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# Configuring Actifio Event Alerting

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# Preface

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This guide provides step-by-step instructions on how to configure your Actifio appliance to collect and send event notifications, send alerts, and send logs to Actifio Support by using the Actifio Desktop. It assumes you have read ***Getting Started with Actifio Copy Data Management***, are familiar with the components of the Actifio Desktop, and have a grasp of the basic concepts associated with an Actifio appliance.

Your Actifio appliance's Documentation Library contains detailed, step-by-step, application-specific instructions on how to protect and access your data. Each guide is may be viewed online, downloaded, or printed on demand. The following guides will be of particular interest:

- ***Network Administrator's Guide to Actifio Copy Data Management***
- ***Configuring Resources and Settings With the Domain Manager***
- ***Using the System Monitor to Monitor Jobs and Events***

## 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](mailto: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 Actifio Event Notifications

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An Actifio CDS or Sky copy data management system generates notifications for hundreds of system events ranging from critical hardware failures to informational network messages. This chapter describes Actifio event notifications, and then the following two chapters list all known event notifications for the CDS, AOS, and Platform components.

Event notifications can be sent as emails and they can also be routed to a trap receiver.

This section describes:

[Types of Actifio Events](#) on page 2

[Example of Automating Corrective Action Based Upon an Event Notification](#) on page 2

[Events that Go from Information or Warning to Error](#) on page 3

[Alert Methods Supported by Actifio Appliances](#) on page 4

## Glossary of Event-Related Terms

These terms have specific meanings with regard to event notifications:

**Component:** Actifio CDS/Sky, Actifio Optimized Storage (AOS), and some IBM storage (Platform).

**Error:** The most serious level of Event Notification, more serious than both Information and Warning.

**Error Message:** The human-readable explanatory component of an Event Notification.

**Event:** Any change reported by the system or by some of the resources it relies on, including network and storage.

**Event ID:** The unique identifier for an Event Notification.

**Event Notification:** A set of information about a job or other system event that can be communicated via SMTP, SNMP, and in the Actifio Desktop System Monitor.

**Information:** The least serious level of Event Notification severity, less serious than Warning and Error.

**MIB:** The Management Information Base, a collection of event notification information consumable by a trap receiver via SNMP.

**Trap:** An event notification received by a trap server over SNMP.

**Trap Receiver:** A device that receives event notifications via SNMP and responds according to user-configured rules.

**Warning:** The middle level of Event Notification severity, more serious than Information but not as serious as an Error.



## Types of Actifio Events

The Actifio appliance sends notifications for these components of your Actifio System:

### CDS system events

CDS system events are related to the execution of Actifio copy data management jobs anywhere in your Actifio CDS or Sky system. This includes job failures or delays, missed SLAs, and other events not related to storage or underlying hardware.

CDS system events often include additional detailed information about job IDs, affected hosts or appliances, and more in the Error Message part of the event notification. In addition, if there is more information available from a subsystem, then that is concatenated to the error message.

Some job failure CDS events are initially reported as warnings, and later become errors. If a job fails during a period in which it can be retried, the event is a warning. If the retry attempts fail, the event finally becomes an error.

CDS events are detailed and listed in **Actifio Event IDs and Error Codes**, available on ActifioNOW.

### AOS Events and Platform Events

AOS events are from Actifio Optimized Storage (storage that the Actifio appliance integrates with via IBM APIs). You get these from IBM Storwize V3700, IBM System Storage DS3512, and NetApp E2700 storage arrays. These are documented by IBM in the IBM Knowledge Center at: <https://www.ibm.com/support/knowledgecenter/>.

Platform events relate to the physical hardware and network connections on which an Actifio CDS appliance is installed. Platform events come from Actifio CDS appliances only; Sky appliances do not send platform events.

### Clearable Events

Some platform and AOS events are clearable. Clearable events that are not cleared trigger repeated event notifications every 25 hours until cleared.

## Example of Automating Corrective Action Based Upon an Event Notification

Suppose a snapshot job fails because a datastore is pending consolidation. You see this information in the System Monitor:

Event ID	43901
Error Code	937
Error Message	Failing the job since disk consolidation is pending on VM

You want to perform the consolidation and resubmit the job right away, unless the datastore is so large that consolidation might impact production hosts.

If you are using monitoring software like SolarWinds or Control M, then:

1. The job failure is reported by the Actifio appliance.
2. The monitoring software catches the failure, and notes the error code for consolidation required.
3. The monitoring software makes a vSphere API call **reportsnaps** to query the size of the datastore.
  - o If the datastore is small enough to consolidate without impacting production hosts, the monitoring software sends an Actifio CLI or API call to enable consolidation for that policy and application, then runs the job from the CLI using **udtask mkpolicyoption** and **udtask backup**. The appliance responds with **Success Job\_<Job number>**. The job number is captured and tracked. Upon completion of the job the auto consolidate feature is disabled via **udtask rmpolicyoption**.
  - o If the datastore is so large that consolidation might impact production hosts, the monitoring software crafts a ticket for the VMware team to manually consolidate that datastore at a more appropriate time.

## Events that Go from Information or Warning to Error

Actifio CDS and Sky employ three notification types: **info**, **warning**, and **error**. Some UDP events experience all three error notification types. This is because some jobs may not succeed on their first execution due to an event that is later resolved. For example, a snapshot job may encounter a timeout event of type Warning due to network traffic. If there is still time within the SLA job window, the job may be retried several times; that job gets **Retry** status in the Actifio Desktop System Monitor.

If the job ultimately fails (the SLA time window elapses before success) then that job gets **Failed** status in the System Monitor. At this time, a timeout event of type Error is posted.

For complete information on job statuses, see *Using the System Monitor to Monitor Jobs and Events*.

The screenshot shows the Actifio System Monitor application. The sidebar on the left has filters for 'FILTER BY DATE' (Last 24 Hrs, Last Week, Last Month, Last 3 Months, Custom Dates) and 'FILTER BY TYPE' (All, Information, Warning, Error). The main area displays a 'List of events' table with columns: Clear, Event Date, Event, App Name, App Type, Job Name, Sevel, Code, Comp, and Event Summary. Two events are highlighted with orange boxes and arrows:

Event Date	Event	App Name	App Type	Job Name	Sevel	Code	Comp	Event Summary
Mar 26 19:07	43901				info	5036	CDS	Retry pending snapshot Job_0828979 for application ActDBRegress11 on host TEST-DAG-2016.EXCHANGE.COM, Error: 5036: 5036: Actifio Connector: Failed to save metadata configuration file, Make sure that file system where Actifio connector is installed has free space.
Mar 26 20:07	43901				error	5036	CDS	Failed snapshot Job_0828979c for application ActDBRegress11 on host TEST-DAG-2016.EXCHANGE.COM, Error: 5036: 5036: Actifio Connector: Failed to save metadata configuration file, Make sure that file system where Actifio connector is installed has free space.
Apr 08 06:33	43901				info	5043	CDS	Retry pending snapshot Job_1375638 for application helloddb on host sun05.sqa.actifio.com, Error: 5043: Actifio Connector failed identifying the volume and disk/LUN extent details for the application

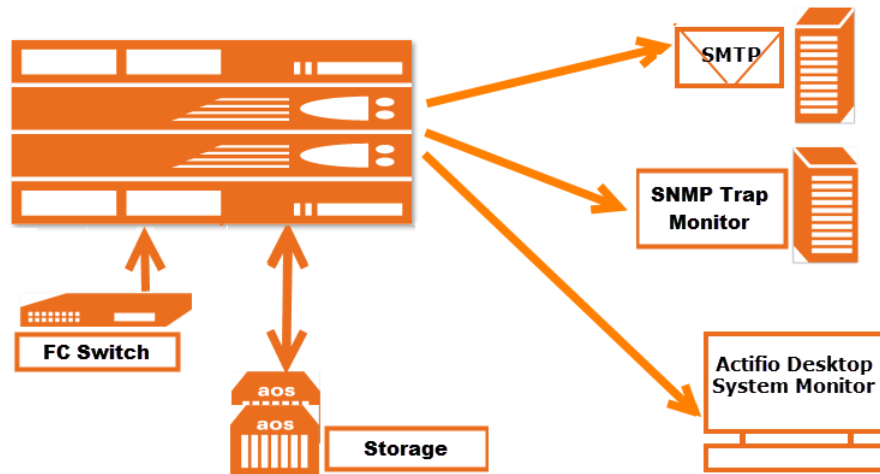
At the bottom of the window, it says 'Updated: 2017-04-10 18:54:42 # Event: 4413 Page 181 of 233 Displaying events: 3421-3439'.

**This Job was Retried (Information) Until it Failed (Error)**

## Alert Methods Supported by Actifio Appliances

The Actifio appliance actively monitors event notifications. Specifically:

- You can monitor job successes and failures directly in the System Monitor as described in [Chapter 2, Monitoring Alerts in the Actifio Desktop System Monitor](#).
- You can send event notifications from Actifio CDS and Sky appliances by email as described in [Chapter 3, Sending Alerts from the Actifio Appliance by Email](#).
- You can send event notifications as SNMP traps from Actifio CDS and Sky appliances to a trap receiver. This is detailed in [Chapter 4, Sending Traps from the Actifio Appliance to a Trap Receiver](#).
- You can collect alerts from some storage and switches onto the Actifio appliance, as detailed in [Chapter 5, Collecting Alerts from Storage and Switches \(CDS only\)](#)



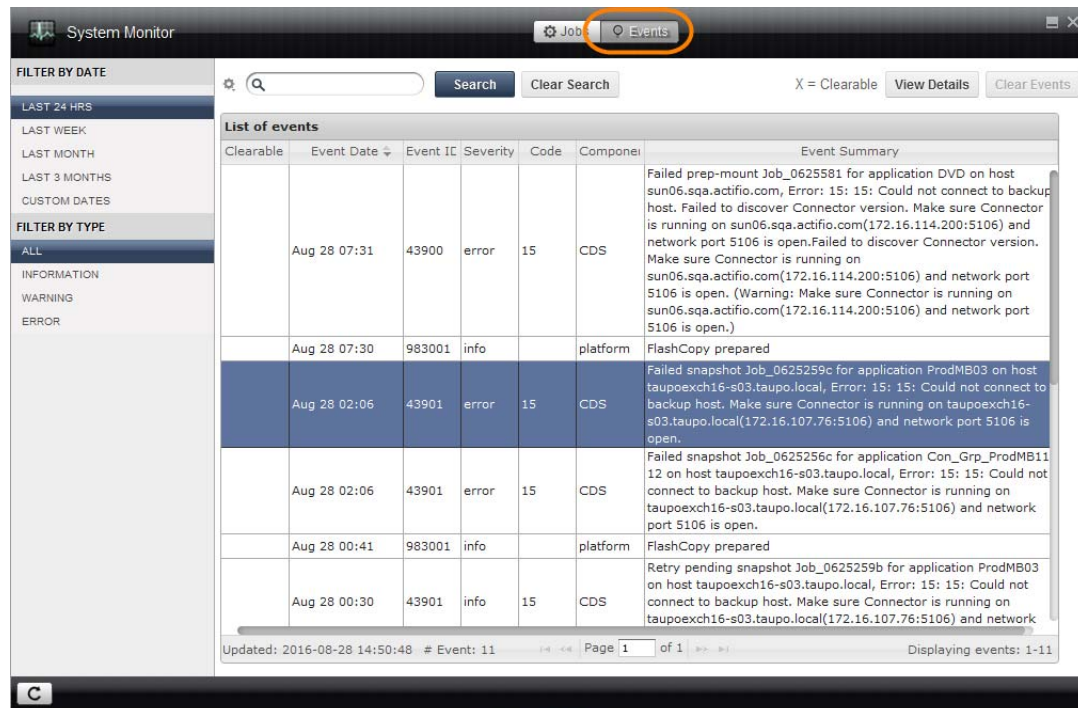
**Overview of Alert Options**

## 2 Monitoring Alerts in the Actifio Desktop System Monitor

You can learn about the context of an event in the Actifio Desktop System Monitor. Events are information/warning/error notifications raised by an Actifio appliance. You can view events in the System Monitor by:

- Viewing events based on date or severity
- Filtering events based on columns displayed in the Events window

See ***Using the System Monitor to Monitor Jobs and Events*** in the Actifio Documentation Library for details.



The screenshot shows the Actifio System Monitor interface. The 'Events' tab is selected in the top navigation bar. The left sidebar contains filters for 'FILTER BY DATE' (LAST 24 HRS, LAST WEEK, LAST MONTH, LAST 3 MONTHS, CUSTOM DATES) and 'FILTER BY TYPE' (ALL, INFORMATION, WARNING, ERROR). The main area displays a table of events. The table has columns: Clearable, Event Date, Event ID, Severity, Code, Component, and Event Summary. The event with ID 43901 and severity 'error' is highlighted in blue.

Clearable	Event Date	Event ID	Severity	Code	Component	Event Summary
	Aug 28 07:31	43900	error	15	CDS	Failed prep-mount Job_0625581 for application DVD on host sun06.sqa.actifio.com, Error: 15: 15: Could not connect to backup host. Failed to discover Connector version. Make sure Connector is running on sun06.sqa.actifio.com(172.16.114.200:5106) and network port 5106 is open.Failed to discover Connector version. Make sure Connector is running on sun06.sqa.actifio.com(172.16.114.200:5106) and network port 5106 is open. (Warning: Make sure Connector is running on sun06.sqa.actifio.com(172.16.114.200:5106) and network port 5106 is open.)
	Aug 28 07:30	983001	info		platform	FlashCopy prepared
	Aug 28 02:06	43901	error	15	CDS	Failed snapshot Job_0625259c for application ProdMB03 on host taupoexch16-s03.taupo.local, Error: 15: 15: Could not connect to backup host. Make sure Connector is running on taupoexch16-s03.taupo.local(172.16.107.76:5106) and network port 5106 is open.
	Aug 28 02:06	43901	error	15	CDS	Failed snapshot Job_0625256c for application Con_Grp_ProdMB1112 on host taupoexch16-s03.taupo.local, Error: 15: 15: Could not connect to backup host. Make sure Connector is running on taupoexch16-s03.taupo.local(172.16.107.76:5106) and network port 5106 is open.
	Aug 28 00:41	983001	info		platform	FlashCopy prepared
	Aug 28 00:30	43901	info	15	CDS	Retry pending snapshot Job_0625259b for application ProdMB03 on host taupoexch16-s03.taupo.local, Error: 15: 15: Could not connect to backup host. Make sure Connector is running on taupoexch16-s03.taupo.local(172.16.107.76:5106) and network

Updated: 2016-08-28 14:50:48 # Event: 11 Page 1 of 1 Displaying events: 1-11

### Viewing All Events of the Past 24 Hours

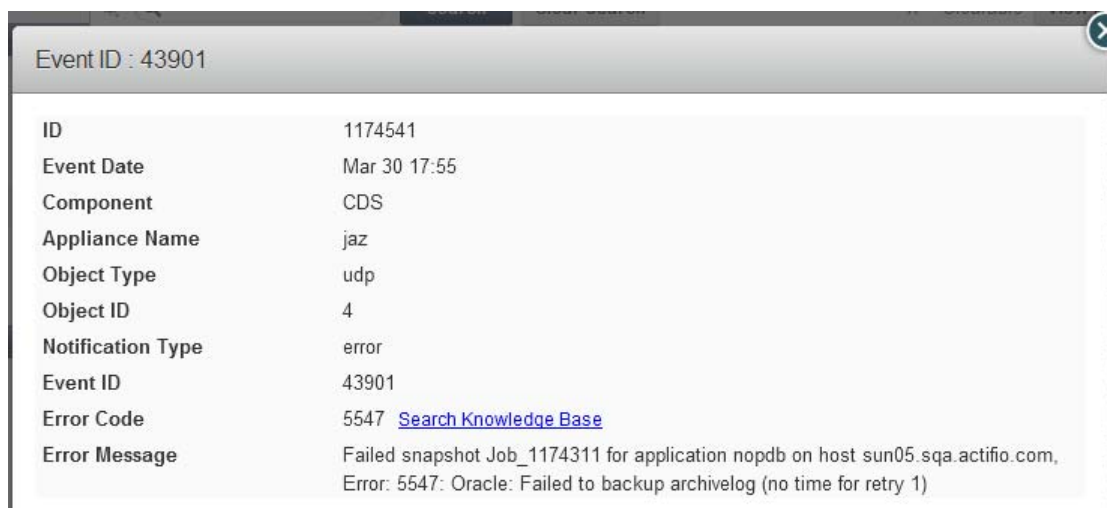
Click **View Details** to show the details of a selected event. To interpret the information in the event, see [Interpreting Event Details in the System Monitor](#) on page 6.

## Interpreting Event Details in the System Monitor

### Event Details in the Actifio Desktop System Monitor

Item	Meaning
ID	Error sequence number.
Event Date	A timestamp for the event.
Component	CDS, AOS, or Platform, described in <a href="#">Types of Actifio Events</a> on page 2.
Appliance Name	The name of the Actifio appliance that processed the job.
Object Type and Object ID	The CDS/Sky component that encountered the event: 1. PSRV      2. UDP      3. OMD      4. Dedup
Application Name*	The name of the application as it appears in the Application Manager.
Application Type*	The type of application in the Application Manager.
Job Name*	The job name as it appears in the System Monitor Jobs tab.
Notification Type	Severity: information, warning, or error.
Event ID	Event identifier. CDS events are listed in <b><i>Actifio Event IDs and Error Codes</i></b> .
Error Message	Descriptive text, sometimes with an additional error message appended to it.

**Note:** \* This appears only if it is relevant to the event.



The screenshot shows a window titled "Event ID : 43901" with a close button in the top right corner. The window displays the following details:

ID	1174541
Event Date	Mar 30 17:55
Component	CDS
Appliance Name	jaz
Object Type	udp
Object ID	4
Notification Type	error
Event ID	43901
Error Code	5547 <a href="#">Search Knowledge Base</a>
Error Message	Failed snapshot Job_1174311 for application nopdb on host sun05.sqa.actifio.com, Error: 5547: Oracle: Failed to backup archivelog (no time for retry 1)

### A Sample Event in the Actifio Desktop System Monitor

# 3 Sending Alerts from the Actifio Appliance by Email

You can configure email notifications to be sent when an event of severity *warning* or *error* is raised by the Actifio appliance. You configure an email server in the Notifications page of the Domain Manager, then set the notifications:

[Configuring the Appliance to Communicate with an SMTP Server](#) on page 8

[Setting Up Automatic Email Notifications](#) on page 9

[Interpreting Emailed Notifications](#) on page 10

Cluster Id: 590029521144  
Cluster Name: BezawadaCDS  
CDS IP Address: 192.168.16.41  
Customer: UNKNOWN  
Hostname: Bezawada

date	component	type	eventid	appliance	appliance type	jobname	message
=====							
2017-03-21 02:54:12	CDS	error	43901	check	Oracle	Job_0111009	Failed snapshot Job_0111009 for application check on host linux_raju_oracle, Error: 15: 15: Could not connect to backup host. Make sure Connector is running on linux_raju_oracle(192.168.18.155:5106) and network port 5106 is open.

## Example Emailed Notification

Domain Manager

EMAIL SNMP

enter search

SECURITY

- ORGANIZATIONS
- USERS
- ROLES

SYSTEM

- CONFIGURATION
  - Resources
  - Storage Pools
  - Dedup Settings
  - Appliance Settings
  - Connector Management
  - Notification
  - Logs
- HOSTS
- IMAGES
- DIAGNOSTICS
- SOFTWARE UPGRADE

Email Configuration

APPLIANCE DETAILS

Appliance ID  
590025326740

Appliance Name  
amazon

Appliance IP  
172.16.9.111

SMTP Server

Server Name/IP\*

smtp.MyCompany.com

Port\*

25 ☐ Use SSL

From Email Address

actifio@MyCompany.com

Email\*

mail@MyCompany.com

Password

\*\*\*\*\*

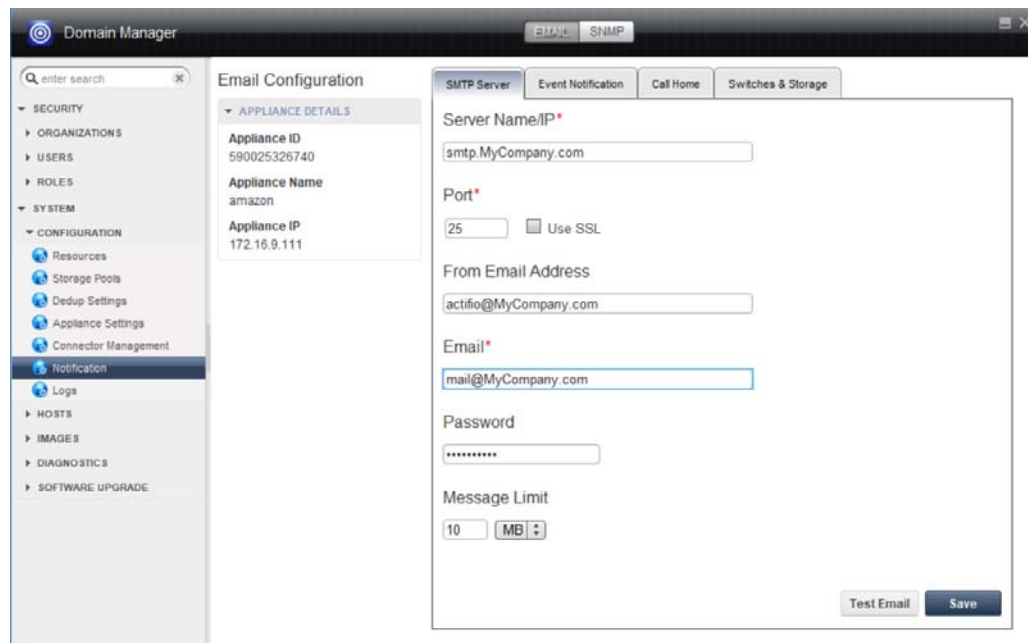
Message Limit

The Notifications Page of the Domain Manager

## Configuring the Appliance to Communicate with an SMTP Server

To configure the Actifio appliance to communicate with an email server:

1. Open the **Domain Manager** to **System > Configuration > Notification**.
2. Click the **EMAIL** tab.
3. Click the **SMTP Server** subtab.
4. Enter the SMTP server name or IP address (IPv4) in **Server Name/IP**.
5. Enter the SMTP or SMTPS port number in **Port**. Select **Use SSL** to send emails securely using SSL.
6. (Optional) Enter a **From Email Address**. This entry is the address that will appear in the From field of each email. For best results, use your company name in the domain section.
7. Enter a mail server user name and password.
8. Enter the maximum size of the email to be sent in **Message Limit**. When an email exceeds this size, the email is split into two or more emails. For example, if the limit is 1MB and the email is 2MB in size, Actifio Desktop splits the attachments into two 1MB attachments and sends two separate emails.
9. Click **Test Email** to send a test mail to an address that you will enter in a pop-up window.
10. Click **Save**.

The screenshot shows the 'Domain Manager' application window. On the left is a navigation pane with a search bar and a tree view containing categories like SECURITY, SYSTEM, CONFIGURATION, and HOSTS. The 'Notification' option under SYSTEM is selected. The main area is titled 'Email Configuration' and has a sub-tab 'SMTP Server'. It contains several input fields: 'Server Name/IP' (smtp.MyCompany.com), 'Port' (25) with a 'Use SSL' checkbox, 'From Email Address' (actifio@MyCompany.com), 'Email' (mail@MyCompany.com), 'Password' (masked with asterisks), and 'Message Limit' (10 MB). At the bottom right are 'Test Email' and 'Save' buttons. A sidebar on the left of the main form shows 'APPLIANCE DETAILS' for an appliance named 'amazon' with ID 590025326740 and IP 172.16.9.111.

### SMTP Server Settings

Configure the email server to either:

- Allow specification of a set of user credentials
- Allow anonymous relaying to email addresses outside the domain (so userid becomes the "from" address and the password field can be left blank)

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**Note:** For useful information about setting up anonymous email in Exchange, see:  
<http://www.petri.co.il/authenticated-or-anonymous-smtp-relay-with-exchange-2007.htm#>

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After the email server has been properly configured, you can configure automated emails for events as described in [Setting Up Automatic Email Notifications](#) on page 9.

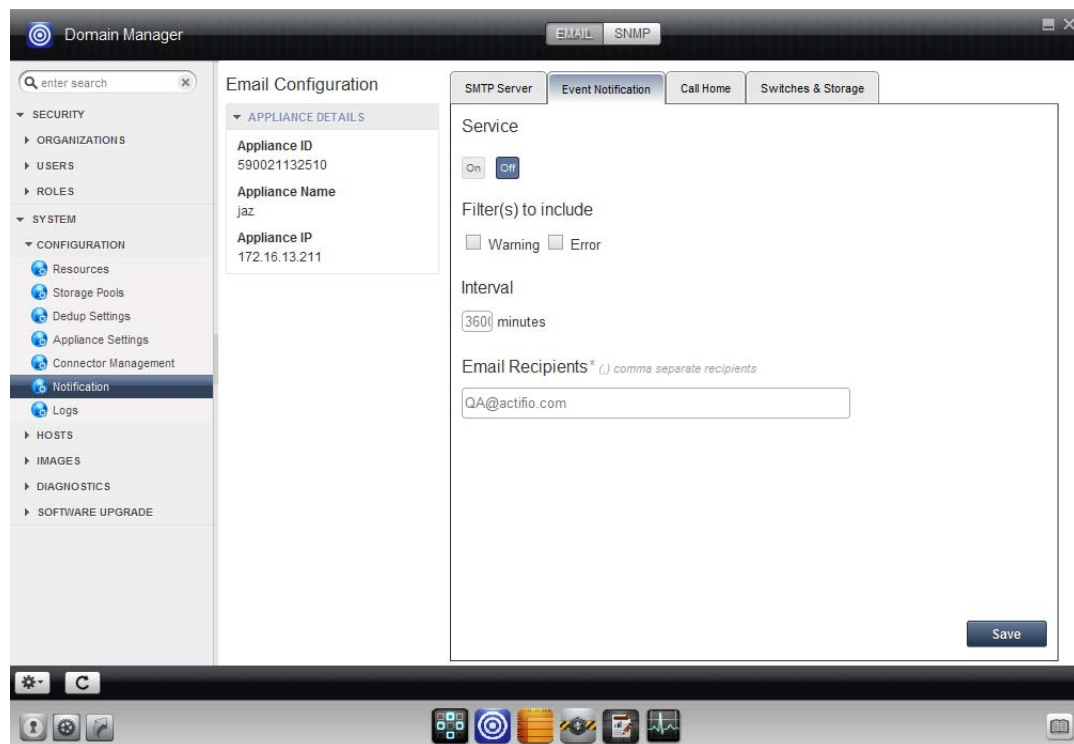
## Setting Up Automatic Email Notifications

Before configuring the levels of events that trigger emails or the addresses to receive the emails, you must configure an email server as described in [Configuring the Appliance to Communicate with an SMTP Server](#) on page 8.

The Actifio appliance can send an email notification when an event of the severity *Warning* or *Error* is raised. Emails about critical events are sent immediately.

To configure email notification:

1. In the Actifio Desktop, open the **Domain Manager** to **System > Configuration > Notification**.
2. Click the **EMAIL** tab.
3. Click the **Event Notification** subtab.
4. Under Service, select **On** and confirm the selection.
5. Check **Warning**, **Error**, or both checkboxes from **Filter(s) to Include** to send those events to the email recipients listed in Email Recipients (below). In most cases you should check both **Warning** and **Error**.
6. Enter the desired time interval in **Interval**. Emails about critical events are sent immediately. This value is the minimum time between when emails for all other events are sent, so it may be almost 30 minutes from the time that an event occurs until the time the next email is sent. The default value of 30 minutes is appropriate for most sites.
7. In **Email Recipients**, enter a comma separated list of email addresses of persons who are to receive email notifications.
8. Click **Save**.



**Configuring Event Notifications**



## Interpreting Emailed Notifications

### Elements of an Emailed Event Notification

Item	Meaning
Cluster Id	A unique identifier of the Actifio appliance that processed the job.
Cluster Name	The name of the Actifio appliance that processed the job.
CDS IP Address	The IP address of a Sky appliance, or the cluster IP address of a CDS appliance.
Customer	The name of the customer site where the event occurred, used by service providers.
Hostname	The host name of the host where the event originated.
date	A timestamp for the event.
component	CDS, AOS, or Platform, described in <a href="#">Types of Actifio Events</a> on page 2.
type	Notification severity: error, warning, or information
eventid	Event identifier. CDS events are listed in <b>Actifio Event IDs and Error Codes</b> , available on ActifioNOW.
appname	The name of the application as it appears in the Application Manager.
apptype	The type of application in the Application Manager.
jobname	The job name as it appears in the System Monitor Jobs tab.
message	Error Message text, sometimes with an additional error message appended to it.

Cluster Id: 590029521144  
Cluster Name: BezawadaCDS  
CDS IP Address: 192.168.16.41  
Customer: UNKNOWN  
Hostname: Bezawada

```
date      component type eventid appname  apptype  jobname message
=====
2017-03-21 02:54:12  CDS   error  43901   check   Oracle  Job_0111009 Failed snapshot Job_0111009 for application check on host linux_raju_ora, Error
Could not connect to backup host. Make sure Connector is running on linux_raju_ora(192.168.18.155:5106) and network port 5106 is open.
```

### A Sample Emailed Event

## 4 Sending Traps from the Actifio Appliance to a Trap Receiver

This section includes:

[Configuring the Actifio Appliance to Forward Traps to a Trap Receiver](#) on page 11

[Configuring the SNMP Agent to Support SNMP GET Operations](#) on page 13

[Using the Actifio MIB](#) on page 15

[Interpreting Traps](#) on page 17

### Configuring the Actifio Appliance to Forward Traps to a Trap Receiver

The Actifio appliance supports sending SNMP traps to a SNMP trap receiver. The Actifio trap handler (receiver and forwarder) uses SNMP4J. It runs within the Actifio "psrv" process, the status of which can be displayed by running "Monit Summary" at the command line of the primary node. It supports SNMPv1 and SNMPv2.

To add an SNMP trap receiver:

1. Open the **Domain Manager** to **System > Configuration > Notification**.
2. Click the **SNMP** tab to see the SNMP Configuration.
3. Enter the SNMP trap receiver name in **Server Name**. If you want to send the traps to an SNMP trap receiver that server requires a different community string, you can set the string as shown in [Setting the Community String for Forwarding Traps to a non-Actifio SNMP Trap Receiver](#) on page 12.
4. Enter the IP address of the SNMP trap receiver in **IP Address**. The IP address should be an IPv4 address.
5. Enter the remote port number in **Port**. Normally the port is 162, but check to be sure. The port number must be between 1 and 65535. Traps are sent over UDP and not by TCP/IP.
6. Select the type of traps to forward: Info, Warning, and Error. Error is the most serious level of event. The Actifio appliance MIB will send notifications about these traps to the SNMP trap receiver. Click **Save**.

Domain Manager

EMAIL **SNMP**

enter search

SECURITY

ORGANIZATIONS

USERS

ROLES

SYSTEM

CONFIGURATION

Resources

Storage Pools

Dedup Settings

Appliance Settings

Connector Management

Notification

SNMP Configuration

APPLIANCE DETAILS

Appliance ID  
590023229670

Appliance Name  
littlerascals

Appliance IP  
172.16.13.131

ADD SNMP COMMUNITY

SNMP Community \* public Save

ADD SNMP SERVER

Server Name \* IP Address \* Port

SolarWind 192.168.0.70 162

Log Options

☒ Info ☒ Warning ☒ Error

Save

Server IP Address Port Info Warn Error

There are currently no SNMP servers.

#### Adding an SNMP Trap Receiver

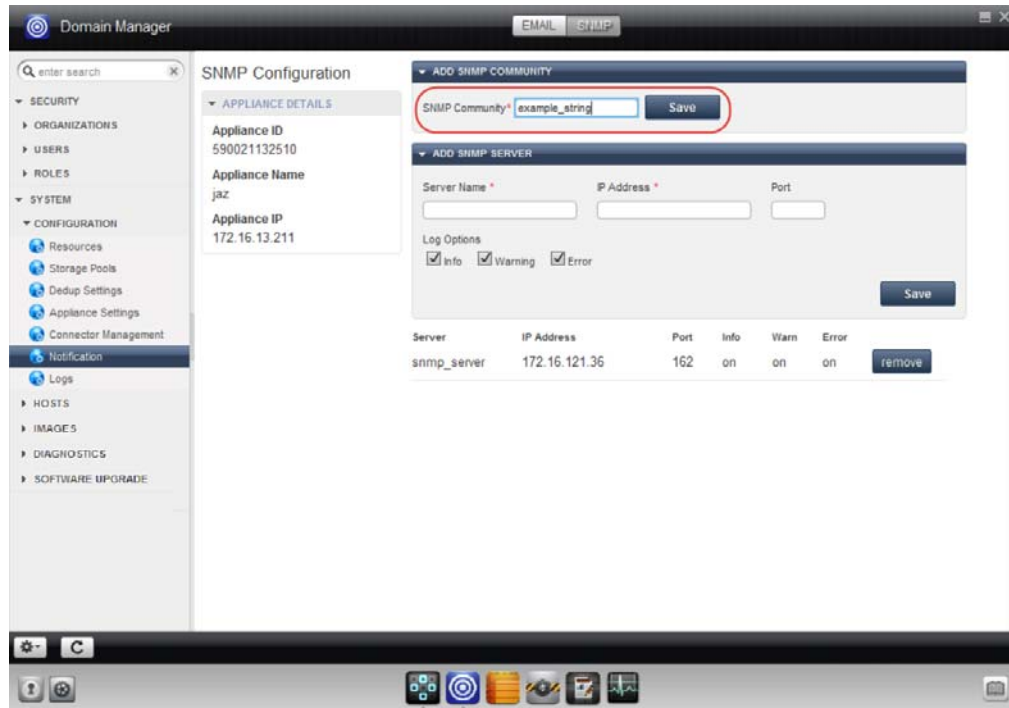
You can add multiple trap receivers and you can specify different types of events to be sent to each. The Actifio MIB is available from the Actifio Resource Center to help analyze these traps. See [Accessing the Actifio MIB](#) on page 14.

## Setting the Community String for Forwarding Traps to a non-Actifio SNMP Trap Receiver

If you want to send the traps to another SNMP trap receiver, and that server requires a different community string, you can set the string from the SNMP Configuration window.

To set the community string:

1. Open the **Domain Manager** to **System > Configuration > Notification**.
2. Click the **SNMP** tab to see the SNMP Configuration.
3. Enter the SNMP community string in **SNMP Community**.
4. Click **Save**.



**Configuring SNMP Community String**

## Configuring the SNMP Agent to Support SNMP GET Operations

If you are using an SNMP-based monitoring and management system to pull data on-demand, you can extend SNMPv2 support for the SNMP GET request process to the Actifio appliance through the activation of an SNMP agent in the appliance. By using the Actifio MIB file, SNMP GET requests pull specific objects to monitor and Actifio appliance configurations, system statistics and performance, and so on.

### Introduction to SNMP GET Operations

---

**Note:** Actifio appliances do not support SNMP SET operations.

---

#### The Actifio SNMP Agent

Actifio appliances extend SNMPv2 support to the SNMP GET request process through the activation of an SNMP agent (a wrapper over the SNMP4j Agent) in the Actifio appliance to register all corresponding Actifio MIB classes to support the PULL/GET mechanism. The management system (the client) “pulls” data from the SNMP agent in the Actifio appliance.

The Actifio SNMP agent runs on an Actifio appliance as part of the PSRV service on port UDP-161. It serves all requests sent by any SNMP client or management system to monitor and manage Actifio appliance configurations, system statistics and performance, and so on. The SNMP agent integrates monitoring and management extensions into the Actifio appliance, and uses SNMPv2 GET requests to allow data to be pulled on-demand. You can integrate the SNMP GET operations with your existing management system.

#### Actifio SNMP GET Request

An SNMP GET request reads the value of SNMP objects and performs network monitoring through a set of predefined Object Identifiers (OIDs). OIDs uniquely identify managed objects in the MIB hierarchy. By using the Actifio MIB, SNMP GET pulls information to monitor Actifio appliance configurations, system statistics, and performance.

To activate the SNMP agent in an Actifio appliance to support SNMP GET requests from an external management system, see [Activating the SNMP Agent in an Actifio Appliance](#) on page 14.

#### The Actifio MIB

The Actifio MIB file includes all of the object identifiers, notification types, object types, and notification groups used by the Actifio appliance. The Actifio MIB is available for download from the Actifio Resource Center. For more, see [Accessing the Actifio MIB](#) on page 14.

This section includes:

- [Activating the SNMP Agent in an Actifio Appliance](#) on page 14

- [Supported CLI Commands and their Mapped OIDs for SNMP GET Requests](#) on page 15

- [System MIB Variables](#) on page 16

## Activating the SNMP Agent in an Actifio Appliance

Use the **udtask configsnmpagent** CLI command to enable the SNMP agent in an Actifio appliance and, optionally to specify a community string for SNMP authentication by the SNMP agent and the management system.

Here is the syntax for the **udtask configsnmpagent** command.

```
>>- udstask -- -- configsnmpagent -- ----->
>--+-----+--+-----+--+>
      '- -communitystring -- key -'      '- -enable --+- true --+- -'
                                           +- false -+
```

### configsnmpagent Parameters

Parameter	Description
<b>-enable true   false</b>	Optional. This value enables or disables the SNMP agent. Supported settings are: <ul style="list-style-type: none"><li><b>true</b> - Enables the SNMP agent in the Actifio appliance</li><li><b>false</b> - Disables the SNMP agent in the Actifio appliance</li></ul>
<b>-communitystring key</b>	Optional. Sets the SNMPV2 community string for performing SNMP GET requests by the Actifio appliance. Enter an authentication pass phrase for connecting to the SNMP agent as the <i>key</i> .

To enable the SNMP agent and specify *Test\_password\_1* as the community string to connect to the SNMP agent:

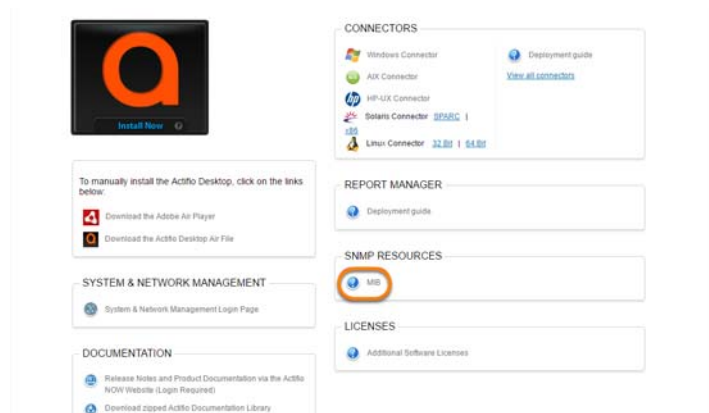
```
$ udstask configsnmpagent -communitystring Test_password_1 -enable true
```

## Accessing the Actifio MIB

An SNMP trap receiver can listen to the SNMP traps that are being sent by an Actifio appliance in the network. To receive alerts from the Actifio appliance for purposes of translating the object identifiers (OIDs) used by the Actifio appliance, you can import the Actifio MIB file to your SNMP trap receiver. The Actifio MIB file includes all object identifiers, notification types, object types, and notification groups used by the Actifio appliance.

You can access the Actifio MIB file from the Actifio Resource Center:

1. Open a web browser to **http://<Actifio\_appliance\_IP\_address>**.
2. The Actifio Resource Center page opens. Right-click the MIB link under SNMP Resources and save the MIB file to a convenient location.



**The Actifio Resource Center at <http://<Appliance IP Address>>**

## Using the Actifio MIB

### Supported CLI Commands and their Mapped OIDs for SNMP GET Requests

This table lists the mapped OID assignments for each of the supported udsinfo and usvcinfo CLI commands:

This section lists the **udsinfo** and **usvcinfo** CLI commands supported for SNMP GET requests:

#### Mapped OIDs

Actifio Base OID	1.3.6.1.4.1.35795	
Traps OID	1.3.6.1.4.1.35795	.1
CDS OID	1.3.6.1.4.1.35795	.2
USVCINFO commands	1.3.6.1.4.1.35795	.2.1
UDSINFO commands	1.3.6.1.4.1.35795	.2.2

#### udsinfo and usvcinfo CLI Commands and their Mapped OIDs

Command	OID Assignment
usvcinfo lssystemstats	1.3.6.1.4.1.35795.2.1.1
udsinfo lsersion	1.3.6.1.4.1.35795.2.2.2
udsinfo lscluster	1.3.6.1.4.1.35795.2.2.3
udsinfo lssnmpevent	1.3.6.1.4.1.35795.2.2.4
udsinfo lssnmconfig	1.3.6.1.4.1.35795.2.2.5
udsinfo lsdiskpoolstat	1.3.6.1.4.1.35795.2.2.6
udsinfo lspolicy	1.3.6.1.4.1.35795.2.2.7
udsinfo lsavailableconnector	1.3.6.1.4.1.35795.2.2.8
udsinfo lsuser	1.3.6.1.4.1.35795.2.2.9
udsinfo lsjob	1.3.6.1.4.1.35795.2.2.10
udsinfo getsysteminfo	1.3.6.1.4.1.35795.2.2.11
udsinfo lsdiskpool	1.3.6.1.4.1.35795.2.2.12

## System MIB Variables

This section lists the System MIB variables and their mapped OIDs:

### System MIB variables and Their Mapped OIDs

System MIB variable	Set By	mapped OIDs
sysDescr	SNMP Agent	1.3.6.1.2.1.1.1
sysObjectID	SNMP Agent	1.3.6.1.2.1.1.2
sysUpTime	SNMP Agent	1.3.6.1.2.1.1.3
sysContact	User, via setparameter	1.3.6.1.2.1.1.4
sysName	SNMP Agent	1.3.6.1.2.1.1.5
sysLocation	User, via setparameter	1.3.6.1.2.1.1.6
sysServices	SNMP Agent	1.3.6.1.2.1.1.7
sysORLastChange	SNMP Agent	1.3.6.1.2.1.1.8

---

**Note:** The *SysUptime* value is the time since the SNMP agent was started.

---

### Setting System Variables with setparameter

Values for sysDescr, sysName, sysObjectID and sysUptime system OIDs are defined by the SNMP agent. You define the system parameter values for the sysContact and sysLocation OIDs in the SNMP agent using the **setparameter** command.

- Set the sysContact OID value using the **systemcontact** parameter.
- Set the sysLocation OID value using the **systemlocation** parameter.

For example:

```
$ udstask setparameter -param systemcontact -value admin
```

```
$ udstask setparameter -param systemlocation -value Boston
```

### Limiting the Number of Records Sent by the SNMP Agent with setparameter

You can use the **setparameter** CLI command to limit the number of records sent by the SNMP agent in the Actifio appliance to the management system (the client). When you set the **snmptablesizes** parameter, the SNMP agent retrieves only the specified number of records and send those records to the respective SNMP clients. The range is 100 to 5000 records (default of 500).

To configure the SNMP agent to retrieve only 400 records and send those records to the SNMP client:

```
$ udstask setparameter -param snmptablesizes -value 400
```

See the **Actifio CLI Reference** in the Actifio Documentation Library for details on CLI commands and parameters.

## Interpreting Traps

**Contents of a CDS Trap Event**

Term	OID 1.3.6.1.4.1.35795.x	Description
Error ID	1.4.1.0	Event identifier. CDS events are listed in <b>Actifio Event IDs and Error Codes</b> , available on ActifioNOW.
Error Code	1.4.2.0	Error code. CDS error codes are listed in <b>Actifio Event IDs and Error Codes</b> , available on ActifioNOW.
Cluster Name	1.4.3.0	The Actifio appliance that processed the job.
Error Sequence Number	1.4.4.0	Error sequence number.
Timestamp	1.4.5.0	Timestamp for the event: Day Mon dd hh:mm:ss yyyy
Object Type	1.4.6.0	The CDS/Sky component that encountered the event: 1. PSRV    2. UDP    3. OMD    4. Dedup
Object Id	1.4.7.0	
Application name	1.4.8.0	The name of the application in the Application Manager.
Application Type	1.4.9.0	The type of application in the Application Manager.
Job name	1.4.10.0	The job name in the System Monitor Jobs tab.

Request ID

947349539

Error Index

0

Error Status

0

Community

public

Ip Address

192.168.16.40

Trap Type

SNMPv2c

Variable Bindings

OID	Type	Value
1.3.6.1.2.1.1.3.0	TimeTick	0 days 00h:00m:00.00s
1.3.6.1.6.3.1.1.4.1.0	OID	1.3.6.1.4.1.35795.1.1
1.3.6.1.4.1.35795.1.4.1.0	String	Error ID = 43901 : Failed snapshot Job_0123209 for ap...
1.3.6.1.4.1.35795.1.4.2.0	String	Error Code = 15
1.3.6.1.4.1.35795.1.4.3.0	String	Cluster Name = BezawadaCDS
1.3.6.1.4.1.35795.1.4.4.0	String	Error Sequence Number = 0
1.3.6.1.4.1.35795.1.4.5.0	String	Timestamp = Wed Apr 05 02:28:50 2017
1.3.6.1.4.1.35795.1.4.6.0	String	Object Type = udp
1.3.6.1.4.1.35795.1.4.7.0	String	Object Id = 4

Close

Show Raw

<< prev

next >>

**A Sample Event in the Actifio Desktop System Monitor**





## 5 Collecting Alerts from Storage and Switches (CDS only)

You can configure your Actifio CDS appliance to collect AOS event notifications from storage arrays and platform events from Fibre Channel switches. The Actifio CDS appliance can collect alerts in two ways:

**Polling Storage Arrays:** Actifio CDS appliances can actively poll some storage arrays. See [Polling Alerts from IBM V3700, IBM DS 3512, and NetApp E2700 Storage Arrays](#) on page 19.

**Receiving Forwarded Alerts from Switches:** You can configure an IBM System Storage SAN24B-4 Express Fibre Channel Switch to forward alerts to the Actifio CDS appliance. See [Forwarding Alerts from an IBM System Storage SAN24B-4 Express Switch to an Actifio CDS Appliance](#) on page 20.

### Polling Alerts from IBM V3700, IBM DS 3512, and NetApp E2700 Storage Arrays

To monitor the SNMP notifications generated by attached storage systems and switches known to the Actifio appliance, you must configure them in the Switches & Storage subtab. To configure the storage and switches:

1. Open the **Domain Manager** to **System > Configuration > Notification**.
2. Click the **EMAIL** tab and the **Switches & Storage** subtab.
3. Provide the IP address details in the **Switch IP Addresses** box:
  - o Click **Add** to open the IP Addresses dialog. Enter a label and switch IP address, and click **Save**.
  - o Repeat to add the second Fibre Channel switch.
4. Repeat the process in the **Actifio Optimized Storage IP Addresses** box, adding two storage arrays and another ping address. You can use **Edit** to modify and **Delete** to remove an existing IP address.
5. Click **Save**.



**Configuring Automatic Notification of Storage and Switch System Events**

## Forwarding Alerts from an IBM System Storage SAN24B-4 Express Switch to an Actifio CDS Appliance

To access the SNMP configuration on an IBM System Storage SAN24B-4 Express Fibre Channel switch:

1. Open Internet Explorer (only) to the IP address of the Fibre Channel switch.
2. Select **Switch Admin** from the upper left hand menu list.
3. In the upper right hand corner of the window, click **Show Advanced**.
4. Select the **SNMP** tab.
5. In the SNMPv3 Inform / Trap Recipient section:
  - o Select the username of the switch administrator account.
  - o Enter the IP address of the Actifio CDS appliance to receive the traps.
  - o Ignore Port Number (leave it at 162).
  - o Select the level of traps to send to the appliance.
6. Click **Apply** and **Close**.
7. Repeat for each Fibre Channel switch.

IBM\_SAN80B\_217 - Switch Administration

SwitchName: IBM\_SAN80B\_217 DomainID: 2(0x2) VVWV: 10:00:00:05:1e:09:97:01 Mon Jul 20 2009 18:52:25 GMT+00:00

SNMP Configure Routing Extended Fabric AAA Service Trace FICON CUP Security Policies

SNMP Information

Contact Name: Field Support.

Description: Fibre Channel Switch.

Location: End User Premise.

Enable/Disable Authentication Trap

☐ Enable Authentication Trap

SNMPv3 Inform / Trap Recipient

User Name	Recipient IP	Port Number	Trap Level
admin - RO	10.64.210.104	162	4 - Informational
snmpadmin2 - RW	0.0.0.0	162	0 - None
snmpadmin3 - RW	0.0.0.0	162	0 - None

SNMPv1 Community/Trap Recipient

Community String	Recipient	Port Number	Access Control	Trap Level
Secret C0de	10.64.210.74	162	Read Write	4 - Informational
OrigEquipMfr	dell-storage-x-074	162	Read Write	4 - Informational
private	127.0.0.1	162	Read Write	0 - None
public	10.64.210.72	162	Read Only	4 - Informational

Access Control List

Access Host	Access Control List
0.0.0.0	Read Write
0.0.0.0	Read Write
0.0.0.0	Read Write
0.0.0.0	Read Write

Apply Close Refresh

Configure SNMP parameters Mode: Advanced Free Professional Management Tool 10.64.210.217 AD0 User: admin Role: admin

### Setting SNMP Trap Destinations in the Fibre Channel Switch

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