Deploying Actifio Sky for AWS from an AMI

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Contents

Preface ..... **v**

The Actifio Now Customer Portal v

Chapter 1 - Deploying the Actifio Sky AMI 1

Prerequisites 2

Configuring the Actifio Sky AMI 3

Chapter 2 - Installing the Actifio Desktop Client 9

Installing the Actifio Desktop Client 10

Next Steps 12

Chapter 3 - Install Actifio Connectors 13

The Actifio Windows Connector 14

Actifio Change Tracking Driver Option for Windows 14

Installing the Actifio Windows Connector 14

Uninstalling the Actifio Windows Connector 14

The Actifio Linux Connector 16

Installing the Actifio Connector on a Linux Host 16

Uninstalling the Actifio Connector from a Linux Host 16

Chapter 4 - Actifio Sky Appliance Installer 17

Next Step 20

Chapter 5 - Enabling Replication 21

Exchanging Certificates 21

Joining Actifio Appliances 23

Chapter 6 - Adding Storage 25

Obtain Instance ID 26

Create a Volume in the EC2 Space 27

Attach Volume to Actifio Sky for AWS Appliance Instance 28

Add the Volume to the Actifio Sky for AWS Appliance 29

Preface

The information presented in this guide is intended for users who are configuring Actifio Sky for AWS with an AMI supplied from Actifio. This guide assumes that the reader has a working knowledge of general Amazon AWS precesses and procedures.

Once you have finished installed and configuring the Actifio Sky AMI, consult ***Getting Started with Actifio Copy Data Management***. It provides detailed instructions on using the unique features of Actifio Sky. A copy of this guide can be found in the Actifio Now customer portal or by clicking the book icon in the lower right-hand corner of the Actifio user interface.

The following guides also reside in the Actifio Now portal and the Actifio user interface provide detailed, application-specific, step-by-step instructions and will be of particular interest:

- ***Configuring Resources and Settings With the Domain Manager***
- ***Setting Up Users and Roles With the Domain Manager***
- ***Planning and Developing Service Level Agreements***
- ***Virtualizing and Protecting Copy Data with the Application Manager***
- ***Managing Copy Data with the Application Manager***

The Actifio Now Customer Portal

From the customer portal you can obtain detailed reports about your Actifio appliance as well as search the portal's knowledge base for answers to specific questions.

To log into the Actifio Now customer portal:

1. Go to: **https://now.actifio.com**
2. When prompted, enter the user name and password you received from you Actifio representative.

1 Deploying the Actifio Sky AMI

An Actifio Sky for AWS appliance is a virtual server designed to capture, and manage data that resides on the servers in your AWS VPC.

Multiple Actifio Sky appliances can be deployed and configured. Each Actifio Sky appliance can capture local application data and replicate copies of the data to other Actifio Sky appliances in AWS.

Actifio Sky appliances outside of AWS can replicate data to Actifio Sky appliances in AWS.

After you have completed deploying Actifio Sky for AWS, consult ***Getting Started with Actifio Copy Data Management***. It provides an overview of the basic Actifio concepts and procedures as well as an introduction to the Actifio user interface.

A copy of this guide can be found in the Actifio Now customer portal or by clicking the book icon in the lower right-hand corner of the Actifio Desktop user interface.

Prerequisites

Before you begin, you must supply your Actifio representative with:

- Your AWS Account Number. To share the Actifio Sky AMI the Actifio representative will:
  - Select the Actifio Sky AMI image
  - From the Actions drop down menu select **Modify Image Permission**
  - In the displayed dialog box, enter the AWS Account Number
- The AWS region in which the Actifio Sky appliance will reside
- A Keypair for the Actifio representative's use
- The VPC in which the Actifio Sky for AWS AMI will be installed
- The VPC must use either a VPN or Public IP for access.
- If you use a Public IP you must use Elastic IP and have defined a gateway for the VPC

Note: *If you have multiple VPCs, configure your Actifio Sky for AWS appliance in the VPC that contains most of the applications to be protected. Applications that reside outside of the specified VPC can be protected if you provide a peering connection between VPCs via AWS.*

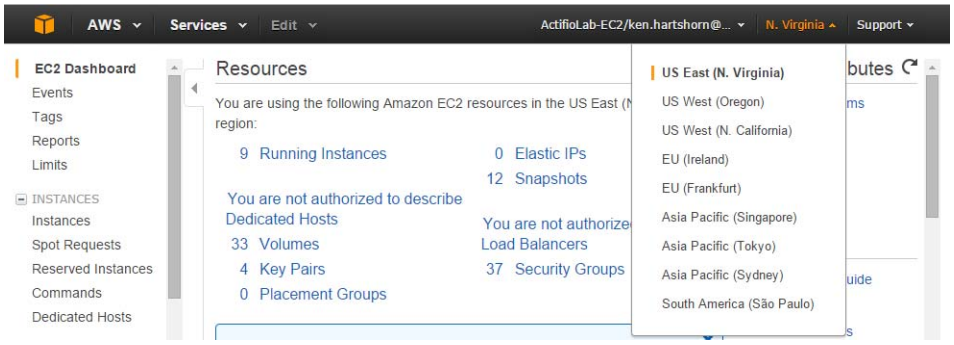
- In addition, you will also need to know your Actifio Sky license size. You will be prompted to select an Instance Type. The instance type maps directly into the Actifio Sky license size:
    - m5.xlarge - for 5TB license
    - m5.2xlarge - for 10TB license
    - m5.4xlarge - for 30TB license
    - r5.8xlarge - for 50TB license
    - r5.8xlarge - for 128TB license

Configuring the Actifio Sky AMI

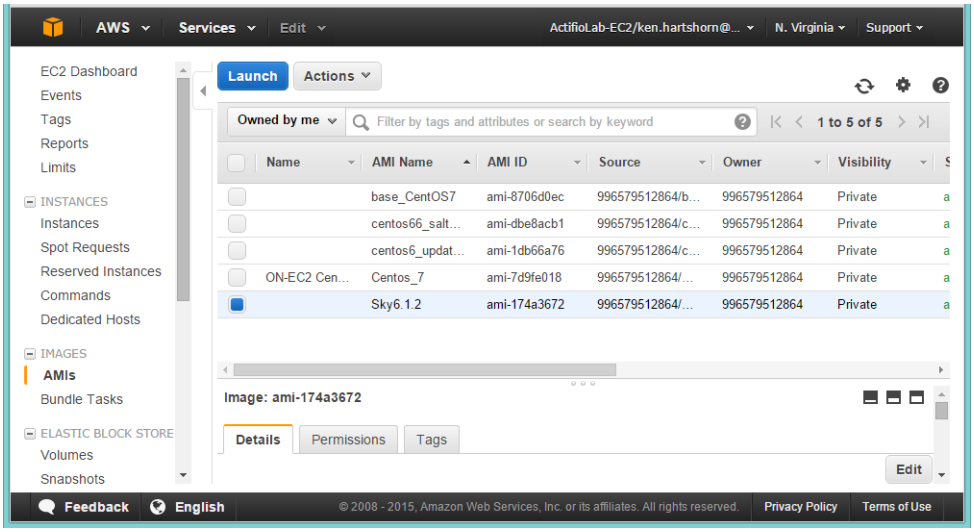
After you have supplied your Actifio representative with the Prerequisites on page 2, your Actifio representative will notify you when the Actifio AMI has been shared to your AWS account.

Once the Actifio AMI has been shared:

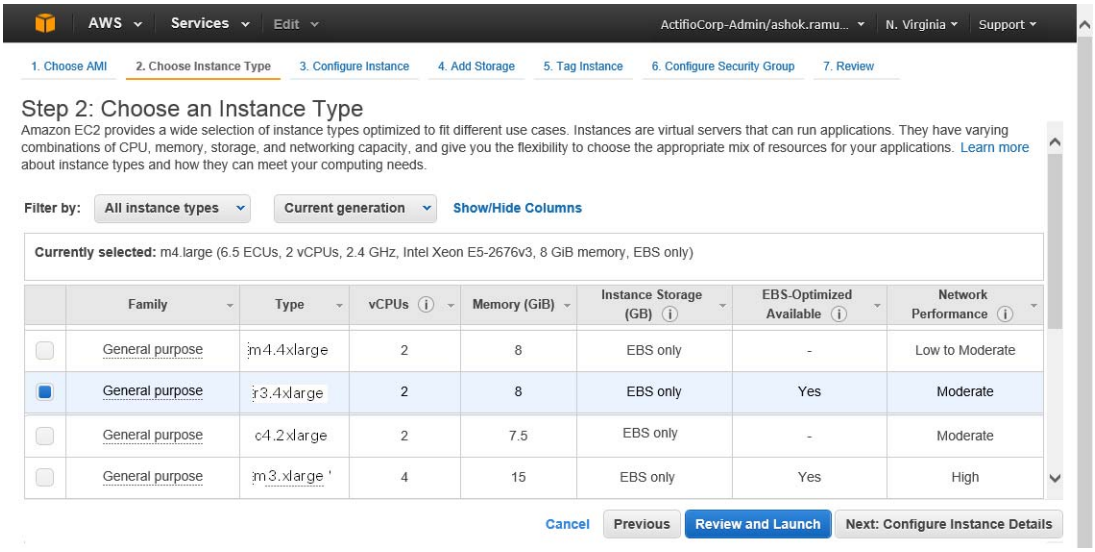
1. Log into your AWS account
2. Ensure you have selected the correct region in which the AMI is to be installed:



3. From the Services menu, select **EC2**.
4. In the left-hand menu, under **Images**, select **AMIs** and a list of all available AMIs is displayed:



5. Select the Actifio AMI
6. Click **Launch**, and Step 2 of the Configure Instance process is displayed:



7. Select the Instance type to be used with the Actifio Sky appliance. The instance type is tied to the license size you purchased:
   - m3.xlarge - for 5TB license
   - c4.2xlarge - for 10TB license
   - m4.4xlarge - for 30TB license
   - r3.4xlarge - for 50TB license

   These sizes are the minimum sizes required based on your Actifio Solution Calculator entries. You may use a larger size instance type as you see fit. Larger instance sizes typically incur additional charges from Amazon.

CAUTION! *Once you have selected an instance type and the Actifio Sky appliance is installed, the license size cannot be increased.*

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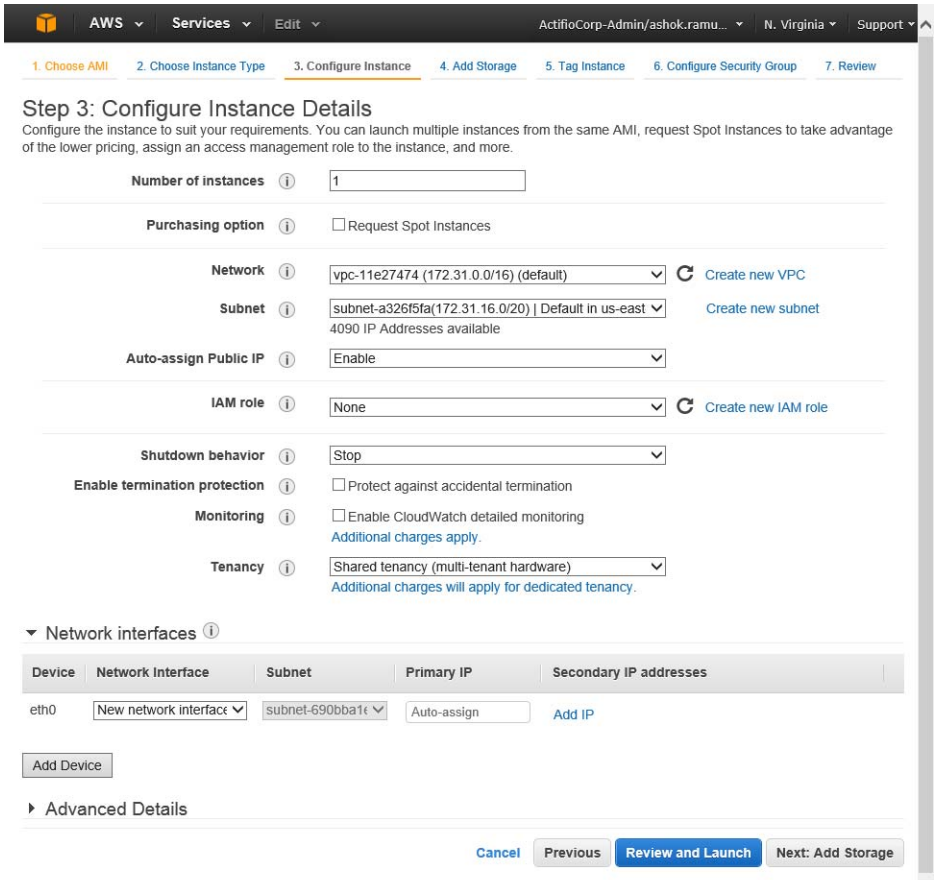
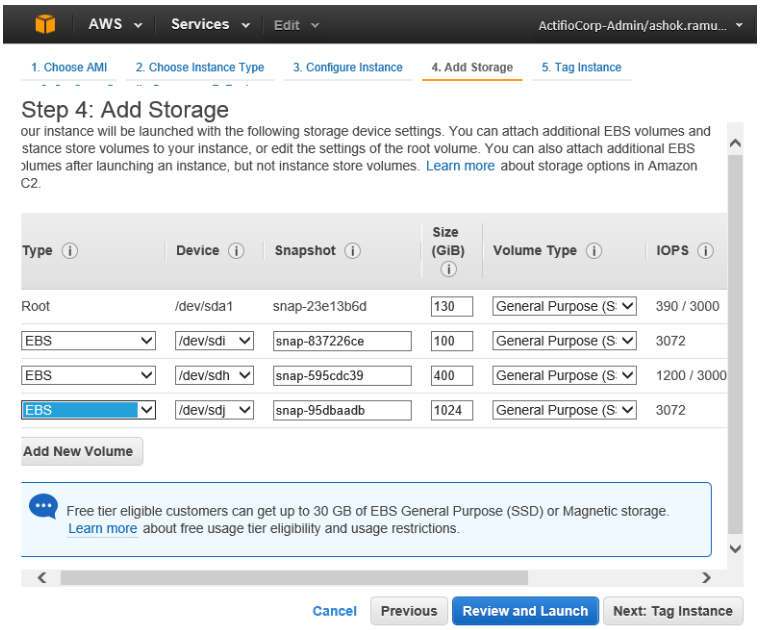
8. Click **Next: Configure Instance Details** and Step 3: Configure Instance Details is displayed:



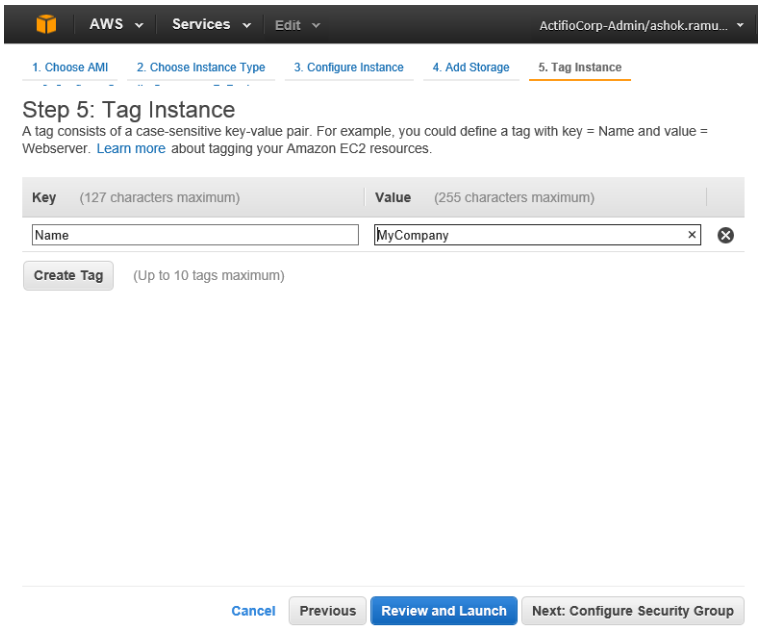
9. Required settings for this step include:
   - **Network:** From the drop down list, select the VPC (network) for the Actifio Sky instance.
   - **Subnet:** From the drop down list, select the subnet for the Actifio Sky instance.
   - **Auto-assign Public IP:** From the drop down list, select **Enable** If this Actifio Sky instance requires access via the public Internet. This is not required if your IT infrastructure has a VPN.
10. Click **Next: Add Storage** and the Step 4 Add Storage page is displayed:



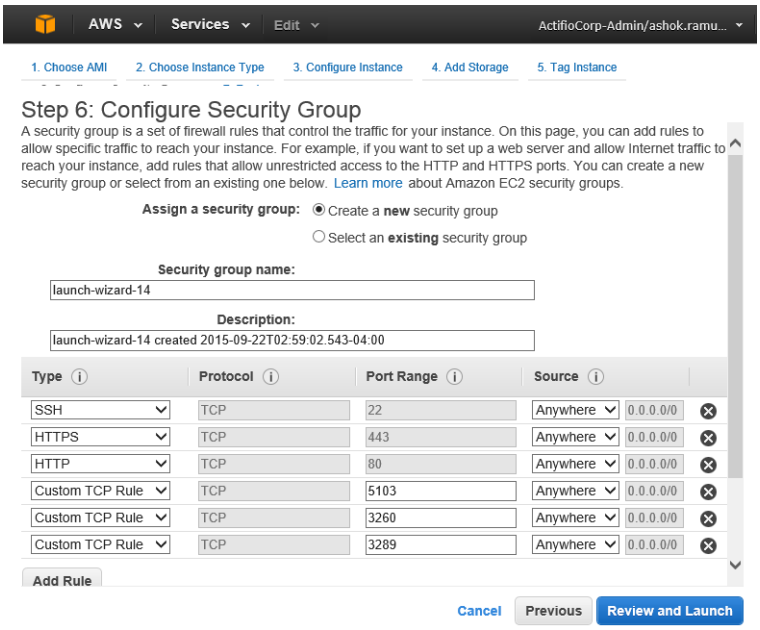
11. Create three devices with a minimum of:
    - 200GB - Will be used by the Actifio Sky Primary
    - 10GB - Will be used by the Actifio Sky Snapshot Pool
    - 100GB - Will be used by the Actifio Sky Dedup Pool

    These devices will be assigned to their respective Actifio pools in Chapter 4, Actifio Sky Appliance Installer

12. Click **Next: Tag Instance** and Step 5 Tag Instance is displayed:



13. Create a tag for the Actifio Sky instance that is easy to remember and identify.
14. Click **Next: Configure Security Group** and Step 6 Configure Security Group is displayed:



15. Ensure that the Security Group is set as follows:

Type	Protocol	Port Range	Source	Custom TCP Rule
SSH	TCP	22	Anywhere	0.0.0/0
HTTPS	TCP	443	Anywhere	0.0.0/0
HTTP	TCP	80	Anywhere	0.0.0/0
Custom TCP Rule	TCP	5103	Anywhere	0.0.0/0
Custom TCP Rule	TCP	3260	Anywhere	0.0.0/0
Custom TCP Rule	TCP	3289	Anywhere	0.0.0/0
Custom UDP for Actifio secureconnect	UDP	1194	Anywhere	0.0.0/0

16. Click **Review and Launch** and a page is displayed detailing your selections and setting.
17. If the selections and settings are correct, click **Launch** and the Actifio Sky appliance is deployed.

2 Installing the Actifio Desktop Client

When you have finished deploying the Actifio Sky appliance you must install the Actifio Desktop Client (user interface) on your local system.

The Actifio Desktop Client is downloaded and installed from the Actifio Sky appliance's Resource Center.

> ***Note:*** *After the Actifio for Sky appliance is deployed, it may take up to ten minutes for the Actifio Resource Center to become activated.*

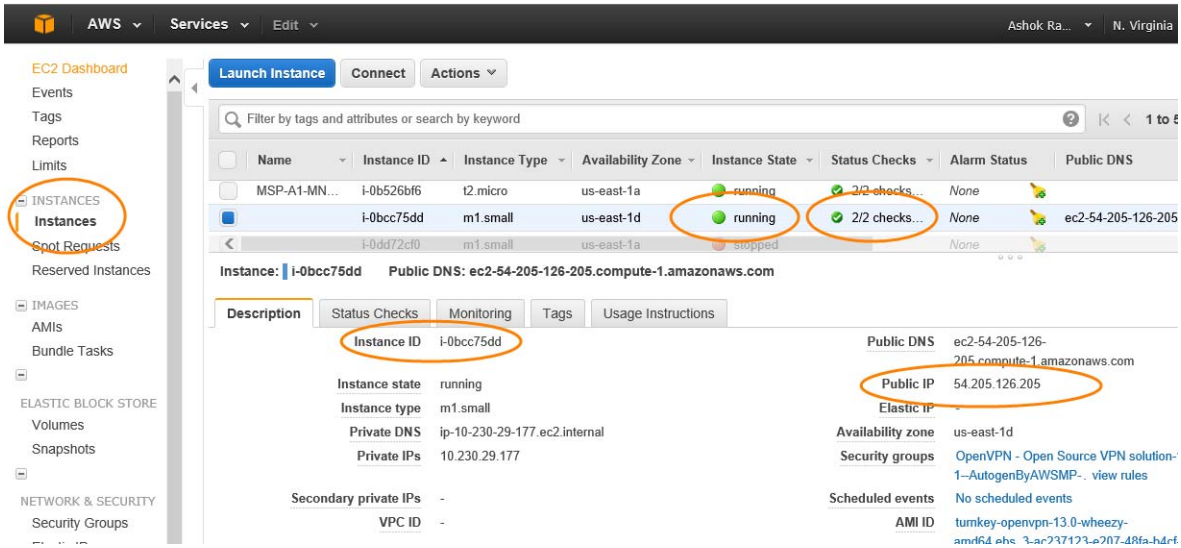
The Actifio Desktop user interface runs on Adobe Air Player. When you install the Actifio Desktop client, you will also install a copy of Adobe Air Player.

Installing the Actifio Desktop Client

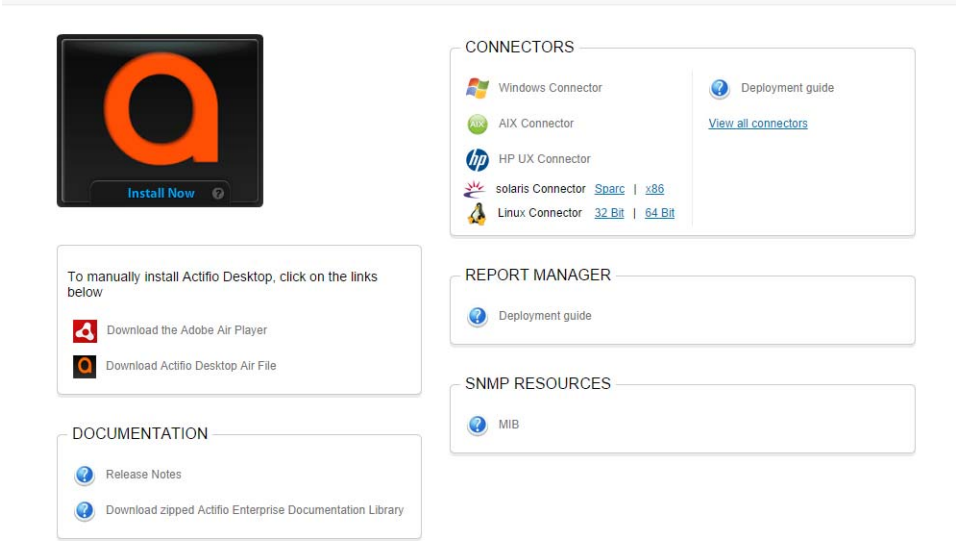
The Actifio Desktop Client is downloaded and installed from the Actifio Sky Resource Center.

To display the Actifio Sky Resource Center:

1. In a web browser, enter the **Public IP** for Actifio Sky for AWS Instance. You can find the public IP in the EC2 instance's **Description** tab.



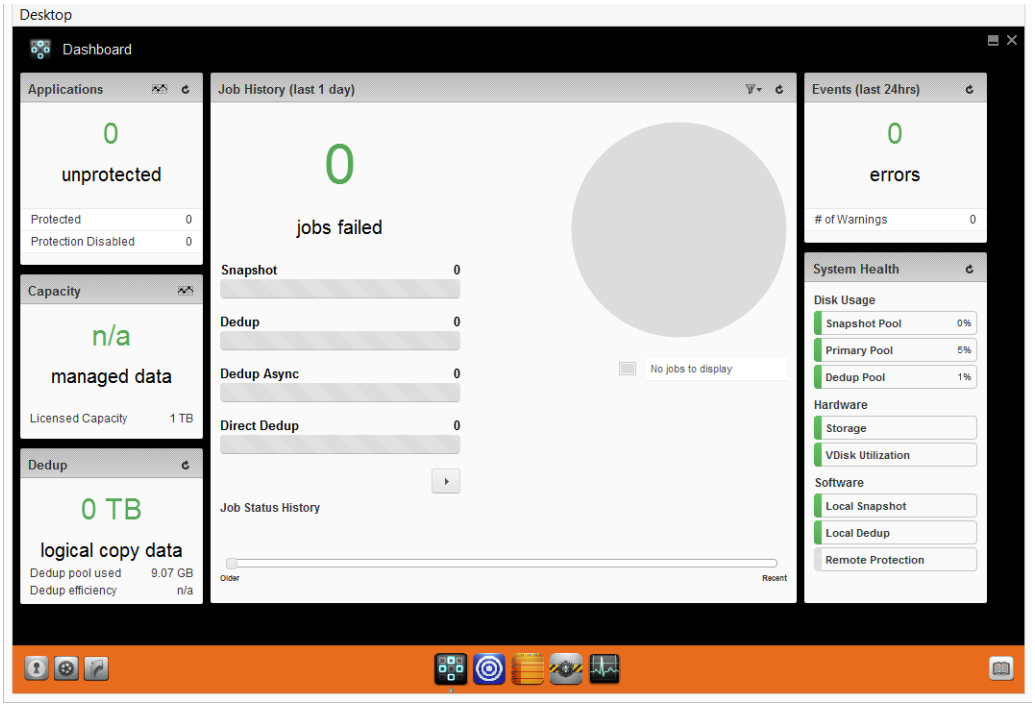
2. Enter the public IP address in a browser's address space and the Actifio Resource Center is displayed:



3. Install the Adobe Air Player and Actifio Desktop (UI):
   - Click **Download the Adobe Air Player**. Follow the prompts to install Adobe Air Player. Wait for the Adobe Air Player installation to complete.
   - Click **Download Actifio Desktop Air File**. Follow the prompts to install the Actifio Desktop Air File.

- When the Actifio Desktop installation is complete, the Actifio Desktop log in page is displayed:

4. Enter the username: **admin**
5. Enter the password you defined in Actifio Sky Appliance Installer on page 7.
6. Enter the **Public IP**. The public IP can be found in the EC2's Instances' **Description tab**.
7. Click **Sign in** and the Actifio Dashboard is displayed:



Actifio Desktop Dashboard

The Actifio Desktop Dashboard displays a high-level view of your Actifio appliance's status.

Next Steps

Before using Actifio Sky for AWS, consult ***Getting Started with Actifio Copy Data Management***. It provides an overview of the basic Actifio concepts and procedures as well as an introduction to the Actifio user interface.

A copy of this guide can be found in the ActifioNOW customer portal.

After you have familiarized yourself with the basic concepts and use of the Actifio Sky for AWS appliance:

- Install the Actifio Connector on the servers whose application data you want to capture. See Chapter 3, Install Actifio Connectors for details.
- Configure the Actifio Sky for AWS appliance's alerting capabilities. See AGM online help for details. A copy of this guide can be found in the ActifioNOW customer portal.
- If you have a license for a second Actifio Sky for AWS appliance, install and configure the appliance in a separate region and VPC.
- If you will replicate data from/to an on premise Actifio Sky appliance or from/to another Actifio Sky for AWS to/from this newly installed Sky for AWS appliance see Chapter 5, Enabling Replication.
- If you need to add additional storage, see Chapter 6, Adding Storage.

3 Install Actifio Connectors

Before you can capture application data from servers running in your AWS VPC, you must install the Actifio connector on those servers.

The Actifio Connector is a small-footprint process installed on servers that host applications. The Actifio Connector is used to capture the data that resides on the application servers in your AWS environment

Specifically, Actifio Connectors:

- Discover applications
- Capture individual and groups of applications including:
  - Microsoft® SQL Server clusters
  - Microsoft Exchange Database Availability Groups (DAGs)
- Quiesce applications, for application consistency during capture
- Enable change block tracking for Actifio's incremental forever capture strategy.
- Capture and manage transaction logs:
  - Capture database(s) and logs with one Policy Template
  - Truncate database transaction logs
  - Roll database transaction logs forward for point-in-time recovery when accessing virtual copies.
- Rescan storage buses, brings new devices on-line, assigns drive letters, imports volume groups, and mounts file systems, based on the operating system of the application host.
- Prepare application volumes for restore operations.
- Enable directory and file browsing, and packages selected files into a ZIP archive when restoring one or more files from a mounted backup.

Actifio Connectors are operating system specific. For details see:

- The Actifio Windows Connector on page 14
- The Actifio Linux Connector on page 16

Note: *You must open the Security Group's ports 5106 and 56789 on the EC2 server(s) hosting an Actifio Connector.*

The Actifio Windows Connector

The Actifio Connector for Microsoft® Windows® runs as a Windows service under the Local System account. The Connector writes logs to a log file in its installation directory and writes significant events to the Windows application event log as well.

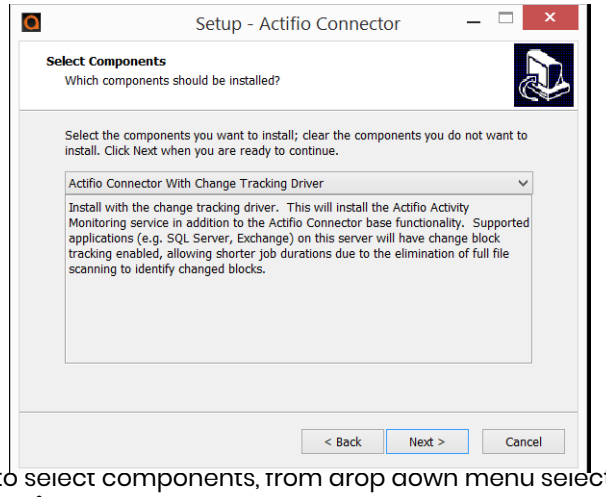
Actifio Change Tracking Driver Option for Windows

When installing the Windows connector you will be given the option of installing the Actifio Change Tracking Driver. For Actifio Sky for AWS, always select the **Actifio Connector With Change Tracking Driver** option. The Change Tracking Driver enables Actifio's initial full then incremental forever approach to data capture.

Installing the Actifio Windows Connector

To install the Actifio Connector on a Windows host:

1. Log on to the host as administrator.
2. Open a browser to `http://<ACTIFIO_APPLIANCE_IP>` to access the Actifio Resource Center.
3. Click the **Windows Connector** to download `connector-Win32.exe`. Save the file.
4. Launch `connector-Win32.exe`.
5. Click **Run** and follow the setup wizard instructions.



6. When prompted to select components, from drop down menu select **Actifio Connector With Change Tracking Driver**.
7. Click **Next**.
8. Follow the rest of the installation instructions.
9. Once the installation is complete, to verify that the Actifio Connector is installed and running correctly run the standard windows tool: services.msc on the server on which you installed the Actifio Connector.

If after the first full backup of an application, the Actifio appliance will perform incremental backups. If your backups are still always full backups, then check for the following:

- The Actifio Activity Monitor (change tracking driver) service may be stopped. In this case, check your Windows services and start the Actifio appliance's Activity Monitor service.
- The change tracking driver may be incorrectly configured or not installed. In this case, uninstall and then make a full install of the Actifio Connector.

Uninstalling the Actifio Windows Connector

To uninstall the Connector from a Windows host:

1. From the `c:\program files\Actifio` folder select and double-click the uninstaller executable: `unins000.exe`.
2. Click **Yes** to confirm and then click **OK** to finish.

The Actifio Linux Connector

The Actifio Connector for Linux runs as a daemon process under the username **root**. It listens on a TCP port 56789 for communication from the Actifio system. The Connector writes to a log file in the installation directory (`/var/act/log/UDSAgent.log`) and posts significant events to the `/var/log/` messages repository.

On Linux systems, the installer takes the form of an RPM package. Use the `rpm` utility to install the Connector. The installer creates `Init` RC scripts to start and stop the Connector that runs as a daemon. After the installation completes, use the RC script to start Connector for the first time.

Installing the Actifio Connector on a Linux Host

On Linux systems, the installer takes the form of an RPM package. Use the `rpm` utility to install the Actifio Connector. The installer creates `Init` RC scripts to start and stop the Actifio Connector that runs as a daemon. After the installation completes, use the RC script to start the Actifio Connector for the first time.

To install the Actifio Connector on a Linux host:

1. Log on to the host as root.
2. Open a browser to `https://<ACTIFIO_APPLIANCE_IP>` to access the Actifio Resource Center.
3. Click the **Linux Connector** icon to download the Actifio Connector.
4. Click **OK** in the information dialog.
5. To check the RPM package before proceeding with installation, run `rpm --checksig <connector_filename>.rpm`
6. To install the Actifio Connector, run `rpm -ivh <connector_filename>.rpm` or `rpm -ivh <connector_filename>.rpm` (for the CentOS 5.7 32-bit installation)

   Note: *The Actifio Connector is always installed at* `'/opt/act'`.

7. Run `/etc/init.d/udsagent status` to verify that the Actifio Connector is running.

Uninstalling the Actifio Connector from a Linux Host

To uninstall the Actifio Connector from a Linux host:

1. Stop the Actifio Connector by running `/etc/init.d/udsagent stop.`
2. Learn the currently installed Linux Connector RPM name:

   ```
   [oracle@vq-oracle ~]$ rpm -qa udsagent
   ```

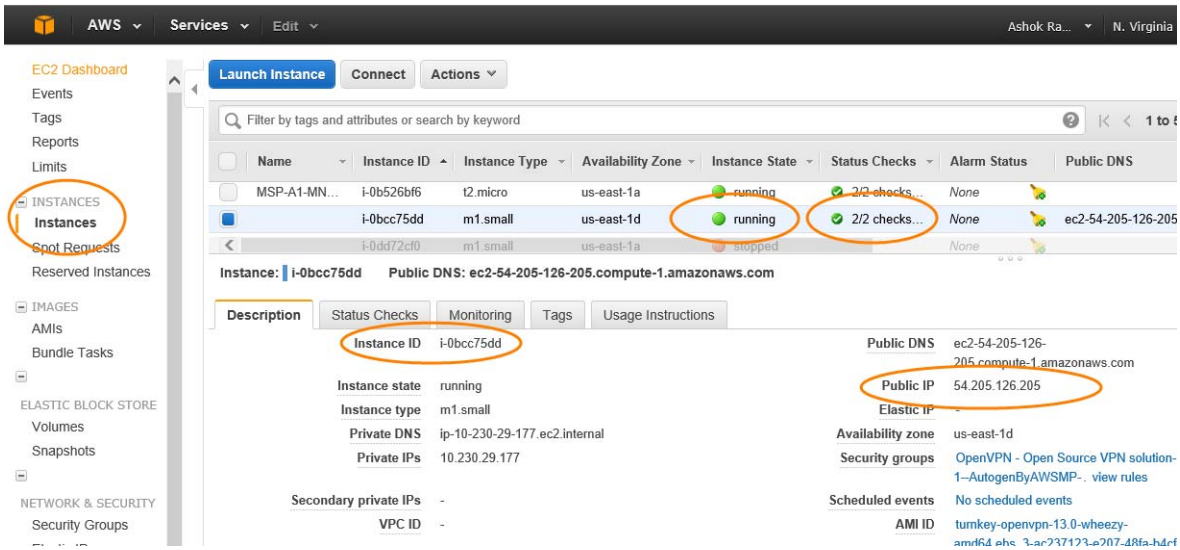
   This returns the package name and version, such as: `udsagent-6.1.1-43975.x86_64`
3. Uninstall the package using `rpm -e udsagent` with the package name you obtained from the query. For example:

   ```
   rpm -e udsagent-6.1.1-43975.x86_64
   ```

4 Actifio Sky Appliance Installer

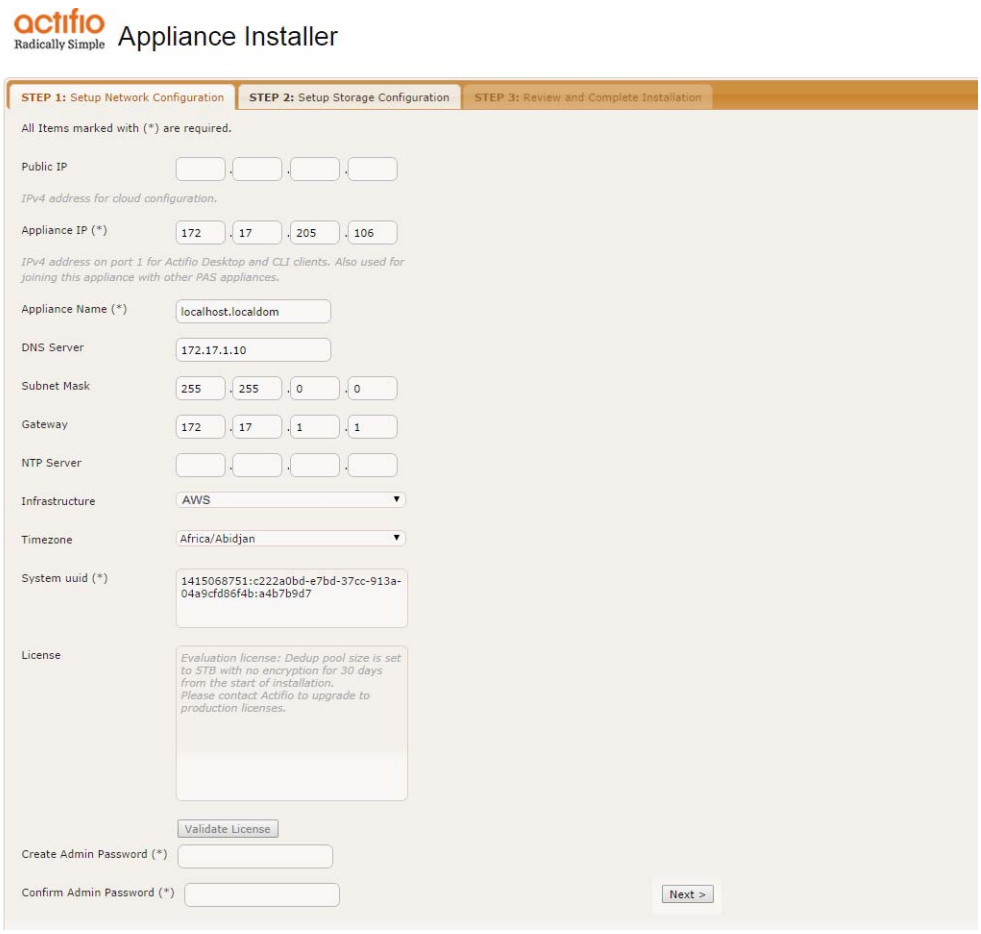
Once the AMI has been configured, access the Actifio Sky Appliance Installer:

1. From the EC2 Instance's **Description** tab obtain the public IP for the Actifio Sky Instance:



Note: *Ensure the Instance State is Running and the Status Checks are 2/2 before proceeding.*

2. Enter the **Public IP** address in a browser's address space and the Actifio Appliance Installer is displayed:



3. In the spaces provided enter the Public IP for the cloud instance in which this AMI will be installed.
4. Ensure that the auto discovered Actifio Sky appliance IP address is correct.
5. In the space provided, enter a name for the Actifio Sky appliance.
6. Ensure that the auto discovered network IP addresses are correct.
7. From the Infrastructure drop down menu, select AWS.
8. Set the time zone as needed.
9. If you are installing the Actifio Sky appliance as a 15-day evaluation:
    - Leave the License Number field set to the default setting.
    - Click Next and the Step 2 tab contents are displayed. See page 16.

Note: *The 5TB license is used for evaluations. Once selected it cannot be increased. If you decide to purchase a Actifio Sky appliance you will either keep the current 5TB appliance or install a larger Actifio Sky appliance.*

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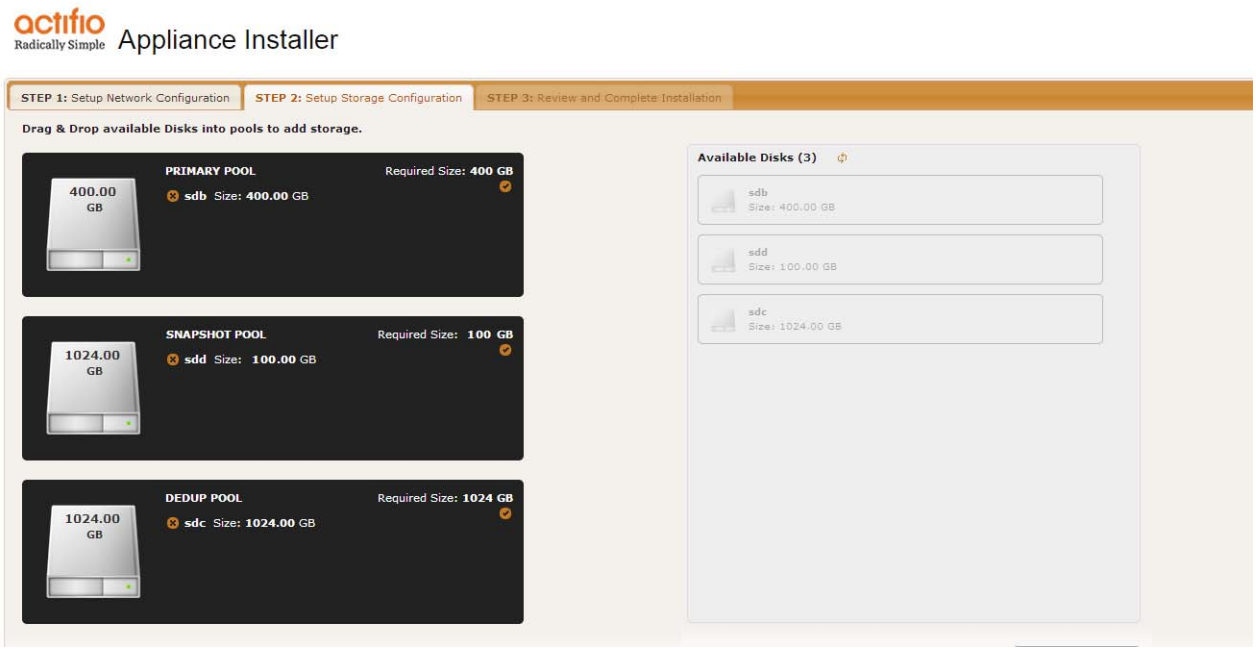
10. If you are not installing this Actifio Sky appliance as an evaluation, capture the System UUID and pass it on to your Actifio representative. The Actifio representative will use the UUID to generate the Actifio Sky appliance license key.

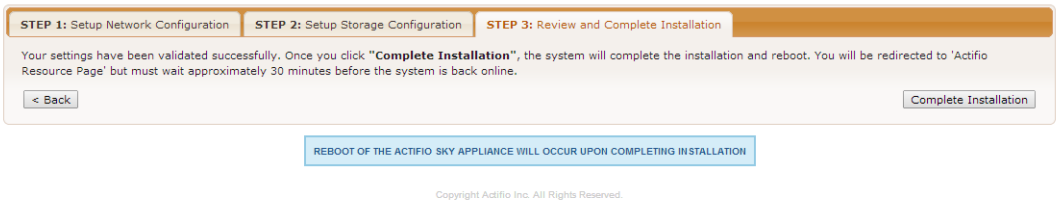
11. In the space provided, paste a copy of the license key you obtained from the Actifio representative.
12. Click **Validate License** to ensure the validity of the license entered.

    If the license is valid, the Managed Data License (MDL) size will be displayed in a popup window. If there are any optional add-ons included in the license they will also be shown here.
13. If you are using an encryption license, a Pass phrase field is displayed. Enter a pass phrase, record the pass phrase and keep it in a secure location.
14. In the spaces provided enter (create) a password for the first Admin user of the Actifio Sky appliance.
15. Click **Next** and the Step 2 tab contents are displayed:



16. Select and drag the **Available Disks** to their associated pools:

    Drag the 400GB disk to the Primary Pool.
    Drag a 100GB (minimum) Snapshot Pool.
    Drag a 1024GB (minimum) disk to the Dedup Pool.
17. Click **Validate Installation**. The Actifio Sky installer validates the settings. Any issues will appear in a yellow field at the top of the page 2. If no issues are encountered, the third tab is displayed:



18. The third tab provides the opportunity to review choices and go back and make changes as needed.
19. Once choices are verified, click **Complete Installation** and the Actifio Sky appliance will reboot. The reboot may take several minutes.

Next Step

Install the Actifio Desktop Client.

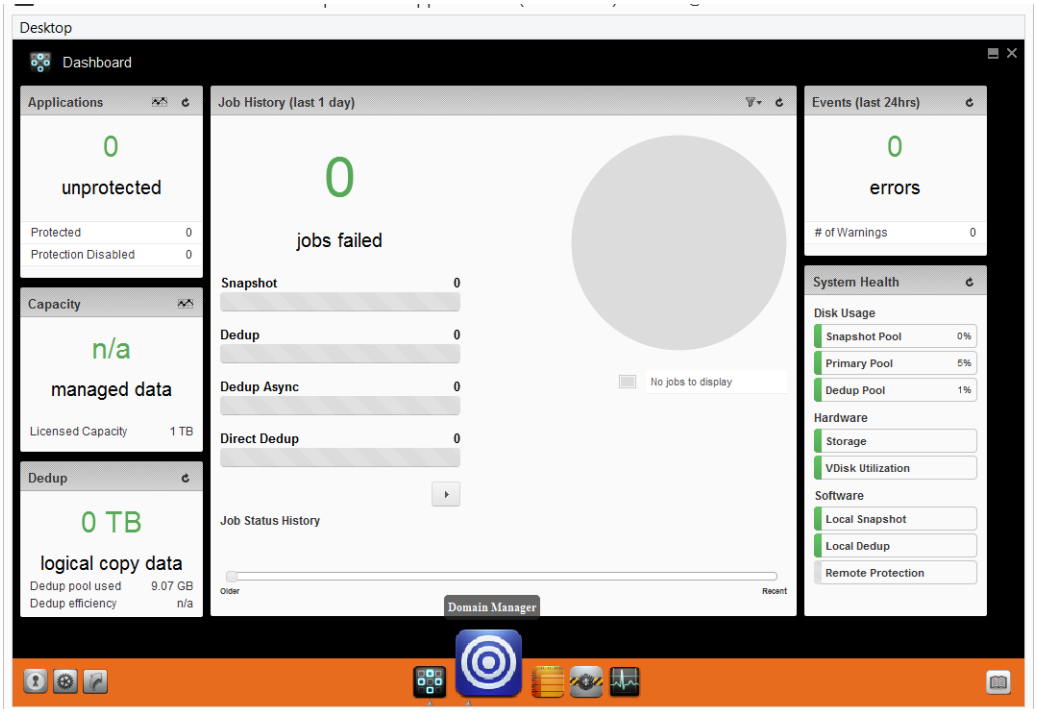
5 Enabling Replication

Note: *Before proceeding, familiarize yourself with the concepts, processes and procedures in the* ***Getting Started with Actifio Copy Data Management*** *guide.*

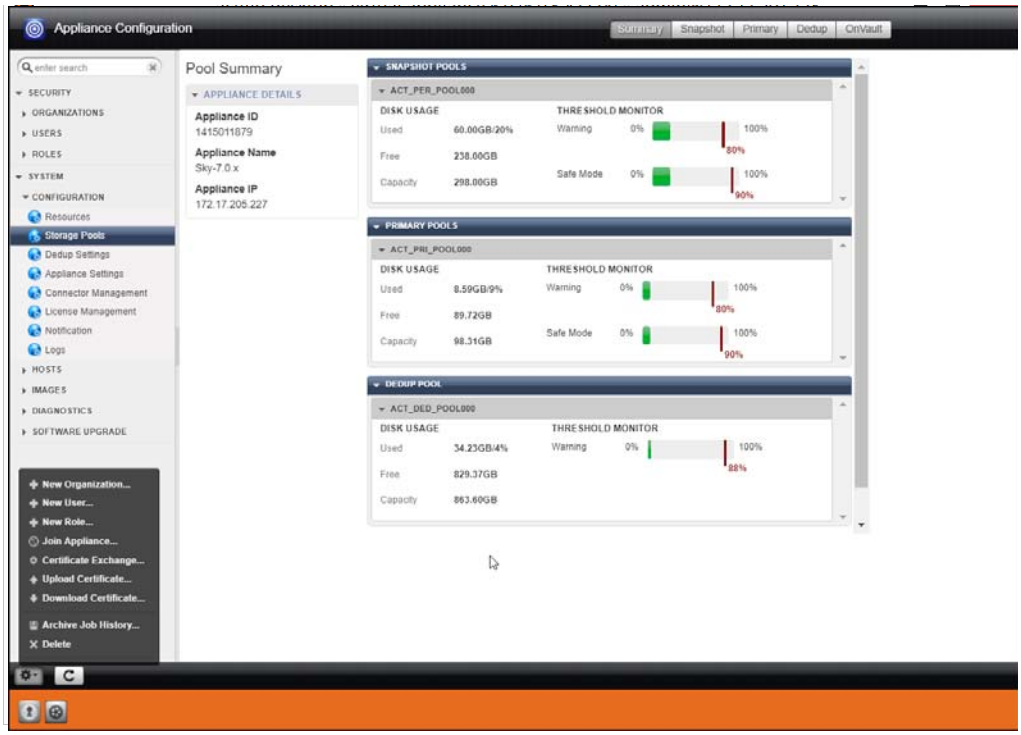
To replicate data, Actifio appliances must first exchange certificates and then be joined.

Exchanging Certificates

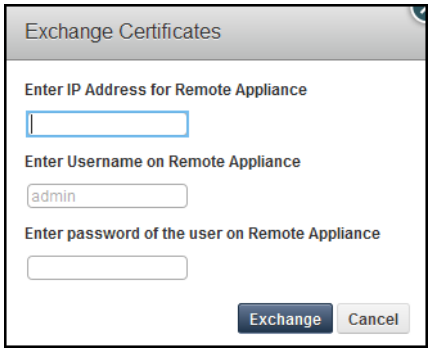
Use the Actifio Appliance Configuration Manager to exchange security certificates between the Actifio Sky appliances:



1. Click the **Manage** tab and select **Appliances** from the drop-down menu. The Appliances page opens.
2. Select an appliance and select **Configure Appliance** from the drop-down menu in the lower right corner of the window. The Application Configuration page opens.
3. On the bottom strip of the Actifio Desktop, click the **gear** button to display **Certificate Exchange** in the drop-down menu.



4. At the bottom of the page, click the gear button and the service menu is displayed.
5. From the service menu, click **Certificate Exchange...** and the Exchange Certificate dialog box is displayed.

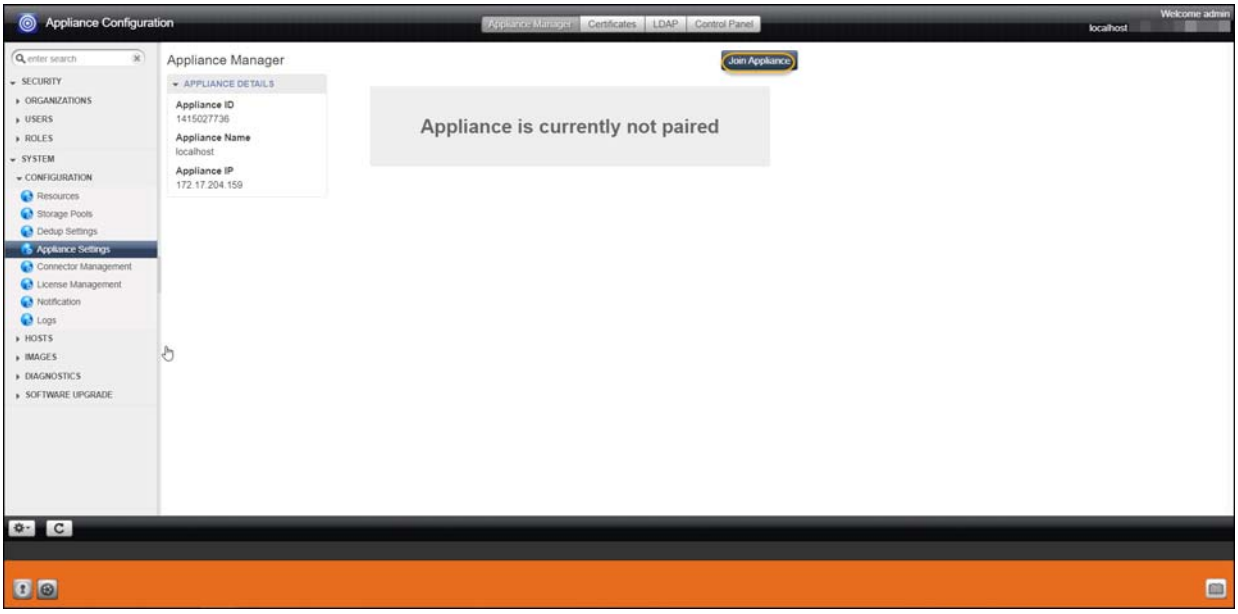


6. In the spaces provided, for the Sky appliance to be replicated to, enter:
    - The Public IP address
    - The username: **admin**.
    - The password: The **InstanceId** of the Actifio Sky appliance
7. Click **Exchange**. The security certificates are exchanged between the Actifio Sky appliances.

Once the security certificates are exchanged, the Actifio appliances are ready to be joined.

Joining Actifio Appliances

To join the Actifio appliances:



1. From the top row of menu tabs, select **Join Appliance.** The **Join a Remote Appliance** dialog box displays.

2. Enter the Public IP address of the Actifio Sky appliance to which the current Actifio Sky appliance will replicate.
3. Ensure **Enable Sharing** is **NOT** checked.
4. Click **Join** and the Actifio appliances are joined.

6 Adding Storage

Note: *This section assumes that you have an Actifio Sky for AWS appliance up and running and you have familiarized yourself with the concepts and procedures found in the* ***Getting Started with Actifio Copy Data Management*** *guide.*

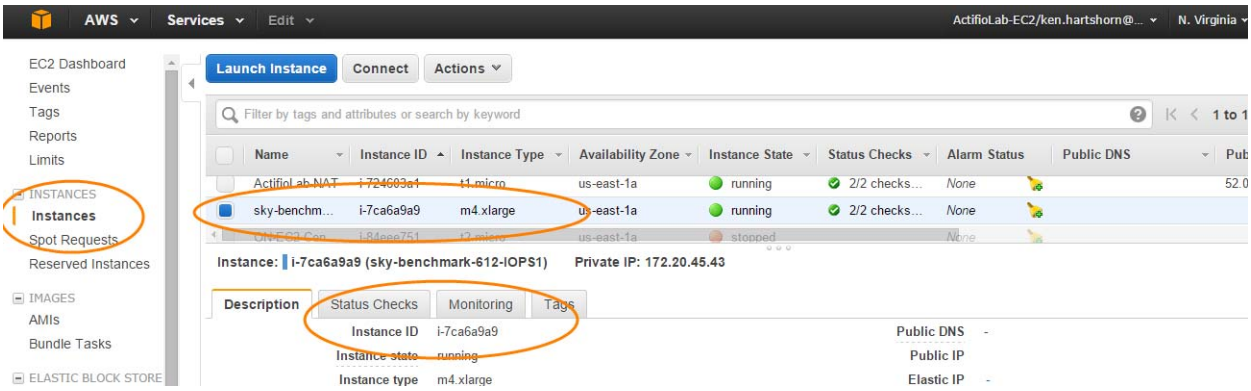
To add additional storage to an Actifio Sky for AWS appliance you must:

- Obtain the Instance ID of the Actifio Sky for AWS appliance
- Create a volume in the EC2 space in which the Actifio Sky for AWS appliance resides.
- Attach the volume to the Actifio Sky for AWS appliance instance in the EC2 space
- Add the volume to the Actifio Sky for AWS appliance via the Actifio Sky user interface.

Obtain Instance ID

When you create the new volume you will be prompted to attach it to an Actifio Sky for AWS instance. To obtain the Instance ID for an Actifio Sky for AWS appliance:

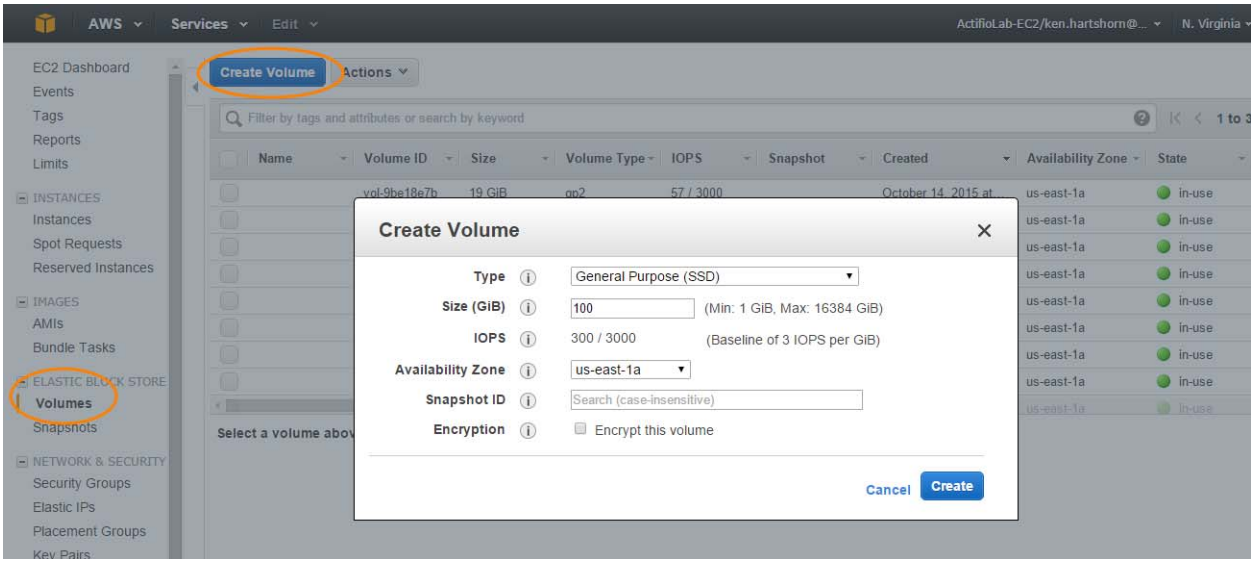
1. Go to the EC2 dashboard and in the left-hand menu, click **Instances**.
2. From the displayed list of instances, select the Actifio Sky for AWS appliance to which the storage (volume) will be added.
3. Click the **Description** tab and the Instance ID is displayed at the top of the tab:



Create a Volume in the EC2 Space

Add storage in the EC2 space in which the Actifio for Sky AWS appliance resides:

1. Go to the EC2 dashboard and in the left-hand menu, click **Volumes** and the Volumes page is displayed.
2. Click the **Create Volumes** tab and the Create Volume dialog box is displayed:



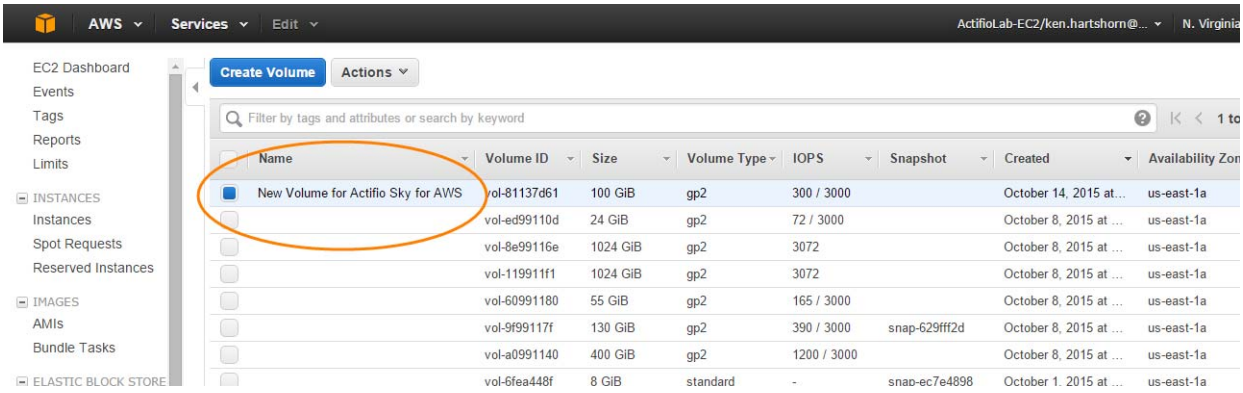
3. In the spaces provided, create the volume according to your needs.
4. Ensure you select the **Availability Zone** in which the Actifio Sky for AWS appliance resides.
5. Click **Create** and the volume will be created.

Once AWS has completed creating the volume it must be attached to the Actifio Sky for AWS appliance.

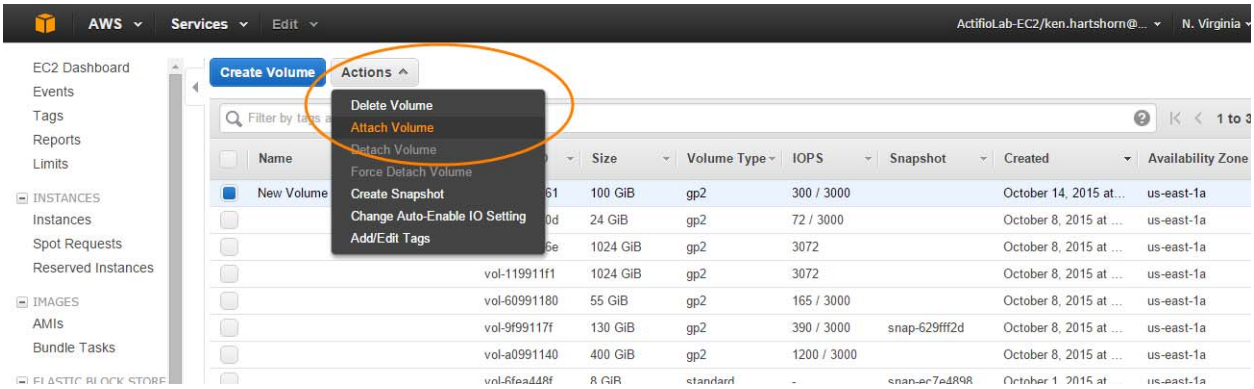
Attach Volume to Actifio Sky for AWS Appliance Instance

To attach the new volume to the Actifio Sky for AWS appliance instance:

1. Select the newly-created volume:



2. Click **Actions** and a drop-down menu is displayed:



3. From the drop-down menu, select **Attach Volume** and the Attach Volume dialog box is displayed:

4. In the space provided, enter the Instance ID of the Actifio Sky for AWS appliance instance to which you want to attach the volume. As you begin typing the Instance ID, a drop down of possible choices is displayed. Finish typing the Instance ID or select it from the list of suggestions.

5. Click **Attach** and the volume will be attached to the Actifio Sky for AWS appliance instance.

Add the Volume to the Actifio Sky for AWS Appliance

Adding a volume to the Actifio Sky for AWS appliance is done via the Actifio user interface.

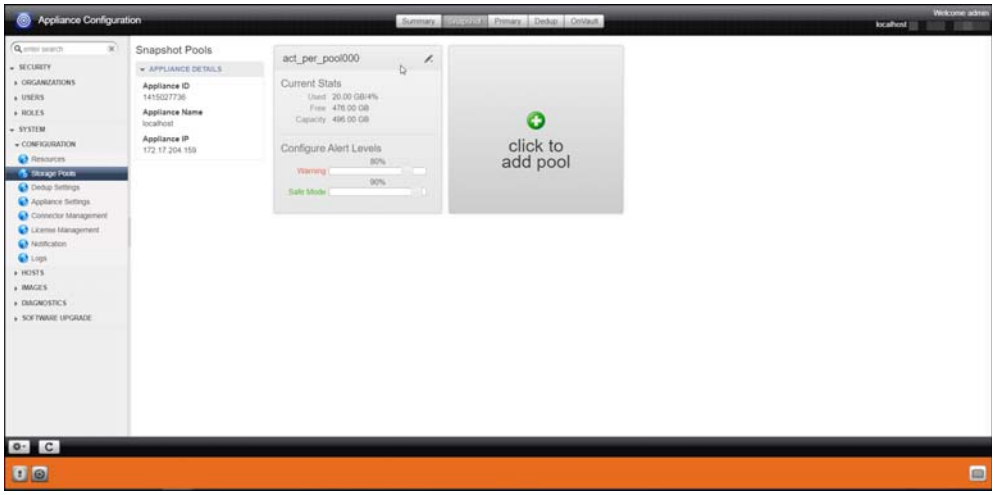
> ***Note:*** *This section assumes you have familiarized yourself with the concepts and procedures found in the* ***Getting Started with Actifio Copy Data Management*** *guide.*

Actifio Sky for AWS appliances allow you to add storage to the Dedup Pool and the Snapshot Pool.

From the Actifio Sky for AWS appliance to which you will add the storage:

To add the volume to storage pool:

1. Open the **Application Configuration Manager** to **System** > **Configuration** > **Storage Pools**.
2. Select the **Snapshot** or **Dedup** tab. The Snapshot Pools or Dedup Pool information page opens.
3. Click the Pencil Edit icon next to the storage pool name.



4. The Manage Pool page for either the Snapshot or Dedup Pool appears..
5. The new volume will appear in the table under **Unmanaged Mdisks**.
6. Click the **+** (plus) next to the new volume and it will appear under **Selected Mdisks**.
7. Click **Submit**. A warning dialog appears. Enter **PROCEED** in the text box to confirm.

The volume can now be used by the Actifio Sky for AWS appliance.