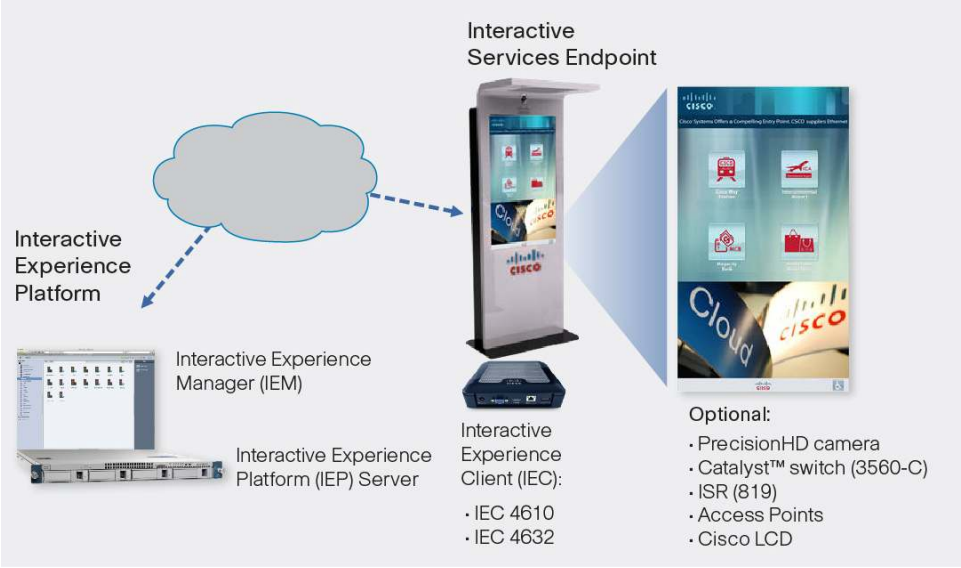
Cisco Interactive Services Solution: Cisco Interactive Experience Manager

Cisco® Interactive Services Solution uses the network as the platform to transform customer experiences with interactive digital media. The solution allows businesses and public agencies to deliver interactive content and information in real time, improving loyalty and revenues, while increasing efficiencies in business processes.

Cisco Interactive Services Solution brings together touchscreen interactive displays, web technologies, interactive multimedia, and collaboration into an integrated solution. The solution consists of digital media devices (Cisco Interactive Experience Clients), a management platform (Cisco Interactive Experience Manager), collaboration applications, and a network infrastructure to deliver web-based applications and multimedia content through interactive displays and kiosks to end users in retail stores, bank branches, and transit points (train stations, bus transit centers, and airports). Figure 1 shows a basic solution configuration with a kiosk powered by a Cisco Interactive Experience Client 4600 Series (IEC 4600) device and managed by the Interactive Experience Manager (IEM) running on the Cisco Interactive Experience Platform Server (IEP Server).

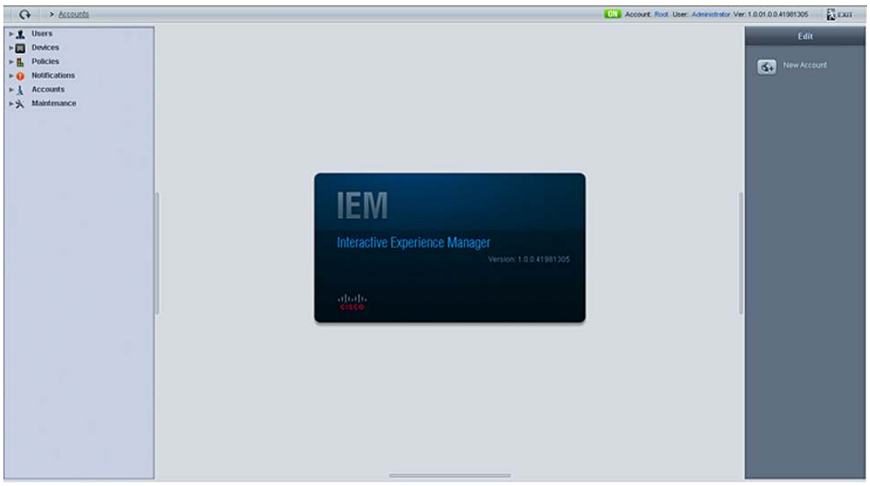
Figure 1. Cisco Interactive Services Solution Components



Cisco Interactive Experience Manager

Cisco IEM is a management console that is used to remotely configure, control, and monitor Cisco IEC 4600 Series devices. Cisco IEM provides for user management as well as real-time monitoring, live viewing of remote screen content, notification of events, and session management. Cisco IEM is accessed through a web portal with a menu-based GUI (Figure 2).

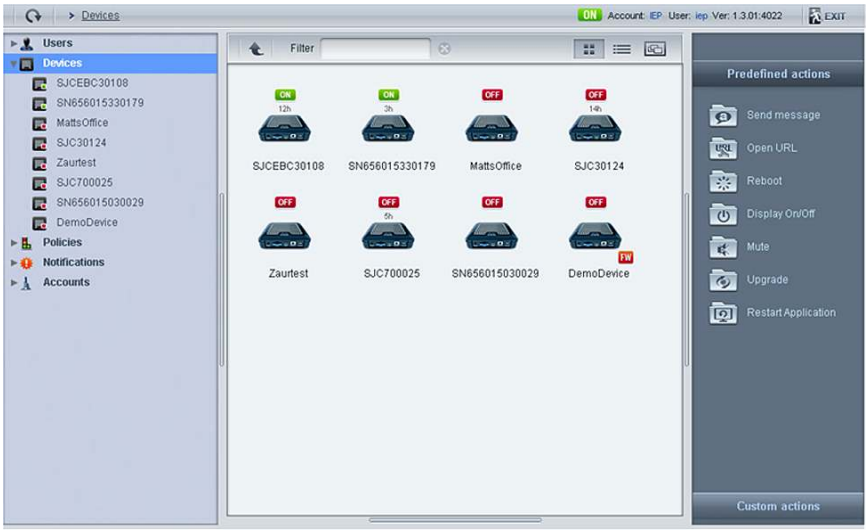
Figure 2. Cisco Interactive Experience Manager GUI



Accounts are created to segregate users, devices, and policies. Users are assigned to a particular account. They can then configure and manage the devices associated with that account.

The Cisco IEM monitors the Cisco IEC 4600 Series devices at regular intervals. The status of the devices are collected within a period of time set by the user. For example, Figure 3 shows the status (ON or OFF) of each Cisco IEC 4600 Series device and that a firmware upgrade is available for the last device (indicated by the red "FW" next to the device). Device logs can be sorted and analyzed by clicking the Events tab of a device. Similarly, the device's performance can be monitored by viewing the Performance tab of a device. The Cisco IEM also collects screenshots from the Cisco IEC 4600 Series devices at intervals specified by the user.

Figure 3. Device Status Display

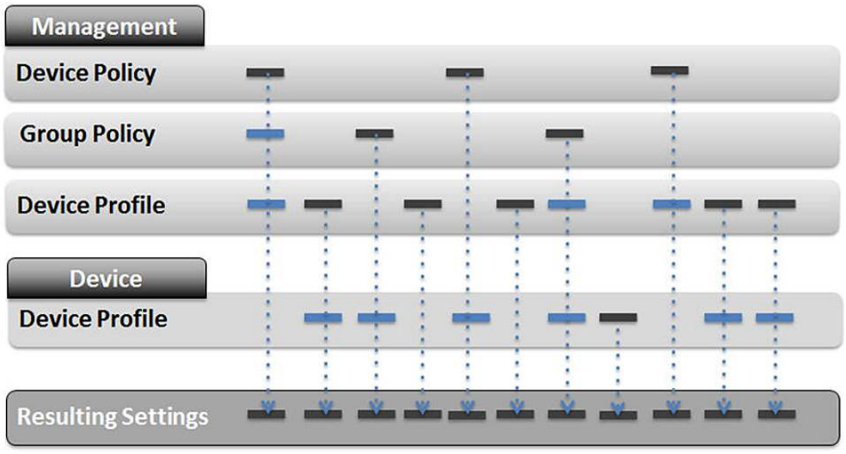


An administrator controls multiple Cisco IEC 4600 Series devices through the use of policies (see Figure 4). Policies provide an easy and flexible way of applying settings to a group of users or devices. A policy is a restrictive mechanism, providing the user with a tool to enforce certain behavior. Policies represent dynamic and transportable setup rules. Policies can be persistent (long-term) or transient (short-term) and can be scheduled per kiosk based on time or events.

Figure 4. Policies

Figure 5 illustrates the hierarchy for settings. If a device policy is applied, it takes precedence over any group policy or device profile set in the management console (the Cisco IEM), and it takes precedence over any device profile set on the device.

Figure 5. Settings Hierarchy



Principles of Operation

- Cisco IEC 4600 Series devices must first exist on the Cisco IEM in order to be managed by it. The devices can be provisioned in advance with the Cisco IEM.
- A policy applied to a device overrides the devices' own configuration. Properties are additive; therefore, if policy doesn't override a property, the property will stay unchanged.
- Multiple policies can be attached to the same device or group. If policies contain conflicting settings, the policy that is higher in the stack order takes precedence. Device policies take precedence over group policies.
- Device and manager versions are best-effort compatible. A device that has a version that is not actively supported by the manager will still be supported, although some features may not work. The fact that device version is incompatible is indicated by a red FW flag on the Cisco IEM GUI. Communication between client and a manager is defined by the communication protocol and specification that defines capabilities of each firmware build. Older communication protocols are supported in the newer server builds, but older specifications that reflect properties of the firmware are often not fully compatible with the later specifications.
- Policies can be persistent or transient (applied for short periods of time). Transient policies are marked by an "action" flag and are made available in form of a button under "Custom Actions." These policies change the settings on the Cisco IEC 4600 Series device temporarily and will be reset on the next restart (or can be rolled back with a counteraction policy). Action policies can only work for run-time properties (properties marked by an orange arrow in the profile).
- Notifications and alerts work on a subscription basis. Once a notification or alert has been created, it must be assigned to an administrator. A notification or alert can submit to a third-party application to collect the data; that application's URL is provisioned in the user's profile.
- To optimize client performance, an application should use the available native components. Native components are available in form of a Browser API and essentially move resource-intensive or asynchronously used components outside the browser processing space.

Product Features

The Cisco IEM runs on a dedicated Cisco Unified Computing System™ (Cisco UCS™) C200 M2 High-Density Rack-Mount Server that uses the Linux operating system. The Cisco IEM software is preinstalled on the Cisco UCS server to ease installation.

Communication originates from the Cisco IEC 4600 Series device, over HTTP/S protocol. Support for multitenancy is built into the Cisco IEM with a nested accounts structure.

Features of the Cisco Interactive Experience Manager include:

- Comprehensive and scalable management platform
- Web-based GUI
- Remote configuration and management of devices
- Group-based or policy-based management
- Segregation of accounts, users, devices, and policies
- Real-time status of devices

- Notification of events
- Visibility into current screen content
- Device performance data

With the Cisco IEM, an administrator can perform the following functions:

- Configuration: An administrator can configure all Cisco IEC 4600 Series device settings remotely, including the startup URL, display behavior, and peripheral support.
- Policy management: Policies provide an easy and flexible way for an administrator to apply settings to a group of users or devices.
- Kiosk control: An administrator can monitor and control the behavior of a kiosk remotely in real time, including muting a station, locking out the user, and sending messages to the user.
- Session management: An administrator can manage users' sessions on the kiosks by setting time limits, forcing a user to log out, and so on.
- Monitoring: Data is sent from the Cisco IEC 4600 Series devices to the Cisco IEM at regular intervals. An administrator can analyze the event logs and performance data to troubleshoot issues.

Solution Benefits

Cisco has identified a number of needs that businesses and public agencies are trying to address. Businesses and public agencies need to improve customer experiences by providing real-time relevant information and giving customers access to products and services to help them complete their journey or make their purchases. Organizations need to provide effective self-service solutions that allow customers to interact and access the information anytime, anywhere. They need to find new sources of revenue generation through advertising or up-selling and cross-selling relevant products and services. Finally, they need to address the major challenges with interactive digital media deployments, such as costly content creation, inconsistent experience across different devices, and siloed, nonscalable solutions for different types of digital media, interaction, and collaboration.

When looking for a solution, organizations are finding that most solutions are standalone: one for interactive kiosks, one for noninteractive displays, one for collaboration, and so on. Furthermore, PC-based solutions are expensive and difficult to manage, especially in a large, distributed environment.

The Cisco Interactive Services Solution addresses these challenges by bringing together touchscreen interactive displays, web technologies, multimedia, and collaboration into a single integrated solution. The integration of video collaboration and interactive kiosks through a network-based, client architecture is much more efficient to deploy, maintain, scale, and upgrade. The Cisco Interactive Services Solution uses open-standard web technologies and allows organizations to use much of their existing web content and application development. The solution also allows businesses and public agencies to combine applications built on web technologies for consumer, passenger, and citizen information; marketing; and branding promotions.

Figure 6. An Interactive Kiosk

Other benefits include the capability to:

- **Enable new interactive services** to improve customer experiences
- **Increase customer retention** with consistent end-user experiences across multiple endpoints
- **Educate the customer** with relevant information in real time
- **Increase visibility** into products and services offered
- **Improve customer service** with virtual assistance
- **Increase revenues** by providing a venue for third-party advertising
- **Reduce costs** with increased operational efficiency in customer and business processes
- **Increase operational consistency** by enabling reuse of existing web content
- **Simplify deployment** with Cisco Interactive Experience Clients
- **Reduce use of management resources** with remote manageability
- **Reduce deployment and management timelines** using policies and groups
- **Improve management experience** with an integrated solution architecture (network, collaboration, video, interactive media, and noninteractive media)

Product Specifications

Table 1 gives specifications for the Cisco UCS C200 M2 Server on which the Cisco IEM runs.

Table 1. Cisco UCS C200 M2 Server Specifications

	Cisco UCS C200 M2 server
Dimensions	1.7 x 16.9 x 27.8 in. (4.32 x 42.93 x 70.61 cm)
Processor	Intel Xeon Series 5600 processors
Memory	16 GB DDR3-1333-MHz RDIMM • Advanced ECC • Mirroring option

	Cisco UCS C200 M2 server
HDD	Two Gen-2 300GB SAS 15K RPM 3.5 in. HDD; hot plug; C200 drive sled
RAID	6 G MegaRAID 9260-4i card (RAID 0,1,5,6,10,60)
Front-panel connector	Ease of access to front-panel video, 2 USB ports, and serial console
Additional rear connectors	Additional interfaces include a DB-15 video port, 2 USB 2.0 ports, and a DB-9 serial port
Temperature: Operating	50 to 95°F (10 to 35°C)
Temperature: Nonoperating	-40 to 149°F (-40 to 65°C)
Humidity: Operating	5 to 93% noncondensing
Humidity: Nonoperating	5 to 93% noncondensing
Altitude: Operating	0 to 10,000 ft (0 to 3000m); maximum ambient temperature decreases by 1°C per 300m
Altitude: Nonoperating	40,000 ft (12,000m)

Ordering Information

Table 2 provides ordering information for the Cisco IEM.

Table 2. Cisco IEM Products

Product Number	Description
IEP-UCS-C200M2-K9	IEP UCS C200 M2 Server
IEP-SW-BASE-01-K9	IEP UCS server base software + license
IEP-MGR-FL-10	10-pack IEM license bundle
IEP-MGR-FL-50	50-pack IEM license bundle
IEP-MGR-FL-100	100-pack IEM license bundle
IEP-MGR-FL-500	500-pack IEM license bundle
IEP-MGR-FL-1000	1000-pack IEM license bundle

An IEM license is required for each Cisco IEC 4600 Series device that is managed by the Cisco IEM. The license bundles support up to 10, 50, 100, 500, or 1,000 devices.

For More Information

For more information about the Cisco Interactive Services Solution, contact your local Cisco account representative.

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Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

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