NetApp

BlueXP workload factory for Builders documentation

Builders workloads

NetApp
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BlueXP workload factory for Builders documentation

Release notes

What's new with BlueXP workload factory for Builders

Learn what's new with the Builders capability of workload factory.

1 December 2024

Builders workload initial release

BlueXP workload factory for Builders simplifies software version consumption and access, eliminating the need for custom tools or scripts. It enables you to consume software versions as instant clones integrated with Perforce Helix Core as a convenient workspace for your development processes, saving time and resources.

The initial release includes the capability to manage projects and workspaces, and automate actions with Codebox. You can also integrate Builders with Perforce Helix Core, so that you can manage different versions of each project and switch between them quickly.

Known limitations of BlueXP workload factory for Builders

Known limitations identify platforms, devices, or functions that are not supported by this release of the product, or that do not interoperate correctly with it. Review these limitations carefully.

Operator permissions required

BlueXP workload factory for Builders requires Operator permissions to function correctly.

Get started

Learn about BlueXP workload factory for Builders

BlueXP workload factory for Builders is a rapid build environment creation tool for software builders. It enables fast setup of personal development environments, saving time and enabling self-service for developers while empowering DevOps teams to retain control of the infrastructure. Using Builders, software developers can quickly create workspaces without needing specialized data storage or understanding of the development infrastructure.

What is BlueXP workload factory for Builders?

BlueXP workload factory for Builders is designed to streamline the way developers manage and interact with different versions of their software. Builders integrates seamlessly with Perforce Helix Core to provide instant clones of software versions, creating ready-to-use workspaces for development, QA, and CI/CD processes.

With Builders, you can easily create a project and assign a volume that represents your software environment and its artifacts. As you update your software, you can take snapshots of the volume, capturing the state of your software at that moment. This means you can access any version of your software instantly without the need to resync with the version control system, saving valuable time and resources.

By leveraging ONTAP's snapshot and clone capabilities, Builders enhances your development workflow, allowing for rapid access to multiple versions of your software, accelerating development cycles, and helping to reduce time to market.

For more information about workload factory, refer to the workload factory overview.

BlueXP workload factory for Builders features

BlueXP workload factory for Builders offers the following features:

- Create, edit, and remove projects
- Create snapshots of defined software versions
- Create, and delete workspaces (based on clones)
- Create access policies to control access to a project
- Analyze the capacity usage of each project
- Control clone size limits and clone retention for each project
- Integrate with version control systems such as Perforce

Projects and workspaces in Builders

When you use Builders, you create a project and assign a volume that represents your software environment and its artifacts. Each time that you create a new version of the software, you need resync the volume data and create a project snapshot to mark the volume state as a known version. The project source volume might get rolling updates and have multiple snapshots to mark multiple versions. You can use each snapshot immediately as an instant clone, a dedicated or shared editable repository available to developers, QA or build processes. A clone in the context of a specific software version is a workspace.

Operational modes in workload factory

Three different operational modes - *basic*, *read* and *automate* - offer flexible options for deployment inside and outside of workload factory. Gain immediate value at zero-trust in *basic* mode with code snippets for use outside workload factory. Get incremental value with incremental trust in *read* and *automate* modes.

Learn more about operational modes in workload factory.

Automation with workload factory Codebox

Workload factory introduces built-in automation with the *Codebox*. The Codebox offers the following automation benefits:

- **Code snippet generation**: Infrastructure-as-Code (IaC) snippets are generated during resource creation, enabling seamless integration with existing orchestration workflows.
- **Infrastructure-as-code co-pilot**: the Codebox is an Infrastructure-as-code (IaC) co-pilot that helps developers and DevOps generate code to execute any operation supported by workload factory.
- **Code viewer and automation catalog**: the Codebox provides a code viewer for quick analysis of automation and an automation catalog for quick future re-use.

Cost

There is no cost for using the Builders capability of workload factory.

Licensing

No special licenses are needed from NetApp to use the Builders capabilities of workload factory.

Supported regions

Builders is supported in all commercial regions where FSx for ONTAP is supported. View supported Amazon regions.

The following AWS regions aren't supported:

- China regions
- GovCloud (US) regions
- Secret Cloud
- Top Secret Cloud

Getting help

Amazon FSx for NetApp ONTAP is an AWS first-party solution. For questions or technical support issues associated with your FSx for ONTAP file system, infrastructure, or any solution using this service, use the Support Center in your AWS Management Console to open a support case with AWS. Select the "FSx for ONTAP" service and appropriate category. Provide the remaining information required to create your AWS support case.

For general questions about workload factory or workload factory applications and services, refer to Get help for Builders for workload factory.

Quick start for Builders

Get started creating a Builders project. Administrators and team leads can use Builders to administer projects and workspaces for teams of developers.

1   **Log in to workload factory**

You'll need to set up an account with workload factory and log in using one of the console experiences.

2   **Add AWS credentials and permissions to your account**

You can use workload factory in *Basic* mode without adding credentials to access your AWS account. Adding AWS credentials to workload factory in either *Read* or *Automate* mode gives your workload factory account the permissions needed to create and manage FSx for ONTAP file systems, and to deploy and manage Builders projects.

Learn how to add credentials and permissions.

3   **Set up your environment to meet Builders requirements**

You'll need a deployed and discovered FSx for ONTAP file system that contains at least one volume that has been configured as an NFS share.

Learn more about Builders requirements.

4   **Integrate with other services**

Integrate Builders with other services such as a service portal or Perforce Helix Core using the workload Factory REST API.

Learn how to integrate Builders with Perforce.

What's next

You can now create a project to provide fast and efficient management of code and artifacts to teams of developers.

Builders requirements

Ensure that workload factory and AWS are set up properly before you begin using BlueXP workload factory for Builders. This includes having your AWS log in credentials, a deployed FSx for ONTAP file system, and more.

Workload factory login and account

You'll need to set up an account with workload factory and log in using one of the console experiences.

AWS credentials and permissions

You need to add AWS credentials to workload factory with automate permissions, which means you'll be using workload factory in *Automate* mode for Builders.

Basic mode and *Read* mode permissions are not supported at this time.
Learn how to add AWS credentials to workload factory

FSx for ONTAP file system

You need a minimum of one FSx for ONTAP file system:

- The file system will be used by Builders to store the projects and workspaces that you create.

  This FSx for ONTAP file system must use FlexVol volumes. FlexGroup volumes are not supported.

- You'll need to know the AWS region, VPC, and subnet where the AWS FSx for ONTAP file system resides.

- You'll need at least one volume in the filesystem with the following configuration:

  ◦ The volume must be configured as an NFS share.

  ◦ The filesystem must be configured with a link. Learn more about links.

- You'll need to consider the tag key/value pairs that you want to apply to the AWS resources that are part of this deployment (optional).

  Learn how to deploy and manage FSx for ONTAP file systems

Integrate Builders with Perforce

Integrate Builders with the Perforce Helix Visual Client (P4V) so that developers can manage your workspaces using the Perforce CLI. This enables developers to quickly switch between projects and workspaces, saving time during development.

Steps

1. Download the P4V integration file.

2. Open P4V and go to **Tools** > **Manage Tools** > **HTML tabs**.

3. Select **Import HTML tabs**.

4. Select the P4V integration XML file and select **Import**.

5. Go to **View** > **Workload Factory**.

Result

The BlueXP workload factory for Builders web UI appears as an HTML tab within the P4V client.

What's next?

Create an Amazon EC2 deployment plan using the migration advisor.

Use Builders workloads

Manage Builders projects

You can manage Builders projects to control how your code and artifacts are managed for each project in BlueXP workload factory for Builders.

Create a project

You can create a new Builders project so that you can leverage the data protection features of your Amazon FSX for NetApp ONTAP filesystem for your code and artifacts.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Create project**.

3. On the Create project page, provide the following:

   a. **Project name**: Enter a name for the project.

   b. **Description**: Enter a description for the project.

   c. **Filesystem**: Provide the following:

      i. **Credentials**: Select the Amazon AWS credentials to use. Builders uses these credentials to discover FSx for ONTAP filesystems that you can use with this project and to create clones and snapshots of projects.

      ii. **Region**: Select the region that this FSx for ONTAP filesystem resides in.

      iii. **FSx for ONTAP filesystem**: Select an FSx for ONTAP filesystem to use with this project.

      You can only select filesystems that are configured with a link. Learn more about links.

      iv. **Choose a volume**: Select a volume on which to store the project; Builders uses this volume as a software repository.

      You can only select volumes that are configured as an NFS share.

   d. **Operation policies**: Provide limits for project clones:

      i. **Maximum retention in days**: Enter the maximum number of days that a clone should be retained. After this number of days, workload factory removes the clone.

      ii. **Maximum number of clones per user or group**: Enter the maximum number of clones that can be provisioned for a user or group.

      iii. **Maximum clone size in GiB**: Enter the maximum size in GiB of a project clone.

   e. **Access policies**: Explicitly grant project access to specific users or groups:

      i. **Policy enforcement scope**: Enter single IP addresses or IP address ranges to limit project access to only those IP addresses or ranges.

      For example: `172.16.0.0/24`

      ii. **User or group identifiers**: Enter user or group identifiers to limit project access to only those users or groups.

For example: `User1234`

4. Select **Create**.

Result

The project is created, and appears in the list of projects on the Projects page.

View existing projects

You can view existing projects created in BlueXP workload factory for Builders by following these steps.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Go to Projects page**.

3. View the existing projects listed on the Projects page.

Edit a project

You can edit the settings of a project at any time.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Go to Projects page**.

3. On the Projects page, select ••• for the project you want to edit.

4. Make any needed changes to the project configuration.

5. Select **Save**.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Go to Projects page**.

3. On the Projects page, select ••• for the project you want to snapshot.

4. In the resulting menu, select **Create a snapshot**.

5. In the **Create snapshot** dialog, choose a name for the snapshot and select **Create**.

View a project's workspaces

A clone or snapshot of a project is known as a workspace. When you create a workspace, it is retained for as long as the project's operation policy allows. You can view existing workspaces for a project by following these steps.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Go to Projects page**.

3. On the Projects page, choose a project and select **View**.

4. View the status and details of all workspaces for this project.

5. If you see alerts or warnings for a workspace, hover over the alert or warning icon to see the reason.

Delete a project

You can delete a project when it is no longer needed by following these steps.

Steps

1. Log in to workload factory using one of the console experiences.

2. In the Builders tile, select **Go to Projects page**.

3. On the Projects page, select ••• for the project you want to delete.

4. Select **Delete**.

5. In the confirmation dialog, select **Delete**.

Result

The project is deleted, and any code or artifacts associated with the project are deleted from the volume. Snapshots and clones of the project are retained.

Create a Builders workspace

A workspace in BlueXP workload factory for Builders is a Perforce representation of a project at a specific moment in time. Workspaces are created using a project snapshot as a basis. You can create new workspaces within a Builders project. You can create workspaces from the Perforce UI.

Before you begin

Ensure you have integrated Builders with the Perforce Helix Visual Client. See Integrate Builders with Perforce for more information.

Steps

1. Log in to Perforce.

2. In the Perforce menu, select **View** > **WF**.

   The workload factory login screen appears within the Perforce UI.

3. Log in to workload factory using one of the console experiences.

4. Select **Create workspace**.

5. On the Create a workspace project page, provide the following:

   a. Select a snapshot to use as a basis for the workspace.

   b. Enter a name for the workspace.

   c. Optionally, enter a user identifier to claim the workspace. This identifier should match the Perforce user ID of the developer that will use this workspace.

6. Select **Create**.

Result

The workspace is created, and appears in the list of workspaces on the Workspaces page.

Automate Builders tasks with Codebox

You can automate project creation and data protection operations with Codebox. Codebox is an infrastructure as code (IaC) co-pilot that helps you generate code to execute any operations supported by workload factory.

Learn more about Codebox automation and how to use it.

Knowledge and support

Register for support for BlueXP workload factory for Builders

Before you can open a support case with NetApp technical support, you need to add a NetApp Support Site account to workload factory and then register for support.

Support registration is required to receive technical support specific to Workload Factory and its storage solutions and services. You must register for support from the BlueXP console, which is a separate web-based console from Workload Factory.

Registering for support does not enable NetApp support for a cloud provider file service. For technical support related to a cloud provider file service, its infrastructure, or any solution using the service, refer to "Getting help" in the Workload Factory documentation for that product.

Amazon FSx for ONTAP

Support registration overview

Registering your account ID support subscription (your 20 digit 960xxxxxxxxx serial number located on the Support Resources page in BlueXP) serves as your single support subscription ID. Each BlueXP account-level support subscription must be registered.

Registering enables capabilities like opening support tickets and automatic case generation. Registration is completed by adding NetApp Support Site (NSS) accounts to BlueXP as described below.

Register your account for NetApp support

To register for support and activate support entitlement, one user in your account must associate a NetApp Support Site account with their BlueXP login. How you register for NetApp support depends on whether you already have a NetApp Support Site (NSS) account.

Existing customer with an NSS account

If you're a NetApp customer with an NSS account, you simply need to register for support through BlueXP.

Steps

1. In the upper right of the Workload Factory console, select **Help > Support**.

   Selecting this option opens the BlueXP console a new browser tab and loads the Support dashboard.

2. In the upper right of the BlueXP console, select the Settings icon, and select **Credentials**.
3. Select **User Credentials**.
4. Select **Add NSS credentials** and follow the NetApp Support Site (NSS) Authentication prompt.
5. To confirm that the registration process was successful, select the Help icon, and select **Support**.

   The **Resources** page should show that your account is registered for support.

Note that other BlueXP users will not see this same support registration status if they have not associated a NetApp Support Site account with their BlueXP login. However, that doesn't mean that your BlueXP account is not registered for support. As long as one user in the account has followed these steps, then your account has been registered.

Existing customer but no NSS account

If you're an existing NetApp customer with existing licenses and serial numbers but *no* NSS account, you need to create an NSS account and associate it with your BlueXP login.

Steps

1. Create a NetApp Support Site account by completing the NetApp Support Site User Registration form

   a. Be sure to select the appropriate User Level, which is typically **NetApp Customer/End User**.

   b. Be sure to copy the BlueXP account serial number (960xxxx) used above for the serial number field. This will speed up the account processing.

2. Associate your new NSS account with your BlueXP login by completing the steps under Existing customer with an NSS account.

Brand new to NetApp

If you are brand new to NetApp and you don't have an NSS account, follow each step below.

Steps

1. In the upper right of the Workload Factory console, select **Help > Support**.

   Selecting this option opens the BlueXP console a new browser tab and loads the Support dashboard.

2. Locate your account ID serial number from the Support Resources page.

3. Navigate to NetApp's support registration site and select **I am not a registered NetApp Customer**.
4. Fill out the mandatory fields (those with red asterisks).
5. In the **Product Line** field, select **Cloud Manager** and then select your applicable billing provider.
6. Copy your account serial number from step 2 above, complete the security check, and then confirm that you read NetApp's Global Data Privacy Policy.

   An email is immediately sent to the mailbox provided to finalize this secure transaction. Be sure to check your spam folders if the validation email doesn't arrive in few minutes.

7. Confirm the action from within the email.

Confirming submits your request to NetApp and recommends that you create a NetApp Support Site account.

8. Create a NetApp Support Site account by completing the NetApp Support Site User Registration form

    a. Be sure to select the appropriate User Level, which is typically **NetApp Customer/End User**.

    b. Be sure to copy the account serial number (960xxxx) used above for the serial number field. This will speed up the account processing.

After you finish

NetApp should reach out to you during this process. This is a one-time onboarding exercise for new users.

Once you have your NetApp Support Site account, associate the account with your BlueXP login by completing the steps under Existing customer with an NSS account.

Get help with Builders

NetApp provides support for Workload Factory and its cloud services in a variety of ways. Extensive free self-support options are available 24x7, such as knowledgebase (KB) articles and a community forum. Your support registration includes remote technical support via web ticketing.

Get support for FSx for ONTAP

For technical support related to FSx for ONTAP, its infrastructure, or any solution using the service, refer to "Getting help" in the Workload Factory documentation for that product.

Amazon FSx for ONTAP

To receive technical support specific to Workload Factory and its storage solutions and services, use the support options described below.

Use self-support options

These options are available for free, 24 hours a day, 7 days a week:

- Documentation

  The Workload Factory documentation that you're currently viewing.

- Knowledge base

  Search through the Workload Factory knowledge base to find helpful articles to troubleshoot issues.

- Communities

  Join the Workload Factory community to follow ongoing discussions or create new ones.

Create a case with NetApp support

In addition to the self-support options above, you can work with a NetApp Support specialist to resolve any issues after you activate support.

Before you get started

To use the **Create a Case** capability, you must first register for support. associate your NetApp Support Site credentials with your Workload Factory login. Learn how to register for support.

Steps

1. In the upper right of the Workload Factory console, select **Help > Support**.

   Selecting this option opens the BlueXP console a new browser tab and loads the Support dashboard.

2. On the **Resources** page, choose one of the available options under Technical Support:

   a. Select **Call Us** if you'd like to speak with someone on the phone. You'll be directed to a page on netapp.com that lists the phone numbers that you can call.

   b. Select **Create a Case** to open a ticket with a NetApp Support specialist:

      - **Service**: Select **Workload Factory**.
      - **Case Priority**: Choose the priority for the case, which can be Low, Medium, High, or Critical.

        To learn more details about these priorities, hover your mouse over the information icon next to the field name.

      - **Issue Description**: Provide a detailed description of your problem, including any applicable error messages or troubleshooting steps that you performed.
      - **Additional Email Addresses**: Enter additional email addresses if you'd like to make someone else aware of this issue.
      - **Attachment (Optional)**: Upload up to five attachments, one at a time.

        Attachments are limited to 25 MB per file. The following file extensions are supported: txt, log, pdf, jpg/jpeg, rtf, doc/docx, xls/xlsx, and csv.

After you finish

A pop-up will appear with your support case number. A NetApp Support specialist will review your case and get back to you soon.

For a history of your support cases, you can select **Settings > Timeline** and look for actions named "create support case." A button to the far right lets you expand the action to see details.

It's possible that you might encounter the following error message when trying to create a case:

"You are not authorized to Create a Case against the selected service"

This error could mean that the NSS account and the company of record it's associated with is not the same company of record for the BlueXP account serial number (ie. 960xxxx) or the working environment serial number. You can seek assistance using one of the following options:

- Use the in-product chat
- Submit a non-technical case at https://mysupport.netapp.com/site/help

Manage your support cases (Preview)

You can view and manage active and resolved support cases directly from BlueXP. You can manage the cases associated with your NSS account and with your company.

Case management is available as a Preview. We plan to refine this experience and add enhancements in upcoming releases. Please send us feedback by using the in-product chat.

Note the following:

- The case management dashboard at the top of the page offers two views:

  - The view on the left shows the total cases opened in the past 3 months by the user NSS account you provided.
  - The view on the right shows the total cases opened in the past 3 months at your company level based on your user NSS account.

  The results in the table reflect the cases related to the view that you selected.

- You can add or remove columns of interest and you can filter the contents of columns like Priority and Status. Other columns provide just sorting capabilities.

  View the steps below for more details.

- At a per-case level, we offer the ability to update case notes or close a case that is not already in Closed or Pending Closed status.

Steps

1. In the upper right of the Workload Factory console, select **Help > Support**.

   Selecting this option opens the BlueXP console a new browser tab and loads the Support dashboard.

2. Select **Case Management** and if you're prompted, add your NSS account to BlueXP.

   The **Case management** page shows open cases related to the NSS account that is associated with your BlueXP user account. This is the same NSS account that appears at the top of the **NSS management** page.

3. Optionally modify the information that displays in the table:

   - Under **Organization's cases**, select **View** to view all cases associated with your company.
   - Modify the date range by choosing an exact date range or by choosing a different time frame.

- Filter the contents of the columns.

- Change the columns that appear in the table by selecting ⊕ and then choosing the columns that you'd like to display.

4. Manage an existing case by selecting ••• and selecting one of the available options:

  ◦ **View case**: View full details about a specific case.

  ◦ **Update case notes**: Provide additional details about your problem or select **Upload files** to attach up to a maximum of five files.

    Attachments are limited to 25 MB per file. The following file extensions are supported: txt, log, pdf, jpg/jpeg, rtf, doc/docx, xls/xlsx, and csv.

  ◦ **Close case**: Provide details about why you're closing the case and select **Close case**.
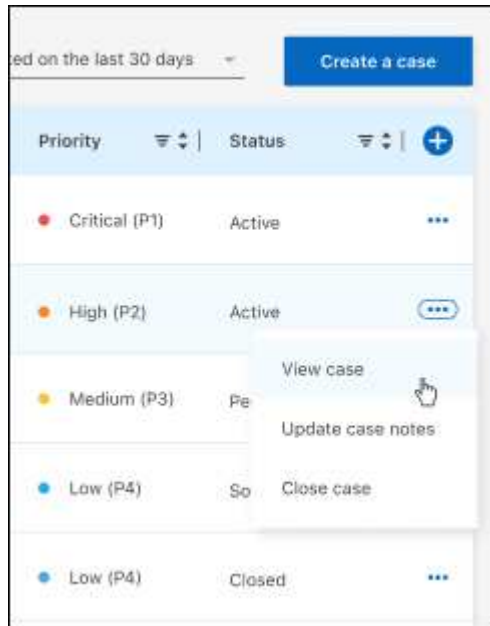
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BlueXP workload factory