

Tech Brief

Most Common Events and Errors in Actifio VDP 9.0.x

The number of errors and warnings encountered by an Actifio appliance are displayed in the upper right-hand corner of the Actifio Desktop Dashboard. Click on the number to display a list of the events in the System Monitor service.

This is a list of the most common Event IDs that you may see. You can find detailed solutions for these error codes are in ActifioNOW at: https://actifio.force.com/community/articles/Top_Solution/EventID-TopSolution

Job failures can be caused by many errors. Each 43901 event message includes an error code and an error message. See the corresponding Error Code in [Most Common Errors that Cause Events, Actifio VDP 9.0.x](#) on page 9.

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
10019	System resource low	The target Actifio pool (snapshot or dedup) is running out of space. See the AGM online help for a wealth of information on optimizing your storage pool usage and on optimizing image capture and dedup.
10026	A suitable MDisk or drive for use as a quorum disk was not found. A FC path from CDS nodes to a target device has been reduced.	A quorum disk is a managed drive that contains a reserved area for data, used exclusively for system management. Both Actifio nodes communicate on a constant basis with the three quorum disks configured in the appliance. When one of the quorum disks is not available to any node, an error message is generated. Some common causes for a quorum disk to become inaccessible or unreadable are: <ul style="list-style-type: none"> • Storage maintenance or upgrade • Storage outage or failure • Disks removed in storage array • Unsupported storage or storage configuration • SAN connectivity is lost Corrective actions are detailed in the knowledge base at https://actifio.force.com/c2/kA4G0000000XZGZKA4

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Event ID	Event Message	What To Do
10034	snapshot memory low	<p>Snapshots consume pool capacity and bitmap space memory. This issue relates to bitmap space memory.</p> <p>The Snapshot Pool requires 1MB of bitmap space memory for every 2TB of source VDisk in snapshot relationships.</p> <p>You can review the usage and set the limit in the Domain Manager:</p> <ul style="list-style-type: none"> • Bitmap space memory at System > Configuration > Resources • Storage pool usage at System > Configuration > Storage Pools <p>For example, a 2TB VDisk with one snapshot needs 1MB snapshot bitmap space; the same VDisk with three snapshots needs 3MB snapshot bitmap space, and a 4TB VDisk with three snapshots needs 6MB snapshot bitmap space.</p> <p>The maximum bitmap memory is 512MB for Snapshot Pool.</p> <p>For an example, see Event 10034 Example Problem and Resolution on page 21.</p>
10038	about to exceed VDisk warning limit	<p>To immediately reduce VDisk consumption:</p> <ul style="list-style-type: none"> • Ensure expirations are enabled, both at the global and individual application level. • Group databases from a single host together into a Consistency Group. For example, if a single host has 9 SQL databases, create one Consistency Group for that host and include all 9 databases, then protect that consistency group rather than the individual databases. • Reduce the number of snapshots kept for an application by changing the policy template used by an SLA. This action does not necessarily lead to a different RPO, as deduplicated images of each snap can be created before they are expired. • Delete unneeded mounts, clones, and live-clones • Move VMware VMs from a snapshot SLA to a Direct-to-Dedup SLA. You will need to expire all snapshots to release the VDIs used by the staging disks. This will only lower the VDisk count for VMware VMs, as other application types, including Hyper-V VMs, still use VDIs when protected by a direct-to-dedup policy. • Change VMware VMDKs that do not need to be protected to Independent mode as these cannot be protected by VMware snapshots <p>If this alert repeats daily but the appliance does not reach the maximum VDIs, modify the policies as above to reduce the number of VDIs used, or increase the alert threshold. During a daily snapshot window the VDisk count can fluctuate while new VDIs are created for snapshots before the old VDIs are removed as a part of snapshot expirations. The daily fluctuations will vary depending on the number of applications protected.</p> <p>For further details to assist with VDisk management, see <i>Configuring Resources and Settings With the Domain Manager</i>.</p>

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
10039	network error reaching storage device	<p>A heartbeat ping to monitored storage has failed due to hardware failure or network issue.</p> <p>Action: Check the storage controller and array for issues, and check the network for issues.</p>
10043	An SLA violation has been detected	<p>Review the best practices in <i>Planning and Developing Service Level Agreements</i> and optimize your policies.</p> <p>The following are common causes for SLA violations.</p> <ol style="list-style-type: none"> 1. Job Scheduler is not enabled: The Job Scheduler may have been disabled for maintenance. Action: Enable it within the Domain Manager appliance settings. 2. The first jobs for new applications can often take a long time: Long job times can occur during the first snapshot or dedup job for an application. On-ramp settings can be used to prevent ingest jobs from locking up slots and locking out ingested applications. Action: See <i>Setting Priorities for First Ingestion of New Applications</i> in <i>Configuring Resources & Settings With the Domain Manager</i>. 3. Applications are inaccessible due to network issues Action: Ensure that all applications and hosts are accessible. 4. Protecting VMware ESXi 5.5.x or older: There are known issues with VMware ESXi 5.5 and earlier versions, where unusually high change rates result in unexpected high growth rates in both the Snapshot and Dedup Pools. Action: This is a VMware issue that cannot be resolved within Actifio. Please refer to these two VMware KB articles: VM KB# 2090639 and VM KB# 2052144 5. Policy windows are too small or job run times are too long: While you cannot control how long each job takes to run, you can control the schedule time for applications that are running. Jobs that run for many hours occupy job slots that could be used by other applications. Action: Review SLAs and adjust policies according to the best practices in <i>Planning and Developing Service Level Agreements</i>. 6. Replication process sending data to a remote CDS Action: Ensure that the bandwidth & utilization of your replication link is not saturated.

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
10045	<p>The following alert message is received:</p> <p>1203 - Dedup Pool Usage is Over the Warning Threshold</p> <p>10031 - Dedup Pool exceeded warning level</p> <p>10045 - Dedup Pool exceeded safe threshold</p>	<p>The Actifio Appliance is configured with the default value of 88% for the warning threshold. When the dedup pool's utilization crosses this threshold, one of the above alerts is generated. When the warning threshold is exceeded, a warning message is generated; whereas, when the safe threshold is reached, 100%, no additional dedup jobs will be scheduled. There are many causes for dedup to exceed utilization thresholds, the most common are:</p> <p>No GC or Sweeps run recently</p> <p>Confirm GC and Sweep jobs have been running on a regular basis. By default each job should occur at least once per month when over 65% dedup pool utilization. While under 65% GC will be skipped.</p> <p>If GC and Sweep have not been running on a regular basis, determine why. Confirm that the GC schedule is enabled and configured as expected. This can be viewed in the Actifio Desktop under Domain Manager > System > Configuration > Dedup Settings > Garbage Collection.</p> <p>Note that two GCs will be needed if no GC has been run before or if a GC been canceled or failed.</p> <p>Newly discovered and ingested applications</p> <p>If new applications were recently added to protection, this alert may be triggered while ingesting the additional data. After confirming that GC and Sweep have been running as expected, add additional mdisks as needed. How to View, Add, Remove, and Rename mdisks From Disk Pools via CLI on CDS</p> <p>Expirations disabled for applications</p> <p>Review the applications currently configured not to expire images via reportdisables.</p> <pre># reportdisables SLAID Function Date Time AppID HostName AppName 37439 expirationoff 2016-08-18 13:03:26 37412 win7 win7</pre> <p>If possible re-enable expiration from the UI under Application Manager for the specific application/applications and then run GC and sweep.</p> <p>Normal dedup pool growth</p> <p>The dedup pool will continue to grow according to the retention set within the SLAs. If a new set of applications are added with a 6 month retention, it is expected that the dedup pool will grow for 6 months into the future and then should taper off into a more stable pattern. If the dedup pool is growing faster or longer than is expected, consult an Actifio Customer Success engineer for further evaluation.</p>

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
10046	Performance Pool exceeded safe threshold	<p>To reduce consumption of the performance/snapshot pool:</p> <ul style="list-style-type: none"> • Move VMware VMs from a snapshot SLA to a Direct-to-Dedup SLA. Then expire all snapshots to release the space used by the staging disks and last snap. This only works for VMware VMs; other application types still use some snapshot pool space if protected by a Direct-to-Dedup policy. • Reduce the number of snaps kept for an application by changing the policy template. Applications that have high change rates create larger snapshots, so this has the highest benefit for high change-rate applications. This does not necessarily lead to a different RPO, as deduplicated images of each snap can be created before they are expired. • Delete mounts, clones, and live-clones if they are not needed • Change applications from Out-of-Band to In-Band • Actifio Appliance Reports Related to Snapshot Pool Management <p>The Actifio Report Manager includes several useful reports relating to snapshot pool consumption:</p> <ul style="list-style-type: none"> • Application Contribution to Daily Snapshot Pool • Application Contribution to Daily Storage Pool and V-Disk Usage • Daily Snapshot Pool Utilization Summary • Daily Storage Pool and V-Disk Usage Trend by Appliance • Disk Pool Utilization History • Snapshot Pool Utilization History by Application • Storage Pool Usage by Organization • Storage Resource Usage Summary
10055	Unable to check remote protection	<p>CDS/Sky checks the remote appliance hourly for possible remote protection issues. A trap is raised when CDS/Sky cannot communicate with the remote appliance.</p> <p>The platform server communication could fail due to:</p> <ul style="list-style-type: none"> • network error (temporary or permanent), temporary network error does not mean job will fail; jobs are retried, but the hourly check is not • adhd is down • certificate error <p>Examine the adhd.log to find the reason for the failure.</p> <p>To fix the issue that caused the failure:</p> <ul style="list-style-type: none"> • If the network error is temporary, you can ignore it. • To resolve an adhd issue, look for the “open for business” message in adhd log. • For a certificate error, you may need to re-exchange certificates.

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
10057	Assert File <file path> Info User forced <node> to assert by issuing a node reset command. A dump will appear in /dumps shortly.	<p>A node assert message is generated when an unexpected system error occurs. If this was for the Primary Node (Node 1), then a failover would have likely occurred. Depending on the date of the assert, you may need to call Actifio for further investigation, or this error can be ignored.</p> <p>Review the full alert message to extract the assert time and date time.</p> <pre>date component type eventid message 2016-04-21 12:26:45 CDS error 10057 (@ Mon Nov 2 09:15:13 2015) Assert File /build/lodestone730/141111/src/user/ic/ic_ic_core.c Line 3297 Info User forced node 1 to assert by issuing a node reset command. A dump will appear in /dumps shortly.</pre> <p>Find the date that is in parenthesis in the error message. In the above example we can see that the assert was generated (@ Mon Nov 2 09:15:13 2015) but the date of the alert is 2016-04-21 12:26:45.</p> <p>The alert came more than 24 hours after the assert</p> <p>This can occur after a restart of the Platform Service or a reboot of the CDS. The Platform server will see an old assert message and send it out as a new trap. This is done so that no assert messages are missed, considering the potentially impactful nature of the events associated with the messages. In this specific scenario the message can be ignored.</p> <p>The alert came within 24 hours of the assert</p> <p>If the assert date is within 24 hours of the alert date and a case has not been generated (a failover auto-case usually accompanies new occurrences), contact the Actifio Support.</p>
10060	The dedup process has been down for longer than the configured acceptable interval	<p>Some common causes for the dedup engine being offline are:</p> <ul style="list-style-type: none"> • Upgrade or other maintenance of Actifio appliance is underway • Appliance being powered up or powered down • Appliance failover • Dedup has shut down or restarted unexpectedly <p>If there is any maintenance task underway, this error is expected and can be ignored. If the error persists, or appears when the appliance is not down for maintenance, contact Actifio Support.</p>
10070	udppm scheduler is off for more than 30 minutes	<p>The scheduler is off. This may have been set for maintenance. If the maintenance is complete, you can re-enable the scheduler:</p> <ol style="list-style-type: none"> 1. From the Actifio Desktop, open the Domain Manager to System > Configuration > Appliance Settings. 2. Click the Control Panel tab. 3. The Appliance Control Panel page shows the status of the scheduler under the Policy Manager/Enable Schedules.

Most Common Error and Warning Events, Actifio VDP 9.0.x

Event ID	Event Message	What To Do
43901	Job Failure	Job failures can be caused by many errors. Each 43901 event message includes an error code and an error message. See Most Common Errors that Cause Events, Actifio VDP 9.0.x on page 9.
43902	Failed local dedup job	A new dedup job with change data will create a new dedup object and resolve this error. If more immediate resolution is required, contact Actifio Customer Success.
43903	Failed expire job	<p>An expiration may fail because an image is in use at the time of the expiration. This could be due to this image being in use by another Actifio process or operation, such as a mount, clone, restore, or even an in-progress dedup job referencing this image.</p> <p>The expiration job will likely complete successfully on the second attempt. Actifio does not report the successful completion of this second attempt. If you get only one error for an image, it is safe to conclude that a second attempt to expire this image was successful.</p> <p>If there is a legitimate reason why this image cannot be expired, you will get multiple errors related to this image. If you receive more than one error, contact Actifio Customer Success.</p>
43912	Failed remote-copy job	<p>Review the network configuration and Appliance configuration to confirm that the source Appliance can reach the target Appliance. Check the following:</p> <ul style="list-style-type: none"> • Target appliance IP is correct • Remote appliance is online and available • Local and remote dedup pools are online and visible in Actifio Desktop • Remote dedup pool has available space <p>If after confirming that all of the above are in order, and the capture jobs still fail, open a case with Actifio Customer Success.</p>
43918	Failed dedup-async job	
43928	Failed direct-dedup job	
43940	Disk space usage on datastore has grown beyond the warning threshold	<p>The datastore storage space is above the warning threshold, which default is 80 percent. If datastore space requirements become higher than the <i>critical</i> threshold, jobs will fail. This alert is created to help you take action to prevent ESX datastores from filling with snapshot data.</p> <p>Increase available space by expanding the datastore, migrating some VMs, or deleting old data on the datastore.</p> <p>Note: Snapshots grow as more change data is added. If a datastore fills up due to a growing snapshot, VMs can be taken offline automatically by VMware to protect the data.</p>
43941	Disk space usage on datastore has grown beyond the critical threshold	This message appears when the remaining space on the datastore is less than the critical threshold. If more storage is not made available soon, then jobs will start to fail when the remaining space is inadequate to store them. See 43940 above.

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Event ID	Event Message	What To Do
43944	Failed to delete snapshot	This happens when a snapshot is not removed from a vCenter within 1 hour. This can normally be ignored, because leftover images are removed during the next backup.
43948	The number of images not expired awaiting further processing [#] images [jobclass] from [#] unique applications	This is generated when an application begins halting expirations as a part of Actifio Image Preservation. Image Preservation preserves snapshot and local dedup images beyond their expiration dates to ensure that those images are processed by the Actifio appliance. Refer to the Actifio CLI Reference section "Configuring Image Preservation", for full information on how these messages occur.
43954	The policy used for the application requires the Actifio Connector to be at release 7.0 or newer.	Please update the Actifio Connector on the host to resolve this issue.
43956	Failed StreamSnap Job	There are many different reasons why a StreamSnap job can fail. The most common are errors 61001, 61002, 61003, 61004, 61006, 61007, 61008, and 61020. These are documented in the knowledge base at ActifioNOW.

Errors That Cause Events

Some events, particularly the 43900 series, can be caused by many errors. Each 43900 event message includes an error code and an error message. See the corresponding Error Code below:

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
15	couldn't connect to backup host. Make sure Connector is running on <host> and network port <port> is open	<p>To initiate an out of band backup, the Actifio Connector service must be reachable by the Actifio Appliance. When the required ports are not open, the incorrect host IP is configured, the Connector service not running, or the host is out of physical resources this error occurs.</p> <ol style="list-style-type: none">1. Ensure that the port in use between the host and Actifio Appliance and Connector service is open. The Actifio Connector uses port 5106 by default for bidirectional communication from the Actifio appliance. You can also use the legacy port 56789 optionally for the same purposes. Make sure your firewall permits bidirectional communication through this port.2. Confirm the correct IP is configured for the host in Domain Manager. For more details see <i>Network Administrator's Guide to Actifio Copy Data Management</i>.3. Confirm that the Connector service is running on the target host and restart if necessary.<ul style="list-style-type: none">o On Windows, find the Actifio UDS Host Agent service in services.msc and click Restarto On Linux, run <code>/etc/init.d/udsagent restart</code>o On HP-UX, Solaris, or AIX, run <code>/etc/udsagent restart</code>If you see these entries in the UDSAgent logs, reboot the host: <pre><timestamp> GEN-DEBUG [4400] UDSAgent starting up ... <timestamp> GEN-INFO [4400] Locale is initialized to C <timestamp> GEN-WARN [4400] VdsServiceObject::initialize - LoadService for Vds failed with error 0x80080005 <timestamp> GEN-WARN [4400] initialize - Failed to initialize Microsoft Disk Management Services: Server execution failed [0x80080005] <timestamp> GEN-WARN [4400] Failed initializing VDSMgr, err = -1, exiting... <timestamp> GEN-INFO [4400] Couldn't connect to namespace: root\mscluster <timestamp> GEN-INFO [4400] This host is not part of cluster <timestamp> GEN-WARN [4400] Failed initializing connectors, exiting -1</pre>4. Confirm the host is not maxed on CPU and memory. For the target host to reply to the Actifio Appliance it must have available physical resources.5. Retry the backup.

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
29	snapshot creation of VM failed. Error: VM task failed An error occurred while saving the snapshot: Failed to quiesce the virtual machine	<p>VM snapshot might fail because the ESX server is unable to quiesce the virtual machine - either because of too much I/O, or because VMware tools cannot quiesce the application using VSS in time. Check the event logs on the host and check the VM's ESX log (vmware.log).</p> <p>Crash-consistent snapshots and connector-based backups show this behavior less often. For more information, see these VMware knowledge base articles:</p> <ul style="list-style-type: none"> http://vmw.re/1z3XDKS http://vmw.re/1C9L86Q
151	couldn't add RawDeviceMappings to Virtual machine. Error: VM task failed A general system error occurred: The system returned an error.	<p>Adding a raw device mapping to a VM "stuns" the VM until ESX has had a chance to add the new resource. To find out why the raw device mapping could not be added, look at the ESX logs for the VM in question (vmware.log).</p> <p>Make sure VMware tools are updated and the ESX has been patched to the latest available service pack. For more information, see this VMware knowledgebase article: http://vmw.re/WhWq6E</p>
155 (First of four)	Error: VM task failed. An error occurred while saving the snapshot: Failed to quiesce the virtual machine	<p>Note: This is a VMware issue; for additional information, refer to VMware KB article: https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1015180</p> <p>Virtual machine quiesce issues are dependent on the OS type. Additional investigation, further VMware KBA searches and / or contacting VMware Support may be needed to resolve this.</p>
155 (Second of four)	Error: VM task failed. Device scsi3 could not be hot-added	<p>This usually means that the SCSI device you are trying to add to the VM is already in use by another VM. Please refer to the following KB for more information:</p> <p>https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2001217</p>
155 (Third of four)	Error: VM task failed. The virtual disk is either corrupted or not a supported format	<p>The VM's CTK files may be locked, unreadable, or are being committed. This is a correctable problem.</p> <p>Remove and re-create these CTK files. To do this:</p> <ol style="list-style-type: none"> 1. Power off the VM 2. Create a new folder inside the VM folder for that vm (in this case, test-w246, according to the example error message shown above). Move all of these CTK files into that newly created folder. 3. Right click on the VM, and select "Snapshot" then Snapshot Manage to trigger a consolidation for this virtual machine 4. Click Delete All and then Close. <p>Note: This is a VMware issue; the steps above were taken from the VMware KB article: https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2013520</p>

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Error Code	Error Message	What to Do
155 (Fourth of four)	Error: VM task failed. The operation is not allowed in the current state of the datastore." progress ="11" status="running"	<p>There are two options for formatting a VMware datastore: NFS and VMFS. With NFS, there are some limitations like not being able to do RDM (Raw Disk Mapping). This means that you cannot mount from the Actifio Appliance to an NFS datastore. Please refer to the following KB article for additional information:</p> <p>https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1001856</p>
175	UDSAgent socket connection got terminated abnormally; while waiting for the response from agent	<p>The Actifio Connector stops responding between the appliance and a host with Actifio Connector installed.</p> <ol style="list-style-type: none"> 1. Restart the UDSAgent (Actifio Connector) service on the specified host. 2. Telnet to tcp port 5106 (UDSAgent communication port) <pre># telnet <Host IP> 5106</pre> <p>Expected output:</p> <pre>Trying 10.50.100.67... Connected to dresx2.accu.local. Escape character is '^]'. Connection closed by foreign host.</pre> 3. Verify network connectivity between appliance and host doesn't drop. If the problem persists, network analysis will be required.
241	Data movement subjob failed: Error 241 - full ingest to dedup not supported during dedup GC	<p>New ingests are not supported during GC to prevent unnecessary writes to the dedup pool.</p> <p>Do not attempt to cancel GC. Wait for the GC to complete. Once complete, the dedup job will be allowed to run.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
374	Failed to find Actifio mapped LUN on ESX server	<p>The ESX server has failed to find any Actifio mapped LUN. This is usually caused by:</p> <ul style="list-style-type: none"> An issue with SAN connectivity between ESX and CDS ESX reaching its maximum Fibre Channel paths (1024). <p>Address potential connectivity issue:</p> <ol style="list-style-type: none"> Check for connectivity problems between ESX and CDS. The steps vary depending on whether the connectivity is Fibre Channel or iSCSI. The steps for each type are explained below. Check the Fibre Channel zoning or iSCSI connection <ul style="list-style-type: none"> For Fibre Channel connections ensure the zoning is configured between the Actifio Appliance and ESX host. For iSCSI connections verify the ESX host has discovered the Actifio Appliance. For configuring iSCSI on an ESX host, refer to the VMware KB article https://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1008083 For both Fibre Channel and iSCSI connections, ensure Actifio has the correct target port configured. Refer to: Configuring the Ports of a Host. <ul style="list-style-type: none"> After configuring the ports, an iSCSI test can also be run, which will map a test disk and rescan the ESX host to find it. You can also manually map a VDisk from the Actifio CDS to the ESX host and rescan to see if it is visible. For help in manually mapping a VDisk, refer to the article Mapping a VDisk to a Host Once the disk is displayed as available on the ESX host, unmap it and proceed with the backup. If this does not address the issue, continue to step 3. Check the number of FC paths on the ESX server: <ul style="list-style-type: none"> On the ESX host execute: <code>~ # esxcfg-mpath -b grep -i target wc -l</code> If the result is 1024, then the maximum connections for the ESX host has been reached. This number will have to be reduced. See VMware Article: http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1020654

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Error Code	Error Message	What to Do
604	Failed to verify fingerprint	<p>This occurs when an inconsistency is found between the source and target data.</p> <p>Use the CLI to run a job with the option nobitmap. This option reviews the full set of application data, instead of just the changed blocks. After running a job with this option, incremental jobs will resume.</p> <ol style="list-style-type: none"> 1. Use this command to have the appid and policyid automatically provided for the udstask backup command (explained in Step 2): <pre># reportfailedjobs -c -p</pre> <pre>StartDate,JobName,JobClass,Policy,HostName,AppName,AppID,Duration,Message 2016-03-05 09:24:32,Job_4313697c,directdedup,4012221,testvm,1466842,00:00:23,Error code 241: message datamovement subjob failed. subjob Job_1729642_00:Fingerprint does not match data,udtask backup -app 1466842 -policy 4012221</pre> <p>The last line of the output provides the appid and policyid for the udstask backup command.</p> <ol style="list-style-type: none"> 2. Run the following command with -options nobitmap at the end: <pre># udstask backup -app <appid> -policy <policyID> -options nobitmap</pre> <p>In the example output in step 1, the app id was 1466842 and the policy id was 4012221. The output of the command returns the Job number that has been started, and the command in this case would be:</p> <pre># udstask backup -app 1466842 -policy 4012221 -options nobitmap Job_4319292</pre>
690	Host doesn't have any SAN or iSCSI ports defined	<p>The Actifio Appliance is not configured with any iSCSI or Fibre Channel connections to the target host.</p> <p>Check whether the target host has iSCSI or Fiber Channel connectivity as explained below:</p> <p>Fibre Channel: Ensure that zoning is complete between the host and the Actifio Appliance (zoning is configured between the Actifio Appliance and the target host on the attached SAN switches; the exact procedure for zoning depends on the switches used.)</p> <p>iSCSI: Ensure that the network ports are open for iSCSI and the target host has discovered the Actifio Appliance.</p>
693	No host SAN ports are provided on Actifio	<p>The Actifio Connector is unable to discover iSCSI or Fibre Channel host ports.</p> <p>Check if the backup host or mounted host has iSCSI or Fibre Channel connectivity and that Fibre Channel ports are properly zoned with Actifio CDS.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
698	ESX host is not accessible for NBD mode data movement	<p>The Actifio appliance is unable to reach the ESX host over the network or resolve the ESX host name using DNS.</p> <p>There may be a mismatch between the vCenter ESX name and its name as known by the CDS appliance, and it might not be resolved by the DNS server.</p> <p>DNS Issues</p> <p>Make sure DNS on the appliance is correctly set. On the CDS appliance, run: <code># cat /etc/resolv.conf</code> and edit it to have the correct DNS server IP address.</p> <p>TCP Port Issues</p> <p>Make sure tcp port 902 is open between the CDS appliance and the ESX host: <code># telnet <esx hostname> 902</code></p> <p>Expected output:</p> <pre>Trying 10.50.100.67... Connected to dresx2.accu.local. Escape character is '^]'. Connection closed by foreign host.</pre> <p>Name Mismatches</p> <p>Read about Name Mismatches at Error 698 About Name Mismatches on page 22.</p>
702	Backup was aborted because there are too many extra files in the home directory of the VM	<p>This is an alert condition generated by Actifio and is caused by leftover delta files in the VM's datastore. Normally, the delta files would be removed after Actifio snapshot consolidation. In some instances these can be left behind by the VMware consolidation, and Actifio begins failing jobs to prevent exacerbating the issue.</p> <p>This issue is caused by VMware; it cannot be resolved within Actifio. The following knowledge base articles from VMware provide more information:</p> <p>Consolidating snapshots in vSphere 5.x/6.0: https://kb.vmware.com/s/article/2003638</p> <p>Committing snapshots when there are no snapshot entries in the Snapshot Manager: https://kb.vmware.com/s/article/1002310</p>
755	Failed to open VMDK volume; check connectivity to ESX server	<p>This happens when the ESX server cannot be reached by the controller, usually because of a physical connection or DNS problem.</p> <p>Ensure port 902 is open between the CDS and ESX host.</p> <p>Check the current DNS server and ensure it is current and valid.</p> <p>If the vCenter is virtualized, attempt a backup after migrating the vCenter to a different ESX host.</p> <p>Ensure SSL Required is set to True on the ESX host in Advanced Settings.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
833	Failed to login to vCenter Server	<p>The VM may have been removed from the vCenter: Check whether the VM has been recently removed from the vCenter.</p> <p>The Actifio appliance may have lost connection to the vCenter, or the vCenter password may have expired. Test connectivity and credentials: in the Actifio Desktop, select the vCenter in the Domain Manager under System > Configuration > Hosts. Click Test to test if the user has the permissions to access the vCenter. If test fails, check the credentials.</p>
844	Invalid size vmdk detected for the VM	<p>There are two possible solutions for this situation:</p> <ul style="list-style-type: none"> • If consolidation is required for some disks on VM, size is reported as zero. Creating and deleting a snapshot of the VM should fix this. • See if the VMDK can be restored from a backup image.
873 VMware	Disk space usage on datastore has grown beyond the critical threshold	<p>This message appears when the remaining space on the datastore is less than the critical threshold. If more storage is not made available soon, then jobs will start to fail when the remaining space is inadequate to store them.</p> <p>For more information, see VMware knowledgebase article: https://kb.vmware.com/s/article/1003412</p>
933	Failed to find VM with matching BIOS UUID	<p>The VM's UUID may have been modified: Rediscover this VM. Check if it was discovered as a new UUID. Confirm this in the Actifio Desktop by comparing the UUID of the newly discovered VM and that of the previously discovered application. If the UUIDs do not match, this VM may have been cloned.</p>
5011 (First of two solutions)	Application discovery failed. Check whether it is configured and running correctly	<p>The Connector is sometimes unable to discover SQL cluster details</p> <p>The UDSAgent.log will log WBEM_E_INVALID_CLASS (0x80041010) errors similar to the below:</p> <pre><timestamp> INFO Worker_Thread_14368 Connect to namespace root\mscluster succeed <timestamp> DEBUG Worker_Thread_14368 Failed to retrieve next object from enumerator: Unknown error code [0x80041010]</pre> <p>If this is only occurring on one node in the cluster, this can be confirmed on the host machines by using WMI Explorer and connecting to the mscluster namespace. Compare the "classes" that start with the string "mscluster" on all nodes. There should be no discrepancies.</p> <p>For more, see Microsoft Technet at: https://blogs.technet.microsoft.com/askperf/2014/08/11/wmi-missing-or-failing-wmi-providers-or-invalid-wmi-cl</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5011 (Second of two solutions)	Application discovery failed. Check whether it is configured and running correctly	<p>The Connector sometimes cannot find a database or file system at the time of backup.</p> <ol style="list-style-type: none"> 1. Check if all the applications or file systems for the backup or Consistency Group are online and available. They may have been disabled or removed. If any one or more of them are offline, bring them up online and try to run the original backup again. If they have been removed, the application can be removed from Actifio protection. If the applications or file systems are online, conduct further troubleshooting: 2. Look for the UDSAgent.log from the host (located in /var/act/log/). To identify which database or filesystem could not be discovered by the UDSAgent, look for the words not protectable in the log (example below): <pre>Mon Oct 7 2013 14:54:44.872000 DEBUG Worker_Thread_Job_0426872 VssBackupService::isProtectableApp: appname ActifioTEST is not protectable by VSS connector.</pre> <p>In this example, ActifioTEST is not being discovered.</p> <p>Once identified, check that the application specific services are running and are not in a failed state, using the two vssadmin commands below. in a command prompt on the Windows host to view a list of application specific services. Check that the Actifio Software Shadow Copy Provider is listed, and that all writers are in state Stable with No Error:</p> <pre>vssadmin list providers vssadmin list writers</pre>
5022	Actifio Connector: Failed preparing VSS snapshotset	<p>Windows could not create a VSS snapshot. This can have several causes. To learn more:</p> <ul style="list-style-type: none"> • Check the UDSAgent.log for more detailed messages. • Check disk space on the protected volumes. 300MB may not be enough. • Check Windows Event Logs for VSS related errors. • vssadmin list writers may show writers in a bad state. <p>Usually these errors are accompanied by VSS errors reported in the logs such as:</p> <pre>VSS_E_VOLUME_NOT_SUPPORTED_BY_PROVIDER VSS_E_UNEXPECTED_PROVIDER_ERROR</pre> <p>First check if all the VSS writers are in a stable state by going to the command line and issuing the command as below</p> <pre># vssadmin list writers</pre> <p>Check output to confirm that all the writers are in a stable state.</p> <p>Restart VSS service and check if the writers are stable. If not you may have to reboot the machine.</p> <p>For more information, see this Microsoft article: http://bit.ly/13kPcIM</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5024	Actifio Connector: Failed to create VSS snapshot for backup. Insufficient storage available to create either the shadow copy storage file or other shadow copy data	<p>Usually this is due to not enough disk space to process a snapshot.</p> <ol style="list-style-type: none"> 1. Ensure the drive being backed up is not full. 2. Check if all the VSS writers are in a stable state From the Windows command line, run: <pre>vssadmin list providers vssadmin list writers</pre> 3. If these services are not running, start them and re-run the job. If the writer's State is Not Stable, restart the VSS service. If the problem continues after restarting the service, reboot the host. <p>Sometimes the message appears when internal VSS errors occur.</p> <p>Check the Windows Event Logs for VSS related errors. For errors related to VSS, search for related Microsoft patches. Additional VSS troubleshooting details can be found on Microsoft TechNet.</p> <p>Microsoft recommends at least 320MB on devices specified for saving the created VSS snapshot, plus change data that is stored there.</p> <p>Actifio recommends the shadow storage space be set to unbounded (unlimited) using these commands:</p> <pre>vssadmin list shadowstorage vssadmin Resize ShadowStorage /On=[drive]: /For=[drive]: /Maxsize=[size]</pre> <p>To change the storage area size in the Windows UI, refer to: http://www.techotopia.com/index.php/Configuring_Volume_Shadow_Copy_on_Windows_Server_2008</p> <p>Re-run the backup once the VSS state is stable and shadow storage is set to unbounded.</p>
5046	Backup staging LUN is not visible to the Actifio Connector	<p>The staging LUN is not visible to the UDSAgent on the application's host because the host is unable to detect the staging LUN from the Actifio Appliance.</p> <p>Check the Fibre Channel zoning or iSCSI connection and network ports are properly configured as detailed in Network Administrator's Guide to Actifio Copy Data Management.</p>
5049	Actifio Connector failed identifying logical volume on the backup staging lun	<p>The Actifio Connector could not see the staging LUN. This can be caused by a bad connection or by trouble on the LUN.</p> <p>Verify that FC/iSCSI connectivity is good, then make sure it works by mapping the VDisk, partitioning it, formatting it, copying files to it, etc. The steps for partitioning and formatting are OS specific.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5056	Actifio Connector failed mounting the logical volumes present on LUN mapped from Actifio	<p>During backup, mounting a staging disk could fail if it:</p> <ul style="list-style-type: none"> • is unable to import volume group • is using raw device instead of multipath device • failed to create lv on pv, etc. <p>During mount, it could fail due to stale LUNs on the host. Look at the connector logs and identify the possible root cause.</p> <ul style="list-style-type: none"> • If failure is due to stale LUNs, then reboot the host. • If failure is due to unable to create pv due to lvm filtering rules, then modify lvm.conf to accept all devices.
5076	SyncFilesets: Failed syncing staging volume	<p>This error is due to a communications problem between the host and the staging disk. Check all the VSS writers for the stable state by issuing these commands from the Windows command line:</p> <pre>vssadmin list providers vssadmin list writers</pre> <p>If one or more of these services are not running, then start them and try to rerun the job. Restart the VSS service if the writer's state shows Not Stable. If the problem persists after a restart, then reboot the host.</p>
5078	Actifio Connector: The staging disk is full	<p>Jobs fail if a file that was modified in the source disk is copied to the staging disk, but the file is larger than the free space available in the staging disk.</p> <p>To fix the issue with full staging disk, increase the staging disk. Specify the size of the staging disk in the Advanced Settings for the application. Set the value for staging disk size such that it is greater than the sum of size of the source disk and the size of the largest file. CDS also uses some space (few MB) in the staging disk for metadata regarding the contents of the staging disk.</p> <p>Note: Changing the staging disk in Advanced Settings provokes a full backup.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5087	Actifio Connector: Failed to write files during a backup (Source File)	<p>Anti-virus programs or third party drivers may have applied file locks that cannot be overridden.</p> <p>Check the UDSAgent.log to see which file could not be accessed. Attempt to find which process is locking the file using lsof on Unix/Linux, or f1tmc on Windows. Exclude the file from the antivirus or capture job and re-try the capture.</p> <p>The current processes known to Microsoft are listed at: https://msdn.microsoft.com/en-us/library/windows/hardware/dn265170%28v=vs.85%29.aspx.</p> <p>These errors are rarely found on Unix or Linux, but it is possible that a process such as database maintenance or patch install / update has created an exclusive lock on a file.</p> <p>Install the latest Actifio Connector.</p> <p>A file system limitation or inconsistency was detected by the host operating system.</p> <p>Run the Windows Disk Defragmenter on the Actifio staging disk.</p> <p>Low I/O throughput from the hosts disks or transport medium, iSCSI or FC.</p> <p>Ensure there are no I/O issues in the host's disks or transport medium. The transport medium will either be iSCSI or Fibre Channel depending on out of band configuration. Consult storage and network administrators as needed.</p>
5131 - SQL Logs report error 3041	SQL log backups on instance fail with error 5131	<p>https://blogs.msdn.microsoft.com/dsnotes/2014/03/25/more-on-user-profile-service-functionality</p> <p>To resolve this, enable "Do not forcefully unload the user registry at user logoff"</p>
5131 - SQL logs show CDS error 43901	Snapshot jobs fail with error 5131, SQL logs show CDS error 43901 "Failed snapshot Job"	<p>This is because the ODBC login for the database is failing.</p> <p>Fixing the ODBC login will help resolve this issue.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5132	Actifio Connector: The VSS snapshot was deleted during backup	<p>Disk pressure on the volume caused the VSS snapshot to be deleted. Either more space is needed on the disk or the VSS shadow copy space is limited.</p> <p>The VSS Snapshot could be deleted due to various reasons like the VSS Shadowstorage running out of space or any third part applications like Anti-virus or other 3rd party tools like Diskeeper causing the snapshot to be deleted.</p> <p>Usually this error is accompanied by a reason why the snapshot was deleted like:</p> <p>The VSS snapshot was deleted during backup. SetFileSize(0) failed for \\?\C:\Windows\act\Staging_692615\RecoveryBin\InProgress\Network folders(01CFEC4D37A72B2D).docx</p> <ol style="list-style-type: none"> 1. Make sure that you have sufficient space on the shadowstorage and it is set to unbounded using these commands: <pre>vssadmin list shadowstorage vssadmin resize shadowstorage</pre> 2. Ensure that the connector is at latest version. 3. Check if any Anti-virus is causing the file to be locked during backup. (You can define UDSAgent.exe as a safe process in the AV settings.) 4. Check if any third party software like Diskeeper is causing the issues. <p>More information may be available in Microsoft KB articles</p>
5136	Actifio Connector: The staging volume is not readable	<p>Check /act/logs/UDSAgent.log for more details.</p> <p>If the UDSAgent.log indicates a corrupted filesystem, run chkdsk on the staging volume.</p>
5138	Actifio Connector: Fingerprint verification failed for backup (Source File)	<p>Note: SQL Server 2005 requires a minimum set of patches in order to run on Windows 2008 R2. If the app is SQL and the issue persists, or is seen frequently, ensure the environment is running at least SQL Server 2005 RTM SP4.</p> <p>There may be an inconsistency between the source and target data Change Block Tracking (CBT). If CBT is not computing the correct verification values, add --ignore-cbt to the Connector Options in Advanced Settings and then retry the capture job. If the job is successful, reset the Connector Options by removing --ignore-cbt.</p>
5241	Actifio Connector: Failed to mount/clone applications from mapped image (Source File)	<p>Invalid username and password being parsed from the control file.</p> <p>On the source, review the UDSAgent.log to see if the source is configured with the correct username/password under Advanced Settings in the connector properties.</p>

Most Common Errors that Cause Events, Actifio VDP 9.0.x

Error Code	Error Message	What to Do
5547	Oracle: Failed to backup archivelog (Source File)	<p>The Actifio Connector failed to backup archive log using RMAN archive backup commands. The likely causes for this failure are:</p> <ul style="list-style-type: none"> Connector failed to establish connection with the database The archive logs were purged by another application TNS Service name is configured incorrectly, causing backup command to be sent to a node where the staging disk isn't mounted <p>Search for ORA- or RMAN- errors in the RMAN log. This is the error received from Oracle. Use the preferred Oracle resource as these are not Actifio conditions, and hence cannot be resolved within Actifio.</p> <ul style="list-style-type: none"> Actifio Connector logs location: /var/act/log/UDSAgent.log Oracle RMAN logs location: /var/act/log/*****_rman.log

Event 10034 Example Problem and Resolution

A single CDS appliance dedicated to a single major database with this snapshot SLA:

- Oracle DB: capacity 8870GB, daily every 4hr, retain 1 month.
- Archive log: capacity 1500GB, daily every 30min, retain 7 days.

This rapidly runs out of snapshot memory.

Snapshot Memory and Bitmap Space Memory Accounting: Too Much

Size	Snaps Per Day	Days Retained	Total Snaps	Snapshot TB	Snapshot Bitmap Space Needed (MB)
8870	6	30	180	1559	780
1500	48	7	336	492	246

This setup requires total snapshot memory of 780+246=1026MB, but max snapshot memory is 512 MB. So we cannot keep so many snaps of such a large database.

One solution is to deduplicate some of the older snapshots. We could instead keep 10 days of snapshots and 20 days of dedups. This comes to 506MB, just under the 512MB limit.

Snapshot Memory and Bitmap Space Memory Accounting: Just Right

Size	Snaps Per Day	Days Retained	Total Snaps	Snapshot TB	Snapshot Bitmap Space Needed (MB)
8870	6	10	60	520	260
1500	48	7	336	492	246

Error 698 About Name Mismatches

Name Mismatches

Any ESX/ESXi host can have three different names. Mismatches in these names can cause backups or restores or clones to not work correctly.

- The name of the ESX host as known to itself (call this the **ESX-ESX-name**). This is the name that will show up if you were to run a `hostname` command on the ESX server itself. This hostname follows IETF host naming standards and can be all numeric or contain dashes and dots. Recommendation: This name should be something unique, begin with a letter, and be in the DNS table for the site.
- The name of the ESX host known to the VCenter Server (**ESX-VCenter-name**). This is the name that was used in the VCenter GUI to connect to the ESX host. The VCenter GUI allows any name and uses DNS to resolve the IP address. This means that the name can be just an IP address, can begin with a digit, or be a fully qualified host name. If it begins with a digit, that is bad news - RDM mounting cannot be made to work. vCenter does not allow an ESX name to be changed after it has been connected. The ESX host must be disconnected and reconnected with another name. Recommendation: This should be the same as the ESX-ESX-name. The vCenter will need to be able to ping the ESX-ESX-name.
- The name assigned to the ESX host by the Actifio CDS system to export storage to it (**ESX-CDS-name**). If the ESX host has to have VDisks exposed to it, we will need to create a generic (or HPUX or TPGS) host. The ESX host can have FC ports or see the CDS system's iSCSI initiator. Either way, an entry is created in the CDS database. This hostname has to follow CDS naming conventions and so it cannot begin with a digit. In CDS older versions (prior to 5.0), it could not contain dashes or periods either.

The name assigned to the ESX host by the Actifio CDS system to export storage to it (ESX-CDS-name). If the ESX host has to have VDisks exposed to it, we will need to create a generic (or HPUX or TPGS) host. The ESX host can have FC ports or see the CDS system's iSCSI initiator. Either way, an entry is created in the CDS database. This hostname has to follow CDS naming conventions and so it cannot begin with a digit. In CDS older versions (prior to 5.0), it could not contain dashes or periods either.

Recommendations

- Create a CDS host for every ESX host - even out-of-band hosts through iSCSI.
- The ESX-CDS-name should be the same as the ESX-VCenter-name.

When you use the Actifio Desktop to discover VMs, the virtual machine names are added to the database, and so is the ESX host name for those VMs.

- **Good:** If the ESX name that is added is the ESX-VCenter-name is already present in the CDS system as the ESX-CDS-name, the host will be updated in the database with the "isesxhost" set to true.
- **Bad:** If the ESX-VCenter-name and ESX-CDS-name don't match, a new database entry for the ESX-VCenter-name is created, and mount failures become much more likely.

After the discovery of VMs is done, go into the Actifio Desktop and enter the username and password for the ESX-VCenter-name. This enables the CDS system to bypass the vCenter on certain operations, resulting in better performance and fewer "clear-lazy-zero" errors.

If you follow the recommendation that even out-of-band ESX hosts have a ESX-CDS-name (using iSCSI) and you login to the CDS's iSCSI target from the ESX host, then you can perform RDM based mounting even on these out-of-band ESX servers.

As a last resort to address this issue, you can restart management services in ESX server.

Note: A restart of the ESX server management services may be required. For more information, refer to the following KB from VMware: *Restarting the Management agents on an ESXi or ESX host (1003490)*
