

Telecom Solution Brief

The Challenge – New Services, Improving Revenues & Lower Cost

Telecom operators and NEPs (Network Equipment Providers) face a myriad of challenges in today's global markets:

- ◇ **Reliable Delivery of New Services** – To capture market share, carriers (and their NEPs) need to be able to quickly and reliably deploy new services such as IPTV, VoD and Social Networking. Deploying these new services often also requires infrastructure upgrades to support growing bandwidth demands, as well as upgrades to AAA, HLR/VLR/HSS, SMS/MMS and billing systems to track these new revenue opportunities. Deploying these new services must be both reliable and the storage that records transaction has to be flawless to ensure proper revenue recognition.
- ◇ **Improving ROI on Capex** – Each dollar spent on capital expenditures (capex) needs to return greater revenue and lower costs. The Telecom world is entering a new round of capex for MSCs and COs that includes upgrading current 1Gb ATCA infrastructure to 10Gb ATCA. Telecom carriers, and NEPs who supply them, need new solutions that maximize this investment, accelerate deployment of new applications and simplify field management
- ◇ **Lowering Operational Costs** – Competition never stops - it accelerates everyday across the globe. Lowering operational cost/subscriber is a key requirement for winning in the competitive Telecom market. This is one of the fundamental drivers for moving to 10Gb ATCA platforms.
- ◇ **Growing Subscribers/Rack** – Increasing revenue per system rack is vital to scaling your subscriber base, lowering operational cost/subscriber and increasing profits in the same MSC and CO footprint.

The Requirements - Telecom Application Requirements

Storage is a foundational service for deploying and scaling core telecom applications such as Network Control (HLR/VLR/HSS/Billing) and SMS/MMS. Optimal storage solutions are also required to support next generation media services such as IPTV (VoD, NPVR, Ad Insertion) and Social Networking. The following table outlines the key application storage requirements to support the scaling of current deployments and the introduction of new applications.

Application	Storage Requirement					
	High Availability	High IOPS	Scalability	Rapid Response	Multiple Streams	Capacity on Demand
Network Control (HLR/VLR/HSS/Billing)	✓	✓	✓			
SMS/MMS	✓	✓		✓		
IPTV (VoD, NPVR, Ad Insertion)	✓				✓	✓
Social Networking	✓			✓	✓	✓

The Solution - Astute Networks Edge Storage Architecture

Astute Network's Edge Storage Architecture (ESA) provides the storage solutions required to help Telecoms and NEPs meet the myriad of business, application and technical demands to compete on the global stage. The Caspian Family of Edge Storage Blades are based on Astute Network's high-performance, lower-power, green friendly 10Gb ASIC technology. The Caspian R1100 meets the rigorous design criteria demanded by Telecom operators and NEPs that include: support NEBS Level-3, advance cooling solutions that keeps high performance 15K SAS disk drives cool under extreme conditions and a 100% HA architecture to create a solution with the right built-in capabilities:

- ◇ Built in Reliability
- ◇ Built in High Performance
- ◇ Built in Rack Density
- ◇ Built in Deployment Simplicity
- ◇ Built in Power Savings
- ◇ Built on Open Standards

Application	Storage Requirement	Caspian R1100 Solution Proof Points
AAA	<ul style="list-style-type: none"> • HA Storage • High IOPS • Scalable Storage 	<ul style="list-style-type: none"> • 140K IOPS/Blade pair • 120 SAS Drives/Blade pair • NEBS Reliability
HLR/VLR/HSS/Billing	<ul style="list-style-type: none"> • HA Storage • High IOPS • Scalable Storage 	<ul style="list-style-type: none"> • 140K IOPS/Blade pair • 120 SAS Drives/Blade pair • NEBS Reliability
SMS/MMS	<ul style="list-style-type: none"> • HA Storage • High IOPS • Rapid Response 	<ul style="list-style-type: none"> • 140K IOPS/Blade pair • 120 SAS Drives/Blade pair • NEBS Reliability
IPTV / VoD	<ul style="list-style-type: none"> • HA Storage • Multiple Streams • Capacity on Demand 	<ul style="list-style-type: none"> • 1.2 GB/sec for blade pairs • 120 SAS/SATA/SSSD Drives/Blade Pair • NEBS Reliability
Social Networking	<ul style="list-style-type: none"> • HA Storage • Multiple Streams • Rapid Response • Capacity on Demand 	<ul style="list-style-type: none"> • 1.2 GB/sec for blade pairs • 120 SAS/SATA/SSSD Drives/Blade Pair • NEBS Reliability • Dynamic Storage Allocation

The Benefits – More Revenue, New Services, Lower Capital & Costs

The key benefits of deploying the Astute Networks Caspian R1100 Edge Storage Blade family is that it provides the right storage solutions to meet the business, operational and applications needs of telecom market. The Caspian R1100 does this in five ways:

- ◇ **Reliable Application Operations, Deployment and Delivery** – The ESA has the built-in reliability (NEBS, Low Power, Easy Cooling) and simplicity of management (single SNMP console) required to make deploying and supporting applications easy and predictable. Since the Caspian R1100s are ATCA based, they can be prefigured and shipped to MSCs without additional installation complexity of external FC storage (HBAs, cables storage chassis), time or staffing.
- ◇ **Lowers CapEx** – Astute Networks ESA based solutions reduce storage CapEx costs by 33% versus external Fiber Channel. This improves ROI and reduces the CapEx and cost per subscriber.
- ◇ **Lowers Operational Costs** – The Caspian Edge Storage Blade family lowers operational cost vs. external FC storage by leveraging existing ATCA infrastructure, lowering FRU counts, and reducing power consumption by 60% over external storage.
- ◇ **Optimal Performance** – The Caspian R1100 is based on Astute Network's advanced 10Gb ASIC that offloads TCP/IP and iSCSI overhead for scalable high performance transfers, supports up to 60 SAS, SSD and SATA drives to meet transactional and streaming requirements and provides storage scalability to meet growing media applications.
- ◇ **Increases Subscribers/Rack** – The key advantage to using Caspian R1100 Edge Storage Blades is a 25% increase in the number of revenue producing servers per Telco rack. But that is not all, when you combine the trifecta of performance improvements from 10Gb ATCA, multi-core/multi-chip CPU blades and the Caspian R1100s, it is easy to see how Telecoms and NEPs can increase the number of subscribers by over 50% and support new services in the same MSC and CO footprint.

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