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Cisco Delivers The Foundation for Next Generation IP Networks: Cisco Carrier Routing System

Innovation Enables Carriers To Deliver Exciting New IP Services Into the Home and Offices of All Sizes.

SAN JOSE, Calif., May 25, 2004 - Cisco Systems, Inc., today announced the Cisco Carrier Routing System (Cisco CRS-1), a new class of routing system designed to deliver continuous system operation, service flexibility and extended system longevity to telecommunications service providers and research organizations. This innovative routing system helps enable customers to scale network capacity to new levels and deliver next-generation data, voice and video services over a converged Internet Protocol (IP) network while providing investment protection for more than a decade.

"The Cisco CRS-1 is a result of Cisco's partnership with our service provider customers to redefine how next-generation IP networks are built to deliver data, voice and video applications," said Mike Volpi, senior vice president/general manager, Routing Technology Group, Cisco Systems, Inc. "To be profitable, service providers are focusing on network and service convergence to reduce total cost of ownership, and adding new, revenue-generating services. Cisco CRS-1 sets new industry standards for reliability, IP service flexibility and scalability, which will enable service providers to become more cost-efficient while delivering a new suite of exciting, multimedia services to business and residential customers."

The Cisco CRS-1 comprises a series of new hardware and software innovations that include:

- Cisco IOS® XR, a new member of the Cisco IOS software family, designed for terabit-scale routing systems built on massively distributed multi-shelf architectures

- System capacity of up to 92 Terabits per second (Tbps)
- Industry's first Optical Carrier (OC)-768c/STM-256c packet interface
- Cisco Silicon Packet Processor (SPP), the world's most sophisticated 40-Gbps Application Specific Integrated Circuit (ASIC)
- XML-based Cisco Craft Works Interface (CWI), a visual management tool that can manage single-shelf or multi-shelf systems.
- The Cisco Intelligent ServiceFlex design for service flexibility and speed to service

With its technology breakthroughs and industry-leading performance, the Cisco CRS-1 enables reliable, large-scale delivery of high bandwidth applications, including video-on-demand, online gaming, and real-time interactive services.

"As a leading carrier of data and voice worldwide, Sprint diligently works to ensure its network can meet growing service and capacity needs in a cost-effective manner which is why we were excited to provide insight into the Cisco CRS-1 design early on," said Kathy Walker, executive vice president, network services, at Sprint. "Some key benefits a core routing system such as the Cisco CRS-1 will provide are flexibility, scalability and modular design, which will help to simplify network management and allow for efficient growth based on network needs."

Continuous System Operation

The Cisco CRS-1 provides continuous system operation, permitting maintenance and upgrades without any service interruptions. This unique fault tolerance capability is achieved through Cisco IOS XR software, the industry's only self-healing operating system for multi-shelf carrier infrastructures scaling up to 92 Tbps. The memory-protected, micro-kernel-based operating system enables process-level in-service upgrades, and enables fully distributed processing through the separation of control, data and management planes. This modular design provides fault containment, and automatic fault recovery so that processes can be started, stopped and upgraded without human intervention. In addition, the Cisco CRS-1 features self-defending network capabilities to automatically recognize disruptive activities such as distributed-denial-of-service (DDoS) attacks with hardware and software based infrastructure.

The Cisco CRS-1 features operationally efficient system management through Command Line Interface (CLI) enhancements, Simple Network Management Protocol (SNMP) or XML-based interfaces. The new XML-based Craft Works Interface (CWI) is a visual management tool that can manage single-shelf or multi-shelf systems.

"As one of the leading carriers in Europe, T-Com makes sure that our core infrastructures are future-proof and able to implement IP/MPLS services onto a highly available and flexible IP-based network," said Wolfgang Schmitz, Senior Executive Vice President for technical engineering at T-Com, Deutsche Telekom's fixed-network division. "This strategy will enable us to enhance operational efficiency, and optimize profitability. The Cisco CRS-1 system offers new levels of scalability and innovation as a foundation for our next generation IP services."

Advanced Service Flexibility

The Cisco CRS-1 is built with a unique service separation architecture—the Cisco Intelligent ServiceFlex design— that provides separation of traffic and network operations on a per-service This system design allows carriers to quickly adapt to changing customer needs and accelerate service delivery by combining the Cisco Silicon Packet Processor (SPP), the world's most sophisticated 40-Gbps Application Specific Integrated Circuit (ASIC), and Cisco IOS XR Software. With comprehensive service separation and line-rate feature flexibility, the Cisco CRS-1 allows carriers to consolidate multiple networks onto one secure infrastructure and deliver converged network services.

Extended System Longevity

The Cisco CRS-1 is a non-blocking, self-routed multi-shelf system that provides industry-leading scale from 1.2 Tbps to 92 Tbps. The system features the industry's first OC-768c/STM-256c IP interface and supports up to 1152 40-Gbps line-card slots. System processes such as Border Gateway Protocol (BGP), and Multiprotocol Label Switching (MPLS) can also be fully distributed across the routing system for maximum efficiency and scale. The system scalability of the Cisco CRS-1 reduces total cost of ownership by simplifying today's networks while protecting investments in capital equipment.

During a product-unveiling event today hosted by Cisco at the Computer History Museum in Mountain View, Calif., MCI, using Cisco CRS-1 systems, demonstrated the fastest IP inter-city transmission ever across MCI's IP backbone at 40 Gbps throughput.

"Our mission is to serve our customers and help them realize the enormous benefits of MCI's global IP network," said Jonathan Crane, Chief Strategy Officer, MCI. "The promise of a high-capacity router complements our ultra-long haul network strategy designed to meet the increasing capacity needs of our customers as they move to a digital, IP environment."

"Pittsburgh Supercomputing Center is a major participant in TeraGrid, the National Science Foundation's program to deploy an advanced integrated cyber-infrastructure for scientific research," said Gwendolyn Huntoon, Pittsburgh Supercomputing Center (PSC) director of networking. "Having installed the Cisco CRS-1 to manage PSC's TeraGrid connection, we're confident this platform is the best routing system to meet our requirements now and in the foreseeable future."

PSC is an associate of the National Lambda Rail (NLR), which provides advanced network services to a number of leading-edge research institutions and agencies. "The NLR also plans to deploy Cisco CRS-1 systems in its national backbone as the foundation to enable ongoing technology innovation through advanced networking and scientific experimentation," said Tracy Futhey, NLR Board Chair and CIO of Duke University.

The Cisco CRS-1 complements Cisco's existing portfolio of routers that support the world's largest carrier and enterprise networks. The new routing system is the result of Cisco's proven 20-year track record in routing innovations through focused research and development programs. The Cisco CRS-1 provides carriers' with high performance core routing capabilities, and rounds out Cisco's existing carrier-class routing portfolio, which is ideally suited to deliver cost effective and innovative IP services. For information regarding the CRS-1 and Cisco's high-end routing customer strategy, visit: www.cisco.com/go/crs

Availability & Pricing

The Cisco CRS-1 is currently in field trials now with carriers and service providers worldwide and is scheduled to be available in July 2004. The starting system list price is $450,000 USD.

Editor's Note:
Further press information on the CRS-1 including; in-depth, executive commentary; customer and partner information; videos; interviews with the technologists who developed the Cisco CRS-1; and downloadable, high-resolution product and event photos are available at: http://newsroom.cisco.com/presskit/crs/

About Cisco Systems

Cisco Systems, Inc. (NASDAQ: CSCO), the worldwide leader in networking for the Internet, this year celebrates 20 years of commitment to technology innovation, industry leadership, and corporate social responsibility. Information on Cisco can be found at http://www.cisco.com. For ongoing news, please go to http://newsroom.cisco.com.

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