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Tech Brief

Most Common Error Codes in Actifio 7.x

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

This is a list of the most common Event IDs that you may see in system alerts or in the System Monitor service on the Actifio Desktop. You can find detailed solutions for all of these error codes are in the ActifioNow customer portal at: **https://actifio.force.com/community/articles/Top_Solution/EventID-TopSolution**

This document has two tables:

Most Common Error Codes, Not 93401-x Job Failure

Event ID	Event Message	What To Do
43944-9450 Warning	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. It's a good idea to check with VMware to see why it is taking so long to remove the snapshot from the vCenter. For more information, see this VMware knowledgebase article: http://vmw.re/1AB3tpj
43941-873 Error	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.
43940-71602 Warning	Disk space usage on datastore has grown beyond the warning threshold	This message appears when the remaining space on the datastore is less than the warning threshold. This is a signal to make some space available on the datastore or to add more space to it. To add more space, see this topic. If more storage is not made available, then jobs will start to fail when the remaining space is inadequate to store them.

Most Common Error Codes, Not 93401-x Job Failure

Event ID	Event Message	What To Do
10055 Error	Unable to check remote protection	CDS/Sky checks the remote cluster hourly for possible remote protection issues. A trap is raised when CDS/Sky cannot communicate with the remote cluster. The platform server uses the adhd tunnel for communication, which could fail due to: • network error (temporary or permanent), temporarily network error does not mean job will fail, as jobs are retried, but the hourly check is not • adhd is down • certificate error Examine the adhd.log to find the reason for the failure. To fix the issue that caused the failure: • 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.
10034-5919 Error	snapshot memory low	This issue relates to bitmap space memory. Snapshots consume pool capacity and bitmap space memory. The Snapshot Pool requires 1MB of bitmap space memory for every 2TB of source VDisk in snapshot relationships. You can review the usage and set the limit in the Domain Manager: • Bitmap space memory at System > Configuration > Resources • Storage pool usage at System > Configuration > Storage Pools 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. The maximum bitmap memory is 512MB for Snapshot Pool. For an example, see 10034-5919 Example Problem and Resolution on page 8.

93401-x: Job Failures

One of the most common Event IDs is the 93401-x series of job failure messages. There are many reasons why a job can fail, from a loose cable to a full snapshot pool.

Most Common Job Failure Error Codes

Event ID	Event Message	What To Do

43901-698
 	
Error
	ESX host is not accessible for NBD mode data movement	There is a mismatch between the vCenter ESX name and its name as known by the CDS cluster, and it might not be resolved by the DNS server.
		
		DNS Issues
		
		Make sure DNS on the cluster is correctly set. On the CDS cluster, run:
		
		`# cat /etc/resolv.conf`
		
		and edit it to have the correct DNS server IP address.
		
		TCP Port Issues
		
		Make sure tcp port 902 is open between the CDS cluster and the ESX host.
		
		`# telnet <esx hostname> 902`
		
		Expected output:
		
		`Trying 10.50.100.67...`
		`Connected to dresx2.accu.local.`
		`Escape character is '^]'.`
		`Connection closed by foreign host.`
		
		Name Mismatches
		
		Read about Name Mismatches at 43901-698 About Name Mismatches on page 9.

43901-175
 	
Error
	UDSAgent socket connection got terminated abnormally; while waiting for the response from agent	The Actifio Connector (UDSAgent) stops responding between the CDS cluster and the host with Actifio Connector installed.
		
		1. Restart the UDSAgent service on the specified host.
		
		2. Telnet to tcp port 56789 (UDSAgent communication port)
		
		`# telnet <Host IP> 56789`
		
		Expected output:
		
		`Trying 10.50.100.67...`
		`Connected to dresx2.accu.local.`
		`Escape character is '^]'.`
		`Connection closed by foreign host.`
		
		3. Verify network connectivity between the CDS and host doesn't drop. If the problem persists, network analysis will be required.

Most Common Job Failure Error Codes

Event ID	Event Message	What To Do
43901-90 Error	object manager: prepare snapshot failed	This typically occurs: • When the back end storage is running slowly due to degraded RAID or other HW issues, or • With SVC versions older than 6.4.1.5 with heavy iSCSI load. (Newer SVC versions have a fix from IBM.) Check the health of your backend storage. Common things to check on the storage: • Hardware errors • Write cache disabled • High I/O If you have Actifio Optimized Storage on a v3700, see 43901-90 Collecting Logs on a V3700 on page 7.

43901-5132
Error
	UDSAgent: The VSS snapshot was deleted during backup	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.
		
		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.
		
		Usually this error is accompanied by a reason why the snapshot was deleted like:
		
		The VSS snapshot was deleted during backup. SetFileSize(0) failed for "\\?\C:\Windows\act\Staging_692615\RecoveryBin\InProgress\Network folders(01CFEC4D37A72B2D).docx".
		
		1. Make sure that you have sufficient space on the shadowstorage and it is set to unbounded using these commands:
		
		`vssadmin list shadowstorage`
		`vssadmin resize shadowstorage`
		
		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.
		
		More information may be available in MIcrosoft KB articles

Most Common Job Failure Error Codes

Event ID	Event Message	What To Do
43901-374 Error	Error: failed to find Actifio mapped LUN on ESX server	There is a problem with iSCSI or Fibre Channel connectivity between CDS and ESX. • Make sure all zoning is correct. • Ensure proper vmnic is configured for connectivity between CDS and ESX. • Try manually configuring the iSCSI session with CDS.
43901-693 Error	No host SAN ports are provided on Actifio	The Actifio Connector is unable to discover iSCSI or Fibre Channel host ports. 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.

43901-5022
Error
	UDSAgent: Failed preparing VSS snapshotset	Windows could not create a VSS snapshot.
		This can have several causes. To learn more:
		• 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.
		Usually these errors are accompanied by VSS errors reported in the logs such as:
		`VSS_E_VOLUME_NOT_SUPPORTED_BY_PROVIDER`
		`VSS_E_UNEXPECTED_PROVIDER_ERROR`
		First check if all the VSS writers are in a stable state by going to the command line and issuing the command as below
		`# vssadmin list writers`
		Check output to confirm that all the writers are in a stable state.
		Restart VSS service and check if the writers are stable. If not you may have to reboot the machine.
		For more information, see this Microsoft article: http://bit.ly/13kPclM

43901-844 Error	Invalid size vmdk detected for the VM	There are two possible solutions for this situation: • 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 behavior in this case. • See if the VMDK can be restored from a backup image.
43901-5136 Error	UDSAgent: The staging volume is not readable	Check /act/logs/UDSAgent.log for more details. If the UDSAgent.log indicates a corrupted filesystem, run chkdsk on the staging volume.

Most Common Job Failure Error Codes

Event ID	Event Message	What To Do
43901-5056 Error	UDSAgent failed mounting the logical volumes present on lun mapped from Actifio	This is a generic error that connector returns when it failed to mount a mapped volume. During backup, mounting a staging disk could fail if it: • is unable to import volume group • is using raw device instead of multipath device • failed to create lv on pv, etc. During mount, it could fail due to stale luns on the host. Look at the connector logs and identify the possible root cause. • 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.
43901-151 Error	couldn't add RawDeviceMappings to Virtual machine. Error: VM task failed A general system error occurred: The system returned an error. Communication with the virtual machine might have been interrupted	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). Make sure VMware tools are updated, and the ESX has been patched up to the latest available service pack. For more information, see this VMware knowledgebase article on collecting VMware logs: http://vmw.re/WhWq6E
43901-29 Error	snapshot creation of VM failed. Error: VM task failed An error occurred while saving the snapshot: Failed to quiesce the virtual machine	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. You can learn more about this situation by checking the event logs on the host and checking the VM's ESX log (vmware.log). Crash-consistent snapshots and connector-based backups show this behavior less often. For more information, see these articles in the VMware knowledge base: • http://vmw.re/1z3XDKS • http://vmw.re/1C9L86Q
43901-5049 Error	UDSAgent failed identifying logical volume on the backup staging lun	The Actifio Connector could not see the staging LUN. This can be caused by a bad connection or by trouble on the LUN. 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.

Most Common Job Failure Error Codes

Event ID	Event Message	What To Do

43901-827
Error
	Actifio iSCSI target session limit exceeded	Jobs fail when the number of active iSCSI sessions on the appliance exceeds the configured value of max iSCSI sessions.
		
		To fix the issue with iSCSI target session limit, we need to increase the parameter maxiscsisessionspertarget.
		
		The parameter maxiscsisessionspertarget governs the maximum number of sessions that can be active at any point of time. The default value is 15.
		
		The maximum value that can be configured for this parameter is 100, but use a value around 50 to get optimal performance.
		
		Steps to verify and increase the parameter maxiscsisessionspertarget
		
		`# udsinfo getparameter | grep iscsi`
		`maxiscsisessionspertarget 15 [15..100]`
		`# udstask setparameter -param`
		`maxiscsisessionspertarget -value 100`
		`# udsinfo getparameter | grep iscsi`
		`maxiscsisessionspertarget 100 [15..100]`

43901-5078 Error	UDSAgent: The staging disk is full	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. 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 MBs) in the staging disk to store metadata information regarding the contents of the staging disk. Note: Whenever we change the staging disk in Advanced Settings, it is a full backup.

43901-90 Collecting Logs on a V3700

To collect logs from a V3700:

1. Log into the v3700 UI by browsing to the management IP address.

2. Move the mouse over the Settings icon (picture of gear and wrench).

3. Click the option for 'Support'.

4. For new logs, click on 'Download Support Package'.

5. Select the option 'Standard logs plus new statesaves'.

6. Once the snap file has been generated there will be a window to allow you to save the file.

7. Save the file to your desktop or a folder and contact the Actifio CSE team to arrange a file transfer.

10034-5919 Example Problem and Resolution

A single CDS 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.

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 DB.

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

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

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 is 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 CDSs 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.