

Introduction

Zoom allows for controlling external 3rd-party devices (such as displays, lights, screens, etc) via the Zoom Room Controller. In order to control these external devices, first a “profile” must be created and uploaded to the Zoom Room. This profile is a JSON-formatted string which provides the Zoom Room with all the information it needs regarding the devices and commands you will be sending. More information regarding this functionality can be found at <https://support.zoom.us/hc/en-us/articles/360033716572>.

The JSON profile needs to be perfectly constructed in order for the Zoom Room to properly configure 3rd-party device control. Though it is possible to edit this JSON file by hand (in a text editor), this process is cumbersome, error-prone and it is quite easy to miss an important field or type something incorrectly, resulting in errors or omissions in the Zoom Room control. The CCI Zoom Room Controls Profile Maker (hereafter referred to as “Profile Maker”) is designed to provide an easy to use “front-end” interface to editing the JSON file and export a fully compatible JSON file for use in the Zoom Room Controller.

This guide will walk you through the terminology, features and important notes to keep in mind when using the Profile Maker.

Be sure to read the Important Notes section at the end of this document as it contains additional information critical to the understanding of the app and its limitations and behavior.

Terminology

Below are some common terms you will encounter while using the Profile Maker.

- **Config** - *this is the JSON data which will be used by the Zoom Room to configure the 3rd-party device control features.*
- **Adapter** – *this is a particular endpoint that the Zoom Room will be connecting to and passing device commands through. An effectively unlimited number of adapters can be added to your profile, one for each endpoint device you have. As of this writing, Zoom supports three adapters:*
 - 1) **Global Cache IP2SL**: *this endpoint has a single serial port connection for RS232 control of a single device*
 - 2) **Global Cache IP2CC**: *this endpoint has three contact closure ports for control of up to three individual relays*
 - 3) **Generic Network Adapter**: *this is any TCP or UDP server on the network*
- **Command** – *this is the specific protocol for a specific function that the 3rd-party device is expecting (such as POWER_ON)*
- **Parameter** – *this is a subset of a command and adds to/replaces part of a command. For example, you might have a command for POWER and parameters for ON and OFF.*
- **Macro** – *this is an automated function that gets triggered when the Zoom Room changes to specific states (such as Meeting Started or Microphone Muted). Commands can be added to macros to automatically trigger them when the macro is called.*

Usage

Below are screenshots and descriptions taking you through the usage of the Profile Maker and the features you will encounter.

Main Screen

When you first navigate to the webpage, you will be presented with the screen/options shown below.



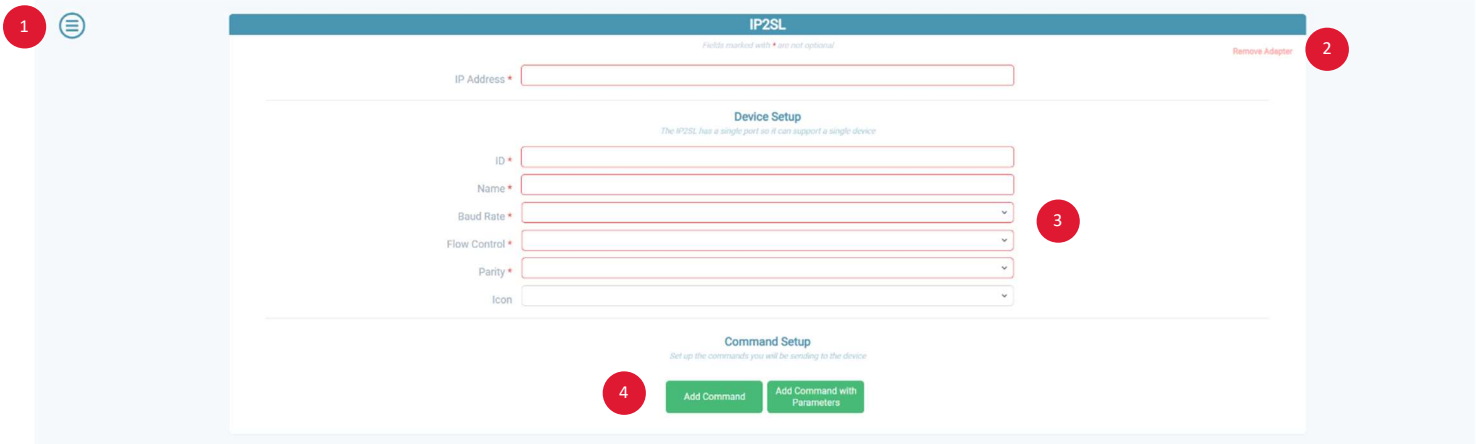
- 1 Press the “Please select an adapter” dropdown to be presented with a list of available adapter types. Once an adapter is selected, the “Add Adapter” button will be enabled. Pressing the “Add Adapter” button will add the selected adapter to the page and allow you to begin configuring it. The adapter selection area will always be available at the bottom of the app and you can continue adding as many adapters as you need. There is no known limitation on the number of adapters the Zoom Room Controller supports.

The screenshots on the pages following this will take you through each of the adapter types and the options they contain.

- 2 Once you have set up all the adapters you need and configured them, press this button to export the data to a JSON file which you can then use as the Zoom Room profile. After pressing this button, the file will be saved in your default download location on your computer and will be named “config.json”.
- 3 Pressing this button will allow you to import an existing config file into the app. Once imported, the app will automatically build itself with the adapters in the imported file and populate the information in each based on the file information. This could be a big time-saver as it will allow you to save config templates on your local machine, import them on a case-by-case basis and adjust details instead of rebuilding configs from scratch every time. One important thing to note is that you should only import configs that have been generated using the Profile Maker app. There is no guarantee that the import will work if you use a file that you generated outside the app/by hand.

IP2SL (Main)

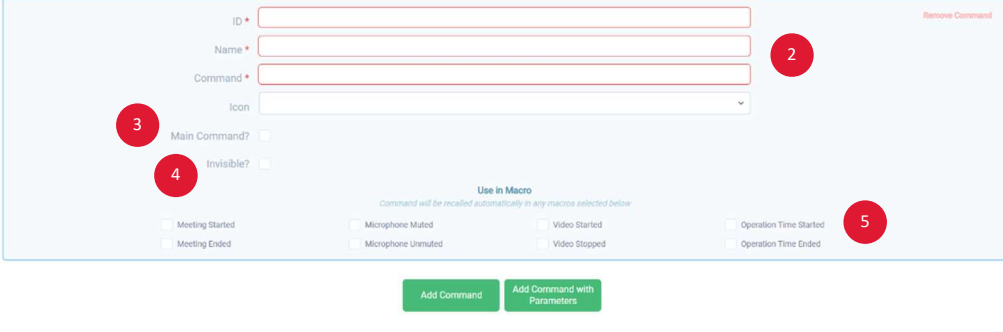
Once you have added an IP2SL adapter, the interface will populate with the adapter shown below.



- 1 Once you have added an adapter of any kind, this button will become available and will always be fixed in the same position at the top left of the screen. Pressing this button will open a side menu (detailed later in this document) allowing you to quickly navigate through the adapters you have added.
- 2 Press to remove the adapter from the app. Note this is a destructive operation. Removing the adapter will destroy all the information you have configured for the adapter.
- 3 The fields present in the center area should be filled out with the desired information. Any fields marked with a red asterisk are mandatory and must be set for the configuration to be accepted by the Zoom Room. Any mandatory field that has not yet been filled in will be highlighted in red.
- 4 Press to add a command or a command with parameters (detailed on the following pages). You can add as many commands and commands with parameters as you desire. There is no known limitation on the number of commands per adapter that the Zoom Room Controller supports.

IP2SL (Command)

If you have added a command to your adapter, the following section will be added within the adapter.



The screenshot shows the "Command Setup" interface. At the top, it says "Set up the commands you will be sending to the device". The form includes fields for ID, Name, and Command, all marked with a red asterisk. Below these is a dropdown for "Icon". There are two checkboxes: "Main Command?" (marked with a red circle 3) and "Invisible?" (marked with a red circle 4). A section titled "Use in Macro" contains several checkboxes: Meeting Started, Meeting Ended, Microphone Muted, Microphone Unmuted, Video Started, Video Stopped, Operation Time Started, and Operation Time Ended (marked with a red circle 5). A "Remove Command" link (marked with a red circle 1) is in the top right. At the bottom are two buttons: "Add Command" and "Add Command with Parameters".

- 1 Press to remove the command from the adapter. Note this is a destructive operation. Removing the command will destroy all the information you have configured for the command.
- 2 The fields present in the center area should be filled out with the desired information. Any fields marked with a red asterisk are mandatory and must be set for the configuration to be accepted by the Zoom Room. Any mandatory field that has not yet been filled in will be highlighted in red. Note the "Command Formatting" section at the end of this document for instructions on formatting the command field.
- 3 Select this box if this command is the primary command for the adapter. All this does is change the layout on the Zoom Room Controller UI and place this command in the most prominent position. Note this checkbox is mutually exclusive and only one command per adapter can have this box checked. The app will automatically ensure this.
- 4 Select this box if you would like the command to be available for use in macros but you want to hide the manual button(s) on the Zoom Room UI.
- 5 Select any macros in which you would like to automatically recall this command.

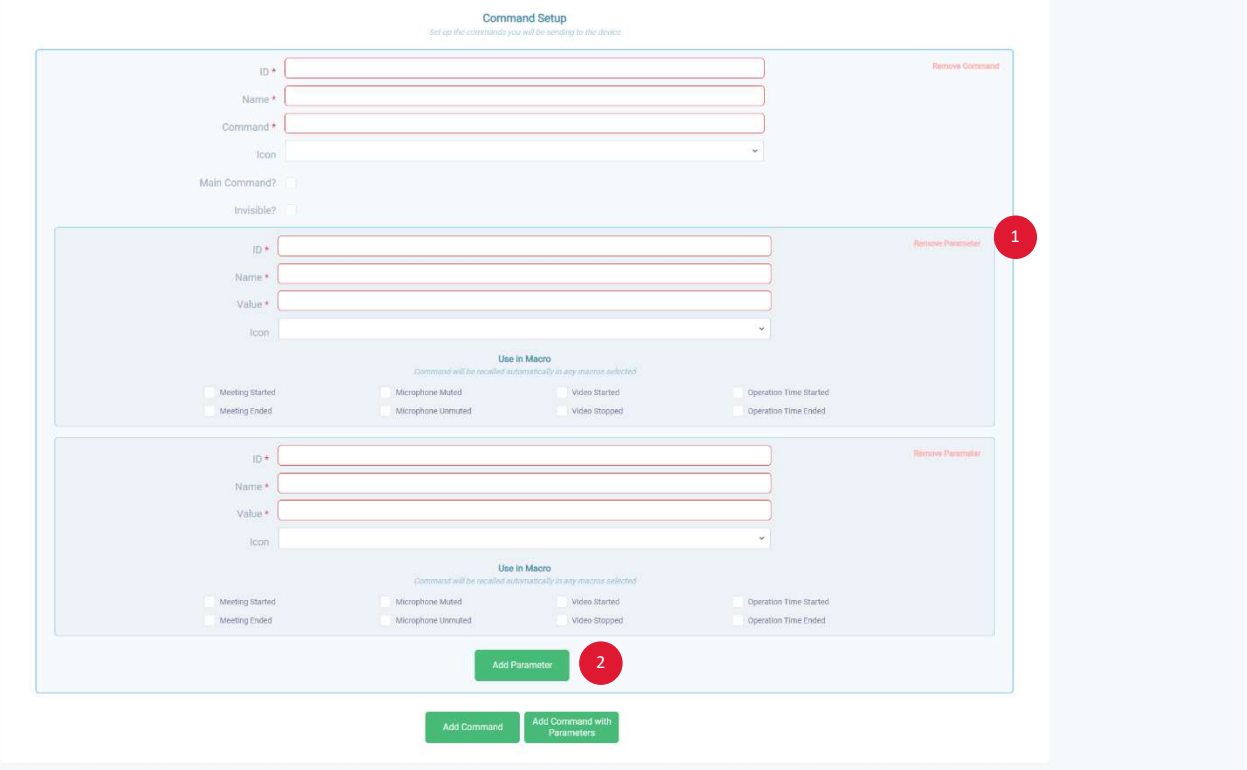
When to use a "normal" command

Use a normal command when you want a single button to be shown on the Zoom Room Controller UI for a particular 3rd-party device control feature. For example, if you have a single power toggle command (instead of discrete power on and power off), you can use a normal command for that. The UI will show a single button for the command and pressing it will send the string that you have entered in the "Command" field.

IP2SL (Command with Parameters)

If you have added a command with parameters to your adapter, the following section will be added within the adapter. Features that are shared with the normal command (on the previous page) will not be specifically noted again here as their functionality is the same.

When adding a command with parameters, two parameters will be added by default. You can add more parameters if necessary. If you only need one parameter, use a normal Command instead of a Command with Parameters.



The screenshot displays the "Command Setup" interface. At the top, it says "Set up the commands you will be sending to the device". The main section is titled "Command Setup" and contains a "Remove Command" button. Below this are fields for "ID *", "Name *", "Command *", and "Icon". There are checkboxes for "Main Command?" and "Invisible?". Below these are two "Parameter" sections, each with "ID *", "Name *", "Value *", and "Icon" fields, and a "Remove Parameter" button. A red circle with the number "1" is placed over the "Remove Parameter" button of the first parameter section. Below the parameter sections is a "Use in Macro" section with the text "Command will be recalled automatically in any macros selected". This section contains several checkboxes: "Meeting Started", "Meeting Ended", "Microphone Muted", "Microphone Unmuted", "Video Started", "Video Stopped", "Operation Time Started", and "Operation Time Ended". At the bottom of the parameter sections is a green "Add Parameter" button with a red circle and the number "2" next to it. At the very bottom of the interface are two green buttons: "Add Command" and "Add Command with Parameters".

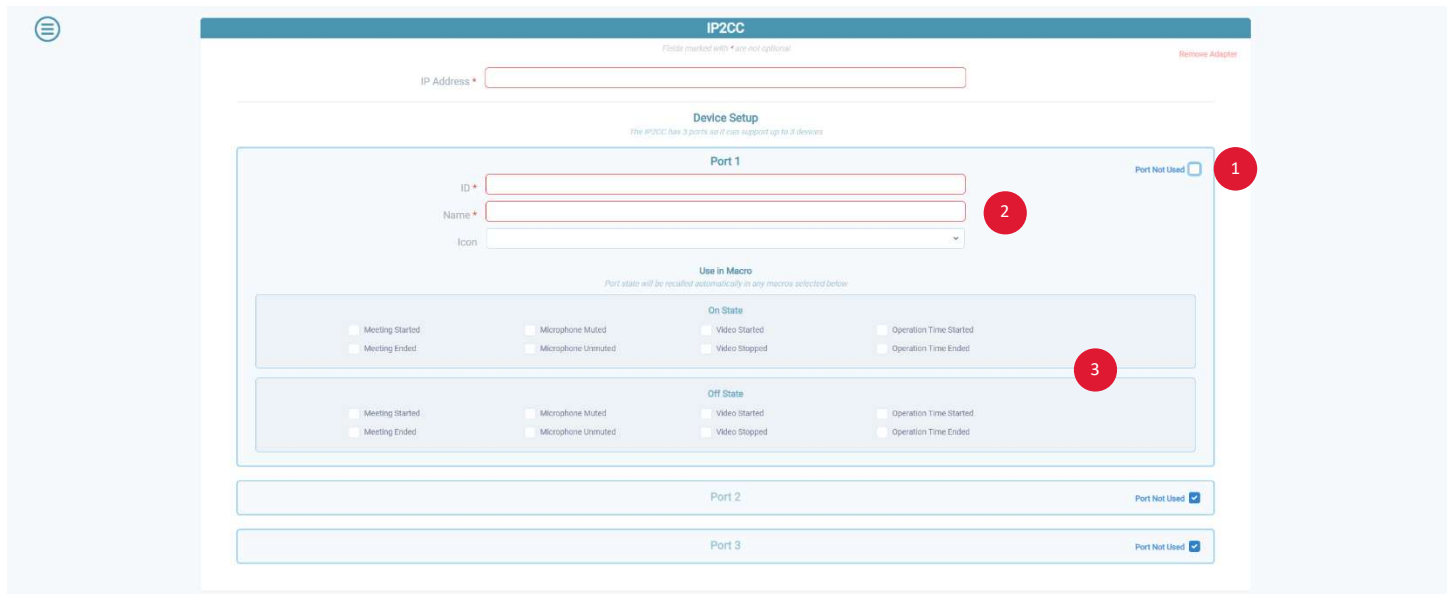
- 1 Press to remove the parameter from the command. Note this is a destructive operation. Removing the parameter will destroy all the information you have configured for the parameter.
- 2 Press to add more parameters to the command.

When to use a command with parameters

Use a command with parameters when you have a command that can have multiple “subcommands” linked to it. For example, if you want discrete power on and power off buttons in a single “Power” section of the Zoom Room Controller UI. In this case, the command would be “Power”, parameter 1 would be “On, and parameter 2 would be “Off”. More information on this topic can be found in the “Command Formatting” section at the end of this document

IP2CC

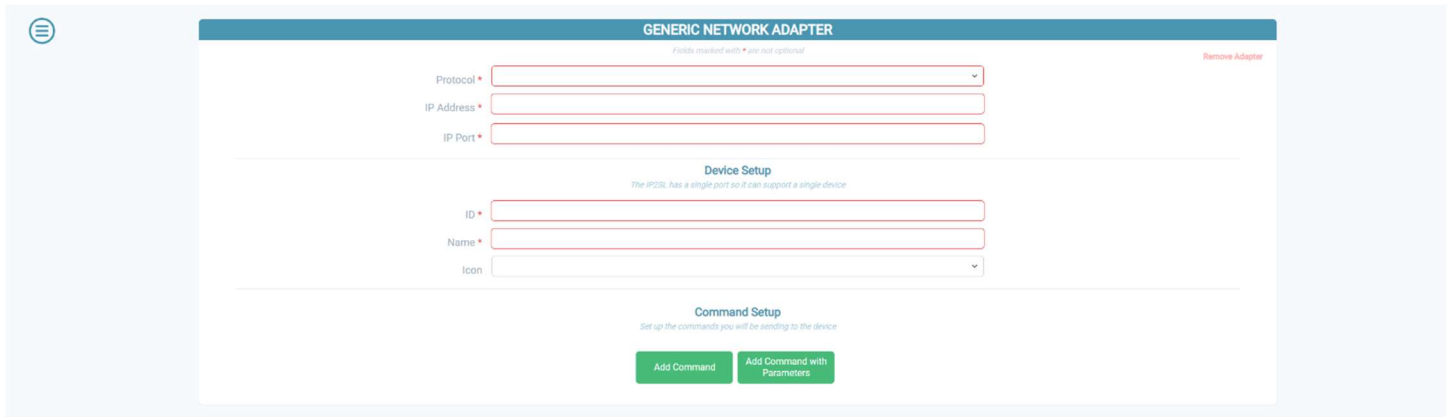
Once you have added an IP2CC adapter, the interface will populate with the adapter shown below. Features that are shared with the IP2SL adapter (on the previous pages) will not be specifically noted again here as their functionality is the same.



- 1 The IP2CC device has three contact closure ports. As such, when adding this adapter, three discrete “port” sections will be added to the adapter section. Since we cannot make any assumptions about which ports you are planning on using, all three are “turned off” by default. If you would like to use any particular port, simply uncheck the “Port Not Used” checkbox. Once unchecked, the port will expand with additional options (shown here).
- 2 The fields present in the center area should be filled out with the desired information. Any fields marked with a red asterisk are mandatory and must be set for the configuration to be accepted by the Zoom Room. Any mandatory field that has not yet been filled in will be highlighted in red.
- 3 Since each port is a contact closure, it can only have two states: on or off. As such, macros can be assigned to recall each state automatically. Note each section is mutually exclusive. For example, you cannot set the “Meeting Started” macro to simultaneously recall both the on and off state for a port. The app will automatically handle this and uncheck the corresponding macro when any state is checked.

Generic Network Adapter

Once you have added a Generic Network Adapter, the interface will populate with the adapter shown below. With the exception of the IP information fields, the Generic Network Adapter is identical in features to the IP2SL (on the previous pages) and those features will not be specifically noted again here as their functionality is the same.



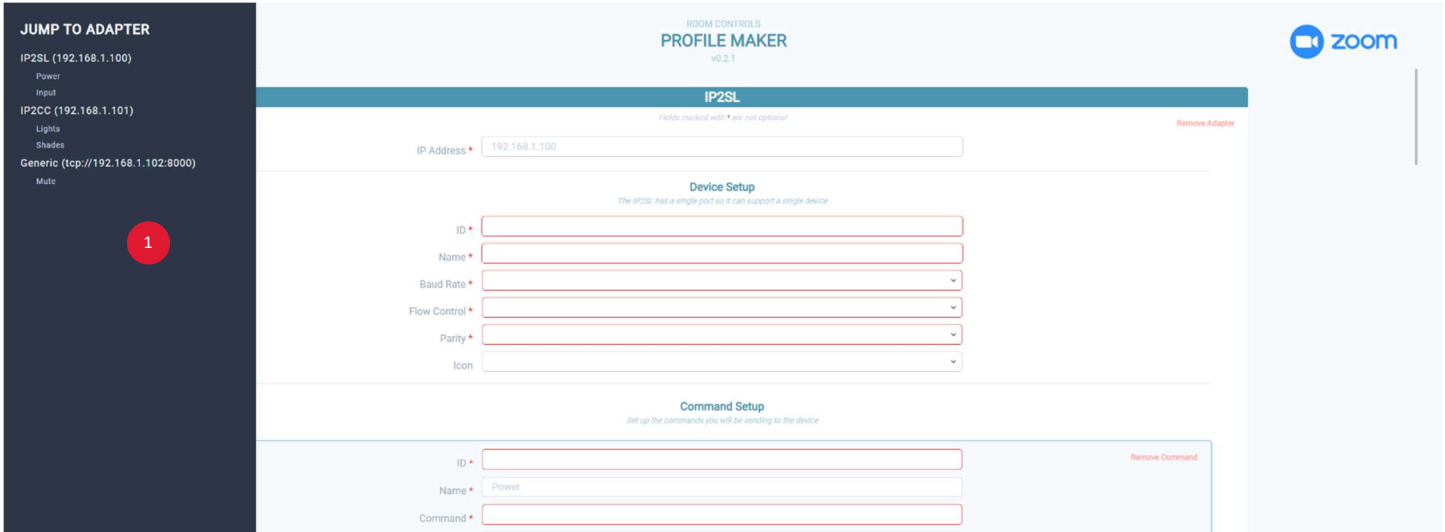
The screenshot displays the configuration interface for a Generic Network Adapter. The interface is titled "GENERIC NETWORK ADAPTER" and includes a "Remove Adapter" link in the top right corner. It is divided into three main sections:

- Protocol Setup:** This section contains three input fields: "Protocol" (a dropdown menu), "IP Address", and "IP Port".
- Device Setup:** This section contains three input fields: "ID", "Name", and "Icon" (a dropdown menu).
- Command Setup:** This section contains two buttons: "Add Command" and "Add Command with Parameters".

Small text annotations include "Fields marked with * are not optional" and "The IP2SL has a single port so it can support a single device".

Adapter Menu

After clicking the Menu button on the top left of the screen, the following menu will slide out from the left hand side of the screen. Selecting an item or pressing anywhere outside the menu will automatically close the menu.



- 1 As you continue adding adapters and commands, the interface can get quite long and it can become cumbersome to constantly scroll through a long list of adapters and commands. Clicking any adapter or command on this menu will automatically scroll to the adapter/command. The list will automatically update as adapters/commands are added/removed.

Command Formatting

Two different command formats can be used in the Profile Maker app: hexadecimal (hex) or ASCII.

Hex Formatting

When sending a hex command, preface each hex character with `\x`

If, for example, you need to send the hex characters: **AA BB 0D**

Type the following as the command string: `\xAA\xBB\x0D`

ASCII Formatting

No special formatting is required for ASCII commands. Just type the text as it appears in the protocol manual for your device.

Commands vs Commands with Parameters

This is a good opportunity to explain the difference between “commands” and “commands with parameters” and how to format each.

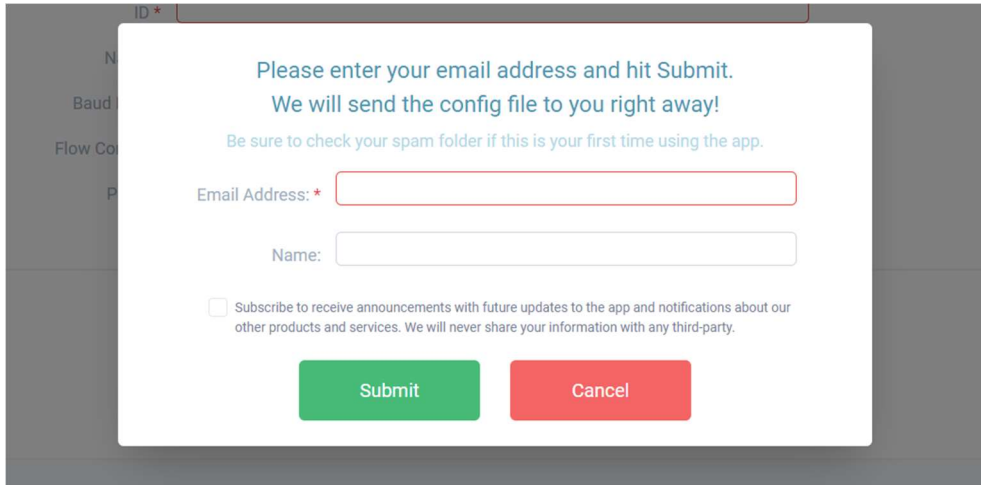
Commands are straightforward. If, for example, you have a display and it has a power toggle command of “POWER”, you would add “POWER” in the command field. On the Zoom UI, a single button will appear and pressing it will send “POWER” each time.

Commands with parameters are a little more complex. If, for example, you have a display and it has discrete power on (“POWER_ON”) and power off (“POWER_OFF”) commands and you want each of these to appear side by side on the UI within the same section, you would use a command with parameters. In this case, you will set the Command field portion of the command to whatever is common between all the parameters and add a % symbol to the part you want to be replaced by the parameters themselves. In the case of the example above, it would look like this:

Command field: POWER_%
Parameter 1 Value field: ON
Parameter 2 Value field: OFF

What will happen here is that you will see one single section on the UI with two buttons: On and Off. Pressing On will send POWER_ON and pressing Off will send POWER_OFF. The Command field has been used and the % part has been replaced by the corresponding parameter values. This may be a little confusing to wrap your head around at first but if it's still unclear we recommend setting up a command with parameters and loading it to get a better sense of how this works.

Exporting to Zoom



Please enter your email address and hit Submit.
We will send the config file to you right away!

Be sure to check your spam folder if this is your first time using the app.

Email Address: *

Name:

Subscribe to receive announcements with future updates to the app and notifications about our other products and services. We will never share your information with any third-party.

Once you have set up your config and have hit the “Export” button, a popup will be shown for you to enter a valid email address where the finished config file will be sent. Once you have entered a valid email address and hit “Submit”, you will receive an email shortly after with the config file attached. The next step is to get this into Zoom so it can be used to configure the Zoom Room Controller to communicate with your devices.

To do this, open up the main Zoom webpage (zoom.us), login and navigate to My Account → Room Management → Zoom Rooms. Here you will see a list of your available Zoom Rooms. Press the Edit button on your desired Zoom Room then click the “Rooms Profile” tab (if you’re not already there).

Navigate down to the “Enable Room Controls” section and enable the toggle button if it’s not already enabled. Next click the “Edit Profile” button. A popup will appear with a text area. Open the “config.json” file that has been saved, copy all the data in it and paste the data into the text area of the popup. Hit “Save” and the profile will load to the Zoom Room. Within about 10 – 15 seconds, the Zoom Room UI will update accordingly and you are now all set to control your 3rd-party devices!

Important Notes

General

- Though not required, it is recommended to fill out fields in sequential order.
- Icons available for selection are those currently allowed by Zoom. Custom or additional icons are not available at this time.
- If you see a “Network Anomaly” message on the Zoom Room Controller UI after uploading a profile, it means something has been misconfigured. The most common causes for this message are 1) a device is offline and the Zoom Room cannot communicate with it, 2) you have entered an IP address incorrectly or 3) you have entered the same IP address on multiple adapters.
- The Profile Maker app has not been set up to be fully responsive at this point. Screens with resolutions below 1280 horizontal pixels will require horizontal scrolling. As such, it is **highly** recommended you do not use the Profile Maker app on a phone or on a tablet with low resolution.

ID Fields

- Cannot have any spaces in them.
- Can be changed but cannot be deleted once they have been set.

Adapters

- You cannot define multiple adapters with the same IP address. Each adapter must have its own IP address.

Icon Behavior

- If an icon is set, the button will show the icon. If an icon is not set, the button will show the Name field. It is recommended you play around with these settings to see the differences for yourself and experiment with what looks best to you.

Importing

- Only import config files that have been created using the Profile Maker app. Do not attempt to manually create a config file (i.e. with a text editor) then import it as even a single type or missing field might cause an import and rendering failure.