

Cisco-funded startup unveils breakthrough router, targets SDNs

By [Jim Duffy](#), Network World | [Networking](#), [Cisco](#), [SDN](#)

March 12, 2013, 11:53 AM — A [Cisco](#)-funded [router](#) startup has unveiled its first product, which the company says implements breakthrough silicon-to-photonics circuitry for scaling service provider networks and enabling them for [software-defined networking \(SDN\)](#).

[Compass-EOS](#) this week announced the availability of the r10004, the first in a line of "core-grade" modular routers designed to increase network capacity and speed. The r10004 is powered by icPhotonics, a proprietary technology developed by Compass-EOS that is a chip-to-chip direct silicon-to-photonics implementation designed to provide terabit-per-second connectivity between line cards.

Compass-EOS' patent-protected icPhotonics technology integrates optical and electronic components onto a single microchip to achieve order-of-magnitude Internet speed increases, the company says. Each r10004 can serve as a modular router building block for the deployment of scale-out routing, SDN and network function [virtualization](#), Compass-EOS says.

The r10004 is a 6RU, 800Gbps modular router optimized for core, peering and aggregation requirements. Line card options include 2x100G ports or 20x10G ports.

Each line-card features two 1.3Tbps full duplex icPhotonics chips for 2.6Tbps full mesh connectivity between line cards. Such bandwidth can deliver high level SLAs at high utilization rates, improved protection from DDoS attacks at maximum capacity, and congestion-free streaming of multicast video, Compass-EOS says.

The router provides centralized traffic policing vs. distributed policing in traditional routers, which helps protect router processing from being disabled in a DDoS attack, the company says.

"They're making the backplane go faster" through the icPhotonics technology, says Eve Griliches, vice president of optical networking at ACG Research. "Midplane designs limit router capacity due to I/O interconnects. (Compass-EOS) targets the I/O interconnect and makes them as fast as the speed of light."

Compass-EOS is earlier to market with optical I/O than any other router vendor, Griliches says. But Cisco may be working on a similar innovation through its recent acquisition of LightWire.

"The technology is extremely interesting and could be used by any of the router vendors," she says. "If Cisco gets optical I/O they's be in great shape."

For SDNs, Compass-EOS officials say the company has lined up partnerships with developers of SDN controllers to allow those controllers to interact with the r10004 via software commands. Compass-EOS will announce those partnerships at a later date.

The r10004 has been shipping since late 2012 and is available globally. One of the router's customers is a Tier 1 U.S. national cable and Internet Service Provider connecting content data centers in California and Texas using four 10G Ethernet link aggregation groups to/from each [data center](#), and 100G Ethernet trunks into the core.

Compass-EOS would not disclose the identity of its customers, but cable provider Comcast is also an investor in the company and is deploying Cisco CRS core routers [with 100G Ethernet links](#).

Cisco [invested in the company in 2010 and earlier](#). Compass-EOS has raised \$120 million since its founding in 2007, and has more than 150 employees between its facilities in Israel and Milpitas, Calif.