XMULTIPLE

RoadMap

Power Over Ethernet

Xmultiple Roadmap for Power Over Ethernet

Power over Ethernet (PoE) is a technology for wired Ethernet LANs (local area networks) that allows the electrical current necessary for the operation of each device, to be carried by the data cables rather than by power cords. This minimizes the number of wires that must be strung in order to install the network. The result is lower cost, less downtime, easier maintenance, and greater installation flexibility than with traditional wiring. For PoE to work, the electrical current must go into the data cable at the power-supply end, and come out at the device end, in such a way that the current is kept separate from the data signal so that neither interferes with the other. The current enters the cable by means of a component called an injector. If the device at the other end of the cable is PoE compatible, then that device will function properly without modification. If the device is not PoE compatible, then a component called a picker or tap must be installed to remove the current from the cable.

Fast Facts On Power Over Ethernet

Put simply, PoE technology allows electrical currents to travel over data cables directly to networked devices. Wireless access points and IP phones, for instance, now can be powered via PoE rather than traditional electrical power cords.

The benefits are numerous. With PoE, fewer cables are needed to wire enterprise networks, saving not only money but also reducing complexity. This makes networked devices powered by PoE much easier to manage. And if the power fails, all those devices that once would have been rendered useless are now still up and running thanks to PoE.
Making PoE even more attractive is the fact that it is now IEEE approved, known as the 802.3af standard. This means vendors are now free to build PoE compatibility directly into their devices, mollifying one of the technology's more glaring drawbacks.

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Howerever, with All the Advantages For PoE to replace traditional Electrical Cables and Power Strips

- Many devices require more power. More than PoE can supply.

- Power over Ethernet Plus does double the amount of power PoE is capable of carrying. But their still is work to do to make this PoE+ standard without companies all going off and producing different approaches to implement PoE+.

The Power Over Ethernet Benefits Include:

PoE has a lot going for it including accessibility where there are no nearby AC outlets (nor the need to pay to have one installed), elimination of unsightly cords and transformers, a UPS at the injector source (one UPS on a PoE ready switch can cover dozens of devices), ease of moving access points, on so forth. With the advent of the 802.3af standard, PoE is taking off like a rocket

PoE is a seemingly innocuous innovation that will have a huge impact on the way we design, purchase, install, and manage our networking infrastructure. PoE allows us to power small network-ready devices without a separate power supply. Instead, power is provided by an "injector" (external or built into a switch) over unused wires in the Ethernet twisted pair cable.

With PoE+ Has Many Advantages Going For It

- Power without a Separate Power Supply
- No Unsightly Cords
- Easy of Moving Access Point
- Easy In Location Required for Access Point

Hugh Number of Components for PoE

1. PoE from chips to injectors to RJ-45 jacks with integrated web servers.
2. PoE-ready devices include VoIP phones, 802.11 access points and bridges, web cams, card access systems
3. A clock that synchronizes to NIST and provides local time services via Telnet, and a low-power XP- based flat-panel computer.

Future Of Power Over Ethernet

Currently, there are two options for providing PoE. One is endspan (where the switch provides power) and the other is midspan where a device injects the power in the channel on the unused data pairs. Midspan is limited to 10/100. Although there are companies that say they have gigabit capable products, they are not standards based and with the standard roughly four years out, the requirements could change drastically.

There is a working group in IEEE called Power over Ethernet plus. The project authorization request (PAR) answers what is affectionately called the 5 critters (5 criteria to determine if it is worth the work to become a standard). If that is approved by the IEEE voting body, they then become a task force and the standard is typically still not complete. Many people will have an interest in the final verbiage of the standard, and this task group has lots of participants so anyone saying that they have a standard gigabit midspan solution right now is incorrect.

Power Power of Ehternet
Plus Double the Amount of Power

- The PoE plus group is working to double that amount of power to accommodate things like higher gain antennas.
- Two of the objectives are to increase the power and to have a gigabit midspan solution, neither of which are in the current 802.3af standard.
- Because endspan does not break into the channel, there is less degradation of the signal on the channel and therefore it can supply power (DC not AC so coupling of interfering signals is not an issue).

Power Over Ethernet Work Being Done To Determine the Data Cables

IEEE has sent liaison letters to the ISO and TIA to determine what the effect of the heat will be on data cables. Right now, that is a large unknown. Work is still being done on this one. There are also powered patch panels on the market which are 10/100 midspan devices. If a device loses power with these, a simple patch cable switch will not suffice, but rather a re-termination would be required to move that channel to one with power. Not very smart for day two administrative costs.

Xmultiple Product Emerging with Standard

Endspan (where the power is supplied by the network switch) will remain the victorious champ for a lot of reasons. Initial Xmultiple PoE and PoE+ connectors were used in network endspan switches. Now many products with PoE and PoE+ are
Emerging . Xmultiple manufacturers RJ45 connectors with PoE and PoE+ which are listed below.

- **Single Port UltraMag PoE and PoE+ RJ Connectors**
- **Multiple Port UltraMag PoE and PoE+ RJ Connectors including 1x2, 1x4, 1x6 and 1x8.**
- **Stackable Port UltraMag PoE and PoE+ RJ Connectors including 2x1, 2x2, 2x4**
- **UltraJAX PoE and PoE+ Connectors**

Look for the “UltraMag ” Label

- **UltraMag is the Xmultiple Magnetic Connector and PoE/PoE+ Trademark Name.**

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