

Unmanaged versus Managed Switches

Suzette: Hello, everyone. I'm Suzette Pereira, Product Marketing Manager at Cisco Systems. Thanks for tuning in to this edition of our online LAN switching update. This session is one in a series of monthly LAN switching podcasts where we talk about business and deployment considerations in focused 5- to 10-minute topics.

Today's session will cover the difference between unmanaged and managed switches.

With me today is one of Cisco's product managers for the Catalyst desktop switches, Amanda Holdan.

Welcome, Amanda.

Amanda: Thanks, Suzette. I'm really happy to be here. Being that this is a popular topic, I am frequently asked the difference between a managed and unmanaged switch.

Suzette: Well, I understand the key difference between a managed and unmanaged switch is the ability to configure the switch and to prioritize LAN traffic to ensure that the most important information, as I have defined it, gets through.

Amanda: That's correct. Managed switches give you more control over your LAN traffic and offer advanced features to control that traffic.

An unmanaged switch simply allows Ethernet devices to communicate with one another, such as a PC or network printer, and those are typically what we call "plug and play." They are shipped with a fixed configuration and do not allow any changes to this configuration.

Suzette: So an unmanaged switch allows devices to talk to each other, but that is pretty much all that they do?

Amanda: Pretty much, yes.

Suzette: Okay, I get that. So what is different about a managed switch?

Amanda: Managed switches provide all the features of an unmanaged switch and provide the ability to configure, manage, and monitor your LAN. And this gives you greater control over how data travels over the network and who has access to it.

Also, managed switches use protocols such as the Simple Network Management Protocol, or what we call SNMP, for monitoring the devices on the network. SNMP is a protocol that facilitates the exchange of management information between network devices. SNMP queries can determine the health of the network or the status of a particular device. By displaying this data in an easily understood format, IT managers located at a central site can monitor the performance of the network and quickly detect and repair network problems without having to physically interact with the switch.

Suzette: I see. So SNMP allows me to remotely monitor my network devices, and I don't have to go to the site to make changes or troubleshoot the switch?

Amanda: Exactly.

Suzette: Ok, let's talk about costs. I understand that managed switches are more expensive than unmanaged switches. Why should one pay more for a managed switch?

Amanda: It's true that a managed switch is more expensive than an unmanaged switch. However, there are many additional features you get with a managed switch, such as quality of service, virtual LANs, redundancy, and port mirroring.

Suzette: Can you explain these features and the value they provide?

Amanda: Sure. These features help provide control over the traffic traveling over the switch. Maybe we can take a few minutes to go through each of these features and their benefits so you can get a better understanding of them.

Suzette: Ok, that sounds great.

Amanda: All right, then, we'll start with quality of service. Quality of service allows you to prioritize your network traffic by assigning a higher priority to critical traffic. This helps ensure consistent network performance and can support delay-sensitive data such as real-time voice. For instance, if I know I have voice packets traveling over my network, I want to make sure they have the highest priority so that these voice packets don't get dropped or delayed and mangle the phone conversation.

Suzette: Yes, I know what you're talking about. It's so frustrating to miss half of what a caller is saying. What about virtual LANs, VLANs?

Amanda: VLANs allow a switch to logically group devices together to isolate traffic between these groups even when the traffic is passing over the same physical switch. This segmentation and isolation of network traffic help reduce unnecessary traffic. For instance, you can segment traffic between your finance and marketing groups, so that mission-critical finance information can flow without delay to the finance users and get bogged down by marketing traffic. This allows better network performance and in many cases provides an additional level of security.

Another important feature of a managed switch is redundancy. Redundancy provides the ability to safeguard a network in case a connection or cable fails by providing an alternate data path for traffic. Managed switches incorporate what is called Spanning Tree Protocol standard, or STP, to provide path redundancy in the network. Using the spanning-tree algorithm, STP provides redundant paths while preventing loops that are created by multiple active paths between switches. STP allows for one active path at a time between two network devices, preventing loops and establishing the redundant links as a backup to keep integrated systems available and preventing expensive downtime, which network admins can appreciate.

And, finally, there is port mirroring. In conjunction with a network analyzer, this feature is useful to diagnose problems. It copies the switch network traffic and forwards it to a single port on the same switch for analysis by a network analyzer. You can use the analyzer on a monitor port to troubleshoot network problems by examining traffic on other ports or segments. The benefit of this is you can troubleshoot problems without taking the network out of service.

Suzette: Well, thanks for explaining those features. I can see how they can improve network performance and give users a more consistent experience with their network.

But why should someone consider using a managed switch?

Amanda: Each business needs to evaluate the needs of their network. When their network requirements have evolved to the point where they would like to have some input and control over the behavior of traffic on their LAN, then it is a good time to consider a managed switch. Also, if you are planning to deploy advanced services such as wireless LANs or IP telephony in the near future, managed switches can lay the foundation for these technologies.

Suzette: Thanks, Amanda. This is great information. It sounds like there are some real advantages to using a managed switch.

Great introductory switches for businesses considering moving from an unmanaged to a managed switch are the Cisco Catalyst Express series of switches. These switches provide all the features mentioned at an affordable price. For more information, visit <http://www.cisco.com/go/switching>.

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> for more information. Thanks for listening, everyone. Stay tuned for another session on the latest in switching news.



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