

Simplified Storage Management with iSCSI ATCA

Caspian is the industry's first 10Gb ATCA iSCSI storage blade and unlike re-purposed FC rack mount storage was designed for ATCA deployments from the bottom up. One of the key attributes of ATCA solutions is easy, centralized management. The core of this simplified management lies in the IPMI management interface and the use of SNMP consoles. SNMP consoles typically have three levels of participation; first is monitoring which enables go/no-go notification, second are thresholds that enable rules for predictive failure analysis and third is configuration that enables full control of the device. Caspian is designed to provide all three levels of support through the same SNMP console that is used to manage servers and all other blades in the ATCA chassis.

External FC Storage – Extra and Complex Management

Managing external FC storage requires extra work and is more complex. This is due to four core reasons:

- ◇ **Why have two networks?** – A management concern related to external FC storage is the fact that it requires a second network. ATCA was designed to integrate the networking fabric into the chassis to reduce cost, complexity and simplify management. Using external FC defeats the purpose of the ATCA model. It drives up cost, complexity and management overhead for few benefits over DAS on server blades.
- ◇ **Why have two management interfaces?** Most external FC RAID systems provide monitoring level support for SNMP. This allows administrators to know that a problem has occurred, but usually it is after something has failed. Once the notification is sent to the SNMP console then they must load a second management application for the FC RAID systems. This extra layer of management reduces staff effectiveness and can often lead to longer delays addressing issues in the field. The second concern with multiple management applications for storage is administrator training. If staff changes occur between installations, then a training gaps could make it more difficult to fix problems.
- ◇ **More devices equals more complexity** – In a full ATCA rack, there can be 24 Servers, 6 External RAID chassis and controllers, 72 Hard Disks, 24 HBAs, 24 SFPs and 48 FC cables. Each of these components needs to be configured, managed, diagnosed and repaired in the field. Each of these devices requires management time and resources.
- ◇ **More RAID Groups** – One of the key challenges for external FC storage is the limited

connectivity of each FC array, typically eight ports. This means that not all servers can be connected to all arrays and more RAID groups need to be configured to support the servers. This means more management points to control, configure, monitor and repair.

10Gb iSCSI Storage Blade – Simple Storage Management

Astute Networks' Caspian Storage Blade is the first 10Gb iSCSI storage solution for ATCA. It is designed to be an integrated ATCA solution and provides simple and consolidated SNMP management for all setup, configuration, threshold, monitoring and repair requirements. Since the Caspian storage blade provides integrated RAID via the 10Gb fabric there are no HBAs, SFPs, cables or external RAID chassis to manage. Caspian not only consolidates storage management into a single interface, it eliminates the inherent complexity of the second network that external FC storage requires.

- ◇ **iSCSI Storage for a Single Network** – Since Caspian uses the ATCA 10Gb fabric it eliminates the need for two networks. With 10Gb performance, Caspian can provide higher performance than external FC storage, reduce the cost of deployment, reduce management complexity and unify the network, servers and storage in the ATCA chassis.
- ◇ **Single Management Interface** – Caspian is designed to use SNMP for all monitoring, management and configuration tasks. Administrators use the same console they are familiar with for all management needs and it eliminates the need for a second management application for the External FC RAID.
- ◇ **Eliminates FC Connection Complexity** – Caspian removes the component complexity by eliminating the need for 6 External RAID chassis and controllers, 72 Hard Disks, 24 HBAs, 24 SFPs and 48 FC cables.

- ◇ **Share Storage Across All Servers** – Since Caspian uses the shared fabric of the ATCA chassis storage can be accessed by all servers. Unlike external FC storage, Caspian eliminates the connectivity challenges and costly FC components. The storage LUNs can be shared and mirrored by all the servers in the chassis.
- ◇ **Rapid Deployment and Re-Purposing of Servers** - One of the key benefits of shared storage LUNs is rapid deployment and re-purposing of servers. Simply point the new server toward the right boot and application LUNs and they are up and running.
- ◇ **No Data Migration Required** – The centralized and shared storage of Caspian eliminates the need to migrate data after adding or re-purposing a new server or a new RAID chassis. Simply re-map the LUN from the centralized SNMP console and the new server is ready to use existing data.
- ◇ **Fewer RAID Groups equal Less Cost per Subscriber** – It costs less to support fewer RAID Groups and this lowers the cost per subscriber. Moving from external to internal storage blades increases the number of servers per rack and lowers the cost of storage. These savings and increased subscribers supported in the same foot print significantly reduces costs per subscriber.
- ◇ **Improved Availability and Field Service** – Centralizing storage on Caspian’s shared storage blades allows NEPs and Telcos to reduce the number of disk drives in the chassis. This improves availability by reducing electromechanical devices in the field. Second, the use of centralized storage allows for rapid remote re-deployment to hot spares in the chassis without data migration. Finally, iSCSI storage blades can lower FRU and service costs by requiring fewer RAID controllers and HDDs that can fail and reduces service calls by reducing devices to be replaced.

**FC = Double Network & Management
Caspian = Single Network & Management**

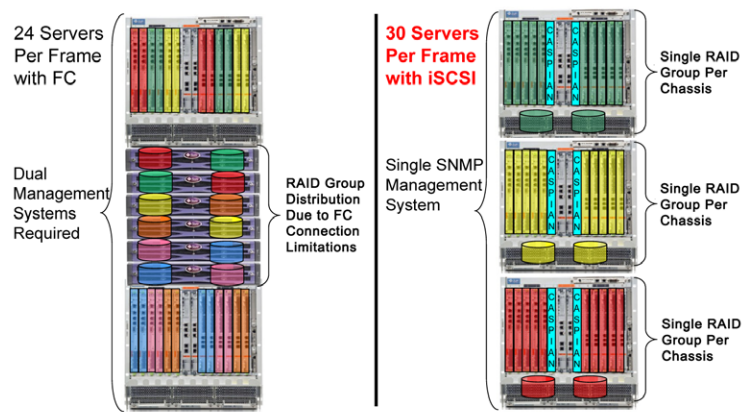


Fig. 1 – Storage Management Comparison

The Caspian R1100 Edge Storage Blade is the first 10Gb iSCSI storage solution for ATCA. It is designed to provide high performance, high availability storage that lowers storage cost per server. Since the R1100 is an ATCA storage solution, it is designed to be easy to install, manage, support, configure and deploy.

Astute Networks is the leading provider of bladed storage solutions designed to handle the most demanding applications served to the edge of the network. Whether you are delivering Telco, military C4I applications, or video surveillance, the Astute Networks’ Edge Storage Architecture (ESA) provides a storage platform that builds-in high performance, high reliability, rack densities and deployment simplicities required to execute on the edge.

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