

Growing Subscribers-per-Rack Revenue with Blade Storage

The Challenge – Improving ROI on ATCA Servers

In HRL & VRL applications, improving ROI in MSCs (Mobile Switching Centers) and COs (Central Offices) is not as simple as it sounds. Some would say, just add more servers/rack and you will get better results. However, that is only half the solution. Storage needs to be able to keep up with the servers. Typically there is room for three 12U ATCA server chassis in a standard telco rack. However, most implementations only hold two ATCA chassis in order to make room for external storage, usually Fibre Channel. The chart below shows how servers with DAS compare against servers with external FC storage.

Servers with DAS on the blade enable more servers to be added to the rack, but this often lacks the performance to support demanding HRL and VRL applications. Adding external FC storage to solve the performance problem provides a modest gain of approximately 7% over servers with DAS. External FC storage also significantly increases the capital investment, as well as increasing the power needs of the rack, adding cabling complexity and requiring a separate management system. These extra costs and overhead quickly consume the raw connection advantage.

The Solution – Astute Networks Edge Storage Blades = More Servers = More Revenue

The challenge of improving ROI for HRL and VRL applications lies in balance. Astute Networks has a solution that provides the right balance by using high performance 10Gb ATCA storage blades. The Caspian R1100 Storage Blade is designed to optimize the server-to-storage ratio and seamlessly integrate with ATCA Option 9 chassis. Unlike servers with DAS blades that have very limited IOPs and data rates, which limit performance and revenues, and external FC storage which consumes valuable, revenue stealing rack space – Caspian storage blades provide four differentiated capabilities to optimize revenue per rack.

- ◇ First is performance. Caspian R1100 Storage Blades integrate a high performance RAID controller that provides over 70,000 IOPs per blade and supports 10Gb/s data rates, using standard RAID levels (5 and 10) for high availability.
- ◇ Second is sharing storage capacity. The R1100 supports 6 disk drives on a single blade slot (4 on blade & 2 on RTM) supporting 750Gb of storage and can scale to 3.5TB in a single RAID set.
- ◇ Third is server connection scalability via the standard ATCA mid-plane. The R1100 supports up to 10 servers per chassis versus only eight for most external FC Storage.
- ◇ Fourth is ATCA integration. By integrating into the standard ATCA form factor, R1100 blades increase the number of servers per rack by 50% over racks with external FC storage.

The Result – 50% Improvement in Revenues per Rack

Astute Networks' ability to balance the needs of increasing server count and increasing storage performance, while reducing rack footprint and power needs is a unique solution in the telco space. These differentiated capabilities help improve the efficiency of MSCs and COs up to 50% over racks with external FC storage. In the following chart, you can see how Astute Networks' Caspian storage blades improve the connections/rack and revenues by 50% of external storage:

Caspian R1100 Edge Storage Blades provide a strategic advantage for telcos. It changes the game on the scale and efficiency of HRL and VRL applications. Providers who use the R1100 will be more competitive in the market, improve company operations and improve their bottom-line returns.

Category	R1100 Blades	DAS on Blade	External RAID
ACTA Form Factor	Yes	Yes	No
Server/Rack	24	30	16
Connection/Rack	480,000	300,000	320,000
IOPs/Server Blade	100,000	400	50,000
RAID 5	Yes	No	Yes
Zero Cabling	Yes	Yes	No
Hot Swap Drives	Yes	No	Yes
Data Rate of Storage	10Gb	3Gb	4Gb

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