

# **Alcatel-Lucent introduces the world's most powerful Internet core router**

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Alcatel-Lucent today unveiled a new family of Internet core routers designed to address the major shifts that are happening in global networks. The 7950 XRS (Extensible Routing System) allows network operators to embrace the rapid adoption of 'cloud' applications, the explosion in video traffic and the widespread use of smartphones and tablets and prepare the core of their networks for the next decade of growth.

## **Shattering performance barriers**

Representing a new generation of core IP routers, the 7950 XRS is based on a compact, highly efficient system design that is built with the future in mind. The flagship of the family, the 7950 XRS-40, supports 32 terabits per second (Tbps) capacity and 160 100Gigabit Ethernet ports in a single system, which is five times the density of today's core routers. Using the latest techniques in silicon and system design, the 7950 XRS also slashes power consumption by more than 66 percent compared to typical core routers.

With 100 gigabit per second (100G) links increasingly serving as the foundation of IP transport networks - and with 400G and Terabit (1000G) links on the horizon - the 7950 XRS accelerates and simplifies core network evolution, helping service providers more easily respond to customer demand. This unprecedented combination of capacity, efficiency and scale can significantly improve the economics of

operating and expanding core IP networks.

Basil Alwan, President of Alcatel-Lucent's IP Division, said: "With the 7950 XRS we are revolutionizing the network core, just as we did over the past ten years at the network edge with service routing. Core networks are evolving at an unbelievable pace, with IP backbones and 'metro' cores facing a host of new requirements."

## **Unparalleled feature/flexibility for the 'New Core'**

Traditional core routers have lacked performance and 100GE density, while recent alternatives have compromised on features and flexibility in an attempt to improve performance and density. Using the Alcatel-Lucent designed FP3 network processor unit (NPU) - the industry's first and only 400G NPU - the 7950 XRS eliminates this tradeoff between capacity and capability. The 7950 XRS has the versatility to support the distinct requirements of both IP backbone networks, which move vast amounts of Internet content around the world, and regional 'metro' core networks, where content is increasingly distributed for fast, efficient delivery to consumers and businesses.

"The core router platform of the future needs to be able to efficiently deliver enormous capacity, and do so without sacrificing the intelligence and capabilities needed to support an expanding variety of content and applications. With the 7950 XRS family, service providers need not compromise on any of these dimensions," Alwan added.

The 7950 XRS also extends Alcatel-Lucent's commitment to tighter integration between IP networks and optical transport networks. This includes support for transponder integration into the 7950 XRS at 10G, 40G and 100G speeds, efficient grooming of traffic from the IP layer into the optical transport network, common management with the industry-leading 5620 Service Aware Manager (SAM) platform and an

Optical Extension Shelf capability that integrates the 1830 Photonic Service Switch (PSS) with the 7950 XRS.

## **Built to last**

The 7950 XRS is designed to be easily expanded and upgraded to meet evolving demands. All aspects of system design have been optimized to ensure in-network scalability and non-stop operation. Every component of the platform design is modular, from power to cooling to all active components, making the system simple to maintain and upgrade. The 7950 XRS backplane and optical interconnect are designed to handle slot capacities of 2 Tbps, multi-chassis clustering that enables the system to scale up to 240 Tbps in the future, as well as support 400GE and 1 Terabit interfaces as they become available. The 7950 XRS also inherits the robust and reliable Service Router Operating System (SR OS) that already supports residential, business and mobile broadband traffic in more than 450 service provider networks worldwide.

## **Strong Industry Support:**

“Verizon is experiencing tremendous growth in metro Ethernet services. Platforms such as the Alcatel-Lucent 7950 XRS will help us efficiently scale to support higher speeds and new capabilities while offering efficiency and flexibility,” said Ihab Tarazi, Vice President of Global IP and Transport Planning and Technology, Verizon. “We applaud Alcatel-Lucent for its bold approach to router value and performance.”

“The success of our broadband services worldwide is resulting in rapid traffic growth in our IP network. As we carry more traffic, we have to improve the power and space efficiency of our network infrastructure” said Fumio Ito, Vice President Network Services Technology of NTT Communications. “We are pleased to see innovation from Alcatel-

Lucent that brings enhancements to the IP network in terms that might be able to address our operational challenges and costs.”

“BT is constantly improving our network to deliver new and better broadband services to our consumer and business customers” said Karl Penaluna, President, BT [Global Networks](#) and Systems. “We’ve been using Alcatel-Lucent’s 7750 Service Router for many years as part of the rollout of the 21CN program across the UK. As we deal with increasing traffic volumes and deliver the growth in cloud services from our data centers, we’ll need platforms for our national and metro core networks that scale to 100Gigabit links and beyond. We’re also constantly seeking to reduce our physical footprint and power per bit, so we’re very encouraged to see Alcatel-Lucent meeting these challenges with the 7950 XRS.”

“Service providers face a serious problem as they tackle 100G, the next great inflection point in their routing, switching and optical networks. If they keep adding more of the same equipment to their networks, they will end up multiplying space and power requirements” said Michael Howard, Principal Analyst & Co-Founder, Infonetics Research. “Alcatel-Lucent’s new 7950 XRS core router platform appears to address the scaling of core networks without growing both soft and hard operating costs. We expect that service providers will also see direct benefits of the versatility of the 7950 XRS in core/metro/datacenter interconnect networks and include it in their decision process mix as they evaluate how to scale their 100G infrastructure.”

## **7950 XRS - Technical Capabilities**

The 7950 XRS family consists of three routers:

- 7950 XRS-40 supports 32 Tbps of routing capacity, capable of supporting 160 100GE interfaces in a single core router – the best in the

industry. It is designed to accommodate up to 2 terabits per slot and is upgradeable to multi-chassis configurations to ensure continued growth as needed. It will be available in the first half of 2013.

- 7950 XRS-20 is a 16 Tbps core router that can deliver 80 100GE interfaces in a single rack (5x more than the current norm). It can be upgraded to 7950 XRS-40 and/or multi-chassis configurations as demand requires, and is designed to accommodate up to 2 terabits per slot. It will be available in the third quarter of 2012 and is currently in several trials.
- 7950 XRS-16c is a 6.4 Tbps core router, ideal for meeting core routing requirements of smaller points of presence (POPs)/nodes with maximum agility. It delivers up to 32 100GE interfaces and is designed to accommodate 1 terabit per slot. It will be available in the first half of 2013.
- Supports a comprehensive set of IPv4 and IPv6 routing, MPLS switching and infrastructure services in a single platform.
- Common operating system (SR OS) across the Alcatel-Lucent router portfolio - a highly available, feature-rich and field-proven software infrastructure that is trusted by more than 450 service providers worldwide.
- Common network management system – the 5620 SAM – offering seamless support across the 7950 XRS family, the service router portfolio and the 1830 PSS optical transport family.

## **7950 XRS and the High Leverage Network**

[Alcatel-Lucent](#)'s vision of the High Leverage Network (HLN) is focused on addressing the exploding demand for broadband capacity and services, making it easier for service providers to be able to capitalize on the new demands of an always-on world.

The introduction of the 7950 XRS family is another critical milestone toward bringing this vision to life, enabling service providers to

dramatically increase network capacity and flexibility, while keeping costs and power consumption in check.

Provided by Alcatel-Lucent

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