



Product Bulletin:

ALUA Support and References

Revision History

November 6, 2009 – Initial Release

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This product bulletin informs NetApp sales and NetApp partners about new or changed NetApp® products or services.

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1. Summary

This product bulletin describes updates that have been made to product documentation and specific references within the NetApp Interoperability Matrix Tool (IMT), for FC and FCoE configurations in support of the Asymmetric Logical Unit Access (ALUA) standard. These documents have been modified and provide a consistent set of ALUA support statements across various host operating systems.

The ALUA standard, described in ANSI INCITS 408-2005(SPC-3), provides various access states for each Target Port Group (TGP): Active/Optimized, Active/Non-optimized, Standby (or passive) and Unavailable. By using ALUA, it is possible to assign one of these states per TGP and therefore describe what is available to a LUN on a host system that may require a different level of performance from other LUNs in the system. It is possible to define direct paths between the LUN and the target as well as define indirect paths that route I/O through alternative ports and even alternative controllers. Ultimately, the Multi-Path I/O (MPIO) software on the host will implement its load balance algorithm(s) but will use the ALUA-enabled "Active-Optimized" path, for example, for best performance between the host and the target.

Although computing environment high availability is highly desired by end users, proprietary implementations have been relatively expensive and by definition force vendor lock-in. With the

introduction of standards such as ALUA, customers can implement environments that leverage redundant physical paths in combination with logical path definitions that provide high availability but at reduced costs. In addition, by allowing for flexible host-based load balance MPIO implementations, user choice is further enhanced.

2. What's New?

NetApp's product portfolio supports the ALUA standard beginning with the following Host Utilities (HU) and Operating System (OS) combinations with FC storage systems and will support ALUA with all subsequent version combinations unless otherwise noted in the NetApp IMT:

Operating System (OS)	OS Version	Host Utilities	Data ONTAP Version
Microsoft Windows	2008	WHU 5.0, 5.1, 5.2	7.3.0
Hewlett Packard HP-UX	11iV3 (Sept. 2007)	HHU 4.2, 4.3	7.3.0
Sun Solaris	10u2 (w/ MPxIO)	SHU 4.0	7.3.0
VMware ESX	4.0	EHU 5.0/VCS 1.0	7.3.1
IBM AIX	5.3 TL9 or later recommended, 6.1 TL2 or later recommended	AHU 5.0	7.3.1
Novell SLES	10 SP2	LHU 4.1.1, 4.1.2, 4.2, 5.0	7.3.0
Red Hat EL	5 U1	LHU 4.0, 4.1, 4.1.2, 4.2, 5.0	7.3.0

- Please refer to specific Host Utility documentation for ALUA support information.
- ONTAP DSM does not support ALUA (will be supported in a future release).
- Veritas Storage Foundation configurations do not support ALUA.
- SnapDrive for Windows (SDW) and SnapDrive for UNIX (SDU) are compatible with the ALUA configurations listed in the table above. Please consult the SnapDrive product documentation for any specific ALUA restrictions or best practices.
- IMT Updates: ALUA references within the "Host Features" and "ONTAP Feature" will be removed
- IMT Updates: support for ALUA information will be added in the "Notes" section for all applicable rows indicating minimum configuration requirements
- Updates will be made to the following documentation indicating support for ALUA: NetApp SAN Information Library, NetApp Fibre Channel and iSCSI Configuration Guide, Knowledge Base article #kb53352, "What is Asymmetric Logical Unit Access (ALUA) and when should it be used?"
- Note: NetApp support ALUA with FCoE configurations listed in the NetApp IMT. NetApp does not support ALUA with iSCSI configurations because ALUA is not necessary with NetApp iSCSI deployments.

3. Sales Tools (Sales Guides, Training Presentations, SE Presentations)

- [NetApp SAN Information Library](#)
- [NetApp Fibre Channel and iSCSI Configuration Guide](#)
- [NetApp SAN Interoperability Matrix](#)
- [Knowledge Base article #kb53352, “What is Asymmetric logical Unit Access \(ALUA\) and when should it be used?”](#)

4. Customer-Ready Tools (Customer Presentations, Datasheets)

· Not Applicable.

5. System Requirements

- **Interoperability:** For NetApp FCoE storage system configurations that are supported by NetApp, refer to the NetApp Interoperability Matrix, <http://now.netapp.com/matrix/mtx/login.do>. ALUA is included as a “Note”.
- **Licensing:** Not Applicable
- **NetApp storage controller support:** FAS and V-Series storage systems: 2000 series, 3100 series, 6000 series.
- **NetApp Management Software.** NetApp SnapDrive®, SnapManager® and management software (e.g., Operations Manager, Systems Manager and FilerView) are supported.
- **NetApp SnapMirror® and MetroCluster.** SnapMirror and MetroCluster are supported.
- **System configuration:** configuration and install guides for the Host Utilities can be found on the NOW site: <http://now.netapp.com/NOW/knowledge/docs/san/>

6. Product Information

Host Utilities can be found on the NOW site: <http://now.netapp.com/NOW/knowledge/docs/san/>

Service Options

Not Applicable.

7. Regulatory Compliance

Standard NetApp export control rules and regulations apply for host utility distribution. Host Utilities can be found on the NOW site: <http://now.netapp.com/NOW/knowledge/docs/san/>

8. Warranty and Service

The warranty period and coverage is dependent upon the particular products selected. Host Utilities can be found on the NOW site: <http://now.netapp.com/NOW/knowledge/docs/san/>

Contact Information: Please contact your NetApp sales or channel partner representative with questions about this bulletin.

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