

HOP UniFi Controller SOFT Interface for RTI

1. Overview

This RTI driver provides a complex interface to UniFi Network controller. Driver does not use any “polling” strategy and silently listens to events broadcasted by network controller. Cloud version of controller is also supported and driver uses SSL to encrypt communication.

Driver supports devices running UniFi OS (Cloud Key Gen2, Cloud Key Gen2 Plus and UDM Pro) starting driver version 1.04.

2. Features

Controller

- Event for wireless client connected
- Event for wireless client disconnected
- Restart any device from UI
- Restart any device from APEX programming

Switch

- Override any port PoE settings (auto, off, 24Vstatic, etc ..)
- PoE power cycle
- Event for switch Connected
- Event for switch Disconnected
- Event for switch Provisioning
- Event for switch Missing Heartbeat
- Event for switch Adopting

Access Point

- Event for switch Connected
- Event for switch Disconnected
- Event for switch Provisioning
- Event for switch Missing Heartbeat
- Event for switch Adopting

3. UniFi Controller Settings

There are no special settings needed on the controller side, however we highly recommend creating a dedicated user for RTI system.

This can be done in controller -> settings -> admins

2. Installation

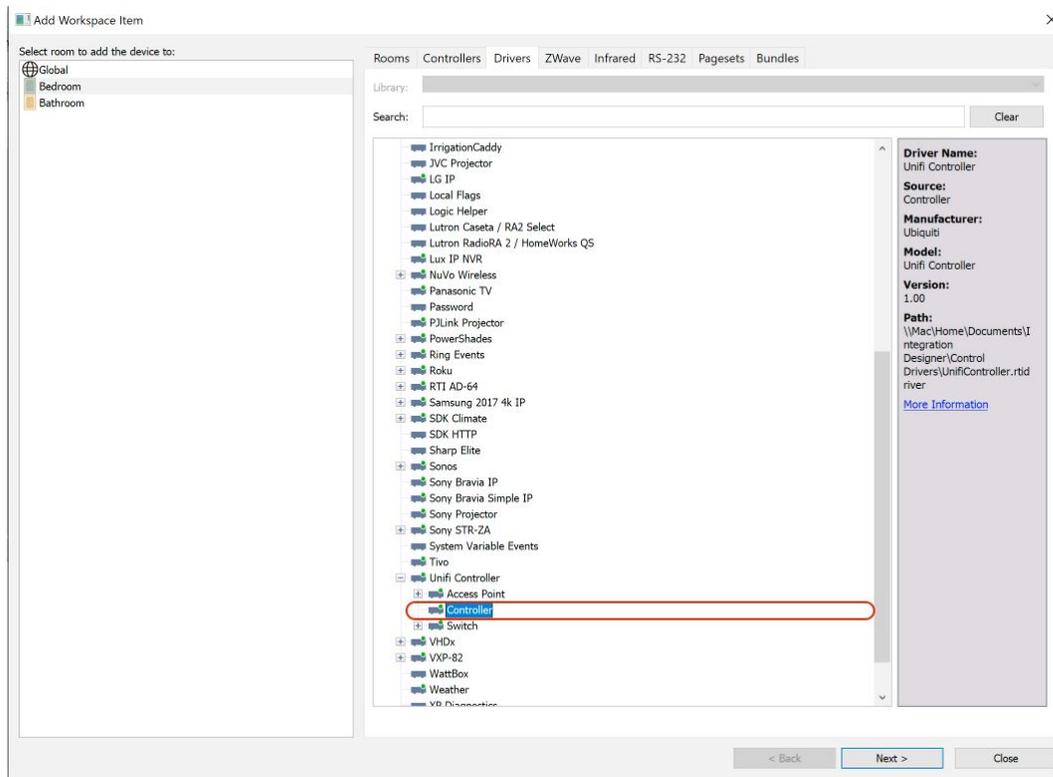
Save UnifiController.rtidriver file into Integration Designer (APEX) driver folder.

Default location is: "Documents\Integration Designer\Control Drivers"

Save source bundle file into Integration Designer (APEX) source bundle folder.

Default location is: "Documents\Integration Designer\Templates"

Add controller driver as source or use supplied source bundle.



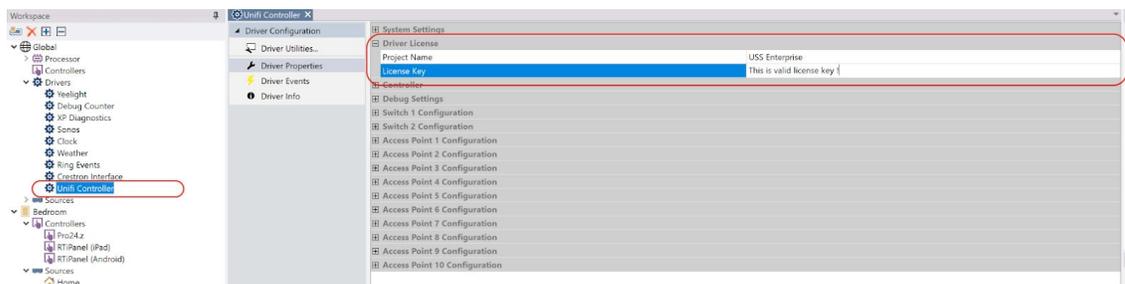
3. Driver Configuration

Add License

Project name - This should be a brief description or identifier of the project where the driver is used.

License key - License key provided after driver purchase, driver comes with three day trial which gets automatically activated if no license key is entered.

License status is exposed via driver variables.



Controller Source

Controller source represents the entire UniFi controller and provides access to common events, commands and holds credentials for connection.

Controller Address - This can be controllers IP access or DNS name. **Do not** include https or port. This field needs to contain only controller IP or its DNS name.

Controller Port (added in v1.04) - This is network port controller API is listening on. **Default port for UniFi OS devices is 443. Default port for hosted controllers is 8443.**

User - Username for accessing controller

Password - Password for access controller

Site Name - This is name of the site you wish to access, user has to have access to this site.

Example:

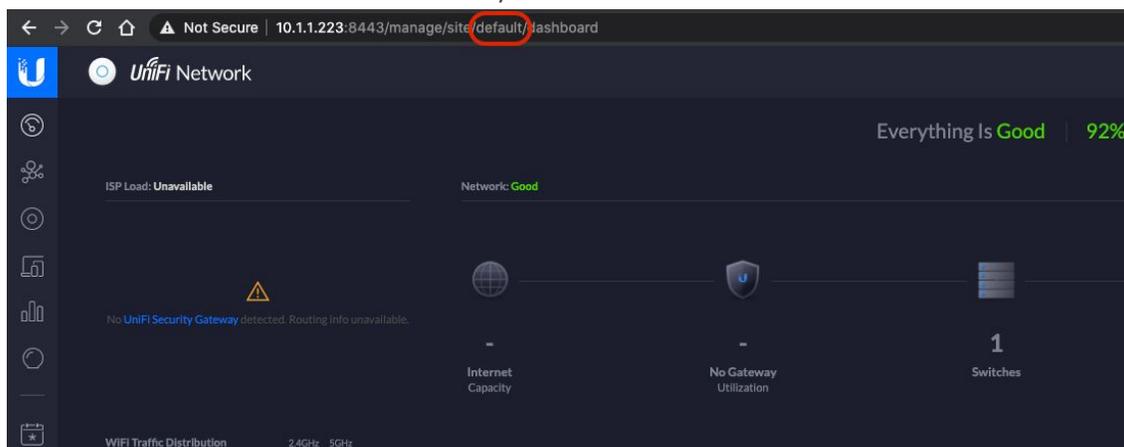
<https://10.1.1.223:8443/manage/site/default/dashboard>

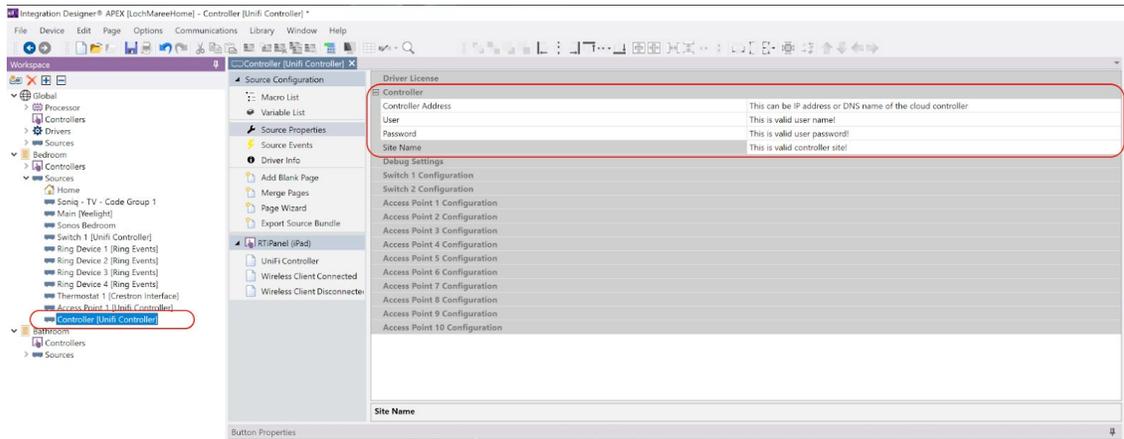
"default" is site name in above example, but usually it is just unique id string, if you are using different site than default, see below

<https://10.1.1.223:8443/manage/site/56sta5yq/dashboard>

in this case it is "56sta5yq"

Site name can be found in the URL of your controller.

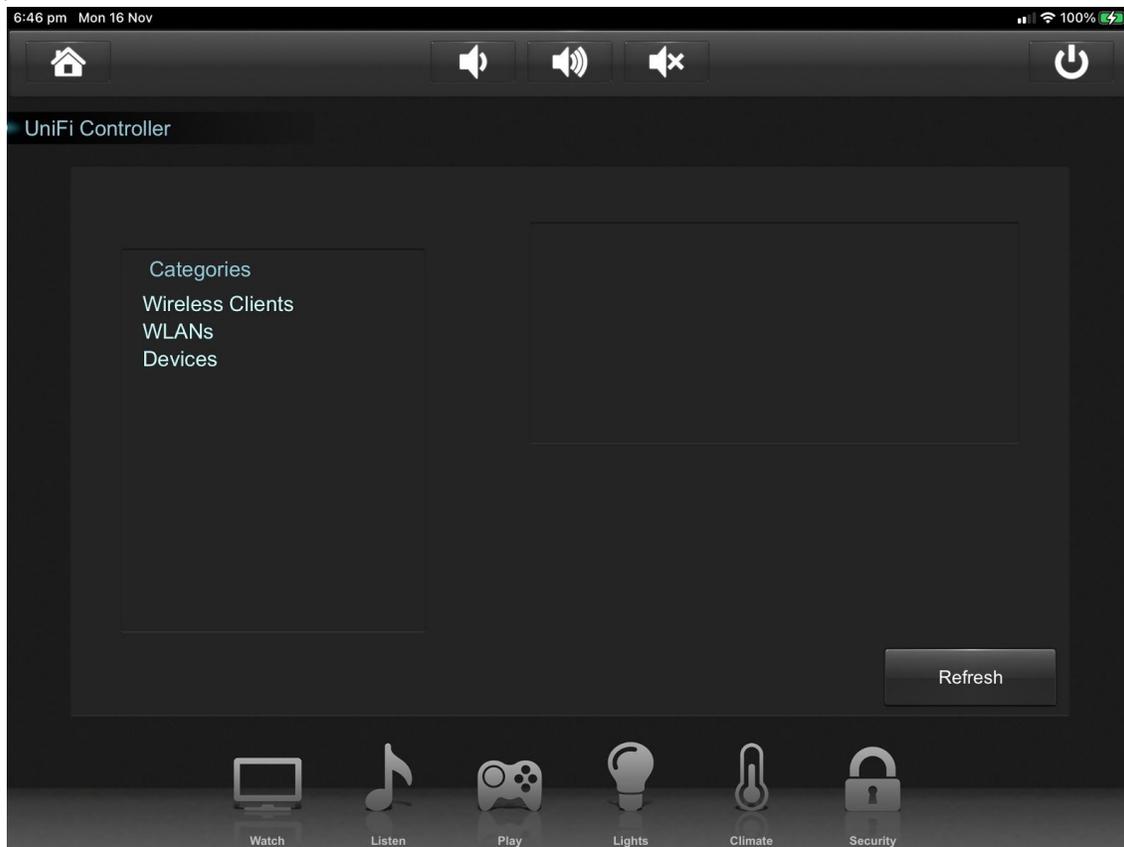




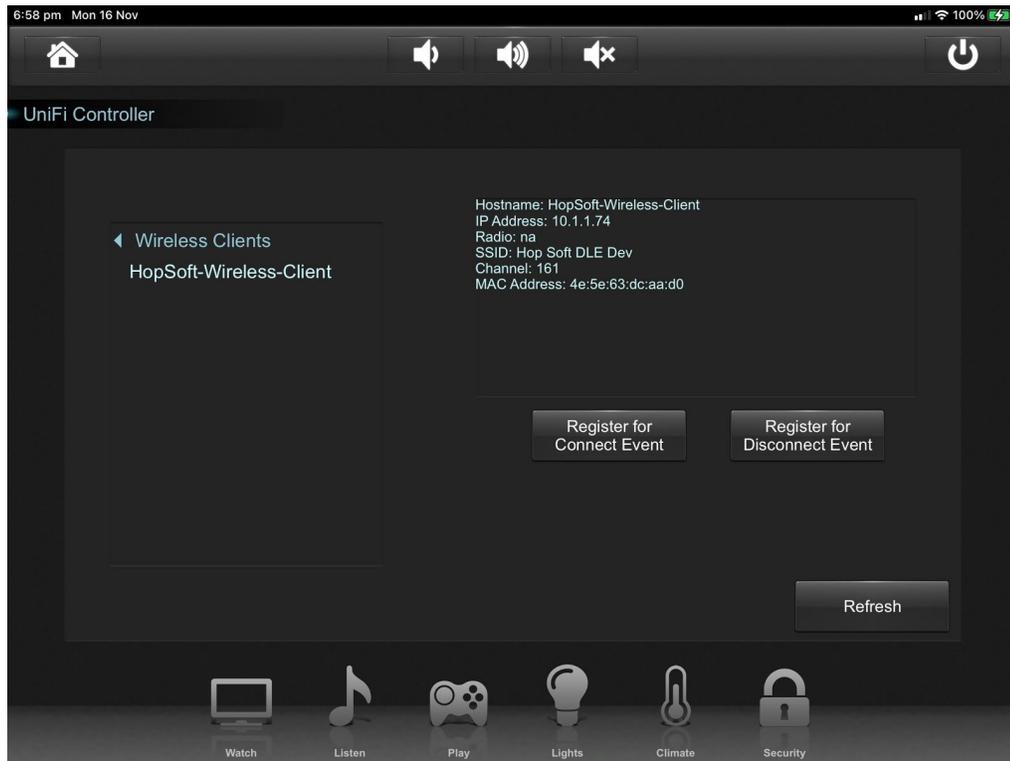
Controller Pages

Source bundle contains three predefined pages for you to use or to get inspired.

This page provides user with access to state of his/hers UniFi Network, there are three main parts:

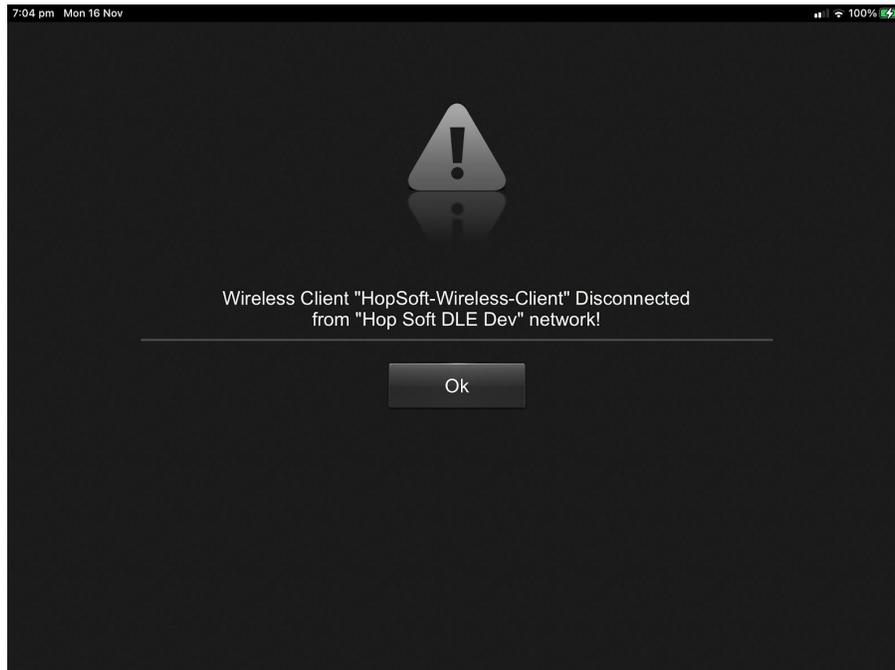


Wireless Clients:



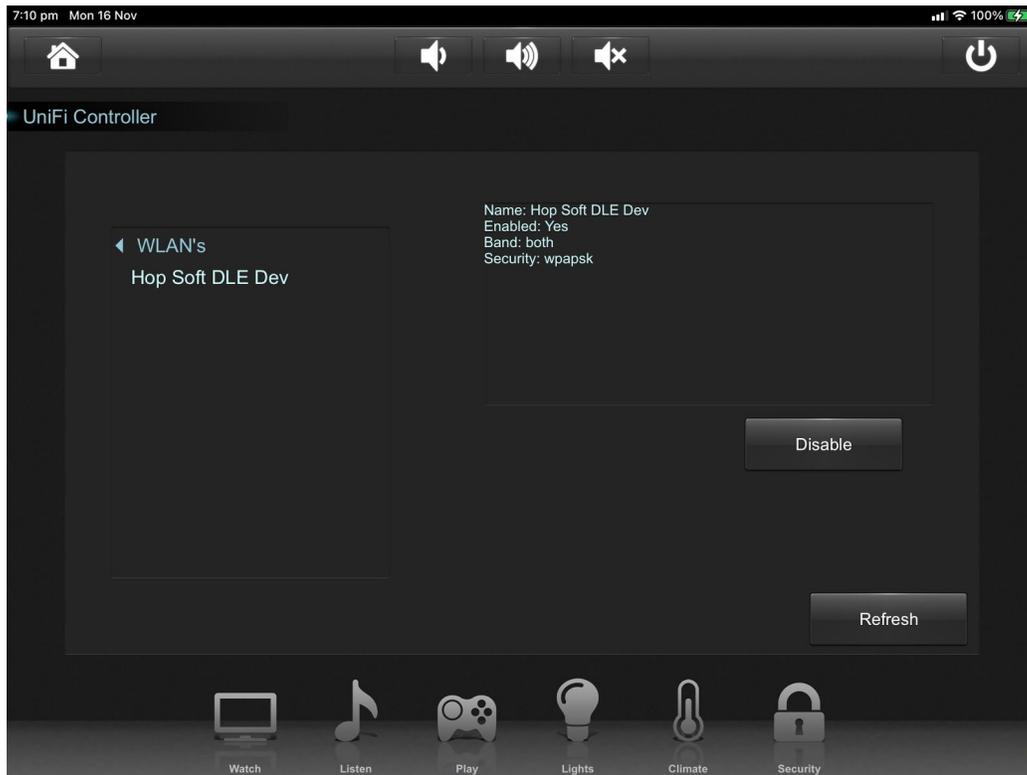
This section provides access to list of all wireless devices connected to site, user than can Register/Unregister any device to event listener. Driver will fire “Wireless Client Connected” or “Wireless Client Disconnected” event if device is registered for such.

Macro can then be executed to display an alert page which is also included in the driver bundle.



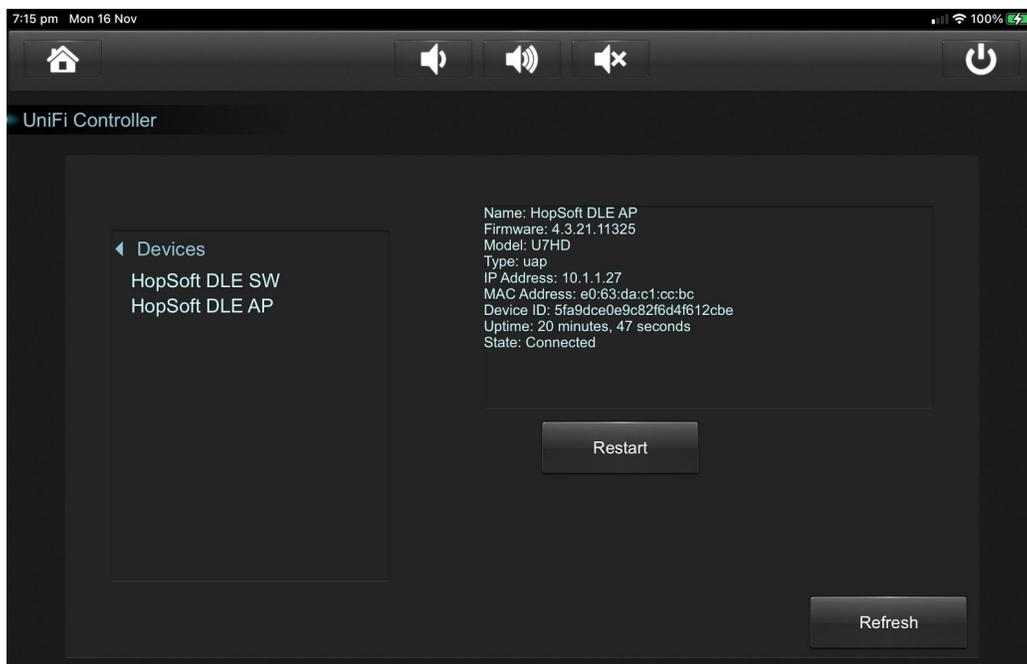
WLAN's:

This section provides access to all wireless networks configured for site, user than can Enable/Disable any or all.



Devices:

This section provides access to essential information about all devices managed by controller for this site. User than can manually restart any device.



Controller Events

Controller source provides two events (as mentioned earlier in pages section) which can be used to notify user when wireless client connects or disconnects to wireless network.

The screenshot displays the configuration for a 'Controller [Unifi Controller]' source. The interface is divided into several sections:

- Workspace Tree (Left):** Shows a hierarchical view of the project. The 'Controller [Unifi Controller]' source is highlighted in blue.
- Source Configuration Panel (Center):**
 - Source Events:** A section containing 'Unifi Controller', 'Wireless Client Connected', and 'Wireless Client Disconnected'.
 - RTIPanel (iPad):** A section containing 'Unifi Controller', 'Wireless Client Connected', and 'Wireless Client Disconnected'.
- Event Table (Top Right):** A table listing the events and their properties.
- Button Properties (Bottom):** Shows the breadcrumb path: 'page link > RTIPanel (iPad) > Bedroom > Controller [Unifi Controller] > Wireless Client Connected'.

Enable	Category	Event	Has Macro
<input checked="" type="checkbox"/>	Controller	Wireless Client Connected	Yes
<input checked="" type="checkbox"/>	Controller	Wireless Client Disconnected	Yes

Controller Commands

- **Enable SSID (SSID String)** - This command will enable wireless network with given SSID parameter.

command	Controlled Device	Unifi Controller
	Function Name	Controller Commands \ Enable SSID
	SSID	Hop Soft DLE Dev
	Sustain	No
	Delay between repeats	0

- **Disable SSID (SSID String)** - This command will enable wireless network with given SSID parameter.

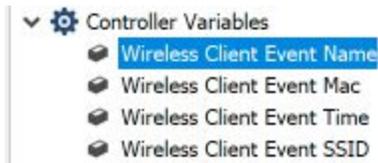
System	command	Controlled Device	Unifi Controller
		Function Name	Controller Commands \ Disable SSID
		SSID	Hop Soft DLE Dev
		Sustain	No
		Delay between repeats	0

- **Reboot Device - (MAC Address String)** - This command will reboot device with given MAC address, same functionality is also available in Access Point and Switch source.

System	command	Controlled Device	Unifi Controller
		Function Name	Controller Commands \ Reboot Device
		Device MAC Address	e0:63:da:8d:c5:c7
		Sustain	No
		Delay between repeats	0

Controller Variables

Controller provides four additional variable which are updated when event “Wireless Client Connected” or “Wireless Client Disconnected” is fired and they provide additional information about client in recently fired event.

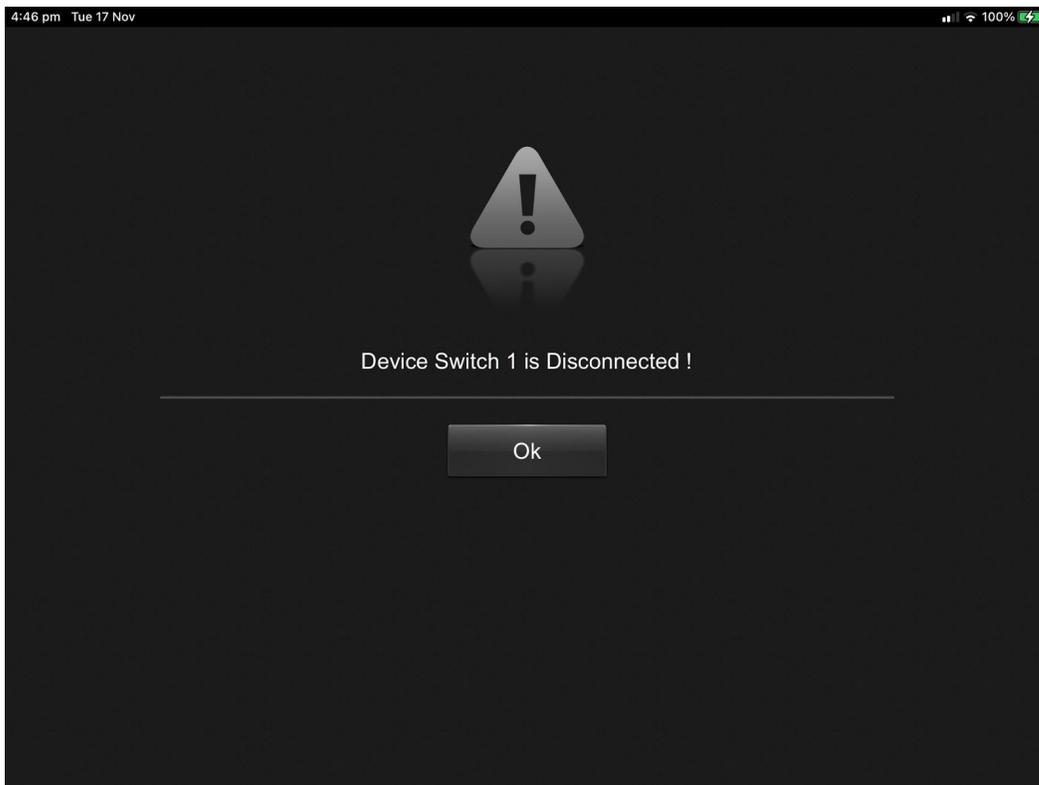


Switch Source

Switch source represents network switch device.

Switch Page(s)

Device State Change:



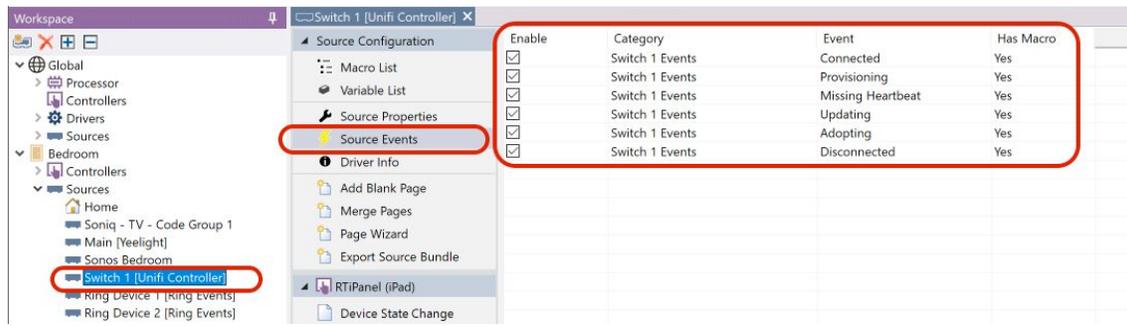
This page can be used to notify user about change in switch connection state.

Switch Events

Switch source provides six events, all six events signal different states of switch connection state. Supported states are:

- Connected
- Provisioning
- Missing Heartbeat
- Updating
- Adopting
- Disconnected

There are other connection states in UniFi ecosystem, all other than above will fire the “Connected” state event.



Enable	Category	Event	Has Macro
<input checked="" type="checkbox"/>	Switch 1 Events	Connected	Yes
<input checked="" type="checkbox"/>	Switch 1 Events	Provisioning	Yes
<input checked="" type="checkbox"/>	Switch 1 Events	Missing Heartbeat	Yes
<input checked="" type="checkbox"/>	Switch 1 Events	Updating	Yes
<input checked="" type="checkbox"/>	Switch 1 Events	Adopting	Yes
<input checked="" type="checkbox"/>	Switch 1 Events	Disconnected	Yes

Switch Commands

- **Reboot** - This command will reboot switch.

Reboot Type:

1. Soft - This will cause switch to reboot its operating system, while maintaining PoE to all ports.
2. Hard - This will cause switch to completely shut down all ports so all attached PoE devices will also reboot.

The screenshot shows a configuration window for the 'command' field. The 'Controlled Device' is 'Unifi Controller'. The 'Function Name' is 'Switch - Control \ Reboot'. The 'Switch' is 'Switch 1 (Switch 1)'. The 'Reboot type' is 'Soft'. The 'Sustain' is 'No'. The 'Delay between repeats' is '0'.

Controlled Device	Unifi Controller
Function Name	Switch - Control \ Reboot
Switch	Switch 1 (Switch 1)
Reboot type	Soft
Sustain	No
Delay between repeats	0

- **Port Control** - This command allows override power settings for each port.

Supported modes:

1. PoE Auto
2. PoE Passive 24v
3. PoE Passthrough
4. PoE Off

There are also two commands available:

1. Power Cycle - This command will cause power cycle of PoE output with 5s delay in off state.
2. Remove Port Override - This command will remove any port override settings which was previously set.

The screenshot shows a configuration window for the 'command' field. The 'Controlled Device' is 'Unifi Controller'. The 'Function Name' is 'Switch - Control \ Port Control'. The 'Switch' is 'Switch 1 (Switch 1)'. The 'Port' is 'Port 1'. The 'Action' is 'PoE OFF'. The 'Sustain' is 'Power Cycle'. The 'Delay between repeats' is 'PoE Auto'. A dropdown menu is open, showing options: 'Power Cycle', 'PoE Auto', 'PoE Passive 24v', 'PoE Passthrough', 'PoE OFF' (highlighted), and 'Remove Port Override'.

Controlled Device	Unifi Controller
Function Name	Switch - Control \ Port Control
Switch	Switch 1 (Switch 1)
Port	Port 1
Action	PoE OFF
Sustain	Power Cycle
Delay between repeats	PoE Auto

Switch Variables

Each switch source provides two extra variables, both of which get updated on switch connection state change and provide additional information for switch connection state.

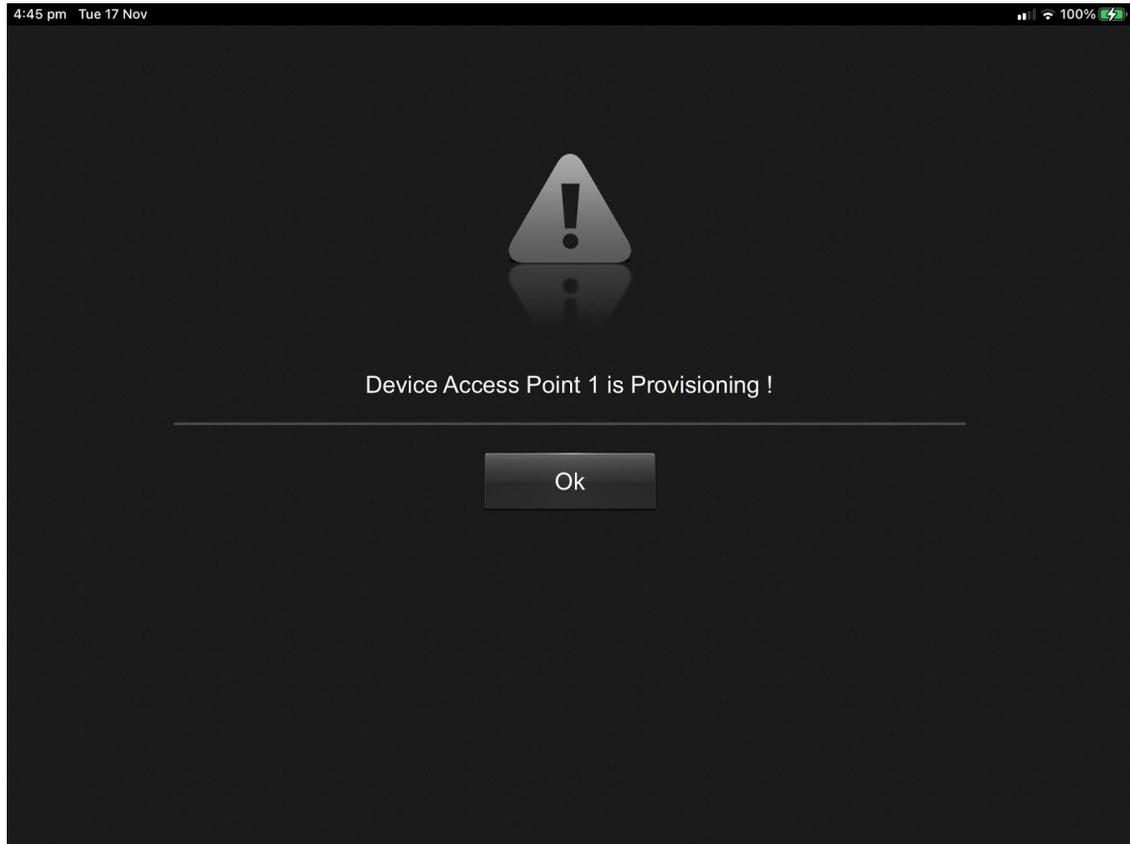
- ▼  Switch 1 Variables
 -  Connection State
 -  Connection State Since

Access Points Source

Access Point source represents access point device.

Access Point Page(s)

Device State Change:



This page can be used to notify user about changes in access point connection state.

Access Points Events

Access Point source provides six events, all six events signals different state of access point connection state. Supported states are:

- Connected
- Provisioning
- Missing Heartbeat
- Updating
- Adopting
- Disconnected

There are other connection states in the UniFi ecosystem, all other than above will fire “Connected” state event.

Enable	Category	Event	Has Macro
<input checked="" type="checkbox"/>	Access Point 1 Events	Connected	Yes
<input checked="" type="checkbox"/>	Access Point 1 Events	Provisioning	Yes
<input checked="" type="checkbox"/>	Access Point 1 Events	Missing Heartbeat	Yes
<input checked="" type="checkbox"/>	Access Point 1 Events	Updating	Yes
<input checked="" type="checkbox"/>	Access Point 1 Events	Adopting	Yes
<input checked="" type="checkbox"/>	Access Point 1 Events	Disconnected	Yes

Access Point Commands

- Reboot - This command will reboot access point.

Controlled Device	Unifi Controller
Function Name	Access Point - Control \ Reboot
Access Point	Access Point 1 (Switch 1)
Reboot type	Soft
Sustain	No
Delay between repeats	0

Access Point Variables

Each access point source provides two extra variables, both of which get updated on access point connection state change and provide additional information for access point connection state.

- ▼  Access Point 1 Variables
 -  Connection State
 -  Connection State Since