Cisco’s Store in a Box: Your Store on a Single Server

Today’s retailers must balance how to best meet operational business demands, deploy new customer services, and respond to opportunities to deploy new store formats. With customers demanding more personalized and compelling mobile, digital media, and assisted selling services, the required technology footprint in the store is becoming increasingly complex and costly to deploy. In fact, a recent Retail Systems Research study noted retailers’ chief complaint: That existing infrastructures are both expensive and prevent moving forward with new solutions.

The Cisco® Store in a Box responds to these challenges with a networking and compute platform designed to consolidate and run all critical store systems on a single server. Studies show that stores can save as much as 50 percent—and in some cases, even 80 percent—with this virtualized solution. Store in a Box provides:

• PCI-compliant security
• Mobility services for store associates and customers
• Point-of-sale (PoS) back-office services
• A powerful foundation for cloud services
• Video, analytics, and content caching

The modular Store in a Box makes it possible to enable business services in phases, based on business priorities and customer demand. It is unique to the marketplace, providing a cost-effective solution for branches, new stores, and temporary shopping environments.

The Challenges Facing Retail Leaders

Today’s retailers are becoming enmeshed in multiple store networks that support point solutions for video displays, video surveillance, and point-of-sale (PoS) systems and their attendant devices, such as Wi-Fi devices. The problem is exacerbated as new services are added to meet customer demands. These expanding layers of networks increase risk, lead to lost opportunities, and help create fiscal constraint.

At the same time, retailers need to be able to centrally manage and maintain store services across multiple locations. Often they wish to open new stores quickly, perhaps seasonally, or open a specialty or “popup” store location within a larger store or mall. They need the flexibility to easily test new merchandising concepts within existing stores as well.

To meet all these challenges, retail IT staff must often spend more than 80 percent of their time on system maintenance, according to studies done by Gartner and by Forrester, and this as retail IT budgets continue to shrink.
Store in a Box Solution

Cisco Store in a Box addresses these challenges with a flexible solution based on the award-winning Integrated Services Routers Generation 2 (ISR G2) platforms (Cisco 2900 and 3900 Series ISRs) and the new Cisco UCS® E-Series Servers. Offering best-in-class network technology combined with a powerful enterprise grade compute platform, Cisco delivers store IT services in a single box, including:

- Security and compliance (PCI 2.0)
- Voice and video quality of service (QoS)
- Network operations and management
- Technology consolidation
- Rapid deployment

The Cisco ISR G2 platform runs Cisco IOS® Software, which delivers an array of IT services such as network routing, IP PBX (Cisco Unified Communications Manager Express [Cisco Unified CME]), public switched telephone network (PSTN) connectivity, WAN acceleration (Cisco Wide Area Application Services, or WAAS), remote access, Network Address Translation (NAT) and firewall, and Dynamic Host Configuration Protocol (DHCP). The Cisco UCS E-Series x86 server modules can be inserted into Cisco ISR G2 platforms to deliver additional services, such as adding video surveillance, digital signage, or traffic counter applications. The Cisco ISR G2 routers also deliver Cisco Cloud Connectors from Cisco and third-party vendors.

The Cisco UCS E-Series servers and the Cisco ISR G2 are built for enterprise-grade performance with a long-term service life expectancy. They are covered under one Cisco SMARTnet® Services contract providing expert technical support, flexible hardware coverage, and smart, proactive device diagnostics. Your IT staff gains anytime access to Cisco engineers in the Technical Assistance Center (TAC) and an extensive range of resources, tools and training.

By consolidating these capabilities into a single server, this powerful solution simplifies support and device management, lowers the store’s hardware footprint, and enables remote replacement of applications from a central location on demand.
How Store in a Box Supports Store Operations

Store Technology Consolidation
The key to Cisco’s retail solutions is virtualization based on the Cisco Unified Computing System™ (Cisco UCS E-Series Blade Server). By creating a logical separation between routing and data flows, stores are able to efficiently combine and secure a wide range of business functions and information on a single system. In the store, the Cisco UCS system consolidates equipment, including PBX, DVR, circuit systems, and more. The result is that costs are reduced across the board, including costs for power, space, and cooling, as well as support costs and other operating expenses. In the retail store itself, retailers may achieve increased sales per square foot from $300/foot to 20-30 percent higher. Stores may also reach higher conversion rates with a lower financial impact.

Evaluate New Store Concepts
Today’s stores need to be able to quickly assess, evaluate, and test new concepts. Digital media broadcasting, mobility, and other capabilities are expected and demanded by today’s tech-savvy consumers. Cisco’s advanced media and content management solutions allow stores to regularly test and deploy new merchandising concepts based on such technologies. For example, a retailer wishing to add digital media to an existing store needs only a minimal investment to use the Cisco UCS E-Series to showcase promotions and information on in-store screens or customers’ digital devices.

Rapid Buildout of New Stores
The low-cost, high-speed installation of temporary storefronts or popup stores has become a rapidly growing trend in retail; today, it is driving revenues of more than $8 billion per year. Cisco’s Store in a Box solutions are a perfect fit for this trend, and they also enable faster rollout of services at new store sites. For example, a retailer creating a point of sale in a popup store can utilize a Cisco supported mobile point-of-sale device to take customer orders and process credit card payments via a PCI-compliant, encrypted data connection between the store and the merchant bank. This less complex solution also makes it easier to reuse equipment, which can be readily moved from one location to another.

The Benefits of the Cisco ISR Platform
IT is incredibly important in retail, but can be perceived by store operations and management as more of a hurdle as an enabler. Cisco’s Store in a Box solutions reduce the high percentage of time that IT normally spends on maintenance, freeing IT staff to innovate and to execute. For IT, the primary benefits of our Store in a Box are faster roll-out of new applications and capabilities, reduced operations expenses enabled by remote management of IT equipment, and reduced costs.

Cisco ISRs enable remote management and a smaller IT footprint in the stores. They provide connectivity for applications and slots for Cisco UCS E-Series, 3G and 4G wireless access, and a range of other extensions, including video surveillance and video display networks.

Providing all this within one system with a small footprint can lower costs in multiple ways. The ISR incorporates Cisco WAAS, enabling WAN acceleration of applications running in the data center. It also incorporates Unified Communications Manager E-Series to replace the PBX telephony systems in your stores.
The ISR also provides one system to network video, voice, data, and wireless networks. The combination of these services on a single system enables IT staff to manage the IT devices in the store remotely, deploy new applications and upgrades more quickly, and provide high-quality, secure service. Cisco does extensive testing in a lab environment and provides detailed guides to make it faster and easier for your store systems to comply with a PCI audit.

Examples for services which can be consolidated onto the router include:

**Servers and Cisco UCS E-Series**

There are cost and security benefits in removing servers from stores. If servers remain in the store, IT should consider consolidating them onto the Cisco UCS E-Series blade. This consolidation, combined with the virtualization available on Cisco UCS E-Series, immediately reduces maintenance, licensing, and energy costs. You also gain the ability to remotely manage the servers by taking advantage of the network. As blades within the ISR, these virtual servers require no additional floor space.

The payback for consolidating and virtualizing servers in stores can be rapid. When combined with reduced ongoing operations and energy costs, and the Payment Card Industry (PCI) validation testing performed by Cisco on UCS E-Series and the ISR, Cisco UCS E-Series helps to make your business much more cost-effective.

**Switches**

With Store in a Box, Cisco switches in the wiring closet can be remotely managed and auto-configured from the ISR, pushing configuration files onto the switches. Compact switches can be auto-discovered upon installation and then auto-configured. Cisco switches also come with Cisco EnergyWise™ technology, which allows IT to set up rules to turn off IP phones, desktop and laptop computers, access points, and other network-attached equipment when the store is closed.

In addition, adding compact switches and smart power distribution units (PDUs) enables you to network PoS stations, including scanners, printers, and digital displays, and to power kiosks and demo pods. The compact switches can pass through Power over Ethernet (PoE) and take advantage of the energy saving benefits of Cisco EnergyWise. Smart PDUs can be managed to turn off specific equipment through EnergyWise. Compact switches also make it possible to significantly reduce the cabling needed to network all the devices on the store floor, reducing complexity and maintenance costs.
Cloud Connectors
Cisco Cloud Connectors, embedded within Cisco IOS Software or hosted on the Cisco ISR G2 compute blades, make it possible to take advantage of intelligent capabilities of the network to improve the delivery of cloud services and applications. Cisco Cloud Connectors help ensure that the network gains additional awareness of the cloud service, and allow the connectors to dynamically respond to the conditions of the network. The improved linkage of the network with multiple cloud services contributes to increased transparency of the end user experience and transparency of managing IT operations. Validated connectors include both cloud services offered by Cisco and partner offerings that leverage the Cisco Cloud Connector API. Examples include:

- Amazon, Inc. (for storage), enabling access to applications in a secure and scalable manner
- Cisco SRST (for collaboration), maintaining continuity even when connectivity is lost to Cisco Hosted Collaboration Services
- VMware (for virtualization), providing continuous access and low latency for virtual desktop infrastructures
- Industry Weapon (for digital signage), for deploying digital media to all Cisco networked devices.

Video Data-Mining and Analytics
The end goal of migrating from analog-based systems to IP-enabled video surveillance is to broaden the application’s focus from simply loss prevention and security to a greater business value by reducing expenses and exposure to liability through data mining and video analytics. Data mining is the process of detecting patterns in the video data. Video analytics may be performed at the endpoint (such as an IP camera) on specialized digital signal processors (DSPs) by a third-party analytics vendor or on the Cisco UCS E-Series servers.

An example of a video surveillance application can be to analyze video feeds to detect certain colors or articles of clothing to identify groups of gang members among store patrons. A comparable video analytics application is to monitor the queue length of checkout lines and inform management to increase or decrease the staffing at cash registers.

Wireless Access Points
Cisco provides a Wi-Fi controller that can manage multiple, remote access points and that lets you take the access point controller out of the store. You can still have rich Wi-Fi services in the store without the complexities of managing multiple boxes. The store can now have a single access point serving data to clients and also monitoring for attacks (using the Cisco wireless intrusion prevention system, or wIPS). Retailers can save on the number of access points they deploy, or they can expand network coverage to accommodate store expansion.

In addition, when you pervasively deploy access points with Cisco CleanAir® technology, you can protect wireless network performance and enhance the user experience by automatically mitigating wireless network interference. IT can benefit from CleanAir technology by getting granular visibility into the radio frequencies and taking proactive measures, thereby reducing the number of troubleshooting calls related to connectivity in various branch locations.
Virtual Desktop Infrastructure
The Store in a Box also supports virtual desktop infrastructures (VDI) with the virtual desktops hosted locally on the UCS-E server to provide the best user experience (LAN based connectivity) and no reliance on the WAN for business continuity. Using VMware View™ from Cisco partner VMware in conjunction with this solution, IT departments can effectively move virtual desktop infrastructure closer to end users to optimize application response times and improve performance. With this solution, IT can remotely manage, patch, and back up users in each branch retail location.

Business Benefits
- **Reduce costs**: Cisco’s Store in a Box Solution allows retailers to centrally and effectively manage and maintain stores across multiple branch locations, increasing flexibility and simplifying operations.
- **Integrate store systems with e-commerce** to provide an omnichannel experience for customers. This targets the “65-90” retail dilemma: 65 percent of shoppers research purchases online, but 90 percent still buy in the store. Stores must be able to serve customers in multiple ways to close the sale.
- **Deliver new guest services** to respond to the changing consumer, including broadcast promotions, in-store kiosks, on-demand experts, customer call centers, and so on.
- **Accelerate delivery of mobility**: Enables retailers to use today’s mobile environments and provide store associates with instant information anywhere, on any device.
- **Assure timely delivery against business needs**: Provide a quick and cost-effective way to open up new stores and popup stores, as well as to test new merchandising concepts.
- **Maintain network security and PCI compliance**: Products have been tested and audited in Cisco Store in a Box environments to be Payment Card Industry Data Security Standard (PCI DSS) compliant.

Learn More
Contact your Cisco account team to discuss how we can help you build your Store in a Box.