Composer Pro Software Release Update Quick Instructions for Multiple Controllers 1.7.4 to OS 2.0
About Control4
As the operating system for the connected home, Control4 brings home automation and control to the broad market. Control4 technology is at the heart of an expanding ecosystem of leading consumer electronics products that work together effortlessly. Control4 designs and delivers award-winning control software and hardware for virtually any room, home or building from anywhere at any time. Control4 is an affordable, easy to use, and easy to install solution for digital living. From essential energy management to one-touch entertainment; from whole-home lighting control to comprehensive security systems, Control4 is the platform for managing all the pieces of today’s connected life.

Disclaimer
Control4® makes no representations or warranties with respect to this publication, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Control4 reserves the right to make changes to any and all parts of this publication at any time, without any obligation to notify any person or entity of such changes.

Licenses
GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION (Section 3.b.)
You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

The complete text for this license is available on the Control4 website.

Copyright
©2010 Control4. All rights reserved. Control4 and the Control4 logo are registered trademarks or trademarks of Control4 Corporation in the United States and/or other countries. All other names or brands may be claimed as property by their respective owners. Pricing and specifications subject to change without notice.

Contact Information
Control4 Corporation
11734 S. Election Road
Salt Lake City, UT 84020 USA
http://www.control4.com
Part Number: TechDoc00033 Rev B. (Release 2.1)
Contents

1. Introduction ................................................................................................................................. 4
2. Review the Upgrade Installation Documents ............................................................................... 4
3. Back Up Composer Pro ............................................................................................................... 4
4. Download and Install Composer 2.0 ............................................................................................ 4
5. Software License Must Be Available ........................................................................................... 4
6. Run and Activate Composer 2.0 .................................................................................................. 5
7. Upgrade to OS 2.0 ...................................................................................................................... 5
   7.1 Run the Media Database Update Wizard ............................................................................. 5
   7.2 Update the IP Devices ......................................................................................................... 6
   7.3 Upgrade the ZigBee Devices ............................................................................................... 6
8. Upgrade to ZigBee Pro ................................................................................................................ 6
   8.1 Plan Your Time .................................................................................................................... 6
   8.2 Update the ZigBee Devices ................................................................................................ 7
   8.3 Create the ZigBee Pro Mesh Network and Select a ZigBee Server ..................................... 7
   8.4 Channel Selection ............................................................................................................... 8
   8.5 Select the EmberNet Upgrade Controller ........................................................................... 9
   8.6 Monitor the Upgrade Using Network Tools ........................................................................ 9
     8.6.1 ZigBee Network Tab ...................................................................................................... 10
     8.6.2 EmberNet Upgrade Tab ................................................................................................. 11
9. Uncheck the EmberNet Upgrade Controller .............................................................................. 12
10. Join the Network ................................................................................................................... 12
     10.1.1 LED Indicators ........................................................................................................... 13
11. Back Up Composer Pro .......................................................................................................... 14
12. More Information .................................................................................................................... 14
1. **Introduction**

This Control4® document gives you quick instructions about how to upgrade a basic, one mesh network system to OS 2.0 from 1.7.4 (through the ZigBee Pro upgrade) if you have multiple Controllers in the system. If your system is more complicated, you can still follow these general steps after you read Section 2, “Review the Upgrade Installation Documents.”

If you are on a Release 1.8.2 system and need to update to OS 2.0, you are already on ZigBee Pro and can perform the update as usual if you have a valid license. In this case, see Managing Dealer Accounts on My.Control4.Com on the Knowledgebase.

You can also view the video “ZigBeeUpdate051810” which explains how to update from Release 1.7.4 to 1.8.2.

2. **Review the Upgrade Installation Documents**

You will be probably unfamiliar with many new terms and concepts needed for this upgrade. To get some good background information and best practices, read Composer Pro Software Release Update Instructions – 1.7.4 to 1.8.2 or Composer Pro Software Release Update Instructions – 1.7.4 to 2.0 depending on the upgrade you’re performing. The first document lists terms and concepts. We suggest you read both documents before you start.

3. **Back Up Composer Pro**

Back up the Composer Pro project before and after the upgrade. We will remind you later in this document.

4. **Download and Install Composer 2.0**


**WARNING!** There is no way to downgrade a system to Release 1.7.4 after it has been updated to ZigBee Pro. Make sure you read the Release Notes and these Composer Pro Software Release Update Instructions – 1.7.4 to 2.0 before you decide whether upgrading to OS 2.0 is a good option for your customers.

5. **Software License Must Be Available**

New with OS 2.0, we are using an activation mechanism for Composer Pro that verifies that the Installer has been granted a license to run Composer Pro. You will need an OS 2.0 Upgrade license and a Composer Pro license. If your account does not have these licenses, please contact the Administrator of your company’s my.control4.com Dealer account.
6. **Run and Activate Composer 2.0**

Requirements:
- Internet connection
- My.Control4.Com account with a Composer Pro license. Once activated, Composer Pro can run without requiring an Internet connection.

Start Composer Pro and connect to a Director.

7. **Upgrade to OS 2.0**

After you connect to your Release 1.7.4 system with Composer 2.0, you are ready to update your system.

In Composer, use **Tools > Update Manager** to update your system to OS 2.0.

7.1 **Run the Media Database Update Wizard**

With OS 2.0, we have changed the format of the Control4 Media Database. Your project will be converted during the upgrade process, and a wizard will walk you through the steps. See *Composer Pro Software Release Update Instructions – 1.7.4 to 2.0* for details about this wizard and the media conversion process.

**Note:** If you initiate the update to OS 2.0 from a prior version of Composer, this wizard will NOT be executed. Your Media Database will be converted automatically by Director when it starts after the update is completed. However, this is not recommended because it will not preserve cover art or playlists. And you will not have the option to perform the other functions offered by the wizard.
After conversion, Composer checks if there is a Screen Saver directory. If the directory is found, Composer creates a new subdirectory (1024x768 resolution) for the 10.5” v2 Wireless Touch Screen. All of the photos currently stored will be scaled for this new aspect ratio.

### 7.2 Update the IP Devices

After the Media Database is converted, the update procedure continues. This works as it always has.

**Note:** Recalibrate all Flash-based Navigator Touch Screens after they have been updated to OS 2.0. To recalibrate go to the Touch Screen and follow the on-screen instructions using the crosshairs.

### 7.3 Upgrade the ZigBee Devices

There is new ZigBee Pro firmware for many of the devices in your system which will update automatically.

**Note:** If you have not previously updated your system’s ZigBee devices to ZigBee Pro (upgrade to Release 1.8.2), you will need to do so now (next section).

### 8. Upgrade to ZigBee Pro

The ZigBee Pro upgrade process is not a trivial task to perform. Ensure that you review the Glossary terms in *Composer Pro Software Release Update Instructions – 1.7.4 to 1.8.2* so you are familiar with the terms and concepts used during this upgrade process.

#### 8.1 Plan Your Time

The ZigBee Pro upgrade is not a “start-and-forget” upgrade. It will take a significant amount of time and attention to update your Control4 systems, but the benefits will be well worth the effort involved.

**Note:** Control4 Dimmers configured in switch-leg mode will not control a load while in MiniApp mode. Because of this, if you try to turn on the Dimmer while in MiniApp mode, it will cause the Dimmer to reboot. Plan your update accordingly (or keep a portable light fixture handy that you can use for temporary lighting).
8.2 Update the ZigBee Devices

Devices that update and the order in which they update:

- Dimmers, Switches, Keypads, and outlet modules: EmberNet > MiniApp > [Join the network] > ZigBee Pro.
- Thermostats and System Remote Controls: EmberNet > ZigBee Pro > [Join the network].

8.3 Create the ZigBee Pro Mesh Network and Select a ZigBee Server

To use the devices in the new ZigBee Pro network, the network must be created and a ZigBee Server must be assigned. The ZigBee Server must be an HC-class Controller (for example: Home Controller HC-300). If you have an HC-1000 as the Primary Controller, use this one.

As part of the upgrade process, create the ZigBee Pro mesh network (see below). This includes selecting the ZigBee Server and ZAP Coordinator (which manages the security parameters of your network).

To create the ZigBee Pro mesh network and select the ZigBee Server:
1. Start Composer 2.0 and connect to a Director.
2. Click System Design.
3. From the project tree, select an HC-class Controller; example: Home Controller HC200.
4. In the Properties page of the Controller, click Edit ZigBee Configuration.
5. View and use the drop-down lists to select the ZigBee Server and ZAP Coordinator as shown in the ZigBee Network Settings dialog in the screen examples below. You can use the same Controller for both.
Note: The Create button takes you into the dialog box where the ZAP coordinator can be selected. Select the ZigBee Server and other ZAPs from the main dialog box. You can change these at any time; however, you cannot change the ZAP coordinator after you create the mesh.

6. Click OK.

7. Verify that your selections are correct, and then click OK.

IMPORTANT! If you use the same Controller designated as the ZAP Coordinator as an EmberNet Upgrade Controller, the ZigBee Pro mesh network will not be operational. When you disable the Controller as an EmberNet Upgrade Controller, it will reconfigure itself for ZigBee Pro and the ZigBee Pro mesh will come online.

WARNING! Do not change your ZAP configuration while the system is updating. This will slow everything down, and may cause problems.

8.4 Channel Selection

A channel is automatically selected based on an RF energy scan conducted at the time the mesh was created. You can change that channel if you have better data from an RF analyzer.

WARNING! Do not change the channels while the devices are re-flashing.
8.5 Select the EmberNet Upgrade Controller

To update your EmberNet devices (Dimmers, Switches, Keypads, etc.) to MiniApp and then to ZigBee Pro, you must have a Controller with a ZigBee radio operating on EmberNet (HC-200, HC-300, HC-500, HTC, or MC).

Note: This can be one of the Controllers in your system or a ZStick. We do not recommend that you assign the same Controller for ZAP and EmberNet Upgrade Controller. Check with your Control4 Sales representative if you want to use a ZStick.

To select an EmberNet Upgrade Controller:
2. Click the EmberNet Upgrade tab.
3. Click the Controllers button. The following screen appears.
4. Select the Controller and click OK.

IMPORTANT! While you have an EmberNet Upgrade Controller configured in your system, the ZigBee Pro mesh network is placed in 'Auto-Join' mode. This means that any device attempting to join the mesh network can join as long as that device was previously identified in the Composer project.

IMPORTANT! When you finish updating the EmberNet devices, disable the EmberNet Upgrade Controller(s). We will remind you to do this later in this document.

8.6 Monitor the Upgrade Using Network Tools

After you select the ZigBee Server, create the mesh network, select the ZAP Coordinator, and select the EmberNet Upgrade Controller, the devices start updating. Network Tools is the best way to
monitor the upgrade activities of your devices. The Network Tools window shows three (3) tabs: IP Network, ZigBee Network, and EmberNet Upgrade.

**Tip:** Two (2) of these tabs are used for the upgrade: ZigBee Network and EmberNet Upgrade. If you click between the two tabs during the upgrade, you’ll notice various actions taking place (Online vs. Offline, percent changes, devices dropping off the list, etc. as the devices are being upgraded).

### 8.6.1 ZigBee Network Tab

Use this tab to view the devices on the ZigBee Pro mesh network, to enable devices to join the network, and to view which devices have moved from MiniApp to ZigBee Pro.

When you first start the update, you should see the Controller running **ZigBee Server** and **ZAP** in the Routing Tree view marked ‘Online.’ The other ZigBee Pro devices are added and come online as they get updated to ZigBee Pro and join the network.

There are three (3) different ways to view ZigBee Pro devices: Room Tree, Routing Tree, or List (see below).

1. **Room Tree.** The default view that shows all devices identified to your project, and whether they are Online.

2. **List.** Useful during an update or any time you want to sort the device information based on Device Name, Address, Version, or Status, and also shows all devices known to the project. Devices that show up with an ‘M’ in their version are in MiniApp mode. After these devices update to ZigBee Pro and join the network, the ‘M’ disappears and the status indicates ‘Online.’

Notice the progress of devices being updated (**example:** Progress: 91%). When they reach 100%, they show as Online in this view.
3. **Routing Tree.** This varies from the Room Tree and the List view in that it only shows devices actually known to the ZigBee mesh network. It also shows the mesh network in a hierarchical view. Because there are multiple routes to any device on the mesh, you will see devices show up multiple times in the Routing Tree view.

8.6.2 **EmberNet Upgrade Tab**

Control4 has configured the EmberNet Upgrade tab to show all ZigBee devices in the project that have not reported online via the ZigBee Pro mesh network, so you may occasionally see devices in this list that aren’t actually in need of an update or are not available to update.

**Note:** Devices that update to MiniApp appear as “Re-flashing” in the list and “Success” when they are finished. When a device updates to ZigBee Pro, it will show 100% progress and drop out of the list only after it updates to ZigBee Pro. This is a good indicator of how many devices are left to update. If Director restarts, all update status information will be reset.
Notes:

It may take a few minutes for the front panel of the Controller to reconfigure to EmberNet. If you don’t see the channel listed for that Controller after five (5) minutes, it is likely that the Controller front panel wasn’t reconfigured for EmberNet correctly. Try to use another EmberNet Upgrade Controller, or if you know that ZigBee previously worked on the selected Controller, contact Control4 Technical Support for assistance.

If the Controller doesn’t find the devices that require an update in the project on the current channel, it will change channels approximately every two (2) minutes, looking for devices that need to be updated. Be patient while it determines the best channel.

9. **Uncheck the EmberNet Upgrade Controller**

If you assigned a Controller to EmberNet Upgrade Controller rather than using a ZStick, and you’re sure the MiniApp update has completed updating all of the ZigBee devices, uncheck the EmberNet Upgrade Controller (see the section, “Select the EmberNet Upgrade Controller”) (Tools > Network Tools > EmberNet Upgrade tab).

10. **Join the Network**

When a device is in MiniApp mode or has been updated to full ZigBee Pro firmware and is ready to join the network, it needs to be joined.

If an EmberNet upgrade is going on, the network will be in Auto-Join mode. If not, ensure that Auto-Join is enabled (see the next steps).
To join a device to the network:
1. Use the appropriate button-press sequence on the device:
   - **System Remote Control SR-150/SR-250**—Use the four (4) tap method on the 4 button to identify and join.
   - **Thermostat**—Use the four (4) tap method on the center button to identify and join.
   - **Dimmers/Switches/Keypads**—Press and hold the **bottom** button (bottom left on the 6-button Keypad) 3 to 4 seconds to join when in MiniApp mode (see the next section).
   - **Outlet modules**—Press and hold the **identify** button 3 to 4 seconds to join when in MiniApp mode.
   - **LCD Keypad**—Press the Select dial to identify and join.
2. If the network is not in Join mode, you can put it into Join mode by putting the **mesh** into Join mode using the ZigBee Network tab.

### 10.1.1 LED Indicators

When devices finish updating to MiniApp or ZigBee Pro, the following LED indicators show device status. Refer to the table below to see when to join your devices to the network.

Use the **Color** column to view what the LEDs on your device are doing and their **State**, and the **Action** column to determine what to do next.

**Example**: If a Dimmer flashes Green, press and hold the **Bottom** button on the Dimmer for about four (4) seconds until the flashing Green turns to blinking Yellow. At that point, leave the Dimmer alone and let it finish its join. You'll know that when the LED color is the same as the color assigned before you started the update.

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>State</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark LEDs, with short flash (millisecond) of color</td>
<td>Green flash</td>
<td>Dimmer, Switch, or Keypad in MiniApp. Not joined to mesh.</td>
<td>Press and hold bottom button 3-4 seconds until the LEDs turn Yellow and begin to blink.</td>
</tr>
<tr>
<td>Blue flash</td>
<td>Dimmer, Switch, or Keypad in MiniApp. Joined to mesh.</td>
<td>No action needed. This device is joined to the mesh and is awaiting a re-flash slot.</td>
<td></td>
</tr>
<tr>
<td>Orange flash</td>
<td>Outlet Dimmer or Outlet Switch. Not joined to the mesh.</td>
<td>Press and hold the Identify button 3-4 seconds until the LED begins to blink regularly.</td>
<td></td>
</tr>
<tr>
<td>Rapid flash followed by steady flash (second on, second off)</td>
<td>Yellow steady flash (Outlet modules only, Orange steady flash)</td>
<td>Device is scanning for ZigBee Pro mesh network to join.</td>
<td>Release the button. The device is attempting to join the mesh. If successful, the LED will turn Blue. Outlet modules only, Orange.</td>
</tr>
</tbody>
</table>
### LED Color State Action

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>State</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Green</td>
<td>Full app, not join.</td>
<td>Ready to identify.</td>
<td>Yellow flashing followed by rapid Red flashing after which it returns to the previous state. Make sure Auto-Join is enabled, or select Identify. Check Network Tools to see if the ZAP Coordinator shows as ‘Online.’ If not, reboot the ZAP Coordinator and zServer to bring them online.</td>
</tr>
</tbody>
</table>

#### 11. Back Up Composer Pro

Always back up the project after the update is completed. This is important in case the project ever needs to be restored from backup. If the project does need to be restored, you will need a current backup with the correct ZAP mesh parameters to avoid recommissioning the ZAP mesh network.

#### 12. More Information

Refer to the OS 2.0 Upgrade Instructions and Release Notes. The Upgrade Instructions provide more details about each phase of the upgrade, examples, warnings and other information, and other scenarios, for example, if you need to add new devices to the system, join or leave the network, etc.