Cisco Catalyst 4500-E Series Podcast Script

Dave: Hi, and welcome to the Catalyst 4500-E Series podcast. I'm Dave Dhillon with the product marketing group, and with me today is John B., product line manager for the Catalyst 4500. The Catalyst 4500 Series was introduced in 1999 and since then has had a rich history of industry-leading innovations, which has made it the most widely deployed modular switch in the world, with over 500,000 chassis shipped. And just recently Cisco announced the new Catalyst 4500-E Series.

Dave: John, how about a brief introduction to the Catalyst 4500-E Series?

John: Sure, the new Cisco Catalyst 4500-E Series is a high-performance next-generation extension of the Cisco Catalyst 4500 Series. It includes a high-performance Supervisor 6-E with CenterFlex technology, two high-performance copper PoE line cards, a six-port 10GE line card, and four E-Series chassis. All the new E-Series products support 24 Gig per slot bandwidth, quadrupling the current 4500 per slot six Gig bandwidth. The Supervisor 6-E also ships standard with the Cisco TwinGig Converter Module, allowing a customer to start out with Gig SFP uplinks and then, when they are ready to move to 10 Gig, just remove the converter and pop in an X2 10 Gig interface, and you're off to the races.

Dave: I noticed you said this is an extension to the 4500 Series?

John: Yes, that's true, Dave. This is truly an evolutionary extension because it builds on the Catalyst 4500, providing exceptional backward and forward compatibility. For instance, all shipping classic line cards, supervisors, and power supplies can be used in the new E-Series chassis. Plus the new Supervisor 6-E can be used in the classic 4500 Series chassis. Now, this level of backward compatibility is unprecedented in the industry.

Dave: John, you just used the word "classic" a couple times there. Can you tell me what you mean by classic?

John: Sure, I should have done that. Well, by classic I'm referring to all currently shipping non-E-Series line cards, sups, and chassis. Or another way of looking at it, all 4500 line cards, sups, and chassis announced prior to 2007.

Dave: Ok, let's jump in and look at the features of the 4500-E Series starting with the Sup 6-E with CenterFlex technology. What is CenterFlex technology, John?

John: CenterFlex technology is comprised of a set of innovations enabled by leading-edge ASICs developed by Cisco that deliver the industry's highest centralized performance and configuration flexibility. CenterFlex technology-enabled features give customers the ability to be granular in optimizing their real-time voice, video, and data communications, maximizing performance and enhancing the end-user experience. By the way, Dave, Cisco filed over 15 patents in the development of CenterFlex technology.

Dave: Wow, that's pretty impressive, 15 patents! John, can you give us a brief highlight of some of the key features that were introduced with CenterFlex technology with these new patents?

John: CenterFlex technology on the Supervisor 6-E delivers the industry's highest centralized performance with 320 Gig switching capacity and 250 mpps of L2/L3 forwarding with one of the industry's lowest forwarding latencies. It also provides customers the flexibility to mix and match classic line cards with high-performance E-Series line cards with, ready for this, no downspeed, ensuring maximum card performance.

Dave: In other words, the whole chassis doesn't slow down to the slowest card speed? The E-Series cards operate at 24 Gig per slot, and the classic cards operate at 6 Gig in the same chassis?

John: That's right! So customers can use existing cards with E-Series cards and not worry about performance degradation on the higher performing E-Series line cards.

Dave: That's pretty cool, John.

John: There's more, Dave, I'm not done. CenterFlex delivers flexible queuing with up to eight transmit queues per port with dynamic queue sizing for greater flexibility to optimize your network for your specific network traffic patterns. The rich set of hardware QoS features are provisioned via modular QoS CLI (MQC). MQC is a cross Cisco baseline that provides a consistent syntax and behavior of QoS features across multiple product families.

Dave: It looks like we have QoS covered. What about IPv6 support? New desktop OSs are supporting IPv6, and customers are now starting to look at migrating to IPv6 for the future.

John: That's a perfect lead-in, Dave. For customers considering IPv6, CenterFlex technology supports IPv6 unicast and multicast in hardware for full line-rate IPv6 forwarding performance of up to 125 million packets per second. Along with this rich set of IPv6 features, the Supervisor 6-E also dynamically allocates hardware table space between IPv4 and IPv6 routes to maximize table space. Now, why is this important? Well, since IPv6 has longer address labels than IPv4, this feature optimizes the switch for dual IPv4 and IPv6 deployments or IPv6 migration.

Dave: That's a pretty innovative feature, John. So, these are great features for customers who are buying the new 4500-E-Series. How about customers who already have made an investment in the classic Catalyst 4500 Series Switches? How can they take advantage of CenterFlex technology?

John: That's very easy. The 4500 Series as a family delivers unprecedented investment protection. The E-Series chassis and Sup 6-E support all classic line cards and currently shipping Catalyst 4500 power supplies. So customers deploying E-Series chassis can reuse a major portion of their current investment in line cards and power supplies.

Dave: That's really great investment protection. How about investment enhancement? How does the customer get the CenterFlex features in an existing 4500 deployment?

John: Slow down, I'm getting to that, Dave. Customers looking to upgrade their existing 4500 Series with CenterFlex technology can do so by simply upgrading their classic supervisor with the Sup 6-E. Now, what this does is that it effectively upgrades all the classic ports in their existing 4500 with CenterFlex features such as flexible queuing and IPv6 in hardware. So, not only does CenterFlex provide great investment protection, but it also provides exceptional investment enhancement.

Dave: Let me see if I have this right. Backward and forward compatibility, right? The Sup 6-E works in both the classic chassis and the new E-Series chassis.

John: That's right.

Dave: And the classic supervisors, classic line cards, and currently shipping power supplies all work in the E-Series chassis!

John: That's right. Looks like you got it.

Dave: That truly is exceptional investment protection!

John: Yes.

Dave: John, so the Catalyst 4500 is known for its innovative security and HA features. Are these supported in the Sup 6-E?

John: Yes, they are. The Sup 6-E supports a robust set of security features, including 802.1X, and features that prevent spoofing and man-in-the-middle attacks. The Sup 6-E also supports a new security feature, which proactively locks out IP address spoofing by supporting unicast Reverse Path Forwarding (uRPF) in hardware.

Dave: So, uRPF combined with IP Source Guard really puts a kabosh on IP host spoofing attacks?

John: Absolutely! And as for HA, the Sup 6-E supports innovative features such as NSF/SSO, which allows the supervisor failover to occur in less than 150ms, ensuring IP calls don't drop. Another innovative high-availability feature is in-service software upgrade. ISSU allows customers to upgrade the full IOS image without service disruption.

Dave: Looks like the 4500-E Series has all the security and HA features covered. Now let's move on and talk a little about the new E-Series line cards.

John: There are three new E-Series line cards, Dave, and all three operate at 24 Gig per slot. There is:

- A 48-port 10/100/1000 PoE line card
- A 48-port 10/100/1000 premium PoE line card
- And a 6-port 10 Gigabit Ethernet line card

All E-Series line cards have a yellow circle on the faceplate tab, making them very easy to visually identify.

Dave: That's really going to help when identifying classic versus E-Series, once you start mixing and matching in the wiring closet. So, John, how about some more detail about the 48-port cards?

John: Sure. Both copper line cards ship standard with PoE. Customers can use these cards in a data-only environment with the built-in investment protection to enable PoE in the future. Now to take advantage of the higher performance of these new E-Series line cards, customers need an E-Series chassis and the Sup 6-E.

Dave: OK, what is the difference between the PoE and premium PoE line card?

John: The E-Series PoE line card can be used as a high-performance data-only line card and also supports both Cisco prestandard and IEEE 802.3af PoE. The Catalyst 4500-E Series premium PoE line card has all of the PoE features of the E-Series PoE line card with the added capabilities to support up to 30 watts per port with a future software upgrade. Both cards support L2/L3 jumbo frames, by the way.

Dave: So, moving on to the 10GE line card. Does this support Cisco's TwinGig SFP converter module?

John: Yes, it does. This is a configurable option when ordering. It doesn't ship standard, like the Supervisor 6-E.

Dave: That gives us some great flexibility. Now, last but not least, the chassis. What do we need to know about these new E-Series chassis, John?

John: Well, the E-Series chassis come in 3, 6, 7, and 10 slot with the 7 and 10 supporting redundant supervisors. Note that for the E-Series, R chassis, the supervisors are now in the middle of the chassis. The chassis can support the classic 6 Gig and E-Series 24 Gig per slot line cards. Classic 4500 supervisors are also supported when only classic line cards are used. As for the power supplies, they leverage the currently shipping Catalyst 4500 power supplies.

Dave: So, to take advantage of the high-speed 24 Gig line cards, a customer really needs an E-Series chassis.

John: That's right, you need an E-Series chassis and a Sup 6-E to enable the new E-Series line cards.

Dave: John, this has been a very educational podcast on the 4500-E Series, and I'm sure you have lots more to cover.

John: Do you have a few hours?

Dave: Not today, John.

John: Why not? What? Do you have something to do?

Dave: A few closing words and a URL where customers can find more information would be really nice.

John: Ok, Dave, I'll make it quick. In summary, we are very excited about the next-generation high-performance Catalyst 4500-E, which provides secure flexible nonstop communications and high performance for the enterprise access/branch, SMB core, and metro. For more information, please visit: http://www.cisco.com/go/catalyst4500. Thank you for listening to the Catalyst 4500-E Series podcast.

Dave: Thanks, John!

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