Dell Acceleration Appliance for Databases 2.0

Release Notes



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About this guide

This guide contains information about Dell Acceleration Appliance for Databases (DAAD) software, including updates and changes. This guide is intended for administrators responsible for server and storage systems. It is assumed that the reader is familiar with basic server administration.

Typographical conventions

This document follows these conventions:

Convention	Usage	Examples
NOTE:	Important additional information or further explanation of a topic.	NOTE: A weekly backup is recommended.
CAUTION!	The task or operation might have serious consequences if conducted incorrectly or without appropriate safeguards. If you are not an expert in the use of this product, consult support for assistance.	CAUTION! Do not change configuration parameters.
Bold	A command or system input that you type, or text or a button you click on a graphical user interface (GUI).	Click Help for details about disaster recovery.
Italic	Italic font indicates any of the following: • A term with a specific meaning in the context of this document.	Detailed information about disaster recovery methods is available in the Administrator Guide.
	 Emphasis on specific information. Reference to another document. Variables in a syntax statement for which values are substituted. 	network:ping hostname
Courier	System output, file names or path names. Bold Courier for commands typed by user.	> Recovery in progress network:ping 10.1.100.14
< > Angle Brackets	A required entry or variable parameter	installer- <version#>.run</version#>
Square [] Brackets	An optional entry or variable parameter.	tar [zxvf] file.tgz
Curly { } Brackets	A list of options separated by a the pipe symbol " " from which any one must be selected.	Click { OK Cancel }.

Overview

This document describes the Release Notes for the DAAD software and hardware.

New features and changes in DAAD 2.0

The following features and changes are supported in DAAD:

- Dell PowerEdge R730 server platform
- ION 2.5.1 and ION 2.5.2 software
- Support for Atomic SX300 and SX350 series Fusion ioMemory devices
- Support for VSL driver version 4.2.0 and 4.2.1 Fusion ioMemory devices
- Support for InfiniBand/SRP
- Support for Ganglia, an open source monitoring application
- Support for ESXi 5.5
- Support for Oracle Linux 6 Red Hat Compatible Kernel and Unbreakable Enterprise Kernel (UEK)
- Support for Oracle VM Server for X86

Refer to the *Dell Acceleration Appliance for Databases Compatibility Guide* for supported combinations of ION software, Fusion ioMemory devices, and required versions of Fusion ioMemory VSL software

Host OS versions

Refer to the *Dell Acceleration Appliance for Databases Compatibility Guide* for the latest supported host OS versions.

Supported browsers

The Dell Acceleration Appliance for Databases web interface can be accessed with the following browsers:

- Microsoft IE10, IE11
- Firefox version 38
- Chrome version 43

For an optimal viewing experience, install Adobe Flash 17 or higher in your web browser.

General guidelines

- During normal HA operation, both replication links must be connected.
- Clusters must be configured for NTP time synchronization. NTP is enabled with public NTP servers by default in the first boot process. If the Dell Acceleration Appliance for Databases does not have public NTP server access through the Internet, customize the NTP configuration for your local network.
- The Mellanox ConnectX-3 EN and Mellanox ConnectX-3 VPI are used for node interconnect (heartbeat and replication).
- It is a best practice to save and back up configurations of your DAAD system on a regular basis. As you set up storage pools, create volumes, manage initiator groups, and so on, be sure to back up your current configuration. For information about backing up and restoring configurations, see the Configuration commands in the Dell Acceleration Appliance for Databases CLI Reference Guide.

NOTE: If you do not backup the configuration of your DAAD system, you will not be able to restore the configuration after servicing your system or after replacing any field replaceable units (FRUs).

DAAD documentation matrix

The following documentation is available for the Dell Acceleration Appliance for Databases:

- Dell Acceleration Appliance for Databases Configuration Guide an introduction to the Dell Acceleration Appliance for Databases software. The guide also outlines information on features such as first boot setup, host multipathing, and application tuning.
- Dell Acceleration Appliance for Databases GUI Guide a description of the web interface provided for the Dell Acceleration Appliance for Databases. This guide provides procedures for setting up a storage profile and pools, creating volumes, adding initiators, and managing Fusion ioMemory in the GUI environment.
- Dell Acceleration Appliance for Databases CLI Reference a description of the command line interface for the Dell Acceleration Appliance for Databases. This guide provides procedures for setting up a storage profile and pools, creating volumes, adding initiators, and managing Fusion ioMemory from the DAAD console.

Dell Acceleration Appliance for Databases Monitoring Guide — a description of how to monitor the status and performance of DAAD systems using the built-in web-based interface, Oracle Enterprise Manager (OEM), or Ganglia.

Limitations

The following limitations apply to DAAD 2.0.

- All Fusion ioMemory devices in a DAAD must be the same model, must have the same capacity, and must use the same firmware version. Mixing SX300 and SX350 Fusion ioMemory devices in the same DAAD is not supported. Refer to the *Dell* Acceleration Appliance for Databases Compatibility Guide for information about supported hardware and software.
- The RAID 10 (reliable performance) and RAID 5 (reliable capacity) storage profiles are not supported in HA configurations. However RAID 5 is supported in non-HA configurations. The following profiles are supported:
 - Standalone configuration: RAIDO, JBOD and RAID5
 - High availability configuration: RAIDO and JBOD
- Because DAAD 2.0 runs on a new hardware platform and uses new Fusion ioMemory devices, there is no upgrade path from DAAD 1.0 to DAAD 2.0.

Issues resolved in DAAD

The following issues have been resolved in the DAAD.

 Table 3-1.
 DAAD resolved issues

Issue	Description
MG-9301	When deleting volumes using the DAAD GUI, the operation may fail with the error message Error Failed to send command.
ION-2577	One or more volumes may not fail back properly with a RHEL initiator under load.
ION-2735 ION-3518	All paths to the Dell Acceleration Appliance for Databases node in HA mode may appear to be down when accessed by Windows. See Microsoft support article 3027578.
ION-2790	The config:backup command creates a backup that cannot be found after the admin user logs out of the CLI.
MG-8844	The Volumes column on the Initiators grid shows the correct number of volumes, but when it's clicked, it navigates to an empty Volumes grid.
ION-2171	The system does not enter maintenance mode in a single Maximum Performance profile after replacing a Fusion ioMemory device or HBA.
ION-3273	When a ConnectX-3 VPI HCA is replaced, and both ports have been configured as IB, the node does not enter into maintenance mode when it comes up. However, the config:restore CLI command works, and the LUNs are created.
EMD-1577 EMD-1843	Some set of circumstances causes the GUI to either stop responding, show incorrect data, report agents offline, or behave in a sporadic way. All the symptoms are due to the management service becoming deadlocked, and not processing updates.
EMD-2407	In the GUI, when displaying the Volumes grid from the Configuration tab, the Active Initiators counts may fail to update after removing all initiator access.
EMD-2530	In some circumstances, after deleting a volume from the GUI, the volume is not removed from the Volumes grid.
ION-3612	In the GUI, when displaying the Volumes grid from the Configuration tab, there is an intermittent issue where the Edit button next to the <i>Active Initiators</i> may not work.

Known issues in DAAD

Table 4-1 describes issues you may encounter with DAAD, with workarounds provided.

Table 4-1. DAAD known issues

Issue	Description
1	Some initiator ports (WWPNs) may not be auto-discovered if more than six ports are being used.
	Workaround : Manually add the initiator ports that are not auto-discovered.
2	Initiator Groups can be created with spaces in the name such as "initiator group" but the GUI does not display this.
	Workaround: Do not use initiator group names with spaces.
3	When creating an initiator, if an optional alias is supplied when the initiator is created, attempting to add it to an initiator group will fail. Also, if an initiator is created without an optional alias, and an alias for the initiator is set in the Name column of the Initiators screen, attempting to edit the group with this initiator will also fail.
	Workaround : Do not add aliases for initiators before they are added to a group. If no alias is applied to an initiator, adding the initiator to a group will function properly.
4	Initiator ports do not reconnect to LUNs after an HBA replacement.
	Workaround : Restart the initiator node to reconnect the LUNs.
5	The Initiator port list displayed in the CLI and GUI cannot be updated to remove the stale initiator entries.
	Workaround : If the initiators are auto-discovered and are not included in an initiator group, restarting the Dell Acceleration Appliance for Databases node will clear the stale entries. Manually added initiator ports can be deleted.
6	For optimal system performance and response, the maximum number of volumes supported in Dell Acceleration Appliance for Databases in standalone mode is limited to 96, and in HA mode up to 32 volumes are supported.
7	A hostname may not begin with a numeral.
8	When a volume with initiator access is removed, it appears that it cannot be deleted.
	Workaround : After deleting the LUN, navigate away from the Volumes screen and return to it so the deleted LUN disappears from the list.

Table 4-1. DAAD known issues (continued)

Issue	Description
Issue ION-2093	In Linux, multipathd may not recognize that a path came back online. Workaround: If a path fails while multipathd is scanning the path UID, then multipathd does not recognize that path until it is rescanned explicitly. To verify whether multipathd failed to add one or more paths, run the following command: # echo show paths multipathd -k grep faulty 388:0:0:10 sdlt 68:432 1 undef faulty running orphan 388:0:0:11 sdlu 68:448 1 undef faulty running orphan You can also force multipathd to reconsider faulty paths, as follows:
	# echo reconfigure multipathd -k
MG-6339	The Choose Attribute list is empty in the Enhanced Search for the Initiators screen.
MG-6338	The Choose Attribute list is incomplete in the Enhanced Search for the Volumes screen.
ION-2081	Multipath with an InfiniBand/SRP initiator may bounce after port outages. This occurs only if all of the paths to one node not operational and volume re-synchronization is occurring on the other node at the same time. Workaround: This issue is resolved as soon as volume re-synchronization is completed.
14	During storage configuration, such as adding or deleting storage pools, or volume or initiator access, the GUI may display errors or alerts.
	Workaround: These are transient errors; alerts should be cleared after a brief time. If the error or alert persists, refresh the browser. If refreshing the browser does not help to clear the errors, login into the DAAD node and run the CLI command setup resetios. In HA environments, enter the CLI command setup resetios on one node, wait for the command to complete, and then issue setup resetios on the
	other node.
15	Storage capacity does not automatically change to reflect the slot selection after clicking Change selection in the Add Pool dialog box.
	Workaround : Close the Add Pool dialog box and retry the Add Pool operation.
16	When deleting volumes using DAAD GUI, the operation may fail with the error message "Error: Failed to send command".
	Workaround: This is a transient error. Restart the web browser. Open the web app in a different browser by right-clicking the Configure tab and then select Open in a new tab.
MG-9444	In HA mode, the SNMP settings page is disabled if one node is down.

 Table 4-1.
 DAAD known issues (continued)

Issue	Description
MG-9574 EMD-1595	When a node in the cluster is down, storage objects show up as duplicate entries.
	Workaround : This transient error is just a display issue; it will be rectified when the node rejoins the cluster.
ION-2422	iSCSI throughput fluctuates strongly.
MG-9678	Invalid SNMP host names do not generate alerts in the GUI.
	Workaround : Ensure that the hostname is resolvable by DNS.
ION-2792	Under load, a large-block DAAD HA re-sync can be very slow.
	Workaround: Contact customer support for assistance.
ION-2375	In HA mode, on a Fibre Channel initiator running Windows Cluster, I/O may time out during a failover. This is a known issue with Microsoft Windows clustering.
ION-2694	On an iSCSI initiator, the rescan command may hang, leaving all LUNs in an inactive state.
	Workaround : A fix is being added to SLES and RHEL in these Bugzilla requests:
	https://bugzilla.novell.com/show_bug.cgi?id=868362
	https://bugzilla.redhat.com/show_bug.cgi?id=1076344
	Before the updated open-iscsi (SLES) and iscsi-initiator-utils (RHEL) packages are released, you can resolve this by
	a) using fewer than 32 LUNs, or
	b) restarting the iscsid daemon by running
	service iscsid restart
MG-9604	Changing a cluster name in the CLI does not change the name in the GUI.
	Workaround : Refresh the browser to see the updated name in the GUI; otherwise, the change may take up to an hour to be reflected in the GUI.
MG-9432	When a service report is being generated for a USB drive, and the drive is removed, no error message is reported in the GUI.
	Workaround : When collecting a service log to the local USB drive, do not clear the progress dialog box or remove the drive from the machine while the collection is in progress.
MG-9880	The Overview screen for Dell Acceleration Appliance for Databases does not show offline agents as offline.
ION-2754	After an HBA replacement, the Dell Acceleration Appliance for Databases node does not appear to enter maintenance mode as seen from the CLI prompt.
MG-9388	The DAAD GUI does not run reliably in multiple browser tabs on the same computer.

 Table 4-1.
 DAAD known issues (continued)

Issue	Description
MG-9332	Certain storage pool errors in the GUI cannot be cleared, even after resolving the error.
	Workaround: These validation errors can be ignored.
MG-8877	When an error occurs in editing initiator access in the GUI, the controls are disabled so the error cannot be directly resolved.
	Workaround : Delete the initiator access that is in error, and then add a new one.
MG-8057	The browser does not automatically reconnect to the surviving node when the primary cluster node goes down.
	Workaround : After a cluster node failover, refresh the browser window and log in.
ION-3012	CLI messages do not show missing fans if the system is restarted with a missing fan.
MG-10182	Changing iSCSI port settings to an invalid configuration (such as from iSCSI to Management) appears to be accepted by the system; but when the browser is refreshed, an error alert is displayed (as it should).
MG-9747	In the CLI, deleting volumes that have LUNs assigned to them fails as expected, but a Javascript console error is continually repeated.
	Workaround: Refresh the browser.
MG-8766	In the CLI, volumes that are deleted display Unavailable in the Name column of the Volumes screen.
MG-3943	Values for PCI addresses may vary between the CLI and the GUI.
ION-2869	Workloads with small block sizes (< 4KB) may not perform well if the Fusion ioMemory requirements for the total installed Fusion ioMemory capacity at small block sizes are larger than the supported memory capacity of the server.
ION-3087	The CLI command \mathtt{raids} -b -dt does not return anything, even when the DAAD image is installed on a RAID vdisk.
	Workaround: To monitor the boot drive status, including RAID on boot drive, you can set alerts in iDRAC. Select the e-mail option to send an e-mail to the configured e-mail address when an event occurs; or select the SNMP trap option to send an SNMP trap to the configured destination IP address when an event occurs.
	Ensure that you have configured the email server settings (to which the alert must be sent) in the Overview > Server > Alerts > SNMP and E-mail Settings page.

Table 4-1. DAAD known issues (continued)

Issue	Description
ION-3189	When using a RAID 5 configuration with three Fusion ioMemory devices, $\mathtt{md0}$ fails following a drive replacement.
	Workaround : Operating a RAID 5 array in degraded mode (with one failed drive) could cause a total loss of data if the system is exposed to a power failure or any other unclean shutdown. If a RAID 5 drive failure occurs, schedule a drive replacement as soon as possible.
ION-3265	A node may leave the cluster after a restart.
	Workaround: Do a power reset on the system.
ION-3105	When replacing a Fusion ioMemory device in the Maximum Performance profile, the raid:delete md<#> CLI command must be run twice.
ION-3142 ION-3217	When I/O is running on QLogic Fibre Channel to a Windows 2012 initiator and the DAAD is restarted, the initiator may crash.
	Workaround : Upgrade the initiator QLogic driver to version 9.1.11.28.
MG-10463 EMD-2582	When creating a large number of volumes, the dialog box in the GUI may appear to hang.
	Workaround : If this happens, either browse away from the volumes grid and then browse back, or refresh the browser (press F5). Then attempt to recreate any volumes that were not created.
MG-10462	When the last initiator is moved from a group, resulting in an empty group, that group disappears from the GUI.
	Workaround: Click Refresh in the GUI to display the empty group.
ION-3435	Driving traffic from RHEL 6.5 initiator has the potential to cause the initiator to hang during a drive failure. This is initiator specific, and the initiator must be restarted after this occurs.
ION-3347	Boot up takes more than 30 minutes after ungraceful shutdown
MG-10366 EMD-2373	In HA configurations, if a node is shutdown, the performance graph in the GUI may be stuck in buffering mode.
	Workaround : The performance graph will not display data until the node that was shut down is brought back online.
ION-3350	DAAD 2.0 does not work with Brocade Switch Model: ICX7750-26Q SW: Version 08.0.10T201.
EMD-1843	While restoring DAAD after a FRU replacement, the DAAD web interface may become slow to respond or may display incorrect data or alerts.
	Workaround: From the CLI, enter setup resetios
	In HA environments, enter the CLI command setup resetios on one node, wait for the command to complete, and then issue setup resetios on the other node.

 Table 4-1.
 DAAD known issues (continued)

Issue	Description
ION-3467	On first boot, iDRAC sometimes misinterprets keystrokes causing the system to reboot.
	Workaround : If you encounter this problem, use the physical KVM for first boot activities.
ION-3261 ION-3181 ION-2405 FH-22065	During testing, irregular performance was observed under sustained (that is, constant) heavy-write workloads across the entire array when using small request sizes. This condition is most pronounced when using a RAID 10 configuration where write volume is amplified. We do not expect this to impact normal customer workloads. A fix is planned for a future release.
ION-3557	In HA deployments of Fibre Channel, UEK initiators may no longer see volumes if the Fibre Channel switch goes offline and then comes back online.
	Workaround: Reboot one DAAD node at a time.
ION-3566	In HA deployments using FC protocol mode, power cycling a node causes UEK initiators to lose I/O.
	Workaround: On the UEK systems that are affected, restart multipathd. Run ps -ef grep multipath to see if the multipath daemon is running, and then, if it is not, enter service multipathd start.
ION-3580	Combining multiple CLI commands only displays output for the last command. For example, entering the CLI command ports; targets; nodes will only display output for the nodes command.
	Workaround: Enter CLI commands individually.
ION-3578 EMD-2424	With CLI commands, using thedisplay-wide option throws an exception.
ION-3526	In HA configurations, if you attempt to change a node name to a name that does not match its DHCP reservation, you will not be able to change the node name.
	Workaround : Any node names used in DAAD configurations should match the host names in your network's DNS and in your network's DHCP reservations.
ION-3517	The CLI command servicereport may fail with the following error:
	<pre>"cp: cannot create regular file `/tmp/ion-servicereport proc/sys/net/ipv4/route/gc_interval': File exists"</pre>
	Workaround: Retry the servicereport command.
ION-2623 ION-3969	In HA environments, in the event that both nodes go down (for example, if both nodes lose power), you cannot restart just one node. Both nodes must be restarted.
ION-3079	When the DAAD system loses A/C power, a PSU failed alert is generated instead of an "A/C power lost" alert.
	Workaround : Check both the A/C power cord and the PSU to determine the actual cause of the failure.

Table 4-1. DAAD known issues (continued)

Issue	Description
ION-3597	In HA configurations of InfiniBand/SRP, when one of the cluster interconnect links is disconnected, the CLI command $nodes$ -dt will not report any error on the failed link.
	Workaround: Run nodes -dtcluster to view the errors.
ION-3581	Running the CLI command $version$ with the $-n$ option specifying a particular node will throw an exception.
ION-3422	In some cases, after replacing a cluster interconnect card, errors may be reported on the bus during reboot, and DAAD will fail to report the "maintenance off" state. In most cases, this occurs when the replacement cluster interconnect card is an unsupported model.
ION-3426	In some cases, at the end of the DAAD chassis replacement procedure, the config:restore command will fail.
	Workaround: Enter config:restore a second time.
EMD-1879 DO-1453	In some cases, when configuration changes are made using the command line interface, data inconsistencies are observed in the GUI. Symptoms may include the GUI not showing newly-created items (for example, pools, volumes, initiators) or showing incorrect counts or relationships.
	Workaround : The following sequence of workarounds should rectify the situation:
	1 Refresh the browser (for example, press F5 in the browser), and wait up to 20 seconds.
	2 If step 1 does not rectify the situation, enter the CLI command setup resetios
	NOTE: In HA environments, enter the CLI command setup resetios on one node, wait for the command to complete, and then enter setup resetios on the other node.
	The setup resetios command will log you out of the GUI. After logging back in, the problem should be rectified.
ION-3697	If you configure the management NIC to use DHCP, manually set the host name in the "Hostname/DNS" page of the <i>Network Settings</i> screen of the installation program. In addition, your network administrator needs to ensure that the DHCP server supplies only the IP address to requesting hosts with no host name.
ION-3775	After changing the management IP address of the DAAD, or the cluster address of a DAAD cluster, subsequent logins to the DAAD console may display login messages that display the incorrect IP address or incorrect cluster IP address.
	Workaround : Enter clusters -dt or nodes -dt to see the current IP configurations for nodes and clusters.

 Table 4-1.
 DAAD known issues (continued)

Issue	Description
ION-3760	On DAAD systems configured to obtain IP addresses through DHCP, GUI users will be logged out when the DHCP lease expires and the lease is renewed.
	Workaround: Log back into the GUI.
ION-2875	When a boot drive fails, the CLI command ${\tt drive}\ {\tt -b}\ {\tt -dt}$ will not display the status of the failed drive.
	Workaround : Use vendor provided tools to monitor the status of the RAID configuration of the boot drives.
EMD-2860	After replacing a Fusion ioMemory device that is part of a storage pool, the system enters a state where the volumes re-sync. During this time the Active Initiators and Active Targets counts on the Volumes screen are inaccurate.
	Workaround : Wait for the volumes to completely re-sync. You can determine when the volumes are synchronized by clicking the Configuration tab in the GUI and then clicking Volumes . After the volume re-syncing alerts go away, the volumes are synchronized.
	After the volumes are synchronized, use the CLI to enter the setup resetios command. This restores the proper Active Initiators and Active Target counts on the Volumes screen.
ION-3799	When using iDRAC to reinstall the DAAD software during the FRU chassis replacement procedure, iDRAC may misinterpret input on confirmation prompts.
	Workaround : When clicking Yes on the "Destroying ALL data on scsi-**** dialog, the response is misinterpreted, and the following dialog asks "Are you sure you want to cancel the installation?" Click No and continue installing the DAAD software.
ION-3681	In an HA configuration, if a DAAD node loses all connections with the switch, there may be an intermittent issue where one or more volumes do not fail over. This does not cause any I/O disruption. After the connections with the switch are reestablished, the other volumes that failed over will fail back to the original DAAD node.
ION-3930	If a Fusion ioMemory device fails because of over temperature conditions, no alerts or messages are displayed on the command line. The fio:status command shows the drive has failed, and the GUI will display an alert about a failed drive, but the drives -dt command shows the drive operating in a normal state.
ION-3898	In some FRU replacement procedures, the command system:maintenance on may throw exceptions. However, despite the error messages, the system goes into maintenance mode anyway.
ION-3967	InfiniBand/SRP support for Oracle Linux 6.6 Unbreakable Enterprise Kernel is limited to 32 volumes.

Table 4-1. DAAD known issues (continued)

Issue	Description
ION-3788	When naming volumes, do not use a name that has a subset of another volume name at the end of the name. For example, if you have a volume named $vol1$, do not name other volumes $myvol1$, backup $vol1$, dup $vol1$, and so forth
ION-3939	If you use the GUI to expand a volume, and you see the message
	Error: Internal failure. Error code: ••••••••••.
	you can safely ignore the message. The volume expansion operation completes successfully.

Contacting technical support

Dell Acceleration Appliance for Databases drivers, utilities, and related documentation are available at:

dell.com/support/home

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To get help with your Fusion ioMemory devices, contact your Dell Technical Service representative or access the Dell Support website.

Choose the method of contacting Dell that is convenient for you.

NOTE: The safety information that shipped with your system provides important safety and regulatory information. Warranty information may be included within this document or as a separate document.