Administer workload factory

Setup and administration

NetApp
September 03, 2025

Table of Contents

Administer workload factory

Log in to BlueXP workload factory

After you sign up to BlueXP workload factory, you can log in at any time from the web-based console to start managing your workloads and FSx for ONTAP file systems.

About this task

You can log in to the workload factory web-based console using one of the following options:

- Your existing NetApp Support Site (NSS) credentials
- A NetApp cloud login using your email address and a password

Steps

1. Open a web browser and go to the workload factory console.
2. On the **Log in** page, enter the email address that's associated with your login.
3. Depending on the authentication method associated with your login, you'll be prompted to enter your credentials:
   - NetApp cloud credentials: Enter your password
   - Federated user: Enter your federated identity credentials
   - NetApp Support Site account: Enter your NetApp Support Site credentials
4. Select **Log in**.

   If you have successfully logged in in the past, you'll see the workload factory home page and you'll be using the default account.

   If this is the first time that you've logged in, you'll be directed to the **Account** page.

   - If you are a member of a single account, select **Continue**.
   - If you are a member of multiple accounts, select the account and select **Continue**.

Result

You're now logged in and can start using workload factory to manage FSx for ONTAP file systems and your workloads.

Manage service accounts

Create service accounts to act as machine users that automate infrastructure operations. You can revoke or change access to service accounts at any time.

About this task

Service accounts are a multi-tenancy functionality provided by BlueXP. Account admins create service accounts, control access, and delete service accounts. You can manage service accounts in the BlueXP console or in the BlueXP workload factory console.

Unlike managing service accounts in BlueXP where you can recreate a client secret, workload factory supports only creation and deletion of service accounts. If you want to recreate a client secret for a specific service

account in the BlueXP workload factory console, you'll need to delete the service account, and then create a new one.

Service accounts use a client ID and a secret for authentication rather than a password. Client IDs and secrets are fixed until the account admin decides to change them. To use a service account, you'll need the client ID and secret to generate the access token or you won't gain access. Keep in mind that access tokens are short-lived and can only be used for several hours.

Before you begin

Decide if you want to create a service account in the BlueXP console or in the BlueXP workload factory console. There are slight differences. The following instructions describe how to manage service accounts in the BlueXP workload factory console.

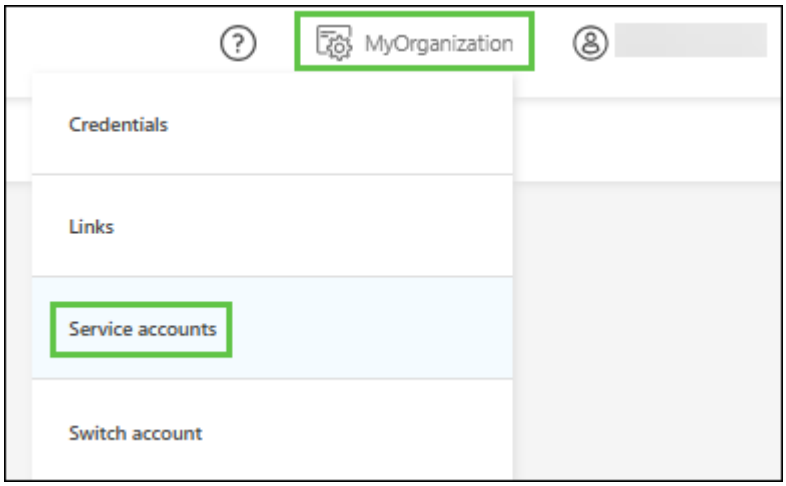
To manage service accounts in BlueXP, learn about BlueXP identity and access management and learn how to add BlueXP IAM members and manage their permissions.

Create a service account

When you create a service account, BlueXP workload factory enables you to copy or download a client ID and client secret for the service account. This key pair is used for authentication with BlueXP workload factory.

Steps

1. In the workload factory console, select the **Account** icon, and select **Service accounts**.



2. On the **Service accounts** page, select **Create service account**.
3. In the Create service account dialog, enter a name for the service account in the **Service account name** field.

   The **role** is preselected as **account admin**.

4. Select **Continue**.
5. Copy or download the client ID and client secret.

   The client secret is visible only once and is not stored anywhere by workload factory. Copy or download the secret and store it safely.

6. Optionally, you can get an access token for Auth0 management API by executing a client credentials exchange. The curl example shows how can you take the client ID and secret and use an API to generate the access token which are time-limited. The token provides several hours of access to the BlueXP

workload factory APIs.

7. Select **Close**.

The new service account is created and listed on the Service accounts page.

Delete a service account

Delete a service account if you no longer need to use it.

Steps

1. In the Workload Factory console, select the **Account** icon, and select **Service accounts**.
2. On the **Service accounts** page, select the three-dot menu and then select **Delete**.
3. In the Delete service account dialog, enter **delete** in the text box.
4. Select **Delete** to confirm deletion.

The service account is deleted.

Configure BlueXP workload factory notifications

You can configure the BlueXP workload factory notification service to send notifications to the BlueXP alerts service or to an Amazon SNS topic. Notifications sent to BlueXP alerts appear in the BlueXP alerts panel. When workload factory publishes notifications to an Amazon SNS topic, subscribers to the topic (such as people or other applications) receive the notifications at the endpoints configured for the topic (such as email or SMS messages).

Notification types and messages

Workload factory sends notifications for the following events:

Event	Description	Notification type	Severity	Workload	Resource type
Some database instances in your account are not well-architected	All Microsoft SQL Server instances in your account have been analyzed for well-architected issues. The description for this event gives the number of well-architected instances and unoptimized instances. Review well-architected status findings and recommendations in the Databases inventory from the workload factory console.	Well-architected	Recommendation	Databases	Microsoft SQL Server instance
Microsoft SQL Server/PostgreSQL server deployment succeeded	The deployment of the Microsoft SQL Server or PostgreSQL host succeeded. For more information, go to job monitoring.	Deployment	Success	Databases	FSx for ONTAP, DB host

Event	Description	Notification type	Severity	Workload	Resource type
Microsoft SQL Server/PostgreSQL server deployment failed	The deployment of the Microsoft SQL Server or PostgreSQL host failed. For more information, go to job monitoring.	Deployment	Error	Databases	FSx for ONTAP, DB host
Failed replication relationship creation	A SnapMirror replication relationship creation has failed. For more information, go to Tracker.	Replication	Critical	General storage	FSx for ONTAP
FSx for ONTAP creation failure	An FSx for ONTAP file system creation process has failed. For more information, go to Tracker.	FSx for ONTAP file system action	Critical	General storage	FSx for ONTAP

Configure workload factory notifications

Configure workload factory notifications using the BlueXP console or the workload factory console. If you use the BlueXP console, you can configure workload factory to send notifications to BlueXP alerts or to an Amazon SNS topic. You can configure BlueXP alerts from the **Alerts and notifications settings** area in BlueXP.

Before you begin

- You need to configure Amazon SNS and create Amazon SNS topics using either the Amazon SNS console or the AWS CLI.
- Note that workload factory supports the **Standard** topic type. This type of topic does not ensure that notifications are sent to subscribers in the order in which they were received, so consider this if you have critical or emergency notifications.

Configure notifications from the BlueXP console

Steps

1. Log in to the BlueXP console.
2. Select **Workloads** from the left navigation.
3. Select **Home** to view all workloads or select one workload like **Storage** or **Databases**.
4. From the workload factory menu bar, select the configuration menu.
5. In the menu, select **Workload Factory notification setup**.
6. Optional: Select **Enable BlueXP notifications** to configure workload factory to send notifications to BlueXP alerts.
7. Select **Enable SNS notifications**.
8. Follow the instructions to configure Amazon SNS from the Amazon SNS console.

   After you create the topic, copy the topic ARN and enter it in the **SNS topic ARN** field in the **Notification setup** dialog.

9. After you verify the configuration by sending a test notification, select **Apply**.

Result

Workload factory is configured to send notifications to the Amazon SNS topic that you specified.

Configure notifications from workload factory console

Steps

1. Log in to the workload factory console.
2. Open the account menu from the top navigation bar.
3. In the menu, select **Notification setup**.
4. Select **Enable SNS notifications**.
5. Follow the instructions to configure Amazon SNS from the Amazon SNS console.
6. After you verify the configuration by sending a test notification, select **Apply**.

Result

Workload factory is configured to send notifications to the Amazon SNS topic that you specified.

Subscribe to the Amazon SNS topic

After you configure workload factory to send notifications to a topic, follow the instructions in the Amazon SNS documentation to subscribe to the topic so that you can receive notifications from workload factory.

Filter notifications

You can reduce unnecessary notification traffic and target specific notification types for specific users by applying filters to the notifications. You can do this using an Amazon SNS policy for SNS notifications, and using the BlueXP notifications settings for BlueXP notifications.

Filter Amazon SNS notifications

When you subscribe to an Amazon SNS topic, you receive all notifications published to that topic by default. If you want to receive only specific notifications from the topic, you can use a filter policy to control which notifications you receive. Filter policies cause Amazon SNS to deliver only the notifications that match the filter policy to the subscriber.

You can filter Amazon SNS notifications by the following criteria:

Description	Filter policy field name	Possible values
Resource type	`resourceType`	• `DB` • `Microsoft SQL Server host` • `PostgreSQL Server host`
Workload	`workload`	`WLMDB`
Priority	`priority`	• `Success` • `Info` • `Recommendation` • `Warning` • `Error` • `Critical`
Notification type	`notificationType`	• `Deployment` • `Well-architected`

Steps

1. In the Amazon SNS console, edit the subscription details for the SNS topic.
2. In the **Subscription filter policy** area, select to filter by **Message attributes**.
3. Enable the **Subscription filter policy** option.
4. Enter a JSON filter policy in the **JSON editor** box.

   For example, the following JSON filter policy accepts notifications from the Microsoft SQL Server resource that are related to the WLMDB workload, have a priority of Success or Error, and provide details on Well-architected status:

```
{
  "accountId": [
    "account-a"
  ],
  "resourceType": [
    "Microsoft SQL Server host"
  ],
  "workload": [
    "WLMDB"
  ],
  "priority": [
    "Success",
    "Error"
  ],
  "notificationType": [
    "Well-architected"
  ]
}
```

5. Select **Save changes**.

For other examples of filter policies, refer to Amazon SNS example filter policies.

For further information about creating filter policies, refer to the Amazon SNS documentation.

Filter BlueXP notifications

You can use the BlueXP alerts and notifications settings to filter the alerts and notifications that you receive in BlueXP by severity level, such as Critical, Info, or Warning.

For more information about filtering notifications in BlueXP, refer to the BlueXP documentation.

Automate tasks using Codebox

Learn about codebox automation

Codebox is an Infrastructure as Code (IaC) co-pilot that helps developers and DevOps generate the code needed to execute any operation supported by workload factory. Codebox is aligned with the workload factory operation modes (*basic*, *read-only*, and *read/write*) and it sets a clear path for execution readiness as well as providing an automation catalog for quick future reuse.

Codebox capabilities

Codebox provides two key IaC capabilities:

- *Codebox Viewer* shows the IaC that is generated by a specific job flow operation by matching entries and selections from the graphical wizard or from the conversational chat interface. While Codebox Viewer

supports color coding for easy navigation and analysis, it does not allow editing—only copying or saving code to the Automation Catalog.

- *Codebox Automation Catalog* shows all saved IaC jobs, allowing you to easily reference them for future use. Automation catalog jobs are saved as templates and shown in context of the resources that apply to them.

Additionally, when setting up workload factory credentials, Codebox dynamically displays the AWS permissions that are needed to create IAM policies. The permissions are provided for each workload factory capability that you plan to use (databases, AI, FSx for ONTAP, and so on), and they are customized based on whether the users of the policy will get *read-only* permissions or full *read/write* permissions. You just copy the permissions from Codebox and then paste them in the AWS Management Console so that workload factory has the correct permissions to manage your workloads.

Supported code formats

The supported code formats include:

- Workload factory REST APIs
- AWS CLI
- AWS CloudFormation

Learn how to use Codebox.

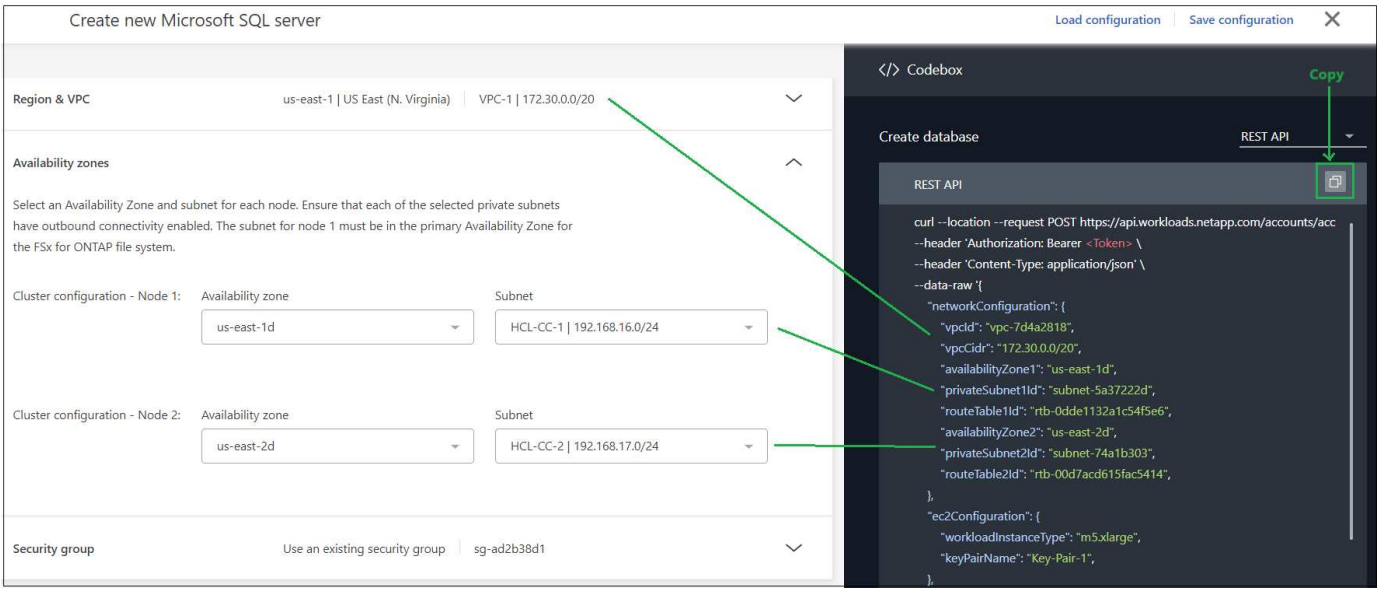
Use Codebox for automation in BlueXP workload factory

You can use Codebox to generate the code needed to execute any operation supported by BlueXP workload factory. You can generate code that can be consumed and run using workload factory REST APIs, the AWS CLI, and AWS CloudFormation.

Codebox is aligned with the workload factory operation modes (*basic*, *read-only*, and *read/write*) by populating the appropriate data in the code based on the AWS permissions provided in the workload factory account for each user. The code can be used like a template where you can fill in missing information (for example, credentials) or customize certain data before running the code.

How to use Codebox

As you enter values in the workload factory UI wizards, you can see the data update in Codebox as you complete each field. When you complete the wizard, but before you select the **Create** button at the bottom of the page, select  to copy in Codebox to capture the code required to build your configuration. For example, this screenshot from creating a new Microsoft SQL Server shows the wizard entries for VPC and availability zones and the equivalent entries in Codebox for a REST API implementation.



With some code formats you can also select the Download button to save the code in a file that you can bring to another system. If required, you can edit the code after it has been downloaded so that you can adapt it to other AWS accounts.

Use CloudFormation code from Codebox

You can copy the CloudFormation code generated from Codebox and then launch the Amazon Web Services CloudFormation stack in your AWS account. CloudFormation will perform the actions that you defined in the workload factory UI.

The steps to use the CLoudFormation code might be different depending on whether you are deploying an FSx for ONTAP file system, creating account credentials, or performing other workload factory actions.

Note that the code within a CloudFormation-generated YAML file expires after 7 days for security reasons.

Before you begin

- You'll need to have credentials to log in to your AWS account.
- You'll need to have the following user permissions to use a CloudFormation stack:

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "cloudformation:CreateStack",
                "cloudformation:UpdateStack",
                "cloudformation:DeleteStack",
                "cloudformation:DescribeStacks",
                "cloudformation:DescribeStackEvents",
                "cloudformation:DescribeChangeSet",
                "cloudformation:ExecuteChangeSet",
                "cloudformation:ListStacks",
                "cloudformation:ListStackResources",
                "cloudformation:GetTemplate",
                "cloudformation:ValidateTemplate",
                "lambda:InvokeFunction",
                "iam:PassRole",
                "iam:CreateRole",
                "iam:UpdateAssumeRolePolicy",
                "iam:AttachRolePolicy",
                "iam:CreateServiceLinkedRole"
            ],
            "Resource": "*"
        }
    ]
}
```

Steps

1. After you have used the UI to define the operation that you want to perform, copy the code in the Codebox.
2. Select **Redirect to CloudFormation** and the Redirect to CloudFormation page is displayed.
3. Open another browser window and log in to the AWS Management Console.
4. Select **Continue** from the Redirect to CloudFormation page.
5. Log in to the AWS account where the code should be run.
6. On the Quick create stack page, under Capabilities, select **I acknowledge that AWS CloudFormation might ….**
7. Select **Create stack**.
8. Monitor the progress from AWS or from workload factory.

Use REST API code from Codebox

You can use the workload factory REST APIs generated from Codebox to deploy and manage your FSx for ONTAP file systems and other AWS resources.

You can run the APIs from any host that supports curl and that has internet connectivity.

Note that the authentication tokens are hidden in Codebox, but they are populated when you copy and paste the API call.

Steps

1. After you have used the UI to define the operation that you want to perform, copy the API code in the Codebox.
2. Paste the code and run it on your host system.

Use AWS CLI code from Codebox

You can use the Amazon Web Services CLI generated from Codebox to deploy and manage your FSx for ONTAP file systems and other AWS resources.

Steps

1. After you have used the UI to define the operation that you want to perform, copy the AWS CLI in the Codebox.
2. Open another browser window and log in to the AWS Management Console.
3. Paste the code and run it.

Use Terraform from Codebox

You can use Terraform to deploy and manage your FSx for ONTAP file systems and other AWS resources.

Before you begin

- You'll need a system where Terraform is installed (Windows/Mac/Linux).
- You'll need to have credentials to log in to your AWS account.

Steps

1. After you have used the user interface to define the operation that you want to perform, download the Terraform code from the Codebox.
2. Copy the downloaded script archive to the system where Terraform is installed.
3. Extract the zip file and follow the steps in the README.md file.

Use CloudShell in BlueXP workload factory

Open CloudShell to execute AWS or ONTAP CLI commands from anywhere in the BlueXP workload factory user interface.

About this task

CloudShell allows you to execute AWS CLI commands or ONTAP CLI commands in a shell-like environment from within the BlueXP workload factory user interface. It simulates terminal sessions in the browser, providing terminal features and proxying messages through workload factory's backend. It allows you to use the AWS

credentials and ONTAP credentials that you have provided in your BlueXP account.

CloudShell features include:

- Multiple CloudShell sessions: deploy multiple CloudShell sessions at one time to issue several sequences of commands in parallel,
- Multiple views: split CloudShell tab sessions so you can view two or more tabs horizontally or vertically at the same time
- Session renaming: rename sessions as needed
- Last session content persistence: re-open the last session if you close it by mistake
- Settings preferences: change the font size and output type
- AI-generated error responses for ONTAP CLI commands
- Autocomplete support: start typing a command and use the **Tab** key to view available options

CloudShell commands

Within the CloudShell GUI interface, you can enter `help` to view available CloudShell commands. After you issue the `help` command, the following reference appears.

Description

NetApp CloudShell is a GUI interface built into BlueXP workload factory enables you to execute AWS CLI commands or ONTAP CLI commands in a shell-like environment. It simulates terminal sessions in the browser, providing terminal features and proxying messages through the backend in workload factory. It enables you to use the AWS credentials and ONTAP credentials that you have provided in your BlueXP Account.

Available commands

- `clear`
- `help`
- `[--fsx <fsxId>] <ontap-command> [parameters]`
- `aws <aws-command> <aws-sub-command> [parameters]`

Context

Each terminal session runs in a specific context: credentials, region, and optionally FSx for ONTAP file system.

All AWS commands execute in the provided context. AWS commands will only succeed if the provided credentials have permissions in the specified region.

You can specify ONTAP commands with an optional `fsxId`. If you provide an `fsxId` with an individual ONTAP command, then this ID overrides the ID in the context. If the terminal session doesn't have an FSx for ONTAP file system ID context, then you must provide `fsxId` with each ONTAP command.

To update different context specifics, do the following:
* To change credentials: "using credentials <credentialId>"
* To change region: "using region <regionCode>"
* To change FSx for ONTAP file system: "using fsx <fileSystemId>"

Showing Items

- To show available credentials: "show credentials"
- To show available regions: "show regions"
- To show command history: "show history"

Variables

The following are examples of setting and using variables. If a variable value contains spaces, you should set it inside quotes.

- To set a variable: $<variable> = <value>
- To use a variable: $<variable>
- Example setting a variable: $svm1 = svm123
- Example using a variable: --fsx FileSystem-1 volumes show --vserver $svm1
- Example setting a variable with string value $comment1 = "A comment with spaces"

Operators

Shell operators such as pipe `|`, background execution `&`, and redirection `>` aren't supported. Command execution fails if you include these operators.

Before you begin

CloudShell works in the context of your AWS credentials. To use CloudShell, you must provide at least one AWS credential.

CloudShell is available for you to execute any AWS or ONTAP CLI command. However, if you want to work within the context of an FSx for ONTAP file system, make sure you issue the following command: `using fsx <file-system-name>`.

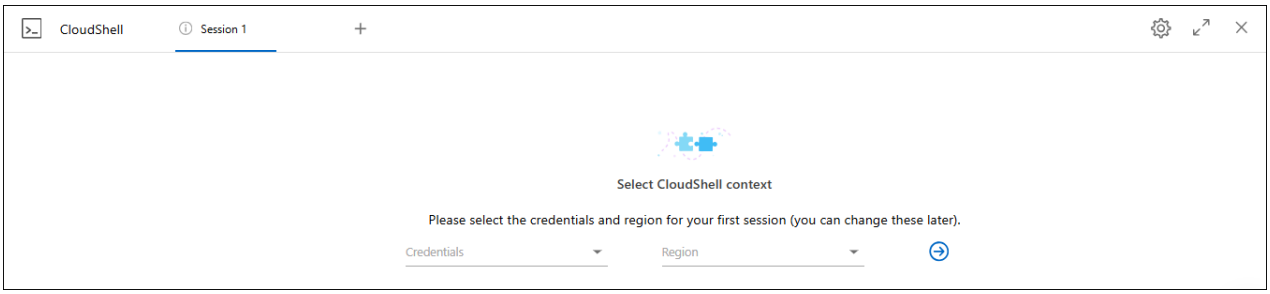
Deploy CloudShell

You can deploy CloudShell from anywhere in the BlueXP workload factory console. You can also deploy CloudShell from Storage from within an FSx for ONTAP file system.

Deploy from workload factory console

Steps

1. Log in using one of the console experiences.
2. Open CloudShell  from the top navigation bar.
3. In the CloudShell window, select credentials and region for the CloudShell session and then select the arrow to continue.



4. Enter `help` to view available CloudShell commands and instructions or refer to the following CLI reference documents for available commands:
   - AWS CLI reference: For commands related to FSx for ONTAP, select **fsx**.
   - ONTAP CLI reference
5. Issue commands within the CloudShell session.

   If an error occurs after issuing an ONTAP CLI command, select the light bulb icon to get a brief AI-generated error response with a description of the failure, the cause of the failure, and a detailed resolution. Select **Read more** for more details.

Deploy from Storage

Steps

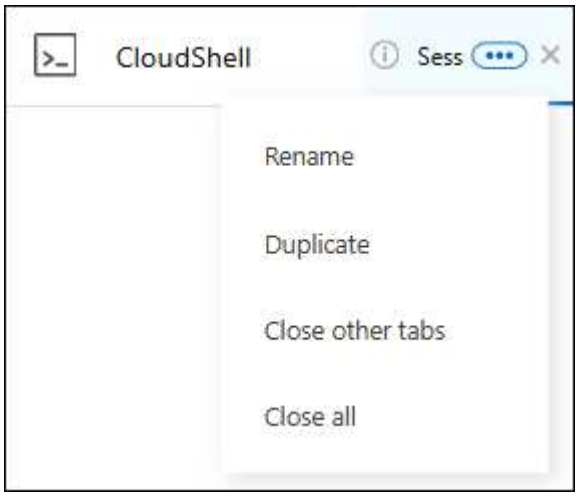
1. Log in using one of the console experiences.
2. In **Storage**, select **Go to storage inventory**.
3. In the **FSx for ONTAP** tab, select the three-dot menu of the file system and then select **Open CloudShell**.

   A CloudShell session opens in the context of the selected file system.

4. Enter `help` to view available CloudShell commands and instructions or refer to the following CLI reference documents for available commands:
   - AWS CLI reference: For commands related to FSx for ONTAP, select **fsx**.
   - ONTAP CLI reference
5. Issue commands within the CloudShell session.

   If an error occurs after issuing an ONTAP CLI command, select the light bulb icon to get a brief AI-generated error response with a description of the failure, the cause of the failure, and a detailed resolution. Select **Read more** for more details.

The CloudShell tasks shown in this screenshot can be completed by selecting the three-dot menu of an open CloudShell session tab. The instructions for each of these tasks follows.



Rename a CloudShell session tab

You can rename a CloudShell session tab to help you identify the session.

Steps

1. Select the three-dot menu of the CloudShell session tab.
2. Select **Rename**.
3. Enter a new name for the session tab and then click outside the tab name to set the new name.

Result

The new name appears in the CloudShell session tab.

Duplicate CloudShell session tab

You can duplicate a CloudShell session tab to create a new session with the same name, credentials, and region. The code from the original tab isn't duplicated in the duplicated tab.

Steps

1. Select the three-dot menu of the CloudShell session tab.
2. Select **Duplicate**.

Result

The new tab appears with the same name as the original tab.

Close CloudShell session tabs

You can close CloudShell tabs one at a time, close other tabs you're not working on, or close all tabs at once.

Steps

1. Select the three-dot menu of the CloudShell session tab.
2. Select one of the following:
   - Select "X" in the CloudShell tab window to close one tab at a time.

- Select **Close other tabs** to close all other tabs that are open except the one you're working on.
- Select **Close all tabs** to close all tabs.

Result

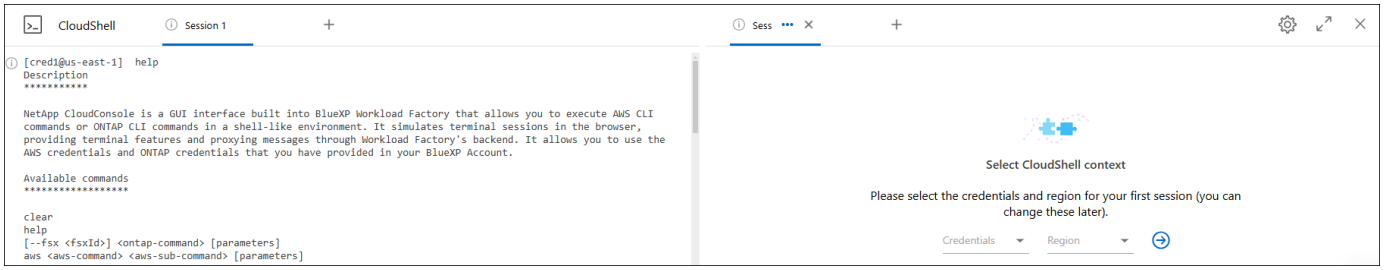
The selected CloudShell session tabs close.

Split CloudShell session tabs

You can split CloudShell session tabs to view two or more tabs at the same time.

Step

Drag and drop CloudShell session tabs to the top, bottom, left, or right of the CloudShell window to split the view.



Re-open your last CloudShell session

If by accident you close your CloudShell session, you can re-open it.

Step

Select the CloudShell icon  from the top navigation bar.

Result

The latest CloudShell sessions open.

Update settings for a CloudShell session

You can update font and output type settings for CloudShell sessions.

Steps

1. Deploy a CloudShell session.
2. In the CloudShell tab, select the settings icon.

   The settings dialog appears.

3. Update font size and output type as needed.

   Enriched output applies to JSON objects and table formatting. All other output appears as plain text.

4. Select **Apply**.

Result

The CloudShell settings are updated.

Remove credentials from BlueXP workload factory

If you no longer need a set of credentials, you can delete them from workload factory. You can only delete credentials that aren't associated with an FSx for ONTAP file system.

Steps

1. Log in using one of the console experiences.
2. Navigate to the **Credentials** page.
   a. In the workload factory console, select the **Account** icon, and select **Credentials**.

   b. In the BlueXP console, select the **Settings** icon, and select **Credentials**.
3. On the **Credentials** page, select the action menu for a set of credentials and then select **Remove**.
4. Select **Remove** to confirm.

Copyright information

Trademark information