

Power Considerations for VoIP – IT Goes Green

Voice over Internet Protocol (VoIP) has progressed to become a main-stream technology being employed by most organizations.

Along the way many standards had to be arrived at for PoE (Power over Ethernet), QoS (Quality of Service), VLANs, Wireless, etc.

Although there is now a Power over Ethernet standard, there are still more standards set for IP endpoint manufacturers. Manufacturer's IP endpoints may be Class 1, Class 2 or Class 3. Each IP endpoint draws up to a defined amount of power and there are essentially two methods in which these IP endpoints can be powered, local power supplies plugged into the IP endpoint and a standard power outlet or power can be supplied over the Ethernet.

Class 1 IP endpoints may use up to 2.2 watts of power, Class 2 endpoints may use up to 6.49 watts of power and Class 3 endpoints may use up to 15.4 watts of power.

The PoE is provided by your data switches. So a 48 port data switch supporting all Class 1 IP endpoints would need to provide 106 watts of power. Similarly, a 48 port data switch supporting all Class 2 endpoints would need to provide 312 watts of power. And finally a 48 port data switch supporting all Class 3 endpoints would need to provide 740 watts of power.

It is then easy to see that communication systems requiring the use of Class 3 IP endpoints uses over 40% more power than those systems utilizing Class 2 IP endpoints and over 85% more power than Class 1 IP endpoints.

It is more likely to find a mixture of Class 1, Class 2 and Class 3 IP endpoints in a vendor's configuration, however there are some manufacturers that supply only Class 3 IP endpoints which significantly increases the operational costs of their systems. All Avaya 9600 series IP phones are rated Class 2.

An analysis showing total cost of ownership without calculating the power consumption difference may not provide end users with a complete picture.

Additionally, data switches providing for more power generate much more heat. Closets previously used for relatively low wattage devices may now have to be air conditioned. This poses two issues, the cost of the air conditioning and the utility cost to run the air conditioning.

The cost of electrical power varies greatly across the country. You can find the electrical energy rates for your state by going to <http://tonto.eia.doe.gov/state/>.

The rates can range from 8 cents per kilowatt hour to 20 cents per kilowatt hour (kwh).

