Create block storage resources

Amazon FSx for NetApp ONTAP

NetApp
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Create block storage resources

Create an initiator group for a file system in NetApp Workload Factory

Use NetApp Workload Factory to create initiator groups and manage host access to SAN block devices.

About this task

Initiator groups, or igroups, connect block devices (LUNs) to the compute resources that are allowed to access them. Unlike NFS or CIFS, where a volume is broadly accessible and user permissions control access, block storage permissions operate at the machine level. Typically, only one system can access a block device at a time.

An igroup acts as a permission layer for block storage. When a server connects to the storage system, it identifies itself using its iSCSI qualified (IQN) host initiator. If that IQN belongs to one or more igroups, then the server gains access to all LUNs associated with those igroups. Both an igroup and an iSCSI host connection are required for iSCSI to function properly.

Before you begin

You must associate a link to create igroups. Learn how to associate an existing link or to create and associate a new link. After you associate the link, return to this operation.

Steps

1. Log in using one of the console experiences.
2. In the Storage tile, select **Go to Storage**.
3. From the Storage menu, select **FSx for ONTAP**.
4. From **FSx for ONTAP**, select the **Block devices** tab.
5. Select the resource type **Create initiator group** and then select **Create igroup**.
6. In the **Create initiator group** dialog, do the following:
   - **igroup name**: Enter a name for the initiator group.
   - **igroup description**: (Optional) Enter a description for the initiator group.
   - **Storage VM name**: Select the storage VM for the initiator group.
   - **Block device name**: Select one or more block devices to associate with the initiator group. The block devices listed are those that have not been mapped to a host initiator yet.
   - **Operating system type**: Select Linux, VMware, or Windows for the operating system type.
   - **Host initiators**: Add one or more iSCSI qualified (IQN) host initiators to the initiator group.
7. Select **Create**.

Related information

Manage the igroups for an FSx for ONTAP file system

Create a block device for a file system in NetApp Workload Factory

Create block devices to support your line of business (LOB) application requirements.

About this task

Only FlexVol volumes are supported for block devices in NetApp Workload Factory. You can create block devices using the iSCSI protocol.

The block size must be smaller than the available FlexVol volume size.

Before you begin

- You must associate a link to create block devices. Learn how to associate an existing link or to create and associate a new link. After you associate the link, return to this operation.

Steps

1. Log in using one of the console experiences.
2. In the Storage tile, select **Go to Storage**.
3. From the Storage menu, select **FSx for ONTAP**.
4. From **FSx for ONTAP**, select the **Block devices** tab.
5. Select **Create block device**.
6. Under **Volume details**, do the following:
   a. **Volume name**: Select one of the following options.
      - Create a new volume and enter the name of the volume.
      - Select an existing volume.
   b. **Storage VM**: Select a storage VM.
   c. **Volume style**: The default volume style is **FlexVol**.
   d. **Volume size**: Enter the size of the volume and select the unit. The maximum size per FlexVol volume is 100 TiB.
   e. **Volume autogrow**: Optionally, enable volume autogrow to allow the volume to automatically increase in size when it reaches capacity. The maximum growth size is 300 TiB.
   f. **Tags**: Optionally, add tags to help organize and categorize your block device.
7. Under **Block device details**, do the following:
   a. **Block device name**: Enter a name for the block device.
   b. **Block device size**: Enter the size of the block device and select the unit. The block device size must be smaller than the available volume size.
8. Under **Access**, do the following:
   a. **iSCSI configuration**: Select one of the following options.
      - **Create new initiator group**: Provide the host operating system, initiator group name, and add one or more iSCSI qualified name (IQN) host initiators.
      - **Map existing initiator group**: Select an existing initiator group, provide the host operating system, and select one or more iSCSI qualified name (IQN) host initiators.
9. Under **Efficiency and protection**, do the following:

a. **Storage efficiency**: Enabled by default. Select to disable the feature.

   ONTAP achieves storage efficiency using deduplication and compression features. Deduplication eliminates duplicate data blocks. Data compression compresses the data blocks to reduce the amount of physical storage that is required.

b. **Snapshot policy**: Select the snapshot policy to specify the frequency and retention of snapshots.

   The following are default policies from AWS. To display existing snapshot policies, you must xref:./associate a link.

   `default`

   This policy automatically creates snapshots on the following schedule, with the oldest snapshot copies deleted to make room for newer copies:

   - A maximum of six hourly snapshots taken five minutes past the hour.
   - A maximum of two daily snapshots taken Monday through Saturday at 10 minutes after midnight.
   - A maximum of two weekly snapshots taken every Sunday at 15 minutes after midnight.

   > Snapshot times are based on the file system's time zone, which defaults to Coordinated Universal Time (UTC). For information about changing the time zone, refer to Displaying and setting the system time zone in the NetApp Support documentation.

   `default-1weekly`

   This policy works in the same way as the `default` policy, except that it only retains one snapshot from the weekly schedule.

   `none`

   This policy doesn't take any snapshots. You can assign this policy to volumes to prevent automatic snapshots from being taken.

c. **Tiering policy**: Select the tiering policy for the data stored in the volume.

   Balanced (Auto) is the default tiering policy when creating a volume using the Workload Factory console. For more information about volume tiering policies, refer to Volume storage capacity in AWS FSx for NetApp ONTAP documentation. Note that Workload Factory uses use-case based names in the Workload Factory console for tiering policies and includes FSx for ONTAP tiering policy names in parentheses.

d. **ARP/AI**: NetApp Autonomous Ransomware Protection with AI (ARP/AI) is enabled by default when a link is associated with the file system. Learn more about ARP/AI. Accept the statement to proceed.

   If the feature is unavailable, it is because of one of the following reasons:

   - A link is not associated with the file system. Learn how to associate an existing link or to create and associate a new link. After the link associates, return to this operation.
   - Volumes with immutable files and volumes with the NVMe protocol are not supported for ARP/AI.
   - The file system already has an ARP/AI policy.

10. Select **Create**.

Related information

Manage the block devices for an FSx for ONTAP file system

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