

## Integrating Amazon Alexa with RadioRA2 and HomeWorks

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### Overview

Voice control provides a convenient, hands-free control point in today’s connected home. In addition to elegant and intuitive in-wall and tabletop Lutron keypads, Amazon’s Alexa® voice control platform can be integrated with a RadioRA2 or HomeWorks system, through Lutron’s mobile app, to deliver complete and cohesive control of a system from anywhere in the residence.

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## System Requirements and Configuration

### Hardware and Software Requirements - RadioRA2 and HomeWorks QS

Below is a list of all of the minimum hardware and software required to implement Alexa® voice integration in RadioRA2 and HomeWorks QS systems.

- Amazon Alexa® device(s)
- Lutron Connect Bridge
- Active Internet connection for the residence
- RadioRA2 Main Repeater or HomeWorks QS Processor
- RadioRA2 or HomeWorks QS software version 14.3 or newer
- Lutron Connect app 7.2 or newer

### Hardware Configuration - RadioRA2 and HomeWorks QS

Below is an example simplified one-line diagram demonstrating the integration of Amazon Alexa® with RadioRA2 or HomeWorks QS systems.



## System Requirements and Configuration *(continued)*

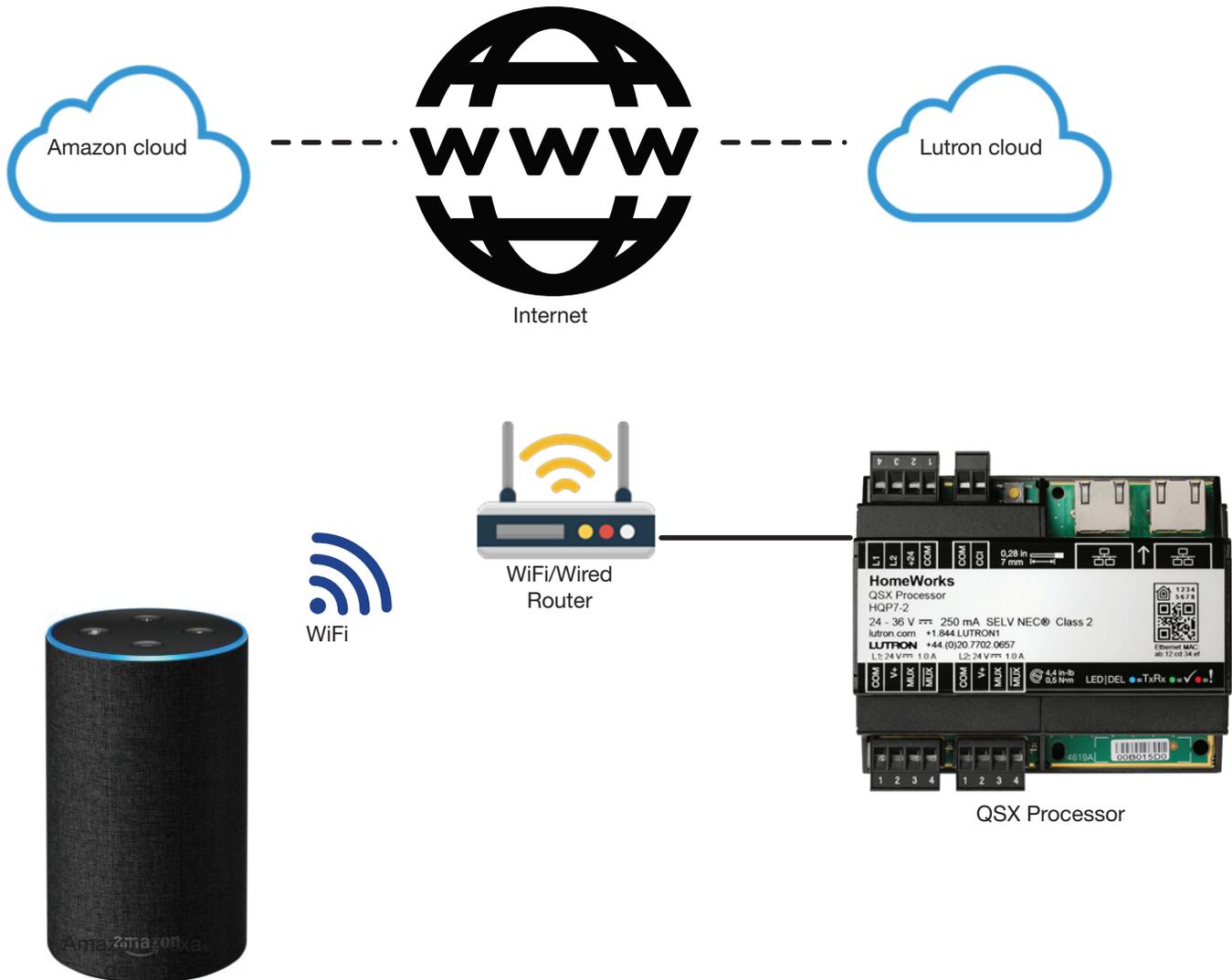
### Hardware and Software Requirements - HomeWorks QSX

Below is a list of all the minimum hardware and software required to implement Alexa® voice integration in a HomeWorks QSX system.

- Amazon Alexa® device(s)
- Active Internet connection for the residence
- HomeWorks QSX Processor
- HomeWorks Designer software version 16.0 or newer
- Lutron Mobile App 7.0 or newer

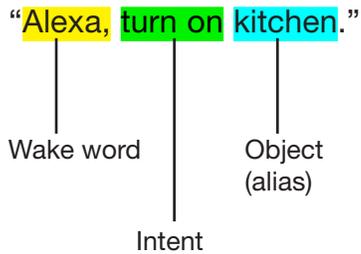
### Hardware Configuration - HomeWorks QSX

Below is a simplified diagram demonstrating the integration of Amazon Alexa® with a HomeWorks QSX processor.



## Voice Control Basics

### Voice Command Structure



Control of the residence using Alexa® first requires an understanding of the basics of voice control. Similar to how a packet of information is sent wirelessly, using Clear Connect between a keypad and a dimmer has a specific structure that allows the dimmer to understand what action to take. Alexa® operates by receiving information from a homeowner’s voice in a specific structure so that it knows the appropriate action to execute. Essentially, the homeowner’s voice is the “keypad” telling the dimmer what level to go to.

Every voice command to Alexa® is composed of three core components:

1. **Wake word** – The word that triggers the Amazon device to wake up and listen for direction on what to do
  - a. Default is “Alexa”
  - b. The wake word can be altered by going to the Amazon device’s settings within the Alexa app
2. **Intent** – Words that supply the Alexa® device with direction on what action to take
  - a. For lighting control, common intents are:
    - i. Turn on
    - ii. Turn off
    - iii. Set
    - iv. Raise
    - v. Lower
3. **Object** – The device or button being controlled by the Alexa device; the name of the Object is known as the Alias
  - a. Each alias must be unique
  - b. Examples of Aliases used in lighting control:
    - i. Scenes:
      - Goodnight
      - Morning
      - Prepare
      - Dining
    - ii. Lights:
      - Pendants
      - Downlights
      - Cove
      - Lamp

## Voice Control Basics *(continued)*

### Voice Control Best Practices

Voice control provides a convenient layer of control for the end user, offering hands-free support for physical devices and scenes. The idea is for voice control to be a complimentary piece to the existing control structure provided by the Lutron system. Ideally, each space of a home will provide multiple layers of control to provide a cohesive and complete experience for the end user.

Physical keypads and local zone controls offer instant response and tactile feedback. With good programming design and engraving on the button, homeowners can easily understand what each press will do and the expectation will be reliable performance, using Lutron device communication. Physical keypads also compliment the aesthetic and design of the space.

Voice control offers a way to control a space from anywhere within the space without having to go to a specific physical location. To ensure that the voice control is also intuitive, the integrator must understand the capabilities of the system and design with the end user in mind. Here are the important rules to remember when designing voice control into a system:

1. Remember, every object being controlled needs a unique name (the Alias)
2. Keep it simple!
  - a. Many devices and scenes can be controlled via voice control but since everything requires a unique alias, can the end user remember the name of all of these devices?
3. **Do not** use the words “On”, “Off”, “Lights”, or “Scene” in the alias name
  - a. “On” and “Off” are intent words and using them in the object will be confusing for both the end user and the Alexa® system.
  - b. The simplest command often leads to the greatest success.
4. Use favorite devices and scenes
  - a. Objects already selected as favorites in the Lutron mobile app are selected as such because the end user commonly controls them. This frequent interaction makes them memorable and ideal for use in voice control.
5. Leverage Alexa® routines to help streamline control of multiple items simultaneously
  - a. Alexa® can only perform one task at a time through normal commands but, via routines, can perform a string of actions across multiple smart home platforms or Alexa functions, further enhancing the convenience for the end user and acting as a control system.
  - b. Refer to the [Using Alexa® Routines](#) section for more information on routines and their uses.

## Lutron Programming Requirements

Alexa® can control individual lighting zones and button presses. For Alexa® to be able to control a button, it must be configured properly in the programming software.

### Compatible Button Programming in RadioRA2

LED logic and button function are defined in RadioRA2 by the selection of the Button Type. Alexa® can control the following button types:

- Single/Multi-Room Scene
- Toggle Control/Room Monitoring
- Shared Scene (inclusive only)
- Shared Toggle (inclusive only)

Toggle buttons provide both On and Off functionality via voice command.

- On action triggered by “Alexa, turn on *Kitchen*”
- Off action triggered by “Alexa, turn off *Kitchen*”

Scene buttons only offer an On action. An Off action would require a different button.

- “Alexa, turn on *Welcome*”
- “Alexa, turn on *Goodnight*”

### Compatible Button Programming in HomeWorks

LED logic and button function are defined in HomeWorks QS by two separate selections – Program Type and Button Type. Alexa® can control the following types of button programming:

#### Program Types

- Normal

#### Button Types

- Single action
- Toggle

Toggle buttons provide both On and Off functionality via voice command.

- On action triggered by “Alexa, turn on *Kitchen*”
- Off action triggered by “Alexa, turn off *Kitchen*”

Scene buttons only offer an On action. An Off action would require a different button.

- “Alexa, turn on *Welcome*”
- “Alexa, turn on *Goodnight*”

Single variable and conditional logic Program Types are not supported.

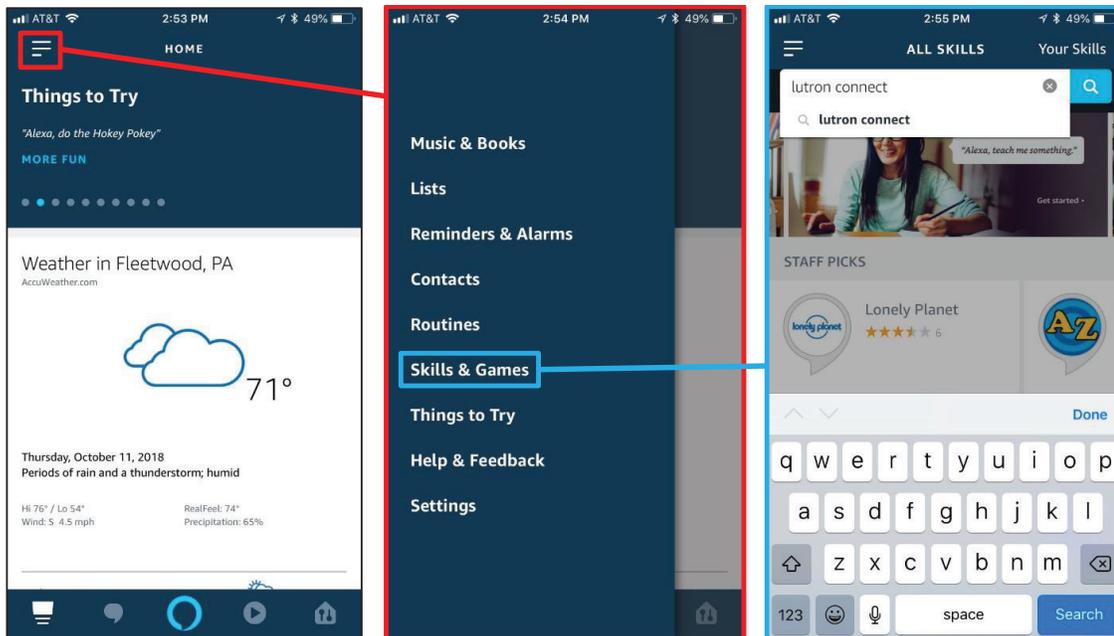
## Integrating Alexa® with the Lutron System

Prior to proceeding, the following steps need to be completed:

1. Complete commissioning of the Lutron system – be sure to transfer latest system files
2. Power up all applicable Alexa® devices
3. Download the Alexa® app to a mobile device
4. Configure the applicable Alexa® devices to the appropriate Amazon account

### Setting up Lutron with Alexa® Skills

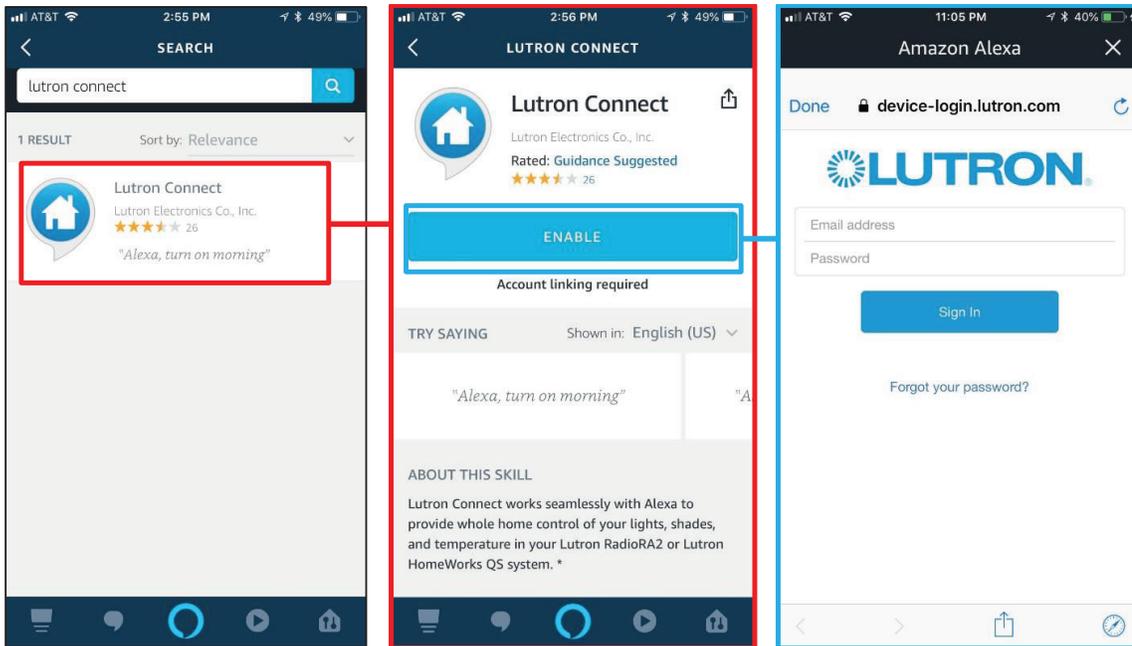
Open the Alexa® mobile app and proceed to the app options in the upper left corner of the screen. From there select the option for **Skills & Games** and search for **Lutron**.



## Integrating Alexa® with the Lutron System (continued)

### Setting up Lutron with Alexa® Skills (continued)

Select the correct Lutron system and tap **Enable**. Next, it will prompt for the Lutron account email address and password. This is required as part of the secure authentication process between the Alexa® servers and Lutron.



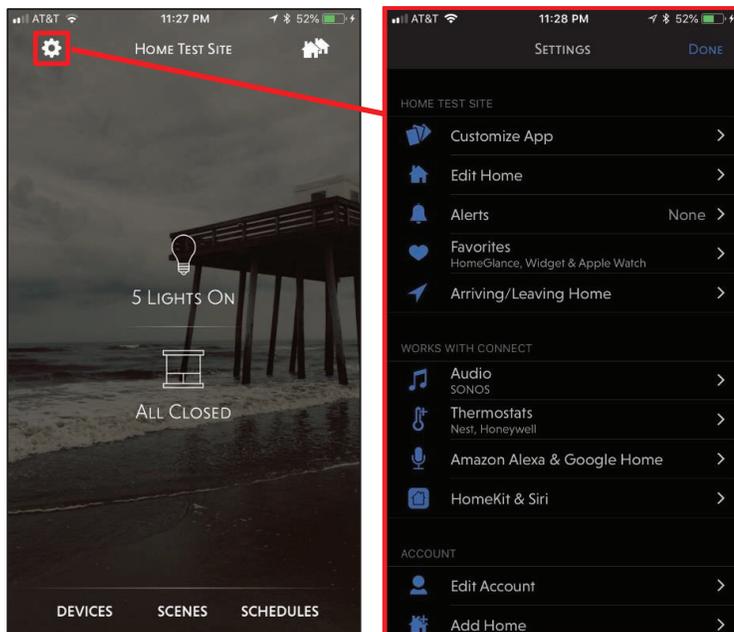
Once the Lutron account login information is successfully entered, the accounts will now be linked.

**Important Note:** If using the Multiple Homes feature through the Lutron mobile app, multiple Amazon Alexa® accounts are required. One Amazon Alexa® account cannot control multiple homes.

## Integrating Alexa® with the Lutron System (continued)

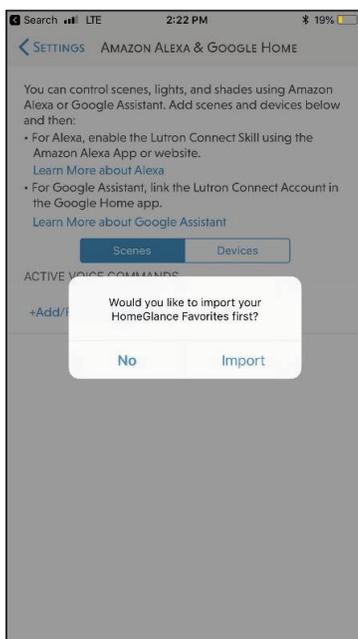
### Selecting Scenes and Devices for Alexa® Control

Open the Lutron mobile app and tap on the gear icon, in the upper left corner of the screen, to access the in-app settings. Select the option for Amazon® Alexa® from the settings menu.



If the Amazon® voice integration is being configured for the first time, the app will inquire if it is desired to automatically enable all scenes and devices designated as Favorites. This helps to make the initial setup efficient and also aligns with the goal of delivering a good user experience – devices and scenes that are configured as Favorites are those which are most often utilized and are subsequently most likely to be desired for voice control.

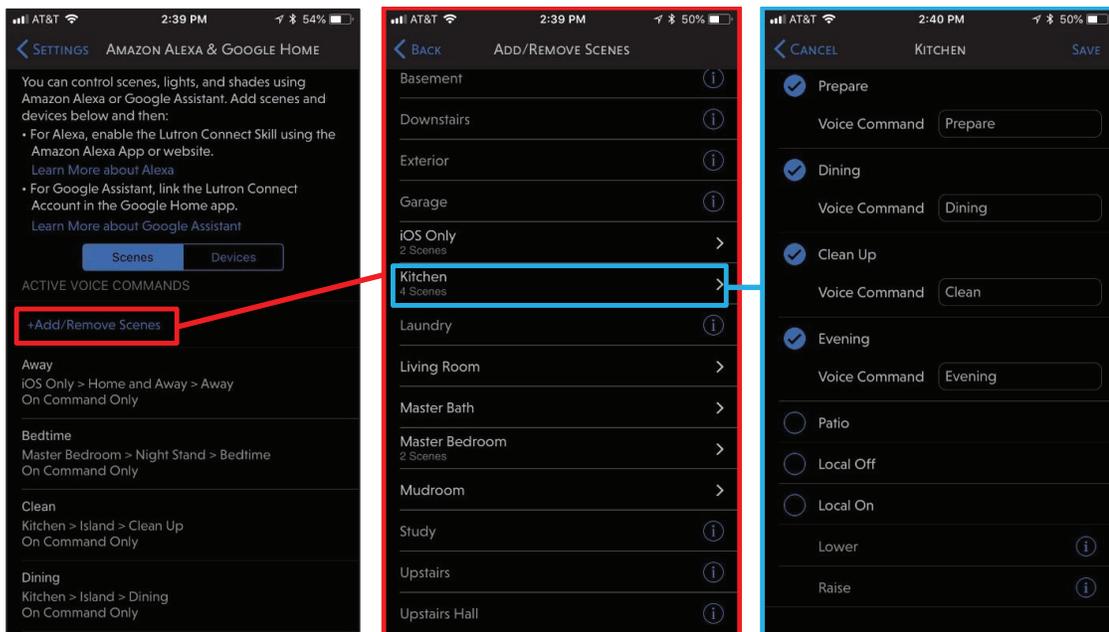
For information on how to configure Favorites in the Lutron Connect app, refer to Application Note 649 (P/N 048649) “Lutron Connect App Guide” at [www.lutron.com](http://www.lutron.com). To use the Favorites for Amazon® Alexa® integration, tap on the option for **Import**.



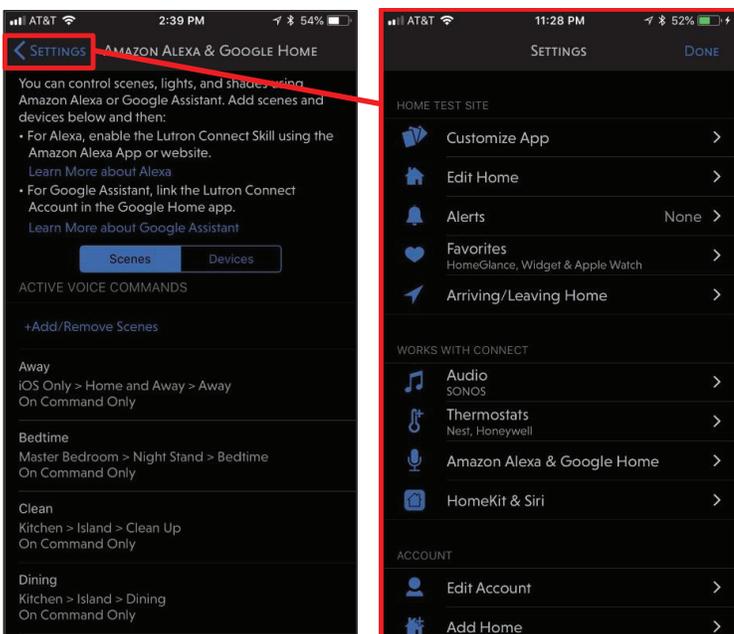
## Integrating Alexa® with the Lutron System (continued)

### Selecting Scenes and Devices for Alexa® Control (continued)

Additional scenes and devices can be added by choosing the option of Scenes or Devices and then tapping on **+Add/Remove Scenes** or **+Add/Remove Lights & Shades**. These same areas of the app can be used to remove scenes and devices from Amazon® Alexa® integration. Only supported button types and device types will be available for selection. Components that are not supported or areas that do not contain supported components will be represented by the information ⓘ icon.



Each scene or device chosen to be available for Amazon® Alexa® integration will be assigned a unique alias, as described in the **Voice Command Structure** and **Voice Control Best Practice** sections. Aliases can be edited in the Lutron mobile app but must remain unique and cannot use the words On or Off. Once all the necessary scenes and devices have been identified for integration, back out of the Amazon® Alexa® settings by tapping **Settings** in the upper-left corner of the screen and then tapping on **Done** in the upper-right corner of the Settings menu.



Alexa® Device Discovery will be required after any change in alias or addition/removal of a device or scene.

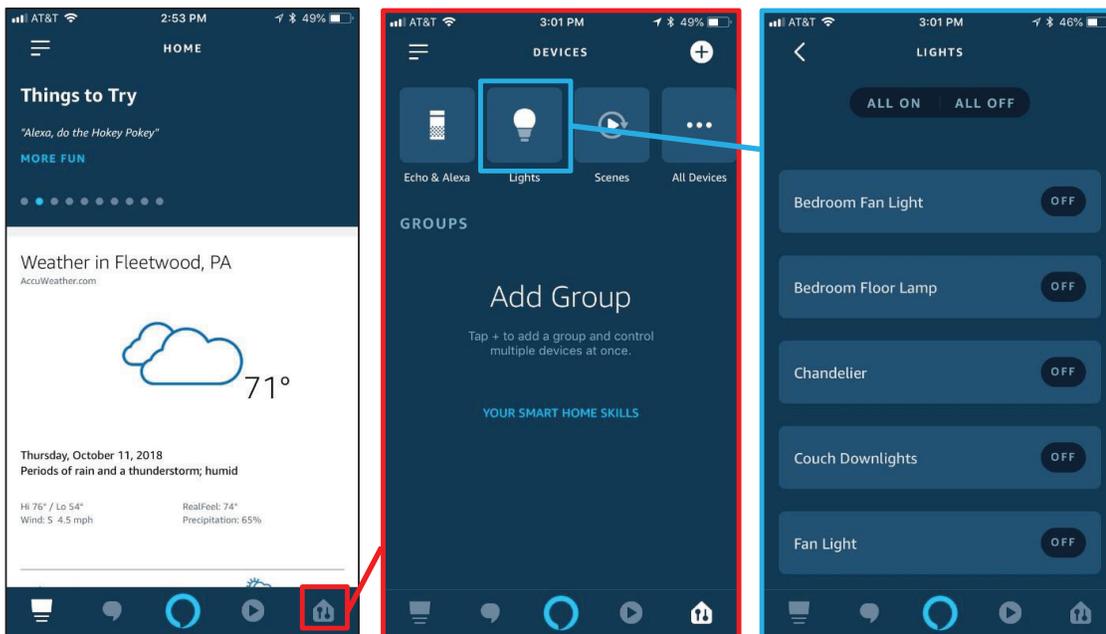
## Integrating Alexa® with the Lutron System (continued)

### Amazon® Alexa® Device Discovery

After completing the steps in the [Selecting Scenes and Devices for Alexa® Control](#) section, the final step to complete, prior to being able to use Amazon® Alexa® to control the elected scenes and devices, is to initiate the Device Discovery feature within Amazon Alexa. There are three different methods for device discovery: voice, Alexa® mobile app or Alexa® web portal. Alexa® Device Discovery will be required after any change in alias or addition/removal of a device or scene.

### Using Voice for Device Discovery

The most common way to discover devices is to simply use a voice command. Simply command the device discovery to begin by saying “Alexa, discover devices.” Alexa® will then take up to one minute to complete the discovery process after which all of the selected scenes and devices should be immediately available for control via voice control, Alexa® mobile app control, or Alexa® web portal control.

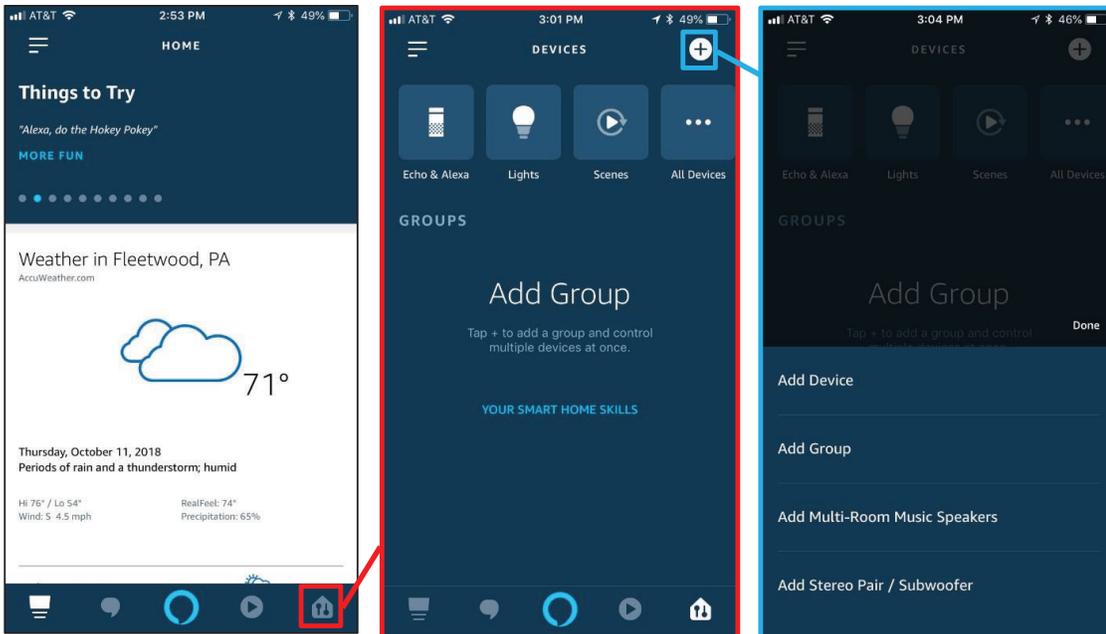


## Integrating Alexa® with the Lutron System (continued)

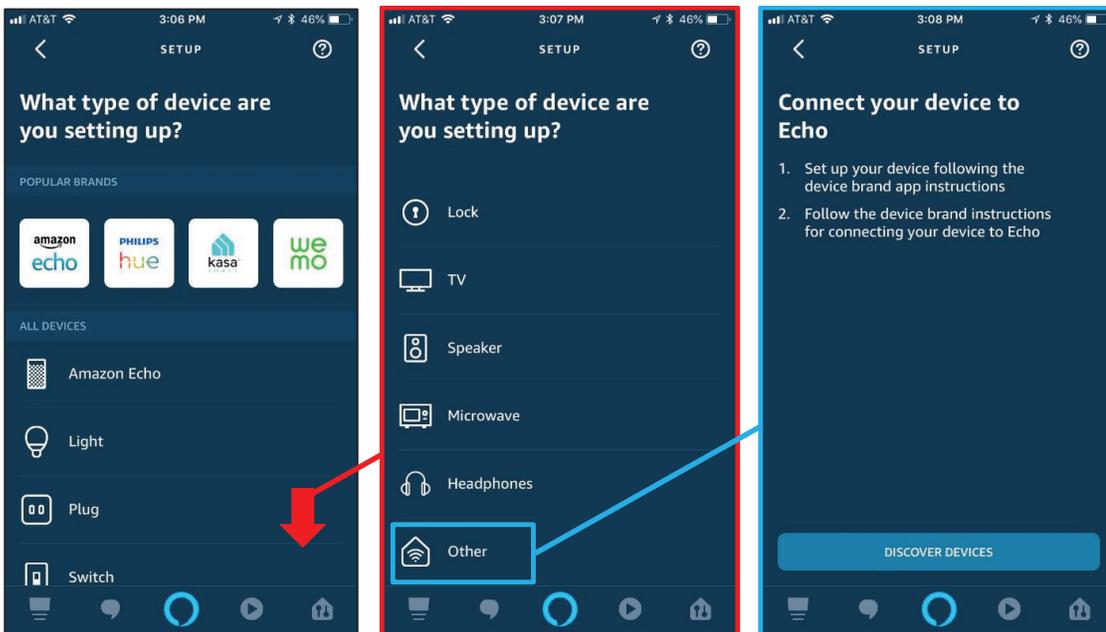
### Amazon® Alexa® Device Discovery (continued)

#### Using the Amazon® Alexa® Mobile App for Device Discovery

To discover devices using the Alexa® mobile app, first proceed to the smart home section of the app and then tap on the + sign in the upper right-hand corner of the screen. Select **Add Device**.



On the setup screen, scroll down the list of devices and select the option for **Other**. Finally, tap on the **Discover Devices** button at the bottom of the screen.



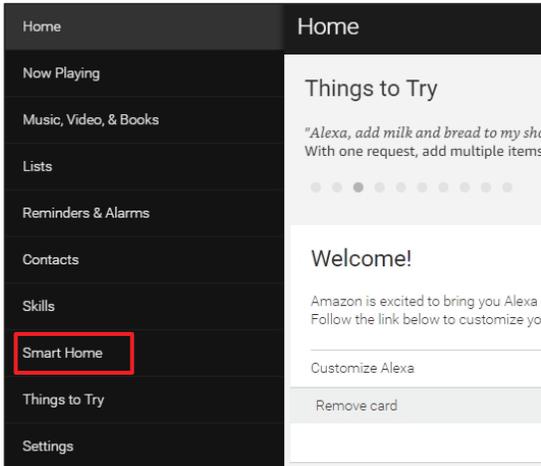
Alexa® will then take up to one minute to complete the discovery process after which all of the selected scenes and devices should be immediately available for control via voice control, Alexa® mobile app control, or Alexa® web portal control.

## Integrating Alexa® with the Lutron System (continued)

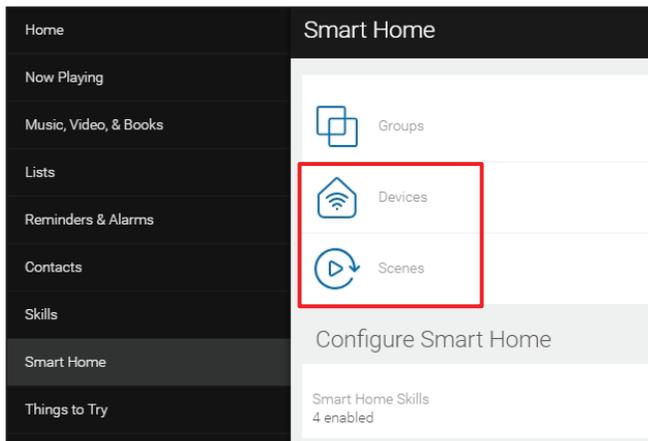
### Amazon Alexa® Device Discovery (continued)

#### Using the Alexa® Web Portal for Device Discovery

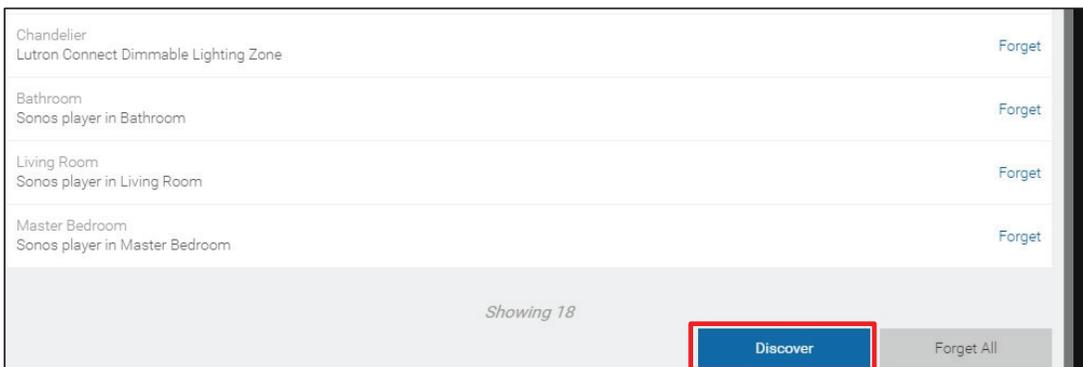
Start by going to alexa.amazon.com and signing into the account that is linked to the Lutron skill. Once logged in, select **Smart Home**, from the menu on the left.



Select either the option for **Devices** or **Scenes**.



Scroll to the bottom of the screen and left-click on the **Discover** button.



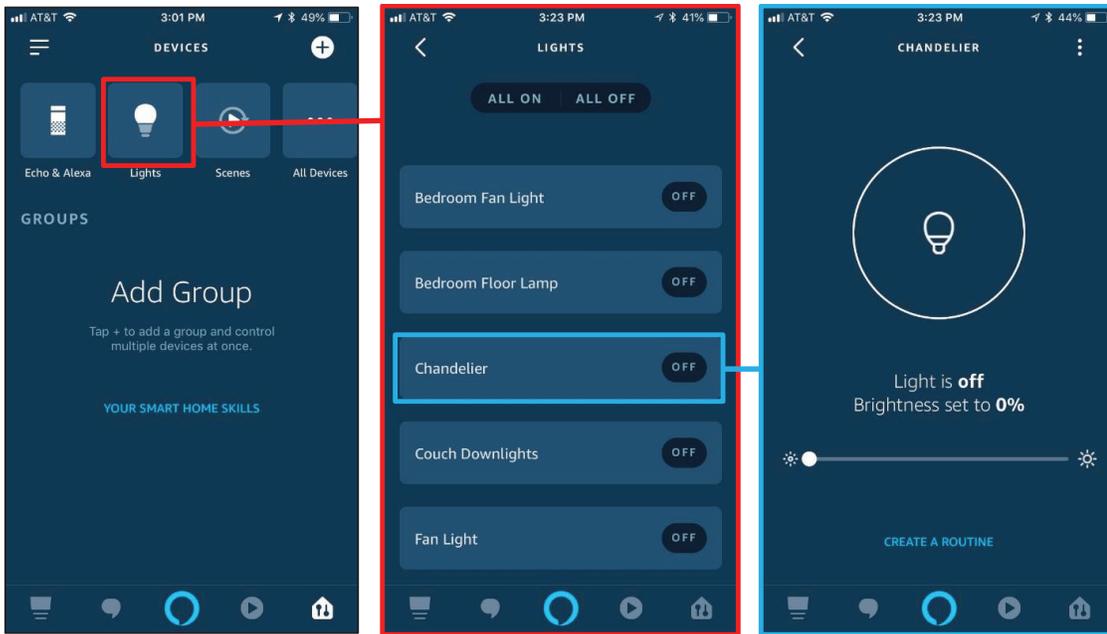
Alexa® will then take up to one minute to complete the discovery process after which all of the selected scenes and devices should be immediately available for control via voice control, Alexa® mobile app control, or Alexa® web portal control.

## Control of Lutron Devices and Scenes from the Alexa® App

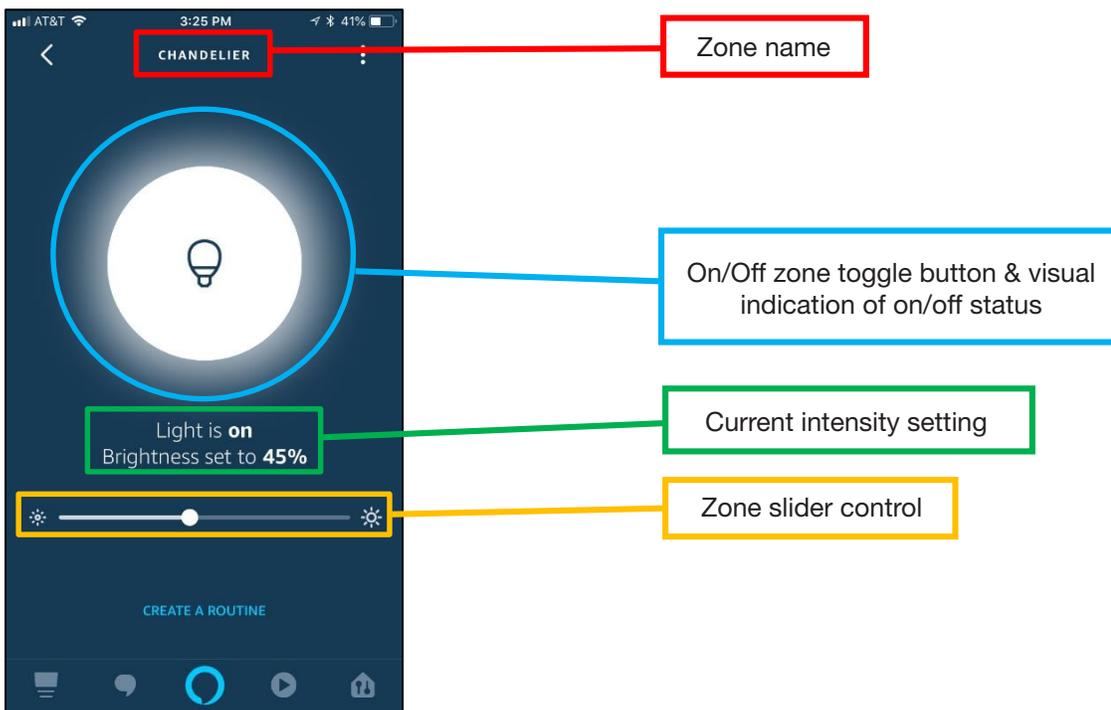
Amazon Alexa® integration goes beyond the obvious aspects of voice control.

### Control of Individual Lighting Zones

Each individual Lutron lighting zone, that has been enabled to work with Alexa®, will appear in the Alexa® app and can be controlled directly from the app.



Each available standard dimmable zone will appear with the below user interface. Examples of standard dimmable zones would be zones from a Maestro Wireless-style dimmer or the output of a Phase Adaptive DIN Rail Power Module.



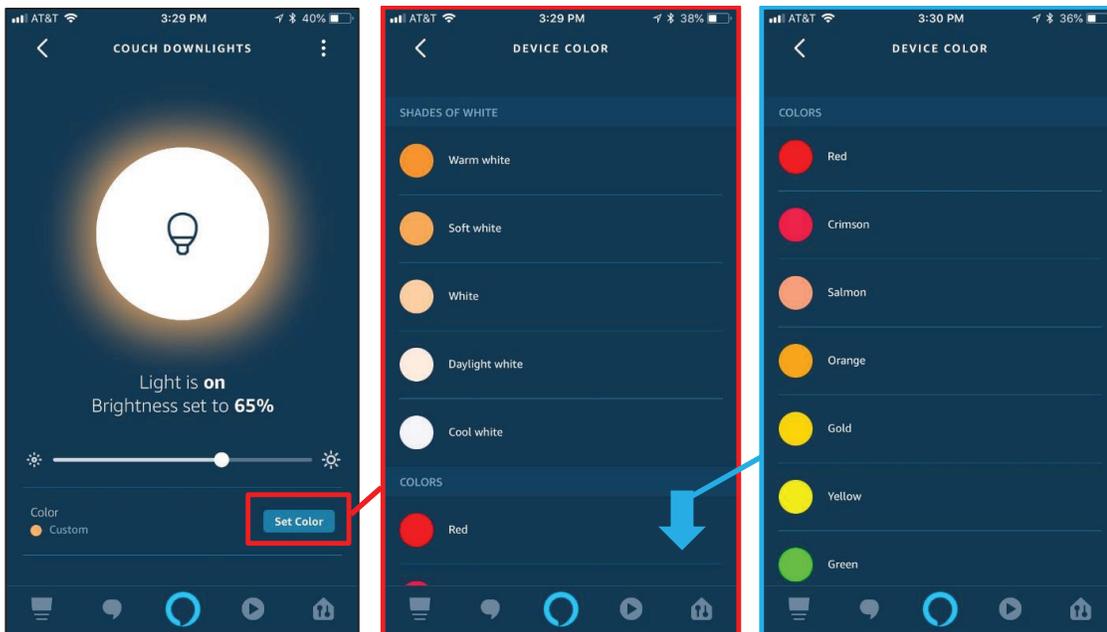
## Control of Lutron Devices and Scenes from the Alexa App *(continued)*

### Control of Individual Lighting Zones *(continued)*

For voice control of a standard dimmable zone, below are examples of common commands:

- “Alexa, turn on the Chandelier”
  - The Chandelier will turn on to 100%
- “Alexa, turn the Chandelier on to 85%”
- “Alexa, set the Chandelier to 40%”
- “Alexa, turn off the Chandelier”

Ketra lamps and fixtures, available only with HomeWorks systems, appear similarly in the app but also have the additional capability of color control. Color can be set to different specified color temperatures of white light or an actual color such as blue or red.



For voice control of a Ketra lighting zone, below are examples of common commands:

- “Alexa, turn on the Couch Downlights”
  - The Couch Downlights will turn on to 100% and most recently used color
- “Alexa, turn the Couch Downlights on to 85%”
  - The Couch Downlights will turn on to 85% and most recently used color
- “Alexa, set the Couch Downlights to Soft White”
  - If the Couch Downlights were in the OFF state, they will turn on to 100% intensity and at 2700K color temperature.
  - If the Couch Downlights were already ON at some level, they will remain at the same intensity but change to 2700K color temperature.
- “Alexa, turn the Couch Downlights Blue”
  - If the Couch Downlights were in the OFF state, they will turn on to 100% intensity and be blue.
  - If the Couch Downlights were already ON at some level, they will remain at the same intensity but change to blue color.

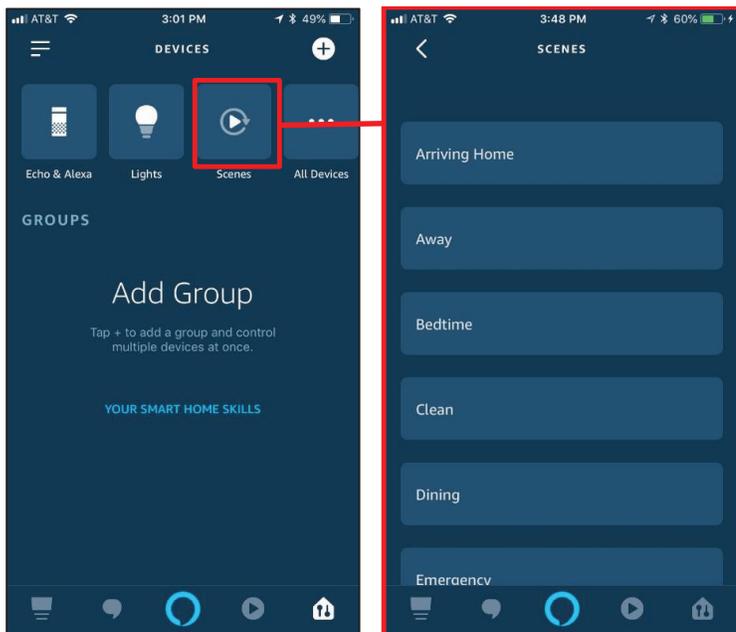
Using Ketra lighting with HomeWorks and Amazon® Alexa® requires the use of:

- HomeWorks QS version 14.3 or newer and Lutron Connect app 7.2 or newer
- HomeWorks Designer software version 16.0 or newer and the Lutron mobile app 7.0 or newer

## Control of Lutron Devices and Scenes from the Alexa® App (continued)

### Control of Scenes

The list of all associated scenes will show up in the Alexa® app, visible from the smart home screen.



Scenes are not controllable via the app like lighting zones are but are available for control via voice and other Alexa® app features, such as routines. For information on the purpose of routines and how to configure them, refer to the [Using Alexa® Routines](#) section.

Remember, single action scenes can only be turned on. To have the ability to toggle the button off, it must be defined as a toggle in the Lutron programming software.

Examples of scene voice commands are as follows:

- “Alexa, turn on Welcome”
- “Alexa, turn on Away”
- “Alexa, turn on Goodnight”
- “Alexa, turn off Kitchen”

## Control of Lutron Devices and Scenes from the Alexa® App (continued)

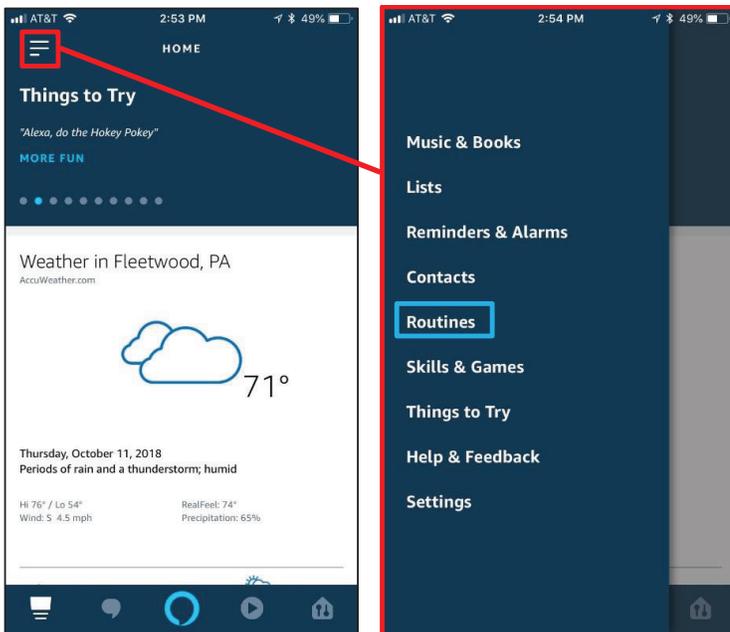
### Using Alexa® Routines

Normal voice control using Amazon® Alexa® is done on a command-by-command basis. In other words, if it was desired to check the weather for the day, traffic to work, and trigger the Morning scene, that would normally be executed by three different voice commands.

- “Alexa, what is the weather for today?”
- “Alexa, how is traffic looking?”
- “Alexa, turn on Morning”

Also, there would be a pause between each step as delivering weather or traffic reports using Alexa® takes time. Issuing a command while Alexa® is reviewing the weather could also cause an interruption of that action causing it to be incomplete. While this style of control works, it is inefficient and does not deliver the best user experience.

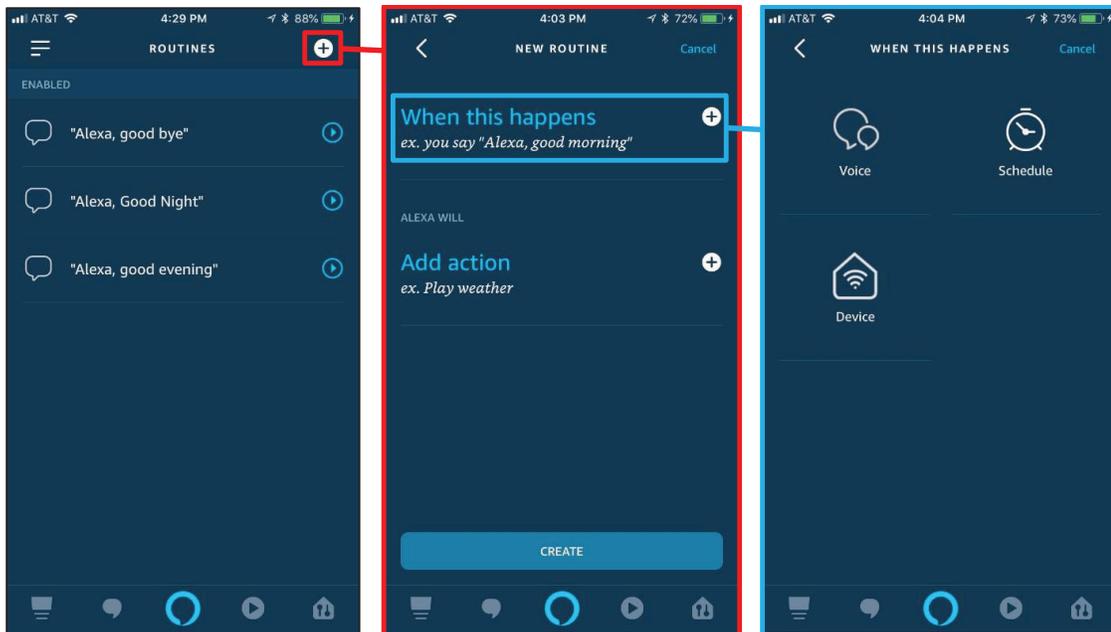
Using routines with Alexa® helps to eliminate this inefficiency by grouping multiple commands into one. To demonstrate the effectiveness of routines and how to define them, start by opening the Alexa® mobile app. From the home screen, access the **Settings** menu by tapping on the icon in the upper-left corner of the screen. Next, select the option for **Routines**.



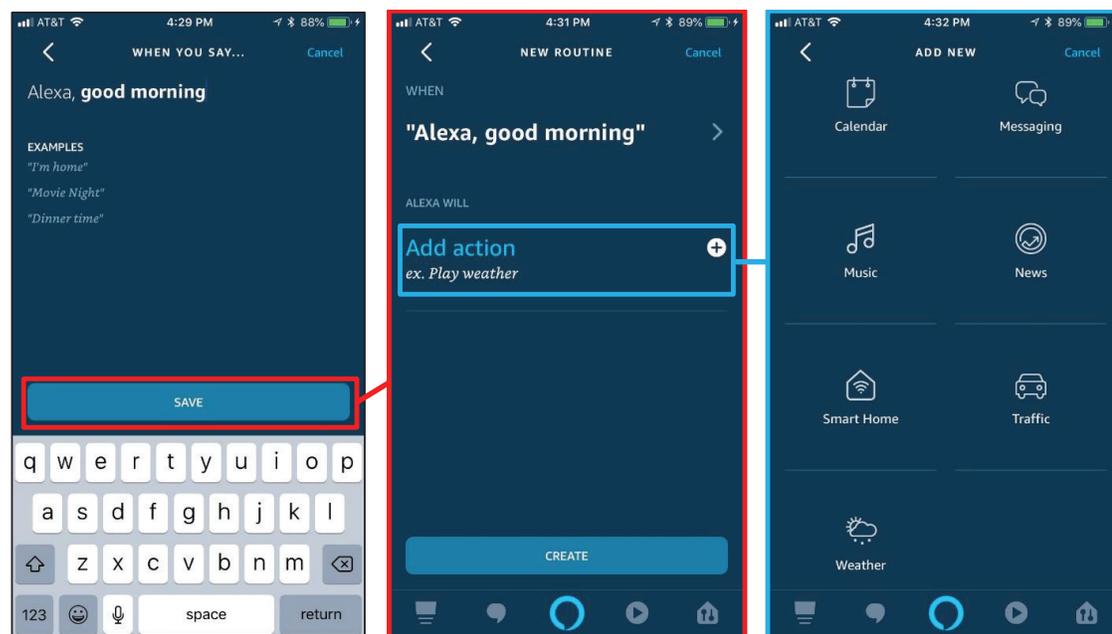
## Control of Lutron Devices and Scenes from the Alexa® App (continued)

### Using Alexa® Routines (continued)

To create a new routine, tap the plus sign in the upper-right corner of the screen. The first thing to define is When this happens. The routine can be scheduled, occur as a result of the action of supported devices, or via voice. For the example of a Good Morning routine, select Voice.



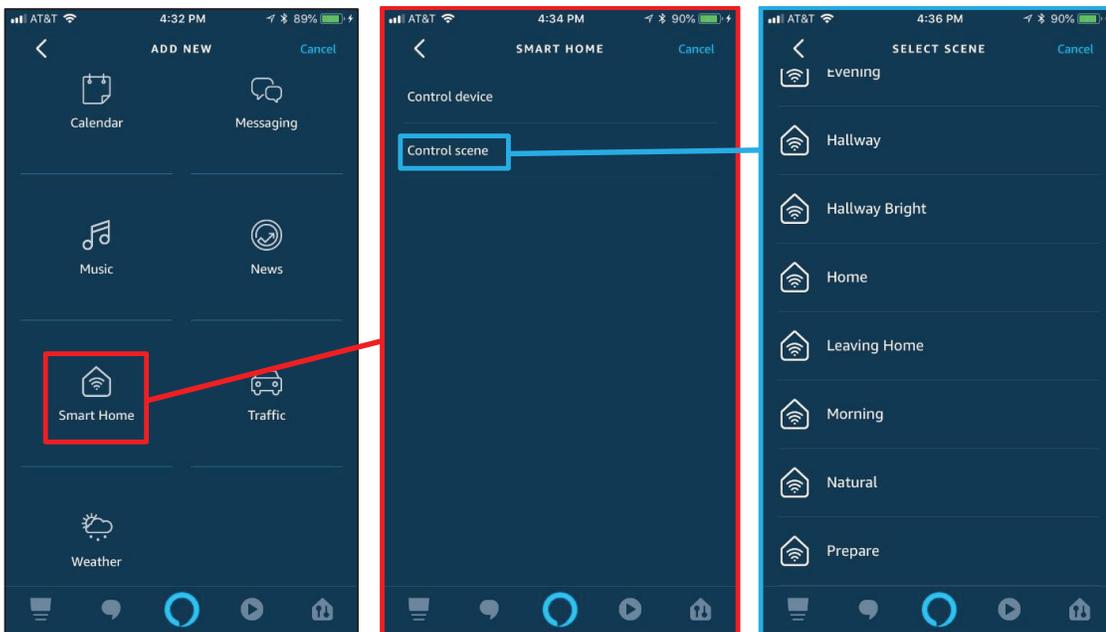
Type in the phrase used to trigger the routine. In this case, "good morning" will be used. Next, tap on the plus sign to add the necessary actions. There are a large variety of actions including Smart Home (such as Lutron scenes and devices), News, Weather, and Traffic.



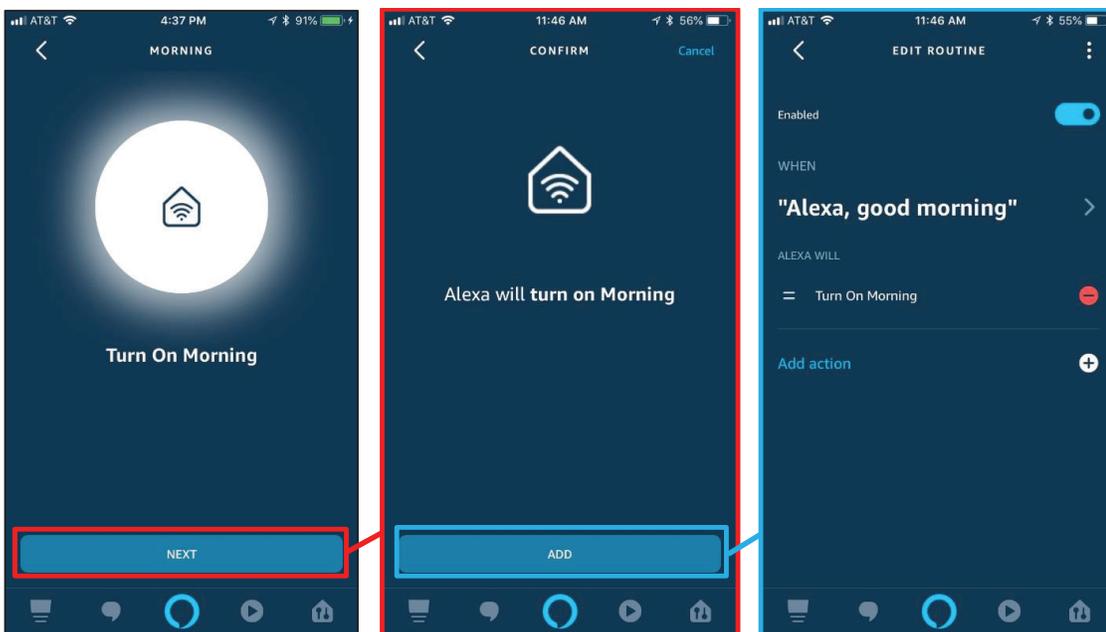
## Control of Lutron Devices and Scenes from the Alexa® App (continued)

### Using Alexa® Routines (continued)

To add a Lutron scene, such as Morning for this example, choose **Smart Home** and then choose to **Control scene**. Select the appropriate scene from the list provided.



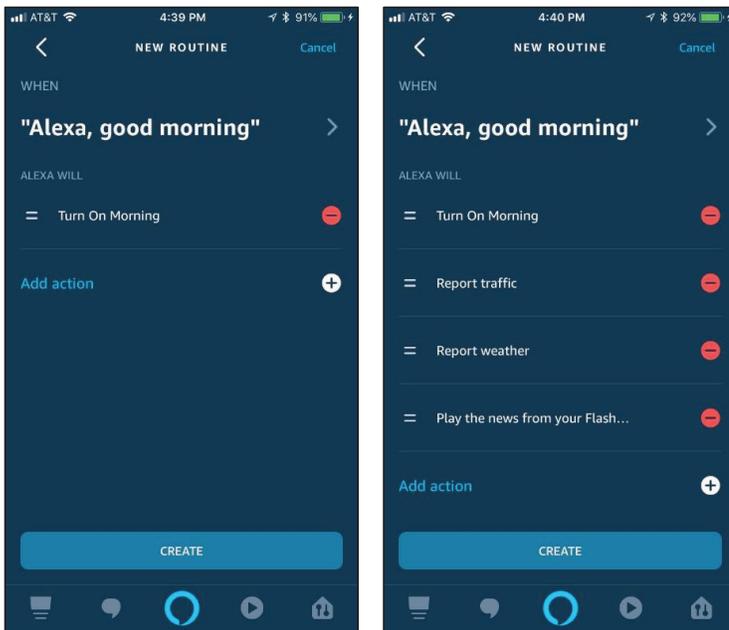
To finish adding the Lutron scene to the routine, choose the appropriate action to take and then tap **Next**. The Alexa® app will present a screen summarizing the action. Tap on **Add** to officially add the Lutron scene to the routine.



## Control of Lutron Devices and Scenes from the Alexa® App (continued)

### Using Alexa® Routines (continued)

From here, tap on **Add action** to continue adding in other components to the routine. For example, for the Good Morning routine — Weather, Traffic and News will all be added in addition to the Lutron scene. Tapping and holding onto the two-line icon, to the left of each item, will allow the user to edit the order of the events by simply dragging and dropping. Once the order has been finalized, the routine can be completed by tapping on **Create**.



After tapping on **Create**, it may take up to one minute for the routine to be available for use. Instead of having to issue multiple commands when the end user wakes up, they can now simply say “Alexa, good morning” and have Alexa®:

1. Turn on the Morning Scene
2. Provide a traffic report
3. Provide a report of today’s weather in the designated location
4. Play the news feed from the user’s identified Flash Briefing

## Frequently Asked Questions

### What is Amazon® Alexa®?

Amazon® Alexa® is Amazon's voice service that responds to questions or commands. For example, Alexa® can tell you the current weather forecast, give you the latest news, play music, control select connected home products, and much more. You can find out more at <https://www.amazon.com/Amazon-Echo-And-Alexa-Devices/b?ie=UTF8&node=9818047011>

### What hardware is required from Amazon® to use Alexa®?

Alexa® requires at least one piece of Alexa® enabled hardware in order to use Alexa®. This hardware includes devices such as Echo, Echo Dot, Tap, and Echo Show.

### How many Amazon® Alexa® devices can I have?

There is no limitation on to how many Alexa® devices you can have. Since the Alexa® devices often use an address on the home network, it may be possible that more addresses first need to be made available on the home network.

### What software is required, from Amazon, to use Alexa®?

In order to set up Amazon® Alexa®, the Amazon® Alexa® mobile app is required for initial setup.

### What do I need from Lutron to control my lights from Amazon® Alexa®?

RadioRA2 or HomeWorks QS: You will need a Lutron Connect Bridge and either a RadioRA2 main repeater or HomeWorks QS processor running version 14.3 or newer. The Lutron Connect app needs to be version 7.2 or newer.

QSX processor: You will need a HomeWorks QSX processor running version 16.0 or newer. The Lutron mobile app needs to be version 7.0 or newer.

### Is there a fee for using Amazon® Alexa® with Lutron?

No, there is no fee to use the Alexa® service or the Lutron mobile apps.

### What parts of a Lutron system can be controlled by Alexa®?

Alexa® can control individual lighting zones and scenes.

### How many scenes/devices can I control with Alexa®?

99 scenes/devices can be controlled through Alexa®.

### Is it possible for Alexa® to control buttons that use advanced programming such as conditional logic or single variable programming?

Alexa® can control single action and toggle buttons which use normal programming only.

### How do I know if my Amazon® Echo® can hear me?

When you say "Alexa," the blue LED ring on the top of your Echo® will light up. That means Alexa® heard you and is waiting for you to say something.

### Do I need to have my smartphone with me to use Alexa®?

No, you don't need to have your smartphone with you. You just need to be within listening range of your Amazon® Echo®, Tap or Fire TV® with voice remote when saying a command. You can also use the Alexa® web portal at [alexa.amazon.com](http://alexa.amazon.com).

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Ketra is a trademark of Lutron Ketra, LLC.

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## Lutron Contact Numbers

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