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Telephone Technology Goes Green

Learn about how Avaya teams up with Extreme Networks edge provisioning technologies to help customers conserve.

by Shari L. Gould
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The "go green" concept dominates the media in virtually every arena these days in an effort to prompt consumers to conserve the Earth's resources. Technology vendors are supporting the initiative by developing technologies that help customers do their part in conservation. Avaya customers are going green as well, with a little help from Extreme Networks® Universal Port feature in the ExtremeXOS™ operating system.

Avaya customers using 9600 Series Avaya IP deskphones can take advantage of the Avaya and Extreme Networks go-green, time-based provisioning. The combined solution, which is based on standard Gigabit Ethernet (GigE), allows Avaya's customers to remain on the cutting edge of technology, while saving money and reducing electricity consumption. GigE is the standard that defines various technologies for transmitting Ethernet frames at a rate of a gigabit per second.

Avaya IP deskphones, used with the customizable Universal Port Power Conservation Module, running over Extreme Networks advanced edge switches, allow you to turn off non-essential communications devices, thus reducing power consumption. This technology combination provides you with precise control over desk phones, wireless access points, and other PoE-capable devices. Another Universal Port module, the Handset Provisioning Module, makes it easy to configure, deploy, and manage, your network by automating the provisioning for large-scale telephone distribution.

Let's take a closer look at the Universal Port Handset Provisioning and Power Conservation modules, along with the other Extreme Networks and Avaya technologies, that help you (as either a developer or administrator) bring your customers closer to efficiency.

Technology Snapshot

Advanced edge switches with the ExtremeXOS modular operating system, Universal Port automation, and Power Conservation modules are some of the Extreme Networks technologies that can help reduce electrical consumption. These components can be used to automate the Power over Ethernet (PoE) port configurations for individual and blocks of IP phones not in use for substantial periods of time. PoE essentially allows you to plug an IP phone device into a network connection, and the wiring on the other side of the wall routes the voice signals over the PoE-enabled wiring to the server on the other end. As a developer, you don't need to worry about this, and you probably don't care, as long as it works. Picture a data connection or outlet, but instead of running over a typical data LAN, it's running over a connection that handles voice communications. This Universal Port capability can work with IP phones with either Gigabit Ethernet or 10/100 connections to the switch.

For Avaya IP phones, Extreme Networks has adapted the Universal Port feature or application programming interface (API) to handle that functionality. The Handset Provisioning module works with an Extreme advanced edge switch and comes with profiles appropriate with certain kinds of phones. When deploying Avaya IP deskphones you can utilize the profile that supports 802.1x or Network Login and Link Layer Discovery Protocol

More Resources

- [Avaya Speed Your Way to Going Green FAQ](#)
- [Extreme Networks® and Avaya Global Strategic Alliance Overview](#)
- [ExtremeXOS™ Universal Port Configuration Guide](#)
- [Extreme Networks: Handset Provisioning Module](#)
- [AvayaLLDP.zip](#)
- [PhoneNetworkLogin.zip](#)

(LLDP). Once you enable the profile for the handsets you want to provision, the rest is done behind the scenes by Universal Port. Universal Port gives you an executable, or triggerable script, to enable the provisioning functionality you want. Once the triggers are executed, the profiles will be executed as well.

The Universal Port feature, not only supports automated phone provisioning and authentication, but it is a powerful framework for time or event-driven activation of automated profiles. The plug and play automation simplifies the provisioning of handsets and management of the network infrastructure. Further, the Universal port profiles can be edited and customized to perform the automated tasks you need on your network. This lifts the burden on your IT staff resources while also allowing consistency of deployment across your enterprise.

Avaya IP deskphones, such as the 9630G and the color display 9640G IP Deskphones, are designed with native GigE compatibility and are rated Class 2 PoE, thus using power most efficiently. All other IP Deskphones from Avaya including the 4600 Series and recently launched 1600 Series Value Edition models can support GigE via an available adapter. Avaya's Communication Manager, or a comparable Avaya communications platform, provides the link between the IP phones and the Extreme modules.

The operational modules within the advanced edge switches from Extreme Networks include the IP Handset Provisioning Module specific to Avaya's IP deskphones, among other IP phone vendors. The Power Conservation Module reduces energy costs by turning off the Power over Ethernet end points when they are not in use.

Edge Provisioning

In dynamic environments where you need to simplify large-fleet handset deployment or quickly provision and de-provision handsets, the ExtremeXOS 12.0 with the Universal Port Handset Provisioning Module makes edge provisioning seamless. As an administrator, you simply create enterprise edge policies for blocks of users. Next, you deploy the provisioning module, including the Avaya script that is launched via a trigger, and policies to switches. Typically, there are multiple switches on a network. That's all the preparation you need to do.

Behind the scenes, the switch detects a new connection and attempts to authenticate the device, usually via 802.1x or Network Login. The switch then is configured with the appropriate edge policy and voice traffic priority and the LLDP-capable Avaya phones are configured using the set profiles and the appropriate parameters. The Handset Provisioning module drives the provisioning and authentication functionality.

Now, all you have to do to provision an Avaya IP deskphone is to plug it in, and the switch initiates an authentication trigger to verify the right phone is attached, and the rest is done for you.

Case in Point

Here's an example of how the conservation part works. An office-based sales force works the usual 9 a.m. to 5 p.m. The phones are powered on 24-hours a day, seven days a week. This obviously consumes unnecessary wattage. The combined Avaya and Extreme Networks solution utilizes a power profile that is controlled by the Extreme Networks Universal Port capability. The network administrator can easily and automatically power down the phones close of business and on weekends, and then bring them back up at 9 a.m. the next business day.

In a large-scale handset deployment, you can develop the module to control this in advance, and deploy it to the switch or switches, and they will be set up automatically based on the profile. This saves time and money, because without this convenience, you would have to provision each individual IP phone.

Going Green Together

Going green means both developers and administrators need to have conservation resources at their disposal. As a developer, you have your existing Avaya technology, and working in combination with your network administrator, you have Extreme Networks time-based provisioning as well as automated large-scale provisioning. Both of you can work to save your company time, resources and money, while simultaneously being environmentally friendly.

More Resources

- [Avaya Speed Your Way to Going Green FAQ](#)

Help reduce your costs and your carbon footprint with an earth-friendly GigE-enabled IP phone system solution from Avaya, which utilizes Extreme Networks environment-friendly products.

- [Extreme Networks® and Avaya Global Strategic Alliance Overview](#)

Learn how Avaya and Extreme Networks have worked together to develop the Engaged Network as an integral part of the intelligent communications experience.

- [ExtremeXOS™ Universal Port Configuration Guide](#)

The Universal Port based operations modules help you manage your network operations.

- [Extreme Networks: Handset Provisioning Module](#)

The Handset Provisioning Module helps IT managers improve accuracy and avoid tedious edge configuration tasks.

- [Avaya LLDP \(zip file\)](#)

This profile configures LLDP capable Avaya phones using the authentication trigger. Authentication can occur using either 802.1x or MAC-based network login. This module will provision the phone with the following parameters using LLDP: call server, file server, dot1q, and dscp. Additionally the following network side configuration is done: enable SNMP traps and QoS assignment.

- [Phone NetworkLogin \(zip file\)](#)

This profile configures the network port parameters on the switch using the authentication trigger. This module will setup QoS assignment and enable DOS protection. The profile is set up so that different portions will run depending on whether the trigger is an authentication or unauthentication event. The authentication can be through either 802.1x, MAC address, or Web-based. In all cases, a RADIUS server is assumed to be used and that it will pass the proper VSA to the switch.

***Shari L. Gould** has more than 16 years of journalism and technical writing experience. Shari has written for numerous leading publications throughout her career, most recently Software Development Times and its various publications, and had an article hand picked by Sun Microsystems for inclusion in its Solaris Developer Connection. She also has more than 10 years experience working with high-tech companies documenting everything from network designs and installations, through software design and APIs, to user interfaces. Shari currently is pursuing her Master's degree in Criminal Justice, specializing in Information Security.*

