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PROFESSIONAL SERVICES TECH NOTE # 055

Asymmetric Logical Unit Access (ALUA)

The Concept

Direct-attached drives only required a single, internal cable. The introduction of LUNs on external storage required running cables externally, which increases the likelihood of cable breaks. The use of MultiPath I/O (MPIO) software resolved this by providing support for redundant paths. Unfortunately, sometimes hosts select the indirect path (non-optimized) rather than the most direct path (optimized) to a LUN. ALUA is a SCSI protocol supported in Data ONTAP 7.3 and 8 to enable host MPIO software to distinguish between optimized and non-optimized paths or target ports per LUN on NetApp storage controllers.

Examples

ALUA is enabled per igroup in Data ONTAP.

```
fas1> igroup show -v igroup_name
fas1> igroup set igroup_name alua yes
```

Enabling ALUA on the first igroup you create for an AIX, HP-UX or Linux host will automatically enable it when you create new igroups for the same host.

What It Means To You

Most NetApp storage controllers now use single-image cfmodes which means ports on both controllers are harder for a host to distinguish as optimized or non-optimized. Performance may be degraded when the host is accessing a Fibre Channel LUN over the non-optimized path. ALUA ensures the host chooses the optimized path and failover to the non-optimized only occurs if all optimized paths are unavailable. Check the Host Utilities documentation to verify the host OS and MPIO software are supported by the version of ONTAP on the storage controller. Warning: If ALUA is enabled for a host that does not support ALUA, it can cause host failures during a NetApp cluster failover.

More Information

The ALUA Support and References document on Field Portal:
<https://fieldportal.netapp.com/viewcontent.asp?qv=1&docid=20058>

Host Utilities documentation in the SAN/IPSAN Information Library:
<http://now.netapp.com/NOW/knowledge/docs/san/#hosts>

Data ONTAP Block Access Management Guide
<http://now.netapp.com/NOW/knowledge/docs/ontap/rel733/html/ontap/bsag/frameset.html>

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