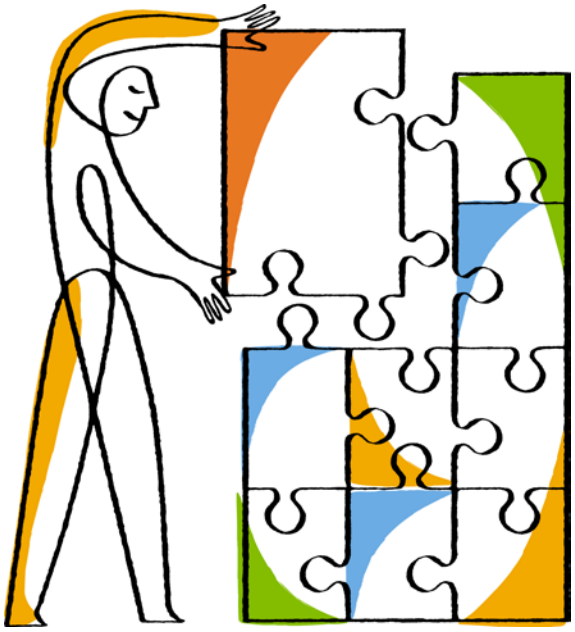
# NetApp® SteelStore Cloud Integrated Storage 3.2

## Amazon Machine Image Deployment Guide



NetApp, Inc.
495 East Java Drive
Sunnyvale, CA 94089
U.S.

Telephone: +1 (408) 822-6000
Fax: +1 (408) 822-4501
Support telephone: +1 (888) 463-8277
Web: www.netapp.com
Feedback: doccomments@netapp.com

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# CHAPTER 1 Deploying SteelStore Amazon Machine Image

This chapter describes how to launch a SteelStore Amazon Machine Image (AMI). It includes the following sections:



## About Amazon EC2

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers.

Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change. Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use. Amazon EC2 provides developers the tools to build failure resilient applications and isolate themselves from common failure scenarios.

## SteelStore AMI User Scenarios

You can use the SteelStore AMI in the following scenarios:

- **Media server in the cloud** - If your backup media server in AWS is an EC2 instance, the SteelStore AMI runs in the same AWS account. The backup media server backs up data to the SteelStore in EC2.

- **Media server on site** - The SteelStore runs in EC2, but the backup media server and software in on site. The uncompressed data goes to the EC2 SteelStore that deduplicates the data and stores it in the cloud.
- **Disaster recovery** - You have a physical SteelStore with the backup software on site that stores the backup data in the Amazon cloud, and you want the capability to create an EC2-based SteelStore with the backup images in EC2 in the event of a disaster at the primary site. This setup enables you to recover your data even if your entire primary site network is down.

# About the SteelStore AMI

- You can try the SteelStore AMI for free up to a period of six months. After six months, the SteelStore AMI blocks all subsequent write attempts, and the SteelStore AMI operates in a read-only mode.
- Maximum disk cache is 8TB.
- Maximum write capacity is 1TB (Deduplicated and compressed)
- Maximum read capacity is 8TB (when you use the SteelStore AMI for disaster recovery)
- You do not need licenses to use the SteelStore AMI.
- You cannot ingest data more than 1TB cloud capacity into the SteelStore AMI; however, you can use expanded data greater than 1TB.
- The SteelStore AMI does not support upgrades.
- You cannot expand or shrink the /data partition after the system creates it.
- The system triggers the **Evaluation mode expiring** alarm, five days before the expiration date.

# Creating the Datastore Volume

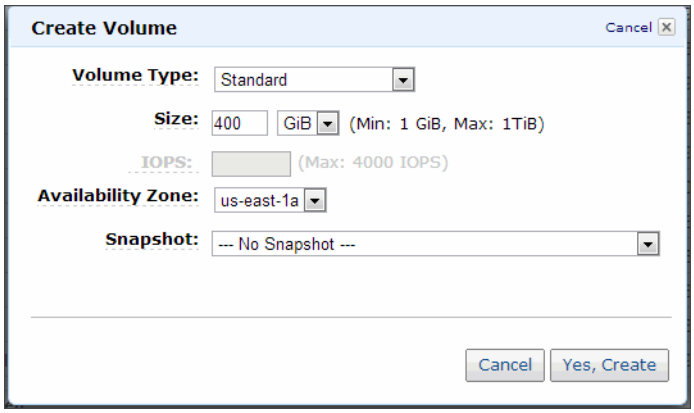
You must create one or more EBS volumes of the same size (300 GiB through 1TiB) to store the user backup data. You can attach a maximum total size of 8TB of EBS volumes. Ensure that you create the data store volumes in the same availability zone where you plan to launch the instance.

### To create the Datastore Volume

1. Log in to the AWS Management Console at console.aws.amazon.com.
2. Enter your user name and password and click **Sign in using our secure server**.
3. Click **EC2** to display the EC2 page.
4. Click **Volumes** in the navigation pane.

5. Click **Create Volume** to display the Create Volume dialog box.

**Figure 1-1. Create Volume Dialog Box - Datastore Volume**




6. In the Create Volume dialog box, leave the Volume Type as Standard.

7. Specify a Size from 300 GiB through 1TiB. You can attach a maximum volume size of up to 8 TB. In this example, you specify 400 GiB.

8. Select the availability zone from the drop-down list. Ensure that you select the same availability zone where you plan to launch the instance. In this example, you select us-east-1b.

9. Click **Yes, Create** to create the Datastore Volume.

# Generating a Key Pair

To launch the SteelStore AMI, you must specify a Key Pair. You can create a Key Pair on the Amazon EC2 page.

### To generate the Key Pair

1. Open the Amazon EC2 console.

2. From the navigation bar, select a region for the key pair. You can select any region on the list, regardless of your location. This choice is important because you can share some Amazon EC2 resources between regions, but you cannot share key pairs. For example, if you create a key pair in the US West (Oregon) Region, you cannot see or use the key pair in another region.

3. Click **Key Pairs** in the navigation pane.

4. Click **Create Key Pair**.

5. Enter a name for the new key pair in the Key Pair Name field of the Create Key Pair dialog box, and then click **Create**.

   The private key file is automatically downloaded by your browser. The base file name is the name you specified as the name of your key pair, and the file name extension is .pem. Save the private key file in a safe place.

**Important:** This is the only chance for you to save the private key file. You'll need to provide the name of your key pair when you launch an instance and the corresponding private key each time you connect to the instance.

For details on how to create key pairs, see http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-key-pairs.html#having-ec2-create-your-key-pair.

# Launching the AMI

You can obtain the SteelStore AMI from the AWS marketplace at: http://www.aws.amazon.com/marketplace.

### To launch the AMI

1. Log in to the AWS marketplace using your AWS account ID.

   Amazon sends you an email with a URL to access the SteelStore AMI.

2. Click the URL to display the SteelStore AMI on the AWS Marketplace page.

3. Review the SteelStore AMI AWS Marketplace page.

4. Click **Continue** to display the SteelStore AMI launch page.

5. Under Region, select the Amazon region in which you want to launch the AMI.

6. Under EC2 Instance Type, leave the default value (Standard XL m.xlarge) selected. You can also select the instance type Standard Large (m1.large), but this might not provide the same performance as the m1.xlarge instance.

7. Under Security Group, leave the SteelStore -3-1-AutogenByAWSMP security group selected.

   NetApp provides the security group settings for SteelStore v3.1 and automatically generates the AMI with the same security group settings.

8. Click **Launch with 1-Click** to launch the SteelStore AMI with pre-configured settings.

   The AWS page displays the instance status as pending and then running.

   While the instance is starting, attach your EBS volumes. If you do not attach your EBS volumes, the instance does not start.

# Attaching the Datastore Volume to the Instance

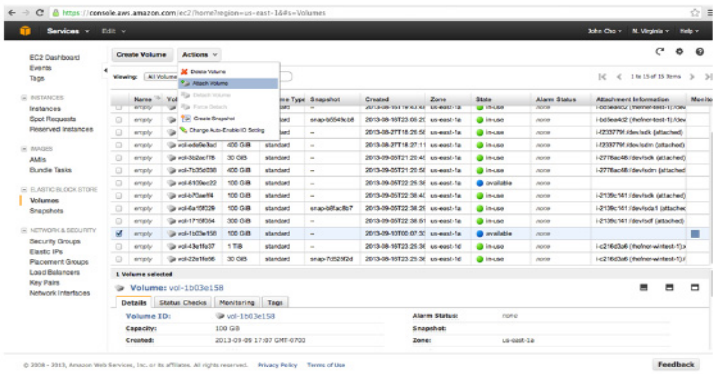
After the SteelStore instance state is running, attach the Datastore Volume.

### To attach the Datastore Volumes to the instance

1. Right-click the Datastore Volume (300 GiB through 1TiB in size) that you created to display a menu of actions that you can perform on the volume.

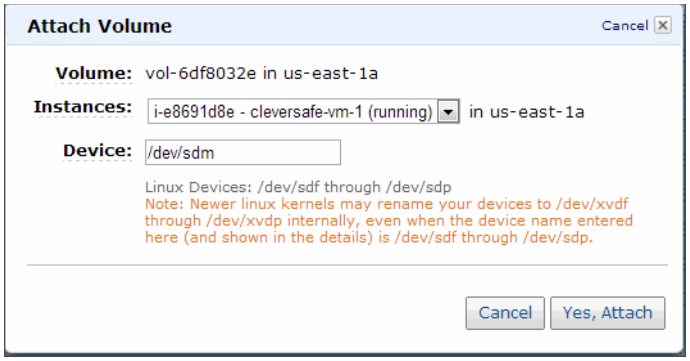
If you created multiple volumes, attach one volume at a time to the instance.

**Figure 1-2. Volumes Page**



2. Select Attach Volume to display the Attach Volume dialog box.

**Figure 1-3. Attach Volume Dialog Box**




3. In the Attach Volume dialog box, select the name of the instance you launched from the drop-down list.

4. Use the default pathname or specify a pathname as the Device name for the Datastore Volume.

5. Click **Yes, Attach** to attach the Datastore volume to the instance.

# Connecting to the SteelStore Appliance Using SSH

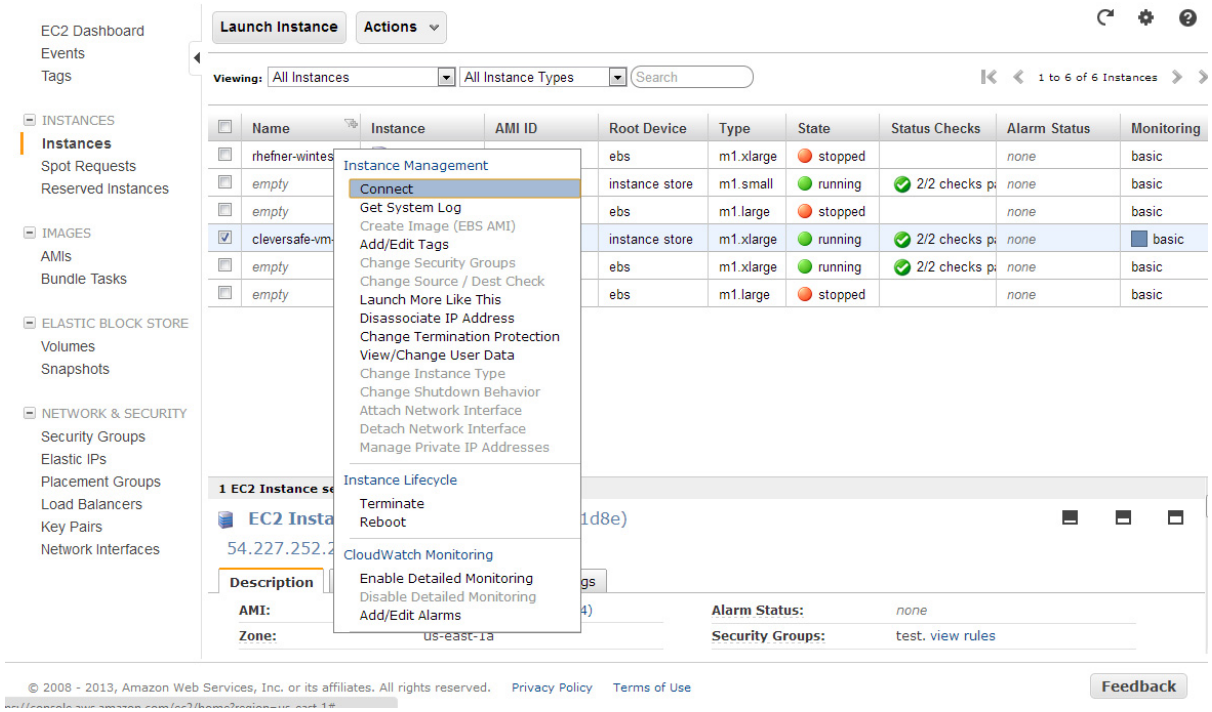
After you attach the EBS volumes to the SteelStore AMI, you can connect to the AMI either using a stand-alone SSH client or from your browser using the Java SSH client (with Java).

### To connect to the SteelStore Appliance

1. Click **Instances** in the navigation pane to display the instances page.

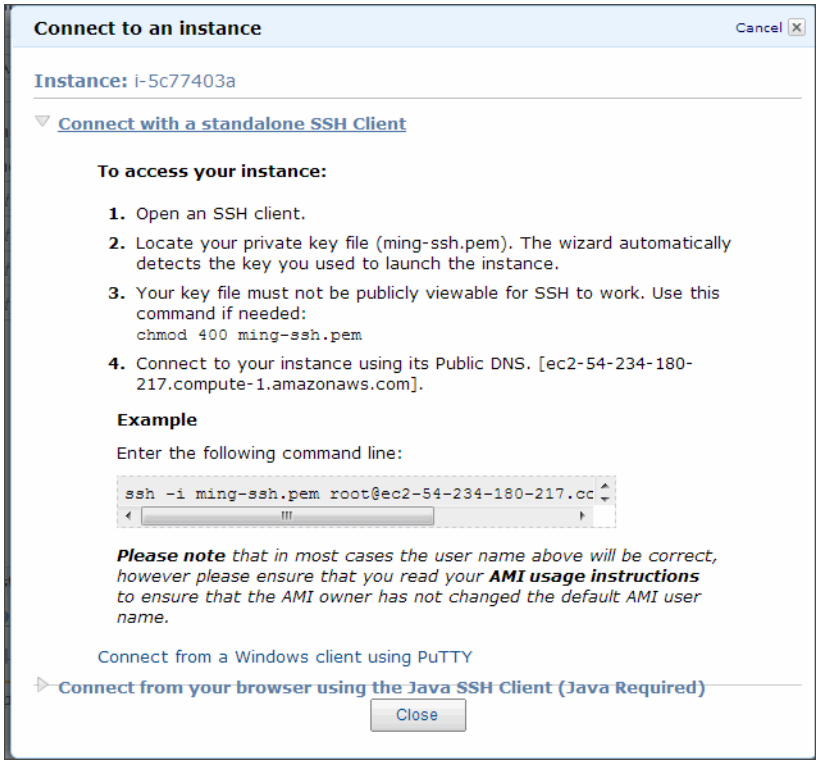
2. Right-click the name of the instance that you launched to display the Instance Management menu.

**Figure 1-4. Instance Management Menu**




The system displays the Connect to an instance page.

**Figure 1-5. Connect To An Instance Page**



### To access your instance using a stand-alone SSH client

1. Open an SSH client.
2. Log in to the SSH client as admin user.
3. Locate your private key file (example-ssh.pem). The wizard automatically detects the key you used to launch the instance.
4. Ensure that your key file is not publicly viewable; otherwise, SSH does not work. To change access permissions to the example-ssh.pem file, type the following command at the command prompt:

   ```
   chmod 400 example-ssh.pem
   ```

5. Copy the Elastic IP address of the instance from the Connect to an Instance page and run it in your SSH client. In this example, you type:

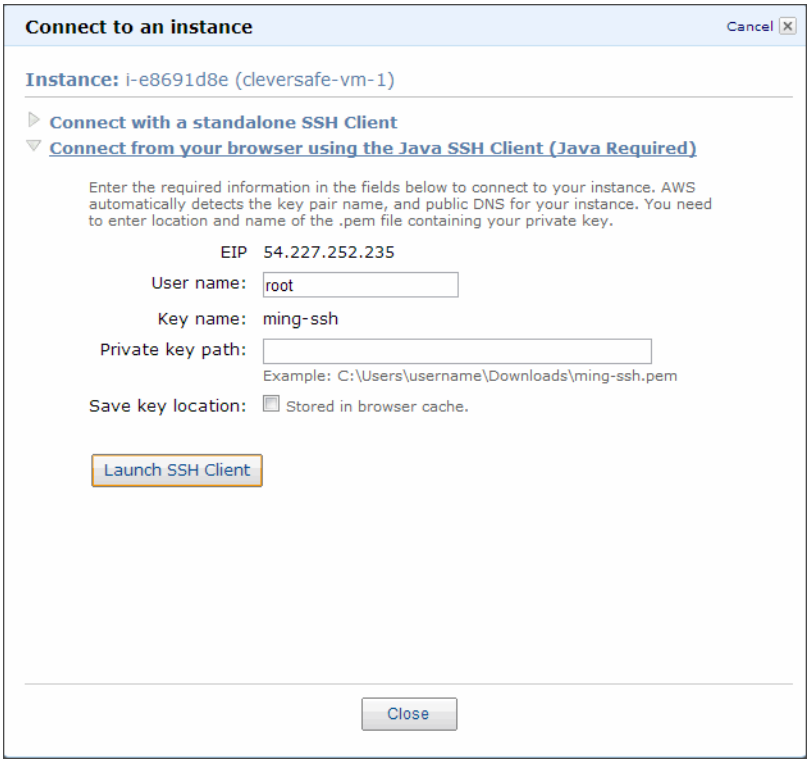
   ```
   ssh -i example.pem root@ec2-10-20-30-40-compute-1.amazonaws.com.
   ```

### To access your instance from your browser using a Java SSH client

1. Ensure that your computer has Java installed.
2. Open an SSH client.
3. Locate your private key file (example-ssh.pem). The wizard automatically detects the key you used to launch the instance.

   AWS automatically detects the key pair name and public DNS for your instance and populates these fields in the Connect to an Instance page.

**Figure 1-6. Connect to an Instance Page**




4. In the Connect to an Instance page, type the name and location of the .pem file in the Private key path field (such as, C:\Users\username\Downloads\example-ssh.pem).
5. Click **Launch SSH Client** to display the SteelStore Management Console in your browser.

# Creating the /data Partition

The /data is the partition that holds the user backup data.

As the SteelStore instance was booting, you attached one or more EBS volumes. You create the /data partition using these EBS volumes.

#### To create the /data partition

- Log in to the SteelStore CLI and type the following commands:

```
amnesiac> enable
amnesiac# configure terminal
amnesiac (config)# no se en
amnesiac (config)# aws setup data partition
```

  This command takes a few minutes to complete because it formats all EBS volumes and create a RAID0 /data partition.

# Creating an admin Password

To configure the SteelStore instance, you must create a password for the admin user.

#### To create an admin password

- Log in to the SteelStore CLI and type the following commands:

```
amnesiac (config)# username admin password 0 <type-the-password>
amnesiac (config)# write memory
```

# Managing the SteelStore AMI

You can stop, start, or deprovision the SteelStore in the AWS cloud.

## Stopping the SteelStore Appliance

To stop the SteelStore, simply terminate the associated SteelStore AMI.

## Starting the SteelStore Appliance

To start the SteelStore, start the associated SteelStore AMI.

## Deprovisioning the SteelStore Appliance

To deprovision the SteelStore, terminate the SteelStore AMI and delete the Configuration Volume and all Datastore Volumes.