details. You can also edit the product's public or custom offers and change the offer terms. When you update your product's offer terms, subscribers with an active subscription keep their existing offer terms as long as their subscription is active. Subscribers who have chosen auto-renewals use the new offer terms.

Keep the following in mind when you update products:

- You can't remove or edit a subscription duration in your offers. This ensures that existing subscribers retain the ability to renew. If you no longer want to offer a specific subscription duration, you can unpublish your existing product and then publish a new product. For more information, see [Unpublish a product \(p. 80\)](#).
- You can't remove data sets from a product after it is published, regardless of how many subscribers have subscribed to your product.
- If you're updating the metered costs for a product that contains APIs:
 - A metered costs price decrease appears immediately on the product detail page for new subscribers.

Warning

If you undo a price decrease for metered costs, you are increasing the price for metered costs. See the following point for more information about metered costs price increases.

- A metered costs price increase will go into effect on the first day of the month, 90 days after the price increase is submitted for existing subscribers OR upon renewal (whichever is sooner). The email is sent to existing subscribers when the price change is submitted. The price increase appears on the product detail page immediately for new subscribers.

Example Example

You submit a metered costs price increase on May 10. Existing subscribers receive an email about the price change. The price increase goes into effect on September 1.

Warning

You can't undo a price increase (because that action decreases the price) before the price increase goes into effect for existing subscribers.

To update a product, data set, or offer details

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the product you want to update. Make sure its status is **Published**.
4. From **Product details**:
 - If you're editing a public offer, choose the **Public offer** tab, choose **Edit**, and then follow the instructions to edit the product.
 - If you're editing a private offer, choose the **Custom offers** tab, choose the option button next to the private offer that you want to edit, choose **Edit**, and then follow the instructions to edit the product.
 - a. For products containing APIs with metered costs, in **Metered costs – optional**, select the option button next to the **Type** of metered costs that you want to edit, and then choose **Edit**.
 - b. In the **Edit metered cost** dialog box, update the **Price / unit** or **Description**.
 - c. Choose **Update**.

The updated metered costs appears under **Metered costs – optional**.
5. From **Data sets**, under **Sensitive information**, choose **Edit**, and then follow the instructions to edit the information.
6. From **Data evaluation**, update the data dictionary or sample by selecting the option button next to the data dictionary or sample **Name** and then choosing **Actions**. For more information, see [Updating a data dictionary \(p. 78\)](#) and [Updating a sample \(p. 78\)](#).
7. Configure your offer, depending on the offer type:
 - If your product is a public offer, from **Public offer**, choose **Edit**, and then follow the instructions to edit the public offer.

- If your product is a custom offer, from **Custom offers**, choose **Edit**, and then follow the instructions to edit the custom offer.
 - If your product is a private offer, from **Private offers**, choose **Edit**, and then follow the instructions to edit the private offer.
8. Choose **Update**.

Updating a data dictionary

You can update a data dictionary by first removing the existing data dictionary and then uploading a new one.

To update a data dictionary

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the product you want to update and confirm its status is **Published**.
4. Choose the **Data evaluation** tab.
5. Under **Data dictionary and samples**, expand the data set by choosing the plus icon, and then choose the data dictionary by selecting the option button next to the data dictionary **Name**.
 - a. Choose **Actions**, and then **Remove data dictionary**.

The data dictionary is removed.
 - b. Select the option button next to the data set, choose **Actions**, and then **Upload data dictionary**.
 - c. Choose **Add file**.
 - d. Select a new data dictionary and then click **Open**.
 - e. Choose **Upload**.
6. (Optional) Choose the data dictionary by selecting the option button next to the data dictionary **Name**, choose **Actions**, and then choose **Download data dictionary (CSV)** to download the data dictionary to your computer.

Updating a sample

To update a sample

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the product you want to update and confirm its status is **Published**.
4. Choose the **Data evaluation** tab.
5. Under **Data dictionary and samples**, select the option button next to a data set.
6. Choose **Actions**, and then choose **Add samples**.
 - a. Choose **Upload samples**.
 - b. Select a new sample from your computer, and then choose **Open**.
 - c. Enter an optional **Description**, and then choose **Add**.
7. (Optional) Select the option button next to the sample **Name**, choose **Actions**, and then choose one of the following actions:
 - **Download selected sample**

- **Preview sample (CSV only)**
- **Remove selected sample**

Updating custom metadata

After you publish a product, you can use the AWS Data Exchange console to edit the product's custom metadata.

To update custom metadata

1. Open your web browser and sign in to the AWS Data Exchange console.
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the product you want to update. Make sure its status is **Published**.
4. (Optional) From **Subscriptions**, choose **View custom metadata**, and view the metadata, and then choose **Close**.
5. From **Subscriptions**, choose **Edit custom metadata**, and then follow the instructions to edit the metadata or add new metadata.
6. Choose **Save**.

Publishing a new data set revision

AWS Data Exchange supports dynamically updated products. Subscribers subscribe to the product for a certain duration and access all of the published data sets as long as their subscription is active. For example, a provider might want to provide a product that contains daily closing stock prices for US equities, which would be updated every day with the day's closing prices. You can create and finalize new revisions that will be available in your product's data sets, or add new data sets to your product.

Your product includes some or all historical and future revisions as part of a subscription. For more information, see [Revision access rules \(p. 42\)](#).

In the following procedure, you create and finalize a new revision for a data set that has already been published using the AWS Data Exchange console. The data set revision is then automatically published to all products the data set belongs to. For more information, see [Revisions \(p. 95\)](#).

Important

A provider can revoke subscriber access to a revision and then delete the assets of the revision using the console or the AWS Data Exchange API. For more information, see [Revoking revisions \(p. 81\)](#).

To publish a new data set revision to a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. On the left side navigation pane, under **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set you want to update.
4. Navigate to the **Products** tab to make sure that the data set is associated with a published product.
5. From the **Revisions** tab, choose **Create revision** to open the **Create revision** page.
 - a. (Optional) Under **Revision settings**, provide an optional comment for your revision that describes the purpose of the revision.
 - b. (Optional) Under **Add tags – optional**, add tags associated with the resource.
 - c. Choose **Create revision**.

Your new revision is created.

6. Under the **Jobs** section, choose either **Import from Amazon S3** or **Upload** (to upload from your computer), depending on if the assets you want to include are stored in an Amazon S3 bucket you own or on your local computer.
 - a. Follow the prompts, depending on your selection. A job is started to import your asset into your data set.
 - b. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.
7. Under **Revision overview**, review your revision and its assets, and then choose **Finalize**.

The revision has been published to the product and is now available to subscribers.

Suggested approach for historical data

Some dynamic products contain historical content that subscribers can access. For example, if your product includes a 30-year history of daily closing stock price for US equities, subscribers would get access to that data in addition to the dynamic updates every day.

For these kinds of products that contain a historical record of data, a best practice is to publish all historical data in a single revision of the data set. You can use the optional comment for the revision to indicate that this revision is a single upload of all data history from a specific date.

If the single historical revision contains a time series of multiple objects, you might consider labeling your object names to describe the underlying data periodicity. For example, if your single revision of history contains 200 files each with a week of historical data, you can name each file with a date for the week the data history begins.

Suggested approaches for updates

You can dynamically update your data sets in a number of ways. Here are three example approaches, all of which create a new revision for each update, but the content of the new revision is different.

- **Use a new revision for each update that contains only the items that have changed since the last revision** – Your revision size would be smaller because only those items that have changed are updated. This approach is suitable for data sets for which the updates affect only a small subset of the data and subscribers are focused only on the items that have changed.
- **Use a new revision for each update that contains the updated data** – The new revision contains a full updated file. All items are included in the new revision, including those that have not changed since the last revision. This approach is convenient for subscribers who want to maintain a single up-to-date file for your data. Subscribers export the latest revision's asset or assets to the same destination and override the previous file or files.
- **Use a new revision for each update that contains the full history and updated data** – The new revision contains the full history of the data, including the latest state of the data and the history of the previous revisions. This approach is more storage-heavy. It's suitable for data sets for which subscribers are interested in the latest comprehensive view of the data's history, including any potential past corrections or adjustments. In this approach, each revision is self-sufficient and provides a full view of the data set history with no dependency on previous revisions.

Unpublish a product

After your product is published, it's available for all to find and subscribe to, based on the product's visibility settings. You can unpublish a product if you want to achieve any of the following results:

- Remove a product you created for the [Publishing a new product \(p. 46\)](#) exercise.
- Clean up your resources.
- Remove a product from the publicly listed products on AWS Data Exchange.
- Stop subscribers from auto-renewing your product.

Keep the following in mind when you unpublish a product:

- You can unpublish a product whenever you want.
- If you unpublish a product, it is no longer visible in the AWS Data Exchange catalog or on AWS Marketplace.
- Subscribers with an active subscription maintain access to the data product until the term of their subscription expires.
- Active subscriptions that expire after you have unpublished your product are not renewed, even if the subscriber has enabled auto-renewal.
- Existing subscribers can still view the product details until their subscription expires.

To unpublish a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Products**, choose the product you want to remove. Make sure its status is **Published**.
4. From **Product overview**, choose **Unpublish**, and then follow the instructions to unpublish the product.

Important

This action can't be undone.

After you complete these steps, your product's status is **Unpublished**. An unpublished product can't be published again, but you can create a new product (with a new product ID) that has the same data sets, product details, and offer details.

Removing a revision

A provider can revoke subscriber access to a revision and then delete the assets of the revision using the console or the AWS Data Exchange API. For more information, see [Revoking revisions \(p. 81\)](#).

You can edit or delete a revision after it's finalized, but before you add it to a product. For more information, see the following topics:

- [Edit a revision \(p. 58\)](#)
- [Delete a revision \(p. 58\)](#)

Revoking revisions

As a provider, you can revoke subscriber access to a specific revision at any time. This action is typically done by providers for compliance reasons. Revoking a revision doesn't delete the underlying assets. After you have revoked the revision, all subscribers receive an Amazon EventBridge (formerly known as CloudWatch Events) notification that the revision has been revoked. Subscribers can then view the reason for the revoked revision on the AWS Data Exchange console. Subscribers can't export or query the data within a revoked revision.

To be able to revoke revisions, providers who manage their own IAM policies must add `dataexchange:RevokeRevision` as a new action. Providers who use the [AWS Data Exchange managed policies](#) don't need to make any changes.

After a revision is revoked, you can delete the assets of the revision by using the console or the AWS Data Exchange `DeleteAsset` API operation.

Topics

- [Revoking a revision \(AWS CLI\) \(p. 82\)](#)
- [Revoking a single revision as a provider \(console\) \(p. 82\)](#)
- [Revoking multiple revisions as a provider \(console\) \(p. 83\)](#)
- [Editing a revocation reason as a provider \(console\) \(p. 83\)](#)
- [Viewing revoked revisions as a subscriber \(console\) \(p. 84\)](#)

Revoking a revision (AWS CLI)

To revoke a revision (AWS CLI)

1. Use the `revoke-revision` command to revoke a revision.

```
$ aws dataexchange revoke-revision \
--data-set-id $DATA_SET_ID \
--revision-id $REVISION_ID \
--comment 'Revoking Revision Example'

{
  "Id": "ab7859881EXAMPLEdd3e8a4b88fc6a8d",
  "Arn": "arn:aws:dataexchange:us-east-1:427362365172:data-sets/$DATA_SET_ID/revisions/$REVISION_ID",
  "Comment": "Revoking Revision Example",
  "CreatedAt": "2022-03-08T18:54:20.746Z",
  "UpdatedAt": "2022-03-09T20:28:53.105Z",
  "DataSetId": "24d30f8446a878237c35d011e7b22d0b",
  "Finalized": true,
  "Revoked": true,
  "RevokedAt": "2022-03-09T20:28:53.105Z",
  "RevocationComment": "revoking revision example"
}
```

2. After a revision is revoked, you can delete the assets of the revision using the AWS Data Exchange `DeleteAsset` API operation.

Revoking a single revision as a provider (console)

To revoke revision as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the revision you want to revoke.
4. On the **Revisions** tab, under **Revisions**, choose the revision.
5. On the revision page, under **Revision overview**, for **Actions**, choose **Revoke**.
6. In the **Revoke revision** dialog box, enter a short description of your reason for revoking the revision. Subscribers will see this description.
7. Choose **Revoke**.

The **Status** of the revision is set to **Revoked**.

Warning

This revokes the revision and all of its assets. Subscribers can view the reason for revocation but can't access or export the assets. This action can't be undone.

8. After a revision is revoked, you can delete the assets of the revision by navigating to the revision page, selecting the assets you want to delete in the **Imported assets** table, and then choosing **Delete**.

To edit the reason for a revoked revision, see [Editing a revocation reason as a provider \(console\)](#) (p. 83).

Revoking multiple revisions as a provider (console)

To revoke multiple revisions as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the revisions you want to revoke.
4. On the **Revisions** tab, choose up to 10 revisions.
5. Choose **Revoke**.
6. In the **Revoke {x} revisions** dialog box, enter a short description of your reason for revoking the revisions. Subscribers will see this description. Then, choose **Revoke**.

The **Status** of the revisions are set to **Revoked**.

Warning

This revokes the revisions and all of the assets. Subscribers can view the reason for revocation but can't access or export the assets. This action can't be undone.

7. After a revision is revoked, you can delete the assets of the revision by navigating to the revision page, selecting the assets you want to delete in the **Imported assets** table, and then choosing **Delete**.

To edit the reason for a revoked revision, see [Editing a revocation reason as a provider \(console\)](#) (p. 83).

Editing a revocation reason as a provider (console)

As a provider, you can edit the reason for the revocation after the revision has been revoked.

To edit a revocation revision as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data products**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the revision you revoked.
4. On the **Revisions** tab, choose the revoked revision.
5. On the revision page, choose **Edit revocation reason**.
6. In the **Edit revocation revision** dialog box, enter a short description of your reason for revoking the revision.
7. Choose **Save**.

The **Status** of the revision is set to **Revoked**.

The updated revocation reason is displayed on the revision page.

Viewing revoked revisions as a subscriber (console)

To view a revoked revision as a subscriber (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **My subscriptions**, choose **Entitled data**.
3. Under **Products**, choose a product, and then expand the data set under the product to see a list of revisions.
4. On the data set page, under the **Revisions** tab, view the **Status** of the revision (**Published** or **Revoked**).
5. Choose a revision.
6. View the revision reason on the top of the revision detail page.

Creating an offer for AWS Data Exchange products

To make a product available, you must create an *offer* in the AWS Data Exchange console. Offers define the terms that subscribers are agreeing to when they subscribe to a product. Products with visibility set to **Public** must have a public offer available to all subscribers. You can also create custom offers for selected subscribers. When you create an offer for your product, you define:

- The data subscription agreement, which defines the terms that a prospective subscriber must agree to before purchasing a subscription for your product.
- Available pricing and duration combinations.
- Whether US sales tax is collected.
- The Terms and Conditions for the refund policy, if any.
- Whether the subscriber must fill out a questionnaire to request a subscription using subscription verification.
- Whether auto-renewal is available for the offer.

You can also create custom offers that you extend to a select AWS account. The custom offer makes it possible for you to set specific terms and pricing for your product. For more information, see [Creating custom offers \(p. 86\)](#).

Offer pricing

When you define the pricing information, you define the total price and duration of the subscription. Durations are 1–36 months. For public offers, you can specify up to 5 different durations in a single offer.

We recommend that you choose durations that you plan to support for the long run. If you discontinue a duration, AWS cancels the subscription renewal for those affected subscribers who opted into an auto-renewal policy.

The only supported currency for pricing is US dollars (USD). You must specify a price for each duration. For example, you can specify different prices for durations of 1 month, 6 months, 12 months, 24 months, and 36 months in a single offer. All options are available to prospective subscribers. They must choose a

single price and duration when they subscribe to your offer, and they must agree to your offer terms and pay upfront for the purchase charges.

US sales and use tax

You can enable US sales tax collection for the offer, based on your tax nexus settings. For more information, see [US sales and use tax \(p. 92\)](#).

Data Subscription Agreement

The Data Subscription Agreement (DSA) is the standard contract template that AWS Data Exchange offers as the default. The DSA describes the Terms and Conditions for the data product. As a provider, you control the legal terms and usage rights. These terms are part of each offer you create for your product.

You can download the default DSA template on the AWS Data Exchange console and edit it to add your own Terms and Conditions. Or, you can specify your own custom terms by uploading the DSA of your choice. AWS Data Exchange associates the DSA that you specify for the product's offer without any further modifications.

The DSA was developed in collaboration with the subscriber and provider community to address the needs of both parties. The DSA proactively defines common ground across key contractual clauses like use, warranty, indemnification and governing law. AWS Data Exchange providers can offer the DSA as the EULA for self-service transactions, or private offers. Subscribers can search for, subscribe to, and use data from providers that offer the DSA, and can request a standard DSA for private offers. For private offers, subscribers can request a DSA template from the provider. The DSA terms can be amended to address custom transaction requirements as agreed upon between the parties.

Refund policy

As a provider, you control the refund policy for your product's subscribers. Although AWS Data Exchange doesn't require you to offer refunds, you must clearly specify your refund policy in the offer details. We encourage you to provide these details in a clear and concise manner so that subscribers can contact you in case of any questions or requests. AWS can process refunds that you authorize on your behalf, but as the provider, you must authorize the refunds.

For AWS to process authorized refunds, [submit a refund approval form](#) to AWS Support through the AWS Marketplace Management Portal. Your refund request is processed, and the refund is issued to the subscriber. You can view all refunds that AWS processed on your behalf in the monthly billed revenue report.

Subscription verification

As a provider, you have the option to enable subscription verification for your data products on AWS Data Exchange. For more information, see [Subscription verification for providers \(p. 89\)](#).

Offer auto-renewal

As a provider, you control the availability of auto-renewal. When you first create an offer, you can choose to enable auto-renewal, which gives subscribers the option to subscribe to the product with automatic renewals. You cannot change this parameter once the offer has been created.

Note

If you set up a flexible payment schedule for a custom private offer, the offer can't be set to auto-renewal.

Viewing subscriptions

You can view all of the subscriptions for any of your products through the **Product overview** page. You can also view subscriptions for each of your offers.

Viewing subscriptions for a product

To view subscriptions for a product

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, expand **Publish data** and choose **Products**.
3. From **Products**, choose the product you want to view offers for.
4. Choose the **Subscriptions** tab. From here, you can view all the subscriptions for your product.

You can choose to filter to currently active subscriptions or to archived (expired and ended) subscriptions from the dropdown at the top left of the **Subscriptions** tab.

Viewing subscriptions for an offer

To view subscriptions for a specific offer

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, expand **Publish data** and choose **Products**.
3. From **Products**, choose the product you want to view offers for.
4. Choose either the **Public offer** or **Custom offers** tab. From here, you can view all the subscriptions for your offer.

You can choose to filter to currently active subscriptions or to archived (expired and ended) subscriptions from the dropdown at the top left of the **Subscriptions** section.

Creating custom offers

AWS Data Exchange gives providers the option to create custom offers. Currently, the two supported kinds of custom offers are private offers and Bring Your Own Subscription (BYOS) offers. For more information about creating these types of offers, see the following topics:

Topics

- [Create private offers \(p. 86\)](#)
- [Create Bring Your Own Subscription offers \(p. 87\)](#)

Create private offers

As a data provider, you can provide your data product to a subscriber at terms that are different from the offer terms available to the general public. For products that are not publicly visible, your private offers are the only terms available to customers, and only customers you create private offers for can see the product. Private offers allow you to create a custom offer for one or more AWS accounts. A private offer can be different from other offers in any dimension, including price, duration, payment schedule, data subscription agreement, or refund policy.

As a provider, after you have created a product, you can then create a private offer and make it available to a group of subscribers of your choosing. For publicly visible products, you must create a public offer before you can create a private offer.

To create a private offer

1. Sign in to the AWS Management Console and open the [AWS Data Exchange console](#).
2. From the left navigation pane of the [console](#), choose **Products**, and then choose the product for which you want to make a private offer.
3. From the **Private offer** tab, choose **Create**.
4. On the **Select Offer Type** page, select **Private offer** or **Renewed private offer**, and choose **Next**.

Note

Choose **Renewed private offer** if this is a renewal of an expired private offer or a pre-existing subscription that is being upgraded on AWS Data Exchange. If you choose this option, AWS might audit and verify that your offer is a renewal or upgrade. If AWS is unable to do so, then we may revoke the offer and entitlements to your subscribers.

5. Under **Subscriber AWS account ID**, enter the 12-digit account number of the account you are creating a private offer for. Because a single private offer can be extended to multiple accounts, you can add more than one account.
6. Under **Description**, provide a short description of the account (for example, the company name of the account).
7. Under **Pricing and duration**, provide the offer details, including the duration and pricing information.
8. Choose the **Specify payment schedule** check box if you want to distribute the **Total price** to the subscriber over multiple payments. You can add an **Upfront payment** that will be invoiced at the time of subscription. You can then choose for the subscriber to make additional monthly or custom payments. If you choose the **Monthly** option, the dates are automatically populated. If you choose the **Custom** option, you must enter the invoice dates (up to 36 payments).

Note

The **Offer expiration date** is the date by which the subscriber must accept the offer. The private offer is no longer available for subscribing if it is not accepted by this date. The expiration date must be before the second payment.

If you need to expire an offer already created prior to the expiry date, you can return to the offer page, and choose **Expire**. This will expire the offer for all potential subscribers.

9. Provide US sales tax and use tax settings, data subscription agreement, auto-renewal settings, and support information.
10. Choose **Next**. If you selected **Renewed private offer**, you must select the check box to indicate that you acknowledge the terms of the renewed private offer.
11. Make sure that the information is correct, and then choose **Publish**.

Note

After you create the private offer, you can edit all of the fields except for the price and invoice dates.

Create Bring Your Own Subscription offers

As a data provider, you might already have subscribers for your data products. Bring Your Own Subscription (BYOS) offers allow you to migrate and fulfill existing subscriptions with AWS customers at no additional cost.

With BYOS offers, any billing relationship between you and your subscribers continues. BYOS offers are not subject to fulfillment fees. Subscribers receive an AWS Marketplace invoice for the subscription with no charge. After you create a BYOS offer, we review it and contact you if we have any issues or questions.

Because the lifecycle of the subscription begins outside of AWS Data Exchange, the workflow for migrating an existing subscription to AWS Data Exchange using BYOS requires collaboration between you and the subscriber.

Important

With BYOS offers, you're migrating a subscription that pre-dates the availability of this product on AWS. AWS might verify your BYOS offer with the existing subscription agreement. If AWS cannot verify your BYOS offer, the offer and entitlements might be revoked without notice.

Before creating or accepting a BYOS offer on AWS Data Exchange, the provider and subscriber should perform the following steps together:

Prerequisites

1. The provider and the subscriber contact each other about implementing a BYOS AWS Data Exchange solution.
2. The subscriber provides the AWS account ID that they want to use to subscribe to data products on AWS Data Exchange.

If you are the provider, follow these steps to create the BYOS offer.

To create a BYOS offer

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the navigation pane, under **Publish data**, choose **Products**.
3. Choose the product that you want to create the BYOS offer for by selecting the option button next to the product name in the **Products** list.
4. From **Actions**, choose **Create custom offer**.
5. On the **Select offer type** page, for **Offer types**, select the Bring Your Own Subscription (BYOS) option and then choose **Next**.
6. On the **Enter pre-existing subscription details** page, for **Existing agreement**, choose **Add file** to upload your pre-existing subscription and verify that the agreement pre-dates when you created the product on AWS.
7. For **Pre-existing subscription start date**, choose the calendar icon and select the start date.
8. For **Duration**, enter the number of months applicable.
9. On **Auto renew terms**, select **Yes** or **No** to specify if the pre-existing agreement included auto-renewal upon expiry of the current subscription.
10. In **Refund policy**, enter information regarding the refund policy stated in your pre-existing subscription agreement and then choose **Next**.
11. On the **Enter subscriber details** page, for **Subscriber details**, enter the subscriber's 12-digit **AWS Account ID** and a **Description** and then choose **Next**.
12. On the **Review & publish** page, verify all of the information. Choose **Edit** to make changes to sections if needed.
13. In the **Acknowledgement** section, select the check box to acknowledge that you're migrating a pre-existing subscription that pre-dates the availability of this product on AWS.
14. Choose **Publish**.

Note

Auto-renewal settings can't be changed after the BYOS offer is created. Only one AWS account can be added to a BYOS. If multiple accounts are required, create additional BYOS offers.

Subscription verification for providers

As a provider, when you create a new public product, you have the option to enable subscription verification on the **Add public offer** section of the **Publish new product** page.

Subscription verification gives you the ability to review a potential subscriber's identity and approve that subscriber for your product. Approving subscription requests to your product can be useful when you have restricted or regulated products, or you have products that you want to limit access to.

When the verification option is not enabled, you won't have access to the identity of your subscribers.

When you turn on the verification option, potential subscribers must complete a form about who they are and what they intend to do with the data before they can subscribe.

The form requires the following information:

- Prospective subscriber's contact details, including contact name, company name, and email address
- Prospective subscriber's intended use case
- Prospective subscriber's AWS account ID

Important

The subscriber must enter information in each field, but AWS Data Exchange doesn't review or validate the information. You're solely responsible for reviewing and verifying the information that the subscriber provides.

For more information about how to enable subscription verification for your product, see [Publishing a new product \(p. 46\)](#).

After you enable subscription verification for your product, you can view, approve, or decline all subscription verification requests for all of your products. Use the **Subscription verification** page under **Publish data** on the AWS Data Exchange console. For more information, see [Approve or decline requests \(p. 90\)](#).

Note

Subscription verification is automatically enabled for all public products from Extended Provider Program (EPP) providers that contain non-public, personal information.

Each subscription request is uniquely identified using its ID. The ID is visible to both the provider and the subscriber. You can use the subscription request ID in your communications with the subscriber.

If you change the product offer terms after a subscriber makes the request, the terms for that subscriber reflect the terms as they were at the time of the request, not the updated terms. Examples of changes to terms include the price, refund policy, or data subscription agreement. If you changed the product offer terms after the request was submitted, a message is displayed in the approval pane of the AWS Data Exchange console to indicate there is a difference between current terms and the terms in place when the request was made.

The AWS Data Exchange console maintains a history of requests. You control when you delete the subscriber's contact details and personally identifiable information (PII). For more information about how to view the request history, see [Viewing subscription verification requests \(p. 90\)](#).

You can also edit the subscription verification option after the product is published. For more information, see [Editing a subscription verification request \(p. 90\)](#).

Email notifications

You will receive an email message to your AWS account email address to notify you when a request is received, or when its status has changed to cancelled or expired. Although most subscription request

status changes result in an email notification, the delivery of these email messages is on a best-effort basis.

Note

You will not receive email notifications for subscription request status changes that you have initiated yourself (for example, when you approve a subscription).

Viewing subscription verification requests

After you publish a public offer with subscription verification, you can view the subscription verification requests.

To view subscription verification requests

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Subscription verification**.
3. From **Subscription verification**:
 - a. Choose **View pending requests** to view all pending requests.
 - b. Choose **View history** to view all other requests.

Editing a subscription verification request

You can choose to require subscription verification for a product's public offer after you have published it.

To edit a subscription verification request

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Products**.
3. From **Public offer**, choose **Edit**.
4. Scroll down to **Subscription verification**, and for the question **Do you want to require subscription verification for this product's public offer?** choose either **Yes** or **No**.
5. Choose **Update**.

Approve or decline requests

After you receive the subscription request, you have 45 days to approve or reject it. If you don't approve the request in that period of time, the request expires. Potential subscribers can resubmit a rejected request at any time, any number of times.

Important

The subscriber information you collect through subscription verification must be used in accordance with AWS Marketplace Terms and Conditions.

Approving requests

To approve a subscription request

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Subscription verification**.
3. From **Subscription verification**, choose **View pending requests**.

4. Choose **Approve**.

Approving requests for products containing APIs

You can approve a subscription request for a product containing APIs. You can also add custom metadata to product containing APIs that is sent in the header of each AWS Data Exchange request for the specific subscription. The custom metadata isn't visible to subscribers.

To approve a subscription request for a product containing APIs

1. Open your web browser, and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Subscription verification**.
3. From **Subscription verification**, choose **View pending requests**.
4. Choose **Approve and add custom API metadata**.
5. On the modal, enter the key-value pair and then choose **Approve and add custom API metadata**.

Note

You can add additional key-value pairs if necessary by choosing **Add** and then entering an additional key-value pair.

6. You are returned to the **Subscription verification** page. A message informs you that you have successfully accepted the subscription request.
7. To view the custom metadata, go to **Products**, select your product with APIs and then select the **Subscriptions** tab.
8. Under **Public and custom subscriptions**, you can:
 - a. Select the subscription, and choose **View custom metadata** to see the key-value pairs you added.
 - b. Select the subscription, and choose **Edit custom metadata** to edit, add, or remove the key-value pairs for this subscription.

Note

If you add three or more key-value pairs, the **Custom metadata for APIs** column in the **Public and custom subscriptions** table displays the first key-value pair, and then displays the number of key-value pairs underneath the first key-value pair. For example: **keyExample-valueExample +2 more**

Declining requests

To decline a subscription request

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. From the left navigation pane, under **Publish data**, choose **Subscription verification**.
3. From **Subscription verification**, choose **View pending requests**.
4. Choose **Decline**.

Provider financials on AWS Marketplace

The following topics cover financial information about providing data through AWS Data Exchange.

AWS Data Exchange is integrated with AWS Marketplace. If you want to register as an AWS Data Exchange provider, you must first register as an AWS Marketplace seller. For more information, see [Step 2: Register to be a provider \(p. 45\)](#).

As an AWS Data Exchange provider, you benefit from AWS Marketplace features, such as Seller Reports and the AWS Marketplace Commerce Analytics Service. For more information, see [Seller Reports and Data Feeds](#).

Payments

AWS disburses payments monthly directly to the bank account associated with the AWS account registered as a seller, minus AWS Marketplace service fees. Payment is disbursed on a rolling monthly basis based on when the account was created, not the beginning of each month. Funds are disbursed to you only after they are collected from the subscriber. For more information, see [Disbursement](#) in the *AWS Marketplace Seller Guide*.

US sales and use tax

AWS Marketplace Tax Calculation Service makes it possible to calculate and collect US sales and use tax for existing and new products. Some states are not eligible for Tax Calculation Service because AWS Marketplace is required by law to collect and remit applicable sales tax attributable to taxable sales of your products to subscribers based in these states. To use the service, configure your tax nexus settings for your provider profile, and then assign product tax codes to your products.

To configure your tax nexus settings

- Open the [AWS Marketplace Management Portal](#). On the **Settings** tab, configure the applicable tax nexus settings.

For more information, see [Seller registration process](#) in the *AWS Marketplace Seller Guide*.

AWS Marketplace seller reports

As an AWS Data Exchange provider, you receive reports detailing the subscription activity of your products. There are several reports available to track daily and monthly data. The reports include information about the subscription activity for your offers, payment received from subscribers, and money being disbursed to you. Disbursement doesn't occur until payment is received from the AWS customer. For more information, see [Seller reports](#) in the *AWS Marketplace Seller Guide*.

AWS Data Exchange providers who use the payment scheduler for their private offers can see this data in a monthly report. For more information, see [Monthly billed revenue report](#) in the *AWS Marketplace Seller Guide*.

Subscriber refund requests

As a provider, you control the refund policy for your products, which you must specify when you create your product. AWS Data Exchange doesn't require you to offer refunds. You must approve all requests for refunds before AWS processes them on your behalf.

Submit a [refund approval form](#) to AWS Support. They process your request and issue the refund to the subscriber. You can view all refunds that AWS processed on your behalf in the monthly billed revenue report.

Data in AWS Data Exchange

Data is organized in AWS Data Exchange using three building blocks:

- **Assets (p. 93)** – A piece of data
- **Revisions (p. 95)** – A container for one or more assets
- **Data sets (p. 96)** – A series of one or more revisions

These three building blocks form the foundation of the product that you manage using the AWS Data Exchange console or the AWS Data Exchange API.

To create, view, update, or delete data sets, you can use the AWS Data Exchange console, the AWS Command Line Interface (AWS CLI), your own REST client, or one of the AWS SDKs. For more information about programmatically managing AWS Data Exchange data sets, see the [AWS Data Exchange API Reference](#).

Assets

Assets are the *data* in AWS Data Exchange.

The type of asset defines how the data is delivered to the subscriber through the data sets and products that contain it.

An asset can be any of the following:

- A file stored on your local computer
- A file stored as an object in Amazon Simple Storage Service (Amazon S3)
- A REST API created in Amazon API Gateway
- An Amazon Redshift data set

Asset structure

Assets have the following parameters:

- **DataSetId** – The ID of the data set that contains this asset.
- **RevisionId** – The ID of the revision that contains this asset.
- **Id** – A unique ID generated when the asset is created.
- **Arn** – A unique identifier for an AWS resource name.
- **CreatedAt** and **UpdatedAt** – Date and timestamps for the creation and last update of the asset.
- **AssetDetails** – Information about the asset.
- **AssetType** – Either a snapshot of an Amazon S3 object, an Amazon API Gateway API, or an Amazon Redshift data set.

Example asset resource

```
{
```

```
"Name": "automation/cloudformation.yaml",
"Arn": "arn:aws:dataexchange:us-east-1::data-sets/29EXAMPLE24b82c6858af3cEXAMPLEcf/
revisions/bbEXAMPLE74c02f4745c660EXAMPLE20/assets/baEXAMPLE660c9fe7267966EXAMPLEf5",
"Id": "baEXAMPLE660c9fe7267966EXAMPLEf5",
"CreatedAt": "2019-10-17T21:31:29.833Z",
"UpdatedAt": "2019-10-17T21:31:29.833Z",
"AssetType": "S3_SNAPSHOT",
"RevisionId": "bbEXAMPLE74c02f4745c660EXAMPLE20",
"DataSetId": "29EXAMPLE24b82c6858af3cEXAMPLEcf",
"AssetDetails": {
  "S3SnapshotAsset": {
    "Size": 9423
  }
}
```

Asset types

Amazon S3 object assets

With S3 object assets, subscribers can access a copy of the data set as an entitled data set and export the assets.

A provider (data set owner) can both import and export Amazon S3 object assets using the AWS Data Exchange console, programmatically through the AWS CLI, their own REST application, or one of the AWS SDKs. For more information, about importing S3 assets see [Importing assets from an S3 bucket \(p. 100\)](#). For more information about exporting assets, see [Exporting assets to an S3 bucket \(p. 105\)](#).

API assets

With API assets, subscribers can view the API and download the API specification as an entitled data set. Subscribers can also make API calls to AWS Data Exchange-managed endpoints, which are then proxied through to provider endpoints.

A provider (data set owner) who has existing Amazon API Gateway API can add an API asset using the AWS Data Exchange console, programmatically through the AWS CLI, or one of the AWS SDKs. For more information about importing API assets, see [Importing assets from an Amazon API Gateway API \(p. 102\)](#).

Note

Currently, the `SendApiAsset` operation is not supported for the following SDKs:

- AWS SDK for .NET
- AWS SDK for C++
- SDK for Java 2.x

Providers who do not have an existing Amazon API Gateway API must create one before adding an API asset to their product. For more information, see [Developing a REST API in API Gateway](#) in the *Amazon API Gateway Developer Guide*.

Amazon Redshift datashare assets

With Amazon Redshift datashare assets, subscribers can get read-only access to query the data in Amazon Redshift without extracting, transforming, and loading data.

For more information about importing Amazon Redshift datashare assets, see [Importing assets from an AWS Data Exchange datashare for Amazon Redshift \(p. 104\)](#).

Revisions

A revision is a *container* for one or more assets.

You use revisions to update data in Amazon S3. For example, you can group a collection of .csv files or a single .csv file and a dictionary to create a revision. As new data is available, you create revisions and add assets. After you create and finalize the revision using the AWS Data Exchange console, that revision will be immediately available to subscribers. For more information, see [Publishing a new product \(p. 46\)](#).

Keep the following in mind:

- To be finalized, a revision must contain at least one asset.
- It is your responsibility to ensure that the assets are correct before you finalize your revision.
- A finalized revision published to at least one product cannot be unfinalized or changed in any way.
- After the revision is finalized, it is automatically published to your products.

Revision structure

Revisions have the following parameters:

- **DataSetId** – The ID of the data set that contains this revision.
- **Comment** – A comment about the revision. This field can be 128 characters long.
- **Finalized** – Either true or false. Used to indicate whether the revision is finalized.
- **Id** – The unique identifier for the revision generated when it's created.
- **Arn** – A unique identifier for an AWS resource name.
- **CreatedAt** – Date and timestamp for the creation of the revision. Entitled revisions are created at the time of publishing.
- **UpdatedAt** – Date and timestamp for the last update of the revision.
- **Revoked** – A status indicating that subscribers' access to the revision was revoked.
- **RevokedAt** – Date and timestamp indicating when subscriber access to the revision was revoked.
- **RevocationComment** – A required comment to inform subscribers of the reason their access to the revision was revoked. The minimum required character length is 10. This field can be between 10 and 512 characters long.
- **SourceID** – The revision ID of the owned revision corresponding to the entitled revision being viewed. This parameter is returned when a revision owner is viewing the entitled copy of its owned revision.

Example revision resource

```
{
  "UpdatedAt": "2019-10-11T14:13:31.749Z",
  "DataSetId": "1EXAMPLE404460dc9b005a0d9EXAMPLE2f",
  "Comment": "initial data revision",
  "Finalized": true,
  "Id": "e5EXAMPLE224f879066f9999EXAMPLE42",
  "Arn": "arn:aws:dataexchange:us-east-1:123456789012:data-sets/1EXAMPLE404460dc9b005a0d9EXAMPLE2f/revisions/e5EXAMPLE224f879066f9999EXAMPLE42",
  "CreatedAt": "2019-10-11T14:11:58.064Z"
```

```
}
```

Data sets

A data set in AWS Data Exchange is a *collection* of data that can change over time.

When subscribers access an Amazon S3 data set, they're accessing a specific revision in the data set. This structure enables providers to change the data available in data sets over time without having to worry about changes to historical data.

When subscribers access an API data set, they're accessing a data set that contains API assets, which enable subscribers to make API calls to AWS Data Exchange-managed endpoints, which are then proxied through to provider endpoints.

When subscribers access an Amazon Redshift data set, they're accessing an AWS Data Exchange datashare for Amazon Redshift. This datashare gives subscribers read-only access to the schemas, tables, views, and user-defined functions that the provider has added to the datashares.

To create, view, update, or delete data sets, providers can use the AWS Data Exchange console, AWS CLI, your own REST client, or one of the AWS SDKs. For more information about programmatically managing AWS Data Exchange data sets, see the [AWS Data Exchange API Reference](#).

Topics

- [Owned data sets](#) (p. 96)
- [Entitled data sets](#) (p. 96)
- [Data set types](#) (p. 96)
- [AWS Regions and data sets](#) (p. 97)
- [Data set structure](#) (p. 97)
- [Data set best practices](#) (p. 98)

Owned data sets

A data set is owned by the account that created it. Owned data sets can be identified using the `origin` parameter, which is set to `OWNED`.

Entitled data sets

Entitled data sets are a read-only view of a provider's owned data sets. Entitled data sets are created at time of product publishing and are made available to subscribers who have an active subscription to the product. Entitled data sets can be identified using the `origin` parameter, which is set to `ENTITLED`.

As a data subscriber, you can view and interact with your entitled data sets using the AWS Data Exchange API or in the AWS Data Exchange console.

As a data provider, you also have access to the entitled data set view that your subscribers see. You can do so using the AWS Data Exchange API, or by choosing the data set name in the product page in the AWS Data Exchange console.

Data set types

The following data set types are supported in AWS Data Exchange:

- [Amazon S3 object data set \(p. 97\)](#)
- [API data set \(p. 97\)](#)
- [Amazon Redshift data set \(p. 97\)](#)

Amazon S3 object data set

An Amazon S3 object data set is a data set that contains flat files permitted by Amazon S3.

As a data subscriber, you can export data either locally (download to your computer) or to your Amazon S3 bucket.

As a data provider, you can import any type of flat file from your Amazon S3 bucket and add it to the data set.

API data set

An API data set is a data set that contains API assets. API assets enable subscribers to make API calls to AWS Data Exchange-managed endpoints, which are then proxied through to provider endpoints.

As a data provider, you create an API in Amazon API Gateway and add it to the data set to license access to your API upon subscription.

Amazon Redshift data set

An Amazon Redshift data set includes AWS Data Exchange datashares for Amazon Redshift. When you subscribe to a data set with datashares, you are added as a consumer of the datashare. This gives you read-only access to the schemas, tables, views, and user-defined functions the provider has added to the datashares.

As a data subscriber, you can create a database from the datashare in Amazon Redshift and then query live data without extracting, transforming, and loading files. You are automatically granted access to the datashare when your subscription is activated and lose access after your subscription expires.

As a data provider, you create a datashare in Amazon Redshift and add it to the data set to license access to your datashare upon subscription.

AWS Regions and data sets

Your data sets can be in any supported AWS Region, but all data sets in a single product must be in the same AWS Region.

Data set structure

Data sets have the following parameters:

- **Name** – The name of the data set. This value can be up to 256 characters long.
- **Description** – A description for the data set. This value can be up to 16,348 characters long.
- **AssetType** – Defines the type of assets the data set contains.
- **Origin** – A property that defines the data set as **Owned** by the account (for providers) or **Entitled** to the account (for subscribers).
- **Id** – An ID that uniquely identifies the data set. Data set IDs are generated at data set creation. Entitled data sets have a different ID than the original owned data set.
- **Arn** – A unique identifier for an AWS resource name.

- CreatedAt and UpdatedAt – Date and timestamps for the creation and last update of the data set.

Note

As a provider, you can change some properties for owned data sets, like the **Name** or **Description**. Updating properties in an owned data set won't update the properties in the corresponding entitled data set.

Example data set resource

```
{
  "Origin": "OWNED",
  "AssetType": "S3_SNAPSHOT",
  "Name": "MyDataSetName",
  "CreatedAt": "2019-09-09T19:31:49.704Z",
  "UpdatedAt": "2019-09-09T19:31:49.704Z",
  "Id": "fEXAMPLE1fd9a5c8b0d2e6fEXAMPLEe1",
  "Arn": "arn:aws:dataexchange:us-east-2:123456789109:data-sets/fEXAMPLE1fd9a5c8b0d2e6fEXAMPLEe1",
  "Description": "This is my data set's description that describes the contents of the data set."
}
```

Data set best practices

As a provider, when you create and update data sets, keep the following best practices in mind:

- The name of the data set is visible in the product details in the catalog. We recommend that you choose a concise, descriptive name so customers easily understand the content of the data set.
- The description is visible to subscribers who have an active subscription to the product. We recommend that you include coverage information and the features and benefits of the data set.

Tags

You can add tags to your owned data sets and their revisions. When you use tagging, you can also use tag-based access control in AWS Identity and Access Management (IAM) policies to control access to these data sets and revisions.

Entitled data sets can't be tagged. Tags of owned data sets and their revisions are not propagated to their corresponding entitled versions. Specifically, subscribers, who have read-only access to entitled data sets and revisions, won't see the tags of the original owned data set.

Note

Currently, assets and jobs don't support tagging.

Jobs in AWS Data Exchange

AWS Data Exchange jobs are asynchronous import or export operations.

As a provider, you can create and manage your data sets that you want to publish to a product. You can download (export) or copy your assets or revisions to Amazon Simple Storage Service (Amazon S3) or a signed URL. In addition, providers can import assets from an Amazon API Gateway API or import assets from an Amazon Redshift data set.

As a subscriber, you can view and access the data sets that you have an entitlement to through a subscription. You can use the API operations to download (export) or copy your entitled data sets to Amazon S3 for use with a variety of AWS analytics and machine learning services.

To create or copy assets or copy revisions through jobs, you can use the AWS Management Console, AWS Command Line Interface (AWS CLI), your own REST application, or one of the AWS SDKs.

Jobs are deleted 90 days after they are created.

Topics

- [Job properties \(p. 99\)](#)
- [AWS Regions and jobs \(p. 100\)](#)
- [Importing assets \(p. 100\)](#)
- [Exporting assets \(p. 104\)](#)
- [Exporting revisions \(p. 108\)](#)

Job properties

Jobs have the following properties:

- **Job ID** – An ID generated when the job is created that uniquely identifies the job.
- **Job type** – The following job types are supported:
 - Import from Amazon Simple Storage Service (Amazon S3)
 - Import from signed URL
 - Import from Amazon API Gateway API
 - Import from an AWS Data Exchange datashare for Amazon Redshift
 - Export to Amazon S3
 - Export to signed URL
- **Amazon Resource Name (ARN)** – A unique identifier for AWS resources.
- **Job state** – The job states are WAITING, IN_PROGRESS, COMPLETED, CANCELLED, ERROR, or TIMED_OUT. When a job is created, it's in the WAITING state until the job is started.
- **Job details** – Details of the operation to be performed by the job, such as export destination details or import source details.

Example job resource

```
{
```

```
"Arn": "arn:aws:dataexchange:us-east-1:123456789012:jobs/6cEXAMPLE818f7c7a23b3d0EXAMPLE1c",
"Id": "6cEXAMPLE818f7c7a23b3d0EXAMPLE1c",
"State": "COMPLETED",
"Type": "IMPORT_ASSETS_FROM_S3",
"CreatedAt": "2019-10-11T14:12:24.640Z",
"UpdatedAt": "2019-10-11T14:13:00.804Z",
"Details": {
  "ImportAssetsFromS3": {
    "AssetSources": [
      {
        "Bucket": "DOC-EXAMPLE-BUCKET",
        "Key": "MyKey"
      }
    ],
    "DataSetId": "14EXAMPLE4460dc9b005a0dEXAMPLE2f",
    "RevisionId": "e5EXAMPLE224f879066f999EXAMPLE42"
  }
}
```

AWS Regions and jobs

If you import or export an asset to or from an Amazon S3 bucket that is in an AWS Region that is different than the data set's Region, your AWS account is charged for the data transfer costs, according to Amazon S3 data transfer pricing policies.

If you export assets to a signed URL, your AWS account is charged for data transfer costs from Amazon S3 to the internet according to [Amazon S3 pricing policies](#).

Importing assets

You can import assets to a revision in the following ways:

Topics

- [Importing assets from an S3 bucket \(p. 100\)](#)
- [Importing assets from a signed URL \(p. 101\)](#)
- [Importing assets from an Amazon API Gateway API \(p. 102\)](#)
- [Importing assets from an AWS Data Exchange datashare for Amazon Redshift \(p. 104\)](#)

Importing assets from an S3 bucket

When you import assets from Amazon S3 to AWS Data Exchange, the AWS Identity and Access Management (IAM) permissions you use must include the ability to write to the AWS Data Exchange service S3 buckets and to read from the S3 bucket where your assets are stored. You can import from any S3 bucket you have permission to access, regardless of ownership. For more information, see [Amazon S3 permissions \(p. 120\)](#).

You can import up to 100 assets in a single job.

Topics

- [Importing assets from an S3 bucket \(AWS SDKs\) \(p. 101\)](#)
- [Importing assets from an S3 bucket \(console\) \(p. 101\)](#)

Importing assets from an S3 bucket (AWS SDKs)

To import assets from an Amazon S3 bucket (AWS SDKs)

1. Create a `CreateJob` request of type `IMPORT_ASSETS_FROM_S3`.
2. Include the following in the request:
 - `AssetSources`
 - `Bucket`
 - `Key`
 - `DataSetID`
 - `RevisionID`
3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. (Optional) Update the assets' name property after they are created.

Importing assets from an S3 bucket (console)

To import an asset from an S3 bucket (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the revision you want to update.
4. On the **Revisions** tab, choose **Create revision** to open the **Create revision** page.
 - a. For **Revision settings**, provide an optional comment for your revision that describes the purpose of the revision.
 - b. For **Add tags – optional**, add tags associated with the resource.
 - c. Choose **Create**.

Your new revision is created.

5. For the **Jobs** section, choose **Import from Amazon S3**.
6. Follow the prompts in the **Import from Amazon S3** window, and then choose **Import assets**.

A job is started to import your asset into your data set. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Importing assets from a signed URL

You can use signed URLs to import assets that are not stored in Amazon S3.

Topics

- [Importing assets from a signed URL \(AWS SDKs\) \(p. 101\)](#)
- [Importing assets from a signed URL \(console\) \(p. 102\)](#)

Importing assets from a signed URL (AWS SDKs)

To import assets from a signed URL (AWS SDKs)

1. Create a `CreateJob` request of type `IMPORT_ASSET_FROM_SIGNED_URL`.

2. Include the following in the request:
 - AssetName
 - DataSetID
 - Md5Hash
 - RevisionID
3. Start the CreateJob request with a StartJob operation that requires the JobId returned in step 1.
4. (Optional) Update the assets' name property after they are created.
5. Note that the response details include the SignedUrl that you can use to import your file.

Note

The signed URL expires one hour after it's created.

Importing assets from a signed URL (console)

To import an asset from a signed URL (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the asset you want to update.
4. On the **Revisions** tab, choose **Create revision** to open the **Create revision** page.
 - a. For **Revision settings**, provide an optional comment for your revision that describes the purpose of the revision.
 - b. For **Add tags – optional**, add tags associated with the resource.
 - c. Choose **Create**.

Your new revision is created.

5. For the **Jobs** section, choose **Upload**.
6. Follow the prompts in the upload window, and then choose **Open**.

A job is started to import your asset into your data set. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Importing assets from an Amazon API Gateway API

When you import assets from Amazon API Gateway to AWS Data Exchange, the AWS Identity and Access Management (IAM) permissions you use must include the ability to write to the AWS Data Exchange service S3 buckets and to read from the S3 bucket where your assets are stored.

Importing API assets from an Amazon API Gateway API (AWS SDKs)

Note

Currently, the SendApiAsset operation is not supported for the following SDKs:

- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Java 2.x

To import assets from an Amazon API Gateway API (AWS SDKs)

1. Create a `CreateJob` request of type `IMPORT_ASSET_FROM_API_GATEWAY_API`.
2. Include the following in the request:
 - `ApiID`
 - `DataSetID`
 - `ProtocolType`
 - `RevisionID`
 - `Stage`
3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. (Optional) Poll the `GetJob` operation to wait for the Job to complete.
5. (Optional) Update the assets' name property after they are created.

Importing API assets from an Amazon API Gateway API (console)

To import an asset from an Amazon API Gateway API (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the asset you want to update.
4. On the **Revisions** tab, choose **Create revision** to open the **Create revision** page.
 - a. For **Revision settings**, provide an optional comment for your revision that describes the purpose of the revision.
 - b. For **Add tags – optional**, add tags associated with the resource.
 - c. Choose **Create**.

Your new revision is created.
5. For the **API assets** section, choose **Add API stage**.
6. On the **Add API stage** page, select the **Amazon API Gateway API** and the **Stage name** from your AWS account or another account.
7. For **Document API for subscribers**:
 - a. Update the **API name** to a clear and concise name that subscribers can understand.
 - b. Document the OpenAPI 3.0 specification by entering the specification in the field, importing the specification by choosing **Import from .JSON file**, or importing the specification by choosing **Import from Amazon API Gateway**.
8. Choose **Add API stage**.

A job is started to import your API assets into your data set. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Importing assets from an AWS Data Exchange datashare for Amazon Redshift

Importing assets from an AWS Data Exchange datashare for Amazon Redshift (AWS SDKs)

To import assets from an AWS Data Exchange datashare for Amazon Redshift (AWS SDKs)

1. Create a `CreateJob` request of type `IMPORT_ASSETS_FROM_REDSHIFT_DATA_SHARES`.
2. Include the following in the request:
 - `AssetSources`
 - `DataShareArn`
 - `DataSetID`
 - `RevisionID`
3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. (Optional) Poll the `GetJob` operation to wait for the Job to complete.
5. (Optional) Update the assets' name property after they are created.

Importing assets from an AWS Data Exchange datashare for Amazon Redshift (console)

To import an asset from an ADE datashare (for Amazon Redshift console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the asset you want to update.
4. On the **Revisions** tab, choose **Create revision** to open the **Create revision** page.
 - a. For **Revision settings**, provide an optional comment for your revision that describes the purpose of the revision.
 - b. For **Add tags – optional**, add tags associated with the resource.
 - c. Choose **Create**.

Your new revision is created.

5. For the **AWS Data Exchange datashares for Amazon Redshift** section, choose **Add datashares**.
6. On the **Add AWS Data Exchange datashare to revision** page, select the datashare or datashares that you want to add.
7. Choose **Add datashare(s)**.

A job is started to import your assets into your data set. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting assets

Both providers and subscribers can export assets from a published revision of a product. There are two ways you can export assets:

Topics

- [Exporting assets to an S3 bucket \(p. 105\)](#)
- [Exporting assets to a signed URL \(p. 106\)](#)

Exporting assets to an S3 bucket

When you export assets to Amazon S3, the IAM permissions you use must include the ability to read from the AWS Data Exchange service S3 buckets and to write to the S3 bucket where your assets are stored. You can export to any S3 bucket you have permission to access, regardless of ownership. For more information, see [Amazon S3 permissions \(p. 120\)](#).

AWS Data Exchange supports configurable encryption parameters when exporting data sets to Amazon S3. In your export job details, you can specify the Amazon S3 server-side encryption configuration you want to apply to the exported objects. You can choose to use server-side encryption with Amazon S3-Managed Keys (SSE-S3) or server-side encryption with AWS KMS keys stored in AWS Key Management Service (SSE-KMS). For more information, see [Protecting data using server-side encryption](#) in the *Amazon Simple Storage Service User Guide*.

Important

We recommend that you consider Amazon S3 security features when exporting data to Amazon S3. See [Security best practices for Amazon S3](#) for general guidelines and best practices.

Important

If the provider has marked a product as containing protected health information (PHI) subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), you may not export the product's data sets into your AWS account unless such AWS account is designated as a HIPAA account (as defined in the AWS Business Associate Addendum found in [AWS Artifact](#)).

You can export up to 100 assets in a single job.

Topics

- [Exporting assets to an S3 bucket \(AWS SDKs\) \(p. 105\)](#)
- [Exporting assets to an S3 bucket as a subscriber \(console\) \(p. 106\)](#)
- [Exporting assets to an S3 bucket as a provider \(console\) \(p. 106\)](#)

The following video explains more about how to export assets from AWS Data Exchange.

Exporting assets to an S3 bucket (AWS SDKs)

To export assets to an S3 bucket (AWS SDKs)

1. Create a CreateJob request of type EXPORT_ASSETS_TO_S3.
2. Include the following in the request:
 - AssetDestinations
 - AssetID
 - Bucket
 - Key
 - DataSetID
 - Encryption
 - KmsKeyArn
 - Type
 - RevisionID

3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. (Optional) Update the assets' name property after they are created.

Note

For information about exporting an entire revision as a single job, see [Exporting revisions \(p. 108\)](#).

Exporting assets to an S3 bucket as a subscriber (console)

To export an asset to an S3 bucket as a subscriber (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **My subscriptions**, choose **Entitled data**.
3. In **Entitled data**, choose the product that has the revision you want to export.
4. In **Entitled data sets**, choose the data set.
5. On the **Revisions** tab, choose the revision.
6. From the **Assets** tab, select the check box next to the assets that you want to export.
7. Select **Export actions** and then choose **Export selected assets to Amazon S3**.
8. Follow the prompts in the **Export to Amazon S3** window and then choose **Export**.

A job is started to export your asset. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting assets to an S3 bucket as a provider (console)

To export an asset to an S3 bucket as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the data set that has the asset you want to export.
4. Navigate to the **Products** tab to make sure that the data set is associated with a published product.
5. From the **Revisions** tab, select the revision.
6. For the **Imported assets** section, select the check box next to the asset name.
7. Select **Export actions** and then choose **Export selected assets to Amazon S3**.
8. Follow the prompts in the **Export to Amazon S3** window and then choose **Export**.

A job is started to export your asset. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting assets to a signed URL

You can use signed URLs to export assets that are not stored in Amazon S3.

Topics

- [Exporting assets to a signed URL \(AWS SDKs\) \(p. 107\)](#)
- [Exporting assets to a signed URL as a subscriber \(console\) \(p. 107\)](#)
- [Exporting assets to a signed URL as a provider \(console\) \(p. 107\)](#)

Exporting assets to a signed URL (AWS SDKs)

You can use signed URLs to export assets to destinations other than S3 buckets.

To export assets to a signed URL (AWS SDKs)

1. Create a `CreateJob` request of type `EXPORT_ASSET_TO_SIGNED_URL`.
2. Include the following in the request:
 - `AssetID`
 - `DataSetID`
 - `RevisionID`
3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. (Optional) Update the assets' name property after they are created.
5. Note that the response details include the `SignedUrl` that you can use to import your file.

Note

The signed URL expires one hour after it's created.

Exporting assets to a signed URL as a subscriber (console)

To export an asset to a signed URL as a subscriber (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **My subscriptions**, choose **Entitled data**.
3. In **Entitled data**, choose the product that has the revision you want to export.
4. In **Entitled data sets**, choose the data set.
5. On the **Revisions** tab, choose the revision.
6. From the **Assets** tab, select the check box next to the assets that you want to export.
7. Select **Export actions** and then choose **Download selected assets**.

A job is started to export your asset. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting assets to a signed URL as a provider (console)

To export an asset to a signed URL as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the product that has the revision you want to export.
4. Navigate to the **Products** tab to make sure that the data set is associated with a published product.
5. On the **Revisions** tab, choose the revision.
6. For the **Imported assets** section, select the check box next to the asset name.
7. Select **Export actions** and then choose **Download selected assets**.

A job is started to export your asset. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting revisions

Both providers and subscribers can export revisions of a data set to an S3 bucket that they have permissions to access.

AWS Data Exchange supports configurable encryption parameters when exporting revisions to Amazon S3. In your export job details, you can specify the Amazon S3 server-side encryption configuration you want to apply to the exported objects. You can choose to use server-side encryption with Amazon S3-Managed Keys (SSE-S3) or server-side encryption with KMS keys stored in AWS Key Management Service (SSE-KMS). For more information, see [Protecting data using server-side encryption](#) in the *Amazon Simple Storage Service Developer Guide*.

Important

If the provider has marked a product as containing protected health information (PHI) subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), you may not export the product's data sets into your AWS account unless such AWS account is designated as a HIPAA account (as defined in the AWS Business Associate Addendum found in [AWS Artifact](#)).

Topics

- [Exporting revisions to an S3 bucket \(AWS SDKs\) \(p. 108\)](#)
- [Exporting revisions to an S3 bucket as a provider \(console\) \(p. 109\)](#)
- [Exporting revisions to an S3 bucket as a subscriber \(console\) \(p. 109\)](#)
- [Automatically exporting revisions to an S3 bucket as a subscriber \(p. 109\)](#)
- [Key patterns when exporting revisions \(p. 113\)](#)

The following video explains more about how to export assets from AWS Data Exchange (starting at 2:18).

Exporting revisions to an S3 bucket (AWS SDKs)

To export a revision to an S3 bucket (AWS SDKs)

1. Create a `CreateJob` request of type `EXPORT_REVISIONS_TO_S3`.
2. Include the following in the request:
 - `DataSetId`
 - `Encryption`
 - `KmsKeyArn`
 - `Type`
 - `RevisionDestinations`
 - `Bucket`
 - `KeyPattern`
 - `RevisionId`
3. Start the `CreateJob` request with a `StartJob` operation that requires the `JobId` returned in step 1.
4. The newly created assets have a `name` property equal to the original S3 object's key. The Amazon S3 object key defaults to the key pattern `${Asset.Name}`.

You can update the assets' `name` property after they are created.

For more information about key patterns, see [Key patterns when exporting revisions \(p. 113\)](#).

Note

If you are using `DataSet.Name` as the dynamic reference, you must have the IAM permission `dataexchange:GetDataSet`. For more information, see [AWS Data Exchange API permissions: actions and resources reference \(p. 123\)](#).

Exporting revisions to an S3 bucket as a provider (console)

To export a revision to an S3 bucket as a provider (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **Publish data**, choose **Owned data sets**.
3. In **Owned data sets**, choose the product that has the revision you want to export.
4. Navigate to the **Products** tab to make sure that the data set is associated with a published product.
5. On the **Revisions** tab, choose the revision.
6. For the **Imported assets** section, select the check box next to the asset name.
7. Select **Export actions** and then choose **Export selected assets to Amazon S3**.
8. Follow the prompts in the **Export to Amazon S3** window and then choose **Export**.

A job is started to export your asset. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Exporting revisions to an S3 bucket as a subscriber (console)

To export a revision to an S3 bucket as a subscriber (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **My subscriptions**, choose **Entitled data**.
3. In **Entitled data**, choose the product that has the revision you want to export.
4. In **Entitled data sets**, choose the data set.
5. On the **Revisions** tab, select the revision, and then choose **Export to Amazon S3**.
6. In **Export revision to Amazon S3**, select a destination option, Amazon S3 bucket folder destination, configure encryption options, and then choose **Export**.

A job is started to export your revision. After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

Automatically exporting revisions to an S3 bucket as a subscriber

When the provider publishes new revisions, you can select to automatically export new revisions to your Amazon S3 bucket. You can export new revisions to up to five S3 buckets. New revisions will automatically appear in the S3 buckets you have selected.

Topics

- [Prerequisites for S3 bucket policy permissions \(p. 110\)](#)
- [Automatically exporting revisions to an S3 bucket as a subscriber \(console\) \(p. 111\)](#)

- [Automatically exporting revisions to an S3 bucket as a subscriber \(AWS SDKs\) \(p. 112\)](#)

Note

To automatically export revisions to an S3 bucket of your choice, your S3 bucket must have a bucket policy with permissions set to allow AWS Data Exchange to export data into it. For more information, see [Prerequisites for S3 bucket policy permissions \(p. 110\)](#).

Prerequisites for S3 bucket policy permissions

Before you can automatically export revisions to an S3 bucket, your S3 bucket must have a bucket policy with permissions set to allow AWS Data Exchange to export data into it. The following procedures provide information about how to either edit your existing S3 bucket policy or create an S3 bucket policy with these permissions.

Important

To verify that the prerequisites for S3 bucket policy permissions are met, an object with the naming format `_ADX-TEST-ACCOUNTID#` is added to the S3 bucket during the automatic export process.

Topics

- [Editing an existing S3 bucket policy \(p. 110\)](#)
- [Creating an S3 bucket policy \(p. 111\)](#)

Editing an existing S3 bucket policy

If your S3 bucket has a bucket policy, complete the following procedure to allow AWS Data Exchange to export data to it.

To edit an existing S3 bucket policy

1. Navigate to the bucket to which you want to export revisions.
2. Select the **Permissions** tab, and choose **Edit** in the bucket policy section.
3. Copy the following statement and paste it at the end of the statement list.

```
{
  "Effect": "Allow",
  "Principal": {
    "Service": "dataexchange.amazonaws.com"
  },
  "Action": [
    "s3:PutObject",
    "s3:PutObjectAcl"
  ],
  "Resource": "arn:aws:s3:::<BUCKET-NAME>/*",
  "Condition": {
    "StringEquals": {
      "aws:SourceAccount": "<AWS ID>"
    }
  }
}
```

4. Replace `<BUCKET-NAME>` with the name of your S3 bucket and replace `<AWS ID>` with your AWS ID.
5. Choose **Save changes**.
6. If you want to add more buckets as a destination for your auto-export jobs, repeat the procedure, starting from Step 1.

Creating an S3 bucket policy

If your S3 bucket does not have a bucket policy, complete the following procedure to create an S3 bucket policy to allow AWS Data Exchange to export data to it.

To create an S3 bucket policy

1. Navigate to the bucket to which you want to export revisions.
2. Select the **Permissions** tab, and choose **Edit** in the bucket policy section.
3. Copy the following full bucket policy and paste it into the bucket policy editor.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": {
        "Service": "dataexchange.amazonaws.com"
      },
      "Action": [
        "s3:PutObject",
        "s3:PutObjectAcl"
      ],
      "Resource": "arn:aws:s3:::<BUCKET-NAME>/*",
      "Condition": {
        "StringEquals": {
          "aws:SourceAccount": "<AWS ID>"
        }
      }
    }
  ]
}
```

4. Replace <BUCKET-NAME> with the name of your S3 bucket and replace <AWS ID> with your AWS ID.
5. Choose **Save changes**.
6. If you want to add more buckets as a destination for your auto-export jobs, repeat the procedure, starting from Step 1.

Automatically exporting revisions to an S3 bucket as a subscriber (console)

Note

To automatically export revisions to an S3 bucket of your choice, your S3 bucket must have a bucket policy with permissions set to allow AWS Data Exchange to export data into it. For more information, see [Prerequisites for S3 bucket policy permissions \(p. 110\)](#).

To automatically export a revision to an S3 bucket as a subscriber (console)

1. Open your web browser and sign in to the [AWS Data Exchange console](#).
2. In the left side navigation pane, for **My subscriptions**, choose **Entitled data**.
3. In **Entitled data**, choose the product that has the revision you want to export.
4. In **Entitled data sets**, choose the data set.
5. On the **Revisions** tab, under **Auto-export job destinations**, choose **Actions** and then choose **Add auto-export job destination**.
6. In **Add auto-export job destination**, choose either the **Simple** or **Advanced** destination option.

- a. If you choose the **Simple** option, select the Amazon S3 bucket folder destination from the dropdown list and the encryption options, and then choose **Add bucket destination**.
 - b. If you choose the **Advanced** option, select the Amazon S3 bucket folder destination from the dropdown list, select the [Key naming pattern \(p. 113\)](#) and append it to the path.
7. Review the **Output**.
 8. Set the **Encryption options**, review the **Amazon S3 pricing**, and then choose **Add bucket destination**.

The Amazon S3 bucket destination appears on the **Revisions** tab under **Auto-export job destinations**.

A job is started to automatically export your revision.

To verify that the prerequisites for S3 bucket policy permissions are met, an object with the naming format `_ADX-TEST-ACCOUNTID#` is added to the S3 bucket.

After the job is finished, the **State** field in the **Jobs** section is updated to **Completed**.

To add another destination, choose **Actions**, and then **Add auto-export job destination**.

To edit, select the destination you want to edit, choose **Actions**, and then **Edit destination configuration**.

To delete, choose **Actions**, and then choose **Remove auto-export job destination**.

Automatically exporting revisions to an S3 bucket as a subscriber (AWS SDKs)

Note

To automatically export revisions to an S3 bucket of your choice, your S3 bucket must have a bucket policy with permissions set to allow AWS Data Exchange to export data into it. For more information, see [Prerequisites for S3 bucket policy permissions \(p. 110\)](#).

To automatically export a revision to an S3 bucket (AWS SDKs)

1. Create a `Create_Event_Action` request.
2. Include the following in the request:
 - `Action`
 - `ExportRevisionToS3`
 - `Encryption`
 - `KmsKeyArn`
 - `Type`
 - `RevisionDestination`
 - `Bucket`
 - `KeyPattern`
 - `Event`
 - `RevisionPublished`
 - `DataSetId`
3. Modify the key pattern if necessary. The Amazon S3 object key defaults to the key pattern `{Revision.CreatedAt}/{Asset.Name}`.

For more information about key patterns, see [Key patterns when exporting revisions \(p. 113\)](#).

To verify that the prerequisites for S3 bucket policy permissions are met, an object with the naming format `_ADX-TEST-ACCOUNTID#` is added to the S3 bucket.

Key patterns when exporting revisions

When you export a revision, each asset becomes an object in the S3 bucket. The names of the objects are based on a key pattern that you provide. You can use dynamic references that represent asset attributes to create a pattern for the names that are automatically generated during the export. Use the dynamic references shown in the following table.

Dynamic references	Description
<code>\${Asset.Id}</code>	The Id of the asset.
<code>\${Asset.Name}</code>	The name of the asset.
<code>\${DataSet.Id}</code>	The Id of the data set being exported.
<code>\${DataSet.Name}</code>	The name of the data set being exported.
<code>\${Revision.CreatedAt}</code>	The UTC date and time the revision was created, in the following format: YYYY-MM-DDTHH:MM:SSZ. For example: 2021-10-08T16:33:19.787Z
<code>\${Revision.CreatedAt.Day}</code>	The day of the month the revision was created.
<code>\${Revision.CreatedAt.Month}</code>	The month the revision was created.
<code>\${Revision.CreatedAt.Year}</code>	The year the revision was created.
<code>\${Revision.Id}</code>	The Id of the revision being exported.

You can use these dynamic references to create the key patterns for your asset names. You must include at least one of the two Asset dynamic references, which are `${Asset.Name}` and `${Asset.Id}`.

For example, using `${Revision.Id}/${Asset.Name}` as a key pattern results in Amazon S3 objects that use the revision Id and asset name (separated by a slash) as the object name.

If you export a revision with the Id `testRevisionId` that has two assets named `asset1` and `asset2`, then the assets are exported to the following locations in Amazon S3:

- `<bucket>/testRevisionId/asset1`
- `<bucket>/testRevisionId/asset2`

Note

Your resulting objects must have unique names. If they have the same names as existing objects in the S3 bucket, your export will overwrite existing objects. If the revision you are exporting has non-unique names (for example, two assets with the same name), the export will fail. The only dynamic reference that is unique is `${Asset.Id}`.

AWS Data Exchange quotas

The following sections provide information about the service quotas, endpoints, guidelines for export and import jobs across AWS Regions, and constraints related to resource fields for AWS Data Exchange for an AWS account.

Service quotas

For information about service quotas, see [AWS Data Exchange endpoints and quotas](#) in the *AWS General Reference*.

Service endpoints

For information about service endpoints, see [AWS Data Exchange endpoints and quotas](#) in the *AWS General Reference*.

Export and import job guidelines

The following table provides guidelines for export and import jobs. For more information, see [AWS Regions and data sets \(p. 97\)](#).

Resource, descriptor, or operation	Maximum value	Description
File size for assets imported from a signed URL	5 GB	The maximum size, in GB, of an asset that can be imported using <code>IMPORT_ASSET_FROM_SIGNED_URL</code> .
File size of a cross-Region revision export to Amazon Simple Storage Service (Amazon S3)	1,000 GB	The maximum size, in GB, of a revision that can be exported to a different Region from the provider data set using an <code>ExportRevision</code> job.
Number of assets that can be imported from a signed URL in a single job	1	The number of assets that can be imported using a single <code>IMPORT_ASSET_FROM_SIGNED_URL</code> job.
Number of assets that can be exported to Amazon S3 in a single cross-Region <code>ExportRevision</code> job	10,000	The number of assets that can be exported from one Region to another from the provider data set using an <code>ExportRevision</code> job.
Number of assets that can be exported to Amazon S3 in a single <code>ExportRevision</code> job	10,000	The number of assets that can be exported to Amazon S3 using an <code>ExportRevision</code> job.

Resource, descriptor, or operation	Maximum value	Description
Number of revisions that can be exported to Amazon S3 in a single ExportRevision job	1	The number of revisions that can be exported to Amazon S3 using an ExportRevision job.
Event actions per resource	5	The maximum number of event actions per resource.
Event actions per account	50	The maximum number of event actions per account.
Payload size for APIs imported from API Gateway	10 MB	The maximum payload size for APIs that have been imported from Amazon API Gateway. For more information about quotas for Amazon API Gateway APIs, see Amazon API Gateway quotas and important notes in the <i>Amazon API Gateway API Developer Guide</i> .
Number of requests per second to an imported API Gateway API	10	The maximum number of requests that can be sent per second to an imported API Gateway API.

Constraints for resource fields

The following table provides constraints related to resource fields that providers encounter in the AWS Data Exchange console when creating data sets, revisions, products, and product offers. The table also provides constraints related to resource fields that subscribers encounter when making subscription requests.

Resource	Field	Maximum length or size
Dataset	Name	256 characters
Dataset	Description	16,384 characters
Revision	Comment	128 characters
Product details	Name	72 characters
Product details	Short description	500 characters
Product details	Long description	30,000 characters
Product details	Logo	100 KB
Product offer	DSA	10 MB
Product offer	Refund policy	200 characters
Subscription request	company name	40 characters
Subscription request	name	40 characters
Subscription request	email address	100 characters
Subscription request	intended use-case	500 characters

Security

Cloud security at AWS is the highest priority. As an AWS customer, you benefit from multiple data centers and network architecture that is built to meet the requirements of the most security-sensitive organizations.

Security is a shared responsibility between AWS and you. The [shared responsibility model](#) describes this as security of the cloud and security in the cloud:

- **Security of the cloud** – AWS is responsible for protecting the infrastructure that runs AWS services in the AWS Cloud. AWS also provides you with services that you can use securely. The effectiveness of our security is regularly tested and verified by third-party auditors as part of [AWS compliance programs](#). To learn about the compliance programs that apply to AWS Data Exchange, see [AWS Services in Scope by Compliance Program](#).
- **Security in the cloud** – Your responsibility is determined by the AWS services that you use. You are also responsible for other factors, including the sensitivity of your data, your organization's requirements, and applicable laws and regulations.

This documentation helps you understand how to apply the shared responsibility model when you use AWS Data Exchange. The following topics show you how to configure AWS Data Exchange to meet your security and compliance objectives. You also learn how to use other AWS services that help you monitor and secure your AWS Data Exchange resources.

Data protection in AWS Data Exchange

The AWS [shared responsibility model](#) applies to data protection in AWS Data Exchange. As described in this model, AWS is responsible for protecting the global infrastructure that runs all of the AWS Cloud. You are responsible for maintaining control over your content that is hosted on this infrastructure. This content includes the security configuration and management tasks for the AWS services that you use. For more information about data privacy, see the [Data Privacy FAQ](#). For information about data protection in Europe, see the [AWS Shared Responsibility Model and GDPR](#) blog post on the *AWS Security Blog*.

For data protection purposes, we recommend that you protect AWS account credentials and set up individual user accounts with AWS Identity and Access Management (IAM). That way each user is given only the permissions necessary to fulfill their job duties. We also recommend that you secure your data in the following ways:

- Use multi-factor authentication (MFA) with each account.
- Use SSL/TLS to communicate with AWS resources. We recommend TLS 1.2 or later.
- Set up API and user activity logging with AWS CloudTrail.
- Use AWS encryption solutions, along with all default security controls within AWS services.
- Use advanced managed security services such as Amazon Macie, which assists in discovering and securing personal data that is stored in Amazon S3.
- If you require FIPS 140-2 validated cryptographic modules when accessing AWS through a command line interface or an API, use a FIPS endpoint. For more information about the available FIPS endpoints, see [Federal Information Processing Standard \(FIPS\) 140-2](#).

We strongly recommend that you never put confidential or sensitive information, such as your customers' email addresses, into tags or free-form fields such as a **Name** field. This includes when you work with AWS Data Exchange or other AWS services using the console, API, AWS CLI, or AWS SDKs. Any data that you enter into tags or free-form fields used for names may be used for billing or

diagnostic logs. If you provide a URL to an external server, we strongly recommend that you do not include credentials information in the URL to validate your request to that server.

AWS Data Exchange provides the following options that you can use to help secure the content that exists in your data sets:

Topics

- [Encryption at rest \(p. 117\)](#)
- [Encryption in transit \(p. 117\)](#)
- [Restrict access to content \(p. 117\)](#)

Encryption at rest

AWS Data Exchange always encrypts all data products stored in the service at rest without requiring any additional configuration. This encryption is automatic when you use AWS Data Exchange.

Encryption in transit

AWS Data Exchange uses Transport Layer Security (TLS) and client-side encryption for encryption in transit. Communication with AWS Data Exchange is always done over HTTPS so your data is always encrypted in transit. This encryption is configured by default when you use AWS Data Exchange.

Restrict access to content

As a best practice, you should restrict access to the appropriate subset of users. With AWS Data Exchange, you can do this by ensuring that IAM users, groups, and roles who use your AWS account have the right permissions. For more information about roles and policies for IAM entities, see [IAM User Guide](#).

Identity and access management in AWS Data Exchange

To perform any operation in AWS Data Exchange, such as creating an import job using an AWS SDK, or subscribing to a product in the AWS Data Exchange console, AWS Identity and Access Management (IAM) requires that you authenticate that you're an approved AWS user. For example, if you're using the AWS Data Exchange console, you authenticate your identity by providing your AWS user name and a password.

After you authenticate your identity, IAM controls your access to AWS with a defined set of permissions on a set of operations and resources. If you are an account administrator, you can use IAM to control the access of other IAM users to the resources that are associated with your account.

Topics

- [Authentication \(p. 117\)](#)
- [Access control \(p. 118\)](#)
- [AWS Data Exchange API permissions: actions and resources reference \(p. 123\)](#)
- [AWS managed policies for AWS Data Exchange \(p. 127\)](#)

Authentication

You can access AWS with any of the following types of identities:

- **AWS account root user** – When you first create an AWS account, you begin with an identity that has complete access to all AWS services and resources in the account. This identity is called the AWS account root user and is accessed by signing in with the email address and password that you used to create the account. We strongly recommend that you do not use the root user for your everyday tasks, even the administrative ones. Instead, adhere to the [best practice of using the root user only to create your first IAM user](#). Then securely lock away the root user credentials and use them to perform only a few account and service management tasks.
- **IAM user** – An [IAM user](#) is an identity in your AWS account that has specific custom permissions. You can use an IAM user name and password to sign in to secure AWS webpages like the AWS Management Console, AWS Discussion Forums, or the AWS Support Center.

In addition to a user name and password, you can also generate access keys for each user. You can use these keys when you access AWS services programmatically, either through one of the several SDKs or by using the AWS Command Line Interface (AWS CLI). The SDK and CLI tools use the access keys to cryptographically sign your request. If you don't use AWS tools, you must sign the request yourself. AWS Data Exchange supports Signature Version 4, a protocol for authenticating inbound API requests. For more information about authenticating requests, see [Signature Version 4 Signing Process](#) in the *AWS General Reference*.

- **IAM role** – An [IAM role](#) is an IAM identity that you can create in your account that has specific permissions. An IAM role is similar to an IAM user in that it is an AWS identity with permissions policies that determine what the identity can and cannot do in AWS. However, instead of being uniquely associated with one person, a role is intended to be assumable by anyone who needs it. Also, a role does not have standard long-term credentials, such as a password or access keys, associated with it. Instead, when you assume a role, it provides you with temporary security credentials for your role session. IAM roles with temporary credentials are useful in the following situations:
 - **Federated user access** – Instead of creating an IAM user, you can use existing identities from AWS Directory Service, your enterprise user directory, or a web identity provider. These are known as *federated users*. AWS assigns a role to a federated user when access is requested through an identity provider. For more information about federated users, see [Federated Users and Roles](#) in the *IAM User Guide*.
 - **AWS service access** – A service role is an IAM role that a service assumes to perform actions in your account on your behalf. When you set up some AWS service environments, you must define a role for the service to assume. This service role must include all the permissions that are required for the service to access the AWS resources that it needs. Service roles vary from service to service, but many allow you to choose your permissions as long as you meet the documented requirements for that service. Service roles provide access only within your account and cannot be used to grant access to services in other accounts. You can create, modify, and delete a service role from within IAM. For example, you can create a role that allows Amazon Redshift to access an Amazon S3 bucket on your behalf and then load data from that bucket into an Amazon Redshift cluster. For more information, see [Creating a Role to Delegate Permissions to an AWS Service](#) in the *IAM User Guide*.
 - **Applications running on Amazon EC2** – You can use an IAM role to manage temporary credentials for applications that are running on an Amazon EC2 instance and making AWS CLI or AWS API requests. This is preferable to storing access keys in the Amazon EC2 instance. To assign an AWS role to an Amazon EC2 instance and make it available to all of its applications, you create an instance profile that is attached to the instance. An instance profile contains the role and enables programs that are running on the Amazon EC2 instance to get temporary credentials. For more information, see [Using an IAM Role to Grant Permissions to Applications Running on Amazon EC2 Instances](#) in the *IAM User Guide*.

Access control

To create, update, delete, or list AWS Data Exchange resources, you need permissions to perform the operation and to access the corresponding resources. To perform the operation programmatically, you also need valid access keys.

Overview of managing access permissions to your AWS Data Exchange resources

Every AWS resource is owned by an AWS account, and permissions to create or access a resource are governed by permissions policies. An account administrator can attach permissions policies to AWS Identity and Access Management (IAM) identities (that is, users, groups, and roles). Some services (such as AWS Lambda) also support attaching permissions policies to resources.

Note

An *account administrator* (or administrator) is a user with administrator privileges. For more information, see [IAM Best Practices](#) in the *IAM User Guide*.

When granting permissions, you decide who is getting the permissions, the resources they get permissions for, and the specific actions that you want to allow on those resources.

Topics

- [AWS Data Exchange resources and operations](#) (p. 119)
- [Understanding resource ownership](#) (p. 119)
- [Managing access to resources](#) (p. 119)
- [Specifying policy elements: actions, effects, and principals](#) (p. 122)
- [Specifying conditions in a policy](#) (p. 122)

AWS Data Exchange resources and operations

In AWS Data Exchange, there are two different kinds of primary resources with different control planes:

- The primary resources for AWS Data Exchange are *data sets* and *jobs*. AWS Data Exchange also supports *revisions* and *assets*.
- To facilitate transactions between providers and subscribers, AWS Data Exchange also uses AWS Marketplace concepts and resources, including products, offers, and subscriptions. You can use the AWS Marketplace Catalog API or the AWS Data Exchange console to manage your products, offers, subscription requests, and subscriptions.

Understanding resource ownership

The AWS account owns the resources that are created in the account, regardless of who created the resources. Specifically, the resource owner is the AWS account of the [principal entity](#) (that is, the AWS account root user, an IAM user, or an IAM role) that authenticates the resource creation request. The following examples illustrate how this works.

Resource ownership

Any IAM entity in an AWS account with the correct permissions can create AWS Data Exchange data sets. When an IAM entity creates a data set, their AWS account owns the data set. Published data products can contain data sets that are owned only by the AWS account that created them.

To subscribe to an AWS Data Exchange product, the IAM entity needs permissions to use AWS Data Exchange, in addition to the `aws-marketplace:subscribe` IAM permission for AWS Marketplace (assuming they pass any related subscription verifications). As a subscriber, your account has read access to entitled data sets; however, it does not own the entitled data sets. Any entitled data sets that are exported to Amazon S3 are owned by the subscriber's AWS account.

Managing access to resources

This section discusses using IAM in the context of AWS Data Exchange. It doesn't provide detailed information about the IAM service. For complete IAM documentation, see [What Is IAM?](#) in the *IAM User*

Guide. For information about IAM policy syntax and descriptions, see [AWS IAM Policy Reference](#) in the *IAM User Guide*.

A *permissions policy* describes who has access to what. The following section explains the options for creating permissions policies.

Policies attached to an IAM identity are referred to as *identity-based* policies (IAM policies). Policies attached to a resource are referred to as *resource-based* policies. AWS Data Exchange supports only identity-based policies (IAM policies).

Topics

- [Identity-based policies \(IAM policies\) \(p. 120\)](#)
- [Resource-based policies \(p. 122\)](#)

Identity-based policies (IAM policies)

You can attach policies to IAM identities. For example, you can do the following:

- **Attach a permissions policy to a user or a group in your account** – To grant a user permissions to create an AWS Data Exchange resource, like a revision, you can attach a permissions policy to a user or group that the user belongs to.
- **Attach a permissions policy to a role (grant cross-account permissions)** – You can attach an identity-based permissions policy to an IAM role to grant cross-account permissions. For example, the administrator in Account A can create a role to grant cross-account permissions to another AWS account (for example, Account B) or an AWS service as follows:
 1. Account A administrator creates an IAM role and attaches a permissions policy to the role that grants permissions on resources in Account A.
 2. Account A administrator attaches a trust policy to the role identifying Account B as the principal who can assume the role.
 3. Account B administrator can then delegate permissions to assume the role to any users in Account B. Doing this allows users in Account B to create or access resources in Account A. The principal in the trust policy can also be an AWS service principal, if you want to grant an AWS service permissions to assume the role.

For more information about using IAM to delegate permissions, see [Access Management](#) in the *IAM User Guide*.

AWS Data Exchange provides four managed policies:

- `AWSDataExchangeFullAccess`
- `AWSDataExchangeSubscriberFullAccess`
- `AWSDataExchangeProviderFullAccess`
- `AWSDataExchangeReadOnly`

For more information about these policies and their permissions, see [AWS managed policies for AWS Data Exchange \(p. 127\)](#).

Amazon S3 permissions

When importing assets from Amazon S3 to AWS Data Exchange, you need permissions to write to the AWS Data Exchange service S3 buckets. Similarly, when exporting assets from AWS Data Exchange to Amazon S3, you need permissions to read from the AWS Data Exchange service S3 buckets. These permissions are included in the policies mentioned previously, but you can also create your own policy to allow just what you want your users to be able to do. You can scope these permissions to buckets that

contain `aws-data-exchange` in their name and use the [CalledVia](#) permission to restrict the usage of the permission to requests made by AWS Data Exchange on behalf of the principal.

For example, you could create a policy to allow importing and exporting to AWS Data Exchange that includes these permissions.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3::*aws-data-exchange*",
      "Condition": {
        "ForAnyValue:StringEquals": {
          "aws:CalledVia": [
            "dataexchange.amazonaws.com"
          ]
        }
      }
    },
    {
      "Effect": "Allow",
      "Action": [
        "s3:PutObject",
        "s3:PutObjectAcl"
      ],
      "Resource": "arn:aws:s3::*aws-data-exchange*",
      "Condition": {
        "ForAnyValue:StringEquals": {
          "aws:CalledVia": [
            "dataexchange.amazonaws.com"
          ]
        }
      }
    }
  ]
}
```

These permissions allow providers to import and export with AWS Data Exchange. The policy includes the following permissions and restrictions:

- **s3:PutObject** and **s3:PutObjectAcl** – These permissions are restricted only to S3 buckets that contain `aws-data-exchange` in their name. These permissions allows providers to write to AWS Data Exchange service buckets when importing from Amazon S3.
- **s3:GetObject** – This permission is restricted to S3 buckets that contain `aws-data-exchange` in their name. This permission allows customers to read from AWS Data Exchange service buckets when exporting from AWS Data Exchange to Amazon S3.
- These permissions are restricted to requests made by using AWS Data Exchange with the IAM `CalledVia` condition. This allows the S3 `PutObject` permissions to only be used in the context of the AWS Data Exchange console or API.

Note

Your users may also need additional permissions to read to or write from your own S3 buckets and objects that are not covered in this example.

For more information about users, groups, roles, and permissions, see [Identities \(Users, Groups, and Roles\)](#) in the *IAM User Guide*.

Resource-based policies

AWS Data Exchange does not support resource-based policies.

Other services, such as Amazon S3, do support resource-based permissions policies. For example, you can attach a policy to an S3 bucket to manage access permissions to that bucket.

Specifying policy elements: actions, effects, and principals

To use AWS Data Exchange, you must be an IAM user with the appropriate permissions defined in a IAM policy.

The following are the most basic policy elements:

- **Resource** – In a policy, you use an Amazon Resource Name (ARN) to identify the resource to which the policy applies. All AWS Data Exchange API operations support resource level permissions (RLP), but AWS Marketplace actions don't support RLP. For more information, see [AWS Data Exchange resources and operations \(p. 119\)](#).
- **Action** – You use action keywords to identify resource operations that you want to allow or deny.
- **Effect** – You specify the effect (allow or deny) when the user requests the specific action. If you don't explicitly grant access to (allow) a resource, access is implicitly denied. You can also explicitly deny access to a resource, which you might do to make sure that a user cannot access it, even if a different policy grants access.
- **Principal** – In identity-based policies (IAM policies), the user that the policy is attached to is the implicit principal. For resource-based policies, you specify the user, account, service, or other entity that you want to receive permissions (applies to resource-based policies only). AWS Data Exchange doesn't support resource-based policies.

For more information about IAM policy syntax and descriptions, see [AWS IAM Policy Reference](#) in the *IAM User Guide*.

Specifying conditions in a policy

When you grant permissions, you can use the IAM policy language to specify the conditions when a policy should take effect. With AWS Data Exchange, the CreateJob, StartJob, GetJob, and CancelJob API operations support conditional permissions. You can provide permissions at the JobType level.

AWS Data Exchange condition key reference

Condition key	Description	Type
"dataexchange:JobType": "IMPORT_ASSETS_FROM_S3"	Provides permissions to jobs that import assets from Amazon S3.	String
"dataexchange:JobType": "IMPORT_ASSET_FROM_SIGNED_URL"	Provides permissions to jobs that import assets from a signed URL.	String
"dataexchange:JobType": "IMPORT_ASSET_FROM_REDSHIFT_TO_SHARES"	Provides permissions to jobs that import assets from Amazon Redshift.	String
"dataexchange:JobType": "IMPORT_ASSET_FROM_API_GATEWAY_TO_JOB"	Provides permissions to jobs that import assets from Amazon API Gateway.	String

Condition key	Description	Type
"dataexchange:JobType": "EXPORT_ASSETS_S3"	Grants permissions to jobs that export assets to Amazon S3.	String
"dataexchange:JobType": "EXPORT_ASSETS_SIGNED_URL"	Grants permissions to jobs that export assets to a signed URL.	String
"dataexchange:JobType": "EXPORT_REVISIONS_S3"	Grants permissions to jobs that export revisions to Amazon S3.	String

For more information about specifying conditions in a policy language, see [Condition](#) in the *IAM User Guide*.

To express conditions, you use predefined condition keys. AWS Data Exchange has the JobType condition for API operations. However, there are AWS wide condition keys that you can use, as appropriate. For a complete list of AWS wide keys, see the [IAM User Guide](#).

AWS Data Exchange API permissions: actions and resources reference

Use the following table as a reference when you are setting up [Access control \(p. 118\)](#) and writing a permissions policy that you can attach to an AWS Identity and Access Management (IAM) identity (identity-based policies). The table lists each AWS Data Exchange API operation, the actions for which you can grant permissions to perform the action, and the AWS resource for which you can grant the permissions. You specify the actions in the policy's Action field. You specify the resource value in the policy's Resource field.

Note

To specify an action, use the dataexchange: prefix followed by the API operation name (for example, dataexchange:CreateDataSet).

AWS Data Exchange API and required permissions for actions

AWS Data Exchange API operations	Required permissions (API actions)	Resources	Conditions
CreateDataSet	dataexchange:CreateDataSet	N/A	aws:TagKeys aws:RequestTag
GetDataSet	dataexchange:GetDataSet	Data set	aws:RequestTag
UpdateDataSet	dataexchange:UpdateDataSet	Data set	aws:RequestTag
DeleteDataSet	dataexchange>DeleteDataSet	Data set	aws:RequestTag
ListDataSets	dataexchange:ListDataSets	N/A	N/A
CreateRevision	dataexchange:CreateRevision	Data set	aws:TagKeys aws:RequestTag
GetRevision	dataexchange:GetRevision	Revision	aws:RequestTag
DeleteRevision	dataexchange>DeleteRevision	Revision	aws:RequestTag
ListDataSetRevisions	dataexchange:ListDataSetRevisions	Data set	aws:RequestTag

AWS Data Exchange API operations	Required permissions (API actions)	Resources	Conditions
ListRevisionAssets	dataexchange:ListRevisionAssets	Revision	aws:RequestTag
CreateEventAction	dataexchange:CreateEventAction	N/A	N/A
UpdateEventAction	dataexchange:UpdateEventAction	EventAction	N/A
GetEventAction	dataexchange:GetEventAction	EventAction	N/A
ListEventActions	dataexchange:ListEventActions	N/A	N/A
DeleteEventAction	dataexchange>DeleteEventAction	EventAction	N/A
CreateJob	dataexchange:CreateJob	N/A	dataexchange:JobType
GetJob	dataexchange:GetJob	Job	dataexchange:JobType
StartJob**	dataexchange:StartJob	Job	dataexchange:JobType
CancelJob	dataexchange:CancelJob	Job	dataexchange:JobType
ListJobs	dataexchange:ListJobs	N/A	N/A
ListTagsForResource	dataexchange:ListTagsForResource	Revision	aws:RequestTag
TagResource	dataexchange:TagResource	Revision	aws:TagKeys aws:RequestTag
UntagResource	dataexchange:UntagResource	Revision	aws:TagKeys aws:RequestTag
UpdateRevision	dataexchange:UpdateRevision	Revision	aws:RequestTag
DeleteAsset	dataexchange>DeleteAsset	Asset	N/A
GetAsset	dataexchange:GetAsset	Asset	N/A
UpdateAsset	dataexchange:UpdateAsset	Asset	N/A
SendApiAsset	dataexchange:SendApiAsset	Asset	N/A

** Additional IAM permissions might be needed depending on the type of the job you are starting. See the following table for the AWS Data Exchange job types and associated additional IAM permissions. For more information about jobs, see [Jobs in AWS Data Exchange \(p. 99\)](#).

Note

Currently, the SendApiAsset operation is not supported for the following SDKs:

- AWS SDK for .NET
- AWS SDK for C++
- SDK for Java 2.x

AWS Data Exchange job type permissions for StartJob

Job type	Additional IAM permissions needed
IMPORT_ASSETS_FROM_S3	dataexchange:CreateAsset
IMPORT_ASSET_FROM_SIGNED_URL	dataexchange:CreateAsset
IMPORT_ASSETS_FROM_API_GATEWAY_API	dataexchange:CreateAsset
IMPORT_ASSETS_FROM_REDSHIFT_DATA_SHARE	dataexchange:CreateAsset, redshift:AuthorizeDataShare
EXPORT_ASSETS_TO_S3	dataexchange:GetAsset
EXPORT_ASSETS_TO_SIGNED_URL	dataexchange:GetAsset
EXPORT_REVISIONS_TO_S3	dataexchange:GetRevision dataexchange:GetDataSet Note The IAM permission dataexchange:GetDataSet is only needed if you are using DataSet .Name as the dynamic reference for the EXPORT_REVISIONS_TO_S3 job type.

You can scope data set actions to the revision or asset level through the use of wildcards, as in the following example.

```
arn:aws:dataexchange:us-east-1:123456789012:data-sets/99EXAMPLE23c7c272897cf1EXAMPLE7a/
revisions/*/assets/*
```

Some AWS Data Exchange actions can only be performed on the AWS Data Exchange console. These actions are integrated with AWS Marketplace functionality. The actions require the AWS Marketplace permissions shown in the following table.

AWS Data Exchange console-only actions for subscribers

Console action	IAM permission
Subscribe to a product	aws-marketplace:Subscribe
Send subscription verification request	aws-marketplace:Subscribe
Enable subscription auto-renew	aws-marketplace:Subscribe
Disable subscription auto-renew	aws-marketplace:Unsubscribe
List active subscriptions	aws-marketplace:ViewSubscriptions
View subscription	aws-marketplace:ViewSubscriptions
List subscription verification requests	aws-marketplace:ListAgreementRequests
View subscription verification request	aws-marketplace:GetAgreementRequest
Cancel subscription verification request	aws-marketplace:CancelAgreementRequest

AWS Data Exchange console-only actions for providers

Console action	IAM permission
Publish product	aws-marketplace:StartChangeSet aws-marketplace:DescribeChangeSet dataexchange:PublishDataSet
Unpublish product	aws-marketplace:StartChangeSet aws-marketplace:DescribeChangeSet
Edit product	aws-marketplace:StartChangeSet aws-marketplace:DescribeChangeSet
Create custom offer	aws-marketplace:StartChangeSet aws-marketplace:DescribeChangeSet
Edit custom offer	aws-marketplace:StartChangeSet aws-marketplace:DescribeChangeSet
View product details	aws-marketplace:DescribeEntity aws-marketplace:ListEntities
View product's custom offer	aws-marketplace:DescribeEntity
View product dashboard	aws-marketplace:ListEntities aws-marketplace:DescribeEntity
List products to which a data set or revision has been published	aws-marketplace:ListEntities aws-marketplace:DescribeEntity
List subscription verification requests	aws-marketplace:ListAgreementApprovalRequests
Approve subscription verification requests	aws-marketplace:AcceptAgreementApprovalRequest
Decline subscription verification requests	aws-marketplace:RejectAgreementApprovalRequest
Delete information from subscription verification requests	aws-marketplace:UpdateAgreementApprovalRequest
View subscription details	aws-marketplace:SearchAgreements aws-marketplace:GetAgreementTerms

AWS managed policies for AWS Data Exchange

To add permissions to users, groups, and roles, it is easier to use AWS managed policies than to write policies yourself. It takes time and expertise to [create IAM customer managed policies](#) that provide your team with only the permissions they need. To get started quickly, you can use our AWS managed policies. These policies cover common use cases and are available in your AWS account. For more information about AWS managed policies, see [AWS managed policies](#) in the *IAM User Guide*.

AWS services maintain and update AWS managed policies. You can't change the permissions in AWS managed policies. Services occasionally add additional permissions to an AWS managed policy to support new features. This type of update affects all identities (users, groups, and roles) where the policy is attached. Services are most likely to update an AWS managed policy when a new feature is launched or when new operations become available. Services do not remove permissions from an AWS managed policy, so policy updates won't break your existing permissions.

Additionally, AWS supports managed policies for job functions that span multiple services. For example, the `ViewOnlyAccess` AWS managed policy provides read-only access to many AWS services and resources. When a service launches a new feature, AWS adds read-only permissions for new operations and resources. For a list and descriptions of job function policies, see [AWS managed policies for job functions](#) in the *IAM User Guide*.

AWS managed policy: `AWSDataExchangeFullAccess`

You can attach the `AWSDataExchangeFullAccess` policy to your IAM identities.

This policy grants administrative permissions that allow full access to AWS Data Exchange and AWS Marketplace actions using the AWS Management Console and SDK. It also provides select access to Amazon S3 and AWS Key Management Service as needed to take full advantage of AWS Data Exchange.

Permissions details

This policy includes the following permissions:

- **AWS Data Exchange** – Allows principals full access to AWS Data Exchange. This includes both providing data products and subscribing to them.
- **AWS Marketplace** – Allows principals access to AWS Marketplace for providing products, subscribing to products, and managing product agreements. This is required to provide or subscribe to data products.
- **Amazon S3** – Allows principals to get AWS Data Exchange related objects (including data product files) from Amazon Simple Storage Service, and to upload AWS Data Exchange related files to Amazon S3. This is required for providing and subscribing to data products.
- **Amazon Redshift** – Allows principals to view AWS Data Exchange datashares for Amazon Redshift for import and to authorize them. This is required for providing Amazon Redshift data products.
- **AWS KMS** – Allows access to AWS Key Management Service so that data can be encrypted and accessed using keys.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "dataexchange:*"
      ],
    }
  ]
}
```

```

    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": "s3:GetObject",
    "Resource": "arn:aws:s3::*aws-data-exchange*",
    "Condition": {
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": "s3:GetObject",
    "Resource": "*",
    "Condition": {
      "StringEqualsIgnoreCase": {
        "s3:ExistingObjectTag/AWSDataExchange": "true"
      },
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "s3:PutObject",
      "s3:PutObjectAcl"
    ],
    "Resource": "arn:aws:s3::*aws-data-exchange*",
    "Condition": {
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "s3:GetBucketLocation",
      "s3:ListBucket",
      "s3:ListAllMyBuckets"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "aws-marketplace:DescribeEntity",
      "aws-marketplace:ListEntities",
      "aws-marketplace:StartChangeSet",
      "aws-marketplace:ListChangeSets",
      "aws-marketplace:DescribeChangeSet",
      "aws-marketplace:CancelChangeSet",
      "aws-marketplace:GetAgreementApprovalRequest",
      "aws-marketplace:ListAgreementApprovalRequests",
      "aws-marketplace:AcceptAgreementApprovalRequest",
      "aws-marketplace:RejectAgreementApprovalRequest",

```

```

        "aws-marketplace:UpdateAgreementApprovalRequest",
        "aws-marketplace:SearchAgreements",
        "aws-marketpalce:GetAgreementTerms"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "aws-marketplace:Subscribe",
      "aws-marketplace:Unsubscribe",
      "aws-marketplace:ViewSubscriptions",
      "aws-marketplace:GetAgreementRequest",
      "aws-marketplace:ListAgreementRequests",
      "aws-marketplace:CancelAgreementRequest"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "kms:DescribeKey",
      "kms:ListAliases",
      "kms:ListKeys"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": ["redshift:AuthorizeDataShare"],
    "Resource": "*",
    "Condition": {
      "StringEqualsIgnoreCase": {
        "redshift:ConsumerIdentifier": "ADX"
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "redshift:DescribeDataSharesForProducer",
      "redshift:DescribeDataShares"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "apigateway:GET",
    ],
    "Resource": "*"
  }
]
}

```

AWS managed policy: AWSDataExchangeProviderFullAccess

You can attach the `AWSDataExchangeProviderFullAccess` policy to your IAM identities.

This policy grants contributor permissions that provide data provider access to AWS Data Exchange and AWS Marketplace actions using the AWS Management Console and SDK. It also provides select access to Amazon S3 and AWS Key Management Service as needed to take full advantage of AWS Data Exchange.

Permissions details

This policy includes the following permissions:

- **AWS Data Exchange** – Allows principals full access to provide data products on AWS Data Exchange. Principals can create, update, and remove products on AWS Data Exchange.
- **AWS Marketplace** – Allows principals access to AWS Marketplace for providing and subscribing to data products, and managing subscription verification requests. This is required to provide data products.
- **Amazon S3** – Allows principals to get AWS Data Exchange related objects (including data product files) from Amazon Simple Storage Service, and to upload AWS Data Exchange related files to Amazon S3. This is required for providing data products.
- **Amazon API Gateway** – Allows principals to get Amazon API Gateway APIs from Amazon API Gateway, and to upload APIs. This is required for providing Amazon API Gateway API data sets.
- **Amazon Redshift** – Allows principals to view AWS Data Exchange datashares for Amazon Redshift for import and to authorize them. This is required for providing Amazon Redshift data products.
- **AWS KMS** – Allows access to AWS Key Management Service so that data can be encrypted and accessed using keys.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "dataexchange:CreateDataSet",
        "dataexchange:CreateRevision",
        "dataexchange:CreateAsset",
        "dataexchange:Get*",
        "dataexchange:Update*",
        "dataexchange:List*",
        "dataexchange:Delete*",
        "dataexchange:TagResource",
        "dataexchange:UntagResource",
        "dataexchange:PublishDataSet",
        "dataexchange:SendApiAsset",
        "dataexchange:RevokeRevision",
        "tag:GetTagKeys",
        "tag:GetTagValues"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "dataexchange:CreateJob",
        "dataexchange:StartJob",
        "dataexchange:CancelJob"
      ],
      "Resource": "*",
      "Condition": {
        "StringEquals": {
          "dataexchange:JobType": [
            "IMPORT_ASSETS_FROM_S3",
            "IMPORT_ASSET_FROM_SIGNED_URL",
            "EXPORT_ASSETS_TO_S3",
            "EXPORT_ASSET_TO_SIGNED_URL",
            "IMPORT_ASSET_FROM_API_GATEWAY_API",
            "IMPORT_ASSETS_FROM_REDSHIFT_DATA_SHARES"
          ]
        }
      }
    }
  ]
}
```



```

    }
  },
  {
    "Effect": "Allow",
    "Action": "s3:GetObject",
    "Resource": "arn:aws:s3::*aws-data-exchange*",
    "Condition": {
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": "s3:GetObject",
    "Resource": "*",
    "Condition": {
      "StringEqualsIgnoreCase": {
        "s3:ExistingObjectTag/AWSDataExchange": "true"
      },
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "s3:PutObject",
      "s3:PutObjectAcl"
    ],
    "Resource": "arn:aws:s3::*aws-data-exchange*",
    "Condition": {
      "ForAnyValue:StringEquals": {
        "aws:CalledVia": [
          "dataexchange.amazonaws.com"
        ]
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "s3:GetBucketLocation",
      "s3:ListBucket",
      "s3:ListAllMyBuckets"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "aws-marketplace:DescribeEntity",
      "aws-marketplace:ListEntities",
      "aws-marketplace:DescribeChangeSet",
      "aws-marketplace:ListChangeSets",
      "aws-marketplace:StartChangeSet",
      "aws-marketplace:CancelChangeSet",
      "aws-marketplace:GetAgreementApprovalRequest",
      "aws-marketplace:ListAgreementApprovalRequests",
      "aws-marketplace:AcceptAgreementApprovalRequest",

```

```

        "aws-marketplace:RejectAgreementApprovalRequest",
        "aws-marketplace:UpdateAgreementApprovalRequest",
        "aws-marketplace:SearchAgreements",
        "aws-marketpalce:GetAgreementTerms"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "kms:DescribeKey",
      "kms:ListAliases",
      "kms:ListKeys"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": ["redshift:AuthorizeDataShare"],
    "Resource": "*",
    "Condition": {
      "StringEqualsIgnoreCase": {
        "redshift:ConsumerIdentifier": "ADX"
      }
    }
  },
  {
    "Effect": "Allow",
    "Action": [
      "redshift:DescribeDataSharesForProducer",
      "redshift:DescribeDataShares"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "apigateway:GET",
    ],
    "Resource": "*"
  }
]
}

```

AWS managed policy: AWSDataExchangeReadOnly

You can attach the `AWSDataExchangeReadOnly` policy to your IAM identities.

This policy grants read-only permissions that allow read-only access to AWS Data Exchange and AWS Marketplace actions using the AWS Management Console and SDK.

Permissions details

This policy includes the following permissions:

- **AWS Data Exchange** – Allows principals read-only access to AWS Data Exchange products. This includes both provided and subscribed data products.
- **AWS Marketplace** – Allows principals read-only access to AWS Marketplace for provided and subscribed products. This is required to view data products.

```
{
```

```
"Version": "2012-10-17",
"Statement": [
  {
    "Effect": "Allow",
    "Action": [
      "dataexchange:Get*",
      "dataexchange:List*"
    ],
    "Resource": "*"
  },
  {
    "Effect": "Allow",
    "Action": [
      "aws-marketplace:ViewSubscriptions",
      "aws-marketplace:GetAgreementRequest",
      "aws-marketplace:ListAgreementRequests",
      "aws-marketplace:GetAgreementApprovalRequest",
      "aws-marketplace:ListAgreementApprovalRequests",
      "aws-marketplace:DescribeEntity",
      "aws-marketplace:ListEntities",
      "aws-marketplace:DescribeChangeSet",
      "aws-marketplace:ListChangeSets",
      "aws-marketplace:SearchAgreements",
      "aws-marketpalce:GetAgreementTerms"
    ],
    "Resource": "*"
  }
]
```

AWS managed policy: AWSDataExchangeSubscriberFullAccess

You can attach the `AWSDataExchangeSubscriberFullAccess` policy to your IAM identities.

This policy grants contributor permissions that allow data subscriber access to AWS Data Exchange and AWS Marketplace actions using the AWS Management Console and SDK. It also provides select access to Amazon S3 and AWS Key Management Service as needed to take full advantage of AWS Data Exchange.

Permissions details

This policy includes the following permissions:

- **AWS Data Exchange** – Allows principals full access to the subscriber features of AWS Data Exchange. This includes subscribing to and accessing data products.
- **AWS Marketplace** – Allows principals access to AWS Marketplace for view and subscribing to products. This is required to subscribe to data products.
- **Amazon S3** – Allows principals to view and get AWS Data Exchange related objects (including data product files) from Amazon Simple Storage Service. This is required for accessing subscribed data products.
- **AWS KMS** – Allows access to AWS Key Management Service to access data that has been encrypted using keys.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
```

```

        "dataexchange:Get*",
        "dataexchange:List*"
    ],
    "Resource": "*"
},
{
    "Effect": "Allow",
    "Action": [
        "dataexchange:CreateEventAction",
        "dataexchange:UpdateEventAction",
        "dataexchange:DeleteEventAction",
        "dataexchange:SendApiAsset"
    ],
    "Resource": "*"
},
{
    "Effect": "Allow",
    "Action": [
        "dataexchange:CreateJob",
        "dataexchange:StartJob",
        "dataexchange:CancelJob"
    ],
    "Resource": "*",
    "Condition": {
        "StringEquals": {
            "dataexchange:JobType": [
                "EXPORT_ASSETS_TO_S3",
                "EXPORT_ASSET_TO_SIGNED_URL",
                "EXPORT_REVISIONS_TO_S3"
            ]
        }
    }
},
{
    "Effect": "Allow",
    "Action": "s3:GetObject",

    "Resource": "arn:aws:s3::*aws-data-exchange*",
    "Condition": {
        "ForAnyValue:StringEquals": {
            "aws:CalledVia": [
                "dataexchange.amazonaws.com"
            ]
        }
    }
},
{
    "Effect": "Allow",
    "Action": [
        "s3:GetBucketLocation",
        "s3:ListBucket",
        "s3:ListAllMyBuckets"
    ],
    "Resource": "*"
},
{
    "Effect": "Allow",
    "Action": [
        "aws-marketplace:Subscribe",
        "aws-marketplace:Unsubscribe",
        "aws-marketplace:ViewSubscriptions",
        "aws-marketplace:GetAgreementRequest",
        "aws-marketplace:ListAgreementRequests",
        "aws-marketplace:CancelAgreementRequest"
    ],
    "Resource": "*"
}

```

```

    },
    {
      "Effect": "Allow",
      "Action": [
        "kms:DescribeKey",
        "kms:ListAliases",
        "kms:ListKeys"
      ],
      "Resource": "*"
    }
  ]
}

```

AWS Data Exchange updates to AWS managed policies

The following table provides details about updates to AWS managed policies for AWS Data Exchange since this service began tracking these changes. For automatic alerts about changes to this page (and any other changes to this user guide), subscribe to the RSS feed on the [Document history for AWS Data Exchange \(p. 155\)](#) page.

Change	Description	Date
AWSDataExchangeProviderFullAccess (p. 126) – Update to existing policy	Added <code>dataexchange:RevokeRevision</code> , a new permission to revoke a revision.	March 15, 2022
AWSDataExchangeProviderFullAccess (p. 126) and AWSDataExchangeFullAccess (p. 127) – Update to existing policies	Added <code>apigateway:GET</code> , a new permission to retrieve an API asset from Amazon API Gateway.	December 3, 2021
AWSDataExchangeProviderFullAccess (p. 126) and AWSDataExchangeSubscriberFullAccess (p. 135) – Update to existing policies	Added <code>dataexchange:SendApiAsset</code> , a new permission to send a request to an API asset.	November 29, 2021
AWSDataExchangeProviderFullAccess (p. 126) and AWSDataExchangeFullAccess (p. 127) – Update to existing policies	Added <code>redshift:AuthorizeDataShare</code> , <code>redshift:DescribeDataSharesForProduction</code> , and <code>redshift:DescribeDataShares</code> , new permissions to authorize access to and create Amazon Redshift data sets.	November 1, 2021
AWSDataExchangeSubscriberFullAccess (p. 135) – Update to an existing policy	Added <code>dataexchange:CreateEventAction</code> , <code>dataexchange:UpdateEventAction</code> , and <code>dataexchange>DeleteEventAction</code> , new permissions to control access to automatically export new revisions of data sets.	September 30, 2021
AWSDataExchangeProviderFullAccess (p. 126) and AWSDataExchangeFullAccess (p. 127) – Update to existing policies	Added <code>dataexchange:PublishDataSet</code> , a new permission to control access to publishing new versions of data sets.	May 25, 2021
AWSDataExchangeReadOnly (p. 132) ,	Added <code>aws-marketplace:SearchAgreements</code> and	May 12, 2021

Change	Description	Date
AWSDataExchangeProviderFullAccess (p. 128) and AWSDataExchangeFullAccess (p. 127) – Update to existing policies	<code>aws-marketplace:GetAgreementTerms</code> to enable viewing subscriptions for products and offers.	
AWS Data Exchange started tracking changes	AWS Data Exchange started tracking changes for its AWS managed policies.	April 20, 2021

Logging and monitoring in AWS Data Exchange

Monitoring is an important part of the well-architected nature of AWS Data Exchange. You should collect monitoring data from each part of your AWS solution so that you can more easily debug a multi-point failure, if one occurs. AWS provides several tools for monitoring your resources and activity in AWS Data Exchange so you can plan for and respond to potential incidents.

The logging of actions and events in AWS Data Exchange is accomplished through its integration with Amazon CloudWatch.

The following sections describe monitoring and logging in AWS Data Exchange:

Topics

- [Monitoring](#) (p. 136)
- [Amazon EventBridge events](#) (p. 136)
- [Logging AWS Data Exchange API calls with AWS CloudTrail](#) (p. 145)

Monitoring

Monitoring is an important part of maintaining the reliability, availability, and performance of AWS Data Exchange and your other AWS solutions. AWS provides the following monitoring tools to watch AWS Data Exchange, report when something is wrong, and take automatic actions when appropriate:

- Amazon CloudWatch Events delivers a near-real-time stream of system events that describe changes in AWS resources. CloudWatch Events enables automated event-driven computing. You can write rules that watch for certain events and respond with automated actions in other AWS services when these events occur. For more information, see the [Amazon CloudWatch Events User Guide](#).
- Amazon CloudWatch Logs makes it possible for you to monitor, store, and access your log files from Amazon Elastic Compute Cloud (Amazon EC2) instances, AWS CloudTrail, and other sources. CloudWatch Logs can monitor information in the log files and notify you when certain thresholds are met. You can also archive your log data in highly durable storage. For more information, see the [Amazon CloudWatch Logs User Guide](#).
- CloudTrail captures API calls and related events made by or on behalf of your AWS account and delivers the log files to an Amazon Simple Storage Service (Amazon S3) bucket that you specify. You can identify which users and accounts called AWS, the source IP address from which the calls were made, and when the calls occurred.

Amazon EventBridge events

AWS Data Exchange is integrated with Amazon EventBridge, formerly called Amazon CloudWatch Events. EventBridge is an event bus service that you can use to connect your applications with data from a variety of sources. For more information, see the [Amazon EventBridge User Guide](#).

As a subscriber with an active subscription to a product, you receive an *event* from AWS Data Exchange every time the provider publishes new revisions or adds new data sets to an existing product. The *event* contains the `DataSetId` and the list of `RevisionIds` that have been published.

This topic provides detailed information about each event listed in the following table.

Action by provider	Event received by subscriber	Related topic
Adds an Amazon S3 data set to a product and publishes it	Data Sets Published To Product	the section called “Events for adding Amazon S3 data sets” (p. 137)
Adds an Amazon Redshift data set to a product and publishes it	Redshift Data Shares Data Sets Published To Product	Events for adding Amazon Redshift datashare data sets (p. 138)
Adds an Amazon S3 data set revision to a product and publishes it	Revision Published To Data Set	Events for adding revisions (p. 139)
Revokes revision to a product	Revision Revoked	Events for revoking revisions (p. 139)
Adds an Amazon Redshift data set revision to a product and publishes it	Revision Published To Redshift Data Shares Data Set	Events for adding Amazon Redshift datashare data set revisions (p. 140)
Takes an action on their Amazon Redshift resources that <i>might</i> remove access from a subscriber	Action Performed On Redshift Data Share By Provider	Events for an action performed on an Amazon Redshift resource (p. 141)
Takes an action on their Amazon Redshift resources that removes access from a subscriber	Redshift Data Share Access Lost	Events for losing access to an Amazon Redshift datashare (p. 141)
Adds an Amazon API Gateway data set to a product and publishes it	API Gateway API Data Sets Published To Product	the section called “Events for adding Amazon API Gateway API data sets ” (p. 142)
Adds an Amazon API Gateway data set revision to a product and publishes it	Revision Published To API Gateway API Data Set	the section called “Events for adding Amazon API Gateway API data set revisions” (p. 143)

Note

AWS Data Exchange emits events on a best effort basis.

Events for adding Amazon S3 data sets

When a provider adds an Amazon S3 data set to a product and publishes it, the subscriber receives an event with the following detail type: `Data Sets Published To Product`.

The following is an example event body for an added Amazon S3 data set.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Data Sets Published To Product",
```

```
{
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2020-07-29T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "prod-uEXAMPLEabc1d"
  ],
  "detail": {
    "DataSetIds": [
      "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
      "5bgd734EXAMPLE100f7gdd9EXAMPLEe9"
    ],
    "DataSets": [
      {
        "Id" : "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
        "Name": "Data_Set_Hello_World_One"
      },
      {
        "Id" : "5bgd734EXAMPLE100f7gdd9EXAMPLEe9",
        "Name": "Data_Set_Hello_World_Two"
      }
    ],
    "Product": {
      "Id" : "prod-uEXAMPLEabc1d",
      "Name": "Product_Hello_World"
    }
  }
}
```

Events for adding Amazon Redshift datashare data sets

When a provider adds an Amazon Redshift datashare data set to a product and publishes it, the subscriber receives an event with the following detail type: `Redshift Data Shares Data Sets Published To Product`.

The following is an example event body for an added Amazon Redshift datashare data set.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Redshift Data Shares Data Sets Published To Product",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "prod-uEXAMPLEabc1d"
  ],
  "detail": {
    "DataSetIds": [
      "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
      "5bgd734EXAMPLE100f7gdd9EXAMPLEe9"
    ],
    "DataSets": [
      {
        "Id" : "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
        "Name": "Data_Set_Hello_World_One"
      },
      {
        "Id" : "5bgd734EXAMPLE100f7gdd9EXAMPLEe9",
        "Name": "Data_Set_Hello_World_Two"
      }
    ]
  }
}
```



```
    }
  ],
  "Product": {
    "Id" : "prod-uEXAMPLEabc1d",
    "Name": "Product_Hello_World"
  }
}
}
```

Events for adding revisions

When a provider adds a data set to a product and publishes it, the subscriber receives an event with the following detail type: `Revision Published To Data Set`.

The following is an example event body for an added revision.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Revision Published To Data Set",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2020-07-29T04:16:28Z",
  "region": "us-east-1",
  "resources": [
    "aae4c2cdEXAMPLE54f9369dEXAMPLE66"
  ],
  "detail": {
    "RevisionIds": [
      "3afc623EXAMPLE099e6fcc8EXAMPLEe7"
    ],
    "Revisions": [
      {
        "Id" : "3afc623EXAMPLE099e6fcc8EXAMPLEe7",
        "Comment": "Revision_Comment_One"
      }
    ],
    "DataSets": [
      {
        "Id" : "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
        "Name": "Data_Set_Hello_World_One"
      }
    ],
    "Product": {
      "Id" : "prod-uEXAMPLEabc1d",
      "Name": "Product_Hello_World"
    }
  }
}
```

Events for revoking revisions

When a provider revokes a revision to a product and publishes it, the subscriber receives an event with the following detail type: `Revision Revoked`.

The following is an example event body for a revoked revision.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
```

```
"detail-type": "Revision Revoked",
"source": "aws.dataexchange",
"account": "123456789012",
"time": "2022-02-17T21:25:06Z",
"region": "us-east-1",
"resources": [
  "aae4c2cdEXAMPLE54f9369dEXAMPLE66"
],
"detail": {
  "RevisionIds": [
    "3afc623EXAMPLE099e6fcc8EXAMPLEe7"
  ],
  "RevocationComment": "example revocation comment",
  "Revisions": [
    {
      "Id" : "3afc623EXAMPLE099e6fcc8EXAMPLEe7",
      "Comment": "Revision_Comment_One"
    }
  ],
  "DataSets": [
    {
      "Id" : "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
      "Name": "Data_Set_Hello_World_One"
    }
  ],
  "Product": {
    "Id" : "prod-uEXAMPLEabc1d",
    "Name": "Product_Hello_World"
  }
}
}
```

Events for adding Amazon Redshift datashare data set revisions

When a provider adds an Amazon Redshift datashare data set revision to a product and publishes it, the subscriber receives an event with the following detail type: `Revision Published To Redshift Data Shares Data Set`.

The following is an example event body for an added Amazon Redshift datashare data set revision.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Revision Published To Redshift Data Shares Data Set",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "aae4c2cdEXAMPLE54f9369dEXAMPLE66"
  ],
  "detail": {
    "RevisionIds": [
      "3afc623EXAMPLE099e6fcc8EXAMPLEe7"
    ],
    "Revisions": [
      {
        "Id" : "3afc623EXAMPLE099e6fcc8EXAMPLEe7",
        "Comment": "Revision_Comment_One"
      }
    ],
    "DataSets": [
      {
        "Id" : "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
```

```
        "Name": "Data_Set_Hello_World_One"
      },
    ],
    "Product": {
      "Id": "prod-uEXAMPLEabc1d",
      "Name": "Product_Hello_World"
    }
  }
}
```

Events for an action performed on an Amazon Redshift resource

When a provider takes an action on their Amazon Redshift resources that *might* remove access from a subscriber, the subscriber receives an event with the following detail type: Action Performed On Redshift Data Share By Provider.

For example, if a provider changes the data share's public accessibility setting from true to false, the subscriber receives an event.

The following is an example event body for an action performed on an Amazon Redshift resource.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Action Performed On Redshift Data Share By Provider",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "arn:aws:redshift:us-east-1:098765432123:datashare:01234567-2590-7654-1234-f57ea0081234/test_data_share"
  ],
  "detail": {
    "Message": "This is an example message which explains why you may have lost access.",
    "AssociatedProducts": [
      {
        "ProductId": "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
        "DataSetIds": [
          "4afc623EXAMPLE099e6fcc8EXAMPLEe8"
        ],
        "DataSets": [
          {
            "Id": "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
            "Name": "Data_Set_Hello_World_One"
          }
        ],
        "Product": {
          "Id": "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
          "Name": "Product_Hello_World"
        }
      }
    ]
  }
}
```

Events for losing access to an Amazon Redshift datashare

When a provider takes an action on their Amazon Redshift resources that removes access from a subscriber, the subscriber receives an event with the following detail type: Redshift Data Share Access Lost.

For example, if a provider deletes an Amazon Redshift datashare or deletes a cluster, the subscriber receives an event.

The following is an example event body for losing access to an Amazon Redshift datashare.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Redshift Data Share Access Lost",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "arn:aws:redshift:us-east-1:098765432123:datashare:01234567-2590-7654-1234-f57ea0081234/test_data_share"
  ],
  "detail": {
    "Message": "This is an example message which explains why you may have lost access.",
    "AssociatedProducts": [
      {
        "ProductId": "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
        "DataSetIds": [
          "4afc623EXAMPLE099e6fcc8EXAMPLEe8"
        ],
        "DataSets": [
          {
            "Id": "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
            "Name": "Data_Set_Hello_World_One"
          }
        ],
        "Product": {
          "Id": "prod-uEXAMPLEeabc1d",
          "Name": "Product_Hello_World"
        }
      }
    ]
  }
}
```

Events for adding Amazon API Gateway API data sets

When a provider adds an Amazon API Gateway API data set to a product and publishes it, the subscriber receives an event with the following detail type: Amazon API Gateway Data Sets Published To Product.

The following is an example event body for an added Amazon API Gateway API data set.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "API Gateway API Data Sets Published To Product",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "prod-uEXAMPLEeabc1d"
  ],
  "detail": {
```

```
    "DataSetIds": [
      "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
      "5bgd734EXAMPLE100f7gdd9EXAMPLEe9"
    ],
    "DataSets": [
      {
        "Id" : "4afc623EXAMPLE099e6fcc8EXAMPLEe8",
        "Name": "Data_Set_Hello_World_One"
      },
      {
        "Id" : "5bgd734EXAMPLE100f7gdd9EXAMPLEe9",
        "Name": "Data_Set_Hello_World_Two"
      }
    ],
    "Product": {
      "Id" : "prod-uEXAMPLEabc1d",
      "Name": "Product_Hello_World"
    }
  }
}
```

Events for adding Amazon API Gateway API data set revisions

When a provider adds an Amazon API Gateway API data set revision to a product and publishes it, the subscriber receives an event with the following detail type: `Revision Published To API Gateway Data Set`.

The following is an example event body for an added Amazon API Gateway API data set revision.

```
{
  "version": "0",
  "id": "dc529cb6-2e23-4c5f-d020-EXAMPLE92231",
  "detail-type": "Revision Published To API Gateway API Data Set",
  "source": "aws.dataexchange",
  "account": "123456789012",
  "time": "2021-12-15T18:24:04Z",
  "region": "us-east-1",
  "resources": [
    "aae4c2cdEXAMPLE54f9369dEXAMPLE66"
  ],
  "detail": {
    "RevisionIds": [
      "3afc623EXAMPLE099e6fcc8EXAMPLEe7"
    ],
    "Revisions": [
      {
        "Id" : "3afc623EXAMPLE099e6fcc8EXAMPLEe7",
        "Comment": "Revision_Comment_One"
      }
    ],
    "DataSets": [
      {
        "Id" : "aae4c2cdEXAMPLE54f9369dEXAMPLE66",
        "Name": "Data_Set_Hello_World_One"
      }
    ],
    "Product": {
      "Id" : "prod-uEXAMPLEabc1d",
      "Name": "Product_Hello_World"
    }
  }
}
```

Error code	Message	Description
CLUSTER_DELETED	The datashare is unavailable because the provider deleted their cluster. Please contact the provider for more information.	This message is sent when the datashare is no longer available because the provider deleted the cluster containing the datashare.
CLUSTER_ENCRYPTION_DISABLED	The datashare is unavailable because the provider disabled encryption on their cluster. Please contact the provider for more information.	This message is sent when the datashare is no longer available because the provider disabled encryption on their cluster. To use a datashare, both the provider and the subscriber must have encryption enabled.
DATASHARE_DELETED	The datashare is unavailable because the provider deleted the datashare. Please contact the provider for more information.	This message is sent when the datashare is no longer available because the provider deleted it. The provider must create a new datashare so that you can regain access to the data.
DATASHARE_DEAUTHORIZED	The datashare is unavailable because the provider deauthorized the datashare. Please contact the provider for more information.	This message is sent when the datashare is no longer available because the provider deauthorized the datashare. The provider must create a new datashare so that you can regain access to the data.
DATASHARE_PUBLIC_CONSUMER_BLOCKED	Blocked. You cannot access a non-publicly accessible datashare from a publicly accessible cluster. You must turn off public accessibility on your cluster to access this datashare. Please contact your provider for more information.	This message is sent when a provider sets the Publicly accessible option to Disable on the cluster that contains their datashare. If the subscriber's cluster has the Publicly accessible option set to Disable , it will not affect their ability to access the datashare. For the subscriber to access the datashare, either the subscriber must set the Publicly accessible option to Disable on their cluster, or the provider must set the Publicly accessible option to Enable on their cluster. Disable on the cluster that contains their datashare. If the subscriber's cluster has the Publicly accessible option set to Disable , it will not affect their ability to access the datashare. For the subscriber to access the datashare, either the subscriber must set the Publicly accessible

Error code	Message	Description
		option to Disable on their cluster, or the provider must set the Publicly accessible option to Enable on their cluster.

Logging AWS Data Exchange API calls with AWS CloudTrail

AWS Data Exchange is integrated with AWS CloudTrail, a service that provides a record of actions taken by a user, role, or an AWS service in AWS Data Exchange. AWS CloudTrail captures all calls to AWS Data Exchange API operations as events, including calls from the AWS Data Exchange console and from code calls to the AWS Data Exchange API operations.

If you create a trail, you can enable continuous delivery of CloudTrail events to an Amazon Simple Storage Service (Amazon S3) bucket, including events for AWS Data Exchange. If you don't configure a trail, you can still view the most recent events in the CloudTrail console in **Event history**. Using the information collected by CloudTrail, you can determine the request that was made to AWS Data Exchange, the IP address from which the request was made, who made the request, when it was made, and other details.

Important

Some actions you can take are console-only actions. There is no corresponding API in the AWS SDK or AWS Command Line Interface (AWS CLI). These are actions that rely on AWS Marketplace functionality, such as publishing or subscribing to a product. AWS Data Exchange provides CloudTrail logs for a subset of these console-only actions. See the following list of console-only actions for which CloudTrail logs are provided.

For more information, see [What Is AWS CloudTrail?](#)

In addition to CloudTrail events for all the [AWS Data Exchange APIs](#) and corresponding console actions, AWS Data Exchange also provides CloudTrail trails for a subset of the AWS Marketplace-backed console-only actions. AWS Data Exchange provides a CloudTrail log for the following console-only actions:

Subscriber actions

- Subscribe to a product
- Send subscription verification request
- Enable subscription auto-renewal
- Disable subscription auto-renewal
- Cancel subscription verification request

Provider actions

- Publish a product
- Unpublish a product
- Edit a product
- Create custom offer
- Edit custom offer
- Approve subscription verification request
- Decline subscription verification request
- Delete subscriber contact information

AWS Data Exchange information in CloudTrail

CloudTrail is enabled when you create your AWS account. When activity occurs in AWS Data Exchange, the activity is recorded in a CloudTrail event along with other AWS service events in **Event history**. You can view, search, and download recent events in your AWS account. For more information, see [Viewing Events with CloudTrail Event History](#) in the *AWS CloudTrail User Guide*.

For an ongoing record of events in your AWS account, including events for AWS Data Exchange, create a trail. CloudTrail uses this trail to deliver log files to an S3 bucket. By default, when you use the console to create a trail, it applies to all AWS Regions. The trail logs events from all Regions and delivers the log files to the S3 bucket that you specify. You can configure other AWS services to further analyze and act upon the event data collected in CloudTrail logs. For more information, see:

- [Overview for Creating a Trail](#)
- [CloudTrail Supported Services and Integrations](#)
- [Configuring Amazon SNS Notifications for CloudTrail](#)
- [Receiving CloudTrail Log Files from Multiple Regions](#)
- [Receiving CloudTrail Log Files from Multiple Accounts](#)

All AWS Data Exchange actions are documented in the *AWS Data Exchange API Reference*. Every AWS Data Exchange action, except for `SendAPIAsset`, is logged by CloudTrail. For example, calls to the `CreateDataSet`, `StartImportAssetsFromS3Workflow`, and `ListRevisionAssets` API operations generate entries in the CloudTrail log files.

Every event or log entry contains information about who generated the request. The identity information helps you determine the following:

- Whether the request was made with root or AWS Identity and Access Management (IAM) user credentials.
- Whether the request was made with temporary security credentials for a role or federated user.
- Whether the request was made by another AWS service.

For more information, see [CloudTrail `userIdentity` Element](#).

Understanding AWS Data Exchange log file entries

A trail is a configuration that makes it possible to deliver events as log files to an S3 bucket that you specify. CloudTrail log files contain one or more log entries. An event represents a single request from any source and includes information about the requested action, the date and time of the action, request parameters, and so on. CloudTrail log files are not an ordered stack trace of the public API calls, so they do not appear in any order.

Note

These examples have been formatted to improve readability. In a CloudTrail log file, all entries and events are concatenated into a single line. This example has been limited to a single AWS Data Exchange entry. In a real CloudTrail log file, you see entries and events from multiple AWS services.

The following example shows a CloudTrail log entry that demonstrates the `CreateDataSet` operation.

```
{
  "eventVersion": "1.05",
  "userIdentity": {
    "type": "AssumedRole",
```



```
"principalId": "AIDACKCEVSQ6C2EXAMPLE:account_name",
"arn": "arn:aws:sts::123456789012:user/Mary_Major",
"accountId": "123456789012",
"accessKeyId": "AKIAIOSFODNN7EXAMPLE",
"sessionContext": {
  "attributes": {
    "mfaAuthenticated": "false",
    "creationDate": "2018-06-20T18:32:25Z"
  },
  "sessionIssuer": {
    "type": "Role",
    "principalId": "AIDACKCEVSQ6C2EXAMPLE",
    "arn": "arn:aws:iam::123456789012:role/Admin",
    "accountId": "123456789012",
    "userName": "username"
  }
},
"eventTime": "2018-06-20T19:04:36Z",
"eventSource": "dataexchange.amazonaws.com",
"eventName": "CreateDataSet",
"awsRegion": "us-east-1",
"sourceIPAddress": "203.0.113.12",
"userAgent": "console.amazonaws.com",
"requestParameters": {
  "Name": "MyDataSet",
  "AssetType": "S3_SNAPSHOT",
  "Description": "This is my data set"
},
"responseElements": {
  "Origin": "OWNED",
  "AssetType": "S3_SNAPSHOT",
  "Name": "MyDataSet",
  "CreatedAt": 1726255485679,
  "UpdatedAt": 1726255485679,
  "Arn": "arn:aws:dataexchange:us-east-1:123456789012:data-sets/DataSetIdentifier",
  "Id": "DataSetIdentifier",
  "Description": "This is my data set"
},
"requestID": "cb8c167e-EXAMPLE",
"eventID": "e3c6f4ce-EXAMPLE",
"readOnly": false,
"eventType": "AwsApiCall",
"recipientAccountId": "123456789012"
}>
```

Compliance validation for AWS Data Exchange

Third-party auditors assess the security and compliance of AWS services as part of multiple AWS compliance programs, such as SOC, PCI, FedRAMP, and HIPAA.

To learn whether an AWS service is within the scope of specific compliance programs, see [AWS services in Scope by Compliance Program](#) and choose the compliance program that you are interested in. For general information, see [AWS Compliance Programs](#).

You can download third-party audit reports using AWS Artifact. For more information, see [Downloading Reports in AWS Artifact](#).

Your compliance responsibility when using AWS services is determined by the sensitivity of your data, your company's compliance objectives, and applicable laws and regulations. AWS provides the following resources to help with compliance:

- [Security and Compliance Quick Start Guides](#) – These deployment guides discuss architectural considerations and provide steps for deploying baseline environments on AWS that are security and compliance focused.
- [Architecting for HIPAA Security and Compliance on Amazon Web Services](#) – This whitepaper describes how companies can use AWS to create HIPAA-eligible applications.

Note

Not all AWS services are HIPAA eligible. For more information, see the [HIPAA Eligible Services Reference](#).

- [AWS Compliance Resources](#) – This collection of workbooks and guides might apply to your industry and location.
- [Evaluating Resources with Rules](#) in the *AWS Config Developer Guide* – The AWS Config service assesses how well your resource configurations comply with internal practices, industry guidelines, and regulations.
- [AWS Security Hub](#) – This AWS service provides a comprehensive view of your security state within AWS that helps you check your compliance with security industry standards and best practices.
- [AWS Audit Manager](#) – This AWS service helps you continuously audit your AWS usage to simplify how you manage risk and compliance with regulations and industry standards.

PCI DSS compliance

AWS Data Exchange supports the processing, storage, and transmission of credit card data by a merchant or service provider, and has been validated as being compliant with Payment Card Industry (PCI) Data Security Standard (DSS). For more information about PCI DSS, including how to request a copy of the AWS PCI Compliance Package, see [PCI DSS Level 1](#).

Resilience in AWS Data Exchange

The AWS global infrastructure is built around AWS Regions and Availability Zones. AWS Regions provide multiple physically separated and isolated Availability Zones, which are connected with low-latency, high-throughput, and highly redundant networking. With Availability Zones, you can design and operate applications and databases that fail over between Availability Zones without interruption. Availability Zones are more highly available, fault tolerant, and scalable than traditional single or multiple data center infrastructures.

AWS Data Exchange has a single, globally available product catalog offered by providers. Subscribers can see the same catalog, regardless of which Region they are using. The resources underlying the product (data sets, revisions, assets) are regional resources that you manage programmatically or through the AWS Data Exchange console in supported Regions. AWS Data Exchange replicates your data across multiple Availability Zones within the Regions where the service operates. For information about supported Regions, see [Global Infrastructure Region Table](#).

For more information about AWS Regions and Availability Zones, see [AWS Global Infrastructure](#).

Infrastructure security in AWS Data Exchange

AWS Data Exchange is protected by the AWS global network security procedures that are described in the [Amazon Web Services: Overview of Security Processes](#) whitepaper.

You use AWS published API calls to access AWS services and resources through the network. Clients must support Transport Layer Security (TLS) 1.0 or later. We recommend TLS 1.2 or later. Clients must also support cipher suites with perfect forward secrecy (PFS), such as Ephemeral Diffie-Hellman (DHE)

or Elliptic Curve Ephemeral Diffie-Hellman (ECDHE). Most modern systems, such as Java 7 and later, support these modes.

Requests must also be signed by using an access key ID and a secret access key that is associated with an AWS Identity and Access Management (IAM) principal. Or, you can use the [AWS Security Token Service](#) (AWS STS) to generate temporary security credentials to sign requests.

AWS Data Exchange and interface VPC endpoints (AWS PrivateLink)

You can establish a private connection between your virtual private cloud (VPC) and AWS Data Exchange by creating an *interface VPC endpoint*. Interface endpoints are powered by [AWS PrivateLink](#), a technology that enables you to privately access AWS Data Exchange API operations without an internet gateway, NAT device, VPN connection, or AWS Direct Connect connection. Instances in your VPC don't need public IP addresses to communicate with AWS Data Exchange API operations. Traffic between your VPC and AWS Data Exchange does not leave the Amazon network.

Each interface endpoint is represented by one or more [Elastic Network Interfaces](#) in your subnets.

Note

Every AWS Data Exchange action, except for `SendAPIAsset`, is supported for VPC.

For more information, see [Interface VPC endpoints \(AWS PrivateLink\)](#) in the *Amazon VPC User Guide*.

Considerations for AWS Data Exchange VPC endpoints

Before you set up an interface VPC endpoint for AWS Data Exchange, ensure that you review [Interface endpoint properties and limitations](#) in the *Amazon VPC User Guide*.

AWS Data Exchange supports making calls to all of its API operations from your VPC.

VPC endpoint policies are not supported for AWS Data Exchange. By default, full access to AWS Data Exchange is allowed through the endpoint. For more information, see [Controlling access to services with VPC endpoints](#) in the *Amazon VPC User Guide*.

Creating an interface VPC endpoint for AWS Data Exchange

You can create a VPC endpoint for the AWS Data Exchange service using either the Amazon VPC console or the AWS Command Line Interface (AWS CLI). For more information, see [Creating an interface endpoint](#) in the *Amazon VPC User Guide*.

Create a VPC endpoint for AWS Data Exchange using the following service name:

- `com.amazonaws.region.dataexchange`

If you enable private DNS for the endpoint, you can make API requests to AWS Data Exchange using its default DNS name for the AWS Region, for example, `com.amazonaws.us-east-1.dataexchange`.

For more information, see [Accessing a service through an interface endpoint](#) in the *Amazon VPC User Guide*.

Creating a VPC endpoint policy for AWS Data Exchange

You can attach an endpoint policy to your VPC endpoint that controls access to AWS Data Exchange. The policy specifies the following information:

- The principal that can perform actions
- The actions that can be performed
- The resources on which actions can be performed

For more information, see [Controlling access to services with VPC endpoints](#) in the *Amazon VPC User Guide*.

Example: VPC endpoint policy for AWS Data Exchange actions

The following is an example of an endpoint policy for AWS Data Exchange. When attached to an endpoint, this policy grants access to the listed AWS Data Exchange actions for all principals on all resources.

This example VPC endpoint policy allows full access only to the AWS Identity and Access Management (IAM) user `bts` in AWS account `123456789012` from `vpc-12345678`. The IAM user `readUser` is allowed to read the resources, but all other IAM principals are denied access to the endpoint.

```
{
  "Id": "example-policy",
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Allow administrative actions from vpc-12345678",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
          "arn:aws:iam::123456789012:user/bts"
        ]
      },
      "Action": "*",
      "Resource": "*",
      "Condition": {
        "StringEquals": {
          "aws:sourceVpc": "vpc-12345678"
        }
      }
    },
    {
      "Sid": "Allow ReadOnly actions",
      "Effect": "Allow",
      "Principal": {
        "AWS": [
          "arn:aws:iam::123456789012:user/readUser"
        ]
      },
      "Action": [
        "dataexchange:list*",
        "dataexchange:get*"
      ],
      "Resource": "*"
    }
  ]
}
```

Using AWS Data Exchange with the AWS Marketplace Catalog API

This chapter contains supplemental information for using AWS Data Exchange and the AWS Marketplace Catalog API. The AWS Marketplace Catalog API service provides an API interface for you as a provider to programmatically access the AWS Marketplace self-service publishing capabilities.

The API supports a wide range of operations for you to view and manage your products. You can extend your internal build or deployment pipeline to AWS Marketplace through API integration to automate your product update process. You can also create your own internal user interface on top of the API to manage your products on the AWS Marketplace.

You can use the AWS Marketplace Catalog API to update your AWS Data Exchange products. To view your products, you can use the `ListEntities` and `DescribeEntity` API operations. To update your AWS Data Exchange product, you need to create a new change set, which is the Catalog API resource that represents an asynchronous operation used to manage products. For more information, see the [AWS Marketplace Catalog API Reference](#).

Keep the following in mind when working with the Catalog API:

- Each AWS Data Exchange product is represented in the Catalog API as an [Entity](#).
- AWS Data Exchange products have `DataProduct` as the `EntityType`.
- Each product can have only one concurrently running change set at a time. This means that you can't create a second change set until the first one has finished running.

Topics

- [\(p. 151\)](#)
- [AddDataSets \(p. 151\)](#)

AddDataSets

Note

Data sets added via the Catalog API change set of type `AddDataSets` default to the publishing method of the product.

To add data sets to your AWS Data Exchange product, start a change set of type `AddDataSets`. To do so, you can use the `StartChangeSet` API operation and specify the change type, the product identifier, the product type, and the details including the data set Amazon Resource Name (ARN).

Tutorial: Adding new data sets to a published data product

This tutorial walks you through detailed steps to add new AWS Data Exchange data sets to a published product. The tutorial has the following high-level steps.

Topics

- [Set up IAM permissions \(p. 152\)](#)
- [Access the AWS Marketplace Catalog API \(p. 152\)](#)
- [Get your product ID from the AWS Data Exchange console \(p. 152\)](#)
- [Start a change request \(p. 153\)](#)
- [Check the status of your change set \(p. 153\)](#)

Set up IAM permissions

Before you begin, you need AWS Identity and Access Management (IAM) permissions for using the AWS Marketplace Catalog API. These permissions are in addition to the permissions you need for using AWS Data Exchange.

1. Navigate your browser to the IAM console and sign in using an AWS account that can manage IAM permissions.
2. From the left navigation pane, choose **Policies**.
3. Choose **Create policy**.
4. Choose the **JSON** tab, and provide the following permissions. This provides full access to the AWS Marketplace Catalog API. You can restrict access as appropriate for your use case.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "aws-marketplace:CancelChangeSet",
        "aws-marketplace:ListChangeSets",
        "aws-marketplace:DescribeEntity",
        "aws-marketplace:StartChangeSet",
        "aws-marketplace:ListEntities",
        "aws-marketplace:DescribeChangeSet",
        "dataexchange:PublishDataSet"
      ],
      "Resource": "*"
    }
  ]
}
```

5. Choose **Next: Review**.
6. Provide a name for the policy (for example, **CatalogAPIFullAccess**), and then choose **Create Policy**.
7. Using the IAM console, choose the users, groups, or roles that you want to attach the policy to.

Access the AWS Marketplace Catalog API

To access the AWS Marketplace Catalog API, use the following HTTP client endpoint.

```
catalog.marketplace.us-east-1.amazonaws.com
```

Get your product ID from the AWS Data Exchange console

Before you can use the AWS Marketplace Catalog API to publish new data sets, get your product ID from the AWS Data Exchange console. Navigate to the **Product Dashboard**, and then copy the product ID

you would like to publish data sets for. You may also use the [AWS Marketplace Catalog API](#) to find your product ID, using the `ListEntities` action with the `DataProduct@1.0` entity type.

Start a change request

To start a change request to add a data set in your test product

1. Copy the entity ID that you get by following the instructions in [Get your product ID from the AWS Data Exchange console](#) (p. 152).
2. Make a `StartChangeSet` request with an `AddDataSets` change type.

Note

For information about working with change sets in the AWS Marketplace Catalog API, see [Working with change sets](#). For more information about working with the identifier for entities, see [Identifier](#).

Example request

```
https://catalog.marketplace.us-east-1.amazonaws.com/StartChangeSet
```

Example request body

```
{
  "Catalog": "AWSMarketplace",
  "ChangeSetName": "Adding Data Set to my test Data Product",
  "ChangeSet": [
    {
      "ChangeType": "AddDataSets",
      "Entity": {
        "Identifier": "entity-id@1",
        "Type": "DataProduct@1.0"
      },
      "Details": "{ \"DataSets\": [ { \"Arn\": \"data-set-arn\" } ] }"
    }
  ]
}
```

Example response

```
{
  "ChangeSetId": "cs-bnEXAMPLE4mkz9oh",
  "ChangeSetArn": "arn:aws:aws-marketplace:us-east-1:account-id:AWSMarketplace/ChangeSet/cs-bnEXAMPLE4mkz9oh"
}
```

Check the status of your change set

After you use the `StartChangeSet` API operation to start the change request, you can use the `DescribeChangeSet` operation to check its status. Provide the change set ID returned in the `StartChangeSet` API response.

Example request

```
https://catalog.marketplace.us-east-1.amazonaws.com/DescribeChangeSet?
catalog=AWSMarketplace&changeSetId=cs-bnEXAMPLE4mkz9oh
```

Example request body

```
{
  "changeSetId": "cs-bnEXAMPLE4mkz9oh"
}
```

Example response

```
{
  "ChangeSetId": "cs-bnEXAMPLE4mkz9oh",
  "ChangeSetArn": "arn:aws:aws-marketplace:us-east-1:account-id:AWSMarketplace/ChangeSet/cs-bnEXAMPLE4mkz9oh",
  "ChangeSetName": "Adding Data Set to my test Data Product",
  "StartTime": "2018-09-20T19:45:03.115+0000",
  "EndTime": "2018-09-20T19:48:12.517+0000",
  "Status": "SUCCEEDED",
  "FailureDescription": null,
  "ChangeSet": [
    {
      "ChangeType": "AddDataSets",
      "Entity": {
        "Type": "DataProduct@1.0",
        "Identifier": "entity-id@1"
      },
      "ErrorList": []
    }
  ]
}
```

AddDataSets exceptions

The following exceptions can occur when you use the AWS Marketplace Catalog API with AWS Data Exchange:

DATA_SET_NOT_FOUND

This happens when the requested data set was not found. To resolve this issue, ensure that there's not a typo in the data set ARN and that your AWS account owns the data set, and try again.

INVALID_INPUT

The request couldn't be processed due to input that isn't valid. To resolve this issue, ensure that there's not a typo in the request and that the product does not exceed the maximum number of allowed data sets.

DATA_SET_ALREADY_PUBLISHED

This happens when the data set has already been previously added to the product.

DATA_SET_DUPLICATE_PROVIDED

This happens when the same data set is provided more than once in the request.

Document history for AWS Data Exchange

The following table describes the documentation for this release of the *AWS Data Exchange User Guide*. For notification about updates to this documentation, you can subscribe to the RSS feed.

To subscribe to RSS updates, you must have an RSS plug-in enabled for the browser you are using.

Change	Description	Date
Israel is now an eligible jurisdiction (p. 155)	Residents in Israel are now eligible to become sellers on AWS Data Exchange. For more information, see Getting started as a provider .	August 29, 2022
Extended Provider Program (p. 155)	The Extended Provider Program (EPP) is now generally available. For more information, see Extended Provider Program (EPP) .	August 9, 2022
Export file size limit increase (p. 155)	The file size limit of a cross-Region revision export to Amazon S3 has increased from 100 GB to 1,000 GB. The number of assets that can be exported to Amazon S3 in a single cross-Region ExportRevision job has increased from 2,000 to 10,000. For more information, see Export and import job guidelines .	August 4, 2022
Similar products (p. 155)	Subscribers can now see a list of similar products at the bottom of a product detail page, which they can use to continue their browse journey without needing to return to the search results page. For more information, see Subscribe to and access a product .	July 28, 2022
Post-subscription enhancement (p. 155)	After subscribing to a product that contains different types of data sets, subscribers can now view see separate cards with icons that display the different types of data sets. Subscribers can learn more information about the data sets and go directly to their entitled data	July 25, 2022

	from the post-subscription page. In addition, subscribers to products that contain S3 data sets can set up manual or automatic exports directly on the post-subscription page. For more information, see Subscribe to and access a product .	
Ability to export data set ID and data set name when exporting revisions (p. 155)	When exporting revisions to an Amazon S3 bucket, both providers and subscribers can now export the data set ID and the name of the data set being exported. For more information, see Exporting revisions .	July 14, 2022
Integration with Open Data on AWS (p. 155)	Anyone, with or without an AWS account, can now search and find data products from the Open Data on AWS project. For more information, see Using Open Data on AWS data sets .	June 21, 2022
Exporting data sets video (p. 155)	Documentation-only update to add a video: One-Time Exports of Third-Party Data Sets from AWS Data Exchange. For more information, see Exporting assets and Exporting revisions .	May 27, 2022
Ability to specify metered costs for API products and subscribe to API products with Pay As You Go pricing (p. 155)	Providers can now specify metered costs for their API products. For more information, see Publishing a product containing APIs . Subscribers can now find and subscribe to third-party APIs with Pay As You Go pricing. This feature reduces upfront subscriber costs relative to monthly data file subscriptions. For more information, see Subscribe to and access a product containing APIs .	May 19, 2022
Ability to view and edit subscription verification requests as a provider (p. 155)	Documentation-only update to clarify how to view and edit subscription verification requests as a provider. For more information, see Subscription verification for providers .	May 6, 2022

Updated tutorials to include data dictionaries and samples (p. 155)	The following tutorials now include data dictionaries and samples: Tutorial: Subscribe to AWS Data Exchange Heartbeat on AWS Data Exchange , Tutorial: Subscribe to AWS Data Exchange for APIs (Test Product) on AWS Data Exchange , and Tutorial: Subscribe to Worldwide Event Attendance (Test Product) on AWS Data Exchange .	April 13, 2022
Ability to provide and subscribe to products containing data dictionaries and samples (p. 155)	Providers can now create and update data products that contain data dictionaries and samples. For more information, see Data dictionaries and Samples . Subscribers can evaluate the products containing data dictionaries and samples before subscribing. For more information, see Data dictionaries and samples . Subscribers can learn more about how to manage their subscriptions in the new topic Managing subscriptions .	March 31, 2022
Publishing products video (p. 155)	Documentation-only update to add a video: Publish products on AWS Data Exchange . For more information, see Publishing a new product .	March 18, 2022
Update to existing policy (p. 155)	The following new permission has been added to the <code>AWSDDataExchangeProviderFullAccess</code> managed policy: <code>dataexchange:RevokeRevision</code> . For more information, see AWS managed policies .	March 15, 2022
Ability to revoke revisions (p. 155)	Providers can revoke subscribers' access to a revision and delete the assets of the revision. For more information, see Revoking revisions . Subscribers will get an Amazon EventBridge event notifying them that their access to the revision was revoked and the reason for the revocation. For more information, see Amazon EventBridge events .	March 15, 2022

Added tutorial for subscribing to products containing API data sets (p. 155)	The following new tutorial has been added: Tutorial: Subscribe to AWS Data Exchange for APIs (Test Product) on AWS Data Exchange .	January 14, 2022
Ability to publish and subscribe to products containing Amazon Redshift data sets (p. 155)	Providers can now create and license products that contain Amazon Redshift data sets. For more information, see Publishing a product containing Amazon Redshift data sets . Subscribers can now find, subscribe to, and use data from the data provider's Amazon Redshift data sets. For more information, see Subscribing to a product containing Amazon Redshift data sets . Subscribers can also receive notifications when a provider performs actions on an Amazon Redshift resource. For more information, see Amazon EventBridge events . The following tutorial has been added: Tutorial: Subscribe to Worldwide Event Attendance (Test Product) on AWS Data Exchange .	January 4, 2022
Update to existing policies (p. 155)	The following new permission to retrieve an API from Amazon API Gateway has been added to the AWS managed policies: <code>AWSDataExchangeProviderFullAccess</code> and <code>AWSDataExchangeFullAccess: apigateway:GET</code> . For more information, see AWS managed policies .	December 3, 2021
Update to existing policies (p. 155)	The following new permission to send a request to an API asset has been added to the AWS managed policies: <code>AWSDataExchangeProviderFullAccess</code> and <code>AWSDataExchangeSubscriberFullAccess: dataexchange:SendApiAsset</code> . For more information, see AWS managed policies .	November 29, 2021

Ability to provide and subscribe to third-party APIs (p. 155)	Providers can now create API data products using AWS Data Exchange and use AWS Data Exchange to manage subscriber authentication, pricing, billing, and pay-as-you-go access to their REST APIs. For more information, see Publishing a new API data product . Subscribers can now find and subscribe to API-based data from third-party REST APIs in the AWS Cloud. They can use AWS native authentication and governance and use AWS-generated SDKs to make API calls. For more information, see Subscribing to an API data product .	November 29, 2021
Update to existing policies (Public Preview) (p. 155)	The following new permissions to authorize access to and create Amazon Redshift data sets have been added to the AWS managed policies (Public Preview): AWSDataExchangeProviderFullAccess and AWSDataExchangeFullAccess: redshift:AuthorizeDataShare, redshift:DescribeDataSharesForProducer, and redshift:DescribeDataShares. For more information, see AWS managed policies .	November 1, 2021
Ability to publish and subscribe to Amazon Redshift data products (Public Preview) (p. 155)	Providers can now create and license Amazon Redshift data products using AWS Data Exchange. For more information, see Publishing a new Amazon Redshift data product (Preview) . Subscribers can now find, subscribe to, and use data from the data provider's Amazon Redshift data sets. For more information, see Subscribing to an Amazon Redshift data product (Preview)	October 19, 2021

Update to an existing policy (p. 155)	The following new permissions to control access to automatically export new revisions of data sets have been added to the AWS managed policy <code>AWSDataExchangeSubscriberFullAccess</code> : <code>dataexchange:CreateEventAction</code> , <code>dataexchange:UpdateEventAction</code> , and <code>dataexchange>DeleteEventAction</code> . For more information, see AWS managed policies .	September 30, 2021
Ability to automatically export revisions (p. 155)	Subscribers can now automatically export revisions. For more information, see Automatically exporting revisions to an S3 bucket as a subscriber (console) .	September 30, 2021
Updated procedure for how to use jobs (p. 155)	The Jobs in AWS Data Exchange section has been updated to clarify how to import and export assets and export revisions through jobs.	September 7, 2021
Added procedure for how to unsubscribe from a data product (p. 155)	The Subscribing to data products on AWS Data Exchange section has been reorganized and a new subsection has been added to clarify how to unsubscribe from a product. For more information, see Unsubscribe from a product on AWS Data Exchange .	August 11, 2021
Support for sharing licenses through AWS License Manager (p. 155)	You can share licenses to products that you purchase with other accounts in your AWS organization. For more information, see Sharing license subscriptions in an organization .	August 4, 2021
Ability to automatically publish revisions (p. 155)	Providers can now automatically publish revisions to data sets. For more information, see Publishing a new data set revision using automatic revision publishing . For information about how to migrate an existing data set to automatic revision publishing, see Migrating an existing product to automatic revision publishing .	July 22, 2021

Updated product description templates (p. 155)	The following product description templates have been updated: Media and entertainment long description template and Retail and location long description template .	July 19, 2021
More eligible jurisdictions (p. 155)	The following are now eligible to become sellers on AWS Data Exchange: Hong Kong SAR and Qatar. For more information, see Eligible jurisdictions for AWS Data Exchange products .	June 24, 2021
Ability to view changes to managed policies (p. 155)	You can now see the changes made to AWS managed policies for AWS Data Exchange. They are tracked in the AWS managed policies for AWS Data Exchange topic.	May 25, 2021
Added payment scheduler (p. 155)	You can now use a payment schedule to invoice subscribers for private or renewed private offers. For more information, see Create private offers .	May 24, 2021
Added ability to add data sets programmatically (p. 155)	You can now add data sets using the AWS Marketplace Catalog API service. For more information, see Using AWS Data Exchange with the AWS Marketplace Catalog API .	August 23, 2020
Support for preferred currency (p. 155)	You can pay for AWS Data Exchange subscriptions using your preferred currency. For more information see Pricing .	July 27, 2020
More eligible jurisdictions (p. 155)	The following are now eligible to become sellers on AWS Data Exchange: Bahrain, Norway, Switzerland, and the United Arab Emirates (UAE). For more information, see Eligible jurisdictions for AWS Data Exchange products .	June 16, 2020
Added encryption support for exporting data sets (p. 155)	AWS Data Exchange now supports configurable encryption parameters when exporting data sets to Amazon S3. For more information, see Exporting assets to an Amazon S3 Bucket .	April 27, 2020

[AWS Data Exchange is now generally available \(p. 155\)](#)

AWS Data Exchange is a service that makes it easy for AWS customers to create, update, maintain, and securely exchange file-based data sets in the AWS Cloud.

November 13, 2019

AWS glossary

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