Control4 Operating System (OS)
Release Version 2.1.1
Release Notes
About Control4

Control4, a leading provider of the operating system for the smart home, delivers intelligent control of consumer electronics products, appliances and networking systems through an easy-to-use and intuitive software interface. Founded in 2003, the company delivers affordable automation and control of lighting, music, video, HVAC, security, and energy management systems to the broad market through more than 1,600 custom integrators, retail outlets, and distributors in over 65 countries. Control4 is the platform of choice for major consumer electronics companies, hotels, businesses and utilities that require an intelligent, open and affordable control solution. For more information visit www.control4.com.

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Control4 Operating System (OS) Software Release 2.1.1 Release Notes

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1. **Introduction**

The Control4® Operating System Release 2.1.1 (OS 2.1.1) is a maintenance release. Its primary purpose is to correct the problem customers have experienced with the On Screen and Touch Screen Navigators locking up after extended operation. It also includes other changes as described in these Release Notes.

OS 2.1.1 is the default OS version for all system upgrades.

These Release Notes document the changes in OS 2.1.1 and provide the information you need to install new systems successfully or update existing systems to OS 2.1.1.

2. **OS 2.1.x Releases**

2.1 **OS 2.1.1**

- **Updated firmware for SR-150 and SR-250**
  - Resolved a problem with the Remote continually trying to reboot when the battery was nearly dead.
  - Added ability to disable the light sensor.
  - Added new button sequences for SR-150:
    - ‘Room Off’ - ‘Function’ - ‘Info’ - ‘0’ - ‘0’ - ‘2’ - ‘1/0’ - > enable/disable ambient light sensor
    - ‘Room Off’ - ‘Function’ - ‘Info’ - ‘0’ - ‘0’ - ‘5’ - ‘1/0’ - > enable/disable wake on motion sensor

- **Navigator**
  - Resolved the 25-day lockup of Navigator which left the interface in a non-functional condition displaying overlaid menus, a blank menu, or a loading dialog.
  - Resolved a Navigator memory leak which caused the Controller running Navigator to perform more slowly over time.
  - Resolved a problem with the Flash Lite player not correctly handling HTTP 404 status.
  - Resolved a problem with On-Screen Navigator getting stuck on a popup going back to the home screen.
  - Resolved a Rhapsody Recommends overlay on the previous menu (non-fatal).
  - Resolved a problem with the IP Camera image remaining on screen after a bookmark is executed in programming.
  - Resolved a problem with two (2) Thermostat pages being overlaid.
  - Resolved a problem with Navigator overlaying UI on when using alphanumeric search and select on music UI.
  - Resolved a problem with Navigator reporting ‘Unknown’ while browsing media.
  - Resolved a problem with MyHomePC Navigators occasionally not showing the current room when first started.

- **4Store**
  - Resolved a problem where the symbolic link wasn’t properly created when using the HC200 / HC300. This prevented the use of these Controllers as the storage location for 4Store apps.

- **Director**
  - Fixed a Director crash that could occur in certain circumstances when a song is selected on the Control4 Dock for iPod.
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- Fixed a problem with the A/V path selection that could cause an A/V Receiver to turn off and then turn back on when changing the video source.
- **HVAC System Zone Driver (HAI, etc.)**
  - Resolved a problem so that Thermostats using the HVAC System Zone Driver can be controlled using the Flash-based Navigator UI.
- **Media Scanning**
  - Resolved a problem with the Sony CX7000ES and CX777ES not properly scanning after a Digital Audio scan has been completed.
- **Zones Page**
  - Resolved a problem that could cause a phantom zone to be displayed.

2.2 OS 2.1

OS 2.1 is a major system software release and supersedes OS 2.0.x. OS 2.1 is the default OS for all new Control4 system installations and upgrades.

2.2.1 Considerations and Advantages

Control4® OS 2.1 is recommended for new customer installations and as an upgrade path for existing customers.

**IMPORTANT**: The OS 2.0 release utilizes ZigBee® Pro for ZigBee RF communications. Controllers and ZigBee firmware devices upgraded to OS 2.1 cannot be downgraded to Release 1.7.4 or prior versions.

- **IMPORTANT**: A few legacy products are not supported in OS 2.1. Other products are supported, but may have limited functionality or may not provide access to new capabilities. See Section 4, "Limitations."

1. Control4 recommends that customer systems running OS 2.0.x be upgraded to OS 2.1 if they need any of the improvements included in this release.
2. Control4 recommends that customer systems running Release 1.8.2 be upgraded to OS 2.1.
3. Control4 will continue to support Release 1.7.4 for existing customers for a limited time.
   - Please use Composer 1.7.4 to manage projects running on Release 1.7.4. Other versions of Composer may introduce incompatible drivers or project settings.
4. Control4 no longer provides support for versions of software prior to 1.7.4. We recommend that these systems either be left “as is” or be upgraded to Release 1.7.4 or to OS 2.1.
   - Control4 will not provide new or replacement hardware products for prior versions.
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- Customers may continue to run prior versions for as long as they want. However, Control4 Technical Support has limited ability to answer questions and provide assistance for older product releases.
- Release 1.3.2.442 was the final release of the Release 1.3.x product line. While Control4 doesn’t actively support this release, it is the best/final release of this line and may be considered as an option for customers who are using a Home Theater Controller or a Media Controller as the Primary Controller within the system.
- Customers’ systems running Release 1.6.0 or any 1.7.x release should be upgraded to Release 1.7.4 or to OS 2.1.

**IMPORTANT**: OS 2.1 is a complete system software release. All supported Control4 devices will receive new software or firmware. The update process will affect all devices in the Control4 system.

**Software Update License**: OS 2.1 utilizes the same software update license as the prior OS 2.0 update. This update is available at no charge for customers purchasing new systems (or Primary Controller) and for customers who have previously purchased an OS 2.0 software update license. A system-wide software update license is required for customers who haven’t previously purchased an OS 2.0 software update license. The price is the same regardless of system size or configuration. Control4 Dealers also may want to consider charging for the time spent performing the upgrade.

### 2.2.2 OS 2.1 Improvements

This section lists the new features and software changes for Control4® OS 2.1.

#### 2.2.2.1 New or Changed Features and Functionality

##### 2.2.2.1.1 4Store Agent and Themes

- OS 2.1 provides a new 4Store agent. Navigators communicate with the 4Store agent which communicates with 4Store. It is no longer necessary to configure 4Store on each Navigator device individually.
- The 4Store agent is automatically added to new projects and to existing projects when they are updated to OS 2.1. It is configured through Composer’s Agents view (Composer -> Agents -> 4Store -> Add).
- When configuring the 4Store agent, you may select any available storage device for App and Theme storage. You may choose also a Controller without a hard drive. If you do so, you will be limited to approximately 5 MB of storage space for Apps. You will not be allowed to download Themes in this configuration. Control4 recommends that you select a Controller with a hard drive (e.g. HC-1000) or a network storage device as the storage location for the 4Store agent.
- After configuring the 4Store agent, please select **Update** to download the customer’s apps from 4Store.
- If you don’t configure the 4Store agent with 4Store account credentials, your customer will still be able to use the Weather and News apps; however, they will not be able to download and install 4Store apps.
- OS 2.1 now provides support for custom Navigator Themes. Custom themes may be developed using the Theme SDK (available to 4Store developers). Custom themes layer on top of the default UI and can either completely replace the default UI or augment specific areas. Themes are distributed through 4Store.com and are downloaded using the 4Store UI on the Navigator device.
2.2.2.1.2 Controller Performance Changes

- To improve performance on Controllers, the navigator, audioclient, and audioserver processes are automatically disabled unless there is a binding in the project which indicates they are needed.
- To improve performance on Controllers, the navigator system process automatically receives a "nice" priority when there isn’t an active On-Screen session. It automatically resumes normal priority when the On-Screen Navigator is in use.
- To improve performance on Controllers, we have changed the Photo Screen Saver agent to serve up the same image to all connected Flash-based Navigators; all devices have the same interval between pictures. Any interval change from any device will change it for all devices. This doesn’t affect Photo Screen Saver on the legacy Navigator devices.

2.2.2.1.3 Detective Suite

- Control4 is providing a new Detective Suite with OS 2.1. This suite of tools is accessed via the Composer Tools menu and can also be run as a standalone program. The Detective Suite provides interfaces to evaluate project programming, review project bindings, analyze device performance, and evaluate the ZigBee mesh.
- The Detective Suite requires .NET Framework 4 to be installed (www.microsoft.com/downloads). Detective Suite is installed automatically when Composer Pro 2.1 is first installed.
- Programming and Bindings information can be exported using the Detective Suite (File > Save As) and printed using any text editor.
- The ZigBee Detective is throttled on how quickly it can ask for information from devices on the mesh. It will require four (4) hours after startup to provide data. If the ZigBee Detective is stopped and restarted, or if the Director and ZigBee Server processes are stopped and restarted for any reason, the ZigBee Detective will wait for four (4) hours before providing any data.
- The Detective Suite can be run across a Remote Director connection with the following limitations:
  - The ZigBee Detective reads a lot of data from the Controller and may not be able to display data due to the low bandwidth connections. If this happens, you will need to have a local network connection to use it.
  - The Discovery Detective will not show devices on the remote network—it only shows devices on the network that the computer running the Detective Suite is on.
  - The performance of the remaining Detectives (Bindings, Performance, and Programming) will be sluggish due to the low-network-bandwidth connection. You will need to be patient when using this tool remotely. If you expect to do significant work with the Detective Suite, you may be better served by a site visit.

2.2.2.1.4 Internet Radio

- Control4 has added an Internet Input binding to all of the current model Controller drivers. When a Controller is added to a project, the Internet Radio cloud driver is added automatically (if it’s not already in the project) and bindings are made to the Internet Input binding on Controller(s) that support that binding.
- The Internet Radio cloud driver can be manually added to existing projects after they are upgraded to OS 2.1. The Controllers’ Internet Input bindings to the Internet Radio cloud driver can also be manually created.
- Internet Radio stations (HTTP-streamed MP3 format) can be added as Channels using Composer’s Media manager.
2.2.2.1.5 MyHomePC

- Prior to OS 2.1, we released the driver for MyHomePC via the online database. When you downloaded that driver it was placed in the Control4\Drivers folder of your My Documents directory. Now, in OS 2.1, we've placed an updated driver with the same name in Composer's Drivers\Virtual folder. This allows the system to update the driver automatically in existing projects to use the MyHomePC license type. However, this also causes an error to be displayed by Composer Pro 2.1 on startup. This error indicates that the MyHomePC driver in the local Control4\Drivers directory cannot be loaded. This is an informational message and will not cause any problems with Composer. You can safely delete the original driver from your %USERPROFILE%\My Documents\Control4\Drivers folder (control4_MyHomePC_MyHomePC_Navigator_Control4.c4i).

- MyHomePC now supports 4Store apps.
- MyHomePC now supports local-language selection, and automatically loads the same language as the other Navigators configured in Composer.
- MyHomePC can now be launched in full-screen mode. This is enabled by adding—fullscreen as a startup parameter on the application's properties.
- If you're unable to identify or connect to the MyHome application please make sure you're using the driver from the local database (Composer -> System Design -> Search -> Manufacturer -> Control4).

2.2.2.1.6 Navigator Improvements

- The Navigator interface has been updated with new icons and additional background selections.
- The Apps landing page is now accessed directly from the default Control4 Home page interface. There are seven (7) icons on the fully-populated default Control4 Home page: Watch, Listen, Lights, Security, Comfort, Apps, and More. 4Store access is provided through the Apps landing page.
- Custom Buttons—Configured using the Custom Buttons agent in Composer, Custom Buttons are now available.
- The user interface for the On-Screen Navigator dimmer control has been improved to allow better control over dimmer functionality.
- The IP Camera user interface now features larger images when in grid view.
- The Album and Artist fields on the Now Playing interface are now quick links to search functionality when Rhapsody and Digital Audio sources are playing. These links take the user to the Search or Browse interfaces for Albums and Artists for the currently playing Album or Artist.
- Movie and Album browsing pages now feature larger cover art images when in grid view.
- The Change Rooms interface now displays rooms in alphabetical order.
- Added a Control4 toggle button to the UI when a Custom Home page is in use; this allows the user to toggle directly between their Custom Home page and the default Control4 Home page. The red Control4 logo indicates that they are on the Custom Home page; the white Control4 logo indicates that they are on the default home page.
- Removed the A, B, C, D labels from the colored buttons on the Flash-based Navigator UI to eliminate confusion caused by other devices having different color mappings.
2.2.2.1.7 **Pool Controller**
- The Pool Control interface is now available in Flash-based Navigators.
- We have updated and improved the Jandy AquaLink and Pentair Intellitouch pool control drivers.

2.2.2.1.8 **Thermostat**
- Thermostat Vacation Mode can now be selected as a Hold mode through the Navigator.
- Thermostat exits Vacation mode when any setting is changed on the Thermostat or when the Hold mode is changed on the Navigator.
- Thermostat scale can now be changed on the interface by pressing the “°F | °C” button.
- Thermostat visibility and display order (in Flash-based Navigators) can now be adjusted using Composer Pro > System Design view > Room Navigator settings.
- When there is only a single Thermostat in the project, and no apps are configured to display under Comfort, selecting Comfort from the Home page automatically loads the Thermostat control UI.

2.2.2.1.9 **Update Manager**
- We have made significant changes to the underlying Update Manager architecture which was first introduced in Release 1.3.0. These improvements are expected to improve the overall success rate of updates. You should not see any difference in the update process or interface.

2.2.2.1.10 **USB Install Support**
- The USB Stick Creator utility has been updated to provide the Dealer with the ability to pre-load licenses onto the USB device at the time that the USB Installation is created. This enables the Dealer/Installer to pre-load the OS 2.1 system software packages and the Software License so that updates can be accomplished without an Internet connection.
- The USB Stick Creator utility has the ability to pre-cache multiple software licenses on a single USB Install stick. The software license needs to be applied when the Dealer is connected to the Internet and requires the entry of the Controller type and the MAC address.
- Because USB Install functionality was not supported in OS 2.0.x, a USB Install device can only update systems from 1.7.x, 1.8.2, or a prior 2.1 version. If a system running OS 2.0.x is not connected to the Internet, it is necessary to update the Primary Controller of that system to OS 2.1 using an Internet connection. After the primary Controller has been updated to OS 2.1, the rest of the devices on that system can be updated using the USB Install method.

2.2.2.1.11 **USB Restore Support**
- To make the occasional device recovery more seamless, Control4 has added OS 2.1 recovery images to the USB Stick Creator utility for the following devices: HC-1000 (all models), HC-200A, HC-300B, HC-500, and 10.5” Wireless Touch Screen v2.
- If you need to USB Restore a Mini Touch Screen, Speaker Point, Media Controller, or Home Theater Controller, you will need to use the 1.7.4 version of the USB Restore utility.

2.2.2.2 Other New Features or Enhancements

**Composer**
- Changed the default setting for new projects to “Push Settings from Project.” This ensures that if a device is replaced, the replacement device will automatically have the same settings.
- Added “Discover DLNA Servers” option to the project. DLNA server and scanning support is experimental in OS 2.1. We do not recommend that you configure your customers’ systems to use DLNA servers and media scanning.

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Control4 Dock for iPod

- Added ability to use alphanumeric quick jump on the Navigator when browsing content from a device connected via the Control4 Dock for iPod. This functionality is only supported on lists that are presented in alphabetic order: songs, albums, artists. This requires that the “Alpha Lookup” setting on the Control4 Dock for iPod driver be Enabled. The default setting for Alpha Lookup is disabled because some iPod devices lock up when doing an alphanumeric lookup with a letter that isn’t in the current list.

DVD Proxy Devices

- Added the option to disable the “Auto Play” feature in drivers using the DVD proxy. This configuration is done using Composer Pro on the driver’s Property page.

Email Notification

- Modified the Email Notification agent to permit multiple email addresses, each separated by comma ‘,’ semi-colon ‘;’ or colon ‘:’.

Firmware

- The OS 2.1 release features new firmware for all Control4 ZigBee devices – you should plan on the ZigBee firmware update taking approximately 5-8 minutes per ZigBee device. The ZigBee firmware update does not require any manual intervention. It will start and complete automatically. However, ZigBee performance will be sluggish while the update is in progress.

Security

- Improved the UI for Security to allow multiple security panels within a project.
- Improved the DSC IT-100 security panel driver to support multiple partitions better.

System Remote Control

- Added the ability to turn off the Ambient Light Sensor on the SR-250 (V2) from the remote’s LCD menu.

ZigBee

- Ensure that a Controller has been identified before it can be configured for use as a ZigBee Server or ZAP.
- Ensure that ZigBee mesh isn’t re-created when it’s already functioning.

2.2.3 Defects Resolved in OS 2.1

The primary focus of the OS 2.1 release is to improve the overall quality of the system, including features that have been introduced in prior releases. It is built on the platform established with the OS 2.0.x releases and contains a significant number of improvements. We have not attempted to detail all of the defects resolved in OS 2.1. However, the following are among the most prominent.

4Sight—Web Navigator IP Camera

- Corrected a problem that could cause IP cameras not to display properly when accessed via the Web Navigator.

7” In-Wall Touch Screen

- Added a patch that Control4 Tech Support has been manually applying to resolve problems with the original 7” In-Wall Touch Screens locking up.

Composer

- Improved the Composer Network Status interface to detect better if a device has gone offline.
- Corrected a problem where a Network File Storage device with a defined username and password wasn’t being mounted due to incorrect handling of the supplied username.
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- Added the ability for Composer to show PARAM values greater than 9 for DriverWorks drivers.

Control4 Dock for iPod
- Includes new firmware to correct the problem identified with some devices locking up and requiring a reset when left on the dock for extended periods of time.

Media
- Corrected a problem where Media Info for movies was showing Director and Actor as N/A.
- Resolved various reported defects where the Play queue would clear before playing all songs (when in Shuffle mode) or would not shuffle properly.

Network File Storage driver
- Corrected a problem where the Network File Storage device could use "guest" rather than the specified user credentials when mounting the specified drive.

Sonance iPort driver
- Corrected a problem with the driver not properly navigating lists on devices with a large number of songs.

Thermostats
- Fixed many reported Thermostat bugs. These fixes were made in the firmware, driver, and user interface.

Update Manager
- Improved the robustness of the Update Manager to resolve problems identified by Dealers with devices not being able to download needed system files and complete the update.

ZigBee
- Corrected a problem where ZigBee Server hit 100% CPU trying to talk to a ZAP that was not available.

Zones
- Updated Zones tracking and UI to fix all known defects.

2.3 Additional Information about OS 2.1
This section contains other important information which is relevant to the Dealer installing systems on OS 2.1 or updating systems to OS 2.1. This information is not all new to OS 2.1, but has been updated to reflect any changes that might have been made with this release.

2.3.1 Navigator Interfaces—Overview
The Navigator interfaces available for use within an OS 2.1 system include:

- **Flash-based Navigator**—provides new functionality and most prior version functionality (with some limitations).
- **MyHomePC**—provides all the functionality of the Flash-based Navigator. MyHomePC runs on Windows, Macintosh, and Linux computers and tablets with support for Adobe Air. New to the OS 2.1 version is added support for 4Store apps and for local language in the UI.
- **MyHome Apps for iPhone and iPad**—these MyHome applications do not use a Flash-based user interface, but have been updated and will continue to be updated to be as consistent as possible with the Flash-based Navigator UI. These interfaces do not support 4Store apps.
• **Legacy GUI Navigator**—provides all functionality provided in prior versions, but doesn’t provide all new functionality. These interfaces are no longer being improved, but will continue to work in compatibility mode on updated systems.

• **Flash-based Web Navigator**—provides essentially the same functionality as the Flash-based Navigator but doesn’t support Rhapsody or 4Store applications

• **Legacy HTML Web Navigator**—provides all functionality provided in prior versions and doesn’t require Flash support in the Web browser. This interface is no longer being improved, but will continue to work on updated systems.

• **List Navigator**—provides all functionality provided in prior versions.

<table>
<thead>
<tr>
<th>Navigator Device</th>
<th>Supports OS 2.1</th>
<th>User Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote V1/V2</td>
<td>No Support</td>
<td>N/A</td>
</tr>
<tr>
<td>SR-250</td>
<td>Yes</td>
<td>List Navigator</td>
</tr>
<tr>
<td>LCD Keypad (POE and ZigBee)</td>
<td>Yes</td>
<td>List Navigator</td>
</tr>
<tr>
<td>Mini Touch Screen V1/V2</td>
<td>No update available—</td>
<td>Legacy Navigator</td>
</tr>
<tr>
<td></td>
<td>Compatibility support</td>
<td></td>
</tr>
<tr>
<td>10.5” Portable Touch Screen V1</td>
<td>No update available—</td>
<td>Legacy Navigator</td>
</tr>
<tr>
<td></td>
<td>Compatibility support</td>
<td></td>
</tr>
<tr>
<td>10” Wall Mount Touch Screen</td>
<td>No update available—</td>
<td>Legacy Navigator</td>
</tr>
<tr>
<td></td>
<td>Compatibility support</td>
<td></td>
</tr>
<tr>
<td>Home Theater Controller and Media Controller (On-Screen)</td>
<td>Yes (Secondary Controller only)</td>
<td>Legacy Navigator</td>
</tr>
<tr>
<td>Web Browser (not Flash capable)</td>
<td>Yes</td>
<td>Legacy HTML Navigator</td>
</tr>
<tr>
<td>10.5” Portable Touch Screen V2</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>Home Controllers HC-200, HC-300, HC-500 (On-Screen)</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>7” Wall Mount, Portable, Tabletop Touch Screens</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>5”/7” In-Wall Touch Screens</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>Web Browser (Flash capable)</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>MyHomePC—Windows, Macintosh, Linux computers/tablets</td>
<td>Yes</td>
<td>Flash Navigator</td>
</tr>
<tr>
<td>MyHome—iPod touch, iPad, iPhone</td>
<td>Yes</td>
<td>Custom Navigator</td>
</tr>
</tbody>
</table>

### 2.3.2 4Store Applications

Control4® has created the 4Store application platform and included it with each Flash-based Navigator (except Web Navigator). Two (2) default apps are provided with the OS 2.1 release: Weather and News apps are automatically installed on the Flash-based Navigators. Other apps and themes can be purchased and downloaded from 4Store.com or through the 4Store app on a Flash-based Navigator.
The 4Store agent configuration provided with OS 2.1 allows all Navigator devices to automatically be configured and display the available applications. When configuring the 4Store agent, any available file storage device in the project can be selected to host the 4Store applications. The agent downloads the Apps and Themes to that location. Each Navigator loads these Apps and Themes locally from that designated location. If the designated File Storage Location is a Controller that doesn’t have a hard drive (e.g., HC-200 or HC-300), then App and Theme downloads will be limited to approximately 5 MB in total size.

Applications and themes purchased from 4Store.com are licensed for use anywhere on the Control4 system associated with the consumer account and can run on all Navigator devices within the system.

Some applications may require a Control4 driver to provide full functionality. The app developer can (but doesn’t have to) indicate a required driver in the 4Store app which they create. If a driver is required, a Control4 Dealer will need to be involved in the installation of the driver prior to the app being downloaded. 4Store app developers can also (but aren’t required to) provide a demo mode for consumers to try out their app before getting the needed drivers installed. When a required driver is specified by the App developer, the app can only be purchased through 4Store on a Flash Navigator device, and only when the required driver has been added to the system. These apps cannot be purchased through 4Store.com.

Control4 reviews all 4Store apps and themes prior to their availability on 4Store.com. Review considerations include: Truth in Advertising, Stability, Security, Resource Requirements, Content (no “Adult” content), and first-pass Legal considerations. We do not review apps based on usefulness, quality, user interface, or redundancy.

Application developers are responsible for all support associated with their apps.

For more information about 4Store, including the 4Store app developer program, please see [www.4store.com](http://www.4store.com). To report a defect or request support for an App, log into 4Store.com, and then click on My Apps. Click on Contact Developer for the app.

### 2.3.3 Media Support

- **FLAC Codec Support.** Control4 supports FLAC decoding an all audio endpoints. Be aware that FLAC streaming can consume significant network bandwidth and is not recommended for WiFi endpoints.

- **AAC Codec (.m4a) Support.** Control4 supports AAC decoding on Home Controller HC-200, HC-300, and HC-500. AAC is not supported on the Speaker Point, the Mini Touch Screen, the Home Theater Controller, the Media Controller, or the 7” Touch Screen devices. If any of those devices are used as audio endpoints in the system you are installing or updating, you should not use the AAC format audio. AAC content also must not be DRM protected.

- **Streaming MP3 (Internet Radio) Source Support.** Control4 supports Internet Radio by enabling HTTP-streamed MP3 sources to be played within the system. Each Controller has an Internet Input binding. The Internet Radio cloud driver is automatically added with the Controller. For projects that are being upgraded from prior versions, the Internet Radio cloud driver can be added manually from the Local Database. Internet Radio station URLs are entered for the Internet Radio...
cloud using the Media view in Composer. Because Control4’s Internet Radio implementation supports only the MP3 format, it will play on all audio endpoints.

<table>
<thead>
<tr>
<th>Audio Endpoint</th>
<th>MP3</th>
<th>FLAC</th>
<th>AAC</th>
<th>Internet Radio (MP3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Touch Screen V1/V2</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Home Theater Controller, Media Controller</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>7” Wall Mount, Tabletop Touch Screen</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Speaker Point</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Home Controller HC-200, HC-300, HC-500</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- **Media Scanning Architecture.** The Media Database and media scanning architecture were updated for OS 2.0. This has not been changed in OS 2.1, but this information is still useful for Dealers who are updating prior version systems.
  - Scanning is performed by the Controller rather than Composer.
  - Scanning can be executed programmatically and by schedule.
  - Scanning configuration allows the addition of different file extensions. Control4 will look for files with the specified extension(s) and add them to the Media Database. **Note:** Just because a file extension is recognized by the scanning process doesn’t mean that the file is playable within the Control4 system.
  - Enable/disable online Media Database lookups for metadata.
  - Synchronize options allow the Control4 system to recognize changes made by third-party Media Managers.
  - When scanning, metadata is populated based on the following priority scheme:
    - Metadata stored in the id3 tags is presumed to be the most correct information.
    - If information is not available in the id3 tags, OS 2.0 uses the online media lookup service (optional configuration).
    - Artist, Album, and Song names are derived from the directory structure if no other information is available:
      \artist
      \artist\album1
      \artist\album1\song1
      \artist\album1\song2
      \artist\album1\song3
      \artist\album2

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2.3.4 Security

- **Set Password.** Control4 provides an interface in Composer (System Design) to allow the Installer to change the password on the Primary Controller. If not set, the password of the Primary Controller remains set to the default, and no password is required to access the project using Composer.

- **Forgotten Password.** If a password is set in Composer and then forgotten, the password can be reset only through a physical connection to the Controller.

- **SSL.** Composer will now connect via SSL to Director.

- **Reset Password.** The process for resetting the password on a project requires physical access to the Controller on which the project is running. Use the network reset feature of the Primary Controller. After the network reset completes, both the project and system password reset to the default.

- **Trusted Controllers.** The first time Composer connects to a Director, it will ask you if you trust that Controller (similar to SSH). If you respond yes, Composer will make an SSL connection to the Controller.

- **SSH for System Console Access.** To improve overall system security, Control4 has disabled the telnet server on all devices except those which don’t support SSH (the exceptions are: Home Theater Controller, Speaker Point, and Mini Touch Screens which still use telnet). You will need an SSH client to log in to the device. Control4 recommends putty (see [http://www.chiark.greenend.org.uk/~sgtatham/putty/](http://www.chiark.greenend.org.uk/~sgtatham/putty/) for information and free download).

- **SSH from the Command Line.** If you need to use the command line SSH client on the Controller to log in to another device, you will use the following syntax, `ssh user@ip_address`.

  **Example:** `ssh root@192.168.0.22`

- **Secure Connections Only (SSL).** If installing a Control4 system with no Legacy Navigator UIs, you can choose to configure it to allow SSL connections only. This will ensure that no unencrypted communications pass between the Navigators and Director. If you need to continue to support a Legacy Navigator UI, you should not enable SSL only. The new Flash-based Navigators will always connect via SSL, if possible, and the Legacy Navigators will be able to connect without SSL.

2.3.5 Other Features that Were New in OS 2.0

- **Composer Pro Software Activation.** Control4 Dealers can now grant and revoke Composer Pro privileges for their installation teams. A my.control4.com account with Composer Pro privileges is required in order for Composer Pro to be activated after installation. Every 30 days, the user is required to reactivate their Composer Pro software. An Internet connection is required to complete the activation.

- **Electronic Licensing for All Control4 Software Licenses.** Control4 now handles all electronic licenses in a paperless manner. Licenses can be purchased via credit card by Control4 Dealer accounts with the proper privileges, or they can continue to be purchased via a Purchase Order. All licenses are electronically assigned to the Dealer’s my.control4.com account, and can then be directly assigned by the Dealer to their customer. Control4 doesn’t support retraction of licenses; once a license has been assigned to a customer, it is considered used.

- **Locale (Internationalization).** Control4 has enabled support for other languages in the Flash-based Navigators. Available languages are listed in Composer Pro. When a language selection is made using Composer, the Flash-based Navigators are reconfigured to use the selected language. Only one (1) language selection is allowed per system.
• **WPA Support.** Control4 supports WPA wireless security on 10.5” V2 Touch Screen and on Home Controllers HC-200, HC-300, and HC-500. The 7” Touch Screens already supported WPA.

• **On Screen—Now Playing and SR-250 shortcuts.** Since the On Screen Navigator is controlled using the System Remote Control, all basic transports and volume controls are already at your fingertips—no need to navigate to them. For that reason, the Now Playing bar is informational and can’t be navigated. In addition to the volume and Device Controls on the SR-250, there are other shortcuts:
  - **MENU**—Quickly access the Favorites popup.
  - **INFO**—Quickly accesses the Now Playing or Device Controls menu based on the selected audio source in the room.
  - **CNCL**—Back out one menu level when navigating using the On Screen Navigator.
  - **PG Up/Down**—Activate the dimming control for dimmers when using the On-Screen Navigator.
  - **GUIDE**—Toggle between the List and Grid views in various interfaces.
  - **Texting Keyboard for Character Entry**—When using the On-Screen keyboard or in any list (such as My Albums) that provides alphabetic sorting and searching, you can use the number keys on the SR-150 and SR-250 as a texting keyboard for letter entry.
  - **Alphanumeric Sorting and Searching**—If you view a list that is sorted alphabetically, you can use the alphanumeric search to access content quickly. You can activate this using the texting keyboard or by pressing and holding the Up or Down arrow.

2.4 Limitations in OS 2.1 and Later

2.4.1 Limitations or Warnings and Workarounds: OS 2.1

• **Legacy Navigator Devices.** No upgrade is provided for legacy Navigators (Mini Touch Screen, 10.5” Wireless Touch Screen V1, 10.5” In-Wall Touch Screen). These devices will continue to work in compatibility mode. These devices will remain on the version on which they were running before the OS 2.1 upgrade.

• **Speaker Points May Require a Power Cycle to Complete an Update.** Speaker Point is most likely to experience this problem, but it has also been observed on other products sharing the same processor (Home Theater Controller, Media Controller). Occasionally the Speaker Point will not properly reboot itself after the update is complete. If the power and data lights are lit (not flashing) and the device has not restarted, you may need to power cycle it. Do not power cycle the device if the data and link lights are flashing.

• **10.5” Wireless Touch Screen v2 May Not Complete the Update to OS 2.1.** Occasionally, we have seen the 10.5” Wireless Touch Screen v2 not complete the update from 1.7.4 or 1.8.2 to OS 2.1. This is caused by the device not properly re-connecting to the network during the middle of the update process. If this occurs, you may use the USB Recovery solution to load OS 2.1 on the touch screen.

• **10.5” Wireless Touch Screen v2 Running 1.7.x May Not ID into an OS 2.1 System.** The touch screen may not identify into an OS 2.1 system if it is running an older version with the legacy Navigator. If it has already been identified into the system, this does not present a problem. If it’s being added to a different system running OS 2.1, you may find it necessary to use the USB Recovery to update the panel to OS 2.1.

• **Windows PC Running Composer Must Be Rebooted after Updating the System.** After updating a Control4 system to OS 2.1 from any prior version, the PC running Composer must be rebooted to remount the Samba file shares properly. Because the Samba server on the Controller has been updated, the PC no longer recognizes the previously-loaded shares as valid. After the
PC reboots, the shares will mount properly. This is important to understand if you are trying to load media or perform a full backup containing media after the update. These operations will not complete correctly until the computer running Composer is rebooted.

- **ZigBee Devices Not Online.** If the ZigBee mesh is offline for an extended period of time, some ZigBee devices may go into "lost sheep" mode and not come online immediately. After updating a Control4 system to OS 2.1 you will want to verify that all the ZigBee devices are online so that they can be updated. If a device is offline for this reason, it can be brought online quickly by rebooting it or by using the standard Identify tap sequence.

- **Update Stalled.** Despite significant improvements to Update Manager, it’s still possible that a device will fail to update. This is because the first part of the update is handled by the update software already installed on the device. In the rare event that the update fails during the portion of the update that uses the existing software, it may be necessary to reboot the device or re-start the update.

  One example, but not the only one, is the upgrade of a device can become stalled if the packages required it do not exist on the Primary Controller. This can happen if:
  a) the Primary Controller reboots before the secondary device finishes its update; or
  b) the Agent restarts the update.

  This is "normal" update behavior for the prior version of Update Manager. While this is fixed in the new Update Manager—which looks in more places for the packages it needs—if the device hasn’t been updated, it won’t have that new capability.

  You should be able to get things going again by opening the Composer update dialog box, selecting **Cancel Update**, and restarting the update. This will cause the agent to download the required packages again, and restart the update.

- **Thermostat schedule may not be correct after firmware update.** Please check the Control4 Thermostat’s stored schedule after the system has been updated to OS 2.1 and the Thermostat firmware has been updated to 03.06.21.

- **Flash-based Navigator can’t adjust thermostat setpoints on HAI Thermostats.** The temperature will display correctly but the setpoints can’t be adjusted using the Navigator interface.

### 2.4.2 Pre-existing Limitations: OS 2.0.x

- **Media Export Includes Playlists.** The Composer media manager export function always includes playlists. If you are importing an exported media file and don’t want to affect playlists, open up the XML export file, and delete the playlists section before importing. If you import multiple exported media files, you will have multiple copies of the playlists included.

- **New Drivers for Control4 Devices Not Showing Up in My Drivers.** My Drivers is a list of favorites that you can add your own drivers to. When Control4 ships new products (e.g., HC-300 B or 5” In-Wall Touch Screen) those drivers are available in Composer through the Local Database. However, they won’t automatically be added to the My Drivers list. To have these drivers show up in the My Drivers list, you can right-click on that list and select “Restore Default List.” **Note:** This action will remove drivers that you previously added manually to My Drivers.

- **Composer Pro Requires .NET 3.5.** If installing Composer Pro on a new Computer, you must also install .NET 3.5.

- **Thermostat Setpoint +/- Programming.** If you’ve used the HEAT_SETPOINT or COOL_SETPOINT thermostat variables to programmatically increment or decrement the current setpoints, be aware that these variables are in 0.1 Celsius integer units. You’ll need to add or subtract accordingly to obtain the desired real setpoint changes.
• **HC-200/HC-300/HC-500 Bootup from Backup Partition.** Occasionally, the HC-200, HC-300, or HC-500 Controllers are unable to boot up from the active boot partition. If this happens, the device fails over to a recovery partition. The recovery partition allows the device to boot up and become operational. The device version will show up as 2.0.0.0 when this happens. Some non-essential system packages, including Navigator, are not loaded on the recovery partition. The device will need to be updated to OS 2.1 to load these packages.

• **Composer HE Limitations.** Changes made to secure Composer access to Director in OS 2.0 have created limitations on certain types of functionality in Composer HE. Some functionality, such as adding agents, cannot be performed by the Composer HE user. A “project locked” error message occurs when they try to perform these operations. This will be addressed in a future release.

• **Composer Error on Startup.** When starting Composer, if you receive an error message of the form:

```
Control4.Client.ConfigDataManager - The file 'driver file name' has an improperly formatted version tag. The driver will still be loaded but there may be problems with updating this driver until the problem is fixed.
```

this means you have a DriverWorks driver in your project using a non-integer in the version field. The driver will continue to function, but it will not be updated when using the “Update Driver” function. It needs to be replaced manually.

• **Flash Player.** The Flash player Control4 uses for Navigator doesn’t support HTML tables (used in popups created by the WeatherBug and Temperature Consolidator drivers) or .gif images. Flash-based Navigator users can use the built-in Weather app and Comfort display, and do not need to use the drivers. Other drivers which format information for popup display using HTML tables or .gif images need to be modified.

Because there is no .gif image support in Flash Navigator, IP camera drivers which were configured to pull Internet images in .gif format will not work correctly. They need to be removed from the project or modified to access a supported format (.jpg or .png).

• **Can’t Change Controller’s Network Configuration from On-Screen.** Control4 has removed the ability to change a Controller’s network configuration from the On-Screen Navigator as there are too many architectural points of failure (ZigBee, Director, Navigator, Sysman, etc.). When a device loses its network configuration, it can’t be recovered easily via an On-Screen Navigator. Controller network configuration will be supported only via the System Manager interface in Composer Pro.

• **Using Page Flips via Programming on an On Screen Device.** If you use page flips, you need to take into account the power state (on/off) of the display device (TV or Projector) and whether it is being used for something else (TV, movies). Turn it on (if off), and select the Controller as the source device (enabling the path to the On-Screen Navigator) via programming. When you are done with the page flip, you’ll need to turn off the device as needed so that you don’t leave TVs or projectors turned on unnecessarily.

• **Use of ‘The.’** The Control4 interface and Media Database ignore “The” in the sorting and presentation of Albums and Movies by Title; however, Control4 includes “The” when sorting and presenting Artists.

• **On-Screen Resolution Display.** Control4 has chosen not to implement an On Screen Navigator interface for 4x3 (Standard Definition) resolution display devices. Control4 scales the 16x9 interface for display on the SD device. This comes with the following limitations:
  - The font size and image size of many interface elements may not be optimal.
The IP camera display buffer is not scaled and will not “fit” correctly if used on an SD display device.

**USB Restore.** If you need to restore a Mini Touch Screen, Speaker Point, Media Controller, or Home Theater Controller using USB, you’ll need to use the 1.7.4 version of the USB Restore utility.

**User Interface**
- Control4 has not implemented a Flash-based UI for browsing CDs stored in a Disc Changer.
- Control4 has not implemented a UI for creating Lighting Scenes in the new Flash Navigator.
- Control4 has not implemented a method for locking specific screens on the Navigator.
- The UI for Video Wall is not yet completed for Flash Navigators.

**Legacy Navigator and Flash Navigator**
- In the Legacy Navigator, there was a volume slider control for devices (audio endpoints) with discrete volume control. In Flash Navigator 2.0, the volume control uses Up/Down controls.
- In the Legacy Navigator, certain motor and sensor devices, the Fireplace Switch, and Wakeups were made available via the Comfort menu. In the Flash Navigator 2.0 UI, these are under “More.”

**WEP and WAP.** Control4 WiFi devices that support WEP and WAP allow for the entry of ASCII keys in the network configuration interface. However, Control4’s implementation of WEP is restricted to hexadecimal keys. You can use ASCII keys for WPA networks, but you must use HEX keys for WEP network configurations.

**Wireless Thermostat.** When connecting to an OS 1.7.4 or an OS 1.8.2 system with a Control4 Wireless Thermostat with Composer 2.1, you will receive a message that the Wireless Thermostat driver failed to initialize. You can ignore this message. After the system updates to OS 2.1, the drivers needed by Composer will match those used by the system.

**2.4.3 Pre-Existing Limitations: Prior Versions**
- **The Audio Driver on Control4 Devices only Supports Sample Rates of 7200 – 48000 bits/second.** Control4 will not attempt to play any stored digital audio files with a higher sample rate. The files will scan and show up in the Media Database, but they will not play. If this situation occurs, an error in the audio log (if enabled) will indicate that the sample rate is too high.
- **Improved Performance of FLAC Audio Streaming.** It is still possible to require more CPU when streaming multiple FLAC files than what the Home Controllers HC-200, HC-300, or HC-500 can deliver. On these Controllers, Control4 only can stream up to two (2) FLAC files concurrently. If you anticipate the need for more, use an HC-1000 as the Primary Controller.
- **The ZAP Coordinator Cannot Be Replaced Without Re-creating the Mesh.** The security parameters of the ZigBee Pro mesh are maintained by the ZAP Coordinator. Control4 does not currently have a solution for replacing the coordinator without requiring the mesh to be re-created and the devices to be rejoined. Because the ZAP Coordinator can’t be changed, it won’t show up in the list of ZAPs to avoid inadvertent changes.
- **ZigBee Mesh Is Down when the Coordinator Is Not Running.** The ZigBee Pro mesh requires that the Controller defined as the coordinator is available and running ZAP. If not, the mesh network will be down until the coordinator is available.
- **EmberNet Upgrades Using the Same Controller as the Coordinator.** Control4 has designed the upgrade procedure to allow any Controller with a ZigBee radio to function as an EmberNet
Upgrade Controller. If the coordinator is functioning in that capacity, it will not be running ZAP during the time that the EmberNet upgrade is underway, and the ZigBee Pro mesh will be down. As soon as you disable the Controller as an EmberNet Upgrade Controller, the system re-flashes the ZigBee radio to run the ZigBee Pro stack, and then restarts ZAP. At that point, your mesh will come back up.

- **Some Devices Are Not Supported.** Control4 does not have ZigBee Pro firmware for all of the devices which may have been used in prior version systems:
  - **System Remote Control V1/V2**—no longer supported.
  - **Audio products (Amps, Switches, Tuners)**—must be configured using Ethernet.
  - **Contact Relay Extender**—must be configured using Ethernet.

- **Button Tap Counts Are more Precise in ZigBee Pro Firmware.** With the ZigBee Pro firmware, the tap counts are handled more precisely than in previous versions. Four (4) button taps are used for identifying. If you’re used to pressing the button a bunch of times, it doesn’t work if you press the button five (5) times.

- **Clearing a Project Doesn’t Force ‘Leave Network.’** From time to time, a Control4 Dealer or Installer will clear and reload projects. To minimize this effort, Control4 doesn’t force ZigBee devices to leave the mesh when a project is cleared. The downside of this implementation is that if you are moving ZigBee devices to another mesh, you’ll need to use the button sequence to cause them to leave the mesh manually before they’ll attempt to join another mesh network.

- **Home Theater Controller and Media Controller Can only Be Used as Secondary Controllers.** Beginning with Release 1.8.0, the Home Theater Controller and Media Controller can be used only as Secondary Controllers. They cannot function as Primary Controllers.

- **Lighting Scenes Limitations.** Each device can be included in up to 32 total scenes, and the project can have up to 1,000 total scenes. If you try to add a device that has reached its maximum amount of scenes, it will allow you to add the device to the scene. However, when the system gets the error back from the device that it isn’t able to add any more scenes, it will remove the device from that scene and pop up a dialog in Composer that will alert the Installer to the problem (similar to the dialog that you get if you try to identify a device that’s already identified within the project).

- **Non-Routing Devices and ZigBee Pro.** A maximum of six (6) non-routing devices can be added to the ZigBee Pro mesh without routing nodes. This limitation is unlikely to affect most deployments; however, the maximum number of non-routing devices (System Remote Controls or other “sleepy” devices) that can be joined to the front panel of a Controller is six (6). To add more sleepy devices, add other routing nodes (dimmers, switches, or keypads) to the mesh.

- **SR-250.** SR-250s with 00.00.18 firmware need to be physically awakened to update. New SR-250s may have version 00.00.18 firmware on them. If so, they’ll need to be awakened to begin the update to ZigBee Pro. SR-250s with later firmware versions will wake up and check for updates without being physically awakened.

- **Devices Operating with MiniApp Firmware.** These devices do not have the ability to be controlled by or provide status feedback to the Control4 system. The MiniApp firmware image is used only during the ZigBee update process. Devices being updated from EmberNet to ZigBee Pro and from one (1) ZigBee Pro firmware version to another will run the MiniApp firmware version during the update process. After the device is updated to the full firmware image, it will resume normal operation.

- **Control4 Wireless Thermostat Is Not Supported in a Battery-Only Configuration.** With ZigBee Pro firmware, the thermostat does not conserve the battery by going to sleep. Control4 has always recommended that Control4 Wireless Thermostats be installed with a dedicated power source (common wire) whenever possible, and if that isn’t possible, to utilize a power-stealing configuration with two (2) relays. Control4 has never recommended that the Control4
Wireless Thermostat be installed in a battery-only configuration. However, if you have installed the Control4 Wireless Thermostat in a battery-only configuration, be aware that the ZigBee Pro firmware for the thermostat does not conserve the battery by putting the thermostat to sleep. This is not an issue for devices that have common power. It should work just fine with supported power stealing configurations. However, if a thermostat is configured for power stealing on a heat-only or cool-only system, it will use too much battery power and require frequent battery replacement.

- **During the Startup Phase, ZigBee Server Has to Assume that All Nodes on the Mesh Are Battery Powered.** This assumption results in the address table on the ZAP’s front panel getting filled up very quickly, since it is limited to eight (8) slots. After each node reports that they are routing nodes, the entry times out and then we have a free slot we can use. This affects the ability of devices (such as the Black and Decker ZigBee DoorLock and battery-powered devices from CardAccess) which actually need to use a slot in the address table on the front panel. After the mesh comes up and stabilizes, these devices can participate in the mesh. It can take up to 20 minutes for a 70-node mesh network to stabilize. During this period of mesh stabilization, these battery-powered devices may not work correctly.

- **Synchronization of Scenes.** Synchronization of scenes occurs in the background after the scene is created. To force synchronization of one particular scene, use the *Sync this Scene* button. To force synchronization of all scenes, use the *Sync All Scenes* button. **Note:** "Sync All Scenes" will thrash your ZigBee network for a while until every device in every scene has been contacted and brought fully up to date. As a rule of thumb, you should wait five (5) minutes or so after using *Sync All Scenes* before attempting to test or expecting ZigBee performance to return to normal.

- **Automatic Channel Changing.** Control4 has not implemented automatic channel changing in the ZigBee Pro implementation. The only scan Control4 does is on the first deployment. If you want to change the channel, you're welcome to, but Control4 recommends that you wait until the system is stabilized—with no updates underway—and all devices are online. The channel-changing process entails the Network Manager (ZigBee Server) notifying all nodes that the network is changing to a new channel. The devices acknowledge this and change to the new channel. If you do this with devices offline or updating, they can become lost. Eventually, they should find their way to the correct channel, but it can take a while.

- **Images Used in the Announcement Agent and in the Web Images from the Camera Driver Should Be no Larger than 300 KB.** The display of images in the Announcement agent and the display of web images through the web images camera driver are designed to work with small images commonly used on websites or in graphical user interfaces. The recommended size for these images is 300 KB or less. Larger images will be scaled to the required size for the Navigator, but this scaling process for very large images can cause, for example, a Mini Touch Screen to restart.

- **Programming Conditional “If time is daytime” or “nighttime” May Not Execute Correctly Within One (1) Minute after Sunset.** If programming exists that is triggered at sunset or sunrise, and other programming exists that is triggered immediately upon this change that executes the conditional on daytime or nighttime, the change may not be immediately recognized. It may take up to one (1) minute for this programming to execute correctly on the change from night to day or from day to night.

- **Upclassing or Upscaling per Input or Output Is Not Handled.** Some new AV equipment will upclass or upscale per input or per output. Currently, the Control4 system is able to handle upclassing or upscaling per device.

- **Handling Audio Announcements Through an Audio Switch or Amplifier when All Digital Audio Inputs into the Switch or Amplifier Are Already in Use.** If all analog outputs into the Audio Switch or Amplifier are already in use and an audio announcement must be played; the
audio announcement is given priority for playback and is piggy-backed on an existing audio session. If the room configured to receive the audio announcement is not part of an existing audio stream, the room joins the oldest digital-audio session temporarily, the announcement is played, and then the room is removed from the session. The result is that the announcement plays correctly, but it may play in rooms not configured to receive the audio announcement.

- **Deleting an Agent Configuration May Not Delete all Associated Programming.** When deleting an agent, confirm that all associated programming is also deleted. You may need to delete some elements of associated programming manually.

- **Using Multiple Audio Outputs Simultaneously on the Home Theater Controller or Media Controller when Navigator Is Running Simultaneously May Cause Audio Playback to Skip.** In systems with multiple audio zones with the Home Theater Controller or Media Controller used as audio endpoints, Control4 recommends that these Controllers not run Navigator simultaneously.

- **Streaming an Analog Source from Audio Input on a Controller to a WiFi Audio Endpoint Is Limited to One (1) Stream.** Audio signals that are processed through the analog input on a Controller are processed as a PCM stream and require much more bandwidth than streaming an MP3 to a WiFi audio endpoint. In this configuration, Control4 recommends that only one (1) stream be used at any one time.

- **Static on Audio Output.** As a reminder, occasionally when using the Home Theater Controller, Media Controller, Mini Touch Screen or Speaker Point as an audio endpoint, the devices will output static from one (1) or both of the audio outputs when music plays. This can be resolved by power cycling the device. The Mini Touch Screen’s click sound also may play very loudly, and sound very harsh. This is caused by the same root problem; power cycling the device will resolve it. **Note:** The devices need to be unplugged and not just rebooted for the audio device to reset properly.

- **USB-Mounted Hard Drives Must Be FAT32.** USB drives that are formatted using NTFS are still mounted as Read-Only and cannot be written to. For best results, please format USB drives as FAT32 before using them with a Control4 system.

- **Container Variables and Lights.** As with previous releases, Control4 recommends that you do not use container variables for lighting. The two-way feedback from the individual lights can cause undesired light-level oscillation when a light level is adjusted and multiple light loads are included in a container variable.

- **Cannot Register a Controller with a “.” in the Name.** Due to network device naming conventions, it is not possible to register a Controller successfully if it has been configured with a period ‘.’ in the Controller’s name. Control4 advises Dealers to avoid this naming convention.

- **Some Devices May Report Online Status after Being Offline.** Due to the networking architecture and services used by the Control4 system, some services will not report themselves as offline in Network Tools immediately after the device is offline. If the status is in question, ping the device or attempt to connect in System Manager and look at the status of the services for immediate feedback.

- **Dock for iPod Locks Up on Retrieval of Cover Art on Classics and Nano.** Control4 recommends that you disable the cover art setting in the driver if you experience this problem.
2.5 Questions about OS 2.1 and Later

Here are a few common questions that you may have related to OS 2.1.

2.5.1 Do I Need to Update My Customers to OS 2.1?

While it is not necessary for you to update your customers' systems to OS 2.1, this is the latest and best-supported version of the OS. It should be used in all new product installations. Upgrading existing customers running prior versions is recommended if the customer is having you install any new products. It is also recommended if the customer is experiencing any problems with their prior release.

As with prior OS releases, Control4 recommends that Dealers first familiarize themselves with OS 2.1 in their own home system and test systems. After gaining an understanding of the full product, including ZigBee Pro and the update procedures, you can make an informed decision about which of your customers might benefit from an update to OS 2.1.

If your customer is running 1.7.4, 1.8.2, or a prior version, you'll want to make sure you understand the performance changes in OS 2.1 and plan for that in the upgrade. This may require adding another Controller to distribute system processes. You can use the Balancing Size and System Usage Requirements for OS 2.0 and System Size Usage Modeling – Performance Calculator technical bulletin to assist with this evaluation.

2.5.2 Which Version(s) of Composer Do I Need for OS 2.1?

Composer 2.1 is required to install and update systems to OS 2.1. It is not backwards compatible with prior versions of Control4 system software. If you are making changes to a prior version before this update, please use the corresponding Composer version based on the installed system version.

Using Composer 2.1, you can connect to a system running a previous version of software, but you should not modify the system.

You can have multiple versions of Composer installed on the same computer at the same time. If you have customers running prior versions of software on their systems, the corresponding versions of Composer must be used for maintenance and configuration work for those systems.

- Use Composer 2.0.6 for any OS 2.0.x system changes
- Use Composer 1.8.2 for any OS 1.8.x system changes
- Use Composer 1.7.4 for any Release 1.6 or 1.7.x system changes
- Use Composer 1.3.2 for any Release 1.3.x system changes
- Use Composer 1.2.5 for any Release 1.2.x system changes

Customers who have purchased Composer Home Edition (Composer HE) must update their software to obtain the new capabilities of OS 2.1. The Composer HE software for all supported OS versions is available via the customer's my.control4.com account.
2.5.3 Can I Continue to Install Prior Release Systems?
Control4 may ship hardware with previous versions of the OS pre-installed. You may certainly install these systems using the bundled OS version. However, we recommend that the system be upgraded to OS 2.1 before turning the system over to the homeowner. This is the most current and the best supported OS for Control4 systems.

2.5.4 What Performance Changes Should I Expect from OS 2.1?
With each software release, as we’ve added new functionality, the CPU places more demands on the Controller. With OS 2.1 we have made modest improvements to system performance when compared with OS 2.0. However, when compared with prior version systems running the legacy Navigator, OS 2.1 requires additional CPU capacity to deliver comparable performance.

On single Controller systems, each system component, including Navigator, ZigBee Server, ZAP, and Director must compete for the CPU. If there is inadequate CPU capacity, the overall system’s performance will be affected. The OS 2.1 release may not perform well on single Controller systems.

We recommend that you evaluate performance capacity using Balancing Size and System Usage Requirements for OS 2.0 and System Size Usage Modeling – Performance Calculator technical bulletins on the Knowledgebase before installing or updating any Control4 single-Controller system.

3. Firmware Versions for OS 2.1 and Later
The following table lists devices and their firmware versions for OS 2.1 and later.

<table>
<thead>
<tr>
<th>Control4 Devices</th>
<th>Firmware Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control4 Dock for iPod</td>
<td>00.03.20 (OS 2.0.x)</td>
</tr>
<tr>
<td></td>
<td>00.03.21 (OS 2.1)</td>
</tr>
<tr>
<td>Audio Matrix Switch</td>
<td>03.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Multi Channel Amplifier</td>
<td>03.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Multi Channel Amplifier V3</td>
<td>03.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>4-Zone Amplifier</td>
<td>03.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Multi Tuner V1</td>
<td>00.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Multi Tuner V2</td>
<td>03.03.70 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Media Player</td>
<td>01.00.17.34 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Media Player V2</td>
<td>02.00.22.39 (OS 2.x – no change)</td>
</tr>
<tr>
<td>Contact/Relay Extender – Ethernet</td>
<td>03.03.80 (OS 2.x – no change)</td>
</tr>
</tbody>
</table>
### Ethernet LCD Keypad
03.03.70 (OS 2.x – no change)

### Front panel for Matrix Switch, Multi Channel Amplifier, and Multi Tuner
No support for ZigBee Pro firmware – use Ethernet to connect to and control the audio products.

### Contact/Relay Extender – ZigBee
No support for ZigBee Pro firmware – use Ethernet.

### System Remote Control V1 and V2
No support for OS 2.0.

### System Remote Control SR-150
03.03.63 (03.04.20 for OS 2.0.1)
03.06.34 (OS 2.1)
03.07.04 (OS 2.1.1)

### System Remote Control SR-150 revB
03.07.16 (OS 2.1.1)

### System Remote Control SR-250
03.03.63 (03.04.20 for OS 2.0.1)
03.06.34 (OS 2.1)
03.07.22 (OS 2.1.1)

### Wireless Dimmer and Switch (EM250)
03.03.38
03.06.16 (OS 2.1)

### Wireless Dimmer and Switch (Reverse Phase/ELV)
03.03.38
03.06.14 (OS 2.1)

### Wireless Dimmer and Switch (AVR – mini app devices)
03.03.38
03.06.28 (OS 2.1)

### Wireless Inline Dimmer
03.03.32
03.06.14 (OS 2.1)

### Wireless Outlet Dimmer and Switch
03.03.32
03.06.14 (OS 2.1)

### Wireless LCD Keypad
03.03.59
03.06.14 (OS 2.1)

### Wireless 2-, 3-, 6-Button Keypads (EM250)
03.03.27
03.06.16 (OS 2.1)

### Wireless 2-, 3-, 6-Button Keypads (AVR – mini app devices)
03.03.27
03.06.14 (OS 2.1)

### Wireless Thermostat
03.04.21 (OS 2.0.2)
03.06.21 (OS 2.1)
3.1 Upgrading to OS 2.1 and Later

3.1.1 ZigBee Pro Review (OS 2.1)

Because some Control4 Dealers may bypass Release 1.8.2 and OS 2.0.x and upgrade customers directly from Release 1.7.x or prior version systems directly to OS 2.1, this section highlights ZigBee Pro concepts which they need to be aware of.

- **ZigBee Pro.** Dealers who are not familiar with the upgrade procedures from EmberNet to ZigBee Pro must become aware of and follow the proper upgrade procedures or the ZigBee devices on the system will not be upgraded. Please see Composer Pro Software Release Update Instructions – 1.7.4 to 2.0 on the Knowledgebase for more information.

- ZigBee Server and ZAP processes are separate processes. This allows the ZigBee Server process to run on a Home Controller HC-1000 or on a separate Controller from the ZAP(s).

- Multiple ZAPs can be configured to bridge ZigBee RF traffic to the Ethernet network for internal system communications. ZAPs must be in radio range of the ZigBee mesh to be able to join.

- All ZigBee devices in a Control4 system now use the same channel with additional flexibility of configuration provided through multiple ZAPs.

- All ZigBee RF communications are now AES encrypted.

- Only devices that have been joined to the secure ZigBee Pro mesh network will communicate within the Control4 system. Devices not belonging to the mesh will not communicate. This change allows physically-adjacent systems to co-exist without the ZigBee networks interfering with each other.

- Multiple ZigBee Servers. To ensure that installations which do not have a strong ZigBee mesh throughout the home can properly control local devices using the Remote Control, the installer can create multiple ZigBee Servers.

- **Lighting**

  - We implemented multicast Lighting Scenes in conjunction with the ZigBee Pro firmware. Each device stores information about its defined behavior in up to 32 different Lighting Scenes. When you execute a scene, a multicast is sent to all devices on the mesh. Devices immediately respond based on their defined behavior, eliminating "popcorn" lighting.

3.1.2 Software License (OS 2.1)

In conjunction with the OS 2.0 release, Control4 introduced a Software License. All new Controller hardware product purchases include a Software License. This same license applies to OS 2.1. Customers who have systems purchased prior to OS 2.0 can purchase a software license for OS 2.1.

- The Software License is an electronic license purchased by the Control4 Dealer using their my.control4.com Dealer account credentials or through the standard purchase order process.

- A Dealer must purchase and assign a license to the customer’s my.control4.com account (to which the system is registered) to upgrade prior-version systems to OS 2.1. If an upgrade is to be performed immediately after adding a license, the dealer should perform a “Check In” using Composer Pro (Tools > Account Services).

- Customers who have previously updated their systems to OS 2.0 will have the needed license to update to OS 2.1.
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- Control4 provides a no-charge OS 2.0 license for Controllers shipped on/after after December 23, 2009. No paperwork or manual approval is required to receive the no-charge upgrade. To receive the no-charge upgrade, the eligible Controller must be the Primary Controller for the Control4 system. During the upgrade process, Update Manager will check the MAC address of the Primary Controller. If it is in Control4’s list of Controllers shipped on/after December 23, 2009, the upgrade will proceed without requiring a Software License.

3.1.3 Quick Reference to OS 2.1 Upgrade Process

The upgrade to OS 2.1 follows the same essential process that prior upgrades have followed, with a few basic exceptions which are called out here. The following description is a quick reference and doesn’t go into detail in many areas. Please refer to the referenced documentation for additional information.

- Customer systems that are on Release 1.8.2 or any OS 2.0.x release can be upgraded to OS 2.1 using Remote Access. However, Control4 recommends that you become comfortable with the OS 2.1 upgrade procedures by performing several upgrades on-site before you decide to use Remote Access.

- Customer systems that are on Release 1.7.4 or prior releases can’t be upgraded remotely due to the Dealer or Installer’s physical presence needed to join ZigBee devices to the mesh during the ZigBee Pro upgrade process.

3.1.3.1 Pre-Work Prior to Arrival at the Customer’s Location

1. Ensure that Composer Pro for OS 2.1 has been installed and activated on the Installer’s laptop or PC. Internet connectivity is required for activation for first-time installations.

2. Internet connectivity is required on-premise for upgrading from OS 2.0.x to OS 2.1. Because the OS 2.0.x release did not support USB Install, the Primary Controller must be updated to OS 2.1 using either the USB Restore or using Update Manager with an Internet connection. Once the Primary Controller has been updated to OS 2.1, the USB Install for OS 2.1 can be used to update the remainder of the devices on the system. Ensure that Internet connectivity is available or plan for temporary Internet connectivity during the time the upgrade is performed.
   a. If you plan to use the USB Install for OS 2.1 to upgrade to OS 2.1 from any version other than OS 2.0, create the USB Install stick and load the license information needed to complete the update. This requires Internet access, the type of the Primary Controller, and the MAC address of the Primary Controller.

3. Make sure that you understand the upgrade path based on the current version installed on the customer’s system. For prior version upgrade support see Section 7.4, “Validated Upgrade Paths.”

4. If a Software License is needed (see Section 7.2, “Software License”) use your Dealer account on my.control4.com to assign the license to the customer’s account.

5. If updating from Release 1.7.4, 1.8.2, or a prior version, make sure that you understand the impact that the new operating system and ZigBee Pro will have on devices in the system. You may need to sell replacement or additional hardware to make the system work correctly.
   a. There is no support for ZigBee Pro firmware on the System Remote Control V1 or V2.
   b. Home Theater Controller and Media Controller can only be used as Secondary Controllers.
   c. Upgrading the Control4 system may cause reduced performance. You should understand the system configuration and plan accordingly prior to upgrading to OS 2.1.
   d. If using Home Controllers HC-200, HC-300, or HC-500 to drive On-Screen Navigators on standard definition (SD) televisions or projectors, be aware that the new On-Screen interface uses a 16x9 aspect ratio and will be scaled to fit the resolution of the display.
3.1.3.2 Upon Arrival at the Customer’s Location

1. Connect to the Control4 system using the appropriate version of Composer for the system that is currently running.
   a. Ensure that all IP and ZigBee devices are identified and online.
   b. Ensure that all system programming is working as it should prior to beginning the update.
   c. **Make a backup of the Control4 system in Composer prior to beginning the update.** This backup should be named so that you can find it later if needed.

2. (Optional) Make sure that the customer’s media collection is backed up. Whether the media is stored on a Control4 Controller hard drive, a USB drive, or a network-attached storage device, it is subject to loss if the storage device fails. Control4 doesn’t provide backup solutions for data storage, but recommends that you ensure that customers have chosen and used a backup solution to protect their data.

3. Connect to the Control4 system using Composer Pro 2.1 to initiate the upgrade to OS 2.1, and then use Update Manager to begin the update process.

4. If updating from a version prior to OS 2.0.x, be aware of the following:
The Composer Pro upgrade wizard will give you the opportunity to convert the Media Database and write metadata to id3 tags in MP3 files.
   a. The OS 2.x media scanning process allows Control4 to synchronize the Media Database with changes made by a third-party Media Manager (such as Media Monkey, Apple iTunes, or Microsoft Media Player). This is done using the id3 tags embedded in the files.
      • If you believe the Control4 Media Database has the most correct/current information about song metadata, you can write this information to the mp3 file tags at this time (the storage device has to be online and writeable). If you don’t write the metadata to the tags and then scan, the information in the Media Database will be replaced by the information in the tags when the media is scanned.
      • If you believe the media tags are more correct or current than the Control4 Media Database, you should NOT write the metadata from the Media Database to the tags.
   b. The OS 2.x system uses a different Media Database format than 1.7.4, 1.8.2 and prior versions. You must convert it when you upgrade the system. If you choose not to convert it, the Media Database will be deleted and can be repopulated by scanning.
      • The 10.5” V2 Wireless Touch Screen now operates at a different resolution. During the upgrade process, the wizard will look for the Photo Screen Saver storage location and automatically scale all Screen Saver images for the new resolution.

5. Monitor the update progress of the IP devices using Update Manager.

6. If updating from a version prior to OS 2.0, after the Touch Screen devices have been updated (those that support the new Flash Navigator) they will prompt for recalibration prior to use.

7. After the Primary Controller has been upgraded to OS 2.1, the ZigBee Pro devices will begin their update automatically.
   a. For Release 1.7.4 or prior version systems, an update of all ZigBee devices to ZigBee Pro is required. Please refer to the ZigBee Pro Upgrade Instructions, **Composer Pro Software Release Update Instructions – 1.7.4 to 2.0**, if you are not familiar with this procedure.
   b. For OS 1.8.x systems and OS 2.0.x systems, the update to the latest ZigBee Pro firmware versions will happen automatically and will not require user intervention. Please be aware that ZigBee performance will be sluggish while firmware updates are in progress. Devices in MiniApp mode will have limited functionality while being updated.
8. At the conclusion of the update, please reboot the PC running Composer to ensure that the Samba mounts to the Controllers are current.

9. **Back up the project.** After completing the update, please make a backup file of the project with Composer 2.1. Give it a name that distinguishes it from the pre-upgrade backup. If you ever need to restore this system, having a 2.1 backup will save you a lot of time and effort.

3.1.4 Validated Upgrade Paths for OS 2.1

3.1.4.1 Primary Controller/System Upgrades

- Controllers running system versions earlier than Release 1.2.x may not be able to retain their project through an update.
- Any Release 1.2.x or prior version system (Primary Controller and devices) must be updated to Release 1.3.2. The update server automatically updates them to Release 1.3.2.234. Then they can be updated further, but it's a multiple-step process.
- Any Release 1.3.x system can be updated to Release 1.6 or to any Release 1.7.x. The system can be updated further, but it's a multiple-step process. Home Controller HC-300s being updated will have their internal memory repartitioned. The Installer must save the project and restore it after the update is completed, as the project will be lost when the device is repartitioned.
- Only systems running Release 1.6 or later can be directly updated to OS 2.1.

3.1.4.2 Secondary Device Upgrades

- Home Controller HC-300s functioning as Secondary Controllers need to be updated to Release 1.6 or Release 1.7.x. This allows Control4 to repartition the internal memory.
- All other Secondary Controllers (Release 1.3.x or later) can be updated directly to any upstream version as long as they're added to a project with a Primary Controller that is running the correct version.

4. **Residential Software Product Releases**

<table>
<thead>
<tr>
<th>Control4 Software Releases (From Inception)</th>
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<tbody>
<tr>
<td><strong>Release 1.0</strong></td>
</tr>
<tr>
<td>Wednesday, July 06, 2005</td>
</tr>
<tr>
<td>Friday, September 02, 2005</td>
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<tr>
<td>Friday, October 14, 2005</td>
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<tr>
<td>Thursday, November 03, 2005</td>
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<td>Sunday, December 28, 2005</td>
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<td>Monday, March 06, 2006</td>
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<td>Thursday, March 23, 2006</td>
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<tr>
<td>Tuesday, May 30, 2006</td>
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<tr>
<td><strong>Release 1.3</strong></td>
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<tr>
<td>Date</td>
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<td>-----------------------------</td>
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<td>Thursday, September 07, 2006</td>
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<td>Monday, October 16, 2006</td>
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<td>Wednesday, December 20, 2006</td>
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<td>Friday, January 12, 2007</td>
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<td>Wednesday, October 31, 2007</td>
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<td>Thursday, November 15, 2007</td>
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<td>Tuesday, February 26, 2008</td>
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<td>Wednesday, April 30, 2008</td>
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<td>Wednesday, June 11, 2008</td>
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<td><strong>Release 1.6</strong></td>
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<td>Wednesday, Sept 17, 2008</td>
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<td><strong>Release 1.7</strong></td>
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<td>Monday, November 16, 2009</td>
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<td>Wednesday, March 17, 2010</td>
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<tr>
<td><strong>Release 2.0.x</strong></td>
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<td>Tuesday, June 29, 2010</td>
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Control4 Operating System (OS) Release
Version 2.1 Release Notes

<table>
<thead>
<tr>
<th>Control4 Software Releases (From Inception)</th>
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<tbody>
<tr>
<td>Wednesday, August 18, 2010 2.0.1.86265</td>
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<tr>
<td>Maintenance Release – HC200B/HC300C</td>
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<td>Tuesday, September 7, 2010 2.0.2.88485</td>
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<tr>
<td>Maintenance Release – 7” IE Touch Screen</td>
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<tr>
<td>Tuesday, October 19, 2010 2.0.4.92890</td>
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<td>Maintenance Release – Fix snmpd/crond</td>
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<td>lockup</td>
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<td>Tuesday, December 14, 2010 2.0.5.99233</td>
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<td>Maintenance Release – HC200B as primary</td>
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<td>Controller</td>
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<td>Maintenance Release – 5” IE Touch Screen</td>
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<td>Release 2.1</td>
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<td>Tuesday, June 7, 2011 2.1.0.126418</td>
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<td>Initial Release</td>
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<td>Release 2.1.1</td>
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<td>Tuesday, August 30, 2011 2.1.1.135702</td>
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<tr>
<td>Maintenance Release-Fix Flash Navigator</td>
</tr>
<tr>
<td>lockups.</td>
</tr>
</tbody>
</table>

5. Technical Support Contact Information

If you encounter any issues during or following the update, or if you have any questions, please contact Control4 Technical Support for assistance.

Phone: 1-888-400-4072
Email: support@control4.com

For additional information about the new features and capabilities of OS 2.1 and later, refer to the new product training on the Web at http://control4.webex.com.

6. Legal Notice

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