

# go green. save green

**going green.** In 2008, going 'green' is seemingly everywhere. Many consumers are interested in becoming more environmentally friendly, but frown when discovering it is often economically unrewarding to do so. Fortunately, Voice over IP (VoIP) technology solves this dilemma by delivering a solution that fits both needs.

## reducing electrical expense.

In today's world of spiraling energy costs the idea of being environmentally responsible is gaining momentum. Rapidly-rising energy prices are continually eroding businesses' profit margins—forcing businesses to investigate methods of reducing this cost. One often overlooked area of expense-reduction is reducing the non-renewable energy being consumed, specifically in the communication room.

**multi-server example.** As an example, a fictional company with 100 employees uses a server based VoIP telephony solution for their day to day business. The telephony application is built on a decentralized platform that uses multiple servers for specific applications: one server runs the call processing applications, while the others are the trunk gateway blades, unified messaging, presence server, and possibly a server dedicated to specialized applications like text to speech and automated speech recognition. That's 5 servers

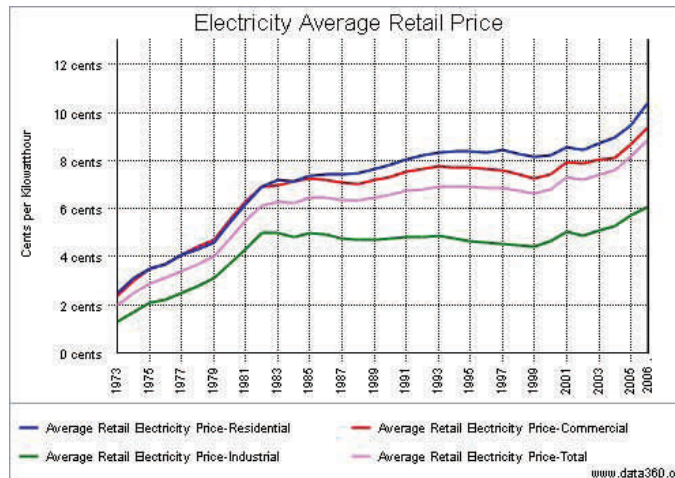
dedicated to the telephony needs of 100 employees.

**the multi-server cost.** Let's examine the cost to run these servers. According to Data360 ([www.data360.org](http://www.data360.org)), the average US cost per commercial kilowatt-hour was 9.36 cents per hour in 2006. A Dell 2650 PowerEdge™ server—typical of those used in communications rooms—with redundant power draws 500 watts per power supply.

Running 24/7 this server would cost \$34.26\* to run per month. Assuming the need for 4 additional servers, that means the energy required to run this company's telephony application is \$171.30 month or \$2055.60 per year. A company this size typically has business-critical equipment such as data servers, database servers, routers and switches. And most

IT experts agree the communications room housing this equipment must be cool and dry. Often, this means a dedicated air conditioning unit.

**multi-server cooling.** Designing a dedicated HVAC system for a communications room is a highly specialized discussion that takes many variables into consideration. For the sake of this example, let's assume an average, 2 ton AC unit draws 3.5 kWh to keep the equipment working properly. This AC unit is constantly monitoring the temperature and costs the company approximately \$226.10 per month or \$2,713.20 per year. That equals a total of \$397.40 per month just for the power to run the telephony application.



\* 500 watts x 24 hours/day x 30.5 days/month = 366,000 Total Watt-hours; 366,000 Wh / 1000 Wh = 366 kWh; 366 kWh x 9.36¢/kWh = \$34.26/mo.; \$411.10/yr.

# go green. save green

**the green solution.** Inefficient power consumption radiates as heat. In the telecommunications industry, the smaller the footprint of the communications systems, the more difficult it is to dispose of that heat. Ultimately, fans are used to pass cool air over heated parts. However, the fans themselves draw power in the process, exaggerating the issue further. Fans are also moving parts that are much more prone to failure, meaning that when a fan fails, so will the equipment.

**passive cooling.** Iwatsu engineers have designed the Iwatsu Enterprise Communication Server to use passive cooling—meaning the system was designed to allow ambient air to correctly flow over internal components. More importantly, they are designed to do so in very hot environments. This is important because the Iwatsu

equipment is insensitive to the high heat generated by servers, switches, routers and other communications equipment, with which it shares rack space.

**the cost of green.** The Enterprise Communications Server configured as a 100% IP telephony solution can operate with a 186 watt power supply. That means that the monthly power consumption is \$12.67 or about \$152.10 per year. Completing the Iwatsu Enterprise Suite requires the addition of the aforementioned Dell PowerEdge 2650 running Iwatsu Enterprise TOL. As previously discussed, the PowerEdge 2650 costs \$36.26/month, bringing the total monthly Iwatsu Enterprise Suite cost to \$49.00/month versus the \$397 month of the multi-server solution used in the example above.

	Distributed Servers Environment	Iwatsu Enterprise Suite	Iwatsu Enterprise Suite In Server Closet
Monthly Cost	\$397	\$49.00	\$275
Yearly Cost	\$4764	\$588	\$3301
Five Year Cost*	\$23,820	\$2940	\$ 16,506
Net Savings	0%	88%	31%

The table above summarizes the approximate monthly, yearly and five-year energy cost required to deploy a voice communications system. Though not required, larger organizations will likely use a dedicated HVAC system to cool data servers and other network devices. The final column illustrates the cost of installing the Iwatsu Enterprise Suite in a communication room with a dedicated HVAC system.

\* Assuming no price increase per kilowatt hour