
Choosing a Switch for Small to Medium Businesses

Description: Learn about the key features to consider when evaluating a switch for your small or medium sized business. Features reviewed include Power over Ethernet, Quality of Service, Security and Ease of Use.

Host: Suzette Pereira, Product Marketing Manager

Guest: Amanda Holdan, Product Manager

Suzette: Hello, and thanks for tuning in to this edition of our online LAN switching update.

Today's session is a deep dive on key features of the Cisco Catalyst Express Series switches. These switches were designed for small and medium-sized businesses. You'll learn why to consider these features when choosing a switch.

I'm Suzette Pereira, Product Marketing Manager at Cisco. With me today is Cisco's product manager for the Catalyst Express desktop switches, Amanda Holdan.

Welcome Amanda.

Amanda: Thanks Suzette.

Suzette: Amanda, there are many switch vendors offering different products with different features. Deciding what's important can cause confusion for small-business owners trying to build out a network for their business.

Amanda: It's true. There are many features available on switches in general. With so much available it can be overwhelming.

Suzette: Based on that, I'd like to review some key features on the Catalyst Express switches and why these are relevant for small and medium-sized businesses.

Let's start with Power over Ethernet or PoE. What is PoE and when should a company consider a switch with PoE?

Amanda: PoE is also referred to as in-line power. It's the ability for the switch to provide power directly to a networked-attached device by connecting the device to the switch with a copper Ethernet cable rather than using a traditional power supply or cord.

Networked-attached devices can include IP telephones, wireless access points, video cameras, point-of-sale devices, security card readers, and more. Businesses considering deploying these types of devices should purchase a switch with PoE, it just makes things easier.

Suzette: So having PoE on switches eliminates the need for local AC power from that device?

Amanda: That's right Suzette. You can plug a device into the switch and power is provided directly to the device. This can save customers thousands of dollars in re-wiring and cabling costs and provides more placement options for devices.

Suzette: I can see the value in having PoE. What should customers look for when selecting a PoE switch?

Amanda: That's a great question. Not all PoE switches are the same. Many switches do not provide enough electrical current to power all ports simultaneously. A true PoE switch should provide 15.4 watts of current simultaneously across all ports. Let's say you purchased a switch that only provided 200 watts of power, but all of the ports supported PoE. You would plug in 24 IP phones and guess what? Only half of them would work! It's important to make sure that power consumption support is 15.4 watts simultaneously per port. A 24-port PoE switch should have at least 370 Watts of power consumption. The Catalyst Express has 460 Watts on the 24-port PoE switch to power up all 24 devices on one switch.

Suzette: Yes, I can imagine it would be frustrating to purchase a 24-port switch that could only power half of the phones connected to it. That's helpful information when evaluating PoE switches.

Okay Amanda, let's move on to another feature customers should consider - quality of service or QoS. Can you describe QoS for our listeners and why it's needed?

Amanda: Sure. QoS is a needed feature for anyone considering deploying an IP telephony or video solution. QoS is essentially prioritization of network traffic. There are many applications and data that run over a network. These tend to stretch a network's bandwidth. With QoS, you can assign real-time voice or video traffic a higher priority than say e-mail. This way, telephone conversations are not affected by employees sending or downloading large files. QoS is important both for the users and also so a business can manage its network resources.

Suzette: So if a switch does not include quality of service, then voice packets cannot be prioritized over data, and some of those packets may get fragmented. Meaning, I can't understand the person on the other end of the phone conversation?

Amanda: Yes, that's correct.

Another important feature I'd like to discuss, Suzette, is switch security. Switches without embedded security can be susceptible to many network attacks, including "man-in-the-middle attacks".

Suzette: Tell us about "man in the middle attacks".

Amanda: That's where a hacker can intercept private and valuable information from a PC or server. This can compromise network privacy because the hacker now has access to the confidential information being exchanged.

Suzette: Which switching security features can prevent these types of attacks?

Amanda: The Catalyst Express includes several layers of security that do not allow hackers to snoop and obtain secure data. These features include:

- Secure Sockets Layer encryption. SSL is a protocol that protects management traffic to and from the device by creating a secure socket for it to travel through.
- IEEE 802.1x port security helps ensure that only authorized users and applications can access your wired and wireless LAN. This is done through authentication.

- Cisco Network Admission Control (NAC) services verify that all devices entering your network meet baseline security requirements.

Also important to mention is that the Catalyst Express is unique in that it allows you to configure network security with a simple GUI interface. You can choose from three preset levels of security using a security slider. The different security levels include low, medium and high:

You would use the Low level if you have only a few guests needing access or if you want to limit the number of devices per port

The Medium level of security allows only authorized devices on the company network and you can specify which devices by MAC address.

With the High level, only authorized devices and authenticated wireless users are allowed on the company network. Again, you have control over specifying devices and users.

Suzette: Network security breaches can be very problematic for businesses. I can see why having the ability to secure data at every point of the network would be important.

Finally, I understand the Cisco Catalyst switches contain a configuration feature called Cisco Smartports technology. What are Smartports?

Amanda: Cisco Smartports technology provide a recommended set of common configurations, for devices such as PCs, printers, IP telephones or wireless access points. These are Cisco best practice, pre-tested Cisco baseline configurations. Smartports are available in Command Line Interface or CLI as macros, and are called “roles” in our GUI. For example, in the GUI you can click on a port and then assign a role to that port. If you assign an IP phone to a port, the port is then configured to support an IP phone, enabling quality of service so you’ll get the voice quality you expect. It’s that easy.

Suzette: Basically, I can configure the switch by assigning roles to the ports - that does sounds easy.

What is the benefit to applying these pre-configured macros versus using CLI?

Amanda: Smartports help simplify deployments, save time in configuring switch ports and reduce configuration errors and most importantly, it eliminates the need to learn CLI. So really anyone can learn to configure a switch. Cisco Smartports technology is part of the Cisco Network Assistant, a free network management tool for the Catalyst Express switches. It can be downloaded from: <http://www.cisco.com/go/cna>.

Suzette: Thanks Amanda for sharing some of the critical features on the Catalyst Express. These are great introductory switches for small and medium- sized business needing a robust LAN with easy management. For more information on the Catalyst Express, visit: <http://www.cisco.com/go/ce500>.

Well that wraps it up for today. If you would like a transcript of this session or would like to listen to other podcasts in this series you can go to: <http://www.cisco.com/go/switching>. Thanks for listening!



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