HELPING CUSTOMERS MEET SOARING BANDWIDTH DEMANDS

Casa Systems outpaces its competition with an NFV-ready, virtualized ultra-broadband edge platform enabled by advanced carrier-grade, Intel®-powered Dell EMC servers.

Business need
With exploding bandwidth demands from its mostly cable customers, OEM Casa Systems sought to dramatically boost performance of its core ultra-broadband service delivery solution.

Business results
- Simplifies network management
- Lowers platform costs
- Extends competitive leadership
- Enables a future-ready ultra-broadband platform

Solutions at a glance
- OEM Solutions for Telecommunications
- Dell EMC Support Services
  - Dell EMC OEM ProSupport

Up to 30x performance boost per RU

Accelerates time to market
As a global supplier of NFV-ready, ultra-broadband, edge solutions worldwide, we consider the global support of Dell EMC and Intel critical to our success in delivering up to 30x performance boost per RU to our service provider customers’ operations.

Paul Hanna
Vice President, Marketing, Casa Systems
regard and always looking to make the edge much more intelligent and efficient for our customers’ operations.”

Axyom is based on an important architectural evolution in the telecommunications industry called Network Functions Virtualization (NFV). NFV takes advantage of IT virtualization cloud orchestration technologies, often open-sourced to cut licensing costs, that have become common in recent years.

Software-defined networking (SDN) also plays a key role. Once network functions are virtualized, they can be placed under SDN control and orchestrated to dynamically deliver the uniquely tailored services 4G and emerging 5G applications require via network slices.

Virtualization on a vast scale

But NFV uses both technologies on a much bigger scale — to create virtualized network functions (VNFs). As modular building blocks, VNFs helps service providers develop, provision and deliver new services much more quickly, flexibly and cost-effectively. In turn, this cuts time to market and reduces deployment risks, while boosting the monetization opportunities that Hanna describes to help get ahead of the cost curve.

Hanna explains that Axyom is another example of the disruptive technology solutions that give Casa Systems’ customers a winning edge over their competitors. “But to keep our leadership role, we need to continually innovate,” Hanna says. “And our innovation is driven by close partnerships with our customers. We listen to their needs and challenges and then apply our deep technological expertise and engineering resources to address them.”

Keeping customers competitive — and profitable

“Our agile development approach for both our hardware and software solutions allows us to respond quickly to our customers’ needs — and, in turn, gives them access to the capabilities, functionality and performance they need to deliver new services more quickly, to improve subscriber experience and to maintain the competitive edge that is so critical to their own profitability.”

As successful as the Axyom platform has been, Casa Systems decided that it needed to reimagine how the platform is built, if it was to continue innovating at the pace and scale to meet its customers’ needs.

Gibson Ang, who is the company’s Mobility Product lead, provides the backstory: “We were using special-purpose hardware in our first generation Mobile Edge products, such as network processors, co-processors, application-specific integrated circuits, and field-programmable gate arrays,” he says. “But these different components were all costly and complex to manage, while also contributing latency to Axyom’s packet-processing performance. We knew there was a better way.”

Consolidation for simplification

To achieve this, the Casa Systems development team wanted to consolidate the discrete architectures for each major workload — such as signal processing, network control, packet processing and application delivery — into just one architecture.

“This approach would enable us to align more functionality with the NFV model, help to simplify both application development and system management, and improve scalability,” Ang says.

Casa Systems decided to move away from proprietary point solutions to use open-source software and host it on commercially available, off-the-shelf (COTS) hardware. After carefully evaluating hardware platforms from IBM, HPE and other vendors, it chose Dell EMC.

“The carrier-grade Dell EMC PowerEdge R630 rack server, powered by Intel processors, gives service-provider customers a dense, 1U form factor, plus three PCIe slots,” says Ang. “This saves space and costs, while boosting performance. Higher density means that our customers’ costs for rack space, power and cooling all go down.”
Ang notes that the highly versatile Dell EMC servers, which are NEBS-compliant, also provide customers with a choice of different storage types — dense, high-performance flash, high-capacity spinning disk or a combination of both. Powered by Intel® Xeon® processors from the E5-2600 v4 product family and state-of-the-art DDR4 memory, the Dell EMC servers can more than handle Axyom's NFV workloads of today and tomorrow.

He adds that the Intel® QuickAssist Technology was a big help to the Casa Systems development team. With it, they were able to boost real-time, packet-processing efficiencies, especially in those functions that need encryption and compression acceleration.

“Maximizing CPU utilization while minimizing packet latencies are key performance benefits that our Axyom platform has gained from the combination of Dell’s server design and the Xeon processors and QuickAssist Technology from Intel,” Ang says.

Ready for a 5G future

Among the features and capabilities for which Casa Systems is determined to remain a market-leader are ones that exploit the coming 5G evolution of mobile broadband standards. The proposed 5G solutions will support data-access speeds of up to 10 x Gbps, which echoes Hanna’s forecasted throughput requirements for Casa Systems customers.

“We’re confident we can keep innovating our Axyom platform and other Casa System products to meet these demands, given the passion that Dell EMC and Intel both have for relentlessly driving down the price-performance of their products and keeping us informed every step of the way as their strategic partner,” Hanna says. “Simply put, we’re ready for the future.”