AWS Service Catalog

User Guide

AWS Service Catalog: User Guide

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What Is AWS Service Catalog?

AWS Service Catalog allows organizations to create and manage catalogs of IT services that are approved for use on AWS. These IT services can include everything from virtual machine images, servers, software, and databases to complete multi-tier application architectures. AWS Service Catalog allows organizations to centrally manage commonly deployed IT services, and helps organizations achieve consistent governance and meet compliance requirements, while enabling users to quickly deploy only the approved IT services they need with the constraints your organization sets.
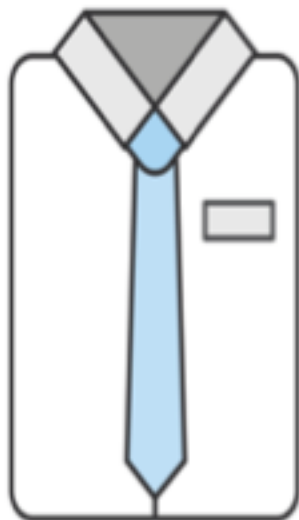
Control
Standardization
Governance

Administrator

AWS Service Catalog provides the following benefits:

- **Promote standardization**

  Administer and manage approved assets by restricting where the product can be launched, the type of instance that can be used, and many other configuration options. The result is a standardized landscape for product provisioning for your entire organization.

- **Self-service discovery and launch**

  Users browse listings of products (services or applications) that they have access to, locate the product that they want to use, and launch it all on their own as a provisioned product.
- **Fine-grain access controls of configuration and provisioning**

  Administrators assemble portfolios of products from their catalog, add constraints and resource tags to be used at provsioning, and then grant access to the portfolio through AWS Identity and Access Management (IAM) users and groups.
- **Extensibility and version control**

  Administrators can add a product to any number of portfolios and restrict it without creating another copy. Updating the product to a new version propagates the update to all products in every portfolio that references it.

For more service highlights, see the AWS Service Catalog detail page.

The AWS Service Catalog API provides programmatic control over all end-user actions as an alternative to using the AWS Management Console. For more information, see AWS Service Catalog Developer Guide

Concepts

Understanding the basic components of AWS Service Catalog, shown in the following diagram, will help you get the most out of this service.

Topics

AWS Service Catalog Users

AWS Service Catalog users might be either of the following types, depending on the level of permissions that they have:

- **Catalog administrators (administrators)** – Manage a catalog of products (applications and services), organizing them into portfolios and granting access to end users. Catalog administrators prepare AWS CloudFormation templates, configure constraints, and manage IAM roles that are assigned to products to provide for advanced resource management.
- **End users** – Receive AWS credentials from their IT department or manager and use the AWS Management Console to launch products to which they have been granted access. Sometimes referred to as simply "*users*", end users may be granted different permissions depending on your operational requirements. For example, a user may have the maximum permission level (to launch and manage all of the resources required by the products they use) or only permission to particular service features.

Portfolio

A portfolio is a collection of *products*, together with configuration information. Portfolios help manage who can use specific products and how they can use them. With AWS Service Catalog, you can create a customized portfolio for each type of user in your organization and selectively grant access to the appropriate portfolio. When you add a new *version* of a product to a portfolio, that version is automatically available to all current users. You also can share your portfolios with other AWS accounts and allow the administrator of those accounts to distribute your portfolios with additional *constraints*, such as limiting which EC2 instances a user can create. Through the use of portfolios, permissions, sharing, and constraints, you can ensure that users are launching products that are configured properly for the organization's needs and standards.

Product

A product is an IT service that you want to make available for deployment on AWS. A product can comprise one or more AWS resource, such as EC2 instances, storage volumes, databases, monitoring configurations, and networking components, or packaged AWS Marketplace products. A product can be a single compute instance running AWS Linux, a fully configured multi-tier web application running in its own environment, or anything in between. You most commonly create your products by importing AWS CloudFormation templates. These templates define the AWS resources required for the product, the relationships between resources, and the parameters that the end user can plug in when they launch the product to configure security groups, create key pairs, and perform other customizations.

Provisioned Product

When an end user launches a product, an instance of the product is created and is using resources. Most commonly, a provisioned product is an AWS CloudFormation *stack*.

Stack

AWS CloudFormation stacks make it easier to manage the lifecycle of your product by allowing you to provision, tag, update, and terminate your product instance as a single unit. An AWS CloudFormation stack includes an AWS CloudFormation template and its associated collection of resources. A *provisioned product* in AWS Service Catalog is most commonly a stack. When an end user launches a product, the instance of the product that is provisioned by AWS Service Catalog is a stack of resources necessary to run the product.

Versioning

AWS Service Catalog allows you to manage multiple versions of the products in your catalog. This allows you to add new versions of templates and associated resources based on software updates or configuration changes. When you create a new version of a product, the update is automatically distributed to all users who have access to the product, allowing the user to select which version of the product to use. Users can update running instances of the product to the new version quickly and easily.

Permissions

Granting a user access to a portfolio enables that user to browse the portfolio and launch the products in it. You apply AWS Identity and Access Management (IAM) permissions to control who can view and modify your catalog. IAM permissions can be assigned to IAM users, groups, and roles. When a user launches a product that has an IAM role assigned to it, AWS Service Catalog uses the role to launch the product's cloud resources using AWS CloudFormation. By assigning an IAM role to each product, you can avoid giving users permissions to perform unapproved operations and enable them to provision resources using the catalog.

Constraints

Constraints control the ways that specific AWS resources can be deployed for a product. You can use them to apply limits to products for governance or cost control. There are two types of constraints: template and launch. Template constraints restrict the configuration parameters that are available for the user when launching the product (for example, EC2 instance types or IP address ranges). Template constraints allow you to reuse generic AWS CloudFormation templates for products and apply restrictions to the templates on a per-product or per-portfolio basis. Launch constraints allow you to specify a role for a product in a portfolio. This role is used to provision the resources at launch, so you can restrict user permissions without impacting users' ability to provision products from the catalog.

AWS Service Catalog Default Service Limits

By default, AWS limits the products and portfolios you can create, the number of constraints that you can apply to products, and the number of tags that you can apply to portfolios. The following table lists the limits for each AWS Service Catalog resource.

Default Limits

Resource	Limit
Portfolios	25 per account
Products	25 per account
Product Versions	50 per product
Constraints	25 per product per portfolio
Tags	3 per product, 3 per portfolio, 10 per stack
Stacks	200 per account (AWS CloudFormation limit)

For more information on limits, including how to increase limits for your account, refer to AWS Service Limits in *AWS General Reference*.

Using the End User Console

Use the AWS Service Catalog end user console to start and stop the products you need to do your job. Also use the end user console to manage the computing resources (known collectively as a *provisioned product*) needed to run those products. Because products are usually based on AWS CloudFormation templates, a provisioned product is sometimes referred to as a *stack*. The home page for the end user console is the dashboard, which you can find at https://console.aws.amazon.com/servicecatalog/.

> **Note**
> If you see an error message when attempting to access the AWS Service Catalog end user console, contact your administrator to ensure that your account has both the permissions required to use the AWS Service Catalog service and access to one or more products.

Topics

Using the Dashboard

The AWS Service Catalog dashboard displays a list of products and a list of provisioned products. From the dashboard, you can launch products, and view, update, or delete provisioned products that you have created.

To view the AWS Service Catalog Dashboard

- Sign in to the AWS Management Console and open the AWS Service Catalog end user console at https://console.aws.amazon.com/servicecatalog/.

While using AWS Service Catalog, you can return to the dashboard at any time by choosing the link at the top of the page or by choosing **Dashboard** from the **Service Catalog** menu.

The Dashboard shows up to five products and five provisioned products. You can see a complete list of products and provisioned products on the **Products list** and **Provisioned product list** pages, which you can display by choosing them from the **Service Catalog** menu.

Using the Products List

The **Products list** shows the applications, tools, and cloud resources that your administrator has made available to you. You can use the **Products list** to launch an instance of those products and manage each stack you create.

To view the Product list

1. Sign in to the AWS Management Console and open the AWS Service Catalog end user console at https://console.aws.amazon.com/servicecatalog/.
2. Choose **See all products**.

You can return to the **Products list** at any time by choosing **Service Catalog** in the navigation bar, and then choosing **Products list**.

Using the Provisioned Product List

The **Provisioned product list** page displays all of the provisioned products that you have created by launching products. By default, the **Provisioned product list** shows each provisioned product's name, the time it was created, its current status, and a status message, if applicable. You can also use the column chooser to show provisioned product ARNs (Amazon Resource Names) and the time they were last updated. Use the **Provisioned product list** to search for provisioned products by name, update a provisioned product to a new version, or delete a provisioned product.

To view the Provisioned product list page

1. Sign in to the AWS Management Console and open the AWS Service Catalog end user console at https://console.aws.amazon.com/servicecatalog/.
2. Choose **See all provisioned products**.

While using AWS Service Catalog, you can return to the **Provisioned product list** at any time by choosing **Service Catalog** in the navigation bar, and then choosing **Provisioned product list**.

To change the columns that are visible

1. Choose the **Edit columns** button (the gear icon at the top right of the **Provisioned product list** page).
2. Choose any of the available columns to show or hide them.
3. Choose **Save**.

Viewing Available Products

The **Product details** page displays information about a product, including a description of the product, details about product versions, and support information.

To view detailed information about a product

1. Navigate to the **Products list**.
2. Choose the product name.

Choosing the Product Version

If multiple versions of a product are available, you can decide which version to use by reading the version descriptions. Typically, you should use the latest version of a product.

Launch options

The Launch options for the product includes identifiers for the product, the portfolio used to deliver it, and constraints or tags that are applied during launch.

- **Launch as** – The ARN of the role assumed by AWS Service Catalog to launch the product. If this field is blank, the product is launched with your user permissions.
- **Rules** – The names of template constraints applied to the product during launch.
- **Tags** – The names and values of tags that are inherited from the portfolio or product.

Tags

Tags are metadata assigned to a provisioned product for tracking and analysis. In addition to the tags that you enter when you launch a product, a provisioned product may have tags that were applied to the product or to the portfolio by the AWS Service Catalog administrator.

Support Details

Support details can include an email address, URL, or both. Support details are provided by the administrator when creating the product. Use this information to get help with your products.

Launching a Product

You can launch any product that appears in your AWS Service Catalog dashboard or products list. Launching a product creates provisioned product, usually an instance of the product in an AWS CloudFormation stack. A provisioned product in AWS is one or more cloud resources (compute instances, databases, networking components, etc.) that you manage as a single unit.

To launch a product

1. Choose the product in the AWS Service Catalog dashboard or products list, and then choose **Launch product**.
2. On the **Product Version** page, enter a name. Provisioned product names must start with a letter and can contain only letters, numbers, and dashes.
3. Choose the version of the product to launch, and then choose **Next**.
4. On the **Parameters** page, enter values for each parameter required by the product, and then choose **Next**. If a product has no parameters, AWS Service Catalog skips this step.
5. On the **Tags** page, add the tags that you would like to use with your provisioned product, and then choose **Next**. Tags can have a key and value and they help you identify resources in your provisioned product.

A provisioned product can inherit a maximum of three tags each from the product and portfolio, and can have a maximum of ten tags. Additional tags are added to some resources by AWS CloudFormation, but these do not apply toward the limit and do not appear on this page.

6. On the **Review** page, review the values that you entered, and then choose **Launch**.

When you choose **Launch**, you are redirected to the **Provisioned product details** page. If you want to see status message updates as resources are created and parameters are validated, choose **Refresh**.

If a problem occurs during launch, the status changes to **Failed**. To identify the problem, choose the provisioned product name to display the **Provisioned product details** page by choosing the provisioned product's name.

If the product launches successfully, the status changes to **Available**. To see output generated by the launch, click through to the **Provisioned product details** page.

Viewing Provisioned Product Information

Each provisioned product has a **Provisioned product details** page that displays information about the provisioned product. The **Provisioned product details** page is available from the time the product is first launched until the provisioned product is deleted.

To view details about a provisioned product

1. Navigate to the **Dashboard** or **Provisioned product list**.
2. Choose the provisioned product.

Viewing Provisioned Product Status

Each provisioned product that you launch changes state as AWS Service Catalog attempts to create and configure AWS resources using the product template and parameters that the user enters during launch. If all goes well, the provisioned product advances from an initial status of **Launching** to **Available**.

A provisioned product's status is shown in the **Dashboard**, **Provisioned product list**, and on the **Provisioned product details** page. A status of **Available** indicates that the product launched successfully and is ready for use.

If any of the cloud resources in a provisioned product failed to start or if parameters failed to pass all constraints applied to the product, all of the resources are terminated and the provisioned product has a status of **Failed**. A failed provisioned product cannot be recovered, but remains in the **Provisioned product list** for troubleshooting.

When you update a provisioned product to use a new version or different parameters, the provisioned product's status is **Updating**. If the update succeeds, the provisioned product's status changes to **Available**.

The status of a deleted provisioned products is **Terminating** while resources are being terminated. When all of the resources have terminated, the provisioned product is removed from AWS Service Catalog and no longer is listed.

The operations that you can perform on a provisioned product depends on the provisioned product's status. For example, provisioned products that are **Available** can be updated or deleted, but provisioned products that are **Launching**, **Updating**, or **Terminating** cannot. **Failed** provisioned products can only be viewed and deleted.

Viewing Outputs

Provisioned products provide information, called outputs, when a product is launching. Outputs usually display URLs, IP addresses, and database connection strings that are generated when the provisioned product is launched. Each output has a key, value, and description.

How you use the information provided by outputs depends on the type of product you launch. For example, if the product launches an EC2 instance, the provisioned product might generate the IP address of the instance, which you could use to connect to the instance using Remote Desktop Connection or SSH.

Viewing AWS CloudFormation Events

AWS CloudFormation provides information during each step of the launch and updating processes, and you can obtain the information using an AWS CloudFormation ARN. This ARN is provided in the **Provisioned product details** page (expand all the subsections to find the current list of events), provided the provisioned product uses a AWS CloudFormation stack. When a AWS CloudFormation stack's status changes, resources are created, or errors occur, AWS CloudFormation logs an event with the following information:

- **Date** – The time that the event occurred, in local time.
- **Status** – The condition of a resource in a provisioned product, as opposed to the Viewing Provisioned Product Status (p. 8).
- **Type** – The type of the resource that is is referenced by the event. For details on resource types, see Resource Types in the *AWS CloudFormation User Guide*.
- **Logical ID** – The name of the resource, as defined in the template.
- **Status reason** – Additional information about the provisioned product's status, if available.
- **Physical ID** – The physical identifier of the resource, which appears when you choose an event.

Entering Parameters

You enter parameters when launching or updating a provisioned product. If you enter an incorrect parameter value when you launch or update a provisioned product, **CREATE_FAILED** will appear in the Viewing AWS CloudFormation Events (p. 9) section.

Viewing Tags

Tags are metadata that are applied to the provisioned product during launch. The **Provisioned product details** page also shows tags that were inherited from the product and portfolio.

Viewing Support Details

If your AWS Service Catalog administrator provided support information in this optional section, you will find an email address or site link that you can use to get support if you encounter problems with your provisioned product. It might also contain additional support information.

Updating Provisioned Products

When you want to use a new version of a product or configure a provisioned product with updated parameter values, you update it. However, you cannot update a provisioned product to change tags.

You can update provisioned products only if they have a status of **Available**. You cannot update failed provisioned products or provisioned products that are in the process of starting, updating, or terminating. See Viewing Provisioned Product Status (p. 8) for more information on provisioned product status.

To update a provisioned product

1. Choose the provisioned product, and then choose **Update provisioned product**.
2. Choose the version that you want to update, and then choose **Next**.
3. Enter the parameters, and then choose **Next**.
4. Choose **Update**.

The provisioned product status changes to **Updating**. To see output from the update operation, open the **Provisioned product details** page and expand the **Events** section.

Deleting Provisioned Products

To remove all AWS resources that a provisioned product uses, delete the provisioned product. Deleting a provisioned product terminates all resources and removes the provisioned product from your provisioned product list. Delete a provisioned product only if you no longer need it. Before deleting a provisioned product, record any information about the provisioned product or its resources that you might need later.

Before deleting a provisioned product, ensure that it is in either the available or failed state. AWS Service Catalog can delete provisioned products only in these two states. For more information on provisioned product status, see Viewing Provisioned Product Status (p. 8).

To delete a provisioned product

1. Navigate to the **Dashboard** page or the **Provisioned product list** page.
2. Select the provisioned product, and then choose **Terminate provisioned product**.
3. Verify that you've chosen the provisioned product that you want to delete, and then choose **Terminate**.

Document History

The following table describes the important changes to the documentation since the last release of AWS Service Catalog.

- **Latest documentation update**: July 9, 2015

Feature	Description	Release Date
New guide	This is the first release of *AWS Service Catalog User Guide*.	July 9, 2015