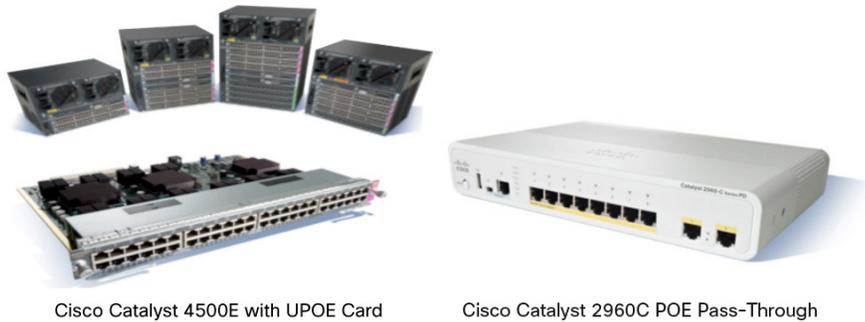# Cisco UPOE Enabled Next-Generation Hospitality Networks: Unleash the Power of Your Network

Cisco Catalyst 4500E with UPOE Card   Cisco Catalyst 2960C POE Pass-Through

Customer experience plays a primary role in any business, but it is especially important for the hospitality sector. The hospitality industry is looking to use advancements in networking technologies to create a positive experience on customers, thus improving profitability. In addition, rising energy costs are a leading factor for new investments in sustainable energy technologies that reduce energy costs and improve brand image.

The Cisco® Catalyst® 4500E is the most widely deployed modular access platform in the industry and addresses all the evolving requirements of the hospitality industry. Hotels now use the latest technology infrastructure to assist consumers and to develop relationships that support particular lifestyles.

Current hospitality guest suites are equipped with devices that are connected to disparate networks. The end devices and corresponding networks that exist in a hospitality environment today are:

· Analog TDM phones on PSTN networks

· Video on cable network

· Wired and wireless Internet connectivity on IP network

· Access control, minibar, and so on on non-IP network

The following figure shows the disparate networks and the associated end devices.
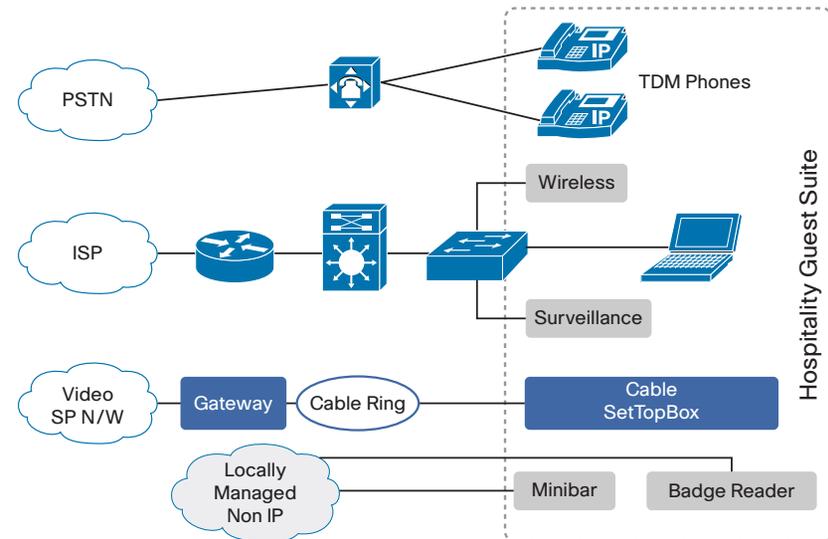
Managing each of these disparate networks leads to inefficient use of resources and often inconsistence and reduced customer experience. Customers are looking for video on demand, intelligent phone systems, and a transparent wired and wireless experience that traditional networks fail miserably to deliver. Moreover, the current architecture also suffers from cabling overhead and multiple network touchpoints and does not provide any mechanism for centralized power management. Network planners need to look at improving the overall experience of their guests, while catering to long-term sustainability goals for their organization.

Evolving Hospitality Infrastructure Requirements

From a switching perspective, hospitality network requirements can be categorized into four:

· Availability

· Performance

· Security

· Management

Availability
The Cisco Catalyst 4500E platform offers full system-level redundancy and software enhancements such as Nonstop Forwarding (NSF) with Stateful Switchover (SSO) to make sure that a single hardware-level failure does not cause downtime to the network. Furthermore, the platform also supports a true In-Service Software Upgrade (ISSU) feature to enable change management without incurring any network downtime. The Cisco Catalyst 4500E platform is also introducing a new technology, Universal Power over Ethernet (UPOE), that extends the IEEE 802.3at PoE+ standard to source up to 60W of inline power over standard cabling infrastructure. This technology, together with the Cisco compact switches, is specifically targeted toward the hospitality vertical to enable consolidation of the disparate networks discussed before.

Performance
Cisco Catalyst 4500E offers superior switching bandwidth (848Gbps/s) to provide up to 384 nonblocking gigabit ports for connecting various endpoints. The platform also offers scalability to 100 x 10G ports on a single system. This architecture also supports 32MB of centralized buffering line-rate multicast replication ideal for deploying video-on-demand applications in hospitality guest suites.

Security
The Cisco Catalyst 4500E platform offers a complete suite of security features and enhancements required to provide authentication and deploy access control using IEEE 802.1x standard. This platform also supports IEEE 802.1ae to offer confidentiality and integrity not only on the individual customers but also on interswitch uplinks for

physically separate buildings. Furthermore, Cisco Catalyst 4500E is the first Cisco Catalyst platform to offer Flexible Netflow and its integration with Embedded Event Manager, which offer application-level visibility and automation capabilities required to prevent anomaly and malware within the facility. Finally, the platform also provides the capability for packet capture using the hosted Wireshark application, which enables further analysis of the traffic when the situation warrants it.

Hospitality Network Consolidation with Cisco UPOE

The Cisco Catalyst 4500E platform has now leapfrogged the industry by introducing Cisco UPOE. With Cisco UPOE, Cisco Catalyst 4500E takes inline power technology to a new level by dramatically increasing the power sourced by the switch to 60W. Cisco UPOE offered on the Cisco Catalyst 4500E Series Switches can be used in conjunction with the new Cisco Catalyst compact switches to enable network administrators to converge the disparate systems to a centralized and yet easy to manage infrastructure.

Cisco Catalyst compact small form factor fanless switches with 8/12-port Fast Ethernet switches enable hotels to deploy an array of IP end devices in hospitality guest suites. The PoE pass-through feature on new Cisco compact switches enables IP applications in locations without access to power outlets. These compact switches can draw up to 60W of power over a single Ethernet cable when connected to UPOE-capable Cisco Catalyst 4500E switches to power itself and the PoE devices connected downstream from the compact switch.

With the rapid proliferation in the number of access ports available in a guest suite, made possible by UPOE-powered compact switches, all the devices can be brought under a single Ethernet IP umbrella. This architecture also facilitates the following much-required transitions since the PoE pass-through power on the compact switches guarantees the required power resiliency and high availability:

· Migration of TDM phones to IP phones

· Consolidation of backup battery on door readers and locks into the wiring closet

· Collapsing the access and distribution layers of the network

The following figure shows the network consolidation that can be achieved in a hospitality guest suite by using a Cisco Catalyst 4500 UPOE-capable switch together with the Cisco Catalyst compact switches.
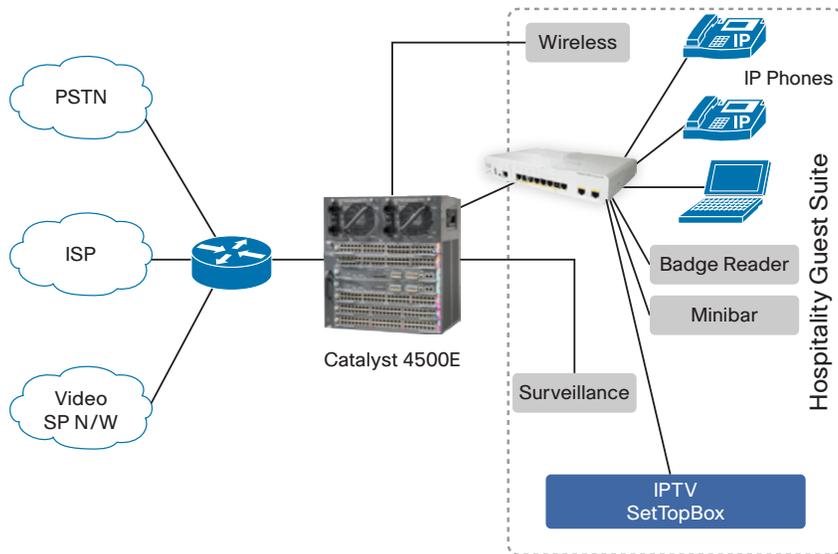
Enable Effortless Setup and Unified Network Management

Setting up the Cisco Catalyst 4500E and new Cisco Catalyst compact switches is simple. Compact switches feature Cisco Catalyst Smart Operations for "zero touch" setup and quick troubleshooting. Both include Cisco Auto Smartports, which support true plug and play by automatically configuring the switch based on the type of device connected to it. Automatic quality of service (AutoQoS) enables state-of-the-art QoS implementation with just one command. This is especially beneficial for stores that need to deploy IP telephony and video quickly, but lack the required expertise or staffing. You can remotely manage and troubleshoot the Cisco Catalyst compact switches utilizing the same infrastructure that you use to manage your switches in the wiring closet. In summary, you can significantly reduce setup and management costs by not requiring teams of IT experts on call.

Improve Energy Efficiency and Sustainability

Energy cost represents the single fastest growing operating cost for the hospitality industry. Through energy efficiency and conservation measures, hotels can dramatically reduce energy use and utility bills, thus helping preserve the environment and improve brand image, all while improving the guest experience and its bottom line. With Cisco EnergyWise you can monitor, manage, and reduce energy consumption on all the PoE devices connected to the switch and other Cisco EnergyWise-enabled devices across the entire facility. Features could be used to remotely turn on the lights and temperature control at the time of customer check-in for added customer experience.

In summary, the new Cisco Catalyst 4500E and compact switches from Cisco are the latest addition to its line of enterprise-class switches that have been proven in hospitality environments worldwide. Together they provide a flexible, secure, and cost-effective means to deliver new services to give your business a competitive edge.

For More Information

- UPOE White Paper
  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_white_papers_list.html

- Cisco Catalyst 4500 Supervisor 7-E Datasheet
  www.cisco.com/en/US/prod/collateral/switches/ps5718/ps4324/data_sheet_c78-612364.html

- Cisco Catalyst 4500 Line-Card Datasheet
  www.cisco.com/en/US/prod/collateral/modules/ps2710/ps5494/product_data_sheet0900aecd802109ea_ps4324_Products_Data_Sheet.html

- Cisco Catalyst 4500 Chassis Datasheet
  www.cisco.com/en/US/prod/collateral/switches/ps5718/ps4324/product_data_sheet0900aecd801792b1.html

- Cisco Catalyst 4500 Power Supply Datasheet
  www.cisco.com/en/US/prod/collateral/switches/ps5718/ps4324/product_data_sheet09186a00801f3dd9.html