Deploying Actifio Sky for AWS from an AMI



Actifio VDP 10.0

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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 Actific Sky for AWS, consult **Getting Started with Actific Copy Data Management**. It provides an overview of the basic Actific concepts and procedures as well as an introduction to the Actific 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:
 - o Select the Actifio Sky AMI image
 - o From the Actions drop down menu select Modify Image Permission
 - o 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:
 - o m5.xlarge for 5TB license
 - o m5.2xlarge for 10TB license
 - o m5.4xlarge for 30TB license
 - o r5.8xlarge for 50TB license
 - o 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:

EC2 Dashboard	Launch Actions V	•				∂ ♦	?
Tags	Owned by me ℽ Q	Filter by tags and a	attributes or search	by keyword		to 5 of 5 > 🗦	>
Reports Limits	Name -	AMI Name 🔺	AMI ID 👻	Source -	Owner -	Visibility	- :
INSTANCES		base_CentOS7	ami-8706d0ec	996579512864/b	996579512864	Private	1
Instances		centos66_salt	ami-dbe8acb1	996579512864/c	996579512864	Private	
Spot Requests		centos6_updat	ami-1db66a76	996579512864/c	996579512864	Private	
Reserved Instances	ON-EC2 Cen	Centos_7	ami-7d9fe018	996579512864/	996579512864	Private	
Commands Dedicated Hosts		Sky6.1.2	ami-174a3672	996579512864/	996579512864	Private	
IMAGES							
AMIs Bundle Tasks	Image: ami-174a3672		0.0	0		880	, 1
ELASTIC BLOCK STORE Volumes	Details Permissio	ons Tags					
Volumes Snapshots	Details Termissie	ina ruga				Edit	Π,

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

. Choose	AMI 2. Choose Instan	ce Type 3. Config	ure Instance 4. A	dd Storage 5. Tag I	nstance 6. Configure Sec	urity Group 7. Review	
azon E nbinatio		ction of instance type rage, and networkin	es optimized to fit o g capacity, and giv		astances are virtual servers choose the appropriate m		
er by:	All instance types	✓ Current ge	eneration 👻 S	Show/Hide Columns			
urrent	ly selected: m4.large (6	.5 ECUs, 2 vCPUs, 2	2.4 GHz, Intel Xeo	n E5-2676v3, 8 GiB r	nemory, EBS only)		
	-	- Туре -	vCPUs (i) -	Memory (GiB) 👻	Instance Storage (GB) (i)	EBS-Optimized Available (i)	Network
	Family	.)po				Available ()	Performance (i)
	General purpose	m4.4xlarge	2	8	EBS only	Available ()	Low to Moderate
			2	8		- Yes	
D D D	General purpose	im4.4xlarge			EBS only	-	Low to Moderate

- 7. Select the Instance type to be used with the Actifio Sky appliance. The instance type is tied to the license size you purchased:
 - o m3.xlarge for 5TB license

- o c4.2xlarge for 10TB license
- o m4.4xlarge for 30TB license
- o 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.

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

AWS - Services -	Edit ~	ance 4. Add Storage	ActifioCorp-Admin	/ashok.ramu ×	N. Virginia • Suppor
tep 3: Configure Instant onfigure the instance to suit your require the lower pricing, assign an access ma	ements. You can lau		from the same AMI,	request Spot Insta	inces to take advantage
Number of instances	(i) <u>1</u>				
Purchasing option	(j) □ Reque	st Spot Instances			
Network	(i) vpc-11e2	7474 (172.31.0.0/16)	(default)	✓ C Create	new VPC
Subnet		326f5fa(172.31.16.0/2 ddresses available	0) Default in us-east	Create	new subnet
Auto-assign Public IP	(j) Enable			~	
IAM role	(i) None			✓ C Create	new IAM role
Shutdown behavior	(j) Stop			~	
Enable termination protection	(j) 🗌 Protec	t against accidental te	mination		
Monitoring		e CloudWatch detailed I charges apply.	monitoring		
Tenancy	0	enancy (multi-tenant h I charges will apply for		~	
Network interfaces (i)					
Vevice Network Interface	Subnet	Primary IP	Secondary IP a	addresses	
th0 New network interface V	subnet-690bba1(🗸	Auto-assign	Add IP		
Add Device					
Advanced Details					
		Cance	Previous	view and Launch	Next: Add Storage

- 9. Required settings for this step include:
 - o Network: From the drop down list, select the VPC (network) for the Actifio Sky instance.
 - o **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:

AWS ~	Services Services Choose Instance Type	Edit 🗸 3. Configure Instan	ce 4. Add St		min/ashok.ramu 👻
stance store volume	launched with the foll es to your instance, or	r edit the settings of th	ne root volume.	an attach additional EB You can also attach ad re about storage option	ditional EBS
Туре ()	Device (j)	Snapshot (j)	Size (GiB) ()	Volume Type (j)	IOPS (j
Root	/dev/sda1	snap-23e13b6d	130	General Purpose (S	390 / 3000
EBS	✓ /dev/sdi ✓	snap-837226ce	100	General Purpose (S	✔ 3072
EBS	✓ /dev/sdh ✓	snap-595cdc39	400	General Purpose (S	1200 / 3000
EBS	✓ /dev/sdj ✓	snap-95dbaadb	1024	General Purpose (S	3072
Add New Volume					
		et up to 30 GB of EB eligibility and usage		ose (SSD) or Magnetic :	storage.
<					>
		Cancel P	revious Rev	view and Launch N	ext: Tag Instance

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

🎁 🛛 AWS	i 🗸 Services 🗸	Edit 🗸			ActifioCorp-Admin/ashok.ramu
1. Choose AMI	2. Choose Instance Type	3. Configure In	stance 4. A	dd Storage	5. Tag Instance
A tag consists of	ag Instance a case-sensitive key-value m more about tagging you			l define a ta	g with key = Name and value =
Key (127 ch	naracters maximum)		Value (25	5 characters	s maximum)
Name			MyCompany		×
	Cancel	Previous	Review and	Launch	Next: Configure Security Group

- 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:

1. Choose AMI 2. Cho	ose Instance Type 3. Co	onfigure Instance 4. Add Stor	age 5. Tag Instance
security group is a set llow specific traffic to re each your instance, add	ach your instance. For ex rules that allow unrestric	ol the traffic for your instance ample, if you want to set up a	e. On this page, you can add rules to a web server and allow Internet traffic to HTTPS ports. You can create a new n EC2 security groups.
Assi	ign a security group: 🤅	Create a new security grou	p
	(Select an existing security	group
Se	ecurity group name:		
launch-wizard-14			
	Description:		
launch-wizard-14 cre	ated 2015-09-22T02:59:0	2.543-04:00	
Туре ()	Protocol (j)	Port Range (i)	Source (j)
SSH 🗸	TCP	22	Anywhere 🗸 0.0.0.0/0 😵
HTTPS 🗸	TCP	443	Anywhere 🗸 0.0.0.0/0 😵
HTTP 🗸	TCP	80	Anywhere 🗸 0.0.0.0/0 😵
Custom TCP Rule 🗸	TCP	5103	Anywhere 🗸 0.0.0.0/0 😵
Custom TCP Rule 🗸	TCP	3260	Anywhere 🗸 0.0.0.0/0 😵
Custom TCP Rule V	TCP	3289	Anywhere V 0.0.0.0/0 😵

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

Туре	Protocol	Port Range	Source	Custom TCP Rule
SSH	ТСР	22	Anywhere	0.0.0/0
HTTPS	ТСР	443	Anywhere	0.0.0/0
HTTP	ТСР	80	Anywhere	0.0.0/0
Custom TCP Rule	TCP	5103	Anywhere	0.0.0/0
Custom TCP Rule	ТСР	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:

Install Now @	CONNECTORS Windows Connector AlX Connector HP UX Connector Solaris Connector Space x86 Linux Connector 32 Bit 64 Bit	Deployment guide View all connectors
To manually install Actifio Desktop, click on the links below Download the Adobe Air Player	REPORT MANAGER	
O Download Actifio Desktop Air File	SNMP RESOURCES	
DOCUMENTATION	МІВ	
Release Notes Download zipped Actific Enterprise Documentation Library		

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

o 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:

Desktop						
🗞 Dashboard						
Applications 🛛 🐼 C	Job History (last 1 day)			5 - ₹	Events (last 24hrs)	¢
0 unprotected	0				0 errors	
Protected 0 Protection Disabled 0	jobs failed				# of Warnings	0
Capacity 🔊	Snapshot	0			System Health	¢
Capacity 🗠	Deduc				Disk Usage	
n/a	Dedup	0			Snapshot Pool Primary Pool	0%
managed data	Dedup Async	0	No jobs	s to display	Dedup Pool	196
-					Hardware	
Licensed Capacity 1 TB	Direct Dedup	0			Storage	
Dedup ¢					VDisk Utilization	
0 ТВ	Job Status History	+			Software Local Snapshot	
UTD	oob status mistory				Local Dedup	
logical copy data					Remote Protection	
Dedup pool used 9.07 GB Dedup efficiency n/a	Older			Recent		
E 🛞 🖗		e 💿 🗐	🥶 🏧			

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 Actific Connector is a small-footprint process installed on servers that host applications. The Actific 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:
 - o Microsoft[®] SQL Server clusters
 - o 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:
 - o Capture database(s) and logs with one Policy Template
 - o Truncate database transaction logs
 - o 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://<ACTIFI0_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.

elect Components Which components should be installed	12	
		Q
Select the components you want to in install. Click Next when you are ready		u do not want to
Actifio Connector With Change Track	ing Driver	~
Install with the change tracking drive Monitoring service in addition to the A	Actifio Connector base function	ality. Supported
	Actifio Connector base function nge) on this server will have ch	ality. Supported ange block
Monitoring service in addition to the A applications (e.g. SQL Server, Exchar tracking enabled, allowing shorter jol	Actifio Connector base function nge) on this server will have ch	ality. Supported ange block

- 6. When prompted to select components, from arop down menu select Actific 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 Actific Connector is installed and running correctly run the standard windows tool: services.msc on the server on which you installed the Actific 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\Actific 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://<ACTIFI0_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:



STEP 1: Setup Network (onfiguration STEP 2: Setup Storage Configuration	STEP 3: Review and Complete Installation	
All Items marked with (*	are required.		
Public IP			
Pv4 address for cloud co	figuration.		
Appliance IP (*)	172 . 17 . 205 . 106		
Pv4 address on port 1 fo ioining this appliance with	Actifio Desktop and CLI clients. Also used for other PAS appliances.		
Appliance Name (*)	localhost.localdom		
ONS Server	172.17.1.10		
Subnet Mask	255 . 255 . 0 . 0		
Sateway	172 .17 .1 .1		
NTP Server			
Infrastructure	AWS		
Fimezone	Africa/Abidjan 🔻		
System uuid (*)	1415068751:c222a0bd-e7bd-37cc-913a- 04a9cfd86f4b:a4b7b9d7		
license	Evaluation license: Dedup pool size is set to 5TB with no encryption for 30 days from the start of installation. Please contact Actifio to upgrade to production licenses.		
	Validate License		
Create Admin Password (٠) ()		
Confirm Admin Password	(*)	Next >	

- 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:
 - o Leave the License Number field set to the default setting.
 - o 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.

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:

OCTIFIO Radically Simple Appliance Installer

STEP 1: Setup Network Configuration STEP 2: Setup Storage Configuration STEP 3: Review and C	Complete Installation
Drag & Drop available Disks into pools to add storage.	Available Disks (3) sdb Size: 400.00 GB sdd Size: 100.00 GB
SNAPSHOT POOL Required Size: 100 GB 1024.00 GB Sdd Size: 100.00 GB	#dc Size: 1024.00 G5
DEDUP POOL Required Size: 1024 GB 1024.00 GB Sdc Size: 1024.00 GB	

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:

STEP 1: Setup Network Configuration	STEP 2: Setup Storage Configuration STEP 3: Review and Complete Installation								
Your settings have been validated successfully. Once you click "Complete Installation", the system will complete the installation and reboot. You will be redirected to 'Actifio Resource Page' but must wait approximately 30 minutes before the system is back online.									
< Back	Complete Installation								
	REBOOT OF THE ACTIFIC SKY APPLIANCE WILL OCCUR UPON COMPLETING INSTALLATION								

- 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:

Desktop					
So Dashboard					
Applications 🛛 🖉 C	Job History (last 1 day)		5 - ₹	Events (last 24hrs)	¢
0				0	
unprotected	0			errors	
Protected 0 Protection Disabled 0	jobs failed			# of Warnings	0
	Snapshot	0		System Health	¢
Capacity 🗠				Disk Usage	
n/a	Dedup	0		Snapshot Pool	0%
TI/a				Primary Pool	5%
managed data	Dedup Async	0	No jobs to display	Dedup Pool	196
				Hardware	
Licensed Capacity 1 TB	Direct Dedup	0		Storage	
Dedup ¢				VDisk Utilization	
bedup		+		Software	
0 TB	Job Status History			Local Snapshot	
				Local Dedup	
logical copy data Dedup pool used 9.07 GB	C			Remote Protection	
Dedup pool used 9.07 GB Dedup efficiency n/a	Older	Domain Manager	Recent		
2 🚳 🌈			🤷 🏧		

- 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.

center search	Pool Summary	- SNAPSHOT PC	KOLS				<u>~</u>
SECURITY	* APPLIANCE DETAILS	* ACT_PER_PC	001.000				
ORGANIZATIONS	Appliance ID	DISK USAGE		THRESHOL	D MONITOR		
USERS	1415011879	Used	60.00GB/20%	Warning	0%	100%	
ROLES	Appliance Name	Free	238.00GB			80%	
SYSTEM	Sky-7.0.x	Capacity	298.00GB	Safe Mode	0%	100%	
CONFIGURATION	Appliance IP 172.17.205.227	coport				90%	÷
Resources	112.11.200.221	· PRIMARY POO	15	_	_		
🚯 Storage Pools							
Dedup Settings		 ACT_PRI_PO DISK USAGE 	OI.000	THRESHOLD	NORGOD		
Appliance Settings		Used	8.59GB/9%	Warning	0%	100%	
Connector Management			(*************************************			80%	
Notification		Free	89.72GB	Safe Mode	0%	100%	
Logs		Capacity	98.31GB	Sale Mode	076	90%	
HOSTS	ł					2014	
IMAGE 5		· DEDUP POOL	_				
DIAGNOSTICS		+ ACT_DED_PC	001000				
SOFTWARE UPGRADE		DISK USAGE		THRE SHOLD	MONITOR		
		Used	34.23GB/4%	Warning	0%	100%	
3		Free	829.37GB			28%	
New Organization		Capacity	863.60GB				
+ New User + New Role		Coproci					÷
 Join Appliance 							Ŧ
© Certificate Exchange			D				
+ Upload Certificate			4-0°				
Download Certificate							
Archive Job History							
× Delete							

- 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.

Exchange Certificates						
Enter IP Address for Remote Appliance						
Enter Username on Remote Appliance						
Enter password of the user on Remote Appliance						
Exchange Cancel						

- 6. In the spaces provided, for the Sky appliance to be replicated to, enter:
 - o The Public IP address
 - o The username: **admin**.
 - o The password: The InstanceId of the Actifio Sky appliance
 - 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:

7.

O Appliance Configura	tion	Applance: Manager Centricates LDAP Control Panel Vectories to Control Panel Income Administration Cont
(Q, enter search (R)	Appliance Manager	(Jam Appliance)
	· APPLIANCE DETAILS	
ORGANIZATIONS USERS ROLES	Appliance ID 1415027736 Appliance Name	Appliance is currently not paired
· SYSTEM	localhost	
CONFIGURATION Resources	Appliance IP 172.17.204.159	
sequences sequences sequences conception conc	ð	
8- C		

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

	Address of the Remote-Appliance you wish to join.
11	ance must already have the certificate from this d. Once joined, the Remote-Appliance will act as the
laster for this rela	
emote Appliance	P Address*
	Enable Sharing)

- 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:

🎁 AWS 🗸 Servi	ces 👻 Edit 👻						ActifioLab-E	C2/ke	en.hartshorn@	• N. Virgi	jinia
EC2 Dashboard	Launch Instance Con	nnect Ac	tions ¥								
Tags	Q Filter by tags and attributed	utes or search	by keyword						0	K < 1	1 to
Reports Limits	Name - Ins	stance ID 🔺	Instance Type 👻	Availability Zone -	Instance State 👻	Status Checks 👻	Alarm Statu	s	Public DNS	*	Р
INSTANCES	Actifiol ab NAT 172	24603a1	t1 micro	us-east-1a	running	2/2 checks	None	70			5
Instances	sky-benchm i-7c	ca6a9a9	m4.xlarge	us-east-1a	running	2/2 checks	None	70			
Spot Requests	+ ON/EG2.Con 1-8/	leee751	12 miero	us-east-1a	stopped		None	10			
Reserved Instances	Instance: i-7ca6a9a9 (s	ky-benchm	ark-612-IOPS1)	Private IP: 172.20.4							
IMAGES	Description Status (Checks	Monitoring Tag	6							
AMIs Bundle Tasks	Insta	ance ID i-7	ca6a9a9)		Public	DNS -				
Dullule Tasks	Instanc	ce state ru	ning			Pub	lic IP				
ELASTIC BLOCK STORE	Instan	ce type m	1.xlarge			Elas	tic IP -				

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:

🎁 AWS 🗸 Service	es 🗸 Edit 🗸 Adif	fioLab-EC2/ken.hartshorn@ 👻 N. Virginia 👻
EC2 Dashboard Events Tags Reports Limits	Create Volume Actions * Q. Filter by tags and attributes or search by keyword Name * Volume ID * Size * Volume Type * IOPS * Snapshot * Created	 ✓ Availability Zone + State
INSTANCES	vol-9be18e7b 19 GiB ap2 57 / 3000 October 14 2015	atus-east-1a 🥥 in-use
	Create Volume	x us-east-1a 🥥 in-use
		us-east-1a 🥥 in-use
Reserved Instances	Type (j) General Purpose (SSD)	us-east-1a 🥥 in-use
IMAGES	Size (GiB) (i) 100 (Min: 1 GiB, Max: 16384 GiB)	us-east-1a 🥥 in-use
	IOPS (i) 300 / 3000 (Baseline of 3 IOPS per GiB)	us-east-1a 🥥 in-use
Bundle Tasks		us-east-1a 🥥 in-use
E ELASTIC BLOCK STORE	Availability Zone () us-east-1a •	us-east-1a 🥥 in-use
Volumes	Snapshot ID (j) Search (case-insensitive)	us-east-la 🔘 In-usa
Snapsnots	Select a volume abov Encryption () Encrypt this volume	
NETWORK & SECURITY Security Groups Elastic IPs Placement Groups Key Pairs	Cancel	

- 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:

	ices - Edit -					Actilio	Lab-EC2/ken.hartshorn@	👻 N. Virgini
EC2 Dashboard	Create Volume Actions *							
Tags	Q Filter by tags and attributes or search b	y keyword					(
Reports Limits	Name	Volume ID 👻	Size -	Volume Type -	IOPS -	Snapshot -	Created -	Availability Zo
INSTANCES	New Volume for Actifio Sky for AWS	ol-81137d61	100 GiB	gp2	300 / 3000		October 14, 2015 at	us-east-1a
Instances		vol-ed99110d	24 GiB	gp2	72 / 3000		October 8, 2015 at	us-east-1a
Spot Requests		vol-8e99116e	1024 GiB	gp2	3072		October 8, 2015 at	us-east-1a
Reserved Instances		vol-119911f1	1024 GiB	gp2	3072		October 8, 2015 at	us-east-1a
IMAGES		vol-60991180	55 GiB	gp2	165 / 3000		October 8, 2015 at	us-east-1a
AMIs		vol-9f99117f	130 GiB	gp2	390 / 3000	snap-629fff2d	October 8, 2015 at	us-east-1a
Bundle Tasks		vol-a0991140	400 GiB	gp2	1200 / 3000		October 8, 2015 at	us-east-1a
ELASTIC BLOCK STORE		vol-6fea448f	8 GiB	standard	(=)	snap-ec7e4898	October 1, 2015 at	us-east-1a

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

育 AWS 🗸 Ser	rvices 🛩 Edit 🗸						Acti	fioLab-EC2/ken.hartsho	m@ v	N. Virginia
EC2 Dashboard	Create Volume	Actions A	~							
Events										
Tags	Q Filter by tags a	Delete Volume Attach Volume							0	K < 1 to
Reports		Petach Volume	1							
Limits	Name	Force Detach Volume	- Size	~ V	olume Type -	IOPS	- Snapshot	- Created	- A	vailability Zone
INSTANCES	New Volume	Create Snapshot	61 100 G	B gi	2	300 / 3000		October 14, 2015 at	us	-east-1a
Instances		Change Auto-Enable IO Setting	0d 24 GiE	l gi	02	72 / 3000		October 8, 2015 at .	us	-east-1a
Spot Requests		Add/Edit Tags	6e 1024 (SiB gr	02	3072		October 8, 2015 at	us	-east-1a
Reserved Instances		vol-119911	lf1 1024 0	GiB gi	02	3072		October 8, 2015 at	us	-east-1a
IMAGES		vol-609911	80 55 GiE	gi	02	165 / 3000		October 8, 2015 at .	us	-east-1a
AMIS		vol-9f9911	7f 130 G	B gi	02	390 / 3000	snap-629fff2d	October 8, 2015 at	us	-east-1a
Bundle Tasks		vol-a09911	400 Gi	B gi	52	1200 / 3000		October 8, 2015 at .	us	-east-1a
ELASTIC BLOCK STORE		vol-6fea44	8f 8 GiB	et	andard		snan-ec7e4898	October 1, 2015 at	119	-east-1a

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

Reports	Name	 Volume ID) - Size	- Volume Tvp	e - IOPS -	Snapshot	Creat	ted .	× Δ.
Limits	Name	volume ib	* Size	• volume ryp	IUF3 *	Shapshot	Clea	leu	· A
INSTANCES	New Volume for Actifio Sky for AWS	vol-01731d	le1 100 GiB	gp2	300 / 3000		Octol	ber 14, 2015 at 1:42:07 PM UTC-4	4 us
Instances		vol-53e689	b3 130 GiB	gp2	390 / 3000	snap-0878e27d	Octo	ber 14, 2015 at 11:29:10 AM UT	us
Spot Requests	O C							per 14, 2015 at 11:29:10 AM UT	. us
Reserved Instances	Attach Vo	lume					×	per 14, 2015 at 11:29:10 AM UT	. us
IMAGES	0							per 14, 2015 at 11:29:10 AM UT	. us
AMIs	Volun	ne (j) vo	ol-01731de1 (Nev	v Volume for Actif	io Sky for AWS) in	us-east-1a		per 14, 2015 at 7:46:14 AM UTC-4	4 us
Bundle Tasks	Instanc	e (j i-	.7		in us-	east-1a		per 14, 2015 at 7:35:40 AM UTC-4	4 us
ELASTIC BLOCK STORE	Devic	e ()	i-7a8f9da8 (runn	ina)				per 14, 2015 at 7:01:33 AM UTC-4	4 us
Volumes	4 m			atoAWSSky) (stop	pped)			per 14, 2015 at 2,29:46 AM UTC-4	4 us
Snapshots	Volumes: Vol-017			bhaztest) (running		Cancel Attach			
NETWORK & SECURITY			i-783dca85 (raje	sh1) (stopped)		Galicer			
Security Groups Elastic IPs		vol-01731de1	i-7a4543aa (runr	ning)		Alarm status	s None	9	

- 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.

Appliance Configura	ition	Surmay, Tipo	2018 Primary Dedug OnVault	والمتحدينية والمتحديد	Wolcome admin localhost
(Q. mmi search (K) • SCURTY • • ORDARDATORS • • ORDARDATORS • • ORDARDATORS • • ORDARDATORS • • STEIN • • ORDARDATORS • • Order Weith • • Concord Management • • MACLASTS • • SOFT WARE UPGARDE • • Soft Wake UPGARDE •	Snapshot Pools	act_per_pool000	Click to add pool		
10					

- 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.