
Troubleshooting Actifio Systems

Copyright, Trademarks, and other Legal Matter

Copyright © 2009 - 2019 Actifio, Inc. All rights reserved.

Actifio®, AnyIT®, Dedup Async®, OnVault®, Enterprise Data-as-a-Service®, FlashScan®, AppFlash DEVOPS Platform®, Copy Data Cloud®, and VDP® are registered trademarks of Actifio, Inc.

Actifio Sky™, Actifio One™, and Virtual Data Pipeline™ are trademarks of Actifio, Inc.

All other brands, product names, goods and/or services mentioned herein are trademarks or property of their respective owners.

Actifio, Inc., is a provider of data protection and availability products. Actifio's technology is used in products sold by the company and products and services sold and offered by its commercial partners. The current list of Actifio patents is available online at: <http://www.actifio.com/patents/>

Actifio believes the information in this publication is accurate as of its publication date. Actifio reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

THE INFORMATION IN THIS PUBLICATION IS PROVIDED "AS IS." ACTIFIO, INC. MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE INFORMATION IN THIS PUBLICATION, AND SPECIFICALLY DISCLAIMS IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This software and the associated documentation are proprietary and confidential to Actifio. Use, copying, and distribution of any Actifio software described in this publication requires an applicable software license. Any unauthorized use or reproduction of this software and the documentation may be subject to civil and/or criminal liability.

Actifio strives to produce quality documentation and welcomes your feedback. Please send comments and suggestions to docs@actifio.com.

Contents

Preface	v
Actifio Appliances	v
The ActifioNOW Customer Portal	v
Actifio Support Centers	v
Chapter 1 - Introduction to Troubleshooting	1
Chapter 2 - Using the Actifio Knowledge Base	3
Chapter 3 - Using Actifio Logs	5
What You Can Learn from Actifio Logs	5
Downloading Logs from the Actifio Appliance	7
Downloading Connector Logs from One of Your Hosts	8
Troubleshooting with Actifio Logs	9
Sending Logs to Support By Email	10
Chapter 4 - Issues Related to Networking and Permissions	11
Actifio CDS Generation-3 Appliances	12
Actifio CDS Generation-4 Appliances	13
Chapter 5 - Getting Help	15
Creating a Support Case	15
Managing Open Cases	17

Preface

This guide provides strategies and step-by-step instructions on how to troubleshoot your Actifio system. It assumes you have read ***Getting Started with Actifio Copy Data Management***, are familiar with the components of the Actifio Desktop, and have a good understanding of the concepts associated with an Actifio appliance.

Your Actifio appliance's Documentation Library contains detailed instructions on how to configure your Actifio environment. The following guides will be of particular interest:

- ***Network Administrator's Guide to Actifio Copy Data Management***
- ***Connecting Hosts to Actifio Appliances***
- ***Configuring Actifio Event Alerting***
- ***Planning and Developing Service Level Agreements***

Actifio Appliances

Unless otherwise specified, all features and functions described in this document apply to all Actifio appliances.

The ActifioNOW Customer Portal

During the configuration and initialization of your Actifio appliance your Actifio representative provided you with a user name and password for the ActifioNOW customer portal.

From the ActifioNOW customer portal you can obtain detailed reports about your Actifio appliance, access the Actifio product documentation, including release notes, and search the knowledge base for answers to specific questions.

To log into the ActifioNOW customer portal:

1. Go to: <https://now.actifio.com>.
2. When prompted, enter the user name and password provided by your Actifio representative.

Actifio Support Centers

To contact an Actifio support representative, you can:

- Send email to: support@actifio.com
- Call:
 - From anywhere:** +1.315.261.7501
 - US Toll-Free:** +1.855.392.6810
 - Australia:** 0011 800-16165656
 - Germany:** 00 800-16165656
 - New Zealand:** 00 800-16165656
 - UK:** 0 800-0155019

1 Introduction to Troubleshooting

Troubleshooting is an important, complex, and frequently frustrating activity. Here is a process to help you troubleshoot effectively and with as little frustration as possible.

1. If you have an Actifio error message, see: [Chapter 2, Using the Actifio Knowledge Base](#).
2. You can gain valuable context from your Actifio logs as detailed in: [Chapter 3, Using Actifio Logs](#).
3. If it's something else, start with: [Chapter 4, Issues Related to Networking and Permissions](#).
4. If the problem is more complex, then go to: [Chapter 5, Getting Help](#).

The Best Solution is Prevention

A system configured according to best practices is less likely to run into trouble. It is a good idea to make sure your system adheres as closely as possible to the best practices described in:

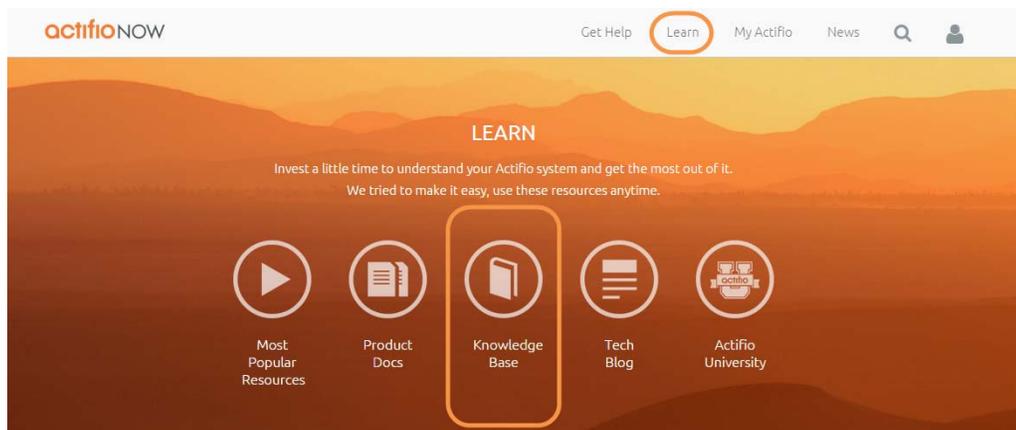
Actifio Product Documentation Resources

Proper Configuration	<i>Network Administrator's Guide to Actifio Copy Data Management</i>
	<i>Configuring Actifio Event Alerting</i>
	<i>Connecting Hosts to Actifio Appliances</i>
	<i>Planning and Developing Service Level Agreements</i>
Best Practices	<i>Daily Tasks for Administrators</i>
	<i>Using the Report Manager</i>
	<i>Most Common Error Codes in Actifio 7.x</i>
Whom You Rely On	<i>A VMware vCenter Administrator's Guide to Actifio Copy Data Management</i>
	<i>An Oracle DBA's Guide to Actifio Copy Data Management</i>
	<i>An SQL Server DBA's Guide to Actifio Copy Data Management</i>

2 Using the Actifio Knowledge Base

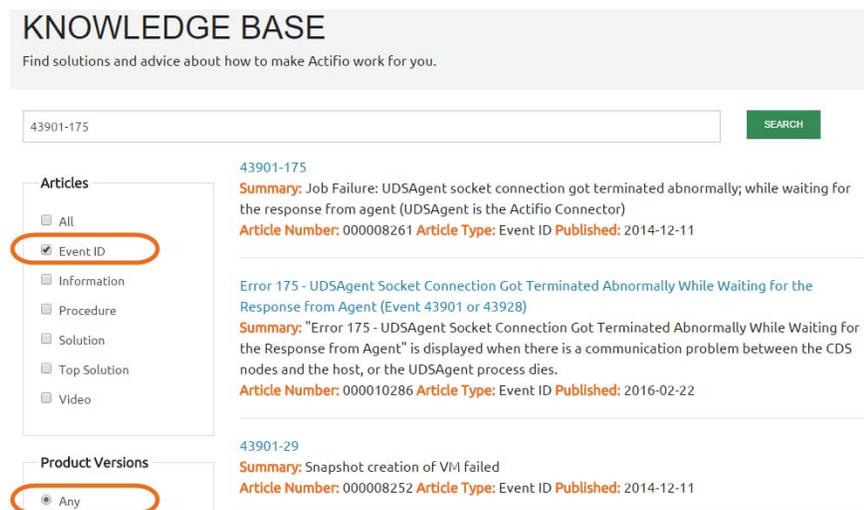
Your best tool for resolving events with error messages is the knowledge base on the ActifioNOW portal. To search the knowledge base:

1. Log into ActifioNOW at: <https://now.actifio.com>.
2. Click the **Learn** tab at the top of the screen and select **Knowledge Base**.



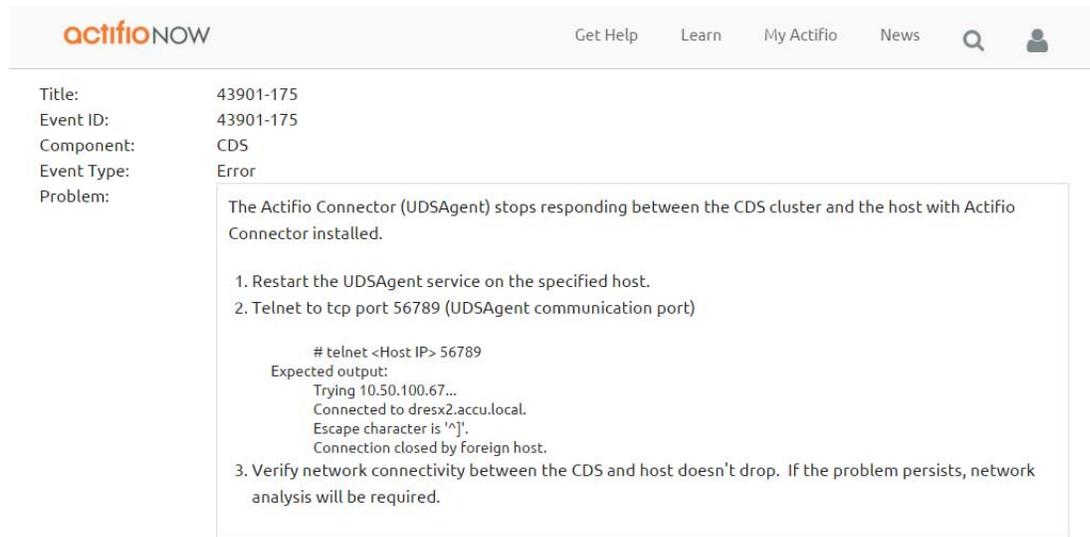
Accessing the Actifio Knowledge Base from ActifioNOW

3. Enter the Event ID in the **Search** field.
4. Under Articles, select the **Event ID** filter, and under Product Versions select **Any**, then click **Search**.



Search for Event ID 43901-175

5. The entry for the Event ID describes the problem and how to fix it or where to look for additional clues.



The screenshot shows the ActifioNOW interface. At the top, there is a navigation bar with the ActifioNOW logo on the left and links for 'Get Help', 'Learn', 'My Actifio', and 'News' on the right. Below the navigation bar, the details for error code 43901-175 are displayed. The 'Title' is '43901-175', 'Event ID' is '43901-175', 'Component' is 'CDS', and 'Event Type' is 'Error'. The 'Problem' section contains the following text:

The Actifio Connector (UDSAgent) stops responding between the CDS cluster and the host with Actifio Connector installed.

1. Restart the UDSAgent service on the specified host.
2. Telnet to tcp port 56789 (UDSAgent communication port)

```
# telnet <Host IP> 56789
Expected output:
Trying 10.50.100.67...
Connected to dresx2.accu.local.
Escape character is '^]'.
Connection closed by foreign host.
```

3. Verify network connectivity between the CDS and host doesn't drop. If the problem persists, network analysis will be required.

Error Code 43901-175 Knowledge Base Entry

6. If the knowledge base does not provide a solution, continue to [Chapter 3, Using Actifio Logs](#).

3 Using Actifio Logs

Logs can provide valuable context for an issue, if you know what to look for.

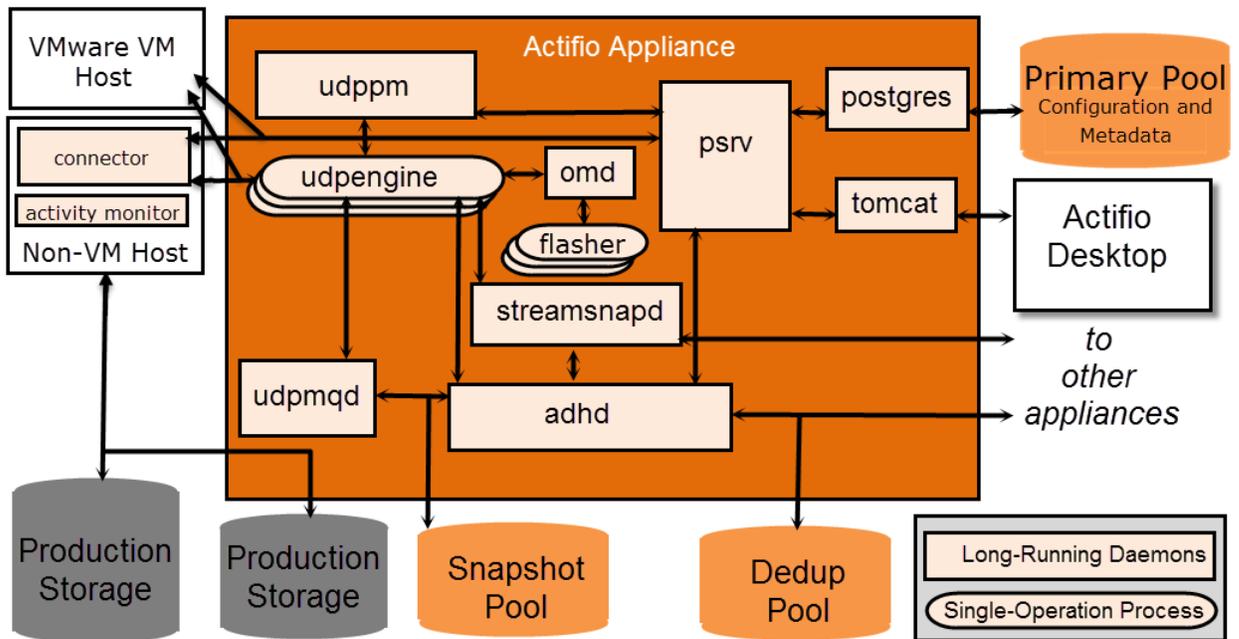
This section describes the Actifio logs and their contents, as well as:

- [What You Can Learn from Actifio Logs](#) on page 5
- [Downloading Logs from the Actifio Appliance](#) on page 7
- [Downloading Connector Logs from One of Your Hosts](#) on page 8
- [Troubleshooting with Actifio Logs](#) on page 9
- [Sending Logs to Support By Email](#) on page 10

What You Can Learn from Actifio Logs

The Actifio services generate many logs, some of which are useful for troubleshooting. This section describes how all of the logs work together. You do not need to use all logs for troubleshooting; to see the most useful logs for troubleshooting, skip to [Troubleshooting with Actifio Logs](#) on page 9.

Each Actifio service has its own log. This is how the different services relate to each other.



Component and Log Relationships

Downloadable Actifio Logs

Service	Log File Name	What the Logs Include
adhd	adhd.log adhd.log-<date> adhd.log-<date>.bz2	Local and remote deduplication, replication and communications with remote systems.
appliance	<HostID>.trc ethernet.<HostID>.trc node.trc and ntp.trc	Primary trace logs for reviewing failovers and node reboots, ethernet status, etc.
dds	dds.log	A set of counters for ongoing system processes.
database	postgresql-<Timestamp>.log	The Actifio internal PostGRES database
flasher	flasher.log	Creation of snapshots.
install	install.log	Events during the installation process.
omd	omd.log	Creation and deletion of VDIs before invoking the Flasher.
patch	autoupdatepatch-<Version>-update.log uds-patch.log uds-patch-<Timestamp>.log	Events during the patch update process.
psrv	psrv.log.0	Communications with Tomcat, Actifio database, VMware, CLI, system health, scheduling GC.
streamsnapd	streamsnapd.log	Disk to remote disk replication operations.
systemlog	command fusevdisk.error.log messages ssd-config.log	<i>/var/log/command</i> – CLI command history Events relating the creation of VDIs. <i>/var/log/messages</i> – Can be used along with node.trc to correlate issues with the Linux kernel Events that occurred when configuring the SSD.
tomcat	catalina.log.<sequence>	Communications with the Actifio Desktop and the Actifio Resource Center. The sequence number increases as you go back in time.
udpmqd	udpmqd.log	Multiplexes udpengine access to snap storage.
udppm	udppm.log udppm.log-<Date> udppm.log-<Date>.bz2	Scheduling and operation of jobs.

Downloadable Actifio Logs

Service	Log File Name	What the Logs Include
connector	A variety of different logs depending upon the host, but always including UDSAgent.log.	The Actifio Connector log includes information such as host OS version/patch revision, HBA make/model/type, firmware revision, CPU/Memory utilization, connector logs, RMAN, syslog, etc.
openvpn	openvpn.log openvpn.log-<date> openvpn.log-<date>.bz2	Actifio SecureConnect communications.

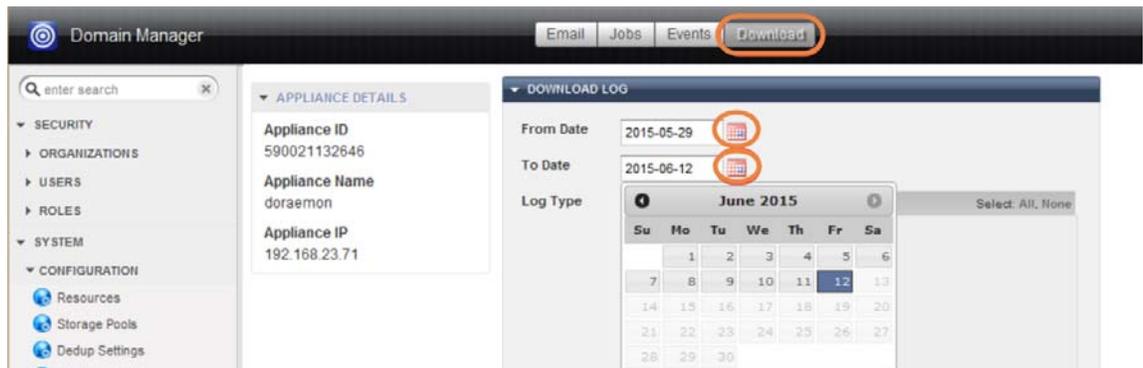
Downloading Logs from the Actifio Appliance

Log files are a great tool for troubleshooting. You can use the Downloads tab in the Logs section of the Domain Manager to download log files. Each downloaded log is bundled as a zip file in the target destination download folder. You can then unzip the downloaded log files and use a program such as Notepad to view the contents of each log.

To download logs from your Actifio CDS or Sky appliance:

1. Open the **Domain Manager** to **System > Configuration > Logs**.
2. Click the **Download** tab to access the Download Logs page.
3. By default, the Actifio appliance downloads logs from the past 3 days (starting with the current date).

To specify a particular date range from which you want to download logs, click the calendar icon and select a start date in the From Date field and an end date in the To Date fields. The calendar icon displays the Calendar view where you make your date selections.



4. Select the types of logs to download from **Log Type**. By default, all log types are selected. If you wish to choose the logs to download, click **None** to deselect all logs and then click the check boxes to select the logs to download. Click **All** if you want to select all logs.
5. Click **Download Logs** to download the selected log file(s), then specify the location where you want to download the files. The **Waiting to Download** message indicates that the download process has started.

Log types are detailed in [What You Can Learn from Actifio Logs](#) on page 5.

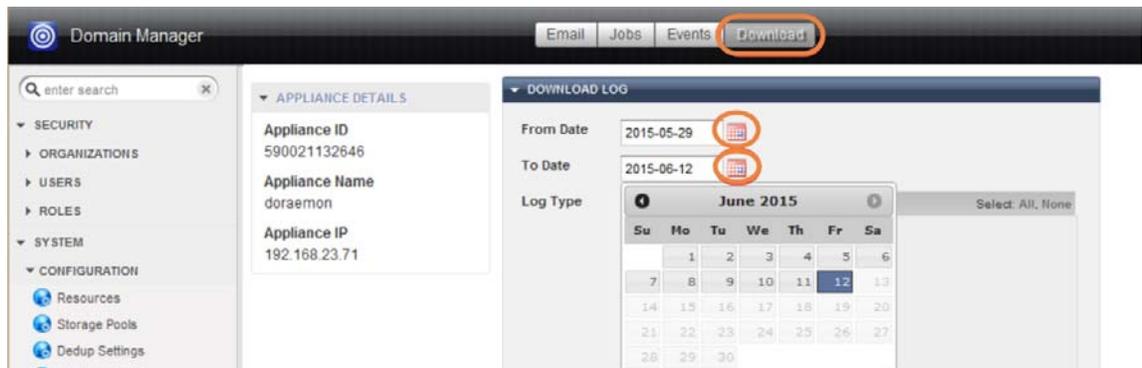
Downloading Connector Logs from One of Your Hosts

Connector logs are a great tool for troubleshooting. You can use the Downloads tab in the Logs section of the Domain Manager to download log files. Each downloaded log is a zip file in the target destination download folder.

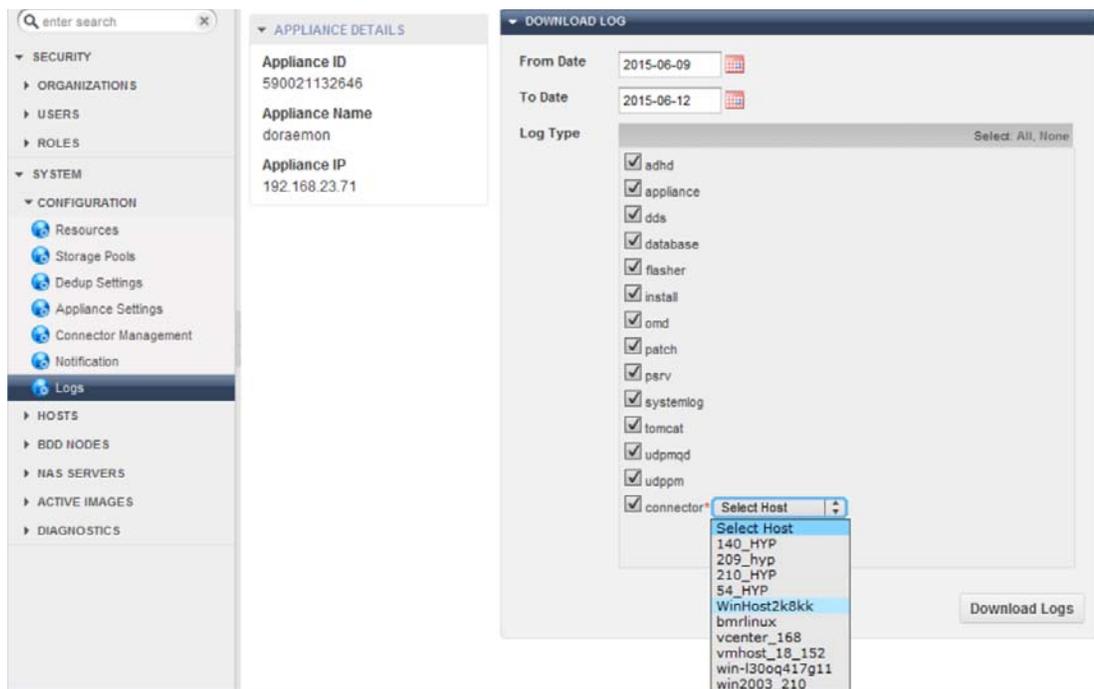
To download logs from your Actifio CDS or Sky appliance:

1. Open the **Domain Manager** to **System > Configuration > Logs**.
2. Click the **Download** tab to access the Download Logs.
3. By default, the Actifio appliance downloads logs from the past 3 days (starting with the current date).

To specify a particular date range from which you want to download logs, click the calendar icon and select a start date in the From Date field and an end date in the To Date fields.



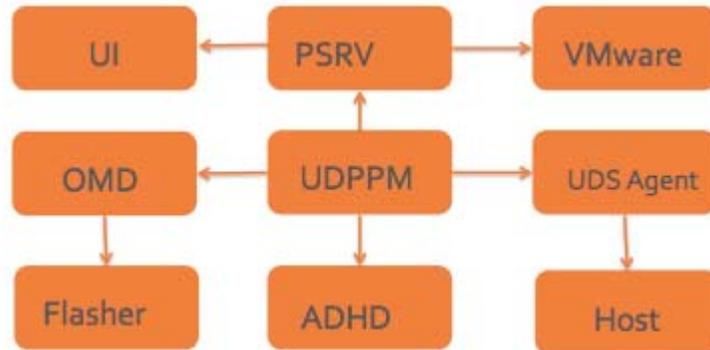
4. Click **None** to deselect all logs, then select **Connector** at the bottom of the **Log Type** list.



5. To download logs from the Actifio Connector installed on a specific host, click the **Select Hosts** drop-down and choose from the list of available hosts.
6. Click **Download Logs** to download the selected log file(s), then specify the location where you want to download the files. The **Waiting to Download** message indicates that the download process has started.

Troubleshooting with Actifio Logs

Each service has its own log, but many of them have little value for troubleshooting. This is a simpler view of how the critical components relate to each other.



Simplified Component Relationships Diagram for Troubleshooting

Here is an abbreviated version of the comprehensive list of logs, showing the most useful ones for troubleshooting.

Useful Actifio Logs for Troubleshooting

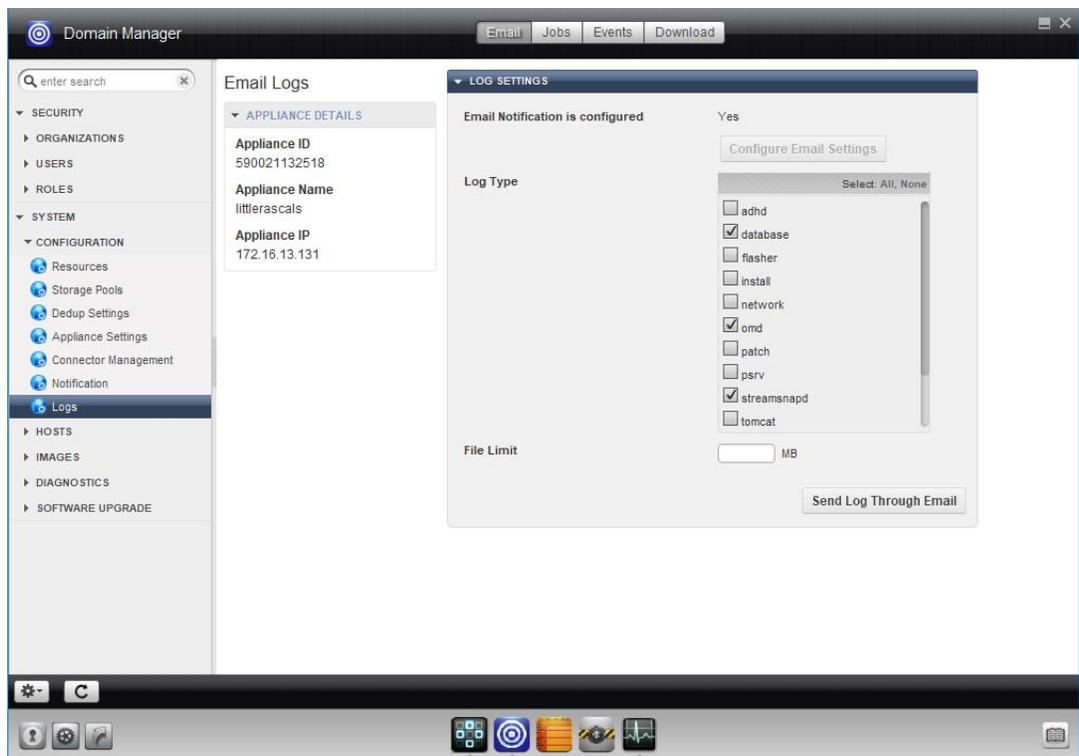
Service	Log File Name	What the Logs Include
adhd	adhd.log adhd.log-<date> adhd.log-<date>.bz2	Local and remote deduplication, replication and communications with remote systems.
flasher	flasher.log	Creation of snapshots.
omd	omd.log	Creation and deletion of VDisks before invoking the Flasher.
psrv	psrv.log.0	Communications with Tomcat, Actifio database, VMware, CLI, system health, scheduling GC.
GUI/tomcat	catalina.log.<Sequence>	Communications with the Actifio Desktop and the Actifio Resource Center. The Sequence number increases as you go back in time.
udppm	udppm.log udppm.log-<Date> udppm.log-<Date>.bz2	Scheduling and operation of jobs.
host/ connector	A variety of different logs depending upon the host, but always including UDSAgent.log.	The Actifio Connector log includes information such as host OS version/patch revision, HBA make/model/type, firmware revision, CPU/Memory utilization, connector logs, RMAN, syslog, etc.

Sending Logs to Support By Email

To send Actifio appliance logs to Actifio Support:

1. Open the **Domain Manager** to **System > Configuration > Logs**.
2. Click the **Email** tab to access the Log Settings. If Email Notification is not configured, configure the setting before proceeding. See the procedure in ***Network Administrator's Guide to Actifio Copy Data Management***.
3. Select the types of logs to send from **Log Type**. To select all categories of logs, click **All**.

Optionally, you can specify the number of log files to be sent to the Actifio Support team in **File Limit**. the Actifio appliance creates one log file for each type of log every day in the /act/logs folder. To email the log files of the past ten days for the selected type, specify **10** in File Limit. If you do not specify the file limit, all logs files from the /act/logs folders are sent. Set the value to **1** to receive the latest log file of the selected type.
4. Click **Send Log Through Email** to save the configuration.



Selecting Logs to Send to Actifio Support

4 Issues Related to Networking and Permissions

To isolate a tricky problem, first rule out networking issues and issues relating to permissions on VMs.

- The first place to look for best practices for Fibre Channel zoning and multipathing, for iSCSI networking, and for required network ports is **Network Administrator's Guide to Actifio Copy Data Management**.
- vCenter required permissions are detailed in **A VMware vCenter Administrator's Guide to Actifio Copy Data Management**.
- For Oracle databases, be sure to review **An Oracle DBA's Guide to Actifio Copy Data Management**.
- For Microsoft SQL Server, see **An SQL Server DBA's Guide to Actifio Copy Data Management**.
- If you have changed your network, then you will want to be sure that any changes are compatible with the **Actifio Support Matrix** for your version of Actifio.

If the network and permissions are good, then check the system architecture against the tables in [Reference Architectures for Actifio Appliances](#), below. If the architecture is good, then go to [Chapter 5, Getting Help](#).

Reference Architectures for Actifio Appliances

Actifio appliances can be configured for different levels of security and high availability depending on available network resources. For best results, appliances should be configured according to the following tables:

[Actifio Sky Reference Architectures](#) on page 13

[Actifio CDS Generation-3 Reference Architectures](#) on page 14

[Actifio CDS Generation-4 Reference Architectures](#) on page 15

[Actifio CDS Generation-5 Reference Architectures](#) on page 16

Actifio Sky Appliances

Actifio Sky Reference Architectures

Sky	Using	Network	Security	High Availability
Sky-1	Eth0 (1G) for all traffic	1G only virtual network	Low	The Sky appliance uses the hypervisor's High Availability features.
Sky-2	Eth0 (1G) for management Eth1 (1/10G) for backup/restore/replication	1/10G mixed virtual network	Medium	
Sky-4	Eth0 (1G) for management Eth1 (10G) for backup Eth2 (1/10G) for replication More Eth* for backups only if required.	1/10G mixed virtual network	High	

Actifio CDS Generation-3 Appliances

The Actifio CDS Generation-3 appliance includes the two nodes in the middle and the batteries above and below.



An Actifio CDS Generation-3 Appliance

These are the most reliable network architectures for a CDS Generation-3 appliance:

Actifio CDS Generation-3 Reference Architectures

Type	Using	Network	Security	High Availability
3CDS-1	Eth0 (1G) for all traffic	1G only	Low	No
3CDS-2	Eth0 (1G) for management Eth1 (1G) for backup/restore/replication	1G only	Medium	No
3CDS-3	Eth0 (1G) for management Eth2 (10G) for backup/restore/replication	1/10G mixed	Medium	No
3CDS-4	Eth0 (1G) for management Eth2 (10G) for backup Eth3 (10G) replication	1/10G mixed	High	No
3CDS-5	Eth0 (1G) for management Eth1 (1G) for replication Eth2/3 (10G & HA) for backup	1/10G mixed	High	Yes

Actifio CDS Generation-4 Appliances

The Actifio CDS Generation-4 appliance looks like this:



These are the most reliable network architectures for a CDS Generation-4 appliance:

Actifio CDS Generation-4 Reference Architectures

Type	Using	Network	Security	High Availability
4CDS-1	Eth0 (1G) for all traffic	1G only	Low	No
4CDS-2	Eth0 (1G) for management Eth1 (1G) for backup/restore/replication	1G only	Medium	No
4CDS-3	Eth0 (1G) for management Eth1 (1G) for backup/restore Eth2 (1G) for replication	1G only	Medium	No
4CDS-4	Eth0 (1G) for management Eth2 (10G) for backup/restore/replication	1/10G mixed	Medium	No
4CDS-5	Eth0 (1G) for management Eth3 (10G) for backup Eth5 (10G) replication	1/10G mixed	High	No
4CDS-6	Eth0 (1G) for management Eth1 (1G) for replication Eth3/4 (10G & HA) for backup	1/10G mixed	High	Yes
4CDS-7	Eth0 (1G) for management Eth3/4 (10G & HA) for backup Eth5 (10G) for replication	1/10G mixed	High	Yes
4CDS-8	Eth0 (1G) for management Eth3/4 (10G & HA) for backup Eth5/6 (10G & HA) for replication	1/10G mixed	High	Yes

Actifio CDS Generation-5 Appliances

The Actifio CDS Generation-5 appliance looks like this:



These are the most reliable network architectures for a CDS Generation-5 appliance:

Actifio CDS Generation-5 Reference Architectures

Type	Using	Network	Security	High Availability
5CDS-1	Eth0 (1G) for all traffic	1G only	Low	No
5CDS-2	Eth0 (1G) for management Eth1 (1G) for backup/restore/replication	1G only	Medium	No
5CDS-3	Eth0 (1G) for management Eth1 (1G) for backup/restore Eth2 (1G) for replication	1G only	Medium	No
5CDS-4	Eth0 (1G) for management Eth2 (10G) for backup/restore/replication	1/10G mixed	Medium	No
5CDS-5	Eth0 (1G) for management Eth3 (10G) for backup Eth5 (10G) replication	1/10G mixed	High	No
5CDS-6	Eth0 (1G) for management Eth1 (1G) for replication Eth3/4 (10G & HA) for backup	1/10G mixed	High	Yes
5CDS-7	Eth0 (1G) for management Eth3/4 (10G & HA) for backup Eth5 (10G) for replication	1/10G mixed	High	Yes
5CDS-8	Eth0 (1G) for management Eth3/4 (10G & HA) for backup Eth5/6 (10G & HA) for replication	1/10G mixed	High	Yes

5 Getting Help

If you are unable to resolve the problem with the information that you have learned, then open a Support Case. This section describes:

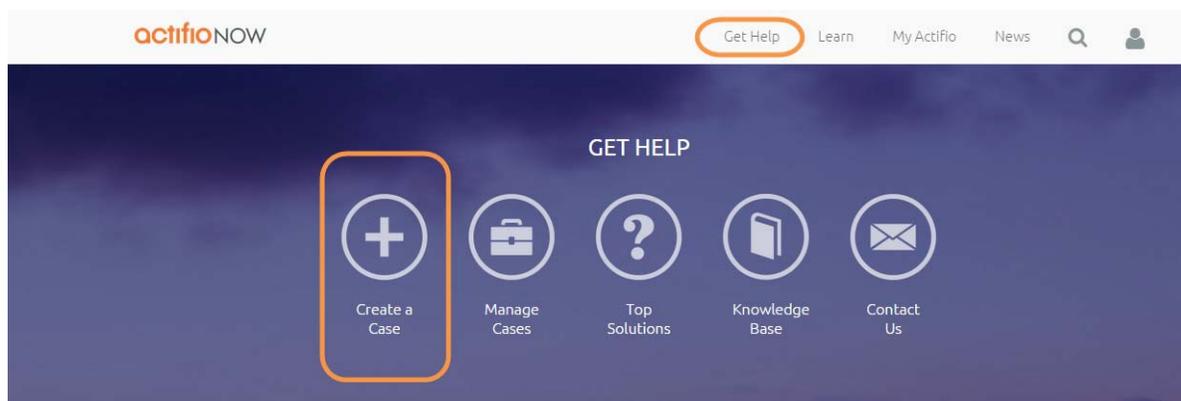
[Creating a Support Case](#) on page 15

[Managing Open Cases](#) on page 17

Creating a Support Case

To create a case:

1. Log into ActifioNOW at: <https://now.actifio.com>.



Creating a Support Case in ActifioNOW

2. Select the **Get Help** tab and then select **Create a Case**. Fill in the form as needed and click **Submit Case**.

CREATE NEW CASE

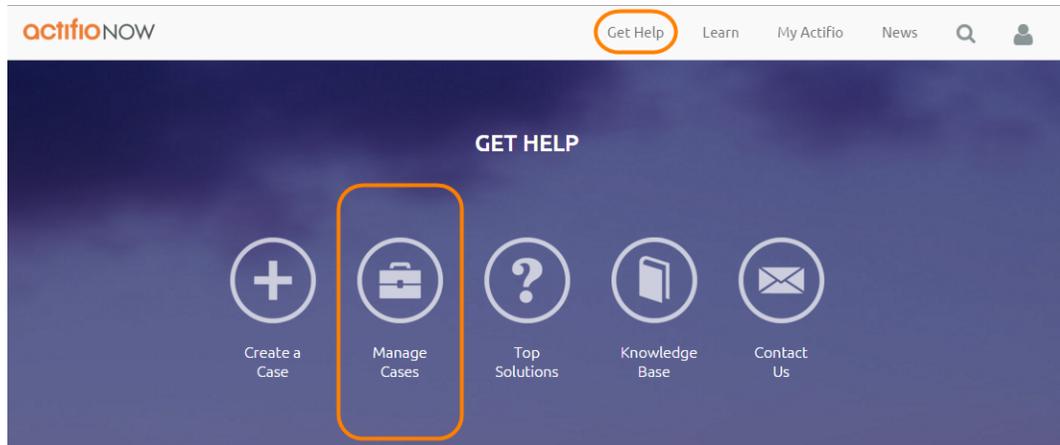
Reason for Opening Case? <input type="text" value="SLA Violation"/>	Case Type <input type="text" value="Problem"/>
Subject <input type="text"/>	Priority  <input type="text" value="Sev 3"/>
Description  <input type="text"/>	Product Type <input type="text" value="CDS"/>
Business Impact <input type="text"/>	Add Attachments <input type="button" value="Choose File"/> No file chosen

Entering Support Case Details

Managing Open Cases

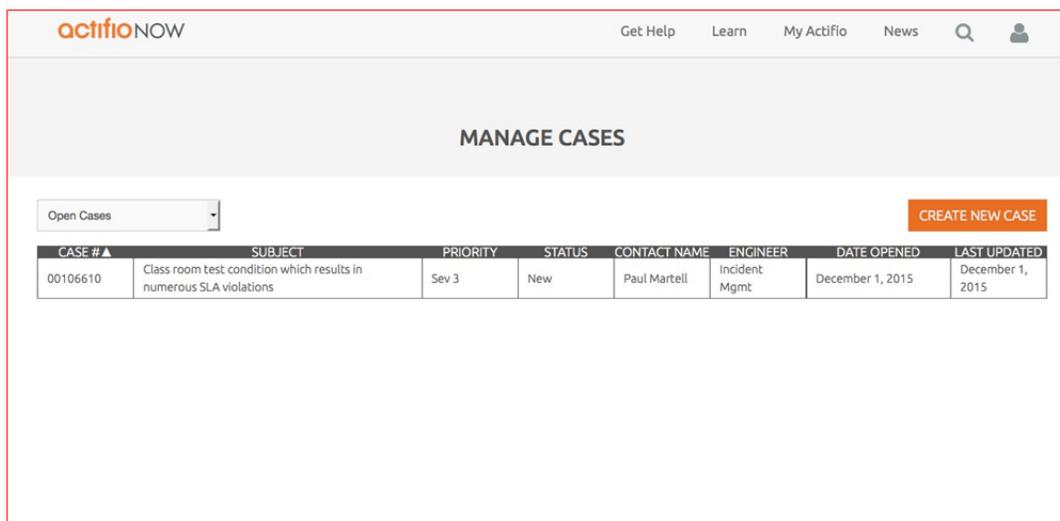
To create a case:

1. Log into ActifioNOW at: <https://now.actifio.com>.



Accessing an Open Support Case in ActifioNOW

2. Select the **Get Help** tab in the top banner, and then select **Manage Cases**. Review information about your existing cases. Your current cases are visible under the Open Cases heading.



Managing a Case

