

## LLDP-MED and CDP Podcast

**Andy:** Hello, everyone. I'm Andy Gremett, Product Marketing Manager in Network Systems at Cisco. 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 LLDP-MED, or Link Layer Discovery Protocol for Media Endpoints, and the Cisco Discovery Protocol, or CDP.

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

Welcome, Anu.

**Anu:** Thanks, Andy. Glad to be here.

**Andy:** So, Anu, the latest release of software for the Catalyst 3k and 2k switches includes support for LLDP-MED, among other things, is that right?

**Anu:** Yes, that's right, Andy. 12.2 37 SE, which is now available, supports LLDP-MED.

**Andy:** Ok, so let's start with the basics. What is LLDP-MED?

**Anu:** Ok, let's start with the definition. LLDP-MED stands for Link Layer Discovery Protocol for Media Endpoints.

LLDP-MED is an enhancement to the LLDP protocol which allows network devices like IP phones to advertise their identity and capabilities on the local network. The LLDP-MED enhancements specifically address voice applications.

It is important to note that Cisco has a protocol called Cisco Discovery Protocol, or CDP. This protocol provides similar capabilities to LLDP-MED. We will talk about some of the differences as we go along.

**Andy:** So, the voice enhancements with LLDP-MED, they involve switches knowing they are connected to an IP phone and negotiating power and those sorts of things?

**Anu:** Exactly. There are six main capabilities that LLDP-MED provides. The first one is:

- Capabilities discovery, followed by
- LAN speed and duplex discovery
- Network policy
- Location identification discovery
- Power discovery
- Inventory discovery

**Andy:** Some of these I have heard of before. As we go along, maybe you can help me fill in some of the gaps.

The first one, capabilities discovery: this allows the device to tell the switch what type of device it is: in other words, whether it is phone or switch or some other device. The device can also tell about

its capabilities. And both CDP and LLDP support this today.

**Anu:** Exactly. In addition to specifying the type of device, such as IP phone or the switch, the device can even tell what capabilities are enabled with LLDP-MED.

Another capability is LAN speed and duplex discovery. This allows for the discovery of both LAN speed as well as full or half-duplex operation.

And then there is network policy. This is one of the most important capabilities provided with LLDP-MED. It allows a switch to notify a phone what VLAN should be used by the phone. This is helpful for making sure voice over IP applications, or VoIP, phones are correctly put into a voice VLAN.

**Andy:** I imagine that this would also allow a phone to plug into a switch and get a correct VLAN assignment right away. That way I wouldn't have to have my phone boot up twice, once for an IP address, then another time for a VLAN assignment. Is this about right?

**Anu:** That's right. It also helps with interoperability between switch and phone vendors.

**Andy:** Oh, that's a good point.

The next one is location identification discovery. And this one provides the location information from the switch to the phone. This is for location-based applications like emergency calls or E911.

**Anu:** That's right, Andy. And this functionality for LLDP-MED is on the roadmap for summer 2007 release. CDP will also support this and will provide location extension shortly after.

Power discovery is also a very important capability, Andy. This allows phones and switches to convey power information, including how the device is powered, power priority, and how much power the device actually needs.

**Andy:** CDP has enhancements that allow the phone and switch to negotiate the power used by the device. So with this, phones that can operate at multiple power settings and still operate when less power is available for them. I think this could be really important as the number of PoE devices continues to grow and you need to better allocate power between multiple devices.

**Anu:** That's correct. CDP provides a more granular bidirectional power negotiation and allows phones to operate at reduced power level. Let's look at the next, inventory discovery. It allows a phone to inform the switch of attributes such as model number, serial number, and software revision, which is very helpful for tracking inventory.

**Andy:** This is important probably because most phones don't yet support SNMP for getting device details. I think it's interesting, here, that both CDP and LLDP support this feature today.

**Anu:** That's right. A few more things you should know about LLDP-MED:

- LLDP-MED enables Cisco products to interoperate with non Cisco devices by exchanging information such as such as VLAN and power.
- However, LLDP-MED may not be available on competitors' products at the same time on all equipment. In fact, some older competitors' products may never get LLDP-MED support.

**Andy:** Anu, CDP offers additional capabilities beyond what we've been talking about here with LLDP-MED. Can you tell us a little bit more about those?

**Anu:** Sure. CDP allows the switch to automatically provide the required quality of service to voice traffic when a Cisco IP phone is detected. It also simplifies voice deployment by extending the trust to the phone. This allows phones to mark packets received on the PC part of the phone, which can

offload this marking function from the switch.

**Andy:** Well, this is great information. I'm glad we didn't forget about this last part. Thanks for sharing this information with us, Anu. Are there documents that I can read and get more information regarding these software enhancements?

**Anu:** Yes, we have materials that address both technical issues and business benefits. Go to <http://www.cisco.com/go/3750-E> and look under Product Literature, then Bulletins.

**Andy:** Well, that wraps it up for today. If you would like to provide comments about this session or submit ideas for upcoming episodes, please go to <http://www.cisco.com/go/switching>. Then you can select switching podcasts. There, you'll find a poll on the far right side of the page to enter your ideas and comments. And we do appreciate your input.

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

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