



StadiumVision



Cisco StadiumVision Local Control Areas Design and Implementation Guide

for Luxury Suites, Clubs, Bars, Restaurants and Back Offices

Release 3.0

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About This Guide

This section contains information about the purpose, audience and revision history of this document.

Document Purpose

The purpose of this document is to provide guidance on how to design and implement a Cisco StadiumVision local control area, which includes luxury suites, clubs, bars, restaurants, and back offices. This document includes hardware and software requirements, recommended physical layouts, best practice configuration settings, as well as deployment guidelines and considerations. This document also provides the master reference data for the technical sales presentation that guides the Sales SE on what they can safely sell, deploy, and quote.

Document Audience

The audience is Cisco Technical Engineers responsible for designing and deploying a Cisco StadiumVision luxury suite. It is expected that readers of this document are familiar with the basic networking and digital signage terminology as well as the operation and configuration of Cisco IP phones. This document also assumes a general understanding of the sports and entertainment business and live event objectives and operations.

Related Documentation

See the Cisco StadiumVision solutions documentation library on Cisco.com at:

http://www.cisco.com/en/US/products/ps11274/tsd_products_support_series_home.html

What's New in this Release?

Refer to the [Cisco StadiumVision Release Notes for Release 3.0](#) for a description of new features available in this release.

Supported Software and Caveats

Refer to the [Cisco StadiumVision Release Notes for Release 3.0](#) for information about the supported software levels for Cisco Unified Call Manager and Cisco Unified Application Environment as well a list of caveats.

Document History

Table 1. Revision History

Date	Release	Comments
August 4, 2012	3.0.0-333	First publication.

Chapter 1 Overview

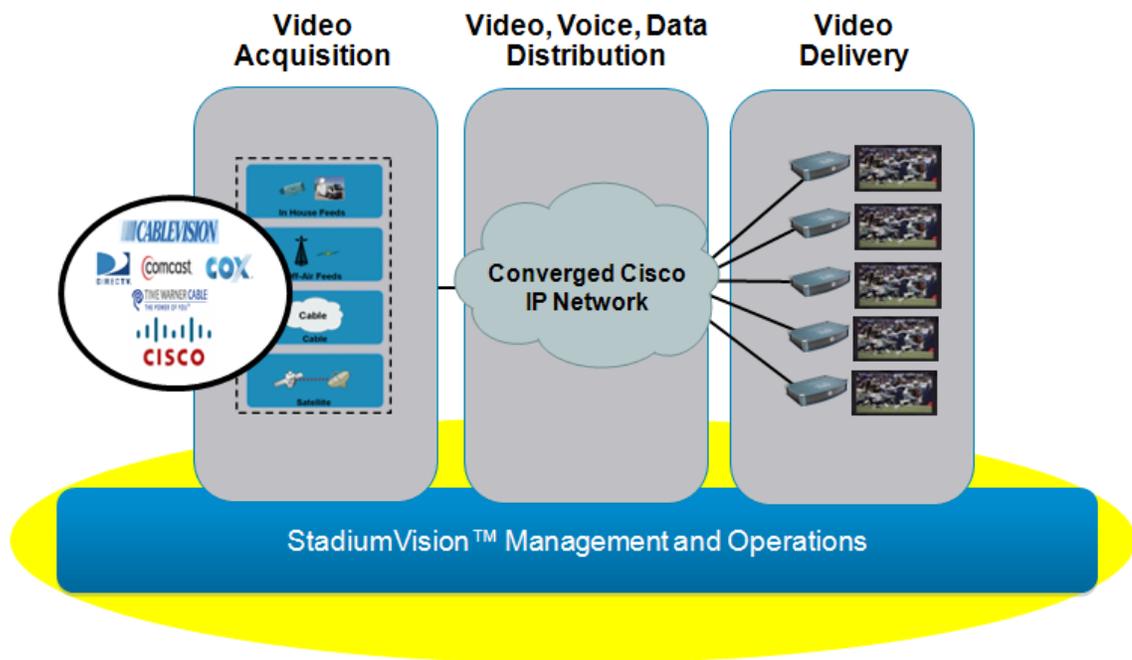
Cisco StadiumVision is a proven, end-to-end, high-definition IPTV solution that provides advanced video content management and delivery. It is a centrally-managed, video processing and distribution solution that enables the integration and automated delivery of customized and dynamic content from multiple sources to different areas of the stadium in Standard Definition (SD), High Definition (HD), or both.

Cisco StadiumVision is purpose-built for sports and entertainment venues, which have extensive video systems deployed throughout and is designed to enhance the viewing of live events and to provide in-house advertising. In addition, it leverages video systems in restaurants, clubs, and luxury suites to allow fans to view both in-house programming as well as external network channels.

Cisco StadiumVision comprises four major components, as shown in [Figure 1](#):

- Video acquisition (or video headend)
- Converged voice, video, and data high-speed IP network
- Video delivery (and signage playback)
- Centralized management and operations

Figure 1. Cisco StadiumVision Major Components



As part of the management and operations, Cisco StadiumVision offers a variety of options for local TV control. Each option provides users with the ability to control the on/off settings, the volume, and the channels displayed on the TV.

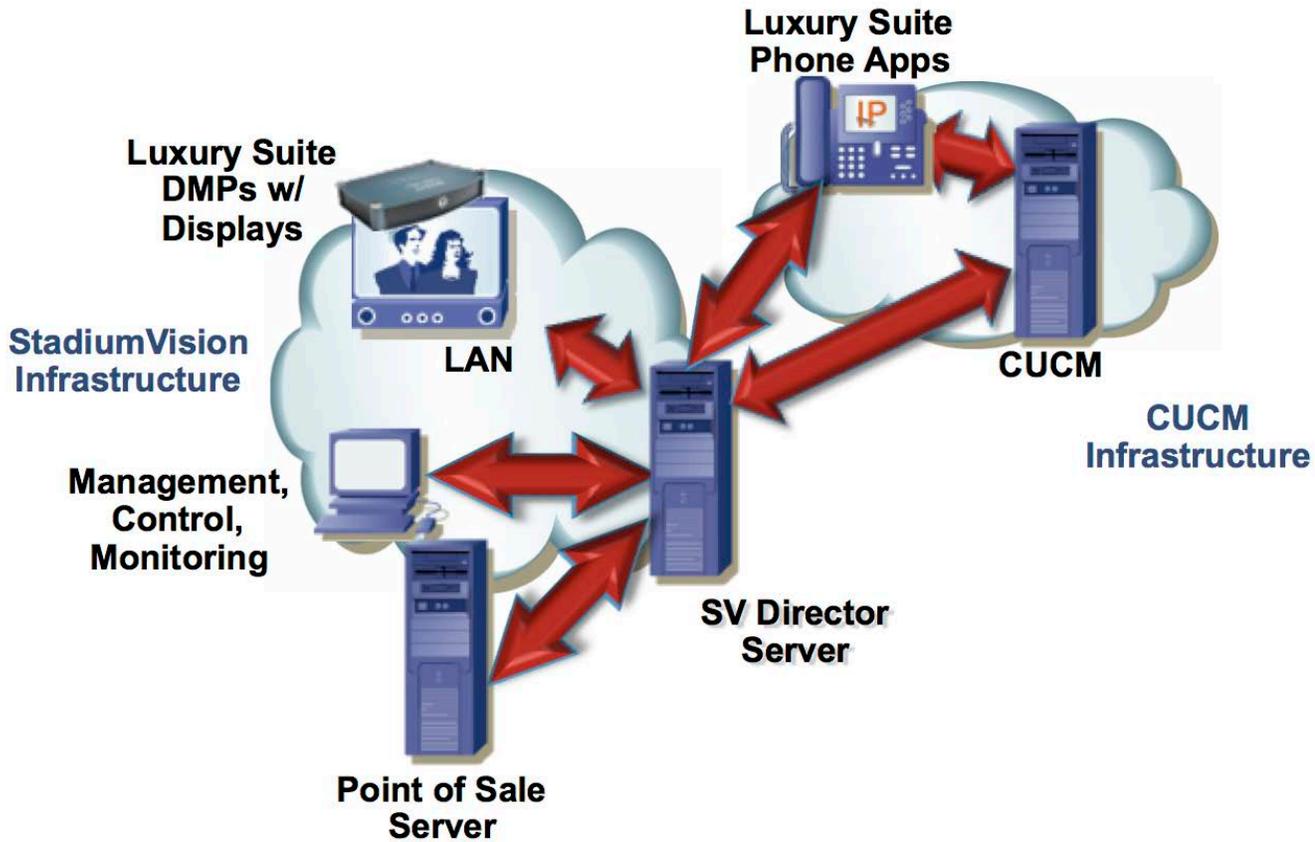
Local TV Control

Typically, TVs that are placed throughout the concourses and in “public” spaces are controlled centrally through Cisco StadiumVision Director. However, TVs that are placed elsewhere, such as

luxury suites, restaurants, clubs and bars, back office, and press boxes, require the ability for local control.

Several components of the Cisco StadiumVision solution work together to provide local TV control, as shown in [Figure 2](#).

Figure 2. Local TV Control (IP Phone Example)



Options for Local TV Control

As shown in [Figure 3](#), Cisco StadiumVision provides several options for Local TV control, which includes controlling the state of the TV (on/off), the volume, and the channel displayed.

Figure 3. Local TV Control Options



The options include:

- A Cisco Unified IP Phone 7975
- A third-party touch panel, such as Crestron or AMX
- An infrared (IR) remote for the Cisco DMP
- Customer-selected device integrated with the Cisco StadiumVision Director User Control Application Programming Interface (API)

Only one option can be used to control a given Cisco StadiumVision TV. Typically, each option is used in specific areas of the venue.

- Cisco IP Phones are generally used for local control in luxury suites, in back offices, and in press boxes.
- Third-party touch screen devices are generally used in clubs, restaurants, and bars, though they can be used in large luxury suites (recommended for those with more than 9 TVs). They can be used to control over 100 TVs.
- The Cisco IR Remote is generally only used in situations where local control of a single TV is needed and the other options are not feasible.

Regardless of the type of device used, the local TV control device cannot change the template used or any content on the screen (such as the ticker, ads in the playlist, or full-screen message) other than the channel. For example, if the TV is showing an emergency message, the local TV control device has no effect on the content displayed.

Note: As an exception to the above, the local TV control can be used to navigate away from the Welcome message in a luxury suite.

Cisco IP Phone

If a Cisco IP Phone is used, it must be a Cisco Unified IP Phone 7975. This phone provides a touch screen interface and color display to interact with the user and is the only phone supported as a local TV control device for Cisco StadiumVision.

The phone uses Cisco StadiumVision Director to provide instructions to the DMP for TV on/off, volume control, and channel selection.

If a DVD player, PC or other external source is connected to the TV, the Cisco IP Phone also allows the user to change the input to the locally attached video device through a pre-determined auxiliary input.

In luxury suites (and other areas where the phone acts as the primary control device for the TVs), it is recommended that the Cisco StadiumVision Services page be configured as the standard phone display. In press boxes, back offices, and other locations where using the phone as a local TV control device may be secondary, it is recommended that the default call services phone display remain and "Service URL" buttons be configured for easy access to TV Services and Commerce Services.

Note: Although additional Cisco IP Phones may be present, only one Cisco IP Phone can be associated with the DMPs in the suite and, therefore, only one can provide the local control. Any additional Cisco IP Phones act simply as phones and are provided for the user's convenience.

Third-Party Touch Panels

Typically, third-party touch panels are used for local TV control in areas where Cisco IP Phones cannot be secured or in locations (bars, restaurants, clubs) where a significant number of displays need to be controlled with a single device.

The third-party device uses the Cisco StadiumVision Director API for local control to provide instructions to the DMP for TV on/off, volume control, and channel selection.

The third-party touch panel displays a menu of up to 10 favorite channels. In the event that the desired channel is not among the favorite channels, the third party touch panel allows users to select from a larger channel lineup.

Note: The favorites feature for panels will be removed in a future release.

Currently supported third-party touch panels include Crestron (<http://www.crestron.com/>) or AMX (<http://www.amx.com/>). These devices communicate through Cisco StadiumVision Director to provide instructions to the DMP for TV on/off, volume control, and channel selection.

User Control API

The User Control API allows a developer to create a control application. The API is platform-agnostic so applications can be developed for any platform. Some examples could be iOS, Android, Blackberry, or a standard web browser. If you are interested in developing an application for local control using the User Control API, please contact svd-lclclt@external.cisco.com.

IR Remote

Unlike the Cisco IP phone and the third-party touch panel, the IR Remote (an optional accessory for the Cisco DMP) communicates directly with the DMP for on/off and volume control. It also communicates directly with the DMP for channel selection; however, the DMP pulls its defined channel lineup from Cisco StadiumVision Director.

If a DVD player, PC, or other external source is connected to the TV, the IR remote also allows the user to change the input to the locally attached video device.

Luxury Suite: A Unique Local Control Area

A luxury suite is a unique implementation of a local TV control area. Physically, a luxury suite generally consists of a “living room” space, kitchenette, a small bathroom, and an exterior balcony overlooking the venue. In the Cisco StadiumVision design, each luxury suite typically contains the following:

- One or more flat panel TVs, each with an attached Cisco Digital Media Player (DMP). One of the TVs is often identified as the “welcome” TV to display a introductory welcome message. Each TV can display different content/channel.
- One Cisco IP Phone, each associated with Cisco Unified Communications Manager. This phone provides touch screen control of all TVs in the suite, and should be situated so that a person using it has a view of all TV positions.

Figure 4 shows an example of a luxury suite.

Figure 4. Example Luxury Suite



Local TV Control in Luxury Suites

As mentioned previously, in Cisco StadiumVision a single, designated Cisco Unified IP Phone 7975 enables luxury suite owners and guests to control the power, volume, and channel selection for each of the TVs in the suite. The IP Phone can also be configured to provide access to commerce services, which allow users to place orders with the venue’s catering and merchandise store, as shown in [Figure 5](#).

Figure 5. Luxury Suite Local TV Control and Commerce Integration



Using Cisco StadiumVision Director Video Management Services on a Cisco IP Phone, owners and guests can control the power and volume of the TV and access a channel guide to select from the full channel lineup. Luxury suite owners and guests can also use the Cisco IP Phone to change the input on a particular video display to a locally attached DVD player or PC.

Using Cisco StadiumVision Director Commerce Services on the same Cisco IP Phone and integration with a third-party PoS application, owners and guests can also place orders with the venue's catering and merchandise departments. Luxury suite owners, guests, and suite attendants can easily navigate through menus, view images of the items on one of the HD TVs in the suite, and easily (and securely) place an order from the Cisco IP Phone touch screen.

Note: Although there are other options for local TV control, the Cisco IP Phone is the preferred option for a luxury suite because it allows access to both video control services and commerce services from a single device. In addition, only one control device can be used at a time in a Luxury suite. Therefore, if you are using an IP Phone an IR remote cannot be used, and vice versa.

Welcome Display in a Luxury Suite

In a luxury suite, one of the TVs is typically identified as the main or "welcome" display. This allows the venue to display static signage that welcomes the suite visitors to venue and instructs them to use the IP Phone to control the room (as shown in [Figure 6](#)).

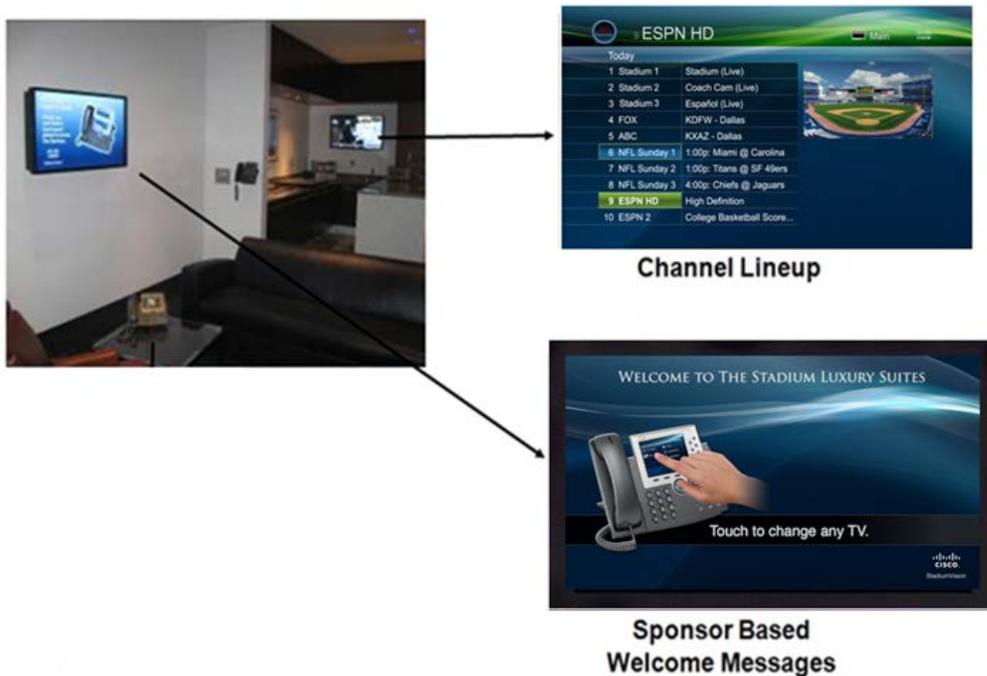
Figure 6. Luxury Suite Welcome Display



Customization in a Luxury Suite

Using the Cisco StadiumVision solution, the IP Phone display and content displayed on the TVs in the luxury suite can be customized for the specific venue, event, or luxury suite owner.

Figure 7. Luxury Suite Customization



For example:

- The “welcome” TV can display information unique to the suite owner or sponsor.
- Each TV in the suite can display select advertisements (using an L-wrapper template) as defined by the luxury suite owner.
- The Cisco IP Phone can display the logo of the venue sponsor, the team, or the suite owner.
- The channel lineup on the TV can display the team logo.

This customization not only enables a unique experience for the suite owner, but also enables additional revenue streams for the venue through sponsorship.

Required Applications and Services

There are several applications and services that play a role in enabling the local control. Some are part of the Cisco StadiumVision family of software, others are standard Cisco offerings.

- Cisco StadiumVision Director (Base License)

Generally speaking, Cisco StadiumVision Director enables centralized content and scheduling control and administration across the entire venue. It provides a set of applications to establish, coordinate, and manage interactivity between all areas of the venue. Cisco StadiumVision Director is also used to define the channel lineup for the venue.

With respect to local TV control, Cisco StadiumVision Director contains definitions for each of the DMPs (which are attached to TVs), Cisco IP Phones, and third-party touch panels. Leveraging those definitions, Cisco StadiumVision Director allows users to create local control areas by designating which DMPs are to be controlled by a given Cisco IP Phone or third-party touch panel.

Note: All designated local control areas, including clubs, bars, restaurants, back offices, and press boxes, are defined using the “Luxury Suites” tab in Cisco StadiumVision Director.

Regarding channel selection, Cisco StadiumVision Director also contains the definitions of each individual channel and the channel lineup.

Each video stream received from the Cisco StadiumVision headend is associated with a locally-designated channel.

The channel lineup includes a listing of the defined channels and is accessible by the local TV control devices.

Using the master channel line up, you can create customized per-area channel guides for use in the local control areas.

- Cisco StadiumVision Director Luxury Suite Applications: Video Management Services

This is an optional set of Cisco StadiumVision Director licensed services that enables the Cisco Unified Communications IP Phone environment to interact with the TV to control power, volume, and channel selection.

- Cisco StadiumVision Director User Control API

This is an optional set of Cisco StadiumVision Director licensed services that allows third-party touch panels or other devices with the API to be used for local control in areas where IP phones are not secure, or where significant numbers of displays are to be controlled with a single device.

- Cisco Unified Communications Manager (CUCM)

CUCM is an enterprise-class IP telephony call-processing system that provides traditional telephony features, such as speed dials, as well as advanced capabilities. This is only required for IP phone control.

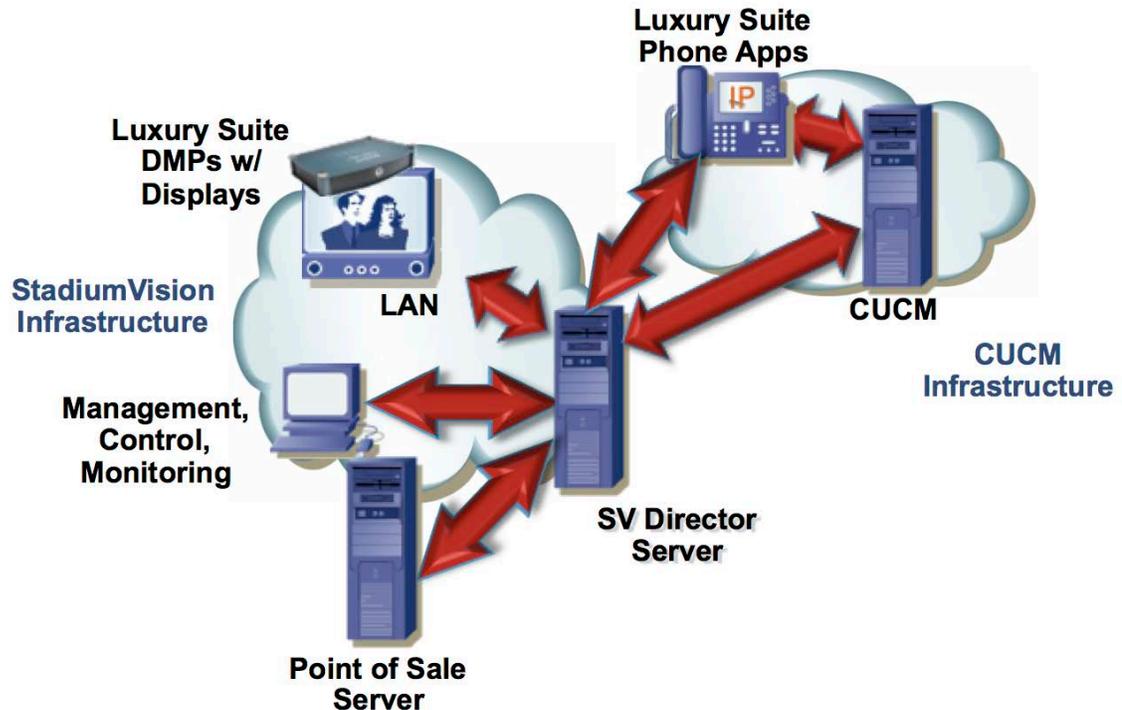
Process Flows

This section provides an overview of the flow of the local TV control processes.

Local TV Control Using a Cisco IP Phone

At a functional level, several components interact to enable the communications required for local TV control from a Cisco IP Phone.

Figure 8. Local TV Control Using a Cisco IP Phone



To enable the TV control process:

- The channel guide and associated icons are defined in Cisco StadiumVision Director.
- The underlying commands used by the DMP to change the channel, input, and volume are configured in Cisco StadiumVision Director.
- The images that make up the phone UI (including the icons) are stored in Cisco StadiumVision Director.
- The IP Phone is subscribed to the Cisco StadiumVision Services on CUCM.

When the user touches TV/Volume on the IP Phone (for example to change a channel):

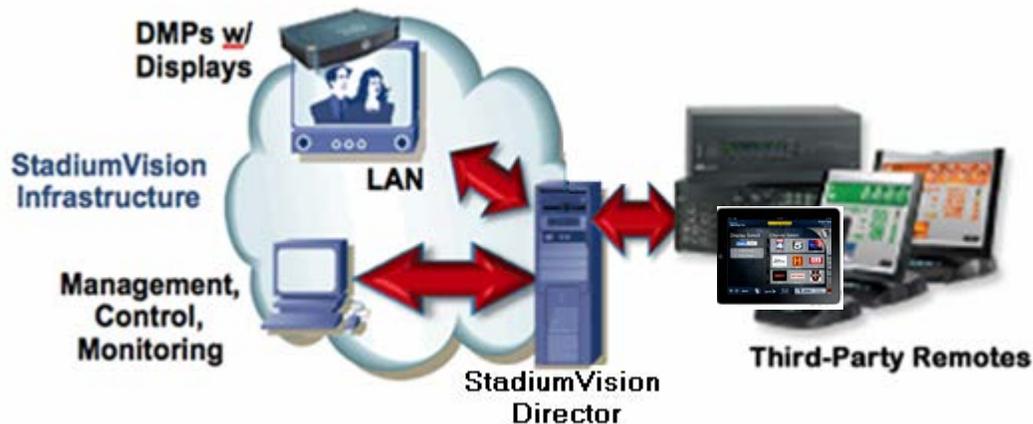
1. The IP Phone sends a request for video control services to Cisco StadiumVision Director.
2. The Cisco StadiumVision Director dynamically creates the XML (content and pointers) for the local TV control device. Simultaneously, Cisco StadiumVision Director sends an HTTP request to CUCM for the phone's speeddial information (if using speeddials).
3. The Cisco StadiumVision Director sends the XML information to the IP phone to update the touch-screen content. The XML includes URLs to the screen graphics that the phone must show next. These graphics are built by Cisco StadiumVision Director on the fly as the user navigates through the menus.

4. The Cisco StadiumVision Director simultaneously sends HTTP commands to the DMP to effect the channel change (or other command). These commands instruct the DMP to “listen to” a different IP multicast address.
5. The DMP joins the new IP multicast group to pick up the new channel.
6. The DMP receives the video content from the IP network via IP Multicast, merges the new video stream into the correct template, and sends it to the TV via an HDMI, S-Video, or component video (YPrPb) connection.

Local TV Control Using a Third-Party Touch Panel or User Control API Device

At a functional level, several components interact to enable the communications required for local TV control from a third-party touch panel.

Figure 9. Local TV Control Using a Third-Party Touch Panel or User Control API Device



To enable the TV control process:

- The channel guide is defined in Cisco StadiumVision Director.
- The underlying commands used by the DMP to change the channel, input, and volume are configured in Cisco StadiumVision Director.

When the user touches TV/Volume on the third-party touch panel (for example to change a channel):

1. The touch panel sends a request for video control services to Cisco StadiumVision Director user control API.
2. The Cisco StadiumVision Director server sends the XML information to the touch panel to update the touch panel content.
3. The Cisco StadiumVision Director server simultaneously sends HTTP commands to the DMP to effect the channel change (or other command). These commands instruct the DMP to “listen to” a different IP multicast address.
4. The DMP joins the new IP multicast group to pick up the new channel.
5. The DMP receives the video content from the IP network via IP Multicast, merges the new video stream into the correct template, and sends it to the TV via an HDMI, S-Video, or component video (YPrPb) connection.

Chapter 2 Planning

This chapter provides information about how to plan for local TV control in a Cisco StadiumVision venue.

Selecting the Appropriate Control Device

The device chosen for local TV control depends largely on the number of TVs to be controlled.

Table 2. Selecting the Appropriate Local TV Control Device

Quantity of TVs	Example of Location	Recommended Device
1	Press box, back office	IR remote or Cisco Unified IP Phone 7975
1-9	Luxury Suite	Cisco Unified IP Phone 7975
>9	Bar, club, restaurant	Third-party touch panel

Note: Although the IP Phone can support up to 29 TVs, the initial TV selection panel can list up to 9 TVs. Therefore, the recommendation is to use the IP Phone in luxury suites with 9 or less TVs.

IR Remote

When using an IR remote for local TV control, keep the following in mind:

- Can control only a single TV.
- Requires line-of-sight access to the DMP's infrared (IR) receiver.
- Requires Cisco StadiumVision Alternate Device Services license.

Cisco IP Phone

When using a Cisco IP Phone for local TV control, keep the following in mind:

- Recommended option for luxury suites. However, if the venue uses a non-Cisco VoIP solution in the luxury suites, use a third-party touch panel for local control.
- Can control up to 29 TVs, but recommendation is to limit to 9. Greater than 9 TVs will require the user to navigate through multiple pages to locate the desired TV.
- If the phone is used in a suite with more than 9 TVs consider splitting the suite into 2 or more control areas, using a separate phone for each area.
- Only the Cisco Unified IP Phone 7975 can be used as a local TV control device.
- Requires Cisco Unified Communications Manager (CUCM).
- Requires Cisco StadiumVision Video Management Services license.
- Although the designated area, such as a luxury suite, can contain multiple Cisco IP Phones, only one can be used for local TV control.

Only the Cisco Unified IP Phone 7975 option allows both the Video Management Services and Commerce Services (which enables ordering of food and merchandise) to be run on a single device. Therefore, it is the recommended option for luxury suites.

Third-party Touch Panel

When using a third-party touch panel for local TV control, keep the following in mind:

- Recommended option for bars, restaurants, clubs and large suites (with more than 9 TVs).
- Supported and tested vendors include Crestron and AMX.
- Touch panels come in many configurations including wired and wireless.
- Requires Cisco StadiumVision Alternate Device Services license.

Several models of Crestron and AMX devices can work with the Cisco StadiumVision solution. Work with the third-party device integrator to identify which is appropriate for your implementation.

Custom Local Control Application

Cisco StadiumVision Director includes an API that can be used by a 3rd party application to perform local TV control. Use of this User Control API is currently restricted, and permission to use is granted on a case-by-case basis. Partners and customers interested in leveraging this API should contact their Cisco account team and provide a brief description of plans and objectives. Once approved API documentation will be made available.

The intent of this API is to allow customers and partners to develop their own local control apps for tablets, smart phones, etc. Cisco does not currently offer any apps beyond the 7975 local control app, which does not use this API. A couple of reference apps for Android and iOS do exist, and these can be demo'ed or shared as part of enabling a customer or partner in this area.

The User Control API works over HTTP or HTTPS and uses XML in POST requests and GET responses. When posting a message, client applications must set the content type to application/xml.

NOTE:

If you are interested in developing an application for local control using the User Control API, please contact your Cisco Systems sales representative.

An app using the API must authenticate itself to Cisco StadiumVision Director using a PIN that has been pre-provisioned on Cisco StadiumVision Director. The PIN serves to authenticate the app, and also identifies the luxury suite(s) that it has been authorized to control.

Three distinct PIN types exist:

1. Unique permanent PIN for each suite in order to access and control the devices within. This PIN type is used for a device that is permanently assigned to a suite, for example a wall mounted tablet.
2. Temporary PIN for each suite that changes per event script run, can be displayed on TV. This PIN type is used for temporary devices, for example suite guests using their personal smart phone for local control. Temporary PINs can be aged so they expire once an event is over.
3. Common master PIN for administrative control. This PIN could be used by an administrator that needs to walk into any suite with a tablet or smart phone in hand, and control any TV.

Cisco StadiumVision Director offers a number of capabilities for managing PINs, including:

- a. Scheduled auto generation of new temporary PINs
- b. Export PINs to a file, for use by an installer or for the suite attendants to hand out to guests.
- c. Force the relevant temporary PIN to display on the TVs in a suite, for consumption by guests in the suites.

The API is best described as a RESTful web service. Functions that can be performed by an app using the API are listed below.

- The API album control capabilities for SSC include:
 - Retrieve all albums available for play on a specific player.
 - Retrieve common albums available for play on a one or more players.
 - Retrieve all albums available for play on a one or more players.
 - Retrieve the album play duration.
 - Set the album play duration.
 - Control album loading and unloading of content to the player.
 - Control play/pause/stop/next/previous actions of the album.
- Information capabilities include:
 - Query of which suites that can be controlled
 - Query of all players that can be controlled
 - Query of all players with in a suite that can be controlled
 - Query control features that exist within all suites
 - Query control features that exist within a specific suite
 - Query control features that exist for all players
 - Query control features that exist for a specific player
 - Query A/V inputs that exist for all players
 - Query A/V inputs that exist for a specific player
 - Query of closed captioning capabilities of StadiumVision Director
 - Query the channel guide for a specific suite
 - Query the status of all players that can be controlled
 - Query the status of a specific player
 - Detailed HTTP POST response messages in XML
- Control capabilities include:
 - Power on and off of the TV
 - Channel change to a channel within the guide
 - Channel change up or down from the current channel in the guide
 - Volume change to a specific value
 - Volume change up or down from current value
 - Mute the audio with a specific on or off
 - Mute and unmute the audio with a toggle
 - Closed caption on with specific CC setting
 - Closed caption off
 - A/V input change with specific input setting
 - Show and hide of the information banner on the TV

Physical Placement

Ensure that the controlling device is easily accessible and in a location from which most, if not all, TVs can be viewed. The recommended placement depends on the type of area.

Luxury Suites

TVs are typically placed in the kitchenette, in the living room space, and on the exterior balcony. Depending on the size and physical configuration of the luxury suite, more or fewer TVs may be installed. When installing TVs, it is recommended they be placed such that all can be seen from a central location (for control purposes).

Ensure that the controlling Cisco IP Phone is easily accessible and in a location from which all TVs can be seen. Recommended placement is in or near the middle of the room, perhaps on a central or side table. If the intended user of the controlling Cisco IP Phone is an attendant, it may be better to place the phone on a wall.

Other Local Control Areas

For restaurants, the recommendation is to place the third-party control unit near the bar area. For other locations, such as a press booth or locker room, simply ensure that the controlling device is easily accessible by the anticipated user and in a location that allows optimal viewing of the TVs it is intended to control.

IR Remote

For IR remotes, placement of the remote is not a consideration. However, if the IR remote is used, it must have a clear 'line-of-sight' to the Cisco DMP. Because the Cisco DMPs are typically mounted on the back of the TVs in the Cisco StadiumVision solution, it is often difficult to obtain a clear line of sight to the DMP. In such cases the IR extender may be used to achieve line of sight even though the DMP is hidden. An IR extender is included in the box with every DMP.

Software Requirements

Each option for local control has different software requirements regarding interaction with licensed components of Cisco StadiumVision.

Option	Cisco StadiumVision Director Control Panel	Cisco StadiumVision Director Video Management Services	Cisco StadiumVision Director Alternate Device Services	CUCM
Cisco IP Phone	✓	✓ ¹		✓
Third-party touch panel	✓		✓ ²	
IR Remote	✓		✓	

For information about the supported/required software levels, see the [Cisco StadiumVision Release Notes for Release 3.0](#).

¹ Requires one license per IP Phone used for local TV control.

² Requires one license per third-party device used for local TV control.

Summary Local TV Control Design Guidelines

Table 3. Deployment Rules

Function	Rules
Local TV control	<p>General</p> <ul style="list-style-type: none"> Place the control device in a central location where most or all TVs can be viewed <p>Cisco IP Phone</p> <ul style="list-style-type: none"> Model 7975 only Can control up to 29 TVs; recommended for controlling up to 9 TVs (DMPs) CUCM required Phone graphics loaded into Cisco StadiumVision Director Video Control Services enabled on phone <p>Third-party Touch Panel</p> <ul style="list-style-type: none"> Crestron and AMX supported Can control 100s of TVs (DMPs) Designate separate DMP for overhead audio in clubs and restaurants <p>Customer-selected Device Integrated with User Control API</p> <ul style="list-style-type: none"> Device agnostic Rich, customized user interface and branding Controls large number of devices <p>IR Remote</p> <ul style="list-style-type: none"> For use in controlling a single DMP Requires line-of-sight access
Central Control and Administration (Software Required)	<p><i>Cisco StadiumVision Director Control Panel Base License</i></p> <ul style="list-style-type: none"> Order single license for a single sever, order two licenses for redundant servers Provides base services for operation and optional expansion licenses First 10 Display Licenses included; first 10 Video Mgmt Licenses included <p><i>Cisco StadiumVision Director 10 Video Mgmt Licenses</i></p> <ul style="list-style-type: none"> One license required per Suite (or other area where the IP Phone is used to for local TV control) Order in multiples of 10 Maximum count 500 <p><i>Cisco StadiumVision Director 10 Alt Device Licenses</i></p> <ul style="list-style-type: none"> One license required per Touch Panel or other input device Order in multiples of 10 Maximum count 500
Central Control and Administration (Configuration Required)	<p>Cisco StadiumVision Director must contain definitions for each locally controlled area (luxury suite):</p> <ul style="list-style-type: none"> Each DMP Each Cisco IP Phone to be used for local control Each third-party touch panel to be used for local control <p>Cisco StadiumVision Director must contain definitions for the channels:</p> <ul style="list-style-type: none"> Each local channel (corresponding to a video stream from the headend) Channel lineup for IP phone/IR remote and for third-party touch panel <p>Favorite channels (up to 10) for use with the third-party touch panels</p>

Application Integration	<p>If Cisco IP Phone is used:</p> <ul style="list-style-type: none"> • Cisco Unified Communications Manager • Cisco StadiumVision Director - Video Management Services <p>If third-party touch panel or User Control API is used:</p> <ul style="list-style-type: none"> • Cisco StadiumVision Director - Alternate Device Services • See your Crestron or AMX integration partner for information on integrating the third-party touch panels. • See your Cisco Systems sales representative to support a customer-selected device integrated with User Control API.
Video Endpoint	<ul style="list-style-type: none"> • Cisco DMP 4310 • Content is controlled by the DMP • Volume can be controlled on the DMP or on the TV (via the DMP) • On/off is controlled at the TV via commands sent from the DMP
Video Endpoints in a Luxury Suite	<ul style="list-style-type: none"> • Quantity: up to 9 recommended; 29 supported • Placement: typically kitchenette, living room, balcony

Recommendations for the appropriate Crestron or AMX device should come from the integration partner. Cisco has co-developed software with each of these two companies and tested their implementation of the API.

Chapter 3 Implementation

This chapter provides information about how to implement local TV control in a Cisco StadiumVision venue.

Prerequisites

The following should be done prior to implementing local TV control and are not discussed in this guide.

Requirement	For More Information, See
Cisco StadiumVision headend installed/configured	Cisco StadiumVision Headend Design and Implementation Guide
Video feeds mapped to IP Multicast streams from headend	Cisco StadiumVision Headend Design and Implementation Guide
DMPs and attached TVs installed	Cisco StadiumVision Video Endpoint Design and Implementation Guide
DMPs configured in Cisco StadiumVision Director	Cisco StadiumVision Video Endpoint Design and Implementation Guide
IP Multicast streams mapped to local channels in Cisco StadiumVision Director	Cisco StadiumVision Content Creation Design and Implementation Guide
Channel guide defined in Cisco StadiumVision Director	Cisco StadiumVision Content Creation Design and Implementation Guide
Templates, event scripts, and additional content defined in Cisco StadiumVision Director	Cisco StadiumVision Content Creation Design and Implementation Guide
Cisco Unified Communications Manager installed/configured (if IP Phone used)	Related Cisco Unified Communications documentation

Implementation Guidelines

Keep the following in mind as you design and implement local TV control.

- Any designated area requiring local TV control (restaurant, club, bar, back office, locker room, press box) must be configured as a “Luxury Suite” within Cisco StadiumVision Director.
- When an IP phone is used for as the local control device for a designated area, it is configured using the “IP Phone” tab of the “Luxury Suite” page.
- When a 3rd party device is used for local control, it is configured using the “Local Control” tab of the “Luxury Suite” page.
- Cisco StadiumVision Director recognizes an IP phone by its IP address. Hence the phones IP address must remain the same. This means the IP address need to be statically configured, or the DHCP server must be configured to always hand out the same IP address to a specific phone MAC address.
- The Cisco StadiumVision service includes pre-defined softkeys. An alternative set of softkeys is available. See the “[Alternative Softkey Mapping](#)” section for more information.

Implementation Summary

This section provides a high-level overview of what must be configured in support of local TV control.

Graphic Specifications

The graphics (or images) used in the deployment of a luxury suite are stored in different locations and have different specifications.

Graphic	Location	Specifications
IP Phone Desktop background	CUCM TFTP Server	Supplied with Cisco StadiumVision Director Can be custom created IP Phone 7975: 320x216x16
Welcome Message example	Cisco StadiumVision Director	Supplied with Cisco StadiumVision Director DMP 4310: 1920x1080
Channel icons used in channel lineup on the IP Phone	Cisco StadiumVision Director	Must be supplied by customer due to copyright IP Phone: 24x24, PNG (26x24 can also be used, height is fixed at 24) 3 rd party: 40x40, PNG
Team logo used in channel lineup on the TV	Cisco StadiumVision Director	Must be supplied by customer due to copyright DMP 4310: 300x180, PNG or JPEG
IP Phone Services background Bullets and service icons used on IP Phone services pages	Cisco StadiumVision Director	Supplied with Cisco StadiumVision Director

Information about how to load these files on the various devices is provided in subsequent sections.

Note on Changing the Phone Background in Cisco StadiumVision Director

Stadium Vision Director includes the ability to deploy IP Phone Backgrounds. However, this method of deployment is only recommended for the initial background graphic deployment. Note the following guidelines before using:

- It requires that all phones are associated to a single user in CUCM.
- It requires that the Settings button on the IP Phones be enabled whenever it is invoked (security risk), this requires a phone reset
- It requires that the phone be enabled to “allow end user changing of the backgrounds”
- It requires that the IP Phone be in a specific state at the time of launch or it may not work (must be on call services display, if left on Directory or Settings it may not work)
- It uses simulated key presses to execute the background change, which is invasive as each press is visible on the phone as it is being executed
- It is not capable of pushing different images to different groups of phones (ie: stadium background on office phones versus event background on suite phones), it will either push to all phones at once or one at a time
- It is suitable only for a one-time initial bulk deployment but not scalable beyond that due to the settings changes that would be required on the phones for each push (enable settings in cucm, push graphic, disable settings- this results in multiple resets to the phone)

- There is no error reporting thus no way of knowing that the background was applied to a specific phone

As an alternative, you can use a third-party application called VoIP Integration Background Deployer for bulk background deployment. Further information on this application is documented in the [Cisco IP Phone Background Deployment for Cisco StadiumVision](#) application note located on Cisco.com.

Enabling IP Phones for Local TV Control

After the Cisco IP Phone and CUCM have been installed and are operational, to enable the Cisco IP Phone to act as local control for a designated area (such as a luxury suite) do the following:

Step	For instructions, see
<p>On CUCM:</p> <ul style="list-style-type: none"> • Configure Cisco StadiumVision services for the IP Phone • Configure any speed dials • Configure the IP Phone display: <ul style="list-style-type: none"> – For luxury suites, set the display of the IP Phone to the Cisco StadiumVision Services home page – For administrative areas, the display should be left as default • Load the Cisco StadiumVision background graphic. 	<p>CUCM Configuration</p>
<p>On Cisco StadiumVision Director:</p> <ul style="list-style-type: none"> • Identify the CUCM server • Configure the TabSynch User password (for speeddials) • Define the IP Phone as a control device and specify whether it is used in a luxury suite environment (both TV control and commerce integration services are enabled) or in an administrative office (only TV control services are enabled) • Associate the DMPs with local control area (Luxury Suite) and label the DMPs to assist in TV identification by the user • Associate the IP Phone with local control area (Luxury Suite) • Change the IP Phone background to the provided Cisco StadiumVision graphic (or venue-specific graphic) • Change the timeout values on the IP phone (optional) 	<p>Cisco StadiumVision Director Configuration</p>

Enabling Third-Party Touch Panels for Local TV Control

Work with the Crestron or AMX integration partner to ensure that the touch-panel is operational (connected to the network). If you have developed an application with the User Control API, other considerations, such as wireless connectivity, might need to be addressed.

To enable the third-party touch panel to act as local control for a designated area (such as a restaurant or club), do the following:

Step	For instructions, see
In Cisco StadiumVision Director: <ul style="list-style-type: none">• Define the third-party device as a local control device• Associate the DMPs with the local control area (Luxury Suite)• Associate the third-party device with the local control area (Luxury Suite)• Define the channel favorites (legacy feature)	Cisco StadiumVision Director Configuration

CUCM Configuration

In CUCM:

- A phone service must be added to enable the phone to access the Cisco StadiumVision Director services.
- Determine how the phone will display the Cisco StadiumVision services (the idle url configuration is discussed below)
- (Optional) Speeddials for services such as housekeeping or security which requires an Application User be created if to be accessible via the Cisco StadiumVision Services Home page.
- The Cisco StadiumVision phone background graphic must be stored on CUCM

Configuring CUCM to Provide Cisco StadiumVision Services

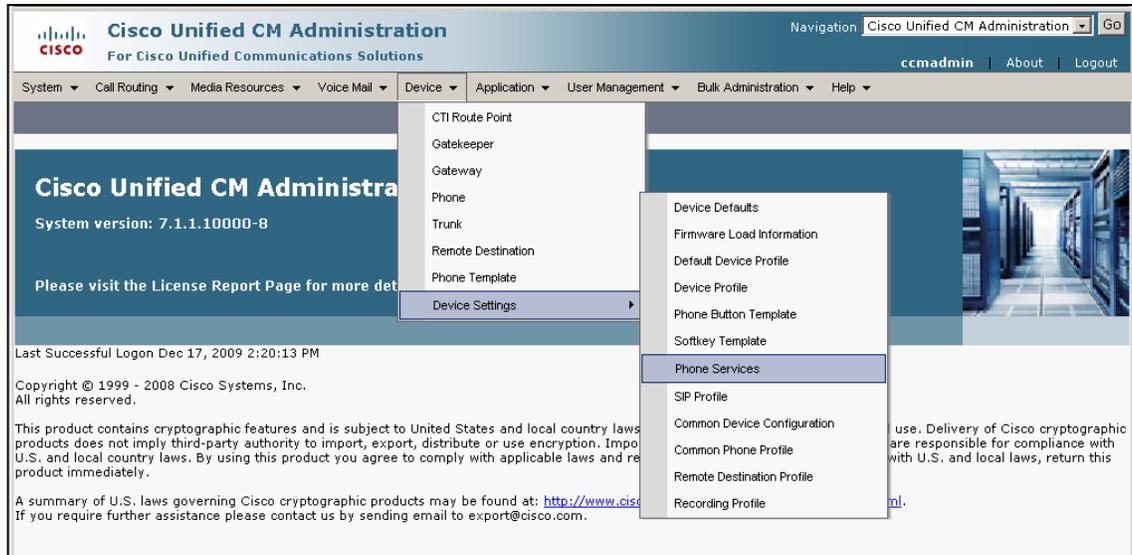
If the Cisco IP Phone is used for local TV control, the phone must have access to the appropriate services within CUCM.

To configure CUCM to provide Cisco StadiumVision services to the Cisco IP Phone:

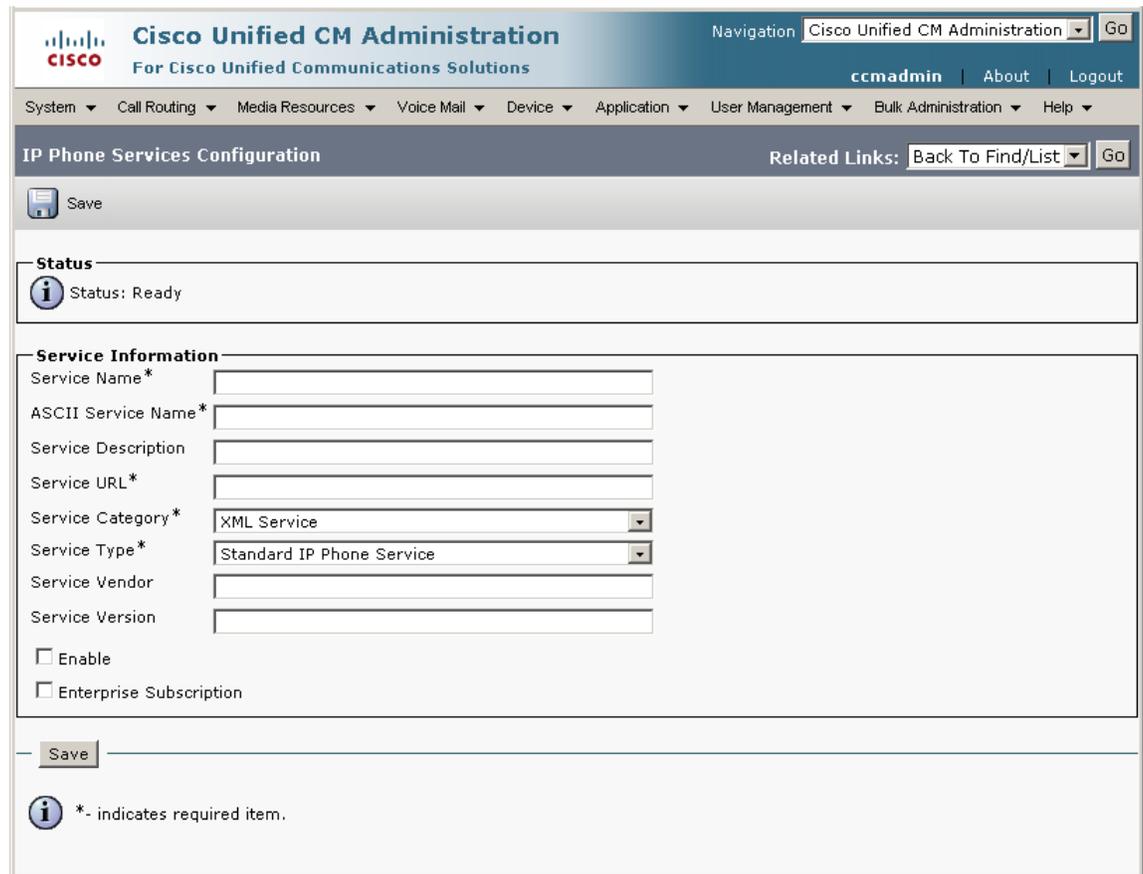
- Configure the Cisco StadiumVision Services
- Subscribe the phones to the appropriate services

Adding the Cisco StadiumVision Services

1. On the Cisco Unified CM Administration page, select **Device > Device Settings > Phone Services**.



- In the Find and List IP Phone Services window, click the **Add New** icon. The IP Phone Services Configuration window displays.



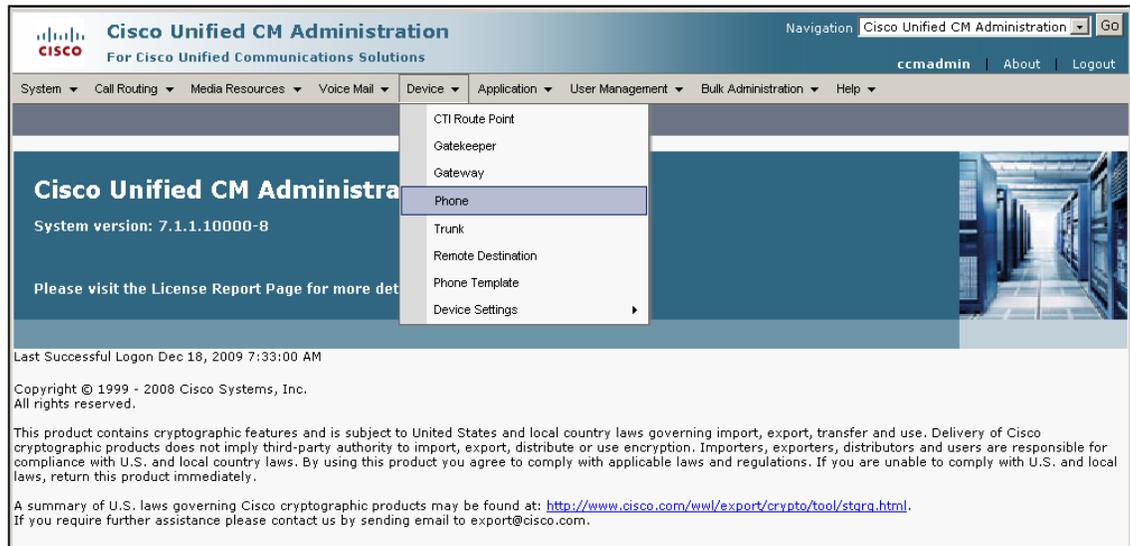
- Enter the following:
Service Name: Cisco StadiumVision Services
Service Description: Cisco StadiumVision Services
Service URL:

<http://<SV Director IP addr>:8080/StadiumVision/jsp/Sports?vc=no&device=#DEVICENAME#>

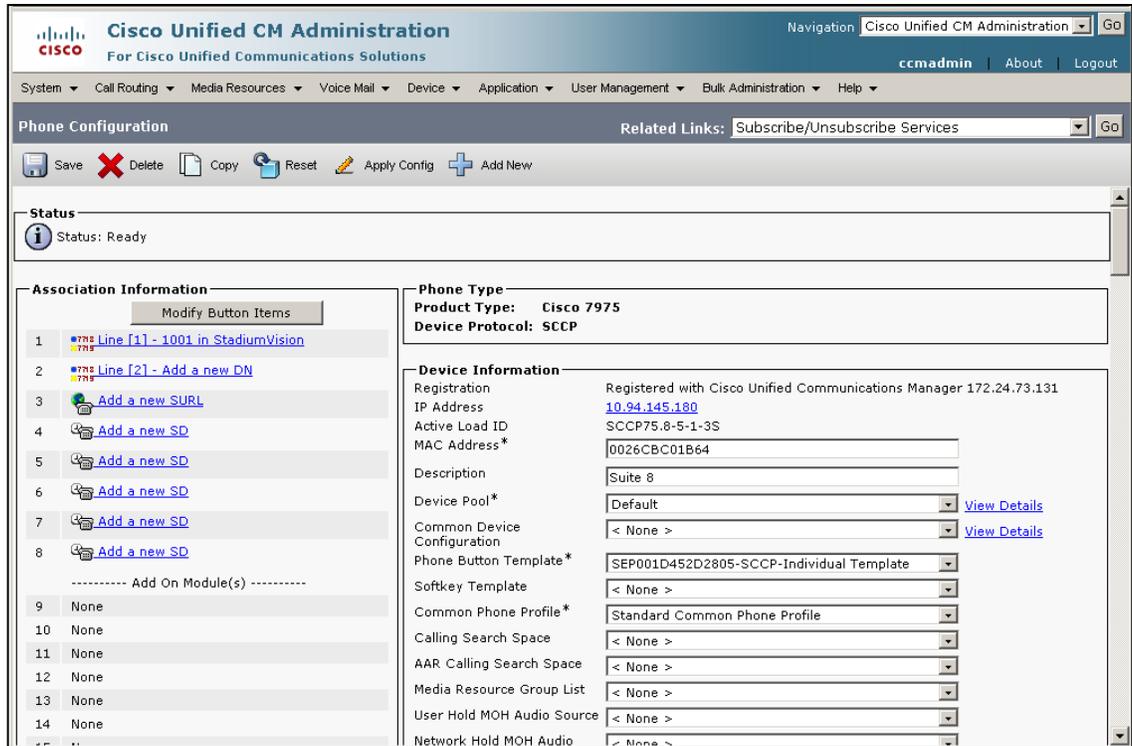
4. Select **Enable** checkbox. Do not select the Enterprise Subscription checkbox.
5. Click **Save**. The page redisplay.
6. Click **Save and Close**.
7. Click **Save** on the IP Phone Services Configuration page.

Subscribing Phones to Cisco StadiumVision Services

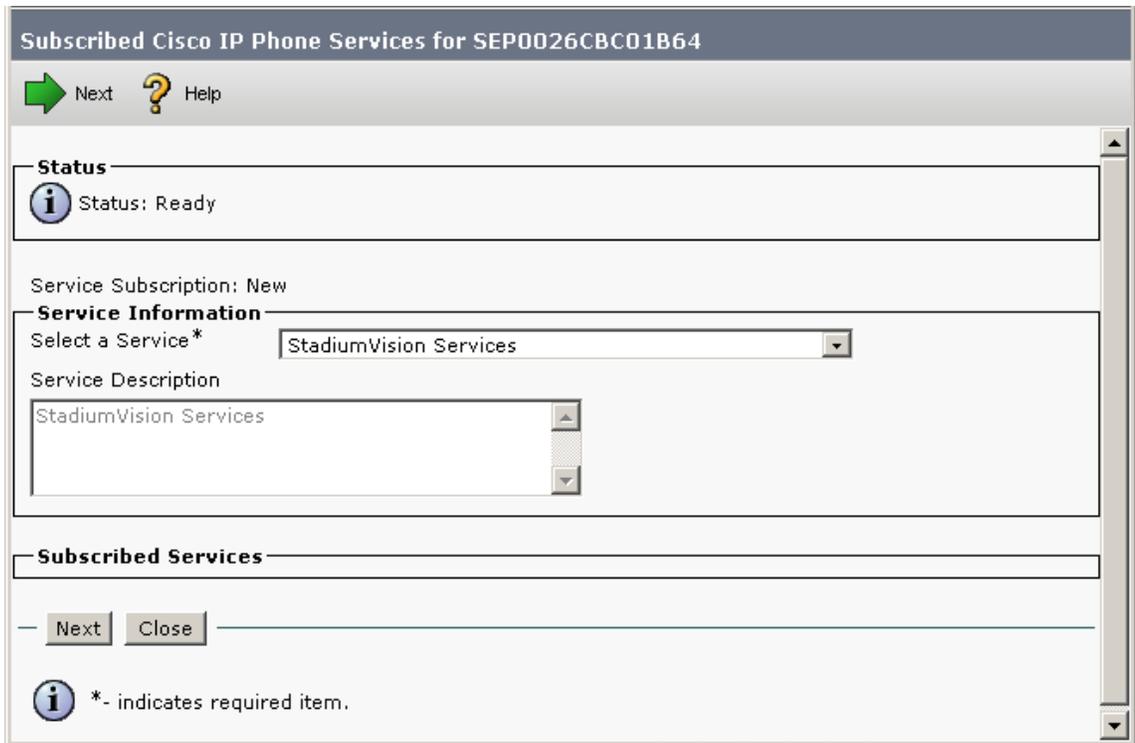
1. On the Cisco Unified CM Administration page, select **Device > Phone**.



2. To display a list of devices, click **Find**. The window redisplay.
3. Click the Device Name of the phone. The Phone Configuration window is displayed.



4. In the Related Links pull-down (upper right), select **Subscribe/Unsubscribe Services** and click **Go**. The Subscribed Cisco IP Phone Services window displays.
5. In the Select a Service field, choose **Cisco StadiumVision Services** and click **Close**.



6. To cause the Cisco StadiumVision services page to display by default on the phone, scroll down to the section titled "External Data Locations Information."

If the phone will be located in a luxury suite, it is recommended that the Cisco StadiumVision services page be the default display on the phone. In this case, modify the information on this page as described below.

If the phone will be located in a back office or other administrative situation, it is recommended that the standard CUCM call services be the default. In this case, skip this step.

External Data Locations Information (Leave blank to use default)	
Information	<input type="text"/>
Directory	<input type="text"/>
Messages	<input type="text"/>
Services	<input type="text"/>
Authentication Server	<input type="text"/>
Proxy Server	<input type="text"/>
Idle	<input type="text"/>
Idle Timer (seconds)	<input type="text"/>

In the Idle field, enter:

`http://<SV Director IP addr>:8080/StadiumVision/jsp/Sports?vc=no`

In the Idle Timer (seconds) field, enter **10**.

7. Click **Save**.
8. Reset the phones individually or as a group.

Configuring Luxury Suite Speed Dials

Within luxury suites, a venue can configure speed dials for the convenience of the guests. Up to three (3) speed dials can be displayed on the Cisco StadiumVision Home page. Recommended speed dials include concierge, housekeeping and security.

Cisco StadiumVision uses the CUCM AXL API to query the CUCM for the phone's speeddial configurations. Cisco StadiumVision then takes the speeddial text label and pointer and displays it on the Cisco StadiumVision Home page (figure shown below).

Configuring speed dials for the Cisco StadiumVision solution is a three step process:

- Configure the speed dials on the phone within CUCM
 - They must be assigned to a button on the phone
 - BLF Speeddial buttons will not work, only standard speeddial buttons
- Create the Application user in CUCM for Cisco StadiumVision AXL access
- [Identify the CUCM server to Cisco StadiumVision Director and provide the CUCM user ID and password](#)
- Confirm that the CUCM db schema version configured in the Cisco StadiumVision Director registry matches that of the CUCM (refer to [Cisco StadiumVision Director Configuration](#) section)

The first three speed dials that you configure in CUCM are displayed on the Cisco StadiumVision service plane, as shown below.



To configure the speed dials within CUCM:

1. Select **Device > Phone**.
2. Locate and select the appropriate phone.
3. In the Association Information section (on the left), select **Add a new SD** beside the desired button.



4. Enter the phone number and a label (such as Housekeeping or Security).
5. Click **Save**.

To configure the application user within CUCM:

1. Select User Management > Application User > Add new
2. Configure a username and password
3. Select Add to User group
4. Search for and Select the Standard TabSynch User
5. Save the Application User

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Device ▾ Application ▾ User Management ▾ Bulk A

Application User Configuration

Save **X** Delete Copy Add New

Application User Information

User ID* [Edit Credential](#)

Password

Confirm Password

Digest Credentials

Confirm Digest Credentials

Presence Group* ▾

Accept Presence Subscription

Accept Out-of-dialog REFER

Accept Unsolicited Notification

Accept Replaces Header

Device Information

Available Devices [Find more Phones](#)
[Find more Route Points](#)
[Find more Pilot Points](#)

Controlled Devices

CAPF Information

Associated CAPF Profiles [View Details](#)

Permissions Information

Groups [View Details](#) [Add to User Group](#) [Remove from User Group](#)

Roles [View Details](#)

Note: Cisco StadiumVision Director caches the speeddial information to reduce the number of requests to CUCM. If a speeddial LABEL is modified on the phone via CUCM, the Cisco StadiumVision Director Services must be restarted so that the correct speeddial labels are displayed.

In addition, if the CUCM is integrated with Active Directory, this will not impact the application user as all application users are local accounts on CUCM.

Loading the Cisco StadiumVision IP Phone Desktop Graphic

To enhance the Cisco StadiumVision user experience, the phone desktop graphic (or background) should be changed to the graphic that is provided in Cisco StadiumVision Director.



The recommended desktop graphics and a List.xml file are included in a zip file located on the Cisco StadiumVision Director server at:

`http://<SV_director_ip_addr>:8080/download/cucmitems-<version-build>.zip`

First, the graphic must be made available to the phone, which requires that the graphic be stored on the CUCM server.

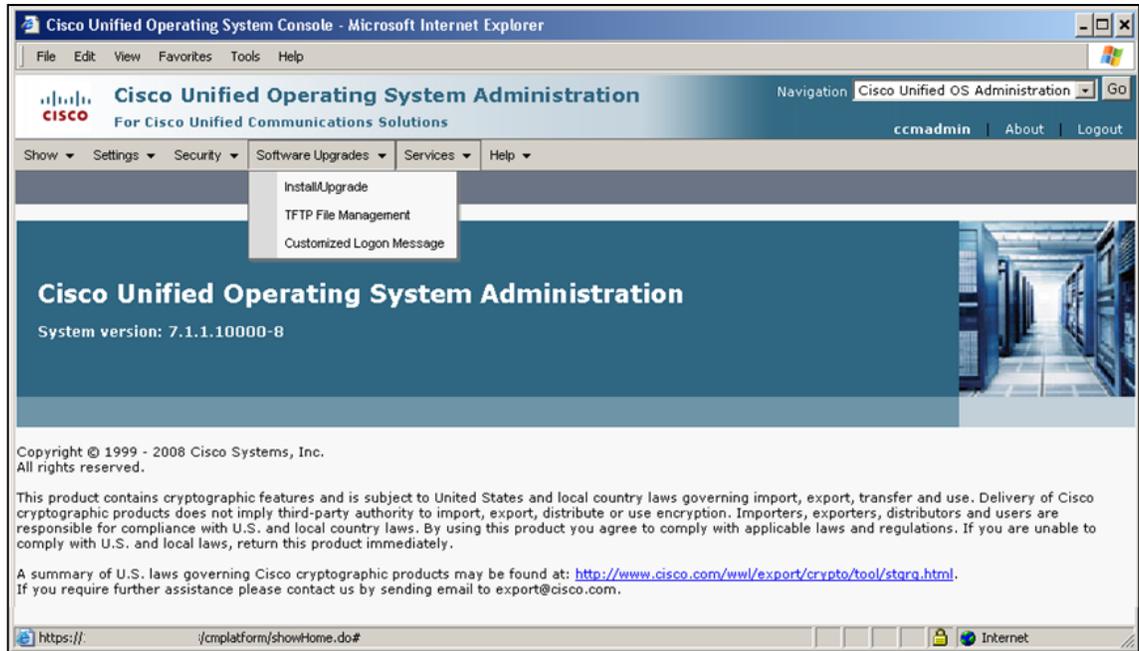
1. Download the cucmitems-<version-build>.zip file to your PC.
2. Unzip the file and review the contents, as necessary. The file contains two directories. Each directory contains a number of files including the background image, a thumbnail version (80x53) of the image, and a List.xml file.

If you opt to create a separate PNG file, be sure to create a thumbnail version (80x53) and update the List.xml file. The format of the provided List.xml file is:

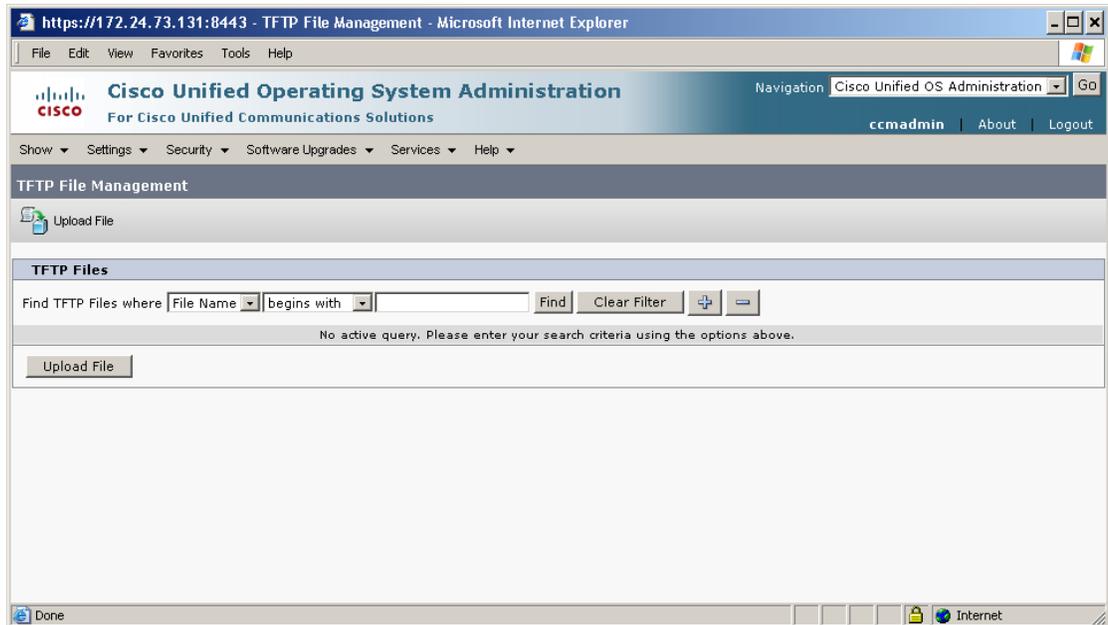
```
<CiscoIPPhoneImageList>
<ImageItem Image="TFTP:Desktops/320x216x16/SV2_BG80x53.png"
URL="TFTP:Desktops/320x216x16/SV2-Phone-background-010.png"/>
</CiscoIPPhoneImageList>
```

For more information, see the [CUCM IP Phone Administration](#) documentation. You can include up to eight (8) background images in the List.xml file. Make note of the order in which the images are listed, as you will need to know this when changing the image using Cisco StadiumVision Director. See the section on [Changing the IP Phone Background](#).

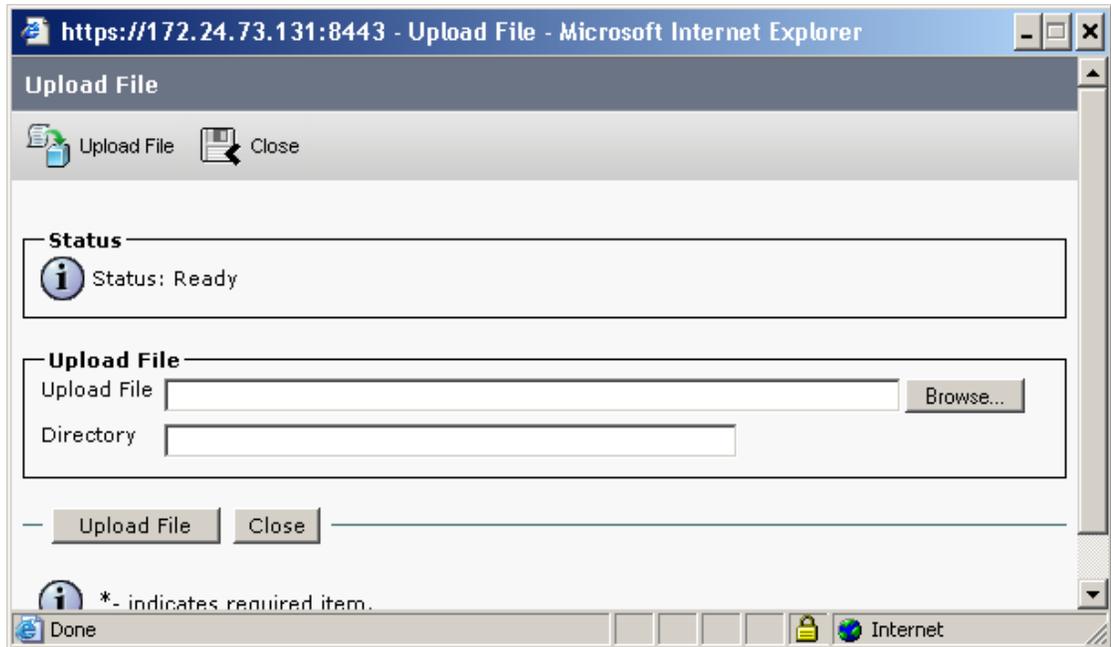
3. On the Cisco Unified Operating System Administration window, select **Software Updates > TFTP File Management**.



4. On the TFTP File Management page, click the **Upload File** icon.



5. Browse to select the desired files and upload them to a directory named `/Desktops/320x216x16`
Note: The file name and subdirectory parameters are case sensitive. Be sure to use the forward slash "/" when you specify the subdirectory path.



6. Use the Cisco StadiumVision Director to specify which background the phone should use. (See the section on [Changing the IP Phone Background.](#))

As an alternative, you can manually change the desktop graphic on a phone.

On the phone, go to **Settings > User Preferences > Background Images**. (It may take a few minutes for all of the images to load.) Press the number that corresponds to the desired graphic. Select **Save**, then **Exit**.

7. To cache the new List.xml file, restart the TFTP server:
 - a. On the Cisco Unified Serviceability page, select **Tools > Control Center – Feature Services**.
 - b. Select CM Server running the TFTP service, and click **Go**.
 - c. Click the radio button next to Cisco TFTP, scroll down and click **Restart**.

Configure the Background CUCM End User (IP Phone User) for Phone Background Access via Cisco StadiumVision:

1. For Suite or Public Facing Phones a single end user can be created for phone backgrounds
2. Administrative and office phones are typically associated to the user who owns the phone, these pwds typically will not be shared, again a single user can be created for this (can use same end user for all phones)
3. End Users are created via CUCM in **User Management > End User**
4. The end user must be assigned to the **Standard CCM End Users** group
5. The device(s) must be associated to the End User, select the Device Association button and search for/select all relevant devices

User Information

User ID*

Password

Confirm Password

PIN

Confirm PIN

Last name*

Middle name

First name

Telephone Number

Mail ID

Manager User ID

Department

User Locale

Associated PC

Digest Credentials

Confirm Digest Credentials

Device Information

Controlled Devices

Permissions Information

Groups

[View Details](#)

Roles

[View Details](#)

6. IF CUCM is integrated with Active Directory you will not be able to create the end user in CUCM
 - a. The AD admin must create a user for you
 - b. Once created the user can be viewed in CUCM and the CUCM admin can then add the user to the End User group and associate all of the devices
 - c. Note that if AD integration is used the password may expire and thus must be updated in Cisco StadiumVision Director.

Cisco StadiumVision Director Configuration

Following are the high-level steps for configuring local TV control in Cisco StadiumVision Director:

1. [Configure CUCM server integration](#)
 - Identify CUCM server
 - Set db schema version
2. [Set the IP Phone passwords](#) for the background image
3. [Configure the local control devices](#)
4. [Define the local control areas](#)
5. [Associate the DMPs with the area and define labels for the associated TVs](#)
6. [Associate the local control device with the area](#)
7. [Providing a Welcome Message on a Luxury Suite TV](#)
8. [Define the channel lineup](#). Remember to store the icons for the TV channels used on the IP Phone in Cisco StadiumVision Director. (See the *Cisco StadiumVision Director Content Manager Guide*.)
9. [Change the IP Phone background to a graphic stored in CUCM](#) (optional).
10. [Define labels for the external inputs on each TV](#) (optional).

Note: This section assumes the DMPs have already been defined within Cisco StadiumVision Director. If this is not the case, see the *Cisco StadiumVision Video Endpoint Design and Implementation Guide*.

To configure local TV control, log into Cisco StadiumVision Director as an Administrator. You will need to access the Control Panel and the Management Dashboard. Both are accessible from the Cisco StadiumVision Director main page: http://SV_Director_IP_addr:8080/StadiumVision/.

Figure 10. Cisco StadiumVision Director Main Menu

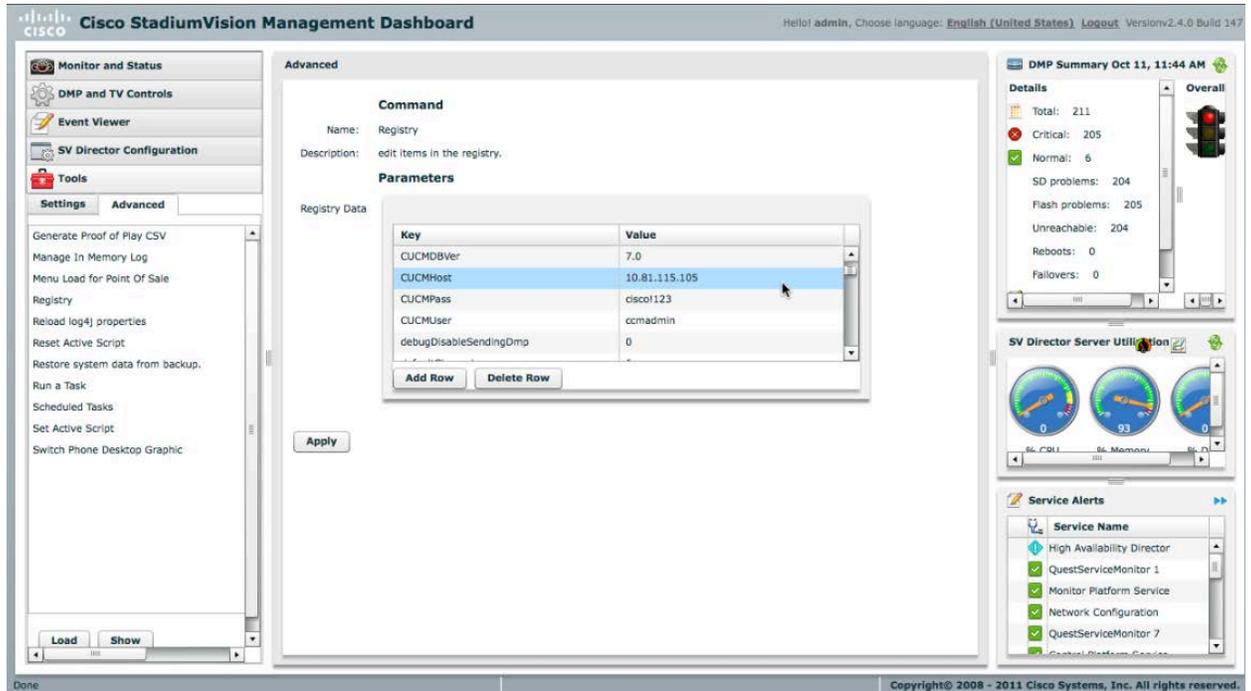


- To access the Cisco StadiumVision Control Panel, click **Control Panel**.
- To access the Advanced Tools page, click **Management Dashboard**, click **Tools** in the left column, and click the **Advanced** tab.

Configuring CUCM Integration

To enable communications between CUCM and Cisco StadiumVision Director in support of luxury suite speed dials:

1. On the Advanced Tools page of the Management Dashboard, click **Registry**.



2. Click **Load** to ensure that you are viewing the current settings.
3. Scroll through the Registry Data list to locate:

CUCMHost
CUCMPass
CUCMUser

Click the Value field for each and enter the appropriate information.

Notes: The registry entries are listed alphabetically, so the password (CUCMPass) is listed before the user ID (CUCMUser). Typically, people think of user ID followed by password, so ensure that you enter the correct values for each. The CUCMUser that is used needs to be a CUCM Application User that is a member of the Standard TabSync User Group.

The CUCMHost value defaults to 'localhost'. To properly use speed dials, this must be changed to the correct CUCM address. To disable the use of speed dials, set the CUCMHost registry entry to blank.

4. Click **Apply**.
5. Repeat step 2.
6. Scroll through the registry data to locate:
CUCMDBVer
7. Click the Value field and enter the appropriate information. Valid values are as follows:
 - For CUCM version 7.1: enter 7.1
 - For CUCM version 8.6: enter 8.6
8. Click **Apply**.

You must restart Cisco StadiumVision Director after saving the change to the value of the CUCMHost registry entry.

For more information about the Registry, see the [Cisco StadiumVision Director Management Dashboard User Guide](#).

For more information about the correct CUCM db version to use, see [AXL Versioning Support](#)

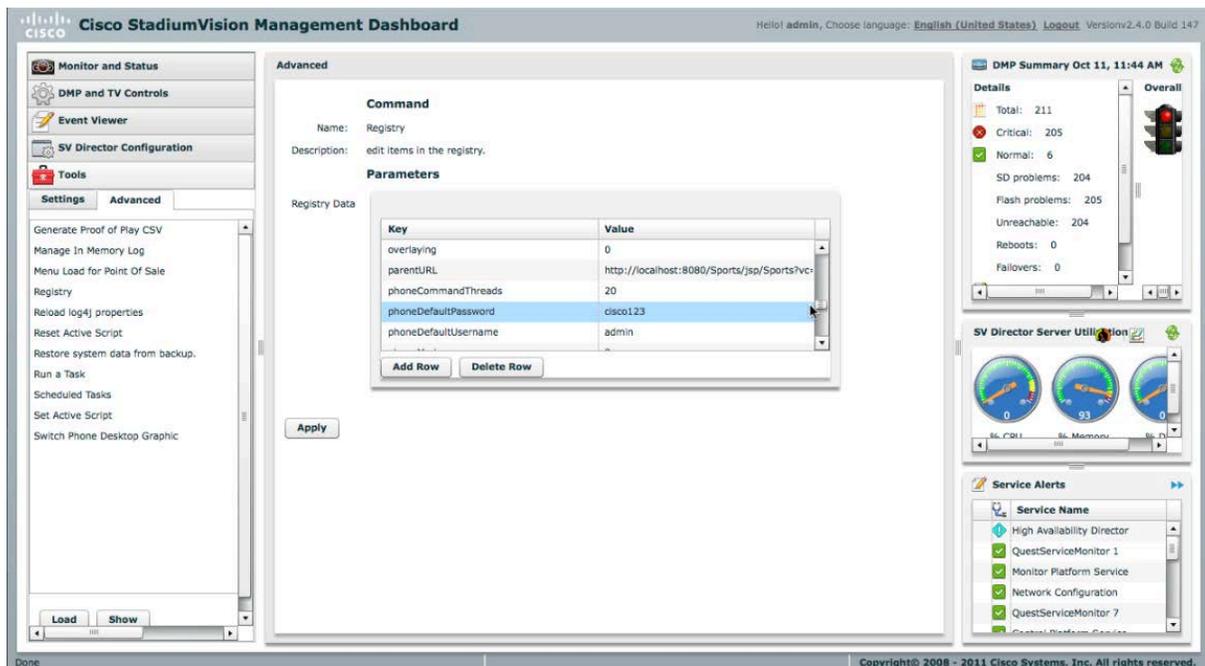
Setting IP Phone Passwords

Changing the phone desktop image requires that the phone's user ID and password be stored in Cisco StadiumVision Director. There are two ways to set the password in Cisco StadiumVision Director.

If phones each have unique userid and passwords, enter the Admin Id and Admin Password on the Admin>Device>IP Phone page.

If all phones have the same password, store the username and password in the registry as follows:

1. On the Advanced Tools page, click **Registry**.



2. Click **Load** to ensure that you are viewing the current settings.
3. Scroll through the Registry Data list to **phoneDefaultPassword** and **phoneDefaultUsername**.
4. Click the Value field beside each parameter and enter the appropriate values.
5. Click **Apply**.

For more information about the Registry, see the [Cisco StadiumVision Director Management Dashboard User Guide](#).

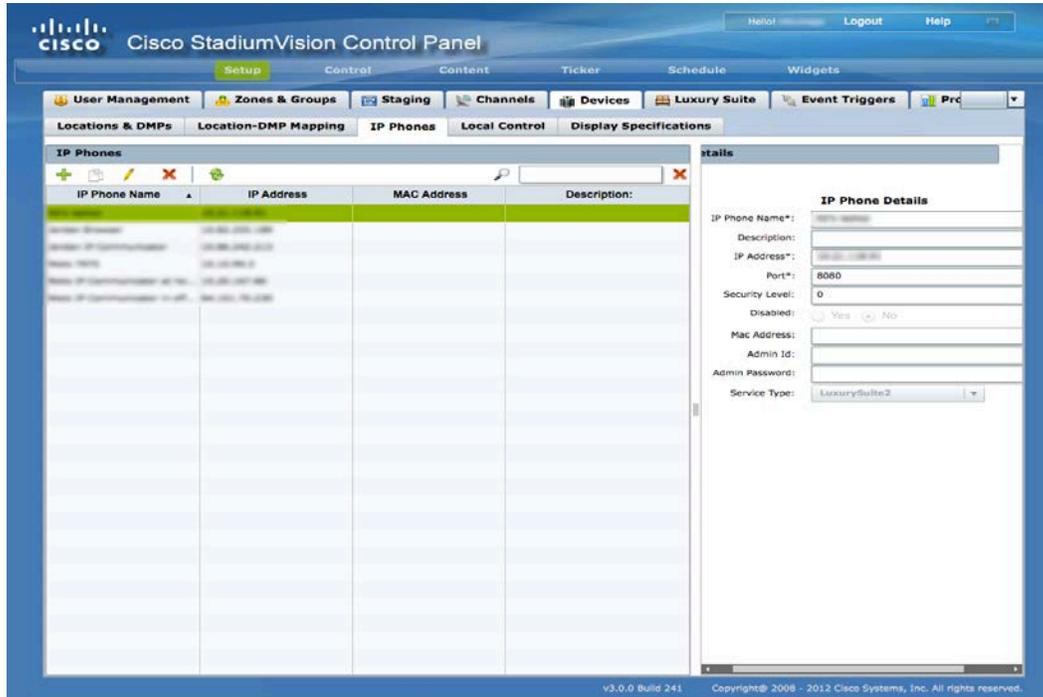
Defining Local TV Control Devices in Cisco StadiumVision Director

Before they can be associated with any designated area or any DMPs, all Cisco IP Phones and third-party control panels must be identified in Cisco StadiumVision Director.

Defining Cisco IP Phones

To define a Cisco IP Phone in Cisco StadiumVision Director:

1. On the Cisco StadiumVision Control Panel, click **Setup**.



2. On the Setup page, click **Devices > IP Phone**
3. To add a phone, click on the **+** (plus sign) at the upper right of the phone list.
4. Under Phone Details, specify the following:

IP Phone Name: Name you wish to use to identify the phone within Cisco StadiumVision Director.

Description: Specify location of phone

IP Address: IP address of the phone.

Port: Do not change the port value.

Security Level: Leave as default

Disabled: To enable this phone as a control device select the Enable radio button

MAC Address: MAC Address of the phone

Admin ID/Password: The Admin ID and Password are specific to this phone. You need only specify these if this phone has credentials that are unique. Otherwise, the global phone credentials are specified in the registry using the Management Dashboard. See [Setting IP Phone Passwords](#) section.

Service Type: There are two types of services available for the Cisco IP Phone

- *Luxury Suite* service includes support for both Cisco StadiumVision Director Video Services and Commerce Services.
- *Administrative Office* service includes support for only the Cisco StadiumVision Director Video Services. This is designed for use within administrative offices (and other locations)

where a Cisco IP Phone will be used for local TV control and there is no need for commerce integration).

5. Click **Save**.

Changing the Service Type or Disabling Service on Multiple IP Phones

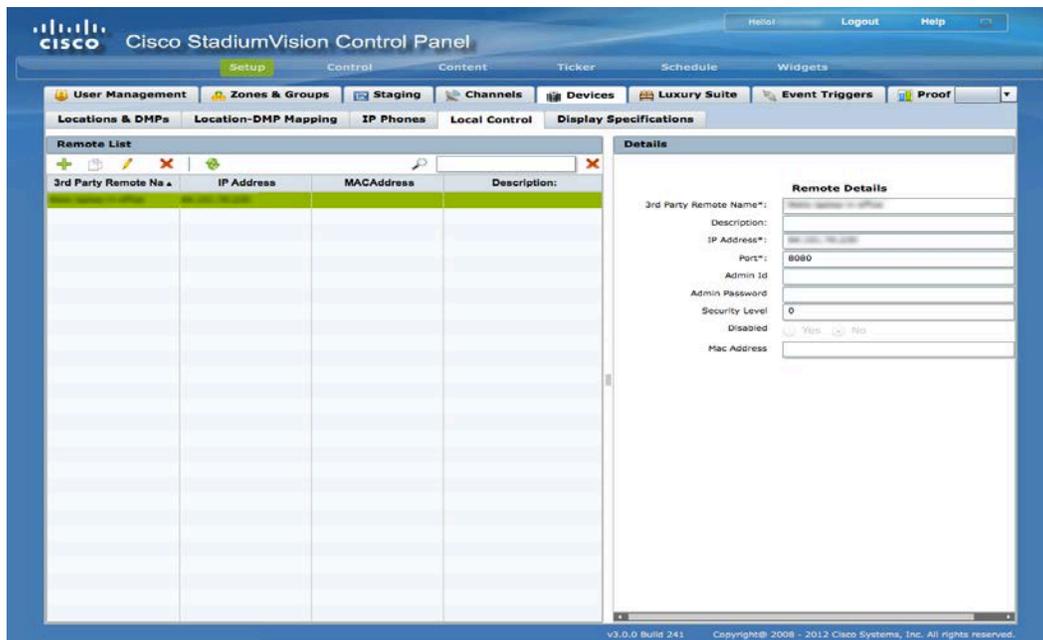
You can change the service type or disable Cisco StadiumVision services on multiple IP phones,

1. To select more than one IP Phone, press the Ctrl key while selecting each IP Phone. To select a consecutive group of IP Phones, press the Shift key and select the first and last desired IP Phone in the group.
2. Select the desired action:
 - a. select the Disable radio button or,
 - b. select the value for Service Type.
3. Click **Save**.

Defining Third-Party Touch Panels

To define a third-party touch panel in Cisco StadiumVision Director:

1. On the Cisco StadiumVision Control Panel, click **Setup**.
2. On the Setup page, click **Devices > Local Control**.
3. To add a device, click on the + (plus sign) at the upper right of the list.



4. Under Remote Details, enter the 3rd Party Remote Name and IP Address. Other fields are optional.
5. Click **Save**.

Disabling Service on Multiple 3rd Party Devices

You can change the service type or disable Cisco StadiumVision services on multiple third party devices,

1. To select more than one third party device, press the Ctrl key while selecting each device. To select a consecutive group of third party devices, press the Shift key and select the first and last desired device in the group.
2. Select the Disable radio button
3. Click **Save**.

Defining Luxury Suites in Cisco StadiumVision Director

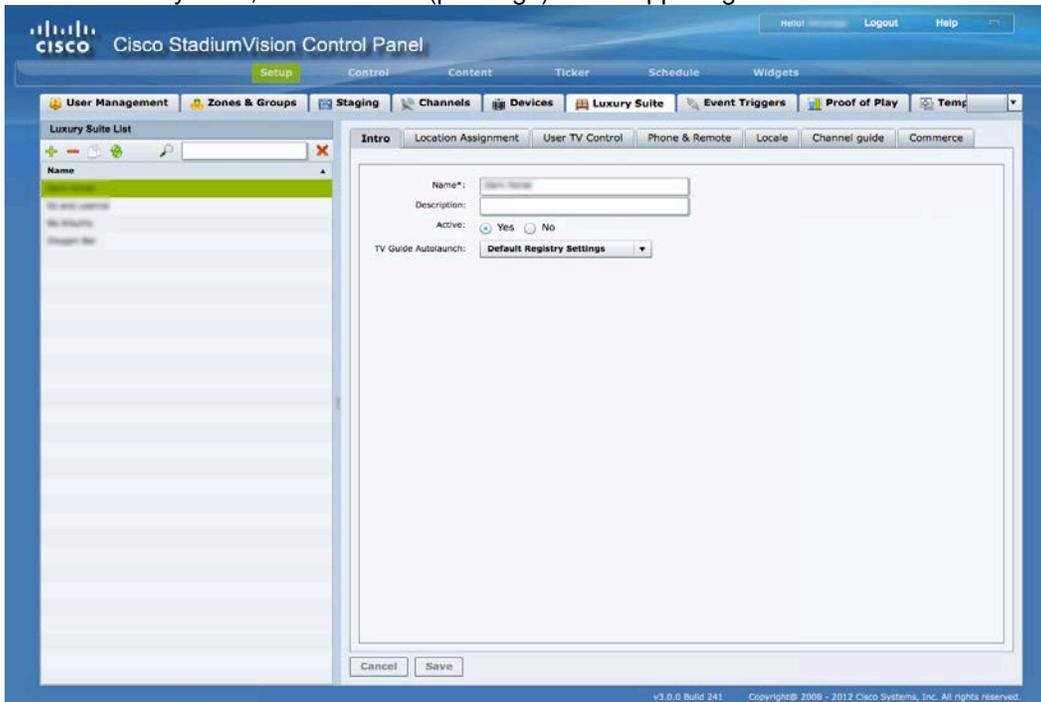
The definition of a luxury suite in Cisco StadiumVision Director includes one or more DMPs in a designated area and one Cisco IP Phone or third-party control panel for local control.

Note: Regardless of whether the designated area is a bar, club, restaurant, back office, press box, or luxury suite, it is defined in Cisco StadiumVision Director using the “Luxury Suites” tab.

Configuring Basic Information

To define a local control area (suite, bar, restaurant, club, etc.):

1. On the Cisco StadiumVision Control Panel, click **Setup**.
2. On the Setup page, click **Luxury Suites**.
3. To add a luxury suite, click on the + (plus sign) at the upper right of the list.



4. On the Intro panel, enter the Name of the luxury suite (or designated area). Optionally, you can enter a description. Leave the Security Level at 99.

Active determines whether services (such as TV control and ordering) are available in the suite. This provides a way for the venue to disable services on the phone during select events (such as preventing guests from changing channels on the TV during a concert).

TV Guide Autolaunch allows each suite to have a different TV Guide Autolaunch setting. The default is to use the setting in the registry. If the suite requires a different value than the registry, set it here.

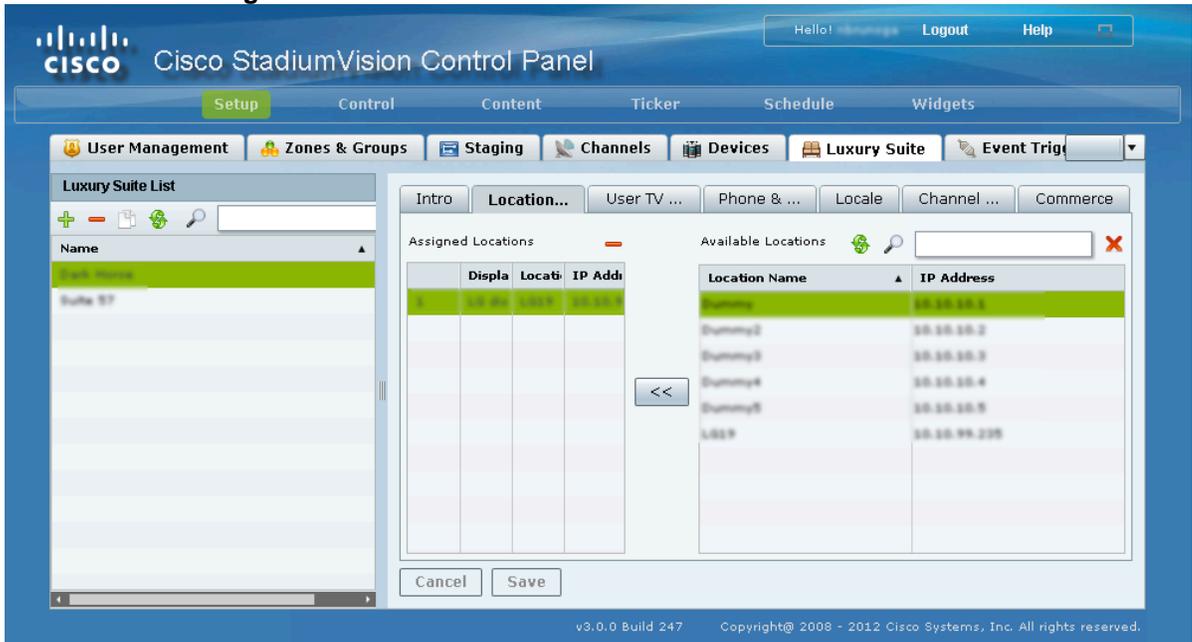
Refer to the section on [Controlling the Behavior of the Channel Guide](#) for details on the values

5. Click **Save**.

Assigning DMPs to the Suite

To associate one or more DMPs with a luxury suite, restaurant, club or other designated area:

1. Click **Location Assignment**.



2. Select the desired DMPs from the list of Available DMPs. To select more than one DMP, press the Ctrl key while selecting each DMP. To select a consecutive group of DMPs, press the Shift key and select the first and last desired DMP in the group.
3. Click the << button. The selected DMPs will be shown in the Assigned DMP list. As an alternative, you can select and drag the desired DMPs from the Available DMPs list to the Assigned DMPs list.

The order of the DMPs in the list should reflect the order of the TVs in the local control area. The number associated with each will be used in the interface of the local TV control device to identify each TV. To change the order of the DMPs in the Assigned DMP list, simply select, drag, and drop into the correct position.

Notes:

For luxury suites, the first DMP listed is considered the “designated TV.” This is the TV on which items are shown when placing an order if commerce integration is enabled.

To remove a DMP from the Assigned list, select the desired DMP and click the “-“ at the upper right of the Assigned DMPs box.

4. For each added DMP, click in the field under the **Display Label** column and enter the desired label for the TV. The label defaults to the numeric position of DMP in the list. If the DMP list is re-ordered by using drag and drop, the numeric labels will be updated automatically. If the labels are edited to be a text label, re-ordering will not update the label.

This label will appear in the IP phone UI when a user selects TV/Volume. This label also appears on the TV when the TV identification banner is displayed.

Note: The identification banner is set in the DMP upon start-up. Therefore, changing the label requires a DMP flash template restart

5. Click **Save**.

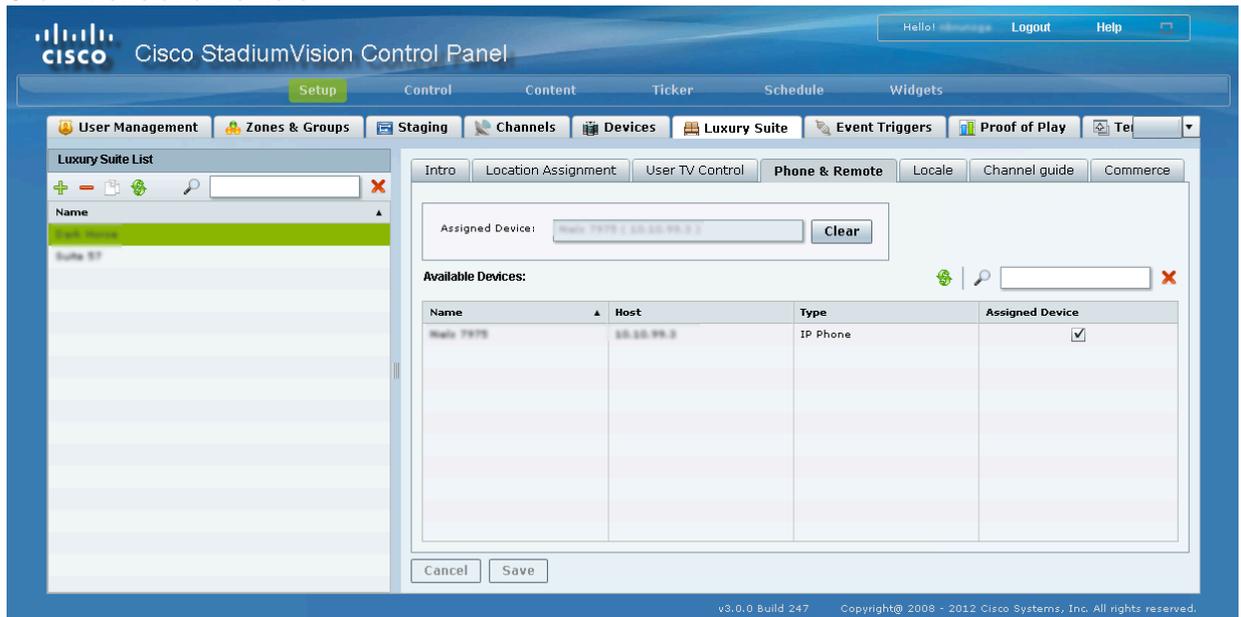
Notes:

- Never assign a DMP/Location to more than one Luxury Suite.
- If an IP phone is configured in Cisco StadiumVision director, but not associated with a Luxury suite, an error message is displayed on the IP phone when the user attempts to access Cisco StadiumVision services. The text of the error message is configured in the Cisco StadiumVision Director Management Dashboard Registry using the “ipPhoneError.SuiteNotFound” parameter. If you modify the content of the message, ensure that carriage returns (represented by #) are placed in the appropriate places for the message to display correctly on the IP phone.

Adding a Local Control Device

To associate a local control device with a luxury suite, restaurant, club or other designated area:

1. Click **Phone and Remote**.



2. Select the desired phone or 3rd party remote (as previously defined in the section on [Defining Local TV Control Devices](#)).
3. Click **Save**.

Each IP phone or 3rd party device can be assigned to only one “luxury suite” (i.e. local control area). If the selected IP phone or 3rd party remote is already assigned to another luxury suite, Cisco StadiumVision Director will display a message prompting you to indicate whether you want to remove the device from the other luxury suite and re-assign it to this one.

Providing a Welcome Message on a Luxury Suite TV

Typically, a single TV in the luxury suite will initially display a welcome message. Cisco StadiumVision director provides two example welcome message graphics (shown in Example Welcome Message) in Adobe Photoshop format.

- Welcome_SV2-1920 is for use with the DMP 4310.

Refer to the [Content Creation Guidelines](#) document for details

Figure 11. Example Welcome Message



At a high-level, the steps to implement a welcome message on a specific TV in a luxury suite are as follows. For details on how to load content and create groups and playlists, refer to the appropriate [Cisco StadiumVision Feature Guides](#).

1. Open the supplied graphic in Adobe PhotoShop. Make modifications (as needed) and save the file as a JPEG.
2. Upload the JPEG into the Cisco StadiumVision Director content repository.
3. Place the DMPs associated with the welcome TVs in the desired luxury suites (typically one per suite) into a separate group.
4. Create a playlist using a full-screen graphic template and add the welcome message graphic to the playlist.
Note: The template used for the Welcome message must be the Full-Screen Graphic template. Do not use an Overlay template.
5. Associate the playlist with the group (created in step 3) as part of a pre-game state.

The welcome message will be displayed on the specified TV during the pre-game state until either the luxury suite guest changes the channel or there is a state change (from pre-game to in-game, for example).

Defining Channel Lineup (Guide)

The channels that make up the channel lineup for the entire venue are defined on the Channels panel of the Cisco StadiumVision Director Setup page. The process for defining the master channel list and creating the default channel guide is described in the *Cisco StadiumVision Content and Event Management Design and Implementation Guide*.

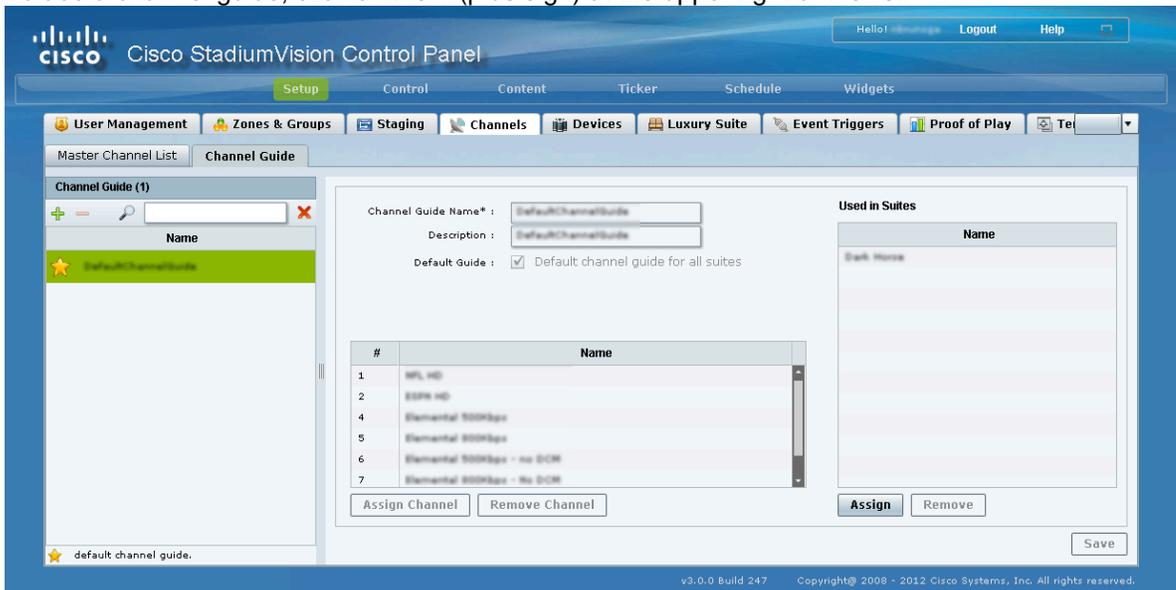
Leveraging the venue-wide master channel list, you can create per-area channel guides, which can be assigned to one or more luxury suites. The per-area channel guides are a subset of the master channel list, meaning the channels numbers and descriptions are preserved. If a DMP is not

associated with a luxury suite, bar, restaurant, or other area that supports local control, then it will use the default channel guide.

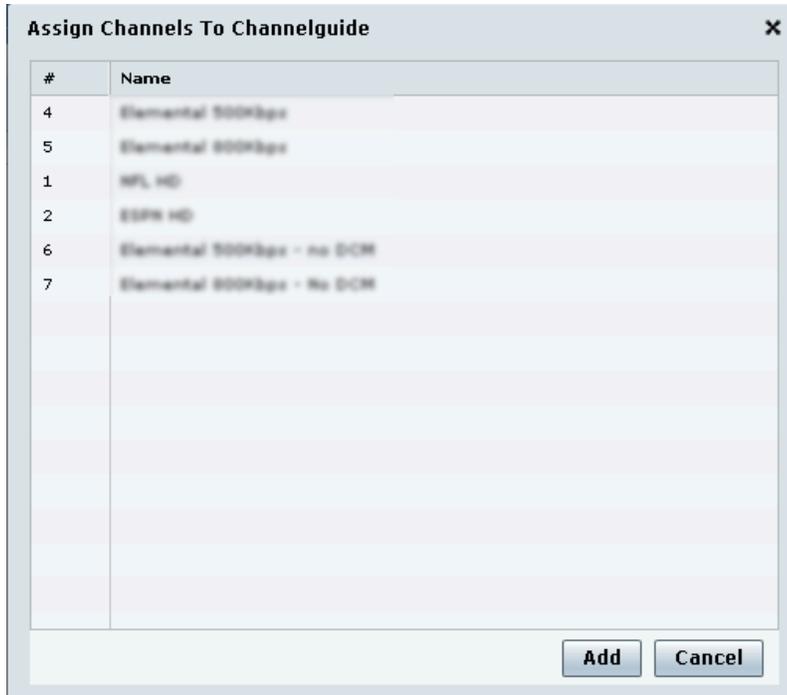
Note: If you make changes to a channel guide that is associated with an area serviced by a third-party touch panel, the third-party device must reload the latest channel guide information. Consult the third-party device integrator (AMX or Crestron) for reload options.

To create a per-area channel guide and assign it to the desired luxury suites (*after the master channel list has been created*):

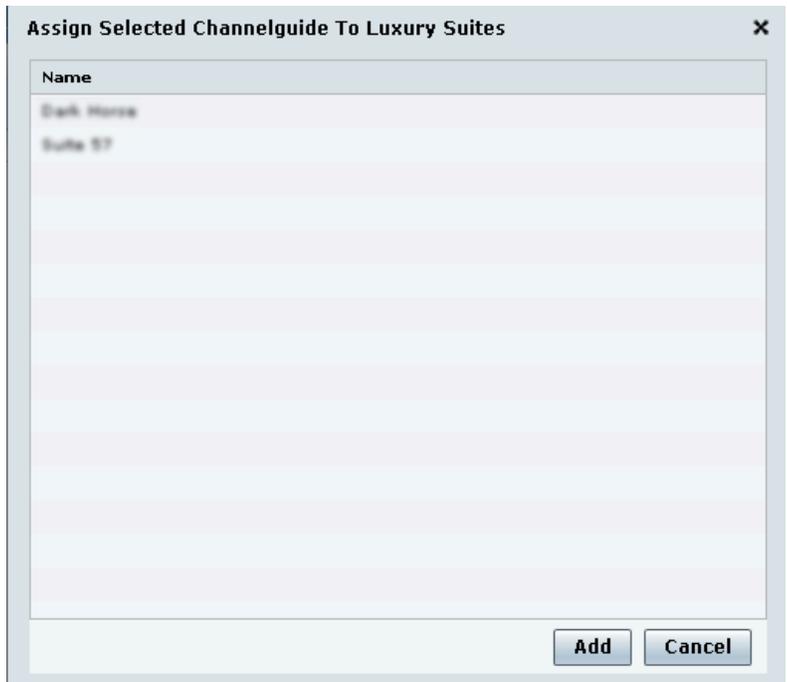
1. On the Cisco StadiumVision Control Panel, click **Setup**.
2. On the Setup page, click **Channels** and click the **Channel Guide** tab.
3. To add a channel guide, click on the **+** (plus sign) at the upper right of the list.



4. Specify the Channel Guide Name.
5. Click **Assign Channel**. The master channel list is displayed.



6. Select the desired Channels from the list. To select more than one Channel, press the Ctrl key while selecting each Channel. To select a consecutive group of Channels, press the Shift key and select the first and last desired Channel.
7. Click **Add**.
8. Click **Assign** (under the “Used in Suites” list. The list of configured Luxury Suites is displayed.



9. Select the desired Suites from the list. To select more than one Suite, press the Ctrl key while selecting each Suite. To select a consecutive group of Suite, press the Shift key and select the first and last desired Suite.

10. Click **Add**.

By default, when the channel guide is brought up on the IP Phone, it is also displayed on the selected TV(s). You can change this behavior by setting the “tvguide.autolaunch” parameter to 0 in the Cisco StadiumVision Director Management Dashboard Registry.

Using “Favorites” (AMX or Crestron Touch Panels Only)

In addition to the channel lineup, a maximum of 10 channels can be identified as favorites, which appear on the initial video control page of the third-party touch panels.

For each channel that should be listed as a favorite:

- In the Favorite field, select **Yes**.
- In the Favorite Order field, enter a number (between 1 and 10) indicating the ordinal placement of this channel in the listing,

Work with the third-party device integrator to determine how the favorites list should be displayed on the third-party touch panels. All installations should move to access channels directly versus indirectly through the favorites mechanism.

Controlling the Behavior of the Channel Guide

The appearance and behavior of the channel guide are controlled by parameters in the Cisco StadiumVision registry.

The registry settings are as follows:

- tvGuide.ChannelSelectFullScreen

This parameter controls whether the selected channel is displayed in full-screen mode. The default is tvGuide.ChannelSelect FullScreen = 1.

If the tvGuide.ChannelSelectFullScreen = 1 and the guide is displayed on the TV, then when a user selects a channel, the selected channel is displayed in full-screen mode on the TV.

If the tvGuide.ChannelSelectFullScreen = 0 and the guide is displayed on the TV, then when a user selects a channel, the guide preview window will change but the user must navigate away from the channel select page (by moving to the Home Page, Display Select Page, Exit, etc.) for the selected channel to be displayed in full-screen mode on the TV.

- tvguide.autolaunch

This parameter controls whether the channel guide is automatically displayed on the TV when the display is selected. The default is tvguide.autolaunch = 1. (This will change in subsequent releases.)

If tvguide.autolaunch = 0, do not automatically display the guide.

If tvguide.autolaunch = 1, automatically display the guide.

NOTE: This parameter can be overridden for an individual suite at the Luxury Suite Basic Info panel in the Control Panel.

- phoneControl.stayOnChannelSelect

This parameter controls whether the IP Phone continues to show the channel guide after the user has made their selection. The default is phoneControl.stayOnChannelSelect = 1. This registry parameter must be added.

If the `phoneControl.stayOnChannelSelect = 0`, the IP Phone will go back to previous page after the user selects a channel.

If the `phoneControl.stayOnChannelSelect = 1`, the IP Phone will continue to display the channel guide after the user selects a channel.

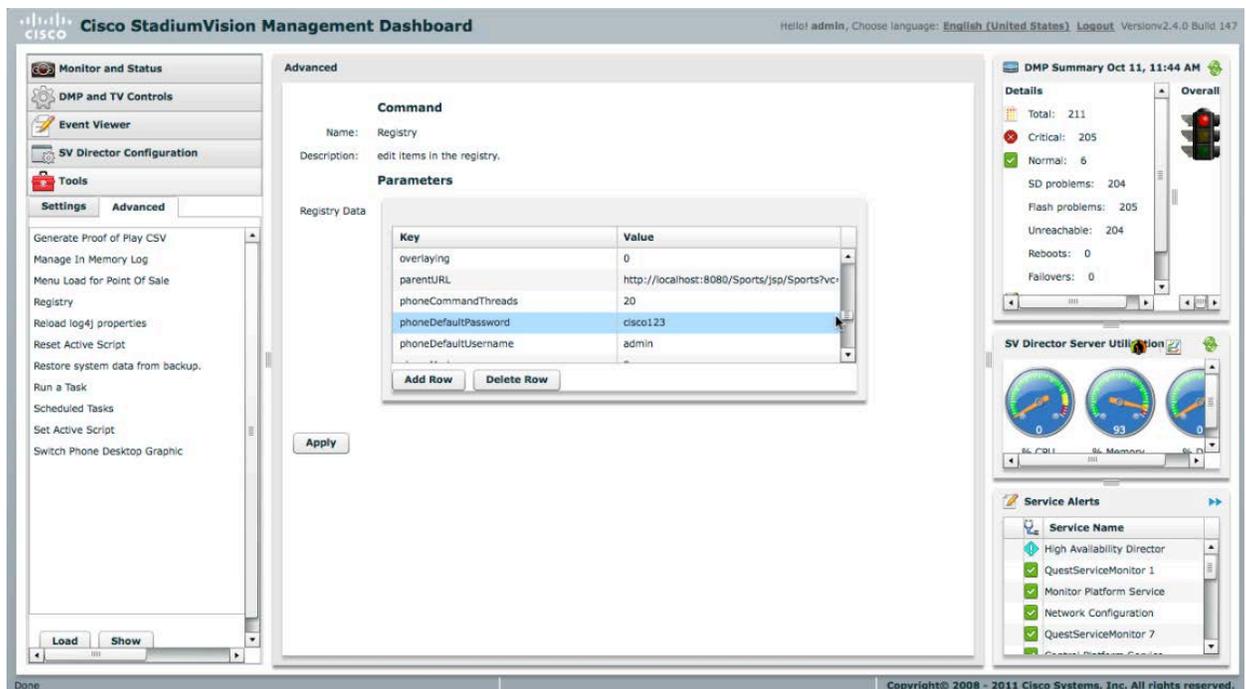
The following table indicates how the settings for these three parameters interact to produce a specific behavior.

tvguide.autolaunch	tvGuide.ChannelSelectFullScreen	phoneControl.stayOnChannelSelect	Resulting Behavior
0	0	1	After display is selected, the Channel Guide appears on the IP Phone (but not on the TV). The user selects channel and channel changes on TV. If the user invokes the Guide on the IP Phone, the Guide will appear on the TV; subsequent channel selections will only change the preview window of the channel guide. Navigation away from the TV guide will be necessary for the video to return to full screen. IP phone will show channel guide page after selecting channel.
0	1	1	After display is selected, The Channel Guide appears on the IP Phone (but not on the TV). User selects channel and channel changes on TV. If the user invokes the Guide button on the IP Phone the TV Guide will appear on the TV screen; subsequent channel selections will change the selected channel to full screen. IP phone will show channel guide page after selecting channel.
1	0	1	After display is selected, The Channel Guide appears on the IP Phone (and on the TV). User selects channel and channel changes will only change the preview window of the channel guide. Navigation away from the TV guide will be necessary for the video to return to full screen. IP phone will show channel guide page after selecting channel.
1	1	1	After display is selected, the Channel Guide appears on the IP Phone (and on the TV). User selects channel and channel changes on TV Full Screen. IP phone will show channel guide page after selecting channel.
0	0	0	After display is selected, the Channel Guide appears on the IP Phone (but not on the TV). If the user invokes the Guide button on the IP Phone the TV Guide will appear on the TV screen; subsequent channel selections will change the selected channel to full screen because the phone navigation will leave the channel selection page. IP phone will go back to previous page after selecting channel.
0	1	0	After display is selected, the Channel Guide appears on the IP Phone (but not on the TV). User selects channel and channel changes on TV. If the user invokes the Guide button on the IP Phone the TV Guide will appear on the TV screen; subsequent channel selections will change the selected channel to full screen. IP phone will go back to previous page after selecting channel.

1	0	0	After display is selected, the Channel Guide appears on the IP Phone (and on the TV). User selects channel and selected channel will be full screen on TV because the phone navigation will leave the channel selection page. IP phone will go back to previous page after selecting channel.
1	1	0	After display is selected, the Channel Guide appears on the IP Phone (and on the TV). User selects channel and channel changes on TV Full Screen. IP phone will go back to previous page after selecting channel.

To set the values of these parameters:

1. On the Advanced Tools page, click **Registry**.



2. Click **Load** to ensure that you are viewing the current settings.
3. Scroll through the Registry Data list to the desired parameters. **Note:** To change the `phoneControl.stayOnChannelSelect` parameter from its default (1), you must add the parameter using **Add Row**.
4. Click the Value field beside each parameter and enter the appropriate values.
5. Click **Apply**.

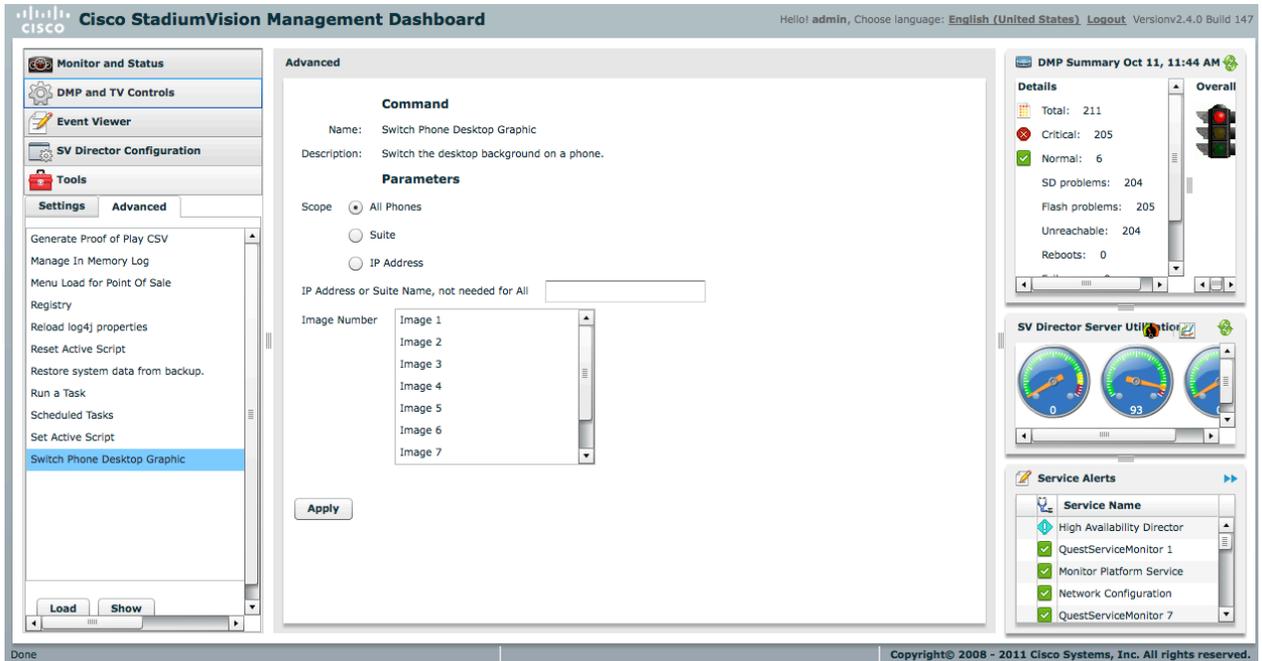
For more information about the Registry, see the *Cisco StadiumVision Director Management Dashboard User Guide*.

Changing the IP Phone Background

Once an alternative background has been loaded in CUCM (as described in the section on [Loading the Cisco StadiumVision IP Phone Desktop Graphic](#)), you can use Cisco StadiumVision Director to change the background on the Cisco IP Phone.

Note: This feature is intended to be used to change the desktop graphic to the official Cisco StadiumVision graphic. Use caution when changing the desktop graphic to any other image as the result may be undesirable.

1. On the Advanced Tools page of the Management Dashboard, click **Switch Phone Desktop Graphic**.



2. Specify the Scope.

If you select Suite, specify the Ext. Suite ID configured on the Setup > Luxury Suite > Commerce Integration tab. If the venue does not use commerce integration, use the IP Address parameter to narrow the scope.

If you select IP Address, enter the address if the IP Phone.

3. Select the desired image.

Notes:

Cisco StadiumVision supports up to 9 images, even though the CUCM supports more.

Image 1 is the factory-default image (which cannot be customized.) Images 2 through 9 correspond to the order of the images in the List.xml file (which is loaded into CUCM).

The Image Number list always includes Image 1 through Image 9. The list does not change even if there is only one image in CUCM, or there are more than 9.

If an image number is selected that is greater than the images available in the CUCM, the factory default image (Image 1) will be used.

4. Click **Apply**.

It takes approximately 10 seconds for the background switch to take effect on a single phone.

Changes to multiple phones will be processed serially, e.g. when choosing option 'All'. Note that the phone background change is visible on the phone while it is occurring (one can see screen navigation as it occurs)

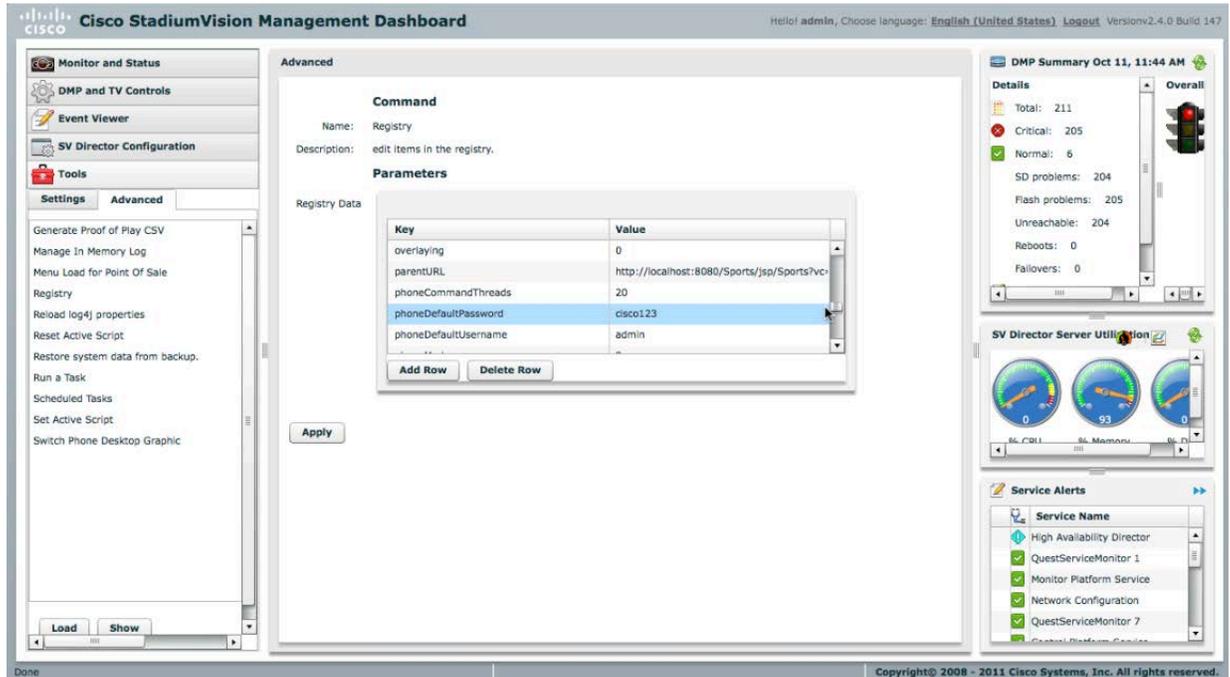
For more information about the Advanced Tools, see the [Cisco StadiumVision Director Management Dashboard User Guide](#).

Adjusting IP Phone Timeout Values

When guests use the IP Phone for local TV control or ordering, if the IP Phone receives no input from the guest for a given amount of time (is idle), it returns to the home page. By default, the idle timeout is set to 30 seconds.

To change the idle timeout:

1. On the Advanced Tools page of the Management Dashboard, click **Registry**.



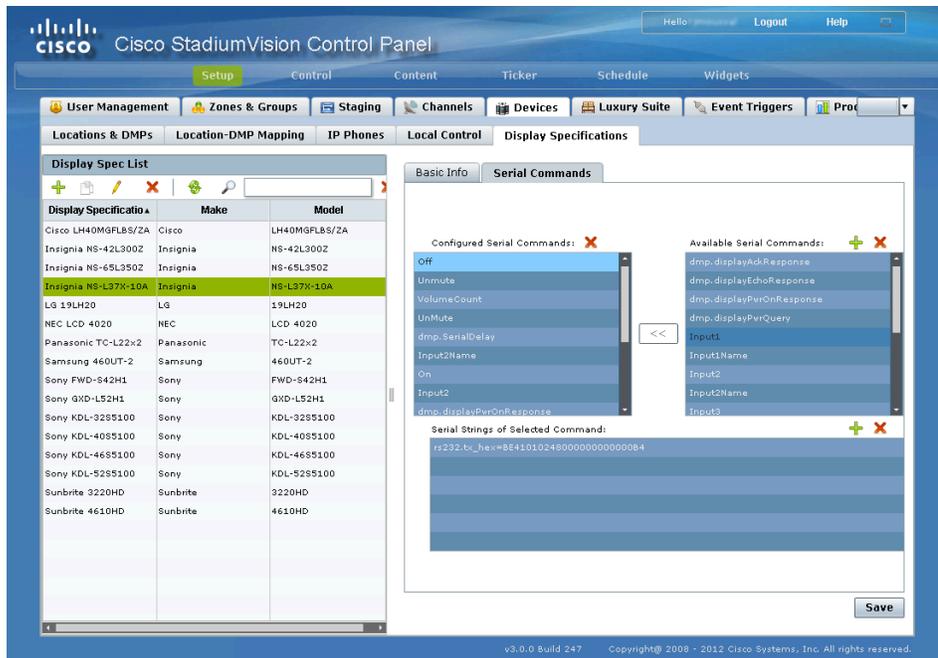
2. Click **Load** to ensure that you are viewing the current settings.
3. Scroll through the Registry Data list to **tvRefreshTime** (to modify the idle timeout for TV control) and to **orderRefreshTime** (to modify the idle timeout for ordering).
4. Click in the Value field beside each and enter the new idle timeout in seconds.
5. Click **Apply**.

For more information about the Registry, see the [Cisco StadiumVision Director Management Dashboard User Guide](#).

Labeling TV External Inputs

In a luxury suite, guests can use the Cisco IP Phone to change the TV input to an external device, such as a DVD player. To make it easier for the guest to select the input, do the following to label the TV's external inputs in Cisco StadiumVision Director:

1. On the Cisco StadiumVision Control Panel, select **Setup**.
2. On the Setup page, click **Devices > Display Specifications**.
3. Select the desired device (TV) and click **Serial Commands**.



4. For each desired input (1 through 4):
 - a. Select the InputxName command in the available list and click << to add it to the configured list.
 - b. Select the InputxName command in the configured list and click + at the upper right of the Serial Strings of Selected Commands. Enter the desired label, such as HDMI or Composite. This label that appear on the Cisco IP Phone when the guest selects the Advanced option.
 - c. Select the Inputx command in the available list and click << to add it to the configured list.
 - d. Select the Inputx command in the configured list and click + at the upper right of the Serial Strings of Selected Commands. Enter the appropriate RS-232 command for that input.
5. If the TV has more available inputs:
 - a. Click + at the upper right of the Available Serial Commands box and add a corresponding command called InputxName, where x is a number that identifies the input.
 - b. Select the InputxName command in the available list and click << to add it to the configured list.
 - c. Select the InputxName command in the configured list and click + at the upper right of the Serial Strings of Selected Commands. Enter the desired label.
 - d. Click + at the upper right of the Available Serial Commands box and add a corresponding command called Inputx, where x is the number that identifies the input .
 - e. Select the Inputx command in the available list and click << to add it to the configured list.
 - f. Select the Inputx command in the configured list and click + at the upper right of the Serial Strings of Selected Commands. Enter the appropriate RS-232 command for that input.
6. Click **Save**.

Chapter 4 Operations

With regard to local TV control and ordering, once the services have been implemented, the operation is largely performed by the end user. This chapter provides information about how to use the Cisco IP Phone to access the Cisco StadiumVision services. For information about how to use a third-party device (such as AMX or Crestron), or devices using the User Control API, please contact the third-party integrator.

When guests arrive at their luxury suite in a venue, they should see a welcome message on one of the TVs (similar to that shown in Figure 6). It is recommended that the welcome screen instruct them to use the Cisco IP Phone to control the TVs located in their suite.

Initially, the Cisco IP Phone will display the “home” screen (as configured using the CUCM idle parameters).

Note the following Cisco StadiumVision service configurations are the default, if the customer is using “[Alternative Softkey Mapping](#)” the screens may appear different on the phone than they do in this chapter. Refer to [Chapter 5](#) for more detail on the alternate mappings.

The [Using the Cisco Unified IP Phone 7975 with Cisco StadiumVision: TV Control](#) quickstart guide can be distributed to end users for explanation of TV Control details.

TV Control

In a luxury suite, the Cisco Unified IP Phone 7975 can be used to control the TVs and to place calls. It has a touch screen, softkeys (which change depending on the screen contents), a navigation pad, and a phone keypad.

Note: The color of the softkey buttons displayed in the below graphics appears different in the document than on the actual phone display. The softkey color displayed on the phones is a light blue as shown here:

The softkey colors cannot be changed.





- 1 Use the **touch screen** to select and control the video displays.
- 2 Use the **softkeys** to:
 Navigate
 Perform actions on the current TV
- 3 The **navigation pad** is not used with Cisco StadiumVision TV Control Services .
 The function of the **keypad** changes depending on the mode of the phone.
- 4 In phone mode, you can use the keypad to dial a phone number
 In Cisco StadiumVision Channel mode, you can use the keypad to select a channel in the line up or use the Keypad softkey and enter a channel number.
- 5 Use the line buttons to select a phone line.

Controlling TVs

To control the TVs, touch **TV/Volume**.



Notes:

- If the phone has been configured through Cisco StadiumVision Director for the “Luxury Suite” service type, the services page will show both options for TV/Volume control and for Ordering. If the phone has been configured for the “AdminOffice” service type, only the TV/Volume control option will be displayed.
- The first three speed dials configured in CUCM will appear on the services page.

Selecting a Display

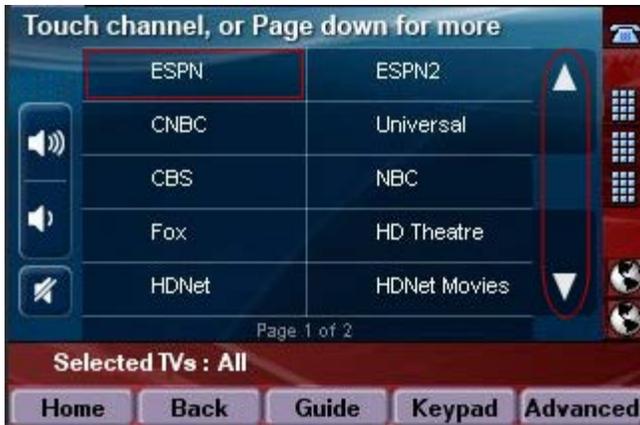
The TVs are typically identified by location. The labels are assigned in Cisco StadiumVision Director. Touch the label of the TV you want to control or touch **All**.



The labels of the TVs are configurable in Cisco StadiumVision Director on the Setup > Luxury Suites > DMP Assignments page.

Selecting a Channel

Touch desired channel or touch **Page Up** or **Page Down** to see additional channels.



The channels are listed in the order in which they are configured in Cisco StadiumVision Director on the Setup > Channels page. Note that channel icons can be included but are not shown here due to licensing restrictions.

By default, the channel guide is displayed on the selected TVs. If this feature has been disabled (through the Cisco StadiumVision Director Management Dashboard, the “Guide” softkey will be displayed (as shown above). You can touch **Guide** to view the channel guide on the associated TV. If you know the number of the channel you wish to select, simply touch the **Keypad** softkey to enter a desired channel number.

Adjusting the Volume

To adjust the volume, touch:



To increase the volume on the selected TV(s).



To decrease the volume on the selected TV(s).



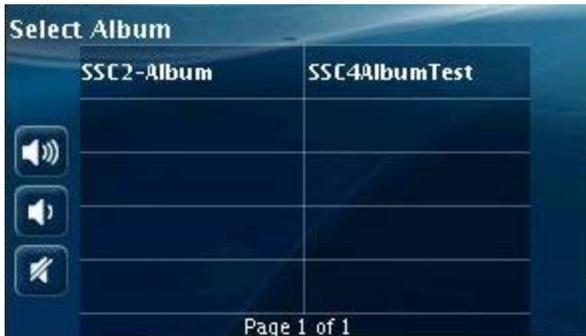
To toggle between mute and unmute on the selected TV(s).

Album Control

Album Control allows the user to control specific content that has been published to their DMPs. This can include sponsored messaging, personal videos and graphics, static menus, schedules and more. This content is only published to specific DMPs, so depending on which DMPs are selected from your control device, different options (albums) will be available for display.



Selecting the displays works just like choosing a channel. Once a display is selected, you will be presented with the albums that are available from that DMP.



The names of the album are defined by the Self-Service Content user. Touching the album will display VCR-like controls for the album. As Album content is on-demand, the user is able to start/stop and advance a slideshow of static graphics, or a set of videos.



Mimicking a slideshow, the user can set the duration in seconds for each image before auto advancing to the next one as seen below.



When a presentation is playing on a DMP(s), and the user starts a new presentation, they will be presented with a message asking if they'd like to cancel the current presentation.



For more information about SSC configuration and working with albums in Cisco StadiumVision Director, see the following documents:

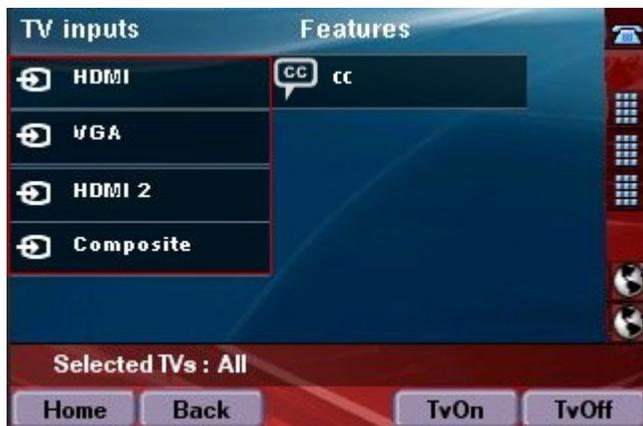
- [Cisco StadiumVision Director Self-Service Content Configuration Guide](#)
- [Cisco StadiumVision Director Self-Service Content User Guide](#)

Using Advanced Functions

In addition to channel selection and volume, the Cisco IP Phone can be used to access advanced functions provided by Cisco StadiumVision. The resulting page can vary by deployment and may contain some or all of the following.

- External Device Input - In luxury suites, there may be the need for TVs to accept input from an external device, such as a PC or DVD player. Only the available inputs are shown.
- Closed Caption - If the video feed includes closed captions, guests in the luxury suite can turn the display of these captions on or off using their Cisco IP Phone (as well as the IR Remote). Support for closed captioning requires the Cisco DMP 4310.
- Information – Reserved for future use.

To access advanced functions such as controls for external inputs and closed captioning, touch **Advanced**.



Placing A Phone Call

To place a phone call, simply pick up the handset and dial the desired number.

Alternatively, you can:

- Touch the Phone symbol on the touch screen and dial the number on the displayed touch panel.
- Touch the desired speed dial (availability may vary).



 If the suite is equipped with multiple phone lines and you wish to place a call on a line other than the primary line, simply touch the line button associated with the desired line and dial the number using the keypad.

Using Softkeys

The softkeys on the phone are located at the bottom of the touch screen and provide access to functions, which vary depending on the screen currently being displayed.

Softkey	Function
Advanced	Access the advanced features (external input, closed captioning) for the selected TV.
Guide	Display the channel guide on the designated TV.
Home	Return to the home screen (Display Control).
Back	Go back to the previous operational screen.
Keypad	Select a channel by entering a number using the keypad.
Mute	Mute the volume of all the TVs.
Unmute	Unmute the volume on all TVs.
TV On	Turn the power on for the selected TV(s).
TV Off	Turn the power off for the selected TV(s).

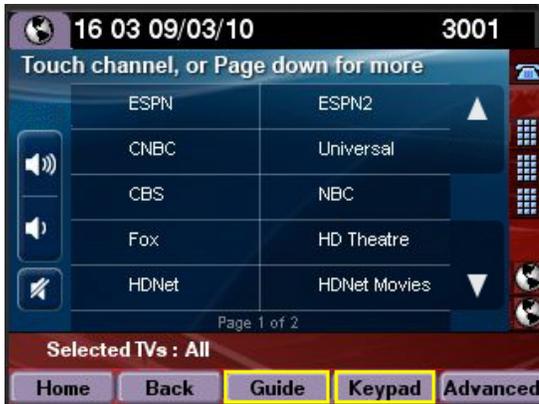
* If the ExplicitTVPower (in the Cisco StadiumVision Director registry) is set to 1, the “TV Power” soft key will be replaced with “TV Off” and “TV On” softkeys.

Alternative Softkey Mapping

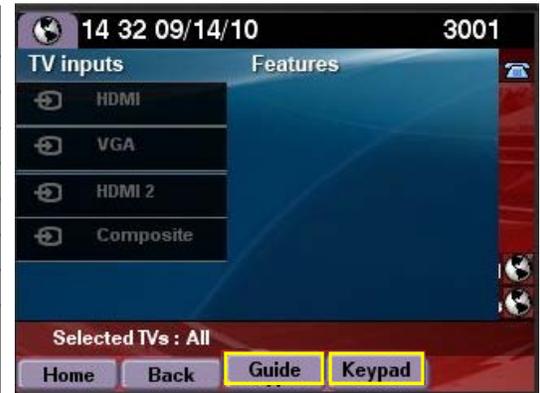
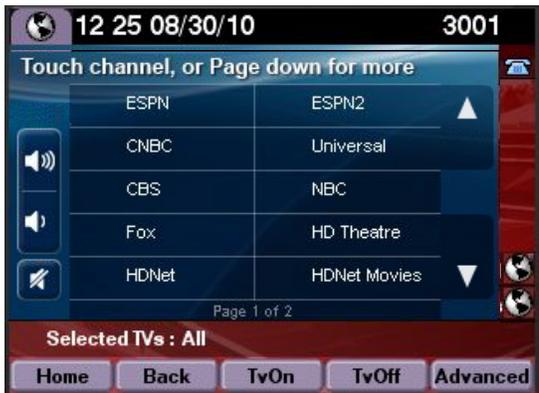
When an IP Phone subscribes to Cisco StadiumVision services, various softkey definitions are provided by default. As an alternative, the following softkey mappings can be made available:

- The “Keypad” and “Guide” softkeys can be moved to the Advanced page, while the “TV On” and “TV Off” softkeys are moved to the Channel Selection page.

Before (Default):



After:



- The "Guide" softkey can be added to the Advanced page.

Before (Default):

After:



- The “Keypad” softkey can be added to the Display Selection page.



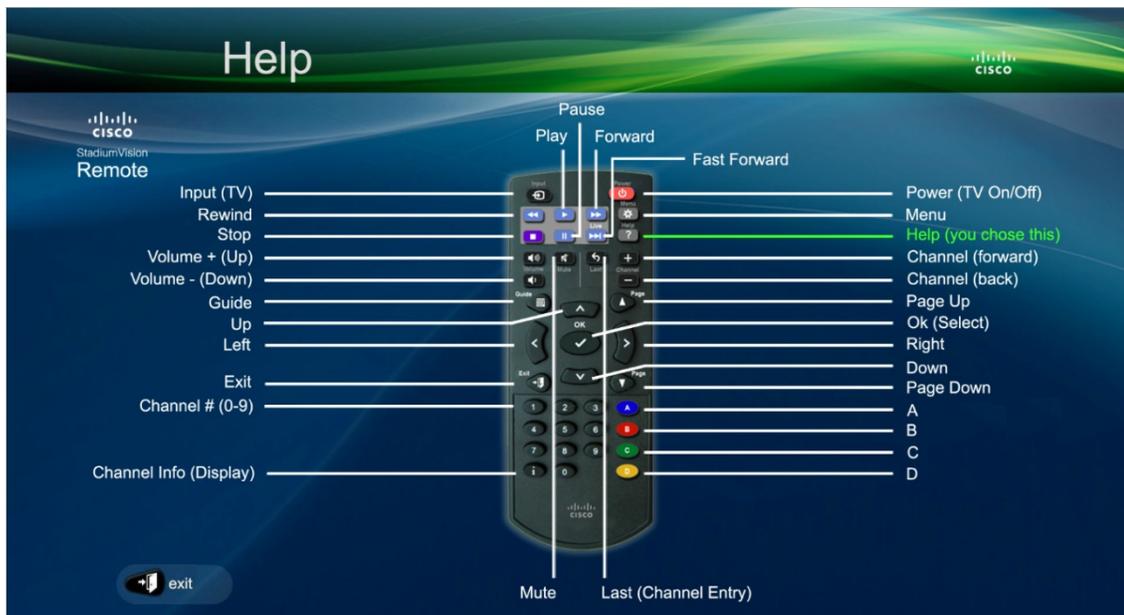
Note: When adding the Keypad to the Display selection page, the Keypad will no longer be available to single TV locations.

The alternative sofkey mapping is implemented using SQL scripts. To obtain and deploy these scripts contact your Cisco Systems account team. For further information, see the [Cisco StadiumVision Release Notes for Release 3.0](#).

IR Remote

The IR remote can also be used to control the TV, similar to the TV remote in your home. The remote is designed to provide the access to the same TV control functions as the IP phone.

To see a diagram of the available functions on the remote, press the Help button. The following is displayed on the associated TV.



Disabling the IR Remote:

The following steps are high-level and require one to be familiar with Cisco StadiumVision Director content, for details on Cisco StadiumVision Director content as well as how to retrieve please refer to the [Cisco StadiumVision Features Guides](#)

1. Retrieve the IRdisable.swf from the Cisco StadiumVision Director content library
2. Load it into a playlist associated with the script state you want to disable the IR functionality in.
3. When the IRdisable.swf loads on the DMP, it will disable the IR remote for that DMP

Note: the IP phone or other 3rd party control device will still control the DMP.

To re-enable the IR, load the IRenable.swf file on the DMP following the same steps as above

Chapter 5 Troubleshooting

This chapter provides information about the available troubleshooting tools as well as a list of common problems and how to resolve them.

Service Monitoring

To assist in troubleshooting, Cisco StadiumVision Director allows you to monitor the services (and servers) that are used in the solution. Pertaining to the operations of luxury suites, you can monitor Cisco StadiumVision Director and the following:

- CUCM Server

To view the latest monitoring information, go to Management Dashboard > Monitor and Status > Services.

Polling	Mode	Interval	Service Name	Service Status
Enabled	Automatic	10 minutes	High Availability Director	No HA system configured in registry entry backup.secondaryIp.
Enabled	Automatic	30 seconds	QuestServiceMonitor 1	Quest server at 10.88.131.78 is running normally.
Enabled	Automatic	30 seconds	Monitor Platform Service	Server is available.
Enabled	Automatic	5 minutes	Network Configuration	Resolved Network configured ok.
Enabled	Automatic	30 seconds	QuestServiceMonitor 7	Quest server at 10.194.171.48 is running normally.
Enabled	Automatic	30 seconds	Control Platform Service	Server is available.
Enabled	Automatic	30 seconds	MicroSuitesServiceMonitor 5	Wei-Micros-Vendor server is up but did not return valid customer.
Enabled	Automatic	10 minutes	Ad Insertion Manager Database	Database admgrddb is running normally.
Enabled	Automatic	10 minutes	Proof Of Play Database	Database lapps_pofp is running normally.

For more information about the service monitors, see the [Cisco StadiumVision Director Management Dashboard User Guide](#)

Logs

Cisco StadiumVision Director maintains activity logs which can be accessed via the Cisco StadiumVision Director Web GUI Main Menu (shown below). These logs contain information that may be useful in troubleshooting. Specifically, the sv_config_problems.log is designed to log configuration errors in the system.

To view or download the logs:

1. Login to Cisco StadiumVision Director.
2. Select **System State Reports**.



3. Select the Report options and then click Get System Status



Log information for Local Control is dispersed across a number of different log files as follows:

/var/log/httpd/access_log: Contains the incoming http request from the IP phone

/opt/sv/servers/control/logs/sv_external.log: A summary of the communications from Cisco StadiumVision Director to phone.

/opt/sv/servers/control/logs/sv_phone_xml.log: Shows the raw XML that is returned by Cisco StadiumVision Director to the phone.

/opt/sv/servers/control/logs/sv_debug.log: Shows the internal processing as a phone request is handled by Cisco StadiumVision Director.

Step 1: Use the Service button on the phone to bring up the main menu of the SV application. Check the Apache logs to confirm that this results in an http GET message being received by Cisco StadiumVision Director:

```
[root@user-svd1 httpd]# pwd
```

```
/var/log/httpd
```

```
[root@user-svd1 httpd]# grep 10.10.99.3 access_log
```

```
10.10.99.3 - - [31/Oct/2011:17:27:19 -0600] "GET
/StadiumVision/images/phone/phone/phoneImages/saved/SEP0026CBC01B64_homePage.png
HTTP/1.1" 200 15606 "-" "Allegro-Software-WebClient/4.34"
```

Step 2: Check sv_external.log to see the requests that have been received from the phone and processed. Log snippet below reflects the following sequence of buttons being pressed on the phone:

1. Service button pressed. Bring up SV main menu – ListServices
2. TV/Volume key pressed. Bring up display selection screen – DisplaySelect
3. TV/DMP with IP addr 10.10.99.29 selected. Display channel guide – Device
4. Channel 3 selected. Channel
5. Volume down key pressed. VolumeDown
6. Screen returns to main SV menu after timeout – ListServices

```
[root@user-svd1 logs]# pwd
```

```
/opt/sv/servers/control/logs
```

```
[root@user-svd1 logs]# grep 10.10.99.3 sv_external.log | cut -c25-110
```

```
10.10.99.3}d2a4c282}Sports}Boulder1}ListServices}}}}}}Duration 134
```

```
10.10.99.3}cebe23bd}VideoControl}Boulder1}DisplaySelect}}}}}}OK}}Duration 124
```

```
10.10.99.3}be0d5d69}VideoControl}Boulder1}Display}Device[#167:10.10.99.29]}}}}OK}10.10.99.3}80
ecc133}VideoControl}Boulder1}Channel}null|3|}}}}OK}}Duration 253
```

```
10.10.99.3}5f69c8c7}VideoControl}Boulder1}VolumeDown}120|}}}}OK}}Duration 92
```

```
10.10.99.3}cb581289}Sports}Boulder1}ListServices}}}}}}Duration 146
```

Step 3: In the previous step notice how each log message in sv_external.log contains an 8 digit log message ID immediately following the phone IP address. This ID can be used to find related messages in the other log files in the same directory. In the following example log messages with ID

f2eeeb6f can be found in 5 different log files. Notice how the timestamps are within one second of each other, emphasizing that they are all part of the same transaction:

```
[user@svd1 logs]$ grep f2eeeb6f * | cut -c1-80
sv_debug.log:2011-10-31 17:17:26,984 [TP-Processor6] f2eeeb6f ERROR com.cisco.sv
sv_dev_debug.log:2011-10-31 17:17:26,982 [TP-Processor6] f2eeeb6f INFO com.cisc
sv_dev_debug.log:2011-10-31 17:17:26,984 [TP-Processor6] f2eeeb6f ERROR com.cisc
sv_dev_debug.log:2011-10-31 17:17:26,990 [TP-Processor6] f2eeeb6f INFO com.cisc
sv_external.log:1}2011-10-31 17:17:27,108}10.10.99.3}f2eeeb6f}VideoControl}Bould
sv_external.log:2011-09-08:3}2011-10-31 17:17:27,107}10.10.99.3}f2eeeb6f}page=VD
sv_msg_trace.log:2011-10-31 17:17:27,269 [I/O dispatcher 13] f2eeeb6f DEBUG svlo
sv_phone_xml.log:2011-10-31 17:17:27,107 [TP-Processor6] f2eeeb6f DEBUG svlog.ph
```

Step 4: Check the sv_phone_xml.log to perform a sanity check of the XML returned to the phone. The XML in the example below corresponds to the be0d5d69 entry in sv_external.log in step 2 above. That is display the channel guide. The XML below describes two channels (KGO-HD and LIVEWELL HD) and for each defines the X,Y touch area and the channel change URL that is fired when touched.

The format of the XML is documented at:

http://www.cisco.com/en/US/docs/voice_ip_comm/cuipph/all_models/xsi/7_1_3/xmlobjects.html

```
2011-10-31 17:36:54,803 [TP-Processor7] be0d5d69 DEBUG svlog.phone.xml.log - To Phone:
<?xml version="1.0" encoding="UTF-8"?><CiscoIPPhoneGraphicFileMenu>
  <Prompt>Selected TV : TV-B</Prompt>
  <URL>http://10.194.172.82:8080/StadiumVision/images/phone/phone/phoneImages/saved/SEP0026
  CBC01B64_ChannelSelect_0.png</URL>
  <LocationX>0</LocationX>
  <LocationY>0</LocationY>
  <MenuItem>
    <Name>KGO-HD</Name>
    <URL>http://10.194.172.82:8080/StadiumVision/jsp/VideoControl?vc=no&Function=Channel&a
    mp;channel=1&device=SEP0026CBC01B64&suite=&display=2&chPgIndex=0&a
    mp;prevPage=ChSel</URL>
    <TouchArea X1="35" Y1="21" X2="147" Y2="47"/>
  </MenuItem>
  <MenuItem>
    <Name>LIVEWELL HD</Name>
    <URL>http://10.194.172.82:8080/StadiumVision/jsp/VideoControl?vc=no&Function=Channel&a
    mp;channel=2&device=SEP0026CBC01B64&suite=&display=2&chPgIndex=0&a
    mp;prevPage=ChSel</URL>
    <TouchArea X1="148" Y1="21" X2="265" Y2="47"/>
  </MenuItem>
```

Step 5: The sv_msg_trace.log file contains log messages for all communication between Cisco StadiumVision Director and the DMPs being controlled. The example below corresponds to the channel change in step 2 (log message ID 80ecc133). The channel change button press on the phone results in 3 commands being sent to the DMP with IP address 10.10.99.29 as follows:

1. *setKeyCode:* Sends IR key code 158 to the DMP
2. *setVideoChannel:* Sets the video channel to udp://239.200.0.103:4000
3. *setDisplayBanner:* Activates the display banner for 5000 msec.

```
[user@user-svd1 logs]$ grep 80ecc133 sv_msg_trace.log
```

```
2011-10-31 17:37:04,522 [I/O dispatcher 9] 80ecc133 DEBUG svlog.dmp.msg - OK :
https://10.10.99.29:443 ||
<commandMessage><commandList><command><type>setKeyCode</type><version>1</version><k
eyCode>158</keyCode></command></commandList></commandMessage> || result: 200

2011-10-31 17:37:04,729 [I/O dispatcher 10] 80ecc133 DEBUG svlog.dmp.msg - OK :
https://10.10.99.29:443 ||
<commandMessage><commandList><command><type>setVideoChannel</type><version>1</versio
n><url>udp://239.200.0.103:4000</url></command></commandList></commandMessage> || result:
200

2011-10-31 17:37:04,954 [I/O dispatcher 11] 80ecc133 DEBUG svlog.dmp.msg - OK :
https://10.10.99.29:443 ||
<commandMessage><commandList><command><type>setDisplayBanner</type><version>1</versio
n><Mode>Active</Mode><Duration>5000</Duration></command></commandList></commandMess
age> || result: 200
```

For further information on Cisco StadiumVision Logs, see [Using the Administrative TUI](#)

Common Problems

Symptom	Possible Cause	Action
The Welcome screen in a luxury suite shows up on the wrong display.	The video display is configured incorrectly in Cisco StadiumVision.	Determine the IP address of the DMP either by looking at the DMP or by using a Cisco IR Remote. Assure this video display is in the correct group.
The channel changed automatically in a luxury suite.	There was a state change and the script for this event did not specify No change for the channel.	If this is not the desired action, go to the script for this or subsequent events and set the action to "No Change" for the channel on this display.
	A configuration error in Cisco StadiumVision defines a controller outside of this suite as the suite controller.	Correct the configuration so that only the controller in this suite has control over the DMPs in this suite.
The IP Phone background graphic will not change.	The graphic is not loaded correctly in CUCM.	Ensure that the graphic is in the correct format and is loaded into CUCM in the correct location. See Loading the Cisco StadiumVision IP Phone Desktop Graphic

Symptom	Possible Cause	Action
	Cisco StadiumVision is unable to communicate with the IP Phone (see possible causes below).	Check /opt/apache-tomcat-6.0.18/logs/sv_dev_debug.log for errors. Look for a message similar to the following: 2010-02-23 22:57:30,659 [pool-6-thread-20] ERROR com.cisco.sv.phone.PhoneCommandCallable - PhoneCommandCallable .call - Exception occurred sending commands to 10.10.99.3 for SetImage com.cisco.sv.phone.IPPhoneCommandException: Phone Authentication error
	The user ID and password of the IP Phone is not correctly configured in Cisco StadiumVision Director.	Ensure that the phoneDefaultPassword and phoneDefaultUsername are correctly configured in Cisco StadiumVision Director. See Setting IP Phone Passwords.
	The user ID and password of the IP Phone is not correctly configured in CUCM.	Ensure that the user credentials are correctly set in CUCM. See Verifying IP Phone .

Verifying IP Phone Credentials

If the credentials for the IP Phone are not set correctly in CUCM and in Cisco StadiumVision Director, you will not be able to change the phone background graphic or speed dials.

Within Cisco StadiumVision Director, there are two places where the IP Phone credentials can be specified.

- In the registry using the Management Dashboard. This is used to specify the “global credentials” for IP Phones. See [Setting IP Phone Passwords](#) for more information.
- On the Setup > Devices > IP Phone page of the Control Panel. The Admin ID and Admin Password fields on this page should only be specified if the phone has credentials that are unique from other phones. See [Defining Cisco IP Phones](#) for more information.

Refer to the section [Configuring CUCM Integration](#) for credentials configurations

Verifying Credentials Configured in the Cisco StadiumVision Director Registry

To verify the credentials when they are configured using the Cisco StadiumVision Director registry, enter the following into a browser:

```
https://<CUCM_IP_addr>/axl
```

where <CUCM_IP_addr> is replaced by the IP address of Call Manager.

At the prompt to enter a username and password, enter the credentials that were configured in the Cisco StadiumVision Director registry for CCMPass and CCMUser.

If the credentials are entered correctly, the following will display in the browser window:

```
Cisco CallManager: AXL Web Service
```

The AXL Web Service is working and accepting requests. Use HTTP POST to send a request.

Verifying Credentials Configured Using the IP Phone Setup in Cisco StadiumVision Director

To verify the credentials when using the IP Phone admin ID and password using the IP Phone configuration page in the Cisco StadiumVision Director Control Panel, enter the following URL in a browser:

```
http://<CUCM_IP_addr>/ccmcip/authenticate.jsp?UserID=<user_ID>&Password=<password>&devicename=SEP<mac_address>
```

where <CUCM_IP_addr> is replaced by the IP address of Call Manager, the <user_ID> and <password> in the URL correspond to the admin credentials from Cisco StadiumVision Director, and the <mac_address> is the MAC address of the phone.

If the credentials are entered correctly, the word AUTHORIZED will display in the window.

Chapter 6 Reference

This chapter provides an overview of the components, both hardware and software, that are required in addition to Cisco StadiumVision Director to enable local TV control.

Cisco Unified Communications Manager

Cisco Unified Communications Manager is an enterprise-class IP telephony call-processing system that provides traditional telephony features as well as advanced capabilities, such as mobility, presence, preference, and rich conferencing services.

In the Cisco StadiumVision solution, CUCM provides the services that enable VoIP in the venue and also enable the Cisco IP Phone to communicate with CUAE in order to access luxury suite services, such as video control.

For more information, see the [documentation on Cisco's website](#).

Cisco DMP 4310

The Cisco Digital Media Player is a small, flexible device used for the decoding and display of digital media, including high-definition live broadcasts, on-demand video, flash animations, text tickers, and other Web content-on digital signage displays.

In the Cisco StadiumVision solution, the DMP enables playback of various types of content in full-screen mode or in regions defined by Cisco StadiumVision Director. Cisco StadiumVision leverages the RS-232 connection of the DMP to control the state and volume of the attached TV.



For more information, see the [documentation on Cisco's website](#).

Cisco Unified IP Phone 7975G

The Cisco Unified IP Phone 7975G provides the latest advances in VoIP telephony, including wideband audio support, an integrated Gigabit Ethernet port, and a large, easy-to-read, color touch screen display for easy access to communication information and timesaving applications and features. It also accommodates Extensible Markup Language (XML) applications that take advantage of the display.

In the Cisco StadiumVision solution, the Cisco Unified IP Phone 7975 is the only phone recommended for use as a local TV control device. The Cisco StadiumVision solution leverages the color touch screen display to enable user interaction with custom applications that enable access to video control and concession services.



For more information, see the [documentation on Cisco's website](#).

Crestron

Crestron provides table-top, wireless, and wall mounted touch panels that can be used for local TV control with the Cisco StadiumVision solution.

Figure 12. Crestron Touch Panel



For more information about the how to setup and use Crestron Touch Panels, see the [documentation at the manufacturer's website](#).

AMX

AMX provides table-top, wireless, and wall mounted touch panels that can be used for local TV control with the Cisco StadiumVision solution.

Figure 13. AMX Touch Panel



For more information about the how to setup and use AMX Touch Panels, see the [documentation at the manufacturer's website](#).

Chapter 7 Appendix

Where to find more information

[Cisco StadiumVision Documentation](#)

[Cisco Unified Communications Manager Documentation](#)

[Cisco Unified IP Phone Documentation](#)