



Inception Control4 Driver Setup Guide

Introduction

With the release of Inception firmware version 2.4.0, support for the Control4 home automation system has been added. The driver written for Control4 integrates to the Inception system via an IP connection. The Control4 discovery protocol (SDDP) has been implemented in the Inception controller to allow easy discovery and installation from the Control4 Composer software.

All inputs that are configured in Inception will be available in Control4, allowing them to be used for any additional automation on top of their security and access control roles in Inception. Areas, outputs and doors can also be synced to Control4, allowing them to be controlled from within the Control4 interface.

This setup guide will take you through the process of configuring Inception to accept connections from the Control4 system and determining what items will be synced. It then explains the process of setting up the Control4 driver integration to sync the items and get the most out of the integration.

Prerequisites

- An Inception controller running firmware version 2.4.0 or later
- A PC with Control4 Composer software installed (internally tested with version 2.10.2)
- The `innerrange_inception.c4z` Control4 driver file (once certified, will be available from the online driver database)

Configuring Inception to Accept the REST API Connection

The Control4 driver logs into Inception as a standard web user. The permissions of this user determine what items are synced to Control4 and what can be controlled by default.

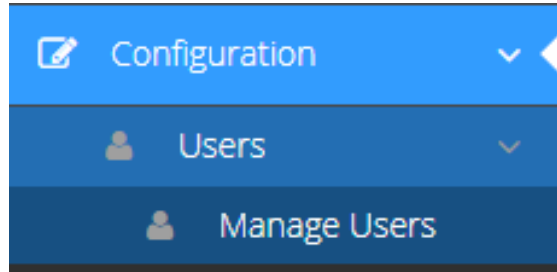
All inputs in the Inception system will be available to Control4 automatically, but only the areas, doors and outputs that this new user has permission to access will be available to Control4. This allows a reduced number of items to be synced across to Control4 to help simplify configuration. Any control requests of areas, outputs or doors that don't require a PIN will also be performed by this user, so this step ensures that the correct permissions for this user are already in place.

If a PIN is provided to perform an action in Control4, the user who is assigned that PIN in Inception will be the one who performs the action, with their permissions checked and their name logged in the review event history. All other commands will be logged as being requested by the API user.

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Configuring Inception to Accept the REST API Connection (cont.)

In the Inception web interface, go to the **[Configuration > Users > Manage Users]** page and create a new user called “Control4 API User”, or another name of your choice. In the credentials section for this user, tick the *Enable Web Login* option, assign a username and password for this user, and set their *Web Page Profile* to REST Web API User.



Enable Web Login

Username

Password

Web Page Profile

This new user will act as the operator who will perform any area, door or output control actions from the Control4 integration by default. This means that this user also needs to have permissions assigned for any of the areas/outputs/doors/etc. that you wish to be able to control from within the Control4 system.

Permissions	Allowed	What	When
	Allow	Door Car Park Door	Access Always
	Allow	Door Front Door	Access Always
	Allow	Door Warehouse Main Door	Access Always
	Allow	Area Administration	Arm Always
	Allow	Area Carpark	Arm Always
	Allow	Area Warehouse	Arm Always
	Allow	Custom Output Office Lighting	Control Always
	Allow	Custom Output Warehouse Lighting	Control Always

Add Items Remove Selected Items

By default, outputs can't be directly controlled by users. For any outputs that you wish to expose for external control, make sure they are configured to be user controllable from the **[Configuration -> Outputs -> Set as User Controllable]** page.

Once this user is created, Control4 can sync with the Inception system..

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Configuring Away / Stay / Instant Areas

By default in Inception, areas can be simply armed or disarmed. The multi-mode arming options available in Control4 must be enabled per-area within Inception, allowing an area to be armed in Away, Stay and Instant modes. This is optional per-area, so you can have a multi-mode House area, but a standard arm Garage and Workshop area for example.

The arm modes have the following behaviour:

- **Full Area (Away)** - Exactly the same behaviour as the standard Arm mode. The whole area is armed with Exit Delay if required. Intended for use when everyone is leaving the area.
- **Home Mode (Stay)** - Arms the area in Home (Stay) mode. Intended for use when people will remain in the area, securing only the perimeter of the building. No exit delay will activate even if requested and only the perimeter inputs are monitored (specified in the "Perimeter Inputs" option below). If a Primary input activates, entry delay will begin (e.g someone opens a door).
- **Sleep Mode (Instant)** - Arms the area in Sleep (Instant) mode. Intended for use when people will remain in the area, but no one is expected to enter or leave. Similar to Home (Stay) mode, no exit delay will activate even if requested and only the perimeter inputs are monitored (specified in the "Perimeter Inputs" option below). Unlike Home (Stay) mode though, if any perimeter input activates (including Primary inputs), the alarm will activate immediately. This allows warning if someone breaks into the front door while everyone is asleep for example.

The modes can be enabled by going to the [**Configuration > Areas > Edit Areas**] page within Inception and to the Inputs section. Tick the *Multi-Mode Arming (Stay/Away/Instant)* option and specify which intruder inputs are in the perimeter of the area. These are the inputs that will be monitored in Home (Stay) and Sleep (Instant) modes.

Multi-Mode Arming (Stay/Away/Sleep)

Perimeter Inputs

Perimeter Inputs
Back Door Reed
Front Door Reed
Lounge Window Reed
Master Bedroom Reed

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Configuring the Control4 Inception Driver

Until the driver is certified, it must be manually loaded into Control4 (in the C:\Users\\Documents\Control4\Drivers folder).

Inception has implemented SDDP and so should be automatically discovered in the Control4 Composer software. Check the Items -> Discovered tab on the right hand side of the window to find the Inception system you wish to add. Alternatively, if you cannot find the Inception system in the discovered devices list, add an instance of the Inception Control4 driver to your project manually, and use the Connections -> Network -> IP Network Connections tab to manually identify the Inception controller by entering its IP address.

Items			
Locations	Discovered	My Drivers	Search
Type	Manufacturer	Model	Address
Security Panel	Inner Range	Inception Security Syst...	INCEPTION-INCEPTION-WT000043

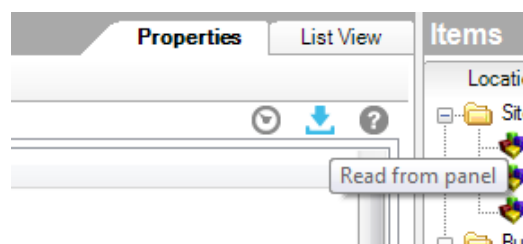
Once added to the Control4 project, the web username and password for the user created in the previous “Configuring Inception” section must be added. These options are configured in the devices properties on the System Design tab of Composer. In addition to the username and password, the “Require User PIN To Arm” option determines if a PIN number should be required to arm the system.

Advanced Properties

Properties	Actions	Documentation	Lua
Status	Online		
Log Level	5 - Trace		
Log Mode	Print		
Version	1.0.001		
Inception Username	control4		
Inception Password	*****		
Require User PIN To Arm	No		

The “Status” option at the top of the properties indicates the current connection state. When online, communications are established and the user has been authenticated.

Once connected, all areas, inputs, outputs and doors can be synced from Inception into Control4. As mentioned before, all inputs will come across, but only the areas, outputs and doors that the Inception user has permission to control will come across.



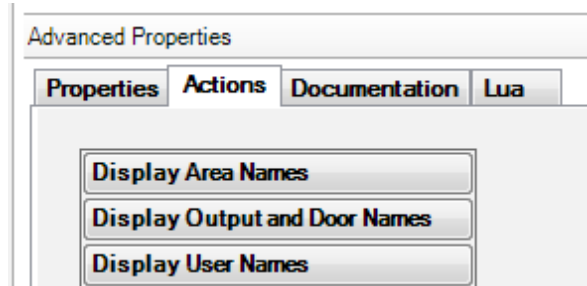
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Configuring the Control4 Inception Driver (cont.)

As the Security interface does not know about doors, the driver will return them as Relay Outputs instead. The driver will automatically name the inputs that come across, but is unable to automatically assign the names of areas and relay outputs.

Inception Security System				
Name	Type	Connection	Input/Output	Connected To
Control Outputs				
Inception Controller - Input 1 Sensor	Control	CONTACT_SENSOR	Output	
Inception Controller - Input 2 Sensor	Control	CONTACT_SENSOR	Output	
8 Input Expander 1 - Input 1 Sensor	Control	CONTACT_SENSOR	Output	Motion Sensor 1->Contact Sensor
8 Input Expander 1 - Input 2 Sensor	Control	CONTACT_SENSOR	Output	Motion Sensor 2->Contact Sensor
8 Input Expander 1 - Input 3 Sensor	Control	CONTACT_SENSOR	Output	Motion Sensor 3->Contact Sensor
8 Input Expander 1 - Input 4 Sensor	Control	CONTACT_SENSOR	Output	
Pgm 1 Relay	Control	RELAY	Output	Door 1->Relay
Pgm 2 Relay	Control	RELAY	Output	Door 2->Relay
Pgm 5 Relay	Control	RELAY	Output	Electronic Gate (Sensor)->Relay

To help identify them, several actions have been added that will list the area, output/door and user names to the Lua output screen. The area names can be used to help identify and rename the Control4 areas, the output/door names can help when assigning these relay outputs to other devices and the user names can help when programming automation commands with variables.



Control4 Device Variables

Several variables have been added to the driver to allow more customizable functionality.

In response to three different events in Inception, four variables each are created (total of twelve) that indicate the item that was controlled, the ID (their number), the name of the user who controlled the item and the user's ID (GUID ID, can be retrieved from the "Display User Names" action). The events include:

- Last Area Armed – Whenever an area is successfully armed in Inception.
- Last Area Disarmed - Whenever an area is successfully disarmed in Inception.
- Last Door Accessed - Whenever a door access request is made in Inception.

These allow custom functionality to be executed when a certain person is the one who accesses a door or area for example.

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Control4 Device Commands

Six commands have been added to make controlling the Inception doors and outputs and custom inputs easier. The outputs and doors can be controlled normally via connections within Control4, however sometimes being able to manually control the relay output directly and skipping the connection step is preferable. Custom inputs can also be controlled directly, allowing Control4 to generate alarm events in Inception if desired.

- Output Control On/Off – Two commands are available to control Inception outputs directly. Within Inception, in order to activate Automated Actions, custom outputs may be used as the trigger. These could be controlled from Control4, but instead of needing to link them with a Connection and controlling that, they can be controlled directly with these commands. The ID number of the relay output to control must be provided. When turning an output on, an optional duration can be configured.
- Door Control – Inception offers a number of door control options, however in Control4 they are treated as outputs and are limited to on/off (unlock/lock). This command offers the same control abilities as within the Inception interface. This allows a door to be unlocked briefly as if an access credential was presented, locked down to prevent credentials from working and several others. The ID number of the door must be provided
- Door Unlock for Time – Allows a simple way to unlock a door for a period of time.
- Turn On/Off Custom Input – Custom inputs in Inception are used like regular hardware inputs, but are controllable by automation. They can be placed in areas for example and assigned an Input Type, triggering alarm responses when activated. The commands allow these custom inputs to be activated and deactivated from Control4. This allows automation or alarm events to be easily activated in response to events in Control4.

For each command, the output/door/input to control can be selected with the [...] button. The options will be automatically filtered, so for example, normal sensor inputs are ignored and only custom inputs can be selected with the Turn On/Off Custom Input commands.

The screenshot shows the 'Inception Security System Actions' configuration window. The main title is 'Perform Grant Access on Door 6 - Front Gate on Living->Inception Security System'. Below this, there are three tabs: 'Commands', 'Conditionals', and 'Loops'. The 'Commands' tab is selected, and a radio button labeled 'Device Specific Command' is checked. Underneath, there is a dropdown menu for 'Control Door'. Below that, there are two rows of configuration fields: 'Door' with the value '6 - Front Gate' and a blue [...] button to its right, and 'Control Type' with the value 'Grant Access' and a dropdown arrow to its right.

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Troubleshooting

- Inception not showing up in Discovered devices

Make sure that the Inception system is properly configured and connected to the local network. If the system is still not showing up in Composer, you will need to note down the IP Address of the Inception device and manually enter it into the Connections -> Network -> IP Network Connections tab of Composer to identify the connection.

- Driver connection fails with status “403 Forbidden”

The driver tries to request the areas, inputs, outputs and doors from Inception. The web profile assigned to user that the driver logs in as must have at least View permissions to Area State, Door State, Input State and Output State. Unless modified, the “Rest Web API User” profile should have these permissions by default.

- Can’t arm Inception areas or control outputs/doors from Control4 system

Ensure that the Control4 API User (in Inception) has been assigned permissions to control each one of the relevant areas, doors and outputs you wish to interact with. If a PIN is used to authenticate as another user (e.g when disarming an area), ensure that user has permission to perform that action.

- New Inception Areas/Inputs/Outputs/Doors are not showing up in the Control4 system

When new items are created in the Inception system after the Control4 driver has done its initial sync, the Control4 driver does not know about these new items until you manually re-sync from Inception by clicking the “Read from panel” button in the top-right corner of the Inception driver properties screen in Composer.



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