Ready for Anything

The new Tellabs SmartCore® 9200 Series enables smarter, simpler networks.

By M.J. Richter

When it comes to predicting the future of the mobile Internet and converged Ethernet networks, the only sure bet is that they will keep growing and changing at an ever-faster clip. That constant change means operators must prepare their networks to handle just about anything.

Operators have stayed on top of the most recent mobile Internet and user trends by deploying solutions for IP/Ethernet and backhaul, the mobile packet core and flatter packet networks. Now they seek products and strategies that will position them to catch the next wave of changes, which likely will include:

- The dominance of multimedia in the traffic mix.
- The rapid expansion of cloud/hosted services and virtualization.
- The movement of billions of users and smart devices onto networks.
- Common services across multiple screens and networks.
- Domination of the marketplace by over-the-top providers.
- The need for massive network scalability—and in multiple dimensions, not just raw capacity.
- New monetization models to bolster operators' long-term success.

To accommodate these coming changes, operators need a new class of network. Those networks must be smart, simple, scalable and adaptable enough to improve both users' quality of experience and operators' profitability.

An Evolutionary Path to the Future

The foundation of that new class of network is the Tellabs SmartCore® 9200 Series, a massively scalable, content-aware routing platform designed to:

- Give operators visibility into their networks.
- Provide secure services.
- Equip the network to predictably deliver any and all kinds of content.
- Enable operators to generate revenues from that content.

The Tellabs SmartCore 9200 series is the most recent addition to the Tellabs portfolio of mobile and metro Ethernet solutions. Featuring the new Tellabs GeniOS™ operating system, the Tellabs SmartCore 9200 series functions initially as an intelligent IP edge router.

Just as important, the Tellabs SmartCore 9200 series' architecture enables networks to keep pace with coming mobile Internet and user developments. For example, by

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adding software application modules to the Tellabs SmartCore 9200 series, operators over time can expand their capabilities. These capabilities include content and security engines integrated onto line cards for application awareness, analytics, IPSec security termination and eventually packet core functionality.

"An operator may deploy the Tellabs SmartCore 9200 series as an aggregation Ethernet router today, but what that operator really is deploying is a large toolkit," said Tim Doiron, Tellabs director of product management. "With it, the operator can infuse the network with so much flexibility that it can adapt to just about anything the mobile Internet throws at it in the years to come."

The Tellabs SmartCore 9200 series is interoperable with existing Tellabs products. It fits neatly into the network to pave an evolutionary path to higher Ethernet density, improved cost-per-bit economics and overall scalability.

Intelligence for the Future

The Tellabs SmartCore 9200 series features high-density intelligence in the form of SmartCards, as well as distributed routing. Together, these features provide the network visibility and service-optimization capabilities operators need to stay ahead of the fast-changing mobile Internet.

SmartCards are fully swappable among all Tellabs SmartCore 9200 series chassis and include multiple interface options, such as Nx10 Gbps, NxGbE, and Nx100 Gbps. SmartCards eliminate the need for function-specific server blades, spare blades and cards that have no Ethernet interface functionality. They are available in 3 versions:

- SC-1: designed for high-density Ethernet applications.
- SC-2: identical to SC-1 density plus on-board content and security engines for added intelligence capabilities
- SC-3: increased content and security engine processing for applications requiring full-rate or higher density packet inspection.

"By combining traffic management, compute processing and security encryption all on a single card, the SmartCard gives you logical scalability and resource virtualization," Doiron said. "So if a card has maxed out some dimension of its capacity, it can use another card's available capacity or intelligence, giving you even greater scalability."

5 Dimensions of Scalability

The SmartCards, together with the new, fully distributed Tellabs GeniOS operating system, enable the Tellabs SmartCore 9200 series to deliver scalability across 5 dimensions: data throughput, control plane, encryption, packet inspection and traffic management. Each of these factors are critical as operators adapt their networks to user and traffic trends, and maximize user quality of experience and operator profitability.

In terms of bandwidth scalability, the Tellabs SmartCore® 9280 platform is a 10 Tbps-plus chassis in a 16 Rack Unit form factor, while the Tellabs SmartCore® 9240 platform is a more dense 4-slot, 4-Tbps-plus 6 RU chassis.

The platform's first iteration will deliver 100 Gbps per slot and is designed to scale upwards of 500 Gbps per slot, or 1 Tbps half-duplex as operator demands dictate. Thus, the Tellabs SmartCore 9200 series will provide a 5-fold capacity improvement over time.

A new kind of operating system built for next-generation networks, Tellabs GeniOS supports multidimensional scalability. It also enables node and network virtualization and features APIs for third-party applications.

The Tellabs SmartCore 9200 series' ability to ensure optimal network performance stems from its distributed routing, processing and forwarding design. Fully distributed routing "will become more and more valuable to mobile operators as they start targeting the embedded devices space, which will become increasingly dependent on IPv6," said Patrick Donegan, Heavy Reading senior analyst.

The Tellabs SmartCore 9200 series is also interoperable with existing Tellabs products and is managed by the Tellabs® 8000 Intelligent Network Manager. This interoperability enables the Tellabs SmartCore 9200 series to fit neatly into the network to pave an evolutionary path to higher Ethernet density, improved cost-per-bit economics and overall scalability.

For example, the Tellabs SmartCore 9200 series pairs well with the Tellabs® 7300 Metro Ethernet Switching Series for Layer-2 services and applications. Combined with the newly released Tellabs® 8609 Access Switch, it can serve as a Layer 2/Layer 3 Ethernet- and TDM-based cell-site and access solution.

With that line-up, Tellabs provides not only a full suite of mobile solutions, from the cell site all the way to the core, but also a new class of network that enables operators to support the smart mobile Internet. ■

API: Application Programming Interface
IP: Internet Protocol
IPSec: Internet Protocol Security
TDM: Time Division Multiplexing