

Designing Turnkey Solutions for Telecom NFV

For telecom customers trialing its virtual session border controller, which uses network functions virtualization (NFV), Ribbon turned to Dell Technologies Design Solutions to help engineer a turnkey platform



Telecommunications

United States

Business needs

With its telecom customers deploying virtual session border controllers (SBCs) in their networks, Ribbon sought a turnkey NFV platform to serve as a high-performance hosting infrastructure capable of high packet throughput, low latency and scalable audio transcoding.

Solutions at a glance

[Dell Technologies Design Solutions](#)

- [Dell EMC PowerEdge servers](#)
 - [PowerEdge R740, powered by Intel® Xeon® Scalable processors](#)
- [Dell Technologies ProSupport Plus](#)
- [VMware vSphere](#)

Business results

- Ensures optimal application performance
- Streamlines procurement
- Disruptive scalability for media transcoding
- Frees up development resources

Simplifies
customer support



Accelerates
time-to-market



Like many industries, telecommunications has widely deployed virtualization in many areas of operations. In recent years, service providers have worked to take that further with network functions virtualization (NFV), aiming to decouple many network services—including routing, firewalls and session border control—from the underlying proprietary hardware that traditionally had provided them. NFV is one of the industry's biggest trends toward greater operational efficiency and cost savings.

An industry leader in providing NFV software solutions, Ribbon has moved many of its telecom application products off its own hardware platforms, so customers can host them on virtual machines using a hypervisor on commercial off-the-shelf (COTS) servers. Ribbon's applications can operate in an OpenStack private cloud infrastructure in service providers' data centers or on public clouds such as Amazon Web Services. This versatility provides its customers with tremendous deployment flexibility. For example, the company's Session Border Controller Software Edition (SBC SWe) enables secure, real-time communications in private or public clouds. Regardless of deployment model—private cloud, public cloud or appliance-based—the SBC uses the same code base and provides the same level of resilience, media transcoding and security for VoIP traffic.

Changing how telecom plays the game

According to Bryan Hill, vice president of engineering at Ribbon, price-performance advancements in computing power, coupled with the emergence of various cloud models, have transformed what's possible, making the company's solution an evolution of the proprietary appliance model. "The appliance model made sense years ago, but with COTS hardware and cloud infrastructure, the game has changed," he says. "Now we focus more resources on software development, which is where most of our solutions' value has always been."

The company optimized its SBC SWe application to run on virtual machines that use either VMware or KVM hypervisors, so customers can choose whatever hardware they want to run it on. For customer trials with VMware, Ribbon provides its application with an underlying hardware stack using VMware, from the Dell Technologies family of companies, engineered on PowerEdge servers.

"We know we can always count on the high-performance platforms from Dell Technologies, now and well into the future."

Bryan Hill
Vice President, Engineering, Ribbon





Ribbon's trial solutions are shipped to a customer's lab aboard the PowerEdge servers, powered by Intel® Xeon® Scalable processors. They also feature optional graphics processing unit (GPU) cards from a leading supplier that offload compute-intensive, media-transcoding chores from the servers' CPUs. "Efficient, high-scale transcoding is one of the keys to our applications' performance, which is why we chose the PowerEdge servers with Intel Xeon processors and with GPUs," Hill explains. "The hardware's architecture and price-performance are unbeatable."

Streamlining procurement, configuration and support

To drive success for proofs of concept or network trials, Ribbon turned to Dell Technologies Design Solutions. Its telecommunications program focuses exclusively on meeting the needs of companies supporting telecom service providers for powerful hardware platforms. If virtualization is needed, PowerEdge servers can come with VMware Embedded, pre-installed for OEMs, plus OpenStack and other solution components, including those from highly regarded third parties.

Hill recalls that the company's long-term relationship with Intel led to a timely introduction to Dell Technologies. "Our appliances have long used powerful Intel chips, so our Intel association goes back 10 years or more," he says. "Most recently, as we migrated to NFV, we've used Intel's Data Plane Development Kit and its Integrated Performance Primitives tools for extremely efficient packet processing."

The Design Solutions team provided Ribbon with a range of strategic assistance, from architectural advice to streamlining procurement, configuration and support. "We got into detailed architectural discussions with both the Dell Technologies team and their VMware colleagues about performance, bottlenecks and other concerns we had," Hill says. "In turn, Dell Technologies also brought in the GPU supplier's technical experts and other third parties, such as a major networking partner, to help us work through any NFV issues."

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Bryan Hill
Vice President, Engineering, Ribbon

Hill adds that having VMware Embedded means the vSphere hypervisor comes pre-installed on the PowerEdge servers, so there is one less step in prepping Ribbon's trial packages for customers. What's more, Dell Technologies ProSupport provides additional peace of mind. "We can focus more on installing and optimizing our application on a virtual machine when the hypervisor comes pre-installed as part of a turnkey trial package for our customers' labs," Hill says. "It also simplifies procurement and support by having one bill of materials and one source for support, if needed."

Accelerating customer NFV migrations

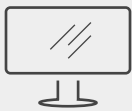
Ribbon's Senior Solutions Marketing Manager Dan Teichman describes his telecom customers as being under boardroom directives to migrate their networks to more efficient, lower-cost operational models as fast as possible. "Of course, major migrations like NFV require many months of evaluation and testing of applications like ours before they can determine if virtual implementations can fully replace existing solutions based on proprietary hardware that may have served them for years," Teichman says. "But we can save our customers substantial time in testing and verification by delivering our SBC application designed on a powerful PowerEdge server with VMware vSphere aboard."

"We can save our customers substantial time ... by delivering our SBC application on a powerful Dell EMC PowerEdge server with VMware vSphere aboard."

Dan Teichman
Senior Solutions Marketing Manager, Ribbon

Both Hill and Teichman consider partnering with Dell Technologies Design Solutions to be an invaluable strategic relationship that goes far beyond working with a technology supplier. As Hill explains, "We can better plan our solutions for best-in-class performance by knowing where the hardware and software stacks of Dell Technologies, VMware and their industry-leading partners like Intel and the GPU card supplier are going."

Hill concludes, "As we continue our transition to a software-only company, we know we can always count on the high-performance platforms from Dell Technologies, now and well into the future."



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