Cisco Smart+Connected Residential Installation and Configuration Guide

Release 2.3

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Cisco Smart+Connected Residential Installation and Configuration Guide

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Preface

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Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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CHAPTER 1

Overview

The Cisco Smart+Connected Residential Solution is a highly flexible and expandable platform for residential automation. This guide provides an overview of the process to design, install, and configure the devices and features in a typical residential dwelling.

Refer to the following topics for more information.

Contents

Requirements

Table 1-1 Requirements

Requirements	Related Documentation	Requirement Complete? (✓)
Gain a solid understanding of the Cisco Smart+Connected Residential Solution, including supported devices, software tools, and remote management	• Complete the Cisco Smart+Connected Residential training. • Solution overview, white paper, case studies, and other information: www.cisco.com/go/smartconnectedresidential • Study the documents in the "Related Documentation" section on page 1-4.	☐
Review all sections of the current guide before you begin.	Cisco Smart+Connected Residential Installation and Configuration Guide	☐

Table 1-1 Requirements (continued)

Requirements	Related Documentation	Requirement Complete? (✓)
A Windows PC to run design and installtion software such as Microsoft Visio and Composer Pro.	• Design and Estimate Requirements, page 2-4 • Install the Composer Pro Software, page 5-7 • Composer Pro User Guide	☐
Internet access and a wireless router and network switch for each residence.	Network Requirements, page 3-3	☐
The Cisco and third-party devices required to support your solution design.	• Create the Design and Estimate Plans, page 2-1 • Network Requirements, page 3-3 • Related Documentation, page 1-4	☐
The electrical, network, serial, and other cables required to implement the solution in each dwelling.	See your real estate developer for the specific requirements for each new or retrofit residence.	☐
Review the individual topics in this guide for additional requirements.	For example: • Network Requirements, page 3-3 • Design and Estimate Requirements, page 2-4 • Installation Requirements, page 4-6 • Template Configuration Requirements, page 5-2	☐

Summary Steps

This guide provides a summary of the main tasks required to install and configure a Cisco Smart+Connected Residential Solution in one or more dwellings. The exact details for your deployment, and the residences within that deployment, will vary. Consult your Cisco representative to carefully plan and implement the supported features and devices.

The following is a high-level summary of the main tasks.

	Task	Related Documentation	Task Complete? (✓)
Step 1	Complete the requirements that apply to your deployment and the installation task(s) you will perform.	Requirements, page 1-1	☐
Step 2	Create one or more designs for the equipment that will be installed in a typical residence.	Create the Design and Estimate Plans, page 2-1	☐

	Task	Related Documentation	Task Complete? (✓)
Step 3	Install the networking equipment in each residence.	Network Requirements and Best Practices, page 3-1	☐
Step 4	Install the automation devices in the residence.	Install and Connect the Physical Components, page 4-1	☐
Step 5	Create the Cisco Controller template(s).	Create the Basic Cisco Controller Project, page 5-1	☐
Step 6	Add additional devices to the project, if necessary.	Adding Additional Devices to the Template, page 6-1	☐
Step 7	Add and configure the video intercom, if necessary.	Configuring the Intercom for Communication Within a Dwelling, page 7-1	☐
Step 8	(Optional) Install and configure the Cisco Smart+Connected Remote Management Solution (Cisco RMS).	Cisco Smart+Connected Remote Management Console Administration Guide Cisco Smart+Connected Remote Management Server Installation Guide	☐

Obtaining and Installing Licenses

Feature licenses must be purchased to enable optional features such as smart device access, or deployment using the Cisco Smart+Connected Remote Management Solution.

For information to purchase, install and activate feature licenses, refer to the *Cisco Smart+Connected Residential Licensing and Registration Guide*.

Related Documentation

For more information about the Cisco Smart+Connected Residential products, see the following documents and websites:

Subject / Document Title	Location
General	
Product Information and Home Page	www.cisco.com/go/smartconnectedresidential
Data Sheets	http://www.cisco.com/en/US/products/ps12445/products_feature_guides_list.html
Cisco 1-Year Limited Hardware Warranty Terms	www.cisco.com/go/smartconnectedresidential warranty
Regulatory Compliance and Safety Information for Cisco Smart+Connected Residential Products	www.cisco.com/go/smartconnectedresidential/docs
Cisco Support	www.cisco.com/cisco/web/support/
ReleaseNotes	
Release Notes for the Cisco Smart+Connected Residential Solution	www.cisco.com/go/smartconnectedresidential/docs
Installation and Configuration	
Cisco Smart+Connected Residential Installation and Configuration Guide	www.cisco.com/go/smartconnectedresidential/docs
Cisco RMS Installation and Administration	
Cisco Smart+Connected Remote Management Console Administration Guide	www.cisco.com/go/smartconnectedresidential/docs
Cisco Smart+Connected Remote Management Server Installation Guide	
Hardware Reference Guides	

Cisco Smart+Connected Controller 200 Reference Guide Cisco Smart+Connected Controller 250 Reference Guide Cisco Smart+Connected Controller 800 Reference Guide Cisco Smart+Connected 7” In-wall Display Reference Guide Cisco Smart+Connected Portable Tablet Reference Guide Cisco Smart+Connected I/O Extender Reference Guide Cisco Smart+Connected Universal Remote 150 Reference Guide Cisco Smart+Connected Universal Remote 250 Reference Guide Cisco Smart+Connected Video Door Station Reference Guide	www.cisco.com/go/smartconnectedresidential/docs
Accounts and Licensing	
Cisco Smart+Connected Residential Licensing and Registration Guide	See your Cisco representative or partner for more information.
Other	
Smart Device Compatibility and other information: Cisco Smart+Connected Smart Device License for Real Estate Developers	www.cisco.com/go/smartconnectedresidential
Composer Pro User Guide	http://www.control4.com/documentation/Composer_Pro_User_Guide/index.htm

Note For information about third-party hardware and software, see the manufacturer’s product documentation and/or website.

CHAPTER 2

Create the Design and Estimate Plans

Use the design and estimate process to define the devices and connections in a Cisco Smart+Connected Residential Solution. The resulting drawings and reports also provide wiring and layout requirements, and estimate the bill of materials (BOM) for the project.

Refer to the following topics for more information.

Contents

Overview

This Cisco Smart+Connected Residential Design and Estimate tool allows you to quickly define the design assets for a residence, and generate reports that include connection and wiring diagrams, cost estimates, keypad engraving details, and other information.

To use this tool, download and install the `S+C Design and Estimate Tool.zip` file. This file includes the following:

- Cisco Smart+Connected Residential *Smart Shapes* that are imported into Microsoft Visio (2007 or later). These shapes provide descriptions, part numbers, pricing and other information about Cisco and select 3rd party products.
- The `Design and Estimate Tool Template v1.vst,` a Visio template file that contains three different drawing tabs. These three drawings (Concept Drawings, System Overview and Single Line) encompass most of the information you will need to fully describe the project. There will be more complex drawing assets required in later stages of the project, but these three should be more than enough to get started.

Design Drawing Types

Three types of design drawing produced with the Cisco Smart+Connected Residential Design and Estimate tool (Table 2-1).

Table 2-1 Example Drawings

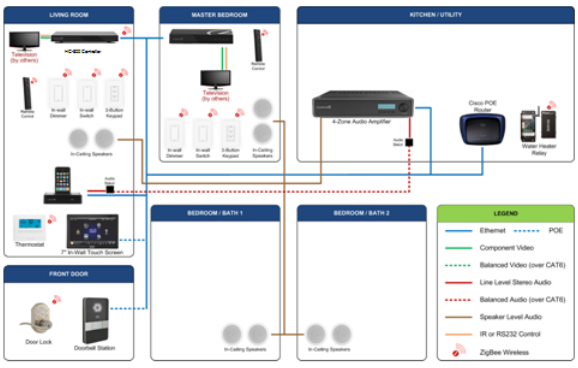
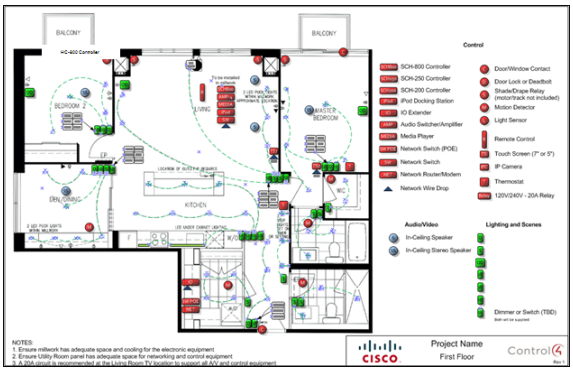
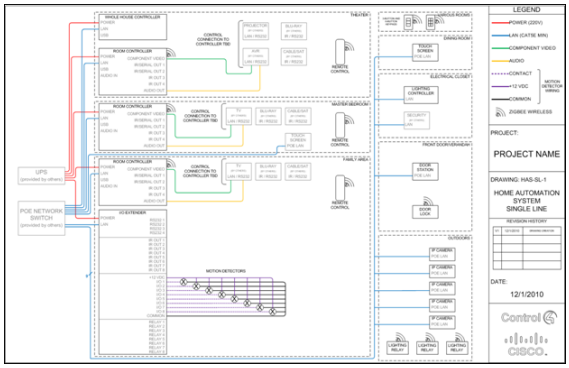
Drawing	Description	Example
Concept Drawings	A graphical overview of the equipment in each room and general device connections. This high-level drawing does not include specific port connections and may or may not include wiring. This drawing is for builders or installers who require a general system understanding.	

Table 2-1 Example Drawings (continued)

Drawing	Description	Example
System Overview	A graphical floor plan including the equipment to be installed in each room. This drawing does not include system connections but could include infrastructure wiring information This provides a general system understanding for a builder or architect.	
Single Line	A detailed connection drawing that shows specific port connections, and the connections to systems that are external to the residence. The audience is the builder, architect, or pre-wire/installation partner company.	

Design and Estimate Requirements

The following table lists the basic devices that are installed in a Cisco Smart+Connected Residential Solution.

Table 2-2 Design & Estimate Requirements

Requirements	Description	Requirement Complete? (✓)
Complete the Cisco Smart+Connected Residential Design and Estimate Training.	Provides an understanding of the hardware and software components in a Cisco Smart+Connected residence, and the configuration tasks required for a successful installation. The Design & Estimate training module also provides greater details and examples. **Note** The Design and Estimate Training video on demand and tools can be viewed and downloaded from the Cisco Smart+Connected Residential Partner Portal. Please contact your Cisco representative for access to the Partner Portal.	☐
A basic understanding of the following: • Control signals (IR, RS232, Relay, Contact, and ZigBee) • Electrical and lighting control • Audio/Video Control	You must understand the controls used to operate the devices in a Cisco Smart+Connected residence.	☐
An understanding of Microsoft Visio and Excel software packages	You must be familiar with the software tools used to create the designs and reports described in this document.	☐
Microsoft Visio 2007 or later	Use Visio to design a typical residence and create reports to assist in layout, wiring and cost estimates.	☐
Cisco Smart+Connected Residential *Smart Shapes*	Import the *Smart Shapes* into Microsoft Visio 2007 (or later) and use them to build diagrams and reports.	☐

Summary Steps

	Task	Task Complete? (✓)
Step 1	Download and install the Cisco *Smart Shapes* (custom Visio shape stencils).	☐
Step 2	Use the template file, or add stencils to your own `.vsd` drawing file.	☐
Step 3	Update the Visio file paths so reports will appear automatically.	☐

	Task	Task Complete? (✓)
Step 4	Create a concept drawing.	☐
Step 5	Create reports, such as a BOM report.	☐
Step 6	Create a system overview drawing.	☐
Step 7	Create a single line drawing.	☐

Download and Install the Cisco *Smart Shapes* for Visio

The `S+C Design and Estimate Tool.zip` file includes a set of custom Visio shape stencils (the .vss files) and report templates (in .vrd format). A Visio template file is also included that contains drawing tabs for system overview, concept and single line drawings.

Procedure

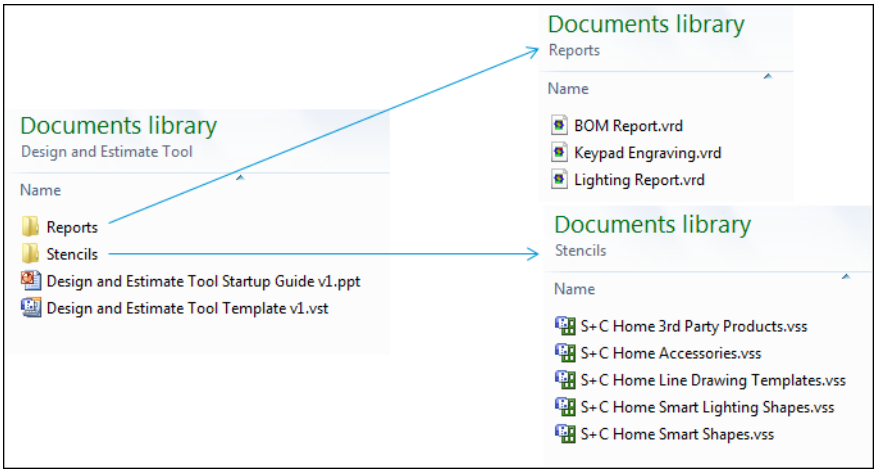
Step 1 Create a new directory on your computer named *Design and Estimate Template* (or similar).

Step 2 Download the `S+C Design and Estimate Tool.zip` file.

Step 3 Extract the `S+C Design and Estimate Tool.zip` file into the new directory.

Step 4 Verify that the file structure is similar to Figure 2-1.

Figure 2-1 Design and Estimate Tools



Step 5 Double-click the latest version of the `S+C Design and Estimate Tool Template.vsd` file to open a new Microsoft Video file that includes the following:

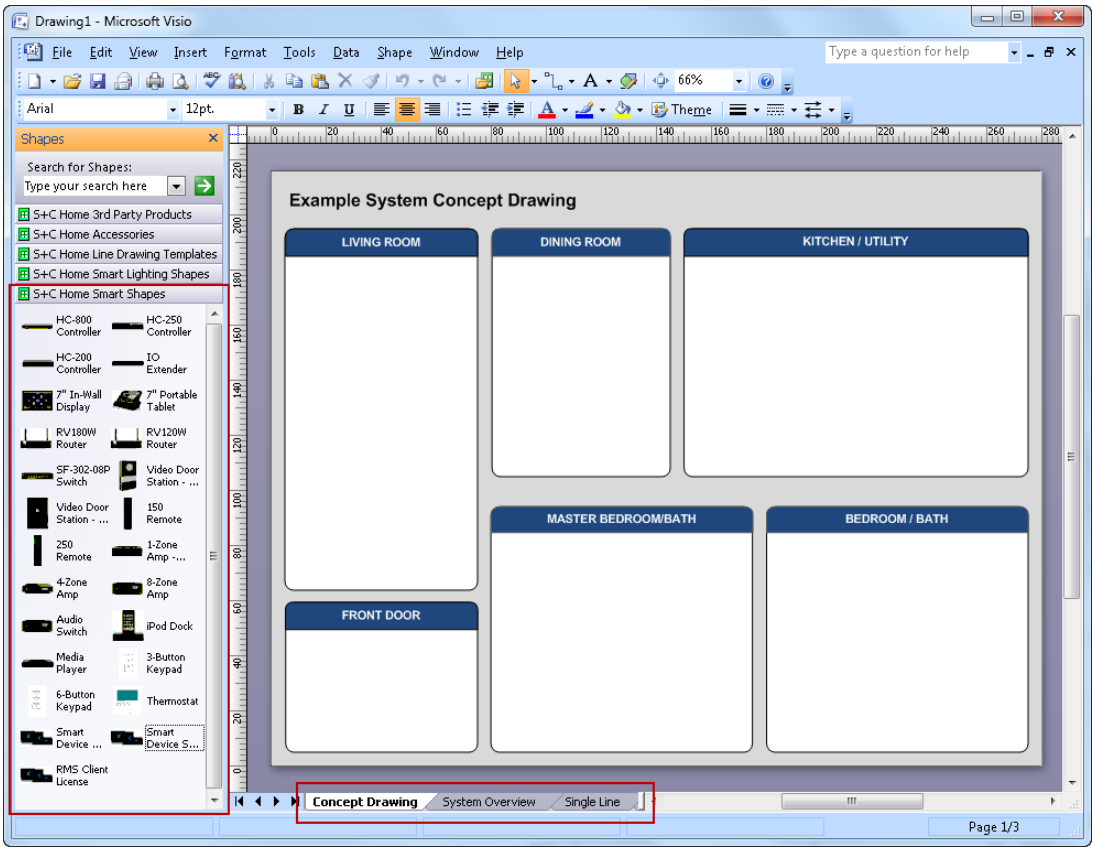
- Cisco *Smart Shapes* (custom Visio shape stencils).

- Concept Drawing page
- System Overview page
- Single Line page

Tip To use an existing Visio file, open the file, select **File -> Shapes -> Open Stencils** and select the `.vss` files included in the *Design and Estimate Template* folder you created in Step 1.

Step 6 Verify that the Shapes Window pane includes the Cisco shapes and similar to Figure 2-2

Figure 2-2 Cisco Smart Shapes Displayed in Visio



Tip Hover over the icons to display information regarding equipment usage (not available for all icons).

Step 7 Update the Visio file paths so reports will appear automatically.

a. Select **Tools -> Options** then select the **Advanced** tab then select the **File Paths…** button.

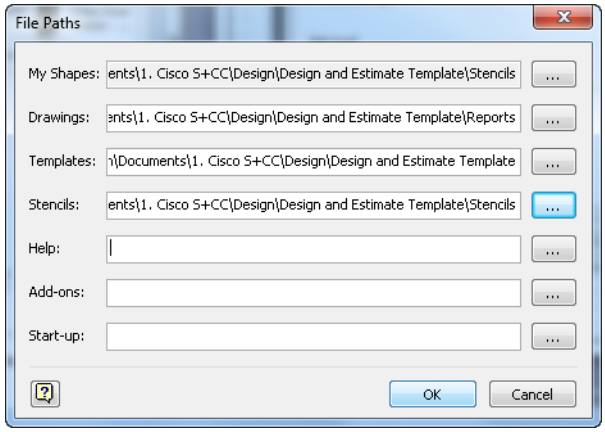
b. In the *File Paths* dialog box (Figure 2-3), click the "**…**" buttons on the right side and select the following file paths:

- My Shapes—Select the Stencils folder.
- Drawings—Select the Reports folder.

- Templates—Select the top-level folder that contains the `.vsd` file.
- Stencils—Select the Stencils folder.

Tip These are sub- folders in the *Design and Estimate Template* folder you created in Step 1.

Figure 2-3 Visio File Paths



Create a Concept Drawing and BOM Report

Procedure

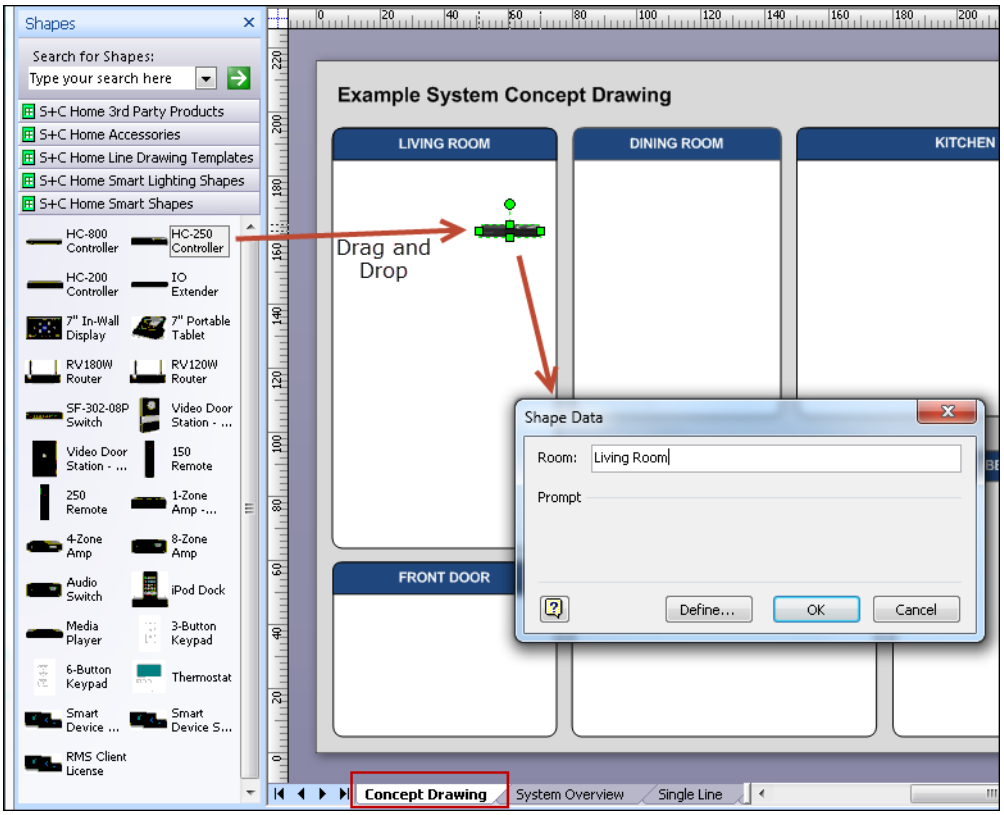
Step 1 Select the Concept Drawing tab.

Step 2 (Optional) Rename and resize the rooms to reflect the project you are designing.

Step 3 Drag the shapes from the smart shapes stencil into the drawing (Figure 2-4).

We recommend starting with the Cisco Controllers.

Figure 2-4 Drag and Drop Icons



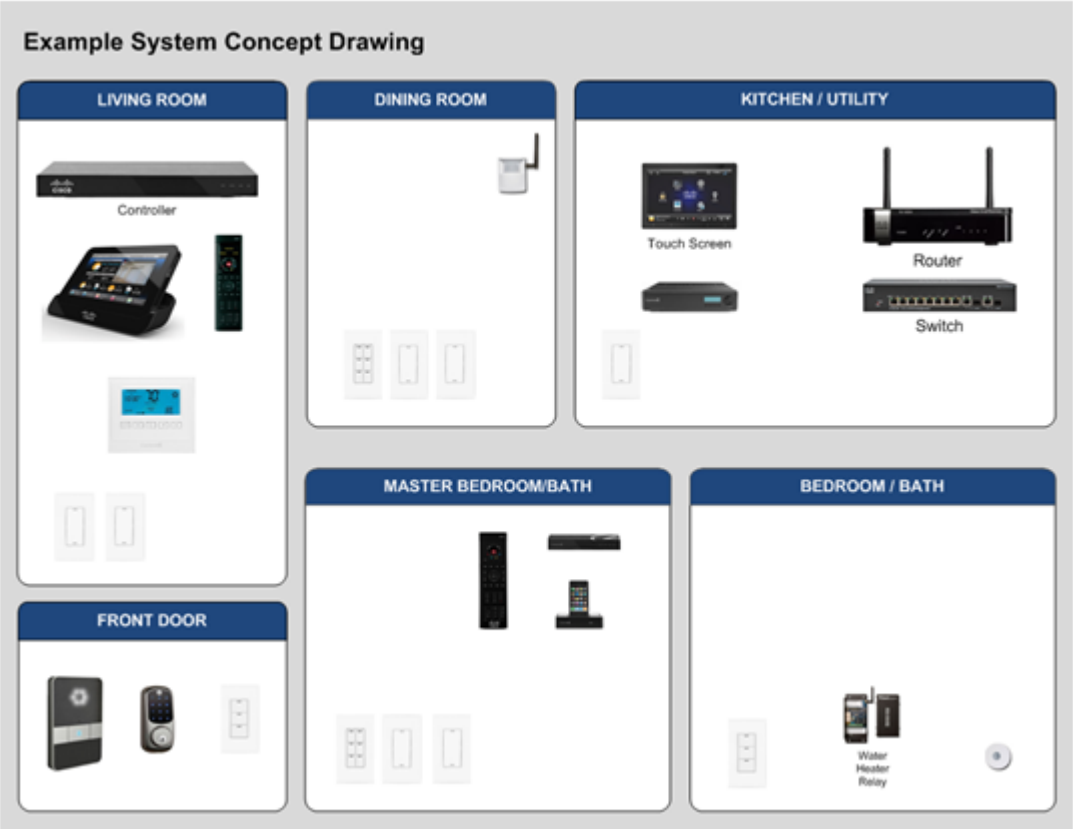
Step 4 (Optional) Enter *Shape Data* about the device or component in the dialog box that appears when you release the icon.

Tip Some icons include fields for simple information such as the room where the device is installed. Other icons request detailed information such as color and engraving. This information is optional but will be very helpful when creating reports later in the design process.

Step 5 Add additional shapes for all Cisco Controllers, user interfaces, network devices, lighting devices, A/V devices and 3rd party devices that your design requires (Figure 2-5).

Tip You can always add your own shapes, but those shapes will not appear in reports later in the design.

Figure 2-5 Completed Concept Design



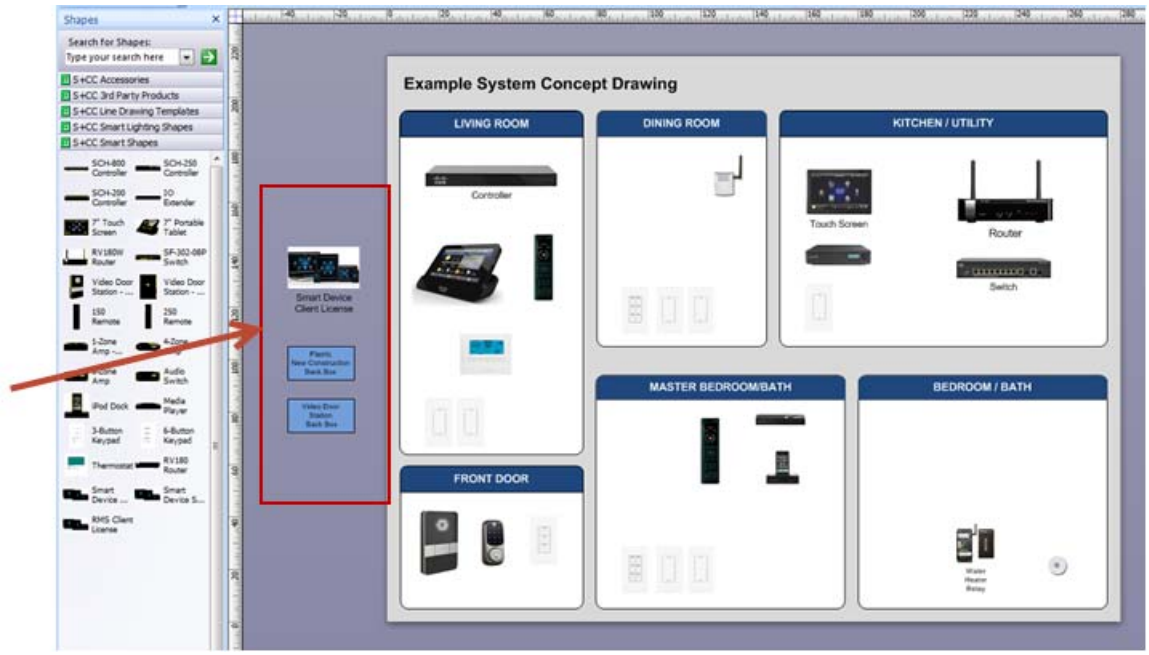
Tip

- Double click the icons to add text labels (names) to the shapes.
- To resize an icon, click and drag the corners or sides of an icon.

Step 6 Add accessories and software items outside of the drawing page (Figure 2-6).

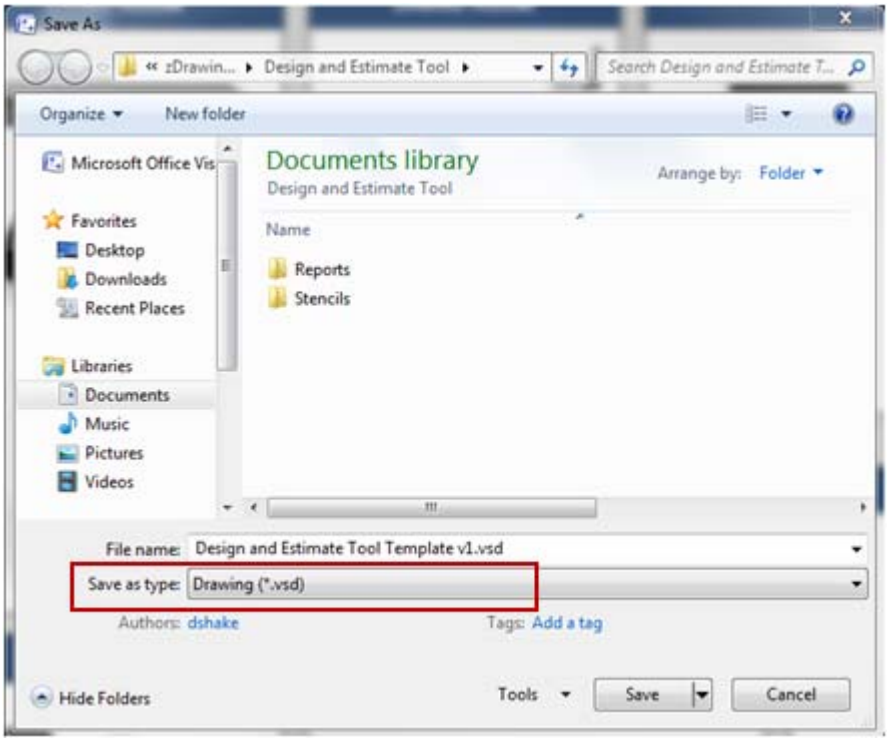
Note Items outside of the drawing page will not appear on a printed page, but will show up in the BOM and other reports.

Figure 2-6 Completed Concept Design



Step 7 Save the design as a drawing file as a `.vsd` drawing file (instead of a template file) (Figure 2-7).

Figure 2-7 Save the Design as a Drawing File



a. Select **File** -> **Save As**.

b. Select **Drawing (*.vsd)** from the *Save as type* drop down box.

c. Enter the file name and select a directory.

d. Click **Save**.

Step 8 Create a report such as BOM Report, Keypad Engraving, or Lighting Report.

Tip You can also create custom reports, if needed.

a. Select **Data** -> **Reports** and the dialog box below should display the three reports (in the *Design and Estimate Template* folder you created in Step 1.

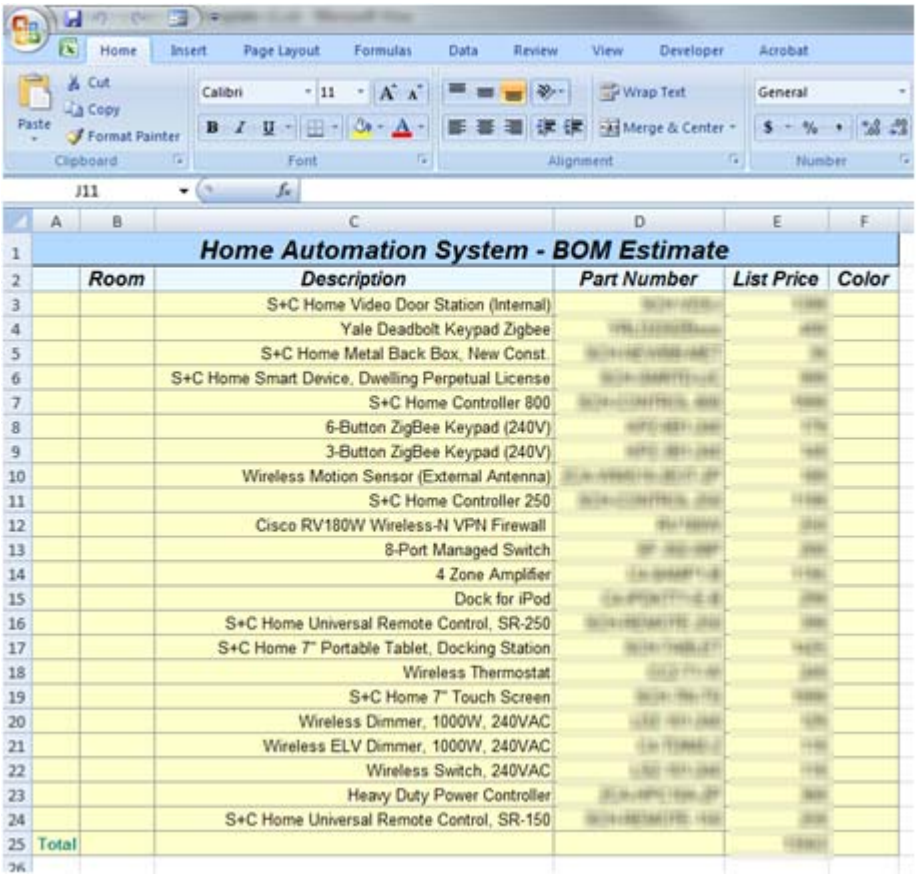
Tip If you saved the `.vrd` files to a different folder, click **Browse** and go to that folder to select a report.

b. Highlight a report name (such as the BOM Report) and select **Run**.

c. Select the report format (such as Microsoft Excel) and any other options that appear (for example, HTML reports prompt you for the location to save the report).

Step 9 Verify the report data (Figure 2-8).

Figure 2-8 BOM Report in Excel Format



	A	B	C	D	E	F
1			Home Automation System - BOM Estimate			
2		Room	Description	Part Number	List Price	Color
3			S+C Home Video Door Station (Internal)			
4			Yale Deadbolt Keypad Zigbee			
5			S+C Home Metal Back Box, New Const.			
6			S+C Home Smart Device, Dwelling Perpetual License			
7			S+C Home Controller 800			
8			6-Button ZigBee Keypad (240V)			
9			3-Button ZigBee Keypad (240V)			
10			Wireless Motion Sensor (External Antenna)			
11			S+C Home Controller 250			
12			Cisco RV180W Wireless-N VPN Firewall			
13			8-Port Managed Switch			
14			4 Zone Amplifier			
15			Dock for iPod			
16			S+C Home Universal Remote Control, SR-250			
17			S+C Home 7" Portable Tablet, Docking Station			
18			Wireless Thermostat			
19			S+C Home 7" Touch Screen			
20			Wireless Dimmer, 1000W, 240VAC			
21			Wireless ELV Dimmer, 1000W, 240VAC			
22			Wireless Switch, 240VAC			
23			Heavy Duty Power Controller			
24			S+C Home Universal Remote Control, SR-150			
25	Total					

Step 10 (Optional) Format the report, if necessary.

For example, you can apply a discount rate or change the text and colors (Figure 2-9).

Figure 2-9 Format and Revise the Report

L21

	A	B	C	D	E	F
1		Home Automation System - BOM Estimate				
2		Description	Part Number	List Price	Discount	List Price
3		S+C Home Video Door Station (Internal)		$		
4		Yale Deadbolt Keypad Zigbee		$		
5		S+C Home Metal Back Box, New Const.		$		
6		S+C Home Smart Device, Dwelling Perpetual License		$		
7		S+C Home Controller 800		$		
8		6-Button ZigBee Keypad (240V)		$		
9		3-Button ZigBee Keypad (240V)		$		
10		Wireless Motion Sensor (External Antenna)		$		
11		S+C Home Controller 250		$		
12		Cisco RV180W Wireless-N VPN Firewall		$		
13		8-Port Managed Switch		$		
14		4 Zone Amplifier		$		
15		Dock for iPod		$		
16		S+C Home Universal Remote Control, SR-250		$		
17		S+C Home 7" Portable Tablet, Docking Station		$		
18		Wireless Thermostat		$		
19		S+C Home 7" Touch Screen		$		
20		Wireless Dimmer, 1000W, 240VAC		$		
21		Wireless ELV Dimmer, 1000W, 240VAC		$		
22		Wireless Switch, 240VAC		$		
23		Heavy Duty Power Controller		$		
24		S+C Home Universal Remote Control, SR-150		$		
25	Total					

Note If you re-run the report, the original formatting will return and any changes must be reapplied.

Step 11 Save the report.

Create a Single Line Drawing

The Concept and System Overview drawings provide general information about the equipment in the system, while the Single Line drawing provides more detailed information about how the equipment connects together.

There is no reporting information included in the Line Drawing shapes but they contain the accurate connections for the Cisco and Control4 equipment.

Procedure

Step 1 Select the Single Line tab (Figure 2-10).

Step 2 Select the S+C Line Drawings Template shapes.

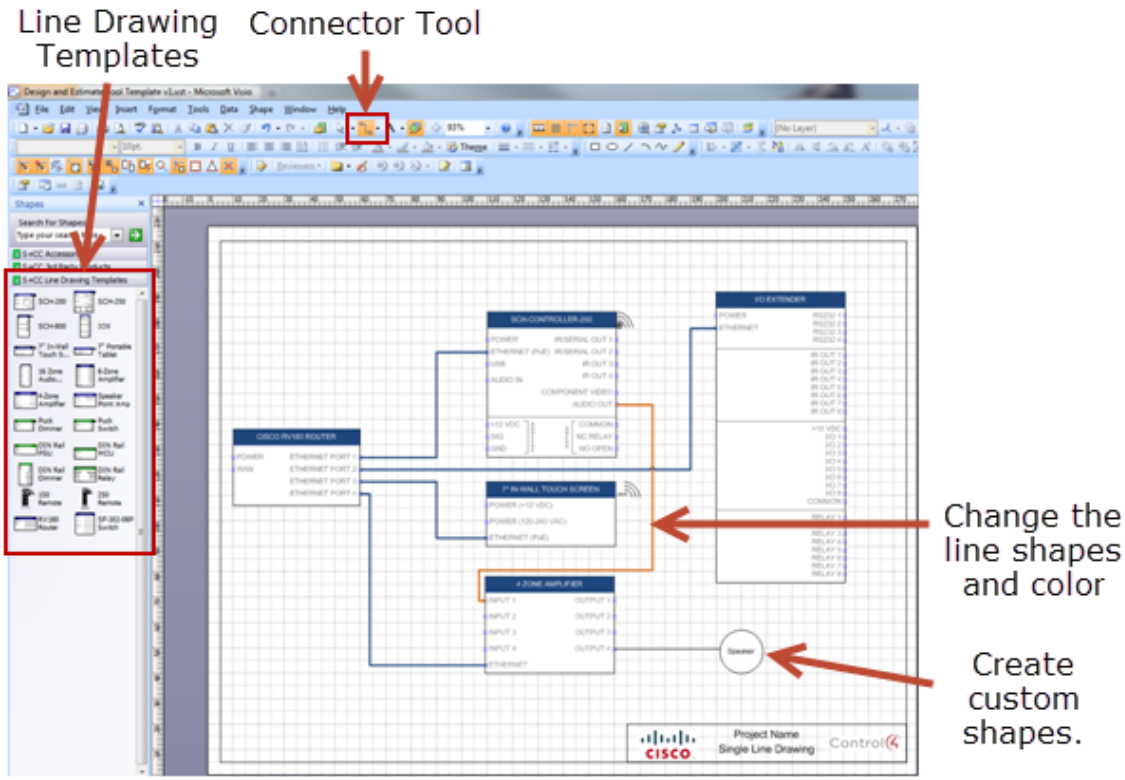
Step 3 Drag and drop devices onto the drawing.

The connections supported by the device are displayed in the drawing.

Step 4 Use the “Connector Tool” to connect the connection points on each shape to the appropriate ports on other shapes.

Step 5 Change the color and line thickness of each line to indicate the type of signal.

Figure 2-10 Single Line Drawing



Step 6 (Optional) Create custom shapes for equipment that isn’t in the stencil to complete the design.

CHAPTER 3

Network Requirements and Best Practices

Each Cisco Smart+Connected Residential Solution deployment requires a network plan that includes the following main elements:

- Public Internet access to each residence.
- A residence network that includes:
  - A router to provide a gateway to the Internet and a wireless access point (WAP).
  - A gigabit switch that (optionally) supports power-over-Ethernet (PoE).

Refer to the following topics for the recommended requirements and best practices regarding the switch and router installed in each residence.

Note Refer to your building network plan and network administrator for more information.

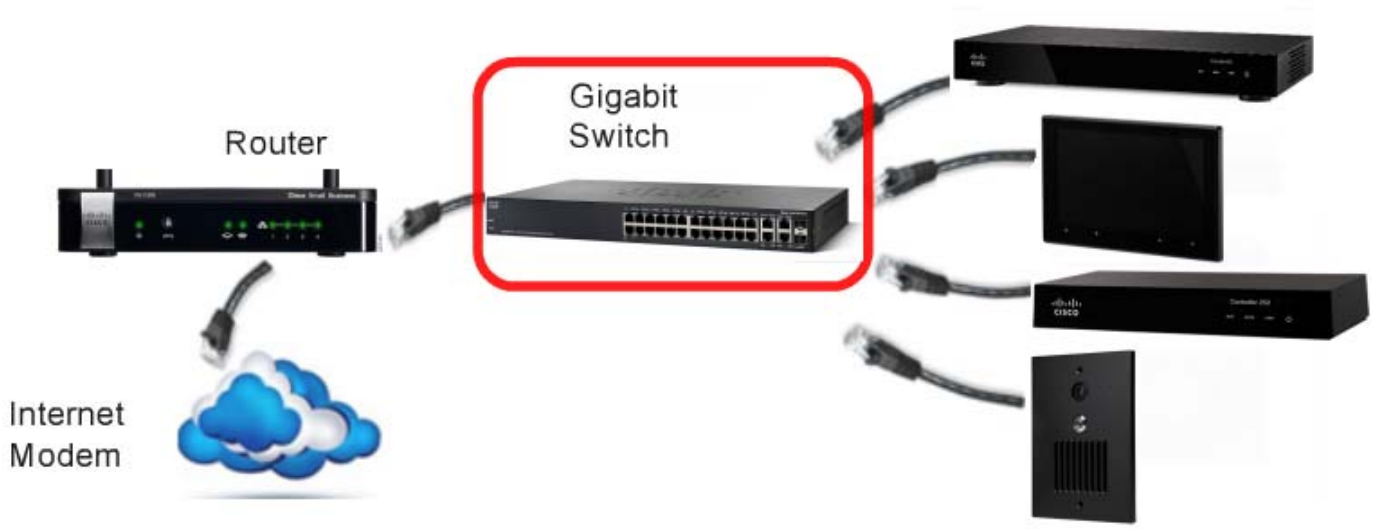
Contents

Overview

Figure 3-1 shows the recommended network configuration.

- A router is installed in the residence to provide Internet access. The router also provides a wireless access point (WAP) for the Cisco Smart+Connected Residential Solution Wi-Fi devices.
- The router WAN port is connected to the service provider's public Internet port.
- An gigabit network switch provides network connectivity for the wired residential devices. The switch also provides power-over-Ethernet (PoE) to the PoE devices in the residence.
- An Ethernet cable is attached from a router LAN port to the switch.
- All wired network devices are connected to the switch (not the router) to ensure robust handling of network traffic within the residence, and between the router and networks (such as the Internet) outside the residence.

Figure 3-1 Basic Network Configuration



Note We recommend using wired Ethernet connections (rather that Wi-Fi connections) whenever possible to ensure robust and reliable network connectivity. We also recommend using a gigabit switch (rather than a 10/100 switch) for optimal system performance.

Network Requirements

Prepare a network plan that includes the following:

Table 3-1 Network Requirements

Network Requirements	Requirement Complete? (✓)
A service provider WAN port in each residence that provides public Internet access.	☐
A wireless Cisco router installed in each residence that includes the following features: • Ethernet ports—At least one wired 1000 BaseT (Gigabit) port **Note** Only one LAN port on the router should be used to connect the router to the network switch. Any other LAN ports should remain unused to ensure the router capacity is used exclusively for Wi-Fi and Internet gateway features. • Wireless—Wireless-N • Wireless security—Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA), WPA2 • (Recommended) We recommend enabling DHCP to dynamically assign IP addresses to the Cisco Smart+Connected Residential (and third party) devices. If static IP addressing is preferred, see your network administrator for more information. **Note** We do not recommend using the resident's personal router. Use only a recommended Cisco router.	☐
A Cisco switch installed in each residence that includes the following features: • Number of ports—A sufficient number of Ethernet ports to provide connectivity for all wired devices. • Ethernet port speed— 1000 BaseT (Gigabit). • Backplane capable of supporting all ports at full bandwidth. For example, a 24 port switch would require a backplane with 48 gigabits of non-blocking backplane or switching fabric. **Note** Do not use 10/100 BaseT switches. 1000 BaseT (Gigabit) switching is required for high resolution video content. • (Optional) Power over Ethernet **Note** If additional Gigabit switches are installed in the residence, they should be directly connected to the main switch. Do not daisy chain a remote switch to another remote switch, since this can cause poor network performance, delays, and data loss. For example, the Cisco SF302-08P Managed Switch.	☐
A router configuration plan that includes the following for each router: • A wireless Network Name (SSID) and password. For security, we recommend using SSIDs or passwords that do not include the physical location of the wireless network. For example, do NOT use an apartment number, address, or other physical identification. We recommend changing the default SSID and password. • A router administration password. You can use the same password for all routers, or a unique password for each residence. We recommend changing the default password.	☐

Table 3-1 Network Requirements (continued)

Network Requirements	Requirement Complete? (✓)
Install and configure an all-in-one Firewall Virus and Spyware suite to protect the residence from unauthorized access while allowing the Cisco Smart+Connected Residential Solution software to function properly. See the "Network Security Best Practices" section on page 3-5.	☐
Use a signal strength analyzer to determine the Wi-Fi and ZigBee signal strength available in different locations in the residence. For example, the Wi-Spy tool from www.metageek.com, which analyzes both Wi-Fi and ZigBee signals. See the following for more information: • ZigBee Wireless Requirements, page 3-4. • Wireless Access Point Best Practices, page 3-5.	☐
Complete the "Create the Design and Estimate Plans" section on page 2-1 to define the solution and network devices that will be included in the installation. Verify that the following is in place before installing the equipment: • Install Ethernet wires (such as Cat5e or Cat6) between the locations in the residence that require connectivity. For example, from the ISP modem to the wireless router, from the router to the network switch, and from the network switch to each wired network device in the residence (such as the Cisco Controller, Cisco Smart+Connected 7" In-wall Display, and Cisco Smart+Connected Video Door Station).	☐

ZigBee Wireless Requirements

ZigBee wireless devices must be within range of other ZigBee devices to successfully form a mesh network. The more ZigBee devices installed in a project, the stronger the ZigBee communication mesh is.

The wireless range varies greatly depending on the device type and model, the location of the device relative to other ZigBee devices, and physical obstructions between devices. RF interference and other wireless devices can also impact signal strength and range.

Table 3-2 ZigBee Wireless Requirements

Requirement	Requirement Complete? (✓)
Perform range tests to verify ZigBee wireless signal strength before you install and configure ZigBee devices such as smart plugs or load control modules. This ensures the ZigBee devices can connect to the Cisco Controller before you install the actual device. For example, the Wi-Spy tool from www.metageek.com.	☐

Wireless Access Point Best Practices

Wireless equipment should be installed as close as possible to each other to ensure sufficient signal strength. Follow the guidelines in Table 3-3 to maximize wireless signal strength.

Table 3-3 Wireless Networking Practices

Best Practice	Description
Update the firmware on all routers.	See the product documentation for more information.
Use a signal strength analyzer (such as the Wi-Spy tool from www.metageek.com) to determine the Wi-Fi signal strength in different locations in the residence.	Look for high levels of interference, signal/noise ration and signal strength. Change channels based on the tool report.
Install the wireless equipment as close as possible.	Wireless signals are much stronger when the components are nearby.
Install the Wi-Fi access point in a central location.	Ideally, the customer's wireless router will be installed in a central location to provide a strong signal throughout the residence.
Avoid physical obstructions.	Barriers such as walls, floors, furniture, or other objects can degrade wireless signal strength. Place the wireless components in locations with as few barriers as possible between them.
Avoid reflective surfaces.	Metal and glass surfaces can disrupt wireless signals. Place the wireless components away from reflective surfaces or move reflective surfaces away from the equipment.
Avoid other residential appliances and electrical equipment.	Appliances such as wireless phones, microwaves, electric fans, baby monitors and fluorescent lighting can interfere with wireless signals. Place the wireless components away from other appliances and move the appliances.
Adjust the router antennas, if possible.	If the Wi-Fi router has adjustable antennas, rotate them and check for improved reception.
Experiment with different locations.	Move the router or other wireless devices to different locations to improve reception.

Note Do NOT use Wi-Fi range extenders or repeaters. These can cause problems upgrading devices and interfere with ZigBee communications.

Network Security Best Practices

To protect a Cisco Smart+Connected residence from unauthorized access that can lead to loss of personal data, we recommend using an all-in-one Firewall Virus and Spyware suite that is provided from a single company. An all-in-one package provides the best protection while minimizing potential conflicts or inter-operability issues between the security utilities.

The security suite must be configured to allow Cisco and Control4 software to function properly and access the primary Cisco Controller and other devices in the Cisco Smart+Connected Residential Solution. You must add all solution software to the "approved" list of the security suite.

See the security software documentation for more information.

CHAPTER 4

Install and Connect the Physical Components

Refer to the following topics for a summary of the requirements, processes, and related documentation required to physically install the devices, components, accessories and cables in a Cisco Smart+Connected Residential Solution.

Contents

Overview

Install the physical components according to the line drawing created using the Cisco Design and Estimate Tool. The line drawing includes each of the physical components included in the residence, and the cable requirements and port connections for each device. You can also refer to the Concept and System drawings for additional information regarding device placement and requirements.

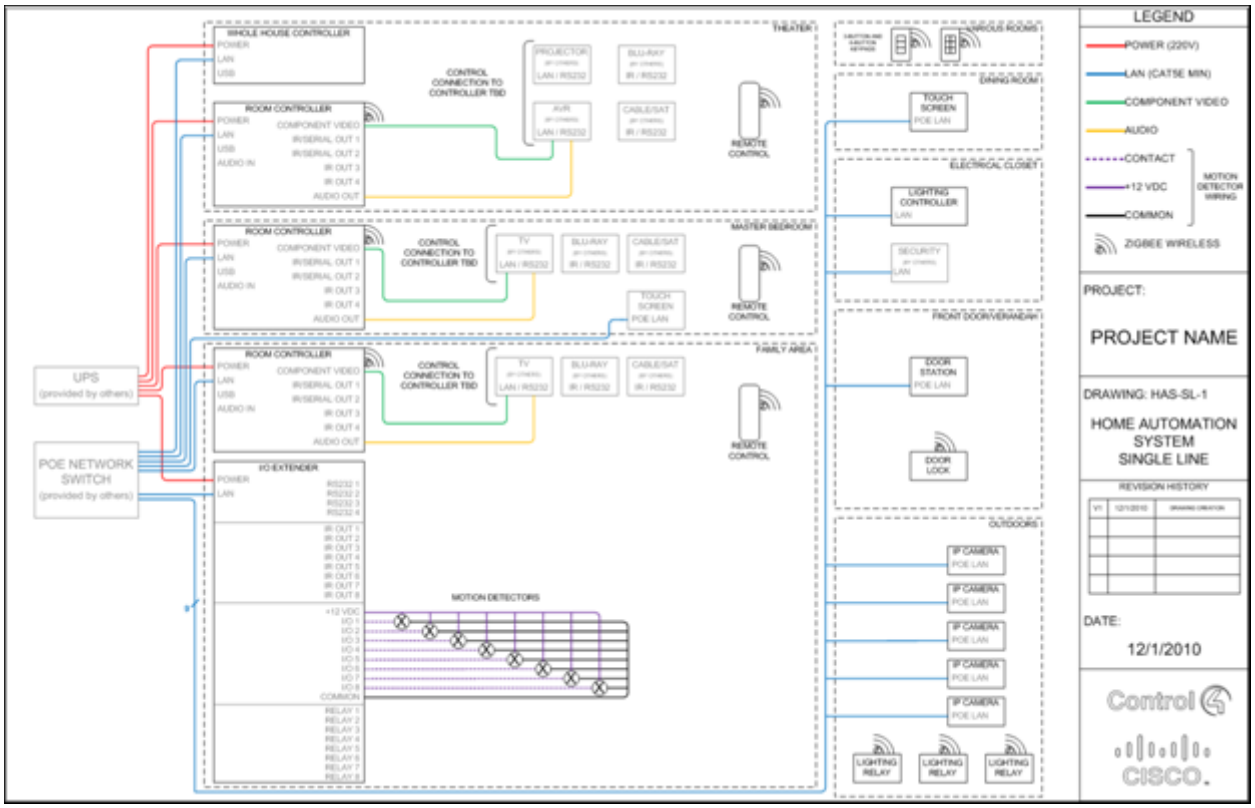
In addition, you must install any back boxes required for wall-mounted components such as the Cisco In-wall Display, the Cisco Video Door Station, 3 and 6-button keypads, lighting controls, and lighting controls. Additional mounting brackets may be required for the Cisco Controllers (such as the Cisco Controller 250).

Table 4-1 summarizes resources and additional information that you should consult before installing the Cisco Smart+Connected Residential Solution:

Table 4-1 Installation Resources

Resource	Description	More Information
Architecture and building plans	The appropriate cables, back boxes and electrical connections must be installed and functional.	Development or construction manager.
Your network administrator	A building network must be installed and functional for communication between the residential devices and the public services. A building network is also required for the remote commissioning and monitoring of the Cisco Smart+Connected Residential Solution. Internet access must be available in the residence to provide communication between smart devices and Internet-based services. An Internet connection also provides residents with access to the Internet for their personal devices.	See your network administrator for more information, and to confirm the location and configuration of the network ports in each residence. See also the "Network Requirements and Best Practices" section on page 3-1.
Line drawing Concept drawing System overview	Provides detailed descriptions of the physical components included in the residence, including the cable requirements and port connections for each device (see the line drawing example in Figure 4-1).	Create the Design and Estimate Plans, page 2-1
Installation Summary	The installation summary provided in the "Summary Steps" section on page 4-3.	Contents, page 4-1 Summary Steps, page 4-3
Device reference guides	The Reference Guide for each Cisco Smart+Connected Residential device provides detailed information regarding device installation, ports, connections, specifications, mounting, warranty, and other information. The reference guides also include specifications and installation instructions for wall mounted back boxes and mounting brackets available for devices such as the Cisco In-wall Display, the Cisco Video Door Station, and Cisco Controllers.	Cisco Smart+Connected Residential Reference Guides
Product documentation for network equipment and other third-party products	See the product documentation included with the device or available online.	• Product website

Figure 4-1 Sample Cisco Design and Estimate Tool Line Drawing



Summary Steps

	Task	Additional Information	Task Complete (✓)	Task Not Required (X)
Step 1	Create a line drawing that includes the devices, connections, cables and other components in the residence. **a.** Create the concept drawing. **b.** Create the system overview drawing. **c.** Create the single line drawing.	Create the Design and Estimate Plans, page 2-1	☐	☐
Step 2	Gather the devices, cables and other components included in the design plan created in Step 1.	Create the Design and Estimate Plans, page 2-1	☐	☐
Step 3	Verify that any pre-existing or required wiring, electrical connections and back boxes are installed, according to the building plan.	Development or construction manager.	☐	☐

	Task	Additional Information	Task Complete (✓)	Task Not Required (X)
Step 4	Install the Cisco router and switch in the residence. **Note** Although this document provides examples, the exact router and switch model can vary. The same installation concepts apply for most devices. See your network administrator for more information. For example: **Router** **a.** Unpack the Cisco Router and connect the power cord. **b.** Connect the Ethernet cable from the existing ISP network connection (such as a cable or DSL modem) into the router port marked "WAN" **c.** Power on the existing IPS cable or DSL modem and wait until the network connection is active. **d.** Power on the router **Switch** **a.** Unpack the unit and connect the power cord. **a.** Connect a Cat5 Ethernet cable from a router LAN port to the switch **LINK/ACT** port.	• Refer to the installation documentation for each device. • Related Documentation, page 1-4	☐	☐
Step 5	Install the Cisco Controller(s), connect the cables and power on the devices according to the design plans.	Cisco Smart+Connected Residential Controller Reference Guides	☐	☐
Step 6	Install the Cisco displays: • Cisco In-wall Display • Cisco Portable Tablet	Cisco Smart+Connected 7" In-wall Display Reference Guide Cisco Smart+Connected Portable Tablet Reference Guide	☐	☐
Step 7	Install the internal and external Cisco Video Door Station(s).	Cisco Smart+Connected Video Door Station Reference Guide	☐	☐
Step 8	Prepare the Cisco Universal Remote(s). For example, install the batteries.	Cisco Smart+Connected Universal Remote 150 Reference Guide Cisco Smart+Connected Universal Remote 250 Reference Guide	☐	☐

	Task	Additional Information	Task Complete (✓)	Task Not Required (X)
Step 9	Install the Cisco I/O Extender.	Cisco Smart+Connected I/O Extender Reference Guide	☐	☐
Step 10	Install the 3rd party devices. For example: • Door Locks • IP cameras • 3 and 6 button Keypads • Light switches • Motion detectors	Refer to the installation documentation for each device.	☐	☐

Installation Requirements

The following table lists the basic devices that are installed in a Cisco Smart+Connected Residential Solution.

Table 4-2 Equipment Requirements

Requirements	Accessories	Description	Requirement Complete? (✓)
WAN ports for public Internet access and for the building network.	Existing modem, router, or other access ports.		☐
Residence wireless router: For example, the Cisco Wireless Router	• Cat5 Ethernet cable	Provides wired and wireless network connectivity.	☐
Network switch to provide additional network ports. For example, the Cisco SF302-08P Managed Switch	• Cat5 Ethernet cable	Provides additional network ports and Power over Ethernet (PoE) capability.	☐
Cisco Controller(s)	• Cat5 Ethernet cable • RCA A/V cables (if necessary) • IR emitter(s)	Manages the residential automation features.	☐
Cisco Portable Tablet	• Cat5 Ethernet cable • (Optional) Phillips head screwdriver and two (2) screws (included) to secure the touchscreen to the dock	Provides the user interface (UI) to navigate and control the solution features.	☐
(Optional) Cisco Universal Remote	• 2 AA batteries (included)	Controls the Cisco Smart+Connected Residential equipment and features using the TV on-screen Navigator. Also replaces the customer TV remote control for the customer TV.	☐
Customer-supplied Television.	HDMI, component or composite cables (depending on the available television input ports).	Displays the on-screen Navigator used to control the residential automation features.	☐
(Optional) Customer TV remote control	None	Controls the TV if a Cisco Universal Remote is not used.	☐

CHAPTER 5

Create the Basic Cisco Controller Project

A “project” is a Cisco Smart+Connected Residential Solution configuration created using the Composer Pro software. This project can be used for a single residence, or backed up to a file and applied as a template to multiple Cisco Controllers.

After the basic project configuration is complete and verified, you can add additional devices and features, and customize the project using agents and programming.

Refer to the following topics for more information.

Contents

Overview

Templates allow you to quickly configure multiple Cisco Controllers that support identical (or nearly identical) sets of Cisco Smart+Connected Residential equipment. For example, you can create a template for small residence that include a basic set of devices and services, and another template for residences that include additional equipment and advanced services. See the "Create the Design and Estimate Plans" section on page 2-1 for information about creating the designs that represent a typical residence configuration.

Templates are applied either by manually loading the template file on the Cisco Controllers, or by remotely deploying the Cisco Controller using the Cisco Smart+Connected Remote Management Solution (Cisco RMS). See the "Related Documentation" section on page 1-4 for links to Cisco RMS installation and administration documentation.

Note The project template is first created in a controlled environment (such as a lab or model residence), and then applied to the Cisco Controller in each residence.

Template Configuration Requirements

Table 5-1 Template Requirements

Requirements	Requirement Complete? (✓)
Your organization must be a Cisco Partner for the Cisco Smart+Connected Residential Solution. See your Cisco representative for more information.	☐
A PC running the Microsoft Windows operating system. The PC must be on the same subnet as the Cisco Smart+Connected Residential components, including the Cisco Controller.	☐
Composer Pro, version 2.2 or higher. • See the "Install the Composer Pro Software" section on page 5-7. • You will be prompted to install the Microsoft .Net Framework during the installation process, if necessary.	☐
A complete set of physical components for the typical installation including a Cisco Controller (such as the Cisco Smart+Connected Controller 250). See the "Install and Connect the Physical Components" section on page 4-1.	☐

Summary Steps

Complete the following steps to create a project template that can be loaded onto multiple Cisco Controllers.

	Task
Step 1	Install the Control4 Composer Pro Software.
Step 2	Register the Cisco Controller and create a registration code, if necessary. Create a consumer account on the dealer portal and register the Cisco Controller to obtain the registration code you will copy into Composer software in Step 9.
Step 3	Launch the Composer Pro software on your PC and select the Cisco Controller name.
Step 4	Rename the project.
Step 5	Add the locations that represent the physical layout of the residence.
Step 6	Add the primary Cisco Controller to the project.
Step 7	Identify the Cisco Controller as the primary Controller.
Step 8	Enter the project properties.
Step 9	Register the primary Cisco Controller to enable software upgrades and other services.
Step 10	Enable the ZigBee Server on the primary Controller.
Step 11	Add additional devices from the default My Drivers tab.
Step 12	Add additional device drivers from the Driver Database (Local or Online), if necessary
Step 13	Identify each networked device.
Step 14	Update the device software.
Step 15	Create the Virtual Connections for Control (Serial) and Audio/Video Devices.
Step 16	Verify and configure light switches and dimmers.
Step 17	(Optional) Save the project as a template.
Step 18	(Optional) Add additional devices to the template.
Step 19	(Optional) Configure an intercom for communication within a residence.

Overview of the Composer Pro Configuration Tool

The Cisco Controller enables automation within the residence. Multiple Cisco Controllers can be installed in a residence, but only one device (known as the primary Controller) runs the Director. Director is a pre-installed Linux based software package embedded in the device that communicates with Cisco and third-party products to enable device interaction and automation features.

Refer to the following topics for more information:

- Connecting to a Director, page 5-4
- Composer Pro Overview, page 5-6
- Install the Composer Pro Software, page 5-7

Connecting to a Director

Composer Pro is the software used to connect to and program the Director that resides on the primary Controller. When you launch Composer Pro, you are prompted to select one of the following options (Figure 5-1).

Figure 5-1 Connecting to a Director

- **Virtual Director**—Allows you to configure the project without being connected to a Director (Cisco Controller). Changes are saved on the PC, and can be uploaded to a Director later. Choose this option to work on a project when you are disconnected from the network. You can do almost everything you need to set up and design a system, set up most connections, and use programming. You cannot identify network connections, test device control, or set up media using this method. See the Composer Pro User Guide for information.

- **Director on Local Network**—Allows you to connect to a Director (Cisco Controller) that is available on the same network (inside the firewall). Changes are automatically saved to the Cisco Controller and are effective immediately. You can set up and design the project, make connections, add media, and program the system using this method. The project can also be backed up and used as a template to configure additional Cisco Controllers
- **Remote Director**—A remote live connection to the Cisco Controller over the Internet (the PC is outside the network firewall). Changes to the system are effective immediately. Choose this option to use an Internet connection to the residential network. See the Composer Pro User Guide for more information.

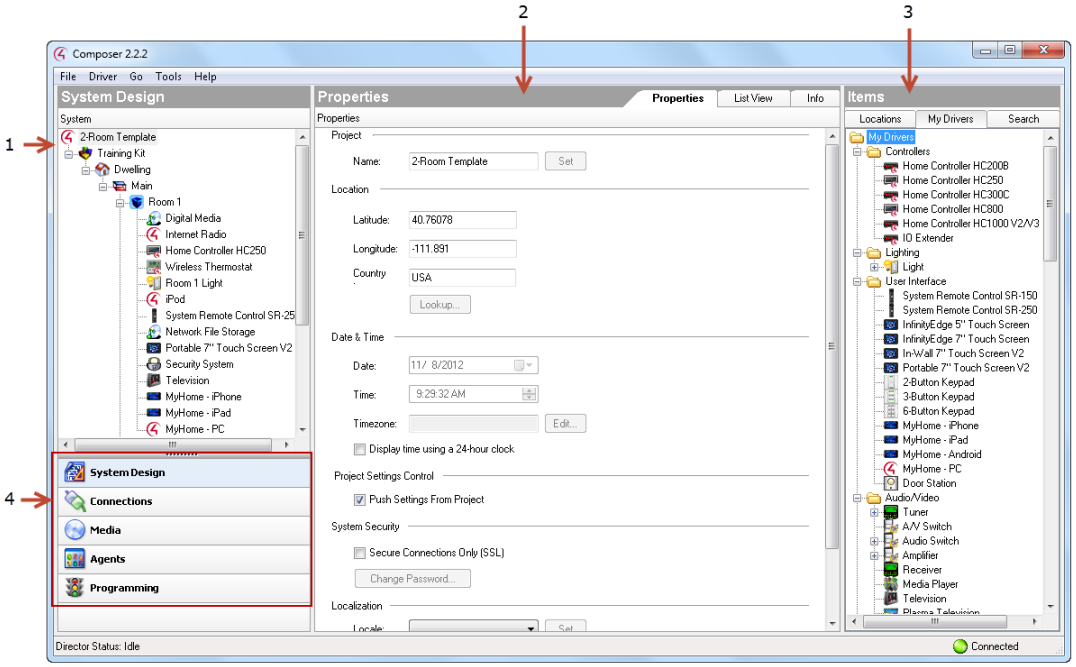
Note If a "Renew Composer Registration" appears, type your email address, password, and click **Renew**. See your Cisco representative and the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.

Composer Pro Overview

After connecting to the Director (Figure 5-1) you must add the devices used in the system, and configure the features available to those devices.

Figure 5-2 summarizes the main Composer Pro user interface elements. See the "Create the Basic Cisco Controller Project" section on page 5-1 for instructions to create a project and (optionally) save it to a template.

Figure 5-2 Composer Pro Overview



1	**System Design**—(Default View). Contains the project tree where you build or update the project configuration with locations and device objects. Double-click an object in the Items pane (see 'Items' in this list) to add it to the project tree in the System Design pane

2	**Properties**—Contains the Properties of an object you select from the project tree when you want to check or modify a device, project, and room. For more information about the Properties pane, select the **Help** menu and search for Project Properties, Room Properties, or Device Properties.
3	**Items** —Contains the items (or objects) you use to build your project, such as locations (sites, buildings, floors, rooms) and devices (Controller hardware, DVDs, TVs, Receivers, lights, contacts, relays, etc.). If a device is not available in the **My Drivers** tab of this pane, use the **Search** tab to search for that device (see the Composer Pro User Guide - Advanced topics for information about drivers). If you've created a new driver using the Driver Wizard (DriverWorks The DriverWorks SDK is used to create two-way drivers for audio video (AV) and non-AV devices.), you will find your new driver in the **Search** tab.
4	**Views**—Select a view to change the appearance and functionality of the Composer Pro interface. The changes reflect the configuration options for that view. • **System Design**—Lets you build the project tree and identify the devices to the system. • **Connections**—Lets you identify all connections (Room, Control, AV, Network). • **Media**—Lets you add and scan stored or broadcast media. • **Agents**—Lets you set up an agent for use in the system and in programming. Agent types: Lighting Scenes, Wakeup, Scheduler, Variables, etc. For more information, see the see the Composer Pro User Guide and the "Understanding Agents" section on page 7-7. • **Programming**—Lets you program devices and agents on the system. For more information, see the see the Composer Pro User Guide and the "Programming Basics" section on page 7-9.

Install the Composer Pro Software

To install the Composer Pro software, you must have a dealer account and access to the Internet.

Procedure

Step 1 Verify that your administrator has created your dealer account and enabled access to the Composer Pro software.

Step 2 Log in to the Cisco Developers Network (CDN) to download the installer file.

Step 3 Double-click the installer file on your local disk.

Step 4 Follow the on-screen instructions to install the Composer Pro software.

Note You will be prompted to install the Microsoft .NET Framework, if necessary.

Step 5 Enter your dealer credentials (username and password) to enable the Composer Pro software.

Note The PC must be on the same subnet as the Cisco Smart+Connected Residential components, including the primary Cisco Controller.

Create the Basic Project Configuration

The basic project configuration includes the project properties, such as the project name, and the location and time settings where the project will be installed. The basic configuration also include the device drivers for the residential automation equipment, such as the Cisco Controller, displays, ZigBee lighting, and other option devices. After the device derivers are added, you must *identify* the devices in the Composer Pro project. If you are adding audio/video (A/V) equipment, such as a television, DVD player or stereo, you must also define the A/V connections and endpoints.

Refer to the following topics for more information, and instructions to create a basic Composer Pro project.

- Devices Added in This Example, page 5-8
- Before You Begin, page 5-9
- Create the Project and Add Devices, page 5-9
- Create the Virtual Connections for Control (Serial) and Audio/Video Devices, page 5-25

Devices Added in This Example

The instructions included in this sample are for a standard set of Cisco and third-party automation devices. The actual devices used in your deployment and template will vary.

The devices used in the instructions include the following:

Cisco Controller

- Cisco Controller 250

Networking

- Cisco 8-Port PoE Switch
- Cisco Wireless Router

Displays

- Cisco In-wall Display
- Cisco Portable Tablet

Door Stations

- Cisco External Video Door Station

Remote Control

- Cisco Universal Remote 250

Audio/Video

- Television
- USB stick
- Speakers

HVAC

- Wireless thermostat

Keypads

- 6-button keypad

Lighting

- Dimmer
- Switch

Other

- Motion sensor
- Door lock
- IP security camera

Before You Begin

- Disable the security features on your PC. They may interfere with your ability to connect to the Cisco Controller.
- Ensure that your PC and the Cisco Controller are on the same network subnet. For example, they should be connected to the same router or switch.
- Create the Consumer accounts and Cisco Controller registration codes used to register the Cisco Controller. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.

Create the Project and Add Devices

Complete the following procedure to create a new project, configure the project properties, and add and identify the supported devices. These instructions use a standard set of residential automation equipment. The actual devices used in your deployment will vary.

Procedure

Step 1 Launch Composer Pro and choose the Cisco Controller.

a. Choose **Start > All Programs > Control4 > Composer 2.2.x**. (or higher)

b. If prompted, enter your dealer credentials (username and password) to register or renew your Composer license.

c. Select "**Director on Local Network**".

d. Highlight the Cisco Controller name (or IP address) and click **Connect**.

Note If the Cisco Controller does not appear in the list, review the "Before You Begin" section on page 5-9. Also verify that the Cisco Controller and networking equipment was properly installed and configured. See the "Install and Connect the Physical Components" section on page 4-1.

e. Click **Yes** to add the Cisco Controller to your list of trusted devices.

This step is only necessary the first time you connect your PC to a Cisco Controller.

f. If prompted to update the device software, click **OK**.

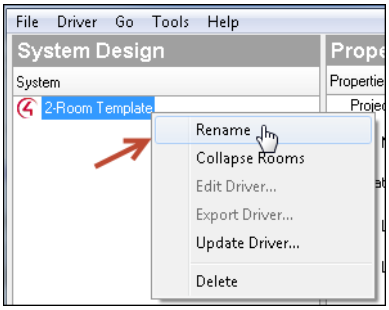
Tip We recommend that you do not perform the upgrade until all devices have been identified in the project (see Step 9 through Step 13). This will cause all devices to be upgraded at the same time. If you upgrade the Cisco Controller before the other network devices are added and identified, each device will automatically upgrade when identified the device will be unresponsive during the upgrade process.

Step 2 Rename the project.

a. Right-click the project name and select **Rename**.

b. Enter a meaningful name that describes the template purpose. For example: `2-room template`.

Figure 5-3 Renaming the Project



Step 3 Add the locations that represent the physical layout of the residence (Figure 5-4).

For example, if you are creating a template for a 2-room residence, add Room 1 and Room 2:

a. Select the **Locations** tab (Figure 5-4).

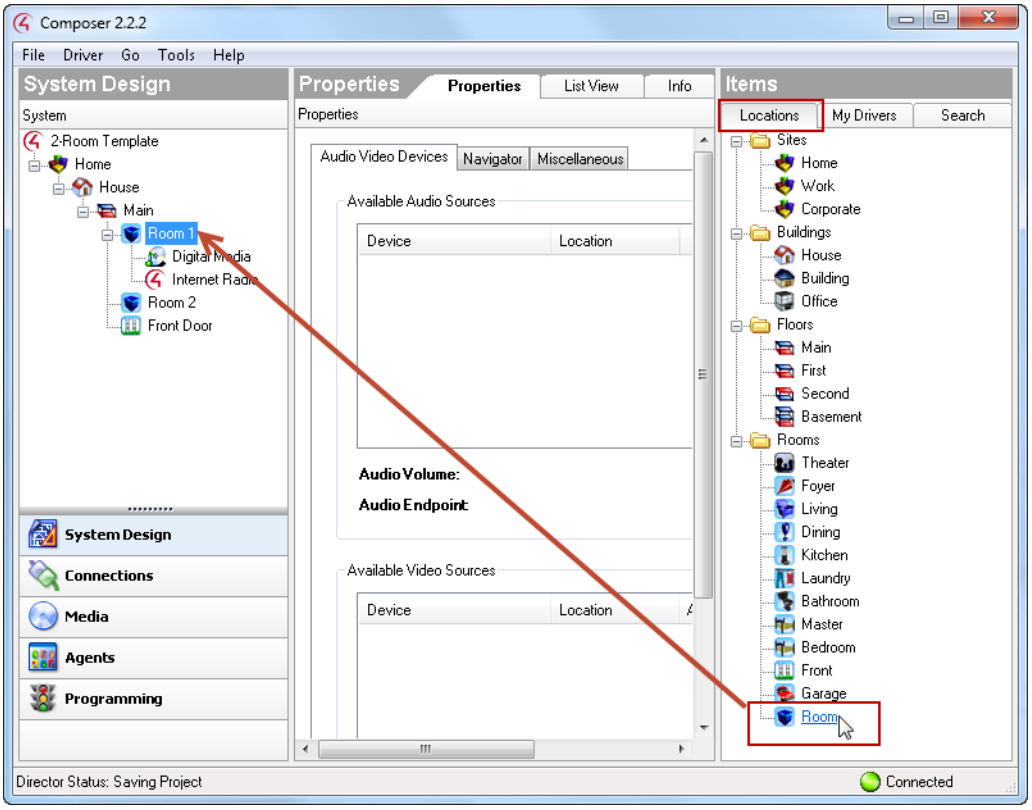
b. Double-click **Room** to automatically add the room. When you add the first room, a default hierarchy is also created (for example: **Home > House > Main > Room**).

c. (Optional) Add additional rooms if necessary. The room is added as a sub-location to the selected location.

For example, highlight **Main** and double-click **Room** to add a second **Room 2**.

d. (Optional) Right-click the icons and **Rename** the locations, if necessary.

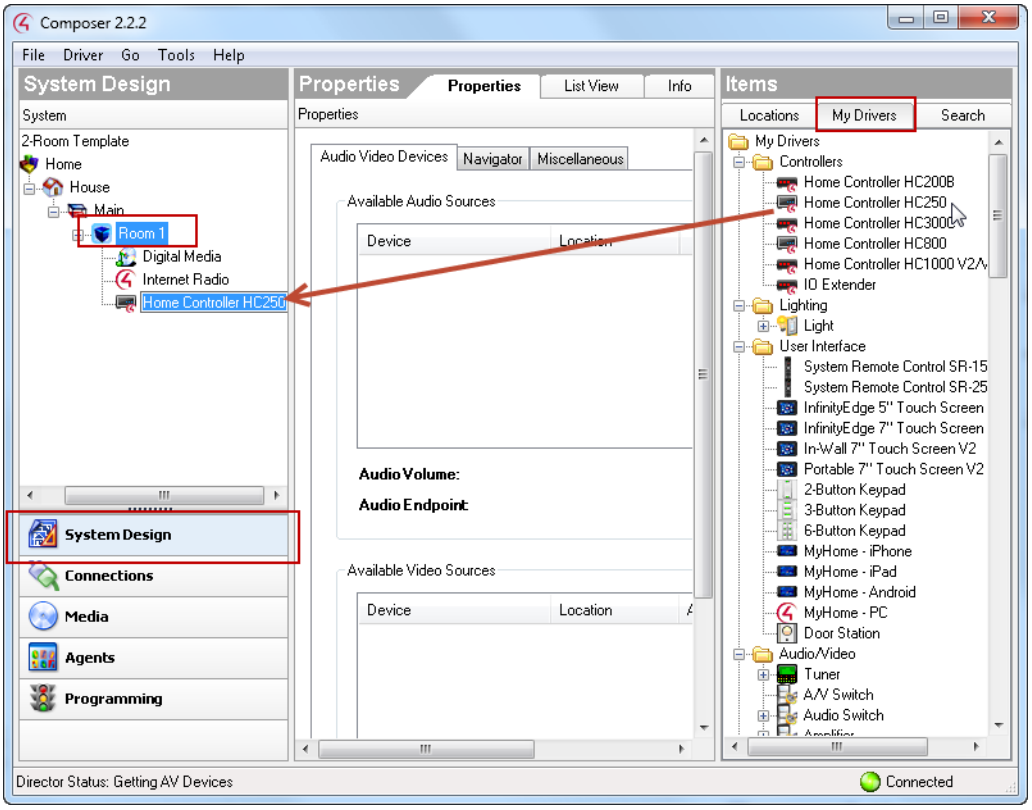
Figure 5-4 Adding Locations



Step 4 Add the *primary* Cisco Controller to the project.

Note The Cisco Controller is the main device that enables residential automation. A residence can include multiple Cisco Controllers, but the Cisco Controller that runs Director is referred to as the *primary* Cisco Controller. The first Cisco Controller to be added to the project is the *primary* Controller by default.

Figure 5-5 Adding the Primary Cisco Controller



a. Highlight the room where the Cisco Controller will be installed.

b. From **System Design**, choose the **My Drivers** tab (Figure 5-5).

c. Double-click the Cisco Controller driver to add the device.

   For example, **Home Controller HC250**.

d. Verify that the Cisco Controller appears in the correct location (Figure 5-5).

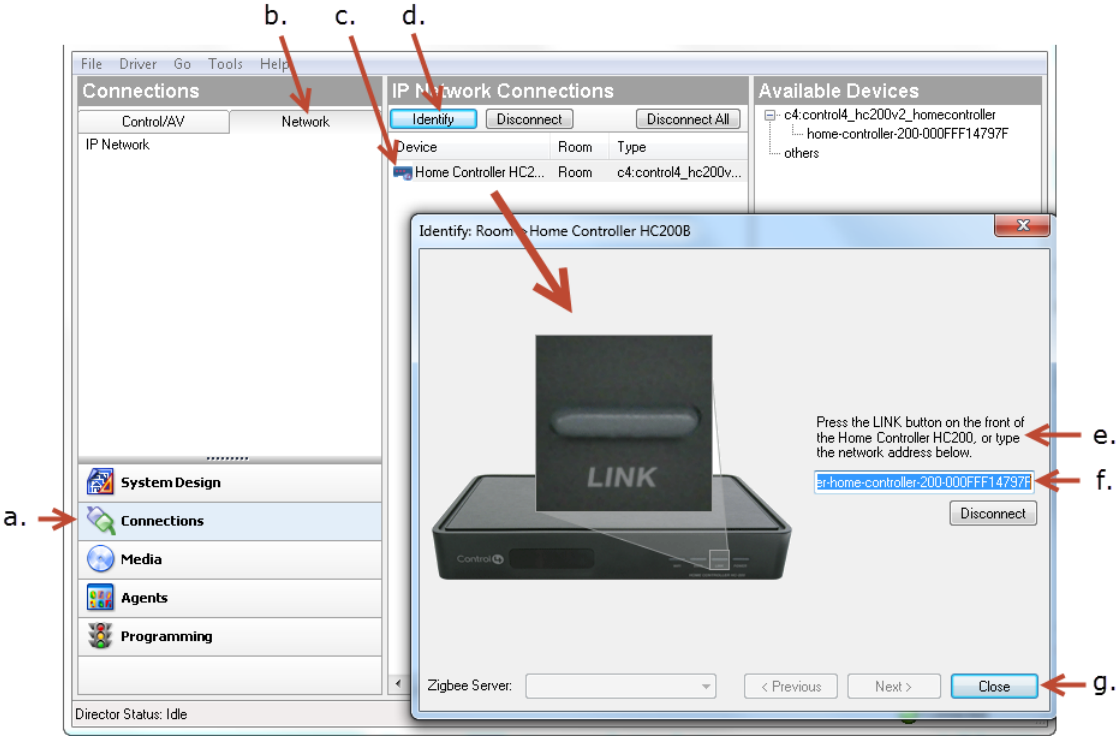
Tip Additional drivers related to the Cisco Controller (such as Internet Radio and Digital Media) are added automatically.

e. (Optional) Right-click on the Cisco Controller name and room names to rename the device and location tree.

   For example, change the Cisco Controller name to *Primary Controller*.

Step 5 Identify the Cisco Controller as the *primary* Controller (Figure 5-6).

Figure 5-6 Identifying the Primary Controller



a. Click **Connections**.

b. Click the **Network** tab.

c. Highlight the Cisco Controller.

d. Click **Identify**.

e. Press the physical **Link** or **ID** button on the Cisco Controller, as shown in the Composer Pro image (the button may be on the front or the back of the device, depending on the model).

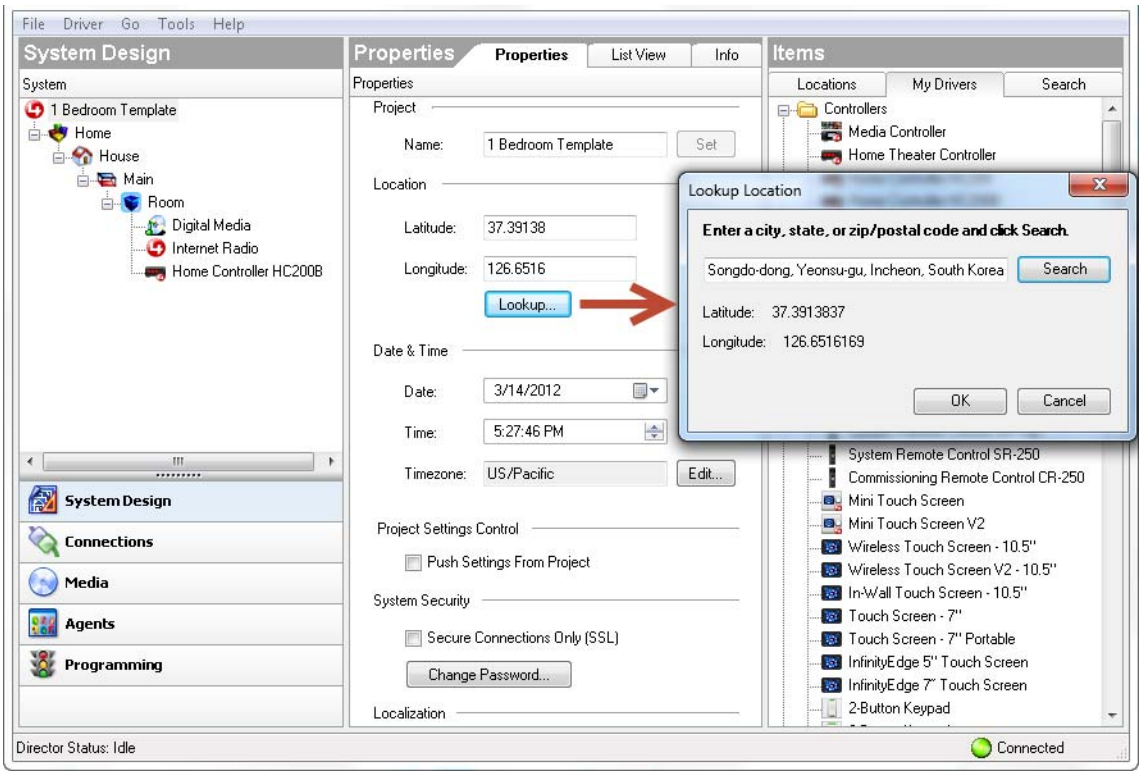
f. Verify that the Cisco Controller network address appears in the entry field, as shown in Figure 5-6.

g. Click **Close**.

Step 6 Enter the project properties (Figure 5-7).

Note Be sure to enter the correct date, time and timezone for your Cisco Controller, or some device functions that require network and device communication may not operate correctly. For example, if the default project year 2000 is not changed, then the Cisco Controller will not register.

Figure 5-7 Project Properties



a. Click **System Design**.

b. Select the project name in the top left of the screen.

c. Under *Properties*, enter a new *Name*, and click **Set**.

   For example, `1 Bedroom Template`

d. Click **Lookup** to enter the location where the equipment will be installed.

   For example: `Songdo, South Korea`.

e. Enter the Time and Date where the equipment will be installed.

f. Click **Edit** to change the time zone.

Note Changing the time zone causes the Cisco Controller to reboot.

Step 7 Register the *primary* Cisco Controller to enable software upgrades and other services.

Note To register the Cisco Controller, a consumer account must be created and used to generate a registration code. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.

a. Select **Tools > Account Services** (Figure 5-8).

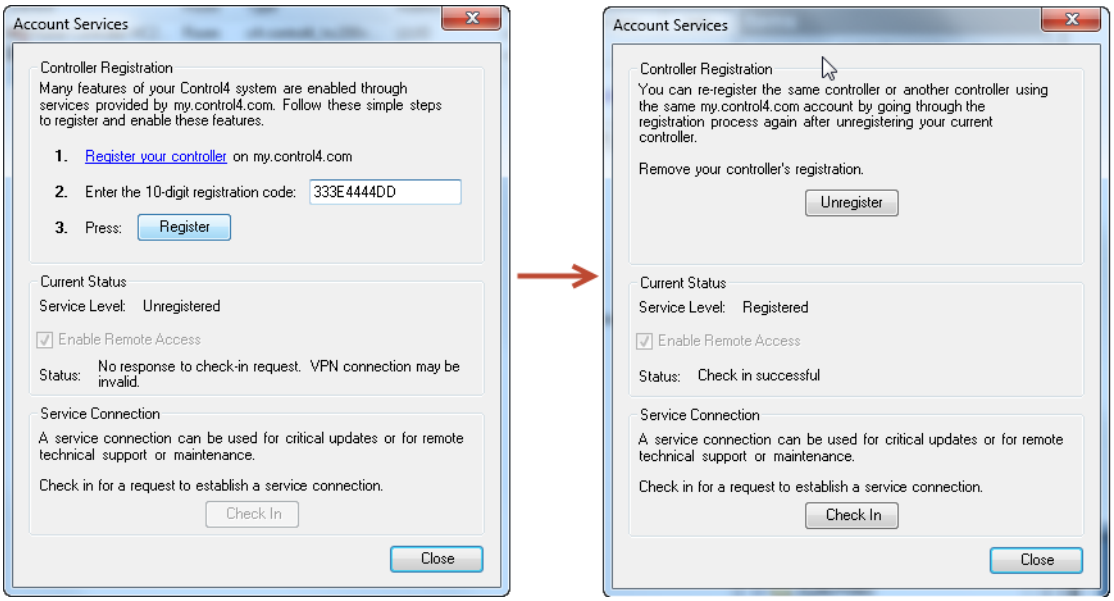
b. Enter the Cisco Controller registration code (see the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information).

c. Verify that **Enable Remote Access** is selected. This option allows remote troubleshooting.

d. Click **Register**.

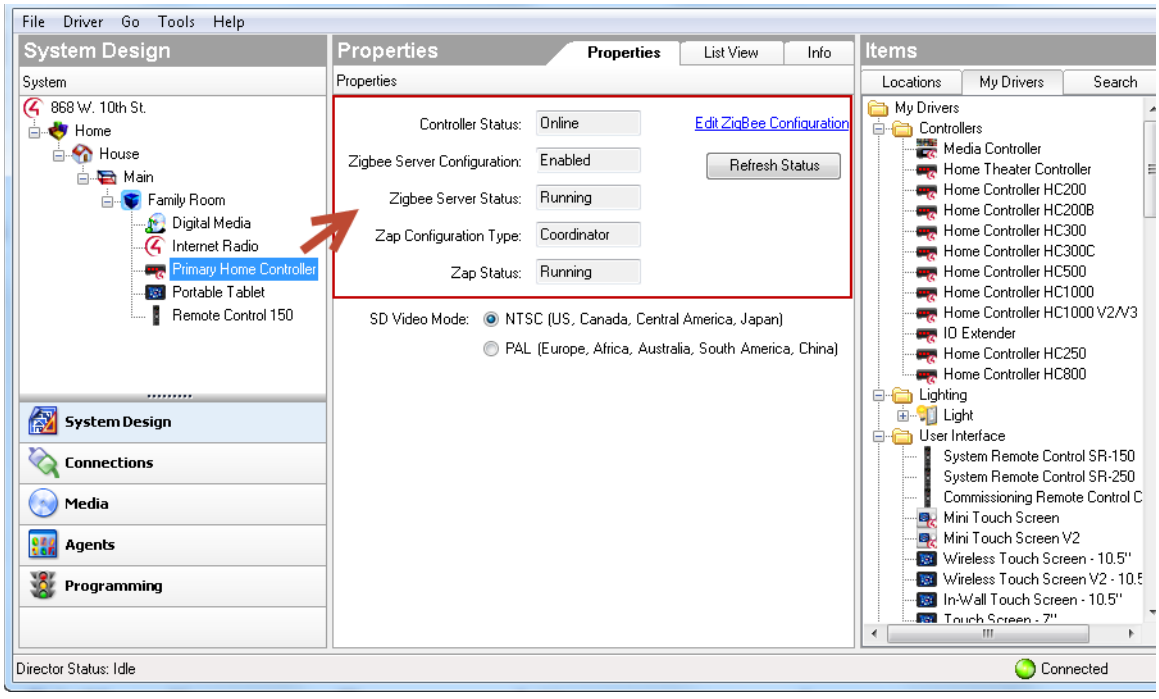
e. Click **Close**.

Figure 5-8 Register the Controller



Step 8 Enable the ZigBee Server on the primary Controller.

Figure 5-9 ZigBee Server Configuration



a. Click **System Design**.

b. Highlight the *primary* Controller.

c. In the Properties tab, click **Edit ZigBee Configuration**.

d. Click **Yes** to create a new ZigBee network.

e. Click **OK** to accept the default ZigBee Server and ZAP Coordinator (ZigBee Network Settings).

f. Click **OK** again to accept the additional default ZigBee Network Settings, including the Server, Channel, and Coordinator).

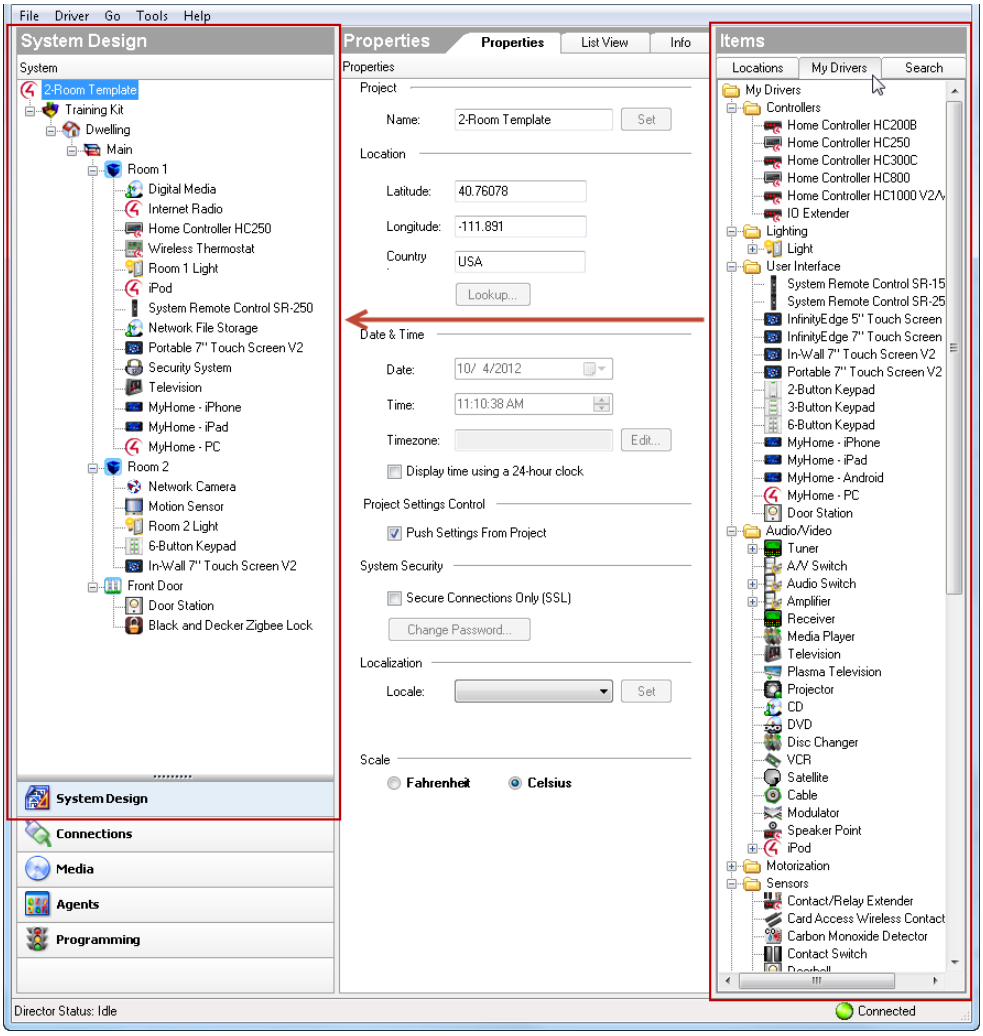
g. Select **File** > **Refresh**.

h. To verify that the ZigBee Server is *Running*, click **System Design**, highlight the *primary* Controller, and verify that the ZigBee Server is *Running*. (Figure 5-9).

Step 9 Add additional devices from the default **My Drivers** tab.

Tip **My Drivers** includes the supported device drivers included with the Composer Pro installation. Use the **Search** tab to locate additional drivers from the **Online Database** (Step 10), or drivers saved to your PC **Local Database** (Step 11).

Figure 5-10 Adding Device Drivers



a. In the **System Design** view, highlight the room where the device is installed.

   For example: select **Family Room**

b. Choose the **My Drivers** tab (Figure 5-10).

c. Double-click the driver name for each device to be added to the project.

- Rename each device and drag it to the correct room that represents the device physical location.
- Figure 5-10 shows a sample project with the devices described in the following sample device set.
- Table 5-2 describes a sample set of device drivers used in a typical residence.

Table 5-2 Sample Device Driver Set

Driver Name / Device Type	Driver Category	Description
• Wireless Dimmer • Wireless Switch	Lighting	We recommend renaming each driver since they are automatically added as "Light". For example, name the device drivers: "Wireless Dimmer" and "Wireless Switch".
• System Remote Control SR-150 • System Remote Control SR-250	User Interface	The Cisco Universal Remote 250 includes an LED interface. The Cisco Universal Remote 150 does not.
InfinityEdge 7" Touch Screen	User Interface	Add each Cisco In-wall Display included in the project. For example, if the project will have three Cisco In-wall Displays, add three copies of the driver, move them to the rooms where they will be installed, and rename the devices (for example, *Right Wall Touch Screen*, *Middle Wall Screen*, etc.).
Portable 7" Touch Screen V2	User Interface	Add each Cisco Portable Tablet included in the project. Rename the devices if necessary (for example, as *Portable Tablet*).
• MyHome - iPhone • MyHome - iPad • MyHome Android • MyHome - PC	User Interface	(Release 2.2 only. In release 2.3 and higher the smart devices are automatically added when the user logs into their account with a smart device or PC). Add the mobile and desktop devices that will use the Cisco SC Residence App to connect with the Cisco Smart+Connected Residential Solution. **Note** The MyHome drivers enable smart device and PC functionality and connectivity in the project. **Note** A Cisco Smart+Connected Smart Device license must also be purchased and added to the Consumer account associated with the primary Cisco Controller. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.
• 3-Button Keypad • 6-Button Keypad	User Interface	In-wall keypads that can be programmed to trigger a variety of tasks, such as lighting scenes.
Door Station	User Interface	The door station allows residents to monitor and communicate with visitors at their front doors or entryways.
Dual Relay Blind	Motorization > Blinds	Motorized blinds can automatically lower and raise a window shade.

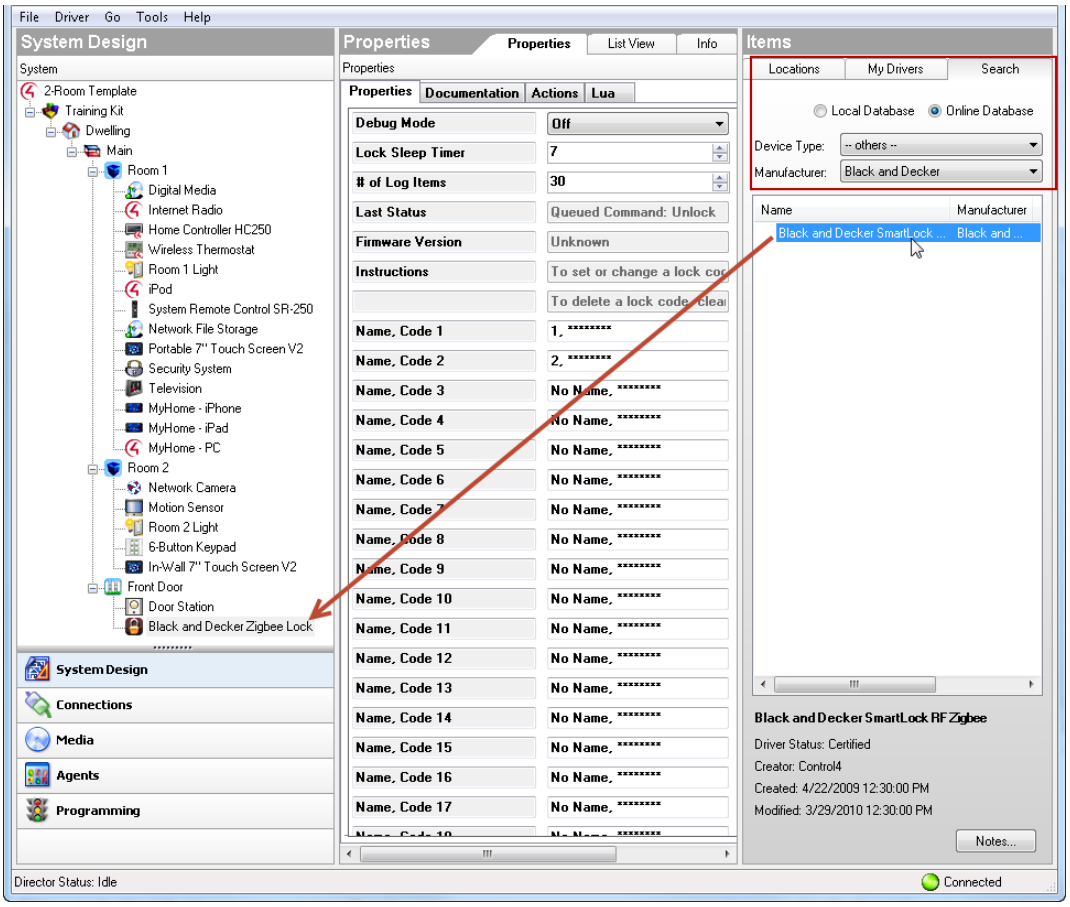
Table 5-2 Sample Device Driver Set (continued)

Driver Name / Device Type	Driver Category	Description
Television	Audio Visual	A pop-up window appears when the Television driver is added. Select the TV model from the local or online database. The television driver defines the physical ports on the device, and the infrared (IR) codes that correspond to the Cisco Universal Remote buttons. For example, select the manufacturer "Coby" and model "LEDTV-1526". **Note** Additional drivers for the television capabilities will be automatically added. For example, *Cable TV*. **Tip** If a driver for the television model is not available, see "Creating an IR Television Driver" in the Composer Pro User Guide (click the link, select the **Search** tag, and search for "Creating an IR Television Driver"). See also the "Overview of Creating Device Drivers" and "Using the Driver Wizard" topics.
<*Camera Model*>	IP Cameras	Select a camera model from the list. For example, the Panasonic Fixed Field Camera. IP cameras can display video based on a set of configured rules.
Residential Thermostat	HVAC	A wireless thermostat used to control the residence heating and air conditioning system.

Step 10 Add additional device drivers from the Online Database, if necessary (Figure 5-11).

The Online Database includes supported drivers that are available from the online respository. Your PC must be connected to the Internet to access the Online Database.

Figure 5-11 Adding Drivers from the Online Database



The following example is for a ZigBee wireless door lock.

a. Click the **Search** tab (Figure 5-11).

b. Select **Online Database**.

c. From Device Type, select **Others**.

d. From Manufacturer, select **Black & Decker**.

e. Double-click **Black & Decker Smartlock RF ZigBee**.

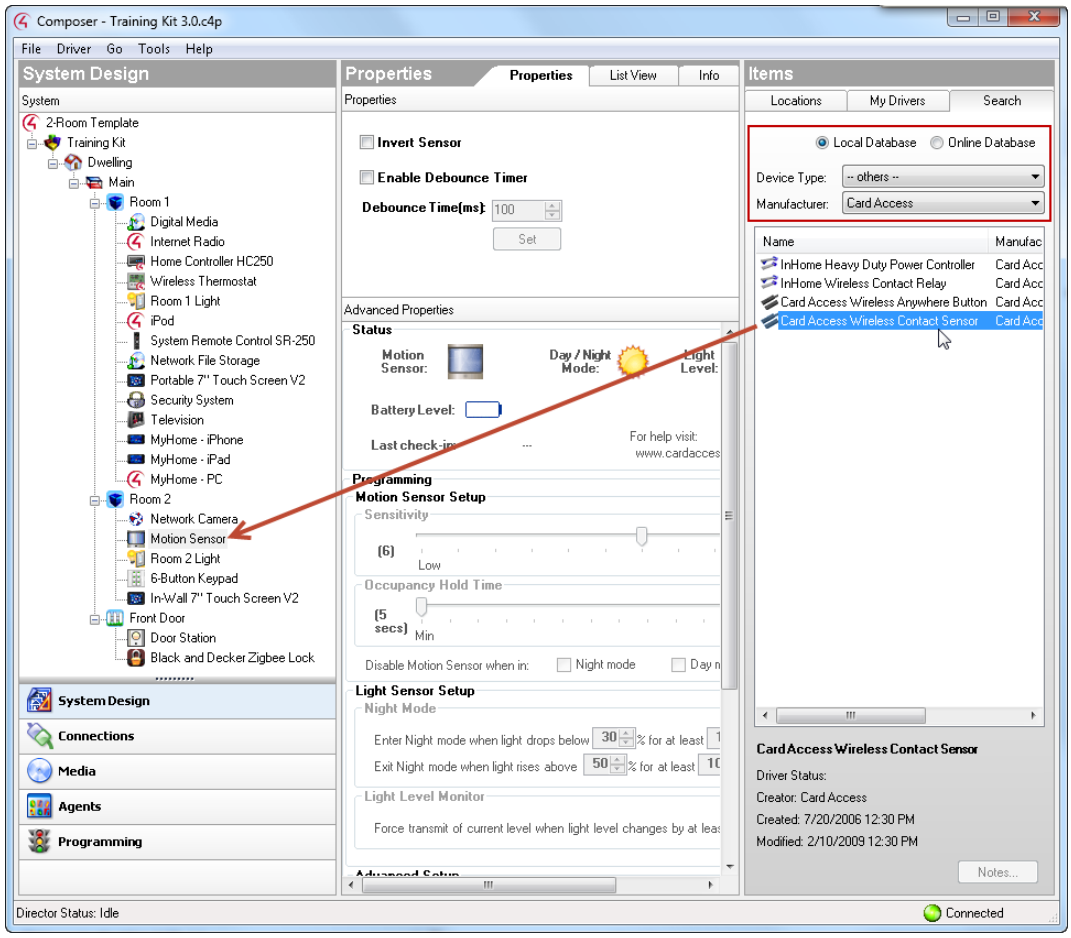
f. Wait for the driver to download and install.

Step 11 Add additional device drivers from the Local Database, if necessary (Figure 5-12).

- The Local Database includes drivers that you previously acquired and copied to the following directory on your PC:
  C:\Users\<*user*>\Documents\Control4\Drivers
- To add a new driver to the Local Database, select **Add Driver** from the **Driver** menu. Select the `.c4i` driver file from a local or network drive and click **Open**.

- See your system administrator or Cisco support representative for more information on obtaining the required driver files.

Figure 5-12 Adding Drivers from the Local Database



The following is an example to add a motion sensor driver.

a. Click the **Search** tab.

b. Select **Local Database** (Figure 5-12).

c. From Device Type, select **Motion Sensor**.

d. From Manufacturer, select **All**.

e. Double-click **Card Access Wireless Motion Sensor**.

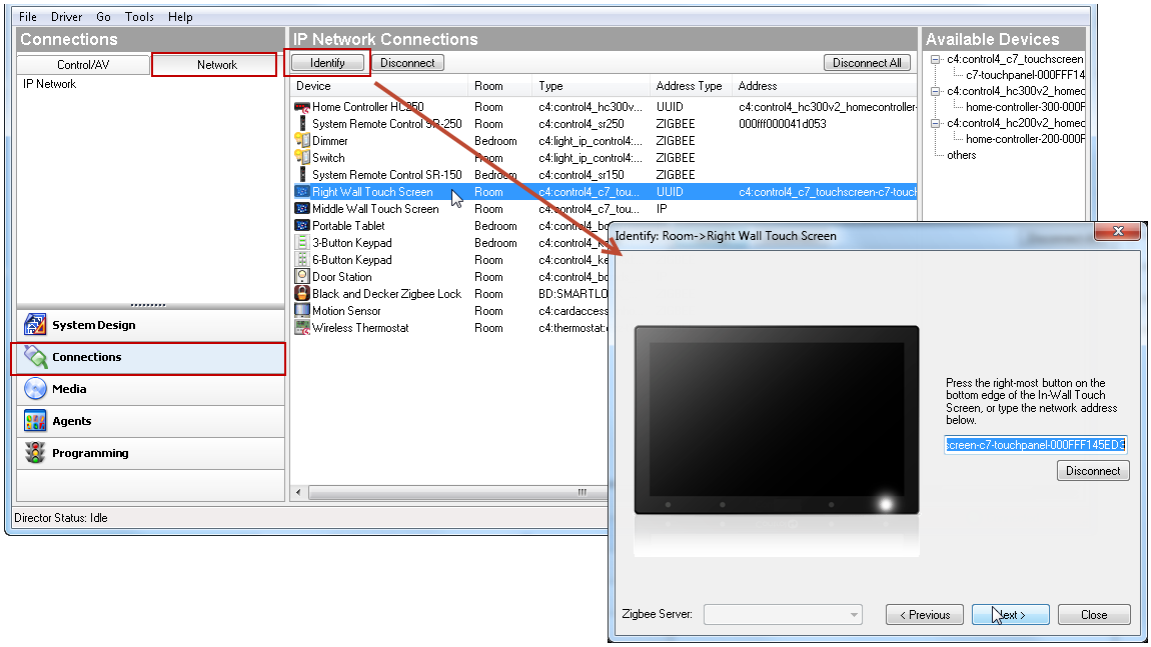
Tip If there is no available IR driver for the device you are adding to your project you can create a new driver or modify an existing one. Use the device remote control to learn IR commands into a new driver. For more information see the following topics in the Composer Pro User Guide: “Creating IR-Controlled Drivers”, “Programming Using IR Inputs with Third-Party Remotes”, and “Creating an IR Television Driver”.

Step 12 *Identify* each networked device (Figure 5-13).

All Wi-Fi and ZigBee devices must be identified to establish communication with the Composer Pro project.

Note The primary Cisco Controller was previously identified in Step 5.

Figure 5-13 Identifying Networked Devices



a. Click **Connections**.

b. Select the **Network** tab.

c. In the **IP Network Connections** list (center pane), select the first device and click **Identify**.

d. When prompted, press the bottom on the device as instructed in the pop-up window (Figure 5-13).

Examples:

- Cisco In-wall Display—Press the right button on the lower-right edge.
- Wireless switch—press the top button four times.
- Cisco Universal Remote—press the red button four times.

Tip If an animation is not available, refer to the device documentation for the button sequence or other method used to join the device to the ZigBee network.

Tip You can create the connection by dragging a device from the "Available Devices" (on the right side) onto the device in the "IP Network Connections" window.

e. When the device address displays in the Composer Pro field, click **Next**.

f. When all devices are identified, click **Close**.

Tip

- Wi-Fi devices typically require a single button press. ZigBee devices require four button presses. To identify ZigBee devices, the ZigBee server must be running, as described in Step 8.
- Mobile and PC devices require a Cisco smart device license. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* and the Cisco Smart+Connected Smart Device License for Real Estate Developers for more information.
- If you upgraded the Cisco Controller software in Step 1, the device firmware may automatically upgrade when identified. The device may be unresponsive during the upgrade process.

Step 13 Update the device software.

Tip We recommend performing the update after all devices have been identified in the project (see Step 9 and Step 12). This causes all devices to be upgraded at the same time. If you upgrade the Cisco Controller before the other network devices are added and identified, then each device will automatically upgrade when it comes online and the device may be unresponsive during the upgrade process.

a. Select the menu **Tools > Update Manager**.

b. Click **Update**.

c. Click **Advanced** (Figure 5-14).

d. Click **Edit**.

e. Enter the following URL (or verify that it was previously changed):

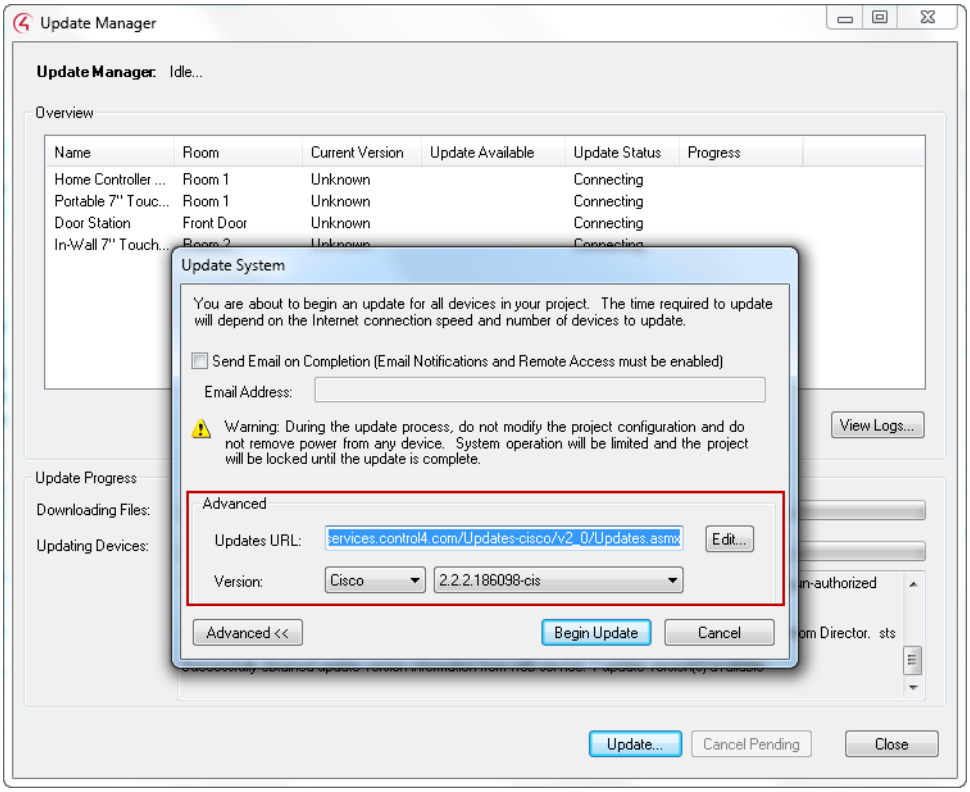
http://services.control4.com/Updates-cisco/v2_0/Updates.asmx

f. Click **OK**.

g. Verify that the version is “Cisco”, and select a version number, if necessary.

Note If the URL is incorrect, the version selections will be blank. You must verify that "Cisco" and a version number appears (Figure 5-14). Failure to update this URL correctly can cause an incorrect software release to load, and the loss of supported services.

Figure 5-14 Updating the Device Software



h. Click **Begin Update**.

i. Follow the on-screen prompts to update all identified devices.

Step 14 Continue to "Create the Virtual Connections for Control (Serial) and Audio/Video Devices".

Create the Virtual Connections for Control (Serial) and Audio/Video Devices

The Control and A/V connections in Composer Pro represent the physical cables connected from the Cisco Controller to other devices, and between the various devices. The connections define the communicate path for signals from A/V, IR, Relay, Contact, and/or serial devices.

For example:

- Video connections define the path of video signals.
- Audio connections define the path of audio signals.
- Control connections define how the Cisco Controller communicates with the device.

Each connection also includes an *endpoint*, which is the final destination of the audio or video signal, and the device/port where that signal will play.

For example:

- The video *endpoint* of a DVD player would be the television.
- The audio *endpoint* of the DVD player could be the same television, or an audio receiver if a home theater is installed.

Note The type and number of connections depends on the physical port. For example, an HDMI cable can provide the path for both audio and video signals, while a component connection uses a different cable for audio and video signals.

Examples

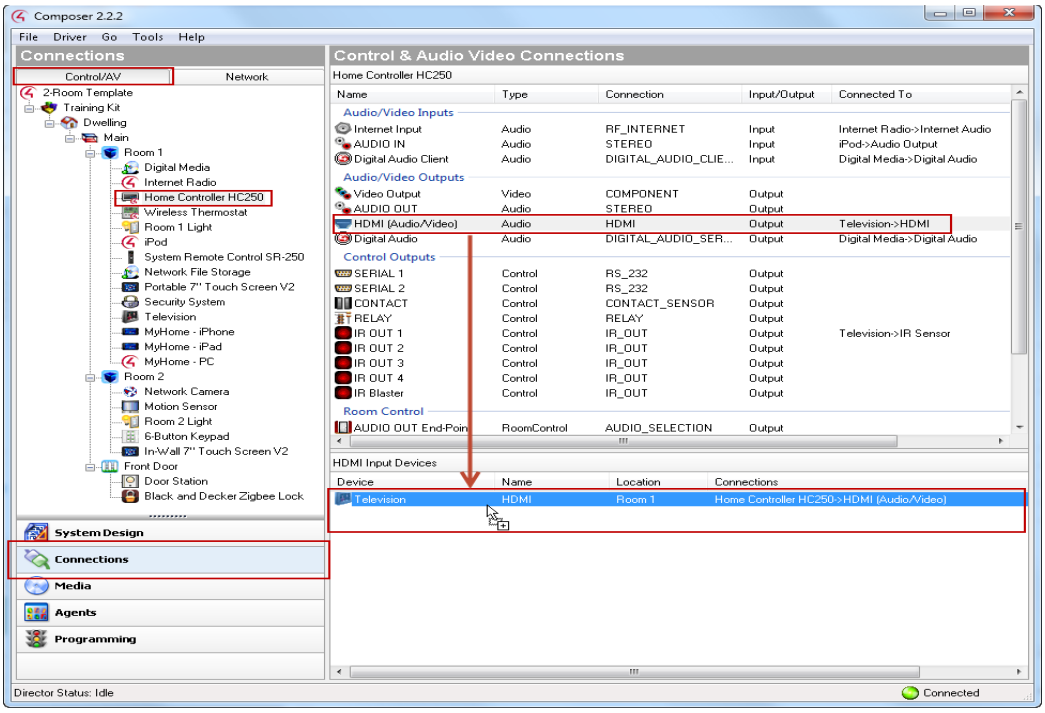
- An HDMI cable connected from the Cisco Controller to the TV allows the Cisco Controller to display the On-Screen Navigator on the TV.
- An IR emitter connected from the Cisco Controller to the TV allows the Cisco Controller act as the remote for the TV (when a button on the Cisco Universal Remote is pressed, the command is sent to the TV via the Controller's IR emitter).
- An HDMI cable connected from a DVD player to the TV allows the TV to display audio and video from the DVD player.
- An IR emitter connected from the Cisco Controller to the DVD player allows the Cisco Controller to send IR commands to the DVD player (when a button on the Cisco Universal Remote is pressed, the command is sent to the DVD player via the Controller's IR emitter).

Summary Steps

To enable control and A/V connections, do the following:

1. Create the design that specifies the physical device connections between the A/V and control (serial) devices. See the "Create a Single Line Drawing" section on page 2-12.
2. Install the devices and connect the physical wires according to the single line drawing. See the "Install and Connect the Physical Components" section on page 4-1 for more information.
3. Create the virtual connections in Composer Pro that replicate the physical connections (Figure 5-15). See the "Procedure to Create the Virtual A/V and Control Connections" section on page 5-26.

Figure 5-15 Control and Audio/Video Connections



Procedure to Create the Virtual A/V and Control Connections

Step 1 Click **Connections**.

Step 2 Click the **Control A/V** tab.

Step 3 Highlight an output device.

For example, the *primary* “Home Controller HC250”.

Step 4 Highlight a connection in the top pane, and drag-and-drop it to appropriate device and port in the bottom pane (Figure 5-15).

For example, Table 5-3 defines a sample set of physical connections between the Cisco Controller and the TV. Select the Cisco Controller to define the Cisco Controller output ports, that connect to device input ports.

Table 5-3 Sample Cisco Controller and Audio/Video Connections

Cisco Controller Output	Component Input Device
Video Output (Component HD)	TV Component Input
Audio Out 1	TV Component Input
IR Out 1	TV IR Sensor

Note Table 5-3 is an example only. The connections will vary depending on the equipment used.

Step 5 Verify the Control and Audio/Video Connections.

a. Click **Connections**.

b. Click the **Control A/V** tab.

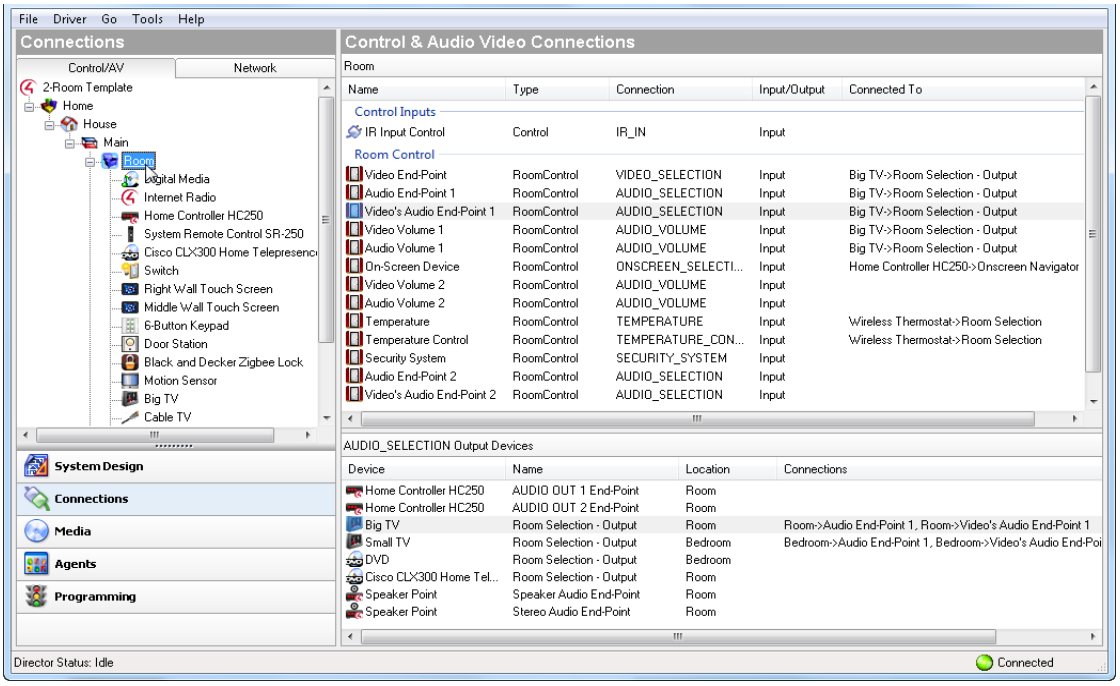
c. Select a room.

For example, the *Living Room or Bedroom*.

d. A summary of the Control and Audio/Video Connections *endpoints* is displayed (Figure 5-15).

Endpoints are the destination for control and Audio/Video signals.

Figure 5-16 Control and Audio/Video Endpoints



For example, Table 5-4 describes the purpose of the endpoints shown in Figure 5-16.

Table 5-4 Room Endpoints

Endpoint	Connected To	Description
Video End Point	Big TV	The Navigator video sent out from the Cisco Controller will be displayed on the “Big TV”.
Audio End Point	Big TV	Audio sent out from the Cisco Controller will be played on the “Big TV”. **Note** Audio could also be sent to other devices, such as an amplifier/receiver.

Table 5-4 Room Endpoints

Endpoint	Connected To	Description
• Video's Audio Endpoint • Video Volume • Audio Volume	Big TV	• The audio associated with video is sent to the "Big TV". • The Video Volume and Audio Volume changes are sent to the "Big TV". **Note** These endpoints are added automatically.
On-screen Device	Primary Cisco Controller	Causes the Navigator user interface to be displayed by the Cisco Controller on the assigned video output device. **Note** This endpoint is added automatically.

e. Drag the **On-screen Device** endpoint to the Cisco Controller. This will enable the Navigator controls to display.

Step 6 Continue to the "Saving the Project as a Template" section on page 5-31.

Verifying and Configuring Lighting Switches and Dimmers

You can manually verify that the Composer Pro project can successfully control a lighting switch or dimmer. This ensures that the device driver was successfully added to the project is communicating over the ZigBee mesh network.

Note The following example is for standard Control4 lighting products connecting to the system via ZigBee wireless. Products from other lighting manufacturers may use different connections (i.e. RS232); the drivers and configuration may appear and operate differently that the following example.

After you verify the switch or dimmer connectivity, you can configure additional properties for the lighting device.

Procedure

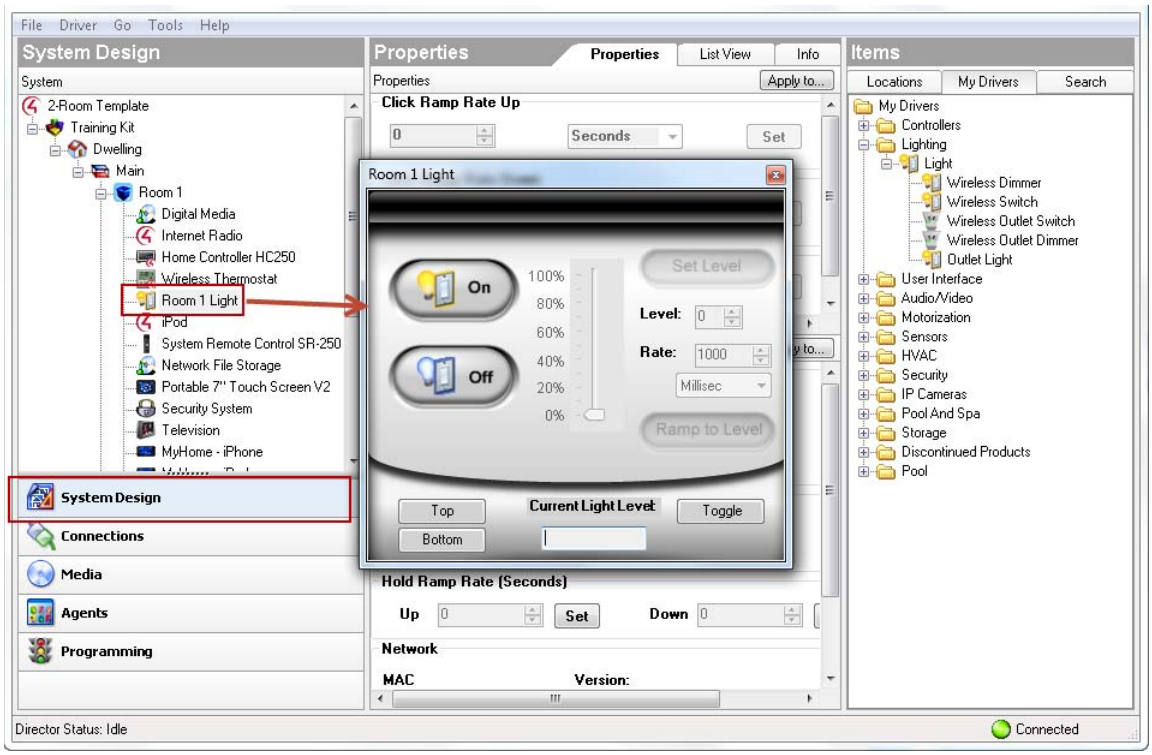
Step 1 Select **System Design** and add the driver for the wireless light switch or dimmer, as described in the "Create the Basic Project Configuration" section on page 5-8.

Step 2 To open the controls, double-click the lighting driver that was added to the system design.

For example, double-click the "Room 1 light" shown in Figure 5-17.

Step 3 Use the available controls to turn the light on or off or control the light level.

Figure 5-17 Verifying a Lighting Connection

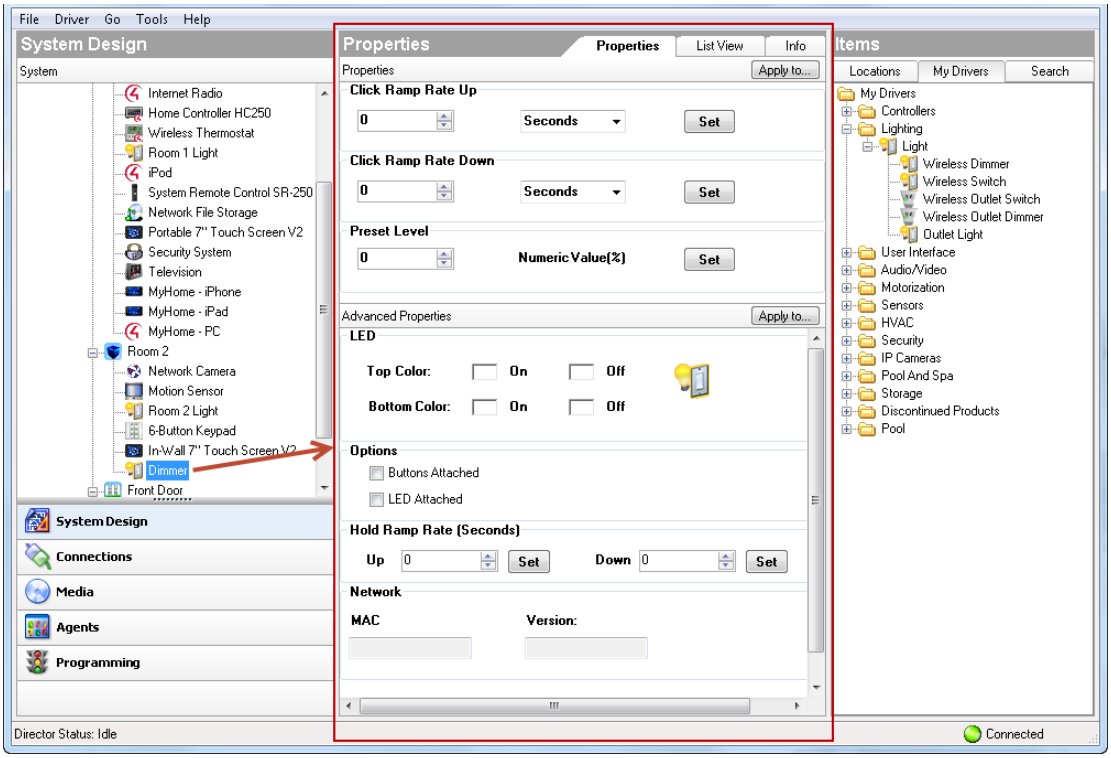


Step 4 Configure additional properties for the switch or dimmer.

- For example, you can define the number of seconds that a dimmer takes to ramp up or down, the "Preset Level" of load to which the dimmer ramps when turned on, the LED colors displayed on the switch or dimmer, and other options.
- See the "Configure a Wireless Switch or Dimmer or an Inline Dimmer" properties of the Composer Pro User Guide. See Figure 5-18 for more information.

Note The options and controls available on a lighting device vary depending on the manufacturer and model. See the device documentation for more information.

Figure 5-18 Configuring a Switch or Dimmer



Step 5 Click **Apply To...** to apply the changed settings to other lighting devices in the system by room.

Step 6 Click **Set** to save the setting at the device.

Related Documentation

For additional information, see the following topics in the Composer Pro User Guide.

- Configuring Lighting and Keypads
- Configure a 2, 3 or 6-Button Keypad
- Configure a Puck Dimmer or Switch Module
- Configure a Wireless Outlet Dimmer

- Configure a Wireless Outlet Switch
- Configure a Wireless Outlet Switch for Power Sensing AV Devices

Saving the Project as a Template

Saving a Composer Pro project as a template allows you to upload the project configuration to other Cisco Controllers. This is especially useful in multi-dwelling units (MDUs) equipped with a large number of similar Cisco Smart+Connected Residential Solutions. For example, a deployment might offer three basic packages: a bronze package with a basic set of features and devices, a silver package that includes additional options, and a gold package that includes the full set of possible features.

To simplify the configuration and deployment of these packages, you can create bronze, silver and gold projects, and then backup each project to a `.C4P` configuration file. You can then use the Cisco Smart+Connected Remote Management Solution (Cisco RMS) to deploy the `.C4P` template file to multiple Cisco Controllers. The upload process removes all user information and device-specific information so the same settings can be applied to multiple Cisco Controller without conflict.

See the Cisco Smart+Connected Remote Management Console Administration Guide for more information on deploying multiple Cisco Controllers in multi-dwelling units (MDUs).

Note The project template does not include configurations that must be applied in the residence, such as identifying network devices in the project, and other tasks. See the Cisco Smart+Connected Remote Management Console Administration Guide for more information.

Procedure

Step 1 Create the Cisco Controller project using Composer Pro as described in the "Create the Basic Project Configuration" section on page 5-8.

Step 2 Backup the `.C4P` project file.

f. Choose **File > Backup As**.

g. Enter a file name and location and click **Save**.

Tip The default file backup location is `C:\Users\<username>\Documents\Control4\Projects`.

Step 3 Upload the project file to the Cisco RMS Console, as described in the Cisco Smart+Connected Remote Management Console Administration Guide.

Refer to the following additional topics:

- Creating Controller Templates
- Adding Controllers to Cisco RMS
- Applying General Attributes to Controllers
- Completing the In-Residence Tasks

Where To Go Next

- Adding Additional Devices to the Template, page 6-1
- Configuring the Intercom for Communication Within a Dwelling, page 7-1

CHAPTER 6

Adding Additional Devices to the Template

After the basic project template is created, you can add additional devices to the project. Refer to the following topics for more information.

Contents

Summary Steps

Complete the following steps to add additional devices and services to an existing project template.

	Task	Task Complete? (✓)
Step 1	Create the basic project. See the "Create the Basic Cisco Controller Project" section on page 5-1	☐
Step 2	Add additional devices and features as described in the following topics. See Contents, page 6-1	☐
Step 3	Customize the project. See the "Configuring the Intercom for Communication Within a Dwelling" section on page 7-1	☐
Step 4	Save the project as a template file. See the "Saving the Project as a Template" section on page 5-31	☐

Add Access for Mobile Devices and PCs

The following components are required to enable smart device access to a Cisco Smart+Connected residence:

- **Cisco Smart+Connected Smart Device license**—This license must be purchased for each primary Controller.
- **MyHome** license—The dealer must apply the **MyHome** smart device license to the Consumer account (the Consumer account is associated with the dwelling primary Cisco Controller.
- **MyHome** device drivers—(Release 2.2 only) A driver must be added to the project for each smart device or PC that will access the residencial system. This step is not necessary if the Cisco Controller is running release 2.3 or higher.
- **Cisco SC Residence App**—Residents must install the smart device app onto each smart device or PC. Residents log in to their residential system using the Consumer account credentials.

Once complete, the user can use their smart device or PC to access the Navigator for the residence.

Note The Navigator is the menu that appears on a TV, touchscreen, PC or smart device.

Summary Configuration Steps

	Task	Task Complete? (✓)
Step 1	Purchase a Cisco Smart+Connected Smart Device license for the dwelling. • Smart device licenses can be perpetual (no expiration) or subscription-based (valid for 365 days). • Licenses can be purchased in bulk. • See the and the *Release Notes for the Cisco Smart+Connected Residential Solution* for more information.	☐
Step 2	Enable the **MyHome** license on the Consumer account associated with the primary Controller in the dwelling. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.	☐
Step 3	From the PC or smart device, download the Cisco SC Residence App from the appropriate app store. See the and the *Release Notes for the Cisco Smart+Connected Residential Solution* for more information.	☐
Step 4	(Release 2.2 only) In Composer Pro, add drivers for each smart device or PC to the dwelling project (or project template). **Note** In release 2.3 and later, the smart device is automatically added to the project when the user logs in to the Cisco SC Residence App for the first time.	☐

	Task	Task Complete? (✓)
Step 5	Log on to the Cisco SC Residence App using the Consumer account registered to the primary Cisco Controller in the residence.	☐
Step 6	(Release 2.2 only) Use the Cisco SC Residence App to identify the PCs and smart devices in the Composer Pro project. **Note** In release 2.3 and later, the smart device is automatically added to the project when the user logs in to the Cisco SC Residence App for the first time.	☐

Procedure

Step 1 Enable the occupant's Consumer account.

a. Purchase the Cisco Smart+Connected Smart Device license.

a. Add the **MyHome** smart device license to the Consumer account.

Note See the and the *Release Notes for the Cisco Smart+Connected Residential Solution* for more information.

Step 2 Synchronize the newly-added licenses that were associated with the Consumer account (using the dealer portal).

This causes the Cisco Controller to retrieve assigned licensing from the remote access licensing service.

Cisco Controllers automatically check in on a regular schedule, but you should manually check in to apply the licenses immediately.

a. Start Composer Pro and connect to a Director (the primary Cisco Controller).

b. From the menu bar, select **Tools > Account Services**.

c. On the Account Services dialog, click **Check in**.

d. When the status indicator changes to "Check in successful" the subscription information is synchronized and the devices can be authenticated.

Step 3 Download the Cisco SC Residence App.

- From the mobile device or PC/Tablet, either you or the device owner can go to the iTunes or Google Play app store to download the app. Follow the online instructions to download the app(s).
- To download the PC application, see the instructions for your release in the *Release Notes for the Cisco Smart+Connected Residential Solution* .

Step 4 (Release 2.2 only) Add the device driver to the project (Figure 6-1).

a. In Composer Pro, select the **System Design** view and highlight the room where you want to add the drivers. For example, the same room as the primary Controller.

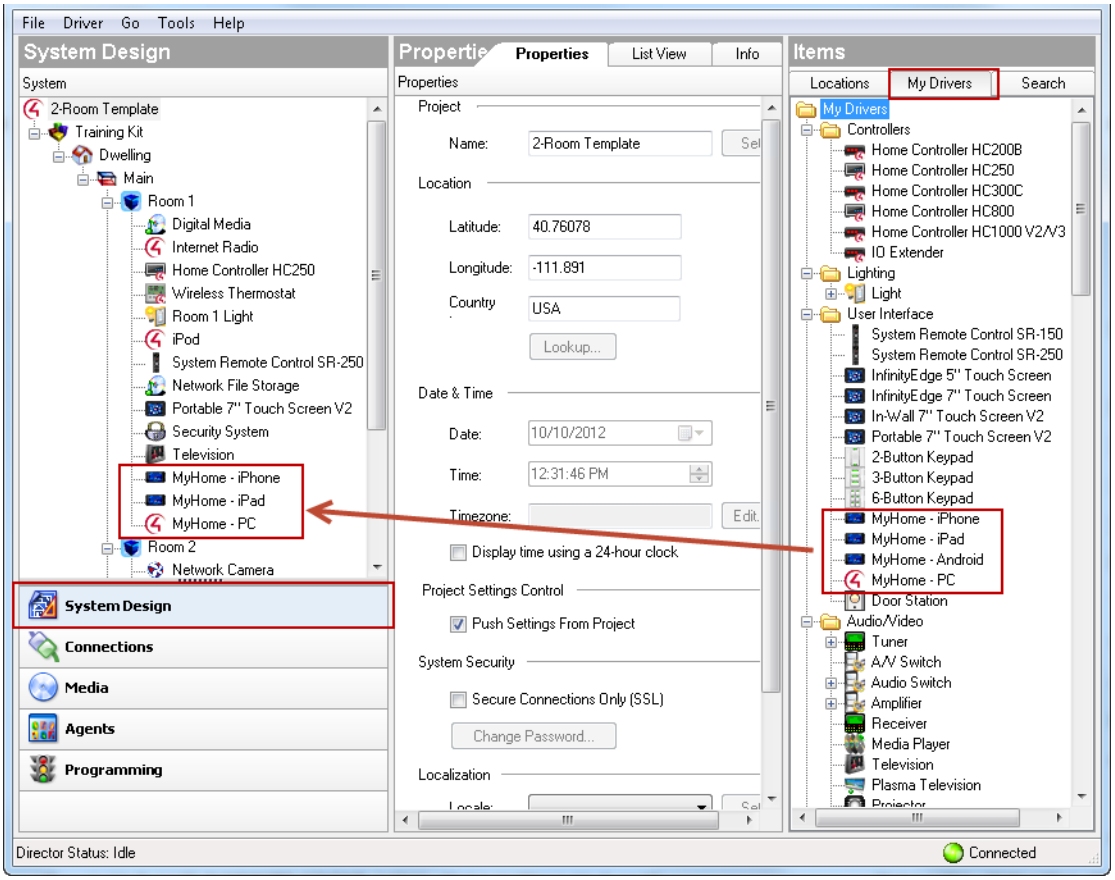
b. Click the **My Drivers** tab (in the Items column on the right).

c. Expand the **User Interface** folder.

d. Double-click the smart device, tablet and PC drivers to add them to the selected room.

Note In release 2.3 and later, the smart device is automatically added to the project when the user logs in to the Cisco SC Residence App for the first time.

Figure 6-1 Smart Device and PC Drivers (Release 2.2 Only)



- **MyHome - iPhone**. Use for iPhone or iPod Touch mobile devices.
- **MyHome - iPad**. Use for iPad mobile devices.
- **MyHome - Android**. Use for Android mobile devices.
- **MyHome - PC**. Use for PC or Mac.

Tip In **My Drivers**, right-click and choose **Restore Default List** to update the list of MyHome drivers.

Step 5 (Release 2.2 only) Identify the device in Composer Pro (Figure 6-2).

a. Click the **Connections** view, and then click the **Network** tab.

b. Double-click the device name (or the driver you added). The Identify dialog box opens and provides instructions to identify your device.

c. Press the appropriate button on the device (see figure below) to identify it to the system.

Note In release 2.3 and later, the smart device is automatically added to the project when the user logs in to the Cisco SC Residence App for the first time.

Figure 6-2 Identify a Smart Device in Composer Pro

Step 6 Using the PC or smart device, log in to the Cisco SC Residence App to access the Cisco Smart+Connected Residential Solution features.

Troubleshooting Tips for Mobile Device Connectivity

If you experience problems identifying a mobile or PC device:

- Confirm that you've properly added the correct license for that device in the correct Consumer account. See the *Cisco Smart+Connected Residential Licensing and Registration Guide* for more information.
- Confirm that the Cisco Controller has checked in and has "learned" about the license entered in the Consumer account.
- (Release 2.2 only) Confirm that you've added the correct device driver to your project. For example, an iPhone won't identify properly if you use an iPad driver See Step 4.
- You should have a Wi-Fi Access Point (WAP) or router connected to and configured to operate on the same IP network or LAN as the Cisco Controller. Confirm that the device is communicating on the same network as the Cisco Controller.

Adding Media From External Storage Devices

You can store and access digital audio and video files from an external storage device for playback on connected speakers or a video or audio endpoint. Audio files can be played on powered speakers connected to the Cisco Controller, through a receiver (such as a home theater system), or other audio endpoint. Video files can be played using an additional media encoder such as an AppleTV or Control4 Media Player. Media is selected using the Navigator interface that appears on a Cisco touch screen, television, or mobile device (using a Cisco SC Residence App).

Examples of external storage devices include USB flash drives, powered USB external hard drives, external serial ATA (eSATA) drives, or a shared network storage area (such as a NAS drive or a computer's hard drive).

Refer to the following topics for more information:

Requirements

- USB flash drives or USB external hard drives must be formatted as FAT32 devices.
- Only externally powered USB drives are supported. Self-powered USB drives are not supported.
- USB storage devices can only use one (1) partition with a 2TB maximum size.
- Shared drives on a Windows system cannot contain a space in the directory/pathname.
- When you disconnect the external drive (USB, network, etc.) from the system, the music is no longer available. Reconnecting the external drive makes the media available again.

Note You can also use the Media view to view and select Internet radio, or add stored music and media collections from a DVD Player or Disc Changer, broadcasts, channels, and stations. See the "Setting Up Media" section of the Composer Pro User Guide for and the "Media View" section of the Composer Pro Getting Started Guide for more information.

Attach and Scan External USB Storage Devices

Complete the following procedure to attach and scan external storage devices using a USB connection. Scanning the device creates an index of the files, and accesses an online database to update media artwork and other information.

External storage devices must have media stored in unprotected MP3 format.

Procedure

Step 1 Attach the storage device to the Cisco Controller.

- If using a USB stick, insert the stick.

- If using a USB hard drive, you must connect the drive and also connect the drive to a power source.
- You can also connect an eSATA drive to some Cisco Controller models.

Step 2 Click **Media**.

Step 3 In the project tree, select the external device.

Step 4 Click **Scan** in the device's pane.

You can add media from the external storage device when it is connected to the Controller. However, it is recommended that you connect your external drive directly to the PC where you want to copy the media. When scanning, the media appears on the device.

Access and Scan Network Storage Devices

To access and scan network storage devices, you must first add the device driver in Composer Pro. Once the device is added to the Composer Pro project, you can scan the device for available media files. Scanning the device creates an index of the files, and accesses an online database to update media artwork and other information.

Note The network location must be an open share location (no password required).

Procedure

Step 1 As appropriate, use the documentation provided with your operating system to create a shared network drive.

Example: Using Windows XP to make a local C:/ Drive directory available on the network, right-click the folder and select **Sharing and Security**. Click the **Share** this folder button.

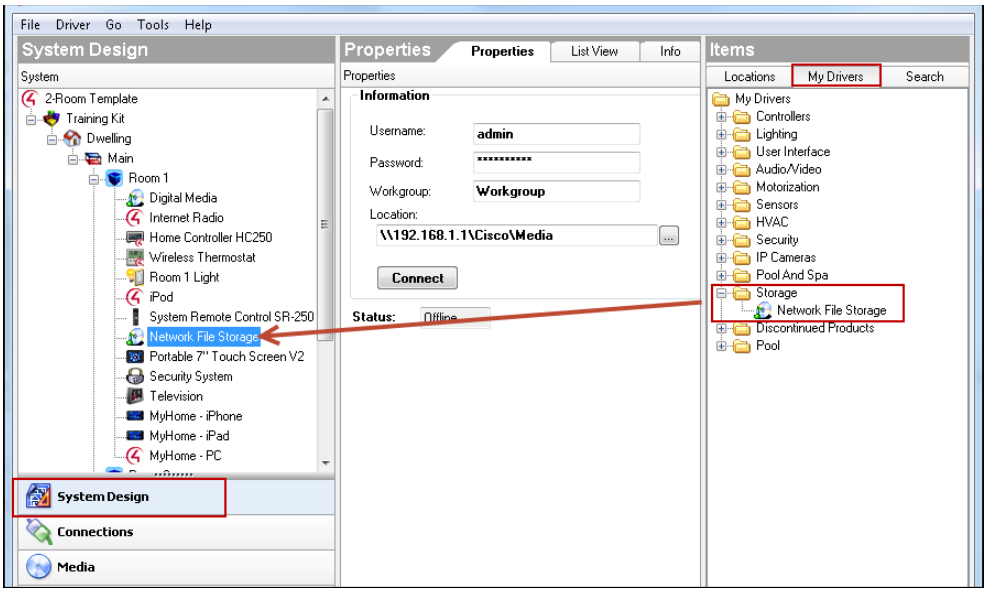
Step 2 Click **System Design**.

Step 3 From the **My Drivers** tab, double-click **Network File Storage** to add it to the project tree (Figure 6-3).

Step 4 Highlight **Network File Storage** in the project tree, and configure the user name, password, and workgroup (or domain) for the network file share, and then browse to its network location.

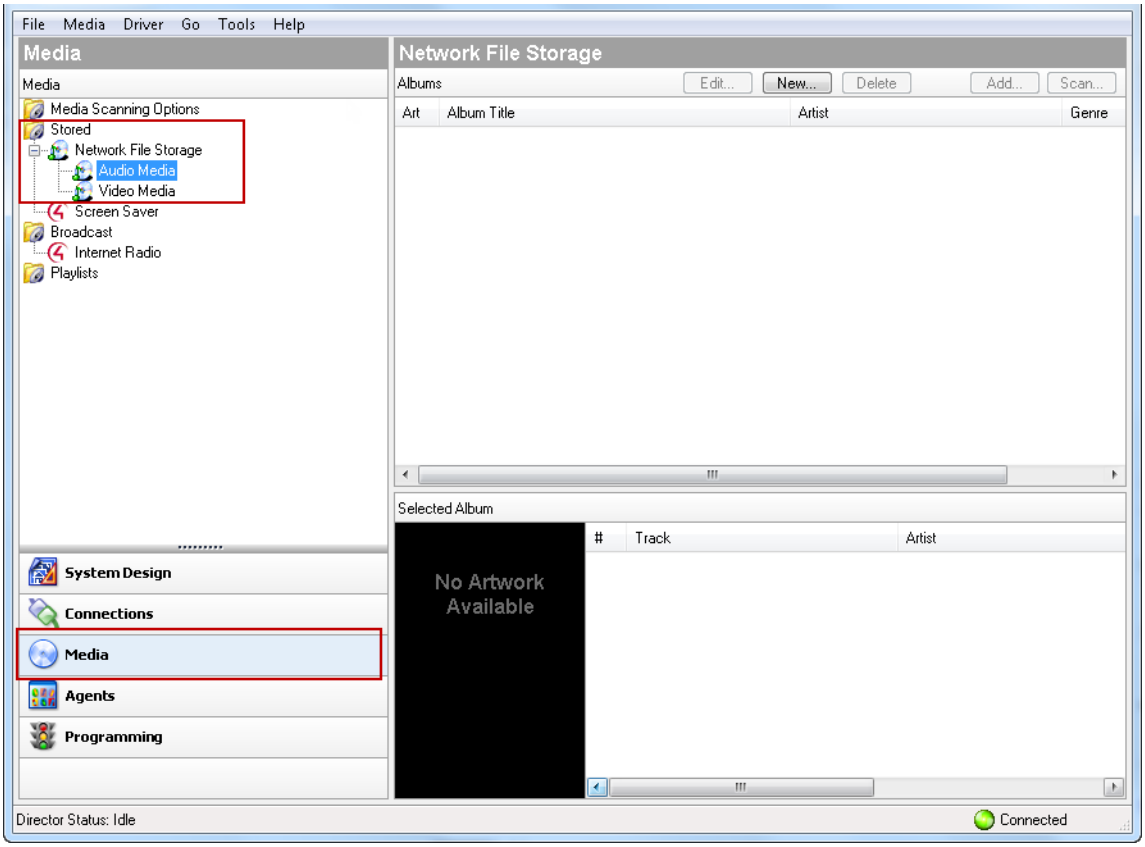
Note This information varies between media storage types.

Figure 6-3 Add a Network File Storage Driver



Step 5 Click **Media** (Figure 6-4).

Figure 6-4 Scanning Media



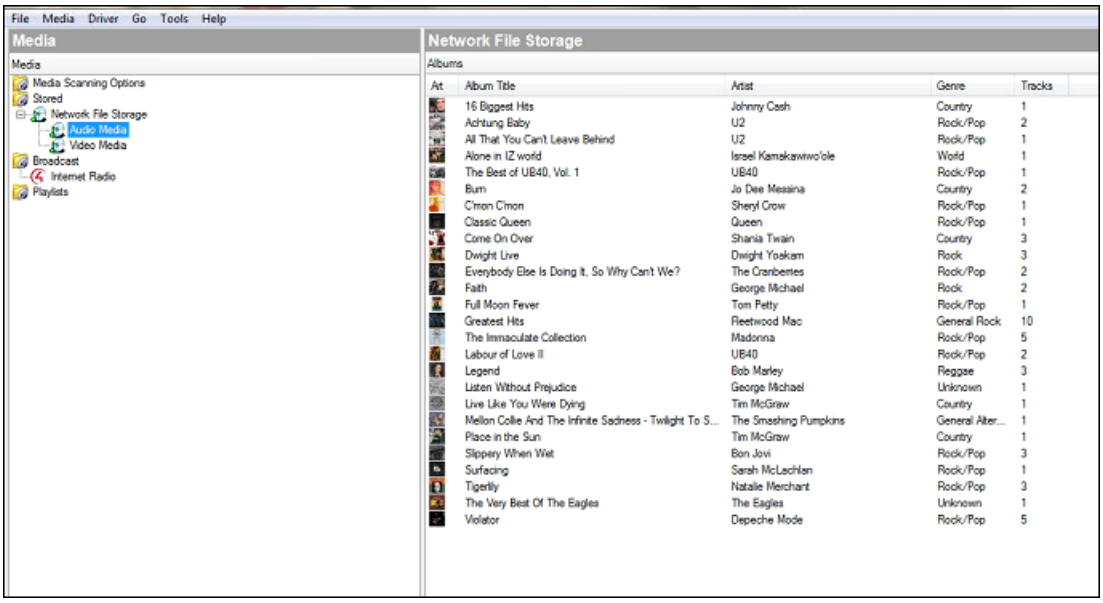
In Network File Storage, notice the options: Audio Media and Video Media.

Step 6 To add or scan audio files, select **Audio Media**, and then click **New** or **Scan**.

- When adding music to Network File Storage from the desktop, the music folder must reside in **My Network Places** so components can access the music files. A mapped network drive is not applicable in this situation.
- Audio files must be in one of the following formats to be scanned and played: WAV, MP3 or FLAC. If you connect an iPod or another audio device, the Control4 system can play back the files supported on that device; but only MP3 files can be decoded.

Step 7 Verify that the audio files are displayed (Figure 6-5).

Figure 6-5 Scanned Audio Files



Step 8 (Optional) To create playlists of available media, see the "Creating a Playlist" topic in the Composer Pro User Guide.

Step 9 To scan Video files, in the Media list select **Video Media**, and then click **Scan**.

- Video files must be in one of the following formats to be scanned: .avi, DVD, .iso, .m4a, mpeg, .mpg, or .wmv. These video files can only be played using a Control4 Media Player device or other video encoder that offers a compatible device driver.
- Video is not supported from a USB drive, so the Video Media option is not displayed in the list under a USB drive.

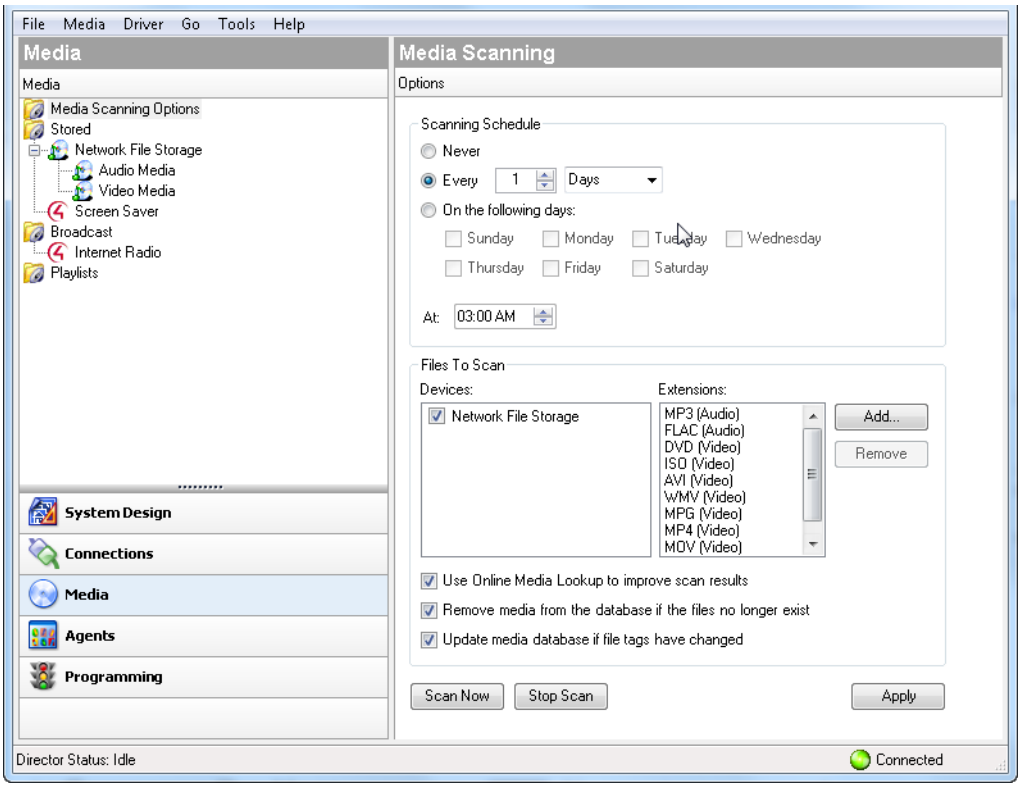
Define a Scanning Schedule

To automatically scan media devices for new or changed content, complete the following procedure. Scanning the media updates the content selections available in a touchscreen or on-screen Navigator, and uses an online service to update related information such as artwork and titles.

Procedure

Step 1 Click **System Design**. > **Media** (Figure 6-6).

Figure 6-6 Media Scanning Schedule



Step 2 Select **Media Scanning Options**.

Step 3 Select the Scanning Schedule options:

For example, you can scan the available media devices event *x* days, on specific days, and at a specific time.

Step 4 In the Files To Scan section, select the device(s) that will be automatically scanned, and add or remove the file types that will be scanned.

The list of supported files depends on the file types supported by the Cisco Controller.

Step 5 (Optional) Select the additional scanning options to use the online database, remove media that does not exist on the storage device, or update the media database if the file tags were changed. These options are selected by default.

Related Documentation

See the “Media View” topic in the Composer Pro Getting Started Guide (**Help > Contents**) for a summary of the available Media options.

See the following topics in the Composer Pro User Guide for instructions to add additional audio video components, access media from additional storage devices, and use other sources for audio and video content (such as a television or radio station).

Configuring audio video features for use with the available media

- Testing the Media Connection
- Using External Storage Devices
- Access and Scan Network Storage Devices
- Creating a Playlist
- Program a Button to Play Media or a Playlist
- Configure Video Scanning of Network File Storage Devices
- Configure a Media Player
- Configure an Audio Matrix Switch
- Configure an Audio or AV Switch
- Configure a Dock for iPod
- Configure a 4-Zone Amplifier
- Configure a Multi Tuner
- Configure a Speaker Point

Using additional media sources:

- Setting Up Media for Television Channels
- Setting Up Media for Radio Stations
- Setting Up the Media
- Setting Up Internet Radio Stations

Adding a Network Camera

Complete the following procedure to add a Internet Protocol (IP) security camera to display video using the Cisco Smart+Connected Residential Solution.

The on-screen and touchscreen Navigators provide access to the features supported by the camera, such as Pan, Tilt, Zoom (PTZ) controls, preset settings.

Tip For web JPEG Image only, use the "Web Image" driver and enter the URL and authentication user name and password (if a secure HTTP address), select the refresh rate in minutes, and test.

Prerequisites

- Complete the "Create the Basic Project Configuration" section on page 5-8.
- Ensure that the IP Security Camera is installed as specified in the manufacturer's installation guide.

Procedure

Step 1 Add the IP camera driver (Figure 6-7):

a. Select **System Design**.

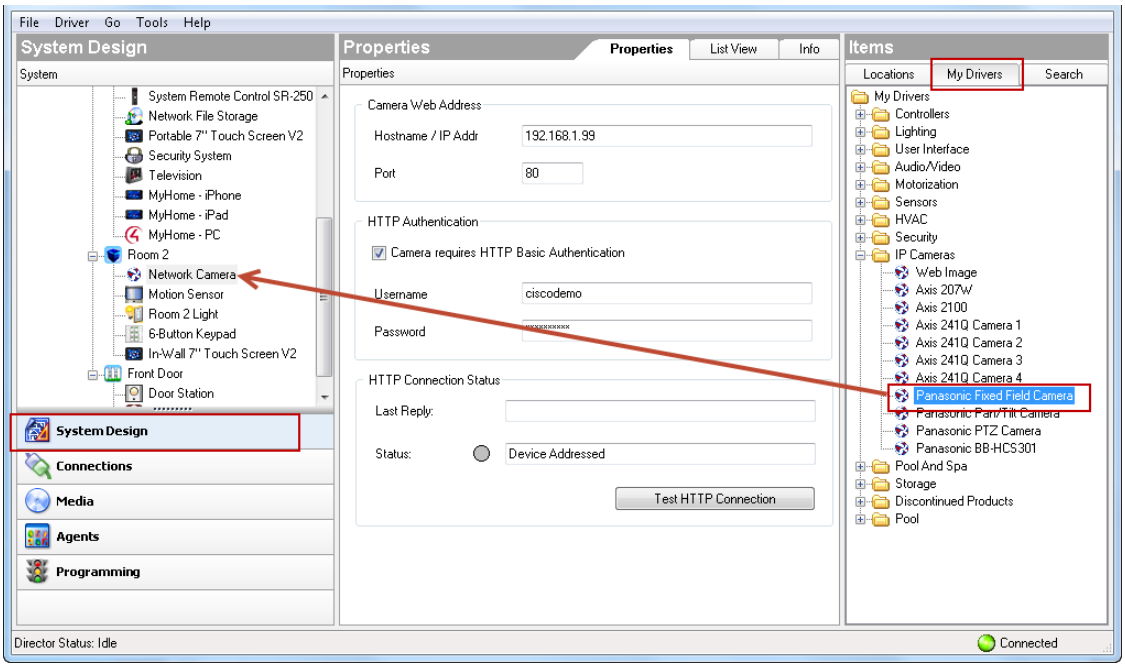
b. Highlight the room or location where the camera is installed.

c. Select **My Drivers** and expand the **IP cameras** heading.

d. Double-click the appropriate device driver to add it to the project tree (Figure 6-7).

For example, **Panasonic Fixed Field Camera**.

Figure 6-7 Adding a Network Camera



Step 2 In the Properties pane, enter the connection information that was configured on the device.

See the product documentation for instructions to configure the network and authentication settings on the device.

a. Enter the IP address and port number for the device.

b. Enter the authentication information (if applicable), such as the username and password required to access the device on the network.

Step 3 Click **Test HTTP Connection** to test it.

Adding a Wireless Thermostat

Use the Composer Pro System Design and Connections views to set up a Wireless Thermostat.

Prerequisites

- Complete the "Create the Basic Project Configuration" section on page 5-8.
- Install the Thermostat at the wall according to the product documentation (for example, see the Control4 Wireless Thermostat Installation Guide).

Procedure

Step 1 Add the wireless thermostat driver (Figure 6-8):

a. Select **System Design**.

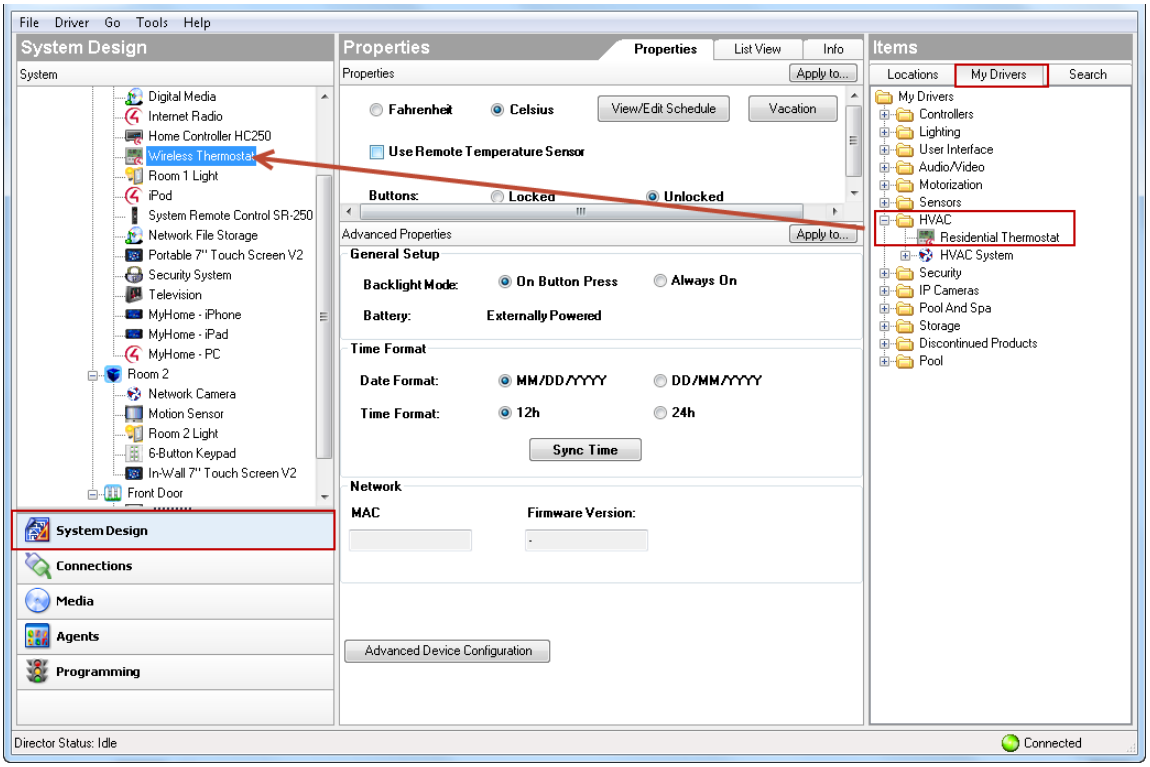
b. Highlight the room or location where the device is installed.

c. Select **My Drivers** and expand the **HVAC** heading.

d. Double-click the appropriate device driver to add it to the project tree (Figure 6-8).

For example, **Residential Thermostat**.

Figure 6-8 Adding a Wireless Thermostat



Step 2 Identify the device in the Composer Pro project as described in the "Create the Basic Project Configuration" section on page 5-8.

Step 3 Configure the thermostat using the following additional topics in the Composer Pro User Guide:

- To program the schedule, see "Programming the Control4 Thermostat Schedule".
- To set up advanced properties, see "Using the Wireless Thermostat Advanced Properties".
- For additional information, see "Configuring HVAC Systems".

Where To Go Next

- Saving the Project as a Template, page 5-31
- Configuring the Intercom for Communication Within a Dwelling, page 7-1

CHAPTER 7

Configuring the Intercom for Communication Within a Dwelling

If your deployment supports the intercom feature for communication between the touchscreens in a dwelling, complete the following instructions.

Contents

Configuring the Intercom Agent for Use With Cisco Touchscreens

The Intercom agent lets you configure the Cisco Touchscreens and Cisco External Video Door Stationfor audio and video intercom communication, including the ability to send broadcasts, monitor a room, and other controls. For example: if you have an elderly parent living in the residence, you can create a macro and assign it to a keypad button. If your family member needs help, they simply press the keypad button to notify you. Another example is a "Good Night" setting where all touchscreens in the house can be set to "Do Not Disturb" when it's time to go to sleep. Or you can monitor your kids' room after they've gone to bed to ensure that they're going to sleep when they should.

For additional information, see the "Example: Program Using the Intercom Agent" in the Composer Pro User Guide. This example describes how to send a "test" announcement to a Cisco Touchscreen in the Master Bedroom that says "You are being monitored." The Master Bedroom is then monitored.

Tip Many of the steps below (such as creating or removing groups and adjusting settings) can be performed on the supported touchscreens.

Prerequisites

The following are added and identified (with a network address) in the project:

- Cisco Controller configured with the device drivers and rooms for your deployment
- Two or more compatible Cisco touchscreens or Cisco External Video Door Station.
  - Cisco In-wall Display
  - Cisco Portable Tablet
  - Cisco External Video Door Station
- Intercom agent (see below)
- Macro agent

Limitations

Call groups for intercom broadcasts should not exceed 10 devices in any one call group. Call groups with more than 10 devices may experience inconsistent behavior with intercom broadcast calls.

Security Best Practices

The Cisco Video Door Stations are designed to be installed on the outside of a residence. These devices include connections for relays (to open doors, gates, etc.) and contacts. If installed without the proper security precautions, unauthorized access to the Cisco Video Door Stations could provide access to Ethernet signals, signaling, and gate or door relays. Sysco Systems advises partners and installers to be aware of these risks and take all necessary precautions depending on each specific installation you will be doing.

It is each installer's sole responsibility to advise the resident at each installation of any security risks specific to such installation.

Summary

Installers should take time to assure they are not creating an unforeseen security risk for the resident, and any such risks should be discussed with the resident prior to the installation.

Carefully consider with your resident any contacts or relays before connecting them to the Video Door Station, and what implications could arise if someone gained access to the rear of the Video Door Station.

Also, think about what could happen if someone gained access to the Ethernet cable, and take necessary precautions to protect private resident information unless your customer is willing to assume these risks. Making available the proper security protections to a resident for their residence is the responsibility of the Control4 Installer.

Best Practices

1. The Cisco External Video Door Station ships standard with security screws. Installers are encouraged to use these screws, or substitute alternate security screws. Screw size is metric M3.5x.6- 30L.
2. Security gates or automatic doors should not be connected to the relay in the Cisco Video Door Station if mounted in an unsecured area; such relays could be accessed in the event of a breach of the device. Secure relay-driven devices should be connected to a more secure relay controller mounted behind a secure wall.
3. Security devices, for example numeric keypads, should not be connected to the contact sensors in the Video Door Station if mounted in an unsecured area; such devices could be accessed in the event of a breach of the device. Security-sensitive devices should be connected to more secure contacts mounted behind a secure wall.
4. Although the best video performance will be enabled by Ethernet connectivity, unauthorized access to the Video Door Station could provide access to the dwelling's Ethernet network and corresponding personal data.

Risk Mitigation

There are alternatives to mitigate this risk. The installer should consider the following options:

- Running the Cisco Smart+Connected Residential Solution on an isolated LAN from PCs on the network would limit exposure to personal data.
- Running MAC address filtering on the router or switch to force a hacker to spoof the Cisco Video Door Station's MAC address to gain access to the LAN.
- Configuring the Video Door Station as WiFi instead of Ethernet would allow the Dealer to use robust WiFi security protocols, for example, WPA.

Note WiFi signals must be very strong and stable to support video intercom.

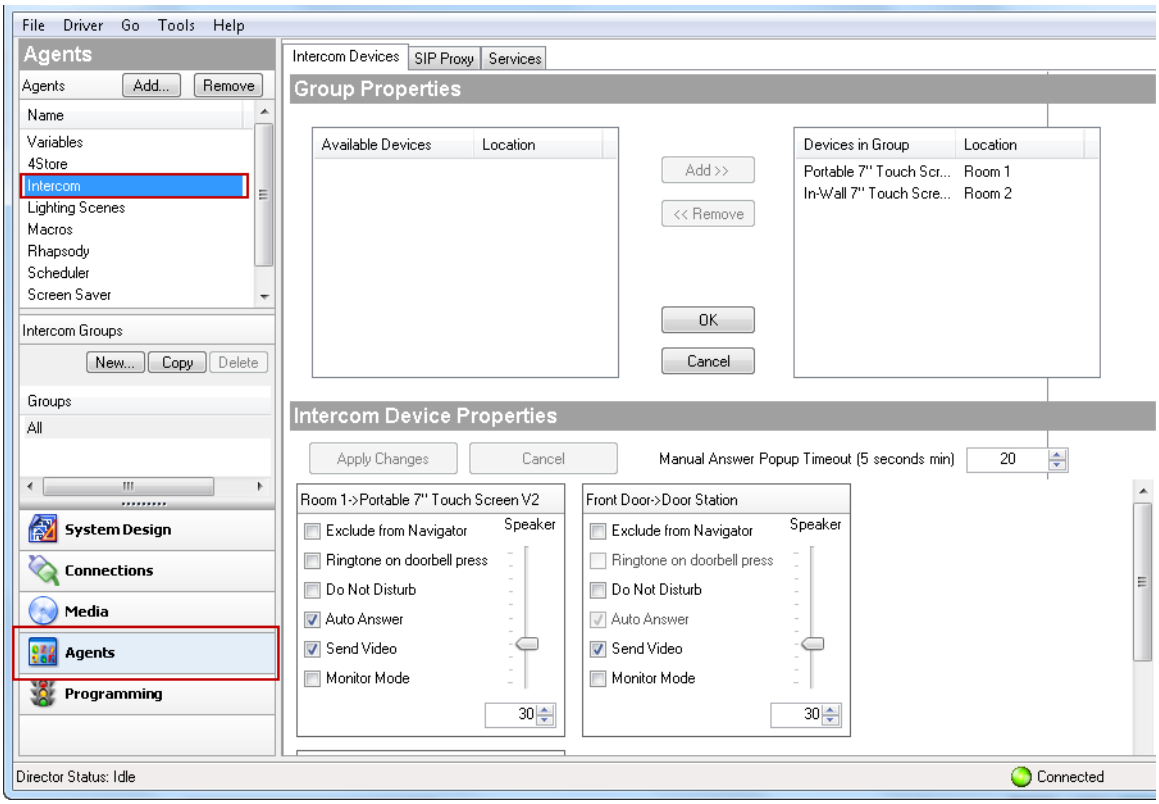
- Routing the Ethernet cable to the Video Door Station through a secure managed switch to limit data access from the Video Door Station.

Procedure

Step 1 Select **System Design** > **Agents** (Figure 7-1).

Step 2 (First time only) Click **Add** to add Intercom to the agent types list in the project. Select **Intercom**, and then click **OK**. The next time you want to configure the Intercom options, just select the Intercom item in the Agents pane.

Figure 7-1 Intercom Agent



Note All of the devices that support intercom functionality are displayed. In Figure 7-1 this includes the Cisco In-wall Display (In-Wall 7” touchscreen) and Cisco Portable Tablet (Portable 7” touchscreen).

Step 3 Select the **Intercom** agent (Figure 7-1).

Step 4 Add an Intercom group.

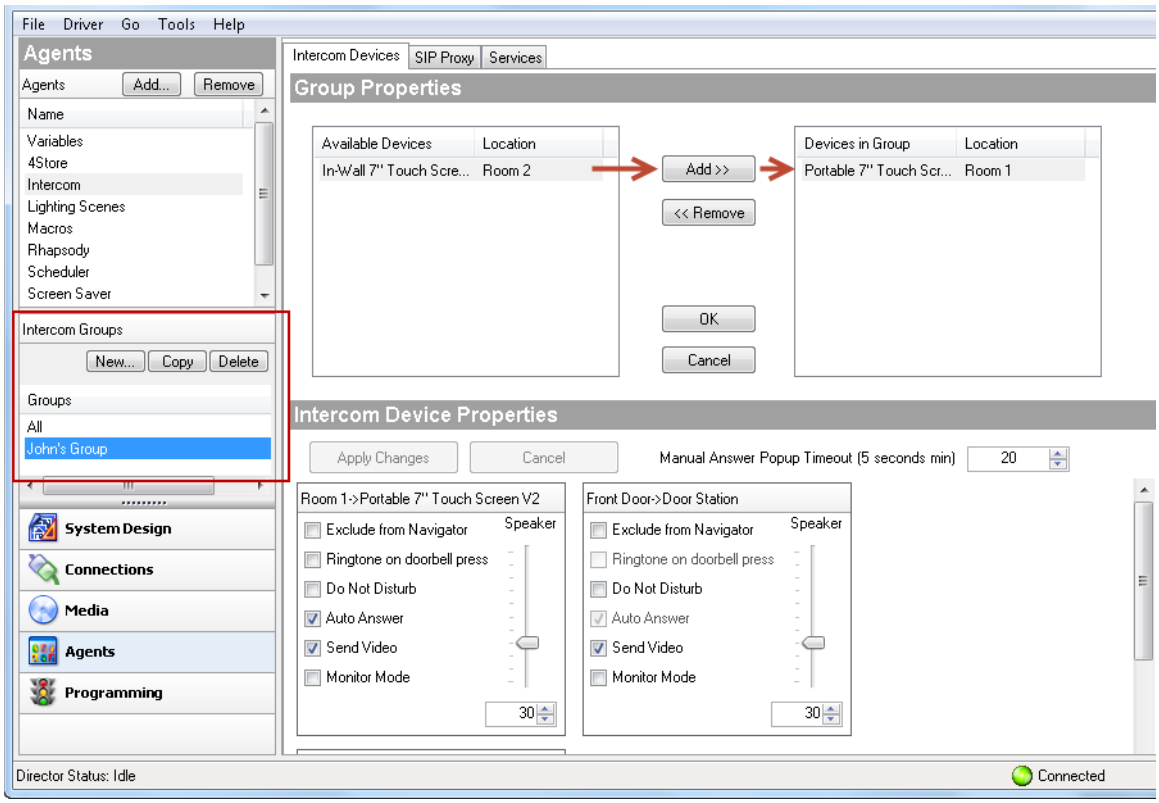
An Intercom group is a set of Intercom-supported touchscreens that can be identified by a specific group name. This saves time when you want to send a broadcast to a group of people. Example: You can create a group (John’s Group) and then send a broadcast to that group.

a. In the Intercom Groups pane, click **New**.

b. Name the Intercom group, and click **Add**. Example: “John's Group”.

c. Double click an “Available Device” to move it to the “Devices in Group” list.

Figure 7-2 Intercom Agent



Step 5 Select the **Manual Answer Popup Timeout (seconds)**.

Use the up or down arrow keys or type how much time is allowed to answer an incoming call.

Step 6 Adjust the settings for each touchscreen (in the Intercom Device Properties pane):

Table 7-1 Intercom Settings

Intercom Setting	Description
Exclude from Navigator	Select if you do not want these options enabled on the touchscreen. This option is useful when you want to broadcast messages to the touchscreens.
Do Not Disturb	Select to enable. When a broadcast or call tries to connect to another touchscreen (for example, John's Room), the message or call is blocked, and the caller's touchscreen displays a "Do Not Disturb" or "Station Busy" message from the "John's Room" touchscreen. On the caller's touchscreen, tap **Close** to close the message.
Auto Answer	Select to enable. When a call comes in from another touchscreen, that touchscreen rings and the caller's voice is heard (and video if activated). John, for example, (or whoever is in John's Room) can then speak to the caller from his or her touchscreen.

Table 7-1 Intercom Settings (continued)

Intercom Setting	Description
Send Video	Select to enable. When a call comes in from another touchscreen, the touchscreen rings and the caller's voice and video appear (if activated) on the caller's touchscreen. John, for example, (or whoever is in John's Room) can speak into his or her touchscreen and the caller can see them on the screen.
Monitor Mode	Select to enable. This monitors a room through the touchscreen in that room. This option sends audio and/or video to the touchscreen that is monitoring another room, for example, John's Room.

Note

- Broadcasting does not work in a room that's being monitored if that room is in Monitor Mode. When in Monitor Mode, you will not want the person in that room to be disturbed, for example, a sleeping child.
- Before you use broadcasting, make sure your Wi-Fi router is set to allow multicasting. Some routers do not allow multicasting. Check with your Dealer for details.

Step 7 Click **Apply Changes** when you're finished.

Understanding Agents

Composer Pro Agents are used in programming. Agents provide the ability to perform complex programming by using functional modules. There are various types of agents; for example, Announcements, Email Notifications, Scheduler, Lighting Scenes, Wakeup, etc.

Summary Steps

When you program with agents, you typically use these general steps:

1. In Agents, define an instance of a type of agent.
2. In Programming, use the instance of the agent to program event actions.

Example:

- In the Agent view, create a Custom Button that identifies all the buttons you want to program.
- In Programming, program the Custom Buttons.

For examples of using the intercom agent, see the "Configuring the Intercom Agent for Use With Cisco Touchscreens" section on page 7-2

Agent Types

Note Agents vary greatly in functionality and flexibility.

Table 7-2 Agent Types

Agent Type	Description	Related Topic in the Composer Pro User Guide
4Store	Lets you set up and manage 4Store logins, apps, themes, and storage.	"Example: Using the 4Store Agent"
Announcements	Plays a pre-recorded .WAV file, or displays a text message whenever a given event occurs. You can play an audio announcement on any audio output device with a supporting text message that displays on selected Navigators. Example: A Doorbell announcement plays a .WAV file that sounds like chimes and displays the following text on a touchscreen: "Someone is at the door" each time a doorbell is pressed.	"Example: Program Using the Announcement Agent"
Custom Buttons	Lets you make user interface buttons for specialized devices on the Navigators.	"Example: Program Using the Custom Buttons Agent"
E-mail Notification	Lets you send an e-mail message to your email address when specified events occur as defined in programming. • Remote Access is required to use the E-mail Notification Agent. See the Composer Pro Getting Started Help for details about Remote Access. • Avoid setting up e-mail notifications for events that occur frequently (e.g., when a Motion Sensor detects motion). If the email notification trigger event occurs too often, it will cause the system to become sluggish.	"Example: Program Using the E-Mail Notification Agent"

Table 7-2 Agent Types (continued)

Agent Type	Description	Related Topic in the Composer Pro User Guide
Intercom	Sets up the Intercom audio function for Cisco touchscreens. It also lets you set up SIP for multi-dwelling units (MDUs).	"Example: Program Using the Intercom Agent" See also the "Configuring the Intercom Agent for Use With Cisco Touchscreens" section on page 7-2.
Lighting Scenes	Sets up a Lighting Scene. Example: By pressing one button on a Keypad, you can turn on assigned lights to specified ramp levels.	"Example: Program Using the Lighting Scenes Agent"
Macros	Macros agents associate programming with events. Example: You can create one macro to use in several different programming events or to use on a touchscreen when creating Favorites.	"Example: Program Using the Macros Agent"
Media Scenes	Creates a media scene that plays music in selected rooms on your system.	"Example: Program Using the Media Scenes Agent"
Rhapsody	Lets you activate or disable a Rhapsody account.	"Example: Program Using the Rhapsody Agent"
Scheduler	Defines conditionals of time to the system, and adds the ability to have scheduled events.	"Example: Program Using the Scheduler Agent"
Screen Saver	Lets you set up a Screen Saver agent so you can create various Screen Savers.	"Example: Program Using the Screen Saver Agent"
SNMP Configuration	Lets you set up and configure devices to monitor via SNMP. Requires knowledge of SNMP and network management.	"Example: Program Using the SNMP Configuration Agent"
Timer	Starts, stops, or repeats a timer based on a given event and action. Example: If a Motion Sensor in the system turns on a light when it detects motion, you can use a timer to turn off the light after 15 minutes. Alternatively, you can set a timer to repeat an action whenever the timer expires.	"Example: Program Using the Timer Agent"
Variables	Creates Boolean, string, and number variables.	"Example: Review Programming with Variables"
Video Wall	Creates a video wall for simultaneous viewing and control of multiple video sources on multiple displays.	"Example: Program Using the Video Wall Agent"
Wakeup	Initiates a pre-specified wakeup time in the Navigators. This agent lets you play music, turn on lights, and change temperatures.	"Example: Program Using the Wakeup Agent"

Programming Basics

Use Programming to program events and other actions that affect system devices.

Tip Use the Programming Detective in **Tools > Detective Suite** to keep track of your programming scripts. See the Composer Pro Getting Started guide for details.

Programming is based on events. When an event is triggered, other actions can take place. You drag and drop Events and Actions that you create for corresponding devices to a programming Script pane.

Table 7-3 Programming Events, Actions and Scripts

Programming Item	Description
Events	Events All programming begins with events. An event is a "when" statement. An event is the trigger report that something happened that results in an automation. Events happen instantaneously. On a Keypad, pushing a button is one event. Actions all occur under Events. Examples of events include: • When the door opens • When it is 7:00 AM • When it is sunrise
Actions	After the event identifies to the system that something occurred, it sends actions. The following are the methods that are used by the system to define actions: • Commands. The Commands tab displays all available commands for a selected item in the Action Device Tree. A command is a "do" statement. Commands are actions the Director tells the device to do. Examples of commands include: – Light: on, off – VCR device: play, stop, pause – CD Changer device: go to disk – Security device: arm, disarm – TV device: Power on/off, change channel • Conditionals. The Conditionals tab displays all available conditionals for a selected item in the Action Device tree. A conditional is an "if" statement. An "if" statement asks a true/false question to the device. Examples of conditionals include: – If door is open – If after 5 PM – If light is greater than 50 percent • Loops. The Loops tab displays all available loops for a selected item in the Action Device tree. A loop is another type of conditional. A conditional loop is a "while" statement. It is something that is ongoing. Examples of conditional loops: – While the sprinklers are on – While the motion detector detects movement – While a doorbell switch is being pressed • Delays. A delay stalls a program from running to ensure actions that occur at the right time.

Table 7-3 Programming Events, Actions and Scripts (continued)

Programming Item	Description
Script	The linking of events and actions is defined in the script.

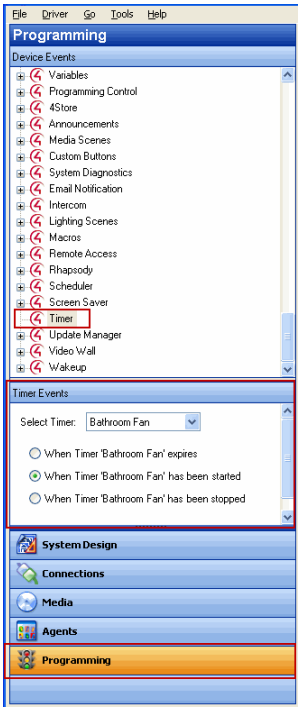
Procedure

The following procedure includes simple events and actions in a sample programming configuration.

Step 1 Select **Programming**.

Step 2 Select a an event (left side of the window).

For example, when the bathroom fan starts.



Step 3 Select an action that is triggered when the event occurs (right side of the window).

For example, start the “Bathroom Fan” timer.

Step 4 Drag the Events and Actions commands to the Script pane (middle pane).