



Instruction

Z-Ware SDK 7.18.x Web User Guide

Document No.:	INS14428
Version:	22
Description:	Z-Ware is a Z-Wave Plus v2 SmartStart Web Gateway over ZIPGW. It comes with sample web pages for UI
Written By:	KAJAROSZ;MIKOZIK;ADGIELNI;JFR;PINOWOBI;MASZPIEC
Date:	2022-05-30
Reviewed By:	NTJ;TRBOYD;SCBROWNI;JCC;ABUENDIA;JFR
Restrictions:	Public

Approved by:

Date	CET	Initials	Name	Justification
2022-05-30	06:14:58	NTJ	Niels Johansen	

This document is the property of Silicon Labs. The data contained herein, in whole or in part, may not be duplicated, used or disclosed outside the recipient for any purpose. This restriction does not limit the recipient's right to use information contained in the data if it is obtained from another source without restriction.



REVISION RECORD

Doc. Ver.	Date	By	Pages affected	Brief description of changes
1	20180726	SNA	ALL	SDK v7.00.00: Cloned from SDK v1.11
2	20181011	SNA	3, 33	Clarified role, n/w ops & CC support; Clarified portal registration Tab UI Dimmer, Door Lock; Eng UI Configuration CC
3	20181024	SNA	3	Updated ZIP CC support; Added Tab UI Maintenance (Device) Network Health
4	20181122	SNA	3	v7.00.02 beta: removed older ZIPGW info, Corrected mailbox CC support version
5	20181122	SNA	1	Removed BBB reference
6	20190215 20190220	SNA	ALL	SDK v7.11.0: RPi3B+, Control CC: Window Covering; N/W IMA v2, User Code v2; updated apps URLs; Tab UI: added Windows Covering, Firmware Backup, User Code v2 Eng UI: added Windows Covering, Firmware Backup; updated About Page Removed Lib info, Added reference to Lib Tab/Eng UI: Binary Switch duration; Grant Key reject Eng UI: multilevel switch duration
7	20190318	SNA	2, 3	Corrected controlled & supported CC table, reference in Update Node/Network
8	20190531	SNA	ALL	v7.11.1:CC control, CC support, Scenes Sound switch action, ZIPGW Portal Config, Tab UI: About, Firmware Update, Device page ZIP GW & Portal settings Eng UI: Firmware Update, Binary Sensor, User Code
9	20190913	SNA	ALL	V7.11.2: CC Control, Scenes Action Window Covering Tab UI: Battery, Indicator, Firmware Eng UI: Feature, Battery, Indicator, Firmware
10	20191115 20191205	SNA	ALL	v7.13.0: CC Control - Protection, DoorLock Logging; CC Support - ZIP v5 removed Tab/Phone UI restrictions, Eng UI – Identify, Protection & Doorlock Logging Tab/Phone UI – Identify, Protection & Doorlock Logging Removed Eng UI: Command Queueing Added techpub edits, Moved Multi CMD CC support to ZIPGW, NW MGMT PROXY v3
11	20191226 20200107	SNA	ALL	CC Control: Updated NWMG_PROXY to v2, removed duplicate SENSOR_ALARM, added ZIPGW; CC Support: Overhauled table to show security requirements Tab UI: Maintenance – added ZIPGW tab and Set Learn Mode button CC Support:: corrected Node Provisioning CC details
12	20200110	SNA	ALL	v7.13.1 – clarified Set Learn Mode for cert
13	20200325	SNA	ALL	Removed Web UI & Portal section & updated Eng UI with same info
14	20200417	ADGIELNI	2, 8, 24	Eng UI: Battery CC v3.
14	20200610	PINOWOBI	11-15	Eng UI: Added Network Manager, Settings description
15	20200618	MIKOZIK	lv, 3	- Removed old version "7.13" from table 5 description. - Update Required Security class for: FIRMAWRE_UPDATE_MD, NW_MGMT_BASIC, NW_MGMT_INCLUSION, NW_MGMT_IMA, NW_MGMT_PROXY in table 5
16	20200629	SCBROWNI	ALL	Tech Pubs review
16	20200702	MIKOZIK	ALL	Changed title to 7.14.x
17	20201124	ADGIELNI	2, 3 7, 8, 9 10 16 29	CC Control/CC Support: Added ANTITHEFT_UNLOCK v1, updated NW_MGMT_INSTALLATION_MAINTENANCE to v4, updated NW_MGMT_PROXY to v4, updated NW_MGMT_INCLUSION to v4, updated ZIP_ND to v2. Update Eng UI screenshots. Update Network Manager Node List description Added Z-Wave Long Range Channel Configuration to Network Manager section Added Anti-theft Unlock Interface
17	20201124	MIKOZIK	4.4.1, 4.6	Add info on adding a Long Range node Update Figure 21: SmartStart Add/Edit Device
18	20201130	SCBROWNI	All	Tech Pubs review on new/revised content since last Tech Pubs review
19	20201222	KAJAROSZ	4.4.8	Add more details to Node Identify
19	20210115	MASZPIEC	4.4.10	Update figure
19	20210118	MIKOZIK	4.4.8	Update Node Identification description
20	20210518	MIKOZIK	Cover	Update version to 7.16.x
20	20210518	KAJAROSZ	4.8.26	Explanations regarding portal removal
20	20210519	MIKOZIK	4.4.8.1	Update Node Identification procedure
21	20211122	KAJAROSZ	Cover	Bump version to 7.17.x
22	20220525	KAJAROSZ	1	Change version to 7.18.x

Table of Contents

1	INTRODUCTION	1
1.1	Purpose	1
1.2	Audience and Requirements	1
2	OVERVIEW	2
2.1	Z-Wave Library	2
2.2	CC Control.....	2
2.3	CC Support.....	3
2.4	Scenes.....	4
3	ACCESS.....	6
4	UI	7
4.1	Home.....	7
4.2	About.....	8
4.3	Features.....	9
4.4	Network Manager	10
4.4.1	Add/Remove Node (Optionally On Behalf)	12
4.4.2	Remove/Replace Failed Node (Optionally On Behalf)	13
4.4.3	Update Node.....	14
4.4.4	Reset	14
4.4.5	Update Network.....	14
4.4.6	Learn Mode.....	14
4.4.7	Send Node Info	14
4.4.8	Node Identify	14
4.4.8.1	Identifying Z/IP Gateway/Z-Wave node.....	14
4.4.9	Network Health Check	16
4.4.10	Z-Wave Long Range Channel Configuration.....	16
4.5	Settings.....	16
4.6	SmartStart	18
4.7	Node Controller	20
4.8	Interfaces.....	21
4.8.1	Basic	21
4.8.2	Binary Sensor	22
4.8.3	Multi-Level Sensor	22
4.8.4	Alarm/Notification	23
4.8.5	Meter	23
4.8.6	Battery	24
4.8.7	Binary Switch.....	24
4.8.8	Multi-Level Switch.....	24
4.8.9	Color Switch Interface.....	25
4.8.10	Central Scene Controller	25
4.8.11	Door Lock	26
4.8.12	User Code.....	27

4.8.13	Door Lock Logging Interface.....	28
4.8.14	Barrier Operator Interface	28
4.8.15	Window Covering Interface	28
4.8.16	Anti-theft Unlock Interface	29
4.8.17	Thermostat-Related Interfaces	29
4.8.17.1	Thermostat Fan	29
4.8.17.2	Thermostat Mode and Operating State	29
4.8.17.3	Thermostat SetPoint	31
4.8.18	Sound Switch.....	32
4.8.19	Indicator	32
4.8.20	Naming/Location.....	33
4.8.21	Association	33
4.8.22	Configuration	33
4.8.23	Wakeup	34
4.8.24	Firmware Update	35
4.8.25	Protection	36
4.8.26	Z/IP Gateway.....	36
4.9	Scenes.....	39
4.10	Security Scenes.....	41
REFERENCES		44

Table of Tables

Table 1: UI-Controlled Z-Wave CCs.....	2
Table 2: Controlled Z-Wave CCs Inherited through Library	2
Table 3: Controlled Z-Wave CCs inherited from ZIPGW	3
Table 4: Supported Z-Wave CCs Pushed down from Z-Ware (No Security Requirements)	3
Table 5: ZIPGW SDK Supported Z-Wave CCs	3
Table 6: Scenes Actions Supported.....	5
Table 7: Scenes Event Triggers Supported.....	5
Table 8: Z-Wave Network Buttons Mapping	12

Table of Figures

Figure 1: Z-Ware on RPi3B+	1
Figure 2: Login Page.....	6
Figure 3: Home Page.....	7
Figure 4: About Page	8
Figure 5: Eng UI – Features	9
Figure 6: Scene Features.....	10
Figure 7: Security Scene Features.....	10
Figure 8: Network Manager Page	11
Figure 9: Network Operation Progress	11
Figure 10: Adding node.....	12
Figure 11: S2 Accepting Security Keys	13

Figure 12: S2 Entering DSK.....	13
Figure 13: S2 CSA	13
Figure 14: S2 Set Learn Mode	14
Figure 15: Node identification: the UI with Node Identity button highlighted; Raspberry Pi3B+ hosting Z/IP Gateway and Z-Wave with LED blinking.....	15
Figure 16: Network Health Check	16
Figure 17: Z-Wave Long Range Channel	16
Figure 18: ZIP Gateway Settings	17
Figure 19: Detailed ZIP Gateway settings	17
Figure 20: SmartStart List	18
Figure 21: SmartStart Add/Edit Device	19
Figure 22: SmartStart Z-Wave Reset Required Detection	20
Figure 23: Node Controller Page	21
Figure 24: Basic Interface	21
Figure 25: Binary Sensor Interface.....	22
Figure 26: Multilevel Sensor Interface.....	22
Figure 27: Alarm/Notification Interface	23
Figure 28: Meter Interface.....	23
Figure 29: Battery Interface.....	24
Figure 30: Binary Switch Interface.....	24
Figure 31: Multilevel Switch Interface.....	24
Figure 32: Color Switch Interface	25
Figure 33: Central Scene Controller Interface	25
Figure 34: Door Lock Interface	26
Figure 35: User Code Interface	27
Figure 36: Door Lock Logging Interface	28
Figure 37: Barrier Operator Interface	28
Figure 38: Window Covering Interface	28
Figure 39: Anti-theft Unlock Interface	29
Figure 40: Thermostat Fan Interface	29
Figure 41: Thermostat Mode and State Interface	30
Figure 42: Thermostat Setpoint Interface	31
Figure 43: Sound Switch Interface	32
Figure 44: Indicator Interface	32
Figure 45: Name/Location Interface.....	33
Figure 46: Group Interface	33
Figure 47: Configuration Interface.....	34
Figure 48: Wakeup Interface	35
Figure 49: Firmware Update Interface	35
Figure 50: Protection Interface.....	36
Figure 51: ZIPGW Interface Portal Mode.....	37
Figure 52: ZIPGW Interface Standalone Mode	38
Figure 53: Scenes Page	39
Figure 54: Scene Edit	40
Figure 55: Security Scenes Page	41

Figure 56: Security Scene Edit	42
Figure 57: Security Scene Notification Edit.....	43

1 Introduction

1.1 Purpose

Z-Ware is a Z-Wave controller middleware running over a Z-Wave over IP (Z/IP) Gateway (ZIPGW) as a Web Gateway. Web pages are built into the Z-Ware Web Server providing a simple web UI. Z-Ware is run on a RPi3B+ (Raspberry Pi 3 – see <https://www.raspberrypi.org/products/raspberry-pi-3-model-b-plus/>) platform.

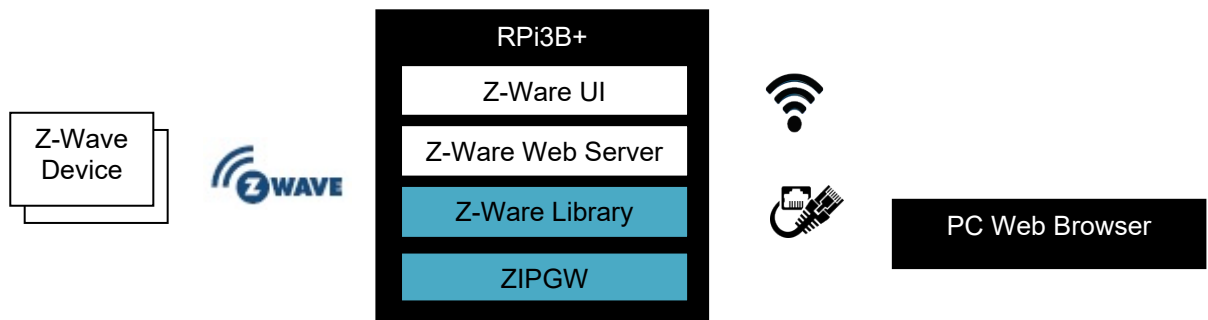


Figure 1: Z-Ware on RPi3B+

This document covers the usage of Z-Ware Web Server.

The diagrams shown in this guide are for Windows® OS with Internet Explorer 8 unless otherwise specified. Your experience may vary slightly depending on your platform configuration.

1.2 Audience and Requirements

Z-Wave Web users

2 Overview

2.1 Z-Wave Library

The Z-Wave Library, which abstracts the ZIPGW, provides Z-Wave Command Class (CC) level APIs and discovery of device capability and state. It is statically linked into the Z-Wave Web Server and provides the following features. Please see [2] Silicon Labs, INS14606, INS, Z-Wave Library User Guide for details on the Library behavior that affects the Web Server.

2.2 CC Control

Z-Wave controls the following CCs and versions:

Table 1: UI-Controlled Z-Wave CCs

CC	Ver	CC	Ver
ANTITHEFT_UNLOCK	1	PROTECTION	2
ASSOCIATION	3	SECURITY	1
ASSOCIATION_GRP_INFO	3	SECURITY 2	1
BARRIER_OPERATOR	1	SENSOR_BINARY	2
BASIC	2	SENSOR_MULTILEVEL	11
BATTERY	3	SOUND_SWITCH	2
CENTRAL_SCENE	3	SWITCH_BINARY	2
CONFIGURATION	4	SWITCH_COLOR	3
DOOR_LOCK	4	SWITCH_MULTILEVEL	4
DOOR_LOCK_LOGGING	1	THERMOSTAT_FAN_MODE	5
FIRMWARE_UPDATE_MD	7	THERMOSTAT_FAN_STATE	2
INDICATOR	3	THERMOSTAT_MODE	3
MANUFACTURER_SPECIFIC	2	THERMOSTAT_OPERATING_STATE	2
METER	5	THERMOSTAT_SETPOINT	3
MULTI_CHANNEL	4	TIME	2
MULTI_CHANNEL_ASSOCIATION	4	USER_CODE	2
NW_MGMT_BASIC	2	VERSION	3
NW_MGMT_INCLUSION	4	WAKE_UP	2
NW_MGMT_INSTALLATION_MAINTENANCE	4	WINDOW_COVERING	1
NW_MGMT_PROXY	4	ZIP_GATEWAY	1
NODE_NAMING	1	ZIP_PORTAL	1
NODE_PROVISIONING	1	ZWAVEPLUS_INFO	2
NOTIFICATION/ALARM	8		

Table 2: Controlled Z-Wave CCs Inherited through Library

CC	Ver	CC	Ver
SENSOR_ALARM	1	NO_OPERATION	1
APPLICATION_STATUS	1	POWERLEVEL	1
CRC_16_ENCAP	1	SUPERVISION	1
DEVICE_RESET_LOCALLY	1	ZIP	5
MULTI_CMD	1	ZIP_ND	2

Table 3: Controlled Z-Wave CCs inherited from ZIPGW

CC	Ver	CC	Ver
INCLUSION CONTROLLER	1	TRANSPORT_SERVICE	2

NODE_PROVISIONING CC is only present when Z-Wave is operating as a Z-Wave SIS.

2.3 CC Support

For easier reference during certification, supported CCs (including those inherited from ZIPGW) are shown below.

Table 4: Supported Z-Wave CCs Pushed down from Z-Wave (No Security Requirements)

CC	Ver
ASSOCIATION	3
ASSOCIATION_GRP_INFO	3
DEVICE_RESET_LOCALLY	1
MULTICHANNEL_ASSOCIATION	4

Table 5: ZIPGW SDK Supported Z-Wave CCs

CC	Ver	Not Added	Required Security classes when added	On Secure Inclusion Failure
APPLICATION_STATUS	1	X	None	X
CRC_16_ENCAP	1	X	None	X
FIRMWARE_UPDATE_MD	5		Highest granted security class - not supported when included non-securely	
INCLUSION_CONTROLLER	1	X	None	X
INDICATOR	3	X	Highest granted security class	X
MAILBOX	2		LAN-side only	
MANUFACTURER_SPECIFIC	2	X	Highest granted security class	X
MULTI_CMD	1	X	None	X
NODE_PROVISIONING	1		Access Control, only when SIS	
NW_MGMT_BASIC	2		Highest granted security class - not supported when included non-securely	
NW_MGMT_INCLUSION	4		Highest granted security class - not supported when included non-securely	

NW_MGMT_IMA	4		Highest granted security class - not supported when included non-securely	
NW_MGMT_PROXY	4		Highest granted security class - not supported when included non-securely	
POWERLEVEL	1	X	Highest granted security class	X
SECURITY	1	X	None	
SECURITY_2	1	X	None	X
SUPERVISION	1	X	None	X
TRANSPORT_SERVICE	2	X	None	X
TIME	1	X	None	X
VERSION	3	X	Highest granted security class	X
ZIP	4		LAN-side only	
ZIP_GATEWAY	1		LAN-side only	
ZIP_ND	2		LAN-side only	
ZIP NAMING	1		LAN-side only	
ZIP PORTAL	1		LAN-side only	
ZWAVEPLUS_INFO	2	X	None	X

Z-Wave does nothing on receiving Basic CC Set or Get, unless the Basic Set from any particular node or endpoint is used as a Scene trigger. Z-Wave supports only 1 Association group supporting 1 node for Lifeline. This node will receive the Device Reset Locally command.

2.4 Scenes

A Z-Wave Scene is a set of actions that may be activated by triggers. An action is a Z-Wave SET command, such as turning on a switch. A trigger may be a user request through a UI element, by schedule, or on an event. A schedule can be set to execute a Scene on any or every day of the week at a preset time. A schedule remains active until it is disabled or deleted. An event refers to the receipt of a Z-Wave report, typically a sensor report, such as motion sensed. The scene state, i.e., whether it is completely activated, can also be monitored.

A Z-Wave Security Scene is a special Scene that can be armed or disarmed by an event trigger or through the UI. It can only be alarmed when it is armed. When alarmed, it can send out alerts using email and/or SMS. Arming, disarming, and alarming can also be configured to activate normal scenes.

The CCs and commands supported for Scenes actions and triggers are shown below. For Central Scene CC, only the Key Pressed attribute is used.

Table 6: Scenes Actions Supported

CC	Command(s)
BASIC	SET
SWITCH_BINARY	SET
SWITCH_MULTILEVEL	SET, START_LEVEL_CHANGE
SWITCH_COLOR	SET
DOOR_LOCK	OPERATION_SET
BARRIER_OPERATOR	SET
THERMOSTAT_SETPOINT	SET
THERMOSTAT_MODE	SET
SOUND_SWITCH	TONE_PLAY_SET
WINDOW_COVERING	SET, START_LEVEL_CHANGE

Table 7: Scenes Event Triggers Supported

CC	Command	Scene	Security Arm/Disarm	Security Alarm
BASIC	SET	Y		Y
SENSOR_BINARY	REPORT	Y		Y
SENSOR_MULTILEVEL	REPORT	Y		
NOTIFICATION	REPORT	Y		Y
DOOR_LOCK	REPORT	Y	Y	
CENTRAL_SCENE	NOTIFICATION	Y	Y	

3 Access

The image shows the Z-Wave login page. On the left, there is a large graphic with a colorful geometric background. It features the text "Z-Ware" at the top in white, and a large "Z WAVE" logo in the center, where the "Z" is inside a dark blue circle with three curved lines above it. On the right side of the page, there is a login form. It consists of two rounded rectangular input fields. The first field contains the text "test". The second field contains a series of dots, indicating a password. Below these fields is a checkbox with an orange checkmark and the text "Remember me". Below the checkbox is a large orange button with the text "Log in". At the bottom right of the page, there are two links: "Register" and "Forgot password?", both in orange text.

Figure 2: Login Page

Users access their accounts on the machine they have installed at `https://<machine IP address>`. The default username and password are 'user' and 'smarthome' respectively.

4 UI

4.1 Home

After successful login, the user can view on the Home page whether or not the controller is already initialized. All Web pages have a navigation menu on the left. The home page shows the details of the local controller.

Menu	Z-Wave
Home	
SmartStart	
Network Manager	
Node Controller	
Scenes	
Security Scenes	
Settings	
Feature	
About	
Change Password	
Logout	

Home Id	E5116394
Local Node Id	1
Network Role	Inclusion; Proxy;
Controller Capability	S2; Inclusion on-behalf; SmartStart; IMA; Identify; Long Range;
Controller Z-Wave Role	SIS
S2 Capable Network	Yes

Figure 3: Home Page

The menu bar on the left is used to navigate to other pages described in the subsequent chapters. The user may log out anytime by clicking the “Logout” Menu option. “Change Password” Menu option can be used to change the password which has to be 8 to 16 UTF-8 characters. Resetting the password is done by the start menu item in Windows OS, or a script in Linux OS, or an application in OS X.

4.2 About

The About page displays the information obtained from the server by using zw_info API. The information is categorised into two different tables, namely General and Version information as shown below.

About	
General Information	
Vendor	Z-Wave
Product	Z-Wave and Z-Wave Apps
Server Platform	Linux
Server Status	Initialized
Username	
Home Id	E5116394
Local Node Id	1
Current Z/IP Gateway	192.168.3.81
Server IP Address	192.168.3.200
Client IP Address	192.168.3.115
Version Information	
Z-Wave Lib	11.00
Z-Wave Web	7.15.0
Z-Wave Web API	1.36
Z-Wave App UI Engineering	2.70.2
Z-Wave App UI Web	21.46

Figure 4: About Page

4.3 Features

This page lists the features – CCs, interfaces, and versions.

Command Class	Command	Web API
Command Class Alarm	8	1
Command Class Anti-theft Unlock	1	1
Command Class Association	3	1
Command Class Association	3	1
Command Class Barrier Operator	1	1
Command Class Basic	2	1
Command Class Battery	3	1
Command Class Central Scene	3	1
Command Class Configuration	4	1
Command Class Door Lock	4	1
Command Class Door Lock	1	1
Command Class Firmware Update	7	1
Command Class Indicator	3	1
Command Class Meter	5	1
Command Class Multi Channel	4	1
Command Class Node Naming	1	1
Command Class Protection	2	1
Command Class Sensor Binary	2	1
Command Class Sensor Multilevel	11	1
Command Class Sound Switch	2	1
Command Class Switch Binary	2	1
Command Class Switch Color	3	1
Command Class Switch Multilevel	4	1
Command Class Thermostat Fan	5	1
Command Class Thermostat Fan	2	1
Command Class Thermostat	3	1
Command Class Thermostat	2	1
Command Class Thermostat	3	1
Command Class Time	2	1
Command Class User Code	2	1
Command Class Version	3	1
Command Class Wake Up	2	1
Command Class Window	1	1
Command Class Z/IP Gateway	1	1
Command Class Z/IP Portal	1	1
Command Class Z-Wave+ Info	2	1

Figure 5: Eng UI – Features

Scene Action Feature

Command Class	Command Class	Web API Command	Web API version
Command Class Barrier Operator	1	BARRIER_OP_SET	1
Command Class Basic	2	BASIC_SET	1
Command Class Door Lock	4	DLOCK_OP_SET	1
Command Class Sound Switch	1	SOUND_SWITCH_TONE_PLAY_SET	1
Command Class Switch Binary	2	BINARY_SWITCH_SET	1
Command Class Switch Color	3	COLOR_SWITCH_SET	1
Command Class Switch Multilevel	4	MULTILEVEL_SWITCH_SET MULTILEVEL_SWITCH_LVL_CHG_SET	1
Command Class Thermostat Mode	3	THRMO_MODE_SET	1
Command Class Thermostat Setpoint	3	THRMO_SETPT_SET	1
Command Class Window Covering	1	WINDOW_COVERING_SET WINDOW_COVERING_LEVEL_CHANGE_SET	1

Scene Event Feature

Command Class	Command Class	Web API Command	Web API version
Command Class Alarm	8	ALARM_GET	1
Command Class Basic	2	BASIC_EVENT	1
Command Class Central Scene	3	CENTRAL_SCENE_REPORT	1
Command Class Door Lock	4	DLOCK_OP_GET	1
Command Class Sensor Binary	2	BINARY_SENSOR_GET	1
Command Class Sensor Multilevel	11	MULTILEVEL_SENSOR_GET	1

Figure 6: Scene Features

Security Scene Arm Feature

Command Class	Command Class	Web API Command	Web API version
Command Class Central Scene	3	CENTRAL_SCENE_REPORT	1
Command Class Door Lock	4	DLOCK_OP_GET	1

Security Scene Disarm Feature

Command Class	Command Class	Web API Command	Web API version
Command Class Central Scene	3	CENTRAL_SCENE_REPORT	1
Command Class Door Lock	4	DLOCK_OP_GET	1

Security Scene Alarm Feature

Command Class	Command Class	Web API Command	Web API version
Command Class Alarm	8	ALARM_GET	1
Command Class Basic	2	BASIC_EVENT	1
Command Class Sensor Binary	2	BINARY_SENSOR_GET	1

Figure 7: Security Scene Features

4.4 Network Manager

The Network Manager menu lists nodes in the network and allows network operations, such as include/exclude.

The Z-Wave node/vendor/product ID, product types, and categories are shown. Further:

- Nodes with a lock icon contain at least one secure interface
- Non-listening nodes have a 'zz' superscript sleep indicator
- Nodes with a 'R' icon are running in restricted mode
- Nodes with a 'LR' icon are included as Z-Wave Long Range node
- Failed nodes are shown in red and can be selected for replace/remove failed node operations.

Z-Wave+ information and version information from the node is also displayed at the bottom when the ">>" icon in the node entry is clicked.

Network Manager

☒ Broadcast

Node Id	Vendor	Product Id	Product Type	Category	Security	Health	
1	Z-Wave	1	1		[S0] [S2.0] [S2.1] [S2.2]		>>
8	Zoos	40964	40960		[S2.0]		>>
9	Ingersoll Rand (was Ecolink)	2	1	Sensor	[Non-Secure]		>>
10	Allegion	1129	1	Door lock with keypad	[S2.2]		>>

Library Type : Bridge Controller
 Protocol Version : 7.12
 Z-Wave Chip Firmware Version : 7
 Z-Wave Chip Firmware Sub Version : 12
 Flirs Device : No
 Sleeping Device : No
 Hardware Version : 1
 Firmware Version List :

Target	Version	Sub Version
1	7	13
2	2	3

Figure 8: Network Manager Page

Progress information for all operations is shown to give immediate feedback to the user.

Adding node... Getting detailed node information...

Please wait...

Figure 9: Network Operation Progress

The network operations are similar to the PC Controller software and will not be elaborated here. A quick map of operations to buttons is provided below.

Table 8: Z-Wave Network Buttons Mapping

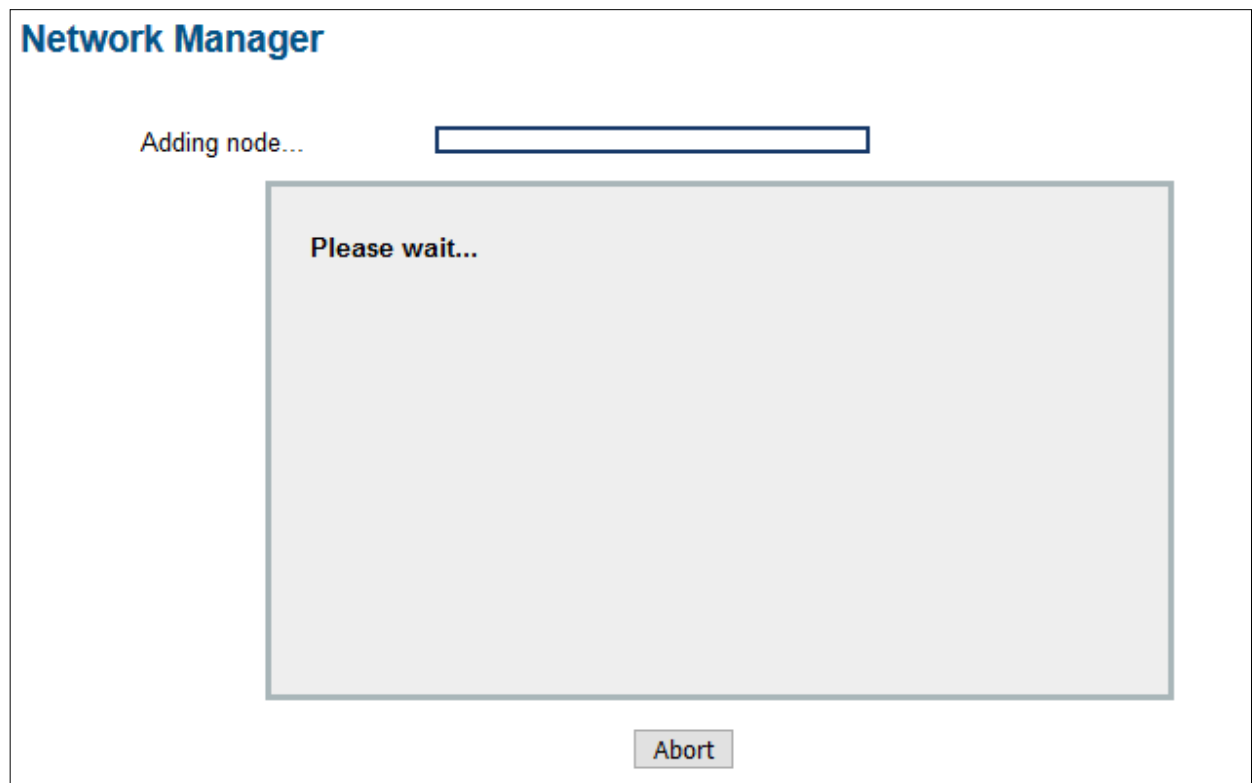
Z-Wave Network Operation	Button(s)
Include nodes	Add Node
Exclude nodes	Remove Node
Include into an existing network	Learn Mode
Factory Reset	Reset

Network operation buttons are shown based on the role of the attached controller, for example, Add Node will not show a secondary controller. Node Identify button is enabled for nodes that support Indicator CC Identify ID.

4.4.1 Add/Remove Node (Optionally On Behalf)

This is a Z-Wave include/exclude network operation for non-SmartStart devices. Devices are automatically named if not previously named in the Node Naming CC. ZIPGW will always try classic inclusion first, then automatically proceed to Network Wide Inclusion (NWI) when it fails.

Note: While this operation can be aborted at any time with 'Abort' button, it is a compound operation that may perform secure bootstrapping and elaborate device discovery after a normal Z-Wave inclusion. Therefore, after abort, the device may still be included but insecurely or with interfaces undiscovered.

**Figure 10: Adding node**

With Security 2, DSK information may need to be entered and security keys granted/accepted.

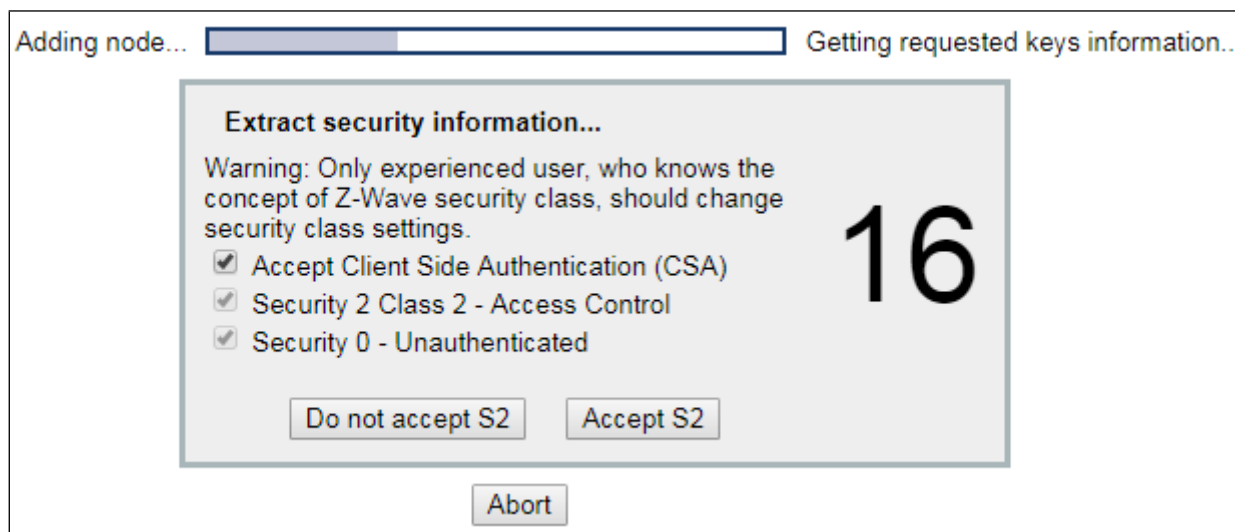


Figure 11: S2 Accepting Security Keys



Figure 12: S2 Entering DSK

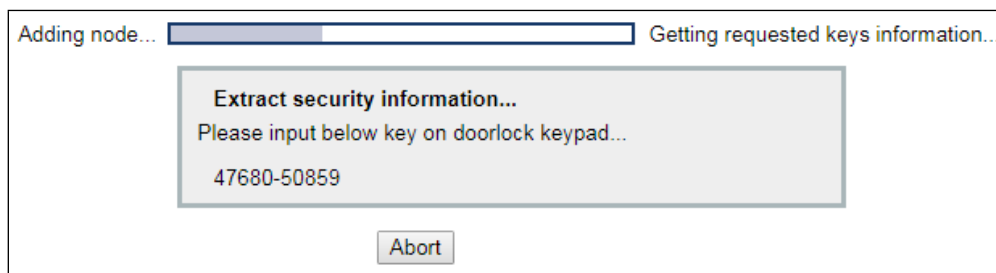


Figure 13: S2 CSA

Note: To add a Long Range node, the user needs to add an entry to a Smart Start provisioning list with Long Range SmartStart Bootstrapping mode enabled.

4.4.2 Remove/Replace Failed Node (Optionally On Behalf)

This is a Z-Wave network function on failed devices. As with most network operations, it can be aborted. For Replace Failed node on Security 2 devices, additional pop ups, will appear.

4.4.3 Update Node

It rediscovers and updates the device – see [2].

4.4.4 Reset

This is the Z-Wave Set Default network operation.

4.4.5 Update Network

The rediscovers and updates all devices in the network – see [2] for details.

4.4.6 Learn Mode

This performs the Z-Wave Set Learn Mode network operation to allow this controller to join or be removed from a network. The corresponding including or removing controller needs to start Add or Remove node operation accordingly. To complete an S2 inclusion, the DSK may need to be entered on the including Controller.

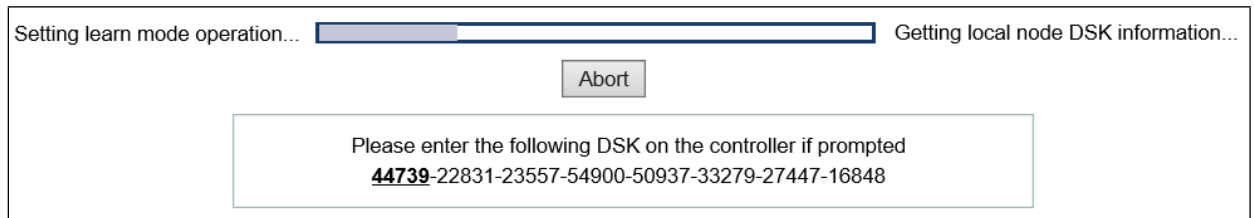


Figure 14: S2 Set Learn Mode

4.4.7 Send Node Info

This sends the attached controller's Z-Wave Node Information Frame to the device.

4.4.8 Node Identify

This sends a command to chosen node to identify itself. The command parameters are as follows (see Indicator Command Class in [8]):

- On/Off Period 800ms,
- On/Off Cycles 3,
- On time within an On/Off period 600ms.

4.4.8.1 Identifying Z/IP Gateway/Z-Ware node

To identify the Z/IP Gateway/Z-Ware node one may:

- Using Z-Ware UI:
 1. Go to the Network Manager tab
 2. Select the Z/IP Gateway/Z-Ware row
 - i. *Hint: The Z/IP Gateway Node Id can be read in the About tab (Local Node Id field)*
 3. Click the Node Identity button
- Or using another Controller:
 1. Send to Z/IP Gateway Node the Node Identify command (Indicator CC, INDICATOR_SET, Indicator ID: 0x50).

As a result, the Raspberry Pi hosting the Z/IP Gateway will blink the LED onboard as described in 4.4.8.



Figure 15. Node identification: the UI with Node Identity button highlighted; Raspberry Pi3B+ hosting Z/IP Gateway and Z-Ware with LED blinking

4.4.9 Network Health Check

Network Manager

Network health check is done!

Add Node Add Node(Dsk) Add Node On Behalf Add Node On Behalf(Dsk) Remove Node

Replace Failed Node Replace Node(Dsk) Replace Node On Behalf Replace Node On Behalf(Dsk)

Remove Failed Node

Network Health Check Update Network Reset

Learn Mode

☒ Broadcast Send Node Info Update Node Node Identify

Node	Vendor	Product	Product	Category	Security	Health	
1	Z-Wave	1	1		[S0] [S2.0] [S2.1]		>>
6	Z-Wave	8	3		[Non-Secure but	<input type="checkbox"/> 0/10	>>
7	Residential Control	21554	21570	Thermost	[Non-Secure]	<input checked="" type="checkbox"/> 8/10	>>

Figure 16: Network Health Check

4.4.10 Z-Wave Long Range Channel Configuration

Allows one to configure channel used by Z-Wave Long Range. Two channels are supported: Primary and Secondary.

Network Manager

Add Node Add Node(Dsk) Add Node On Behalf Add Node On Behalf(Dsk) Remove Node

Replace Failed Node Replace Node(Dsk) Replace Node On Behalf Replace Node On Behalf(Dsk) Remove Failed Node

Network Health Check Update Network Reset

Learn Mode

☒ Broadcast Send Node Info Update Node Node Identify

Set LR Channel Primary Get LR Channel Primary

Node Id	Vendor	Product Id	Product Type	Category	Security	Health	
1	Z-Wave	1	1		[S0] [S2.0] [S2.1] [S2.2]		>>

Figure 17: Z-Wave Long Range Channel

4.5 Settings

This page allows configuring the connected ZIP GATEWAY.

Settings

Current Z/IP Gateway Name/Address : **192.168.1.101**
 Current Port for Unsolicited Reports : **None**

Configure Z/IP Gateway Name/Address

Configure Port for Unsolicited Reports

Enter Pre-Shared Key

Figure 18: ZIP Gateway Settings

Detailed configuration of ZIP GATEWAY and ZIP PORTAL is accessible under Node Controller page.

Node Controller

Node Id	Vendor	Product Id	Product Category	Security
1	Z-Wave	1	1	[S0] [S2.0] [S2.1] >>
6	Z-Wave	8	3	[Non-Secure but >>

Endpoint Id	Generic Device	Specific Device	Name	Location
0	Static Controller	Gateway	CONTROLLER 0	

Time Settings

Gateway Settings

Mode : Stand-alone
 Last Updated Time : May 26, 2020 1:14:50 PM
 Mode

Configuration Parameters
☒ Lock ☐ Unlock
☒ Show ☐ Hide
 Configuration Parameter controls does not indicate the current state of these settings

Unsolicited Destination Address 192.168.1.100
 Unsolicited Destination Port : 46558
 Last Updated Time : May 26, 2020 1:14:50 PM
 Local Address 192.168.1.100
 Local Port : 46558

Unsolicited Destination Address
 Unsolicited Destination Port

Portal Settings

Firmware Settings

Name/Location Settings

Figure 19: Detailed ZIP Gateway settings

4.6 SmartStart

On entry, the current provisioning list is shown. Each node has its status shown on the right. If a device added to the list is not SmartStart-capable, this is indicated with a '!' icon next to the status and normal Z-Wave inclusion, i.e., 'Add Device', has to be used.

[Refresh Device List](#)
[Add Device](#)
[Delete All Devices](#)

Name	Location	DSK	Node Status	
Doorlock A	Master room	18083-60918-08404-49340-01439-15892-37826-53267	Not included	▶
New bin switch	On my table	24209-60844-51551-25044-05326-38990-55017-32664	Included	▼

🔍 ↻ ✕
Detail Info

DSK : 24209-60844-51551-25044-05326-38990-55017-32664

Name : New bin switch

Location : On my table

Product Type :

Generic Device Class	Specific Device Class	Installer icon
Binary Switch	On/Off Power Switch	On/Off Power Switch Device Type

Product Id :

Vendor	Product Id	Product Type	Application Version	Sub Version
Z-Wave	1234	234	1	12

Interval : 30

UUID : sn:1234ABCD12341234

Status : Ignored

Grant Keys :

Boot Mode : Smart Start Bootstrapping mode

Node Id : 54

Node Status : Included

Multi switch	Master room wall	24208-60844-51551-25044-05326-38990-55017-32664	Not included	! ▼
--------------	------------------	---	--------------	-----

🔍 ↻ ✕
Detail Info

DSK : 24208-60844-51551-25044-05326-38990-55017-32664

Name : Multi switch

Location : Master room wall

Product Type :

Generic Device Class	Specific Device Class	Installer icon
Multilevel Switch	Multilevel Power Switch	Light Dimmer Switch Device Type

Product Id :

Vendor	Product Id	Product Type	Application Version	Sub Version
HomeSeer Technologies	1345	13	2	11

Interval : 10

UUID :

Status : Pending

Grant Keys : S2.0 Unauthenticated | S2.1 Authenticated | S2.2 Access Control

Boot Mode : S2 Bootstrapping mode !

Node Id : Not assigned

Node Status : Not included

Figure 20: SmartStart List

Nodes can be added to this list using the 'Add Device' button on top. Clicking on the right arrow at the right of each node allows viewing the details. In the detailed view, the node can be refreshed, deleted, or edited. Adding a node and editing a node lead to the same page. In the edit page, a node in pending status can be ignored by selecting the 'ignore' radio button.

SmartStart nodes in the list that have already joined other networks when detected will cause a 'device joined other network' popup.

Provisioning Device

DSK

34028-23669-20938-46346-33746-07431-56821-45678

Name

Location

Product Type

Generic Device Class

Specific Device Class

Installer icon

Product Id

Vendor

Product Id

Product Type

Application Version

Sub Version

Interval

UUID

Status

☒ Pending

☐ Ignored

Grant Keys

☒ Controller decides the best grant key to use

☐ I decide myself

Boot Mode

☒ SmartStart Bootstrapping mode

☐ S2 Bootstrapping mode

☐ Long Range SmartStart Bootstrapping mode

Supported protocols

☐ Classic

☐ Long range

Figure 21: SmartStart Add/Edit Device

Refresh Device List
Add Device
Delete All Devices

Device joined other network

The following device from provisioning list has joined another network. Please reset the device to join the local network.

DSK : 18083-60918-08404-49340-01439-15892-37826-53267

Name : Doorlock A

Location : Master room

OK

Device joined other network

The following device from provisioning list has joined another network. Please reset the device to join the local network.

DSK : 24209-60844-51551-25044-05326-38990-55017-32664

Name : New bin switch

Location : On my table

OK

Name	Location	DSK	Status
Doorlock A	Master room	18083-60918-08404-49340-01439-15892-37826-53267	Pending ▶
New bin switch	On my table	24209-60844-51551-25044-05326-38990-55017-32664	Pending ▶

Figure 22: SmartStart Z-Wave Reset Required Detection

4.7 Node Controller

This page also lists all nodes in the network. The selected node's endpoints and device classes and the selected endpoint's interfaces are shown. Endpoints that support Z-Wave Plus are shown with a 'Z+' icon. Secure interfaces are shown with a lock icon. Clicking the arrow on the interface tab reveals the elements within for specific control or monitoring.

Node Controller

Node Id	Vendor	Product Id	Product	Category	Security	Health
1	Z-Wave	1	1		[S0] [S2.0] [S2.1] [S2.2]	>>
6	AEON Labs	98	3		[S0]	>>
7	Vision Security	258	8193	Sensor	[Non-Secure]	>>

Library Type : Enhanced Slave
 Protocol Version : 4.05
 Z-Wave Chip Firmware Version : 1
 Z-Wave Chip Firmware Sub Version : 1
 Flirs Device : No
 Sleeping Device : No
 Hardware Version : 98
 Firmware Version List : None

Endpoint Id	Generic Device Class	Specific Device Class	Name	Location
0	Multilevel Switch	Multilevel Power Switch		>>

Role Type : Always On Slave
 Node Type : Z-Wave+ node
 Installer icon : 1536
 User icon : 1536

- ▶ Multilevel Switch Settings
- ▶ Color Switch Settings
- ▶ Basic Settings
- ▶ Group Settings
- ▶ Configuration
- ▶ Firmware Settings
- ▶ Name/Location Settings

Figure 23: Node Controller Page

Clicking on the “>>” icon on the right of a node provides version information on the firmware and whether or not it is an FLIRS or a Sleeping Device. Clicking on the “>>” icon on the right of an endpoint provides Z-Wave Plus information.

4.8 Interfaces

Most of the interface panels have a cycle icon in the middle of the header to refresh the time-stamped state by soliciting data from the node/endpoint. For more information about each interface, see [7] to [10].

4.8.1 Basic

Basic Settings

Current state : Off

Target State : On

Duration : 69 seconds

Last Updated Time : December 12, 2017 11:35:10 AM

Level

Figure 24: Basic Interface

Basic CC is device-specific and should be documented in the device’s product manual. Target State and Duration are shown only if the device supports them.

4.8.2 Binary Sensor

Binary Sensor Settings

Report with selected type:

Sensor Type : General Purpose
Current state : Event detected
Last Idle Time : May 09, 2019 6:20:52 PM
Last Event Detected Time : May 09, 2019 6:26:29 PM

Cached report:

Sensor Type : General Purpose
Current state : Idle
Last Idle Time : May 09, 2019 6:30:43 PM
Last Event Detected Time : May 09, 2019 6:26:29 PM

Sensor Type : Motion
Current state : Idle
Last Idle Time : May 09, 2019 6:26:44 PM
Last Event Detected Time : May 09, 2019 6:20:31 PM

Binary Sensor Type :

General Purpose

Figure 25: Binary Sensor Interface

4.8.3 Multi-Level Sensor

Multilevel Sensor Settings

Report with selected type/unit:

Sensor Type : Temperature
Current state : 77 °F
Last Updated Time : August 31, 2017 12:49:44 PM

Cached report:

Sensor Type : Relative humidity
Current state : 58 %
Last Updated Time : August 31, 2017 12:48:37 PM

Sensor Type : Temperature
Current state : 77 °F
Last Updated Time : August 31, 2017 12:49:44 PM

Sensor Type :

Temperature

Sensor :

Temperature

Relative humidity

Figure 26: Multilevel Sensor Interface

4.8.4 Alarm/Notification

Alarm

Latest Report:
Vendor Alarm Type : 9
Level : 1
Zensor Net Source Node Id : 0
Status : Deactivate
Z-Wave Alarm Type : Power Management Alarm
Event : AC mains disconnected
Last Updated Time : September 21, 2017 6:03:11 PM

Selected Alarm Type Report:
Vendor Alarm Type : 8
Level : 1
Zensor Net Source Node Id : 0
Status : Deactivate
Z-Wave Alarm Type : Home Security
Event : Motion Detection, Unknown Location
Last Updated Time : September 21, 2017 6:00:02 PM

Vendor Alarm Type

Z-Wave Alarm Type

Z-Wave Alarm Event

Alarm Status

Figure 27: Alarm/Notification Interface

4.8.5 Meter

Meter Settings

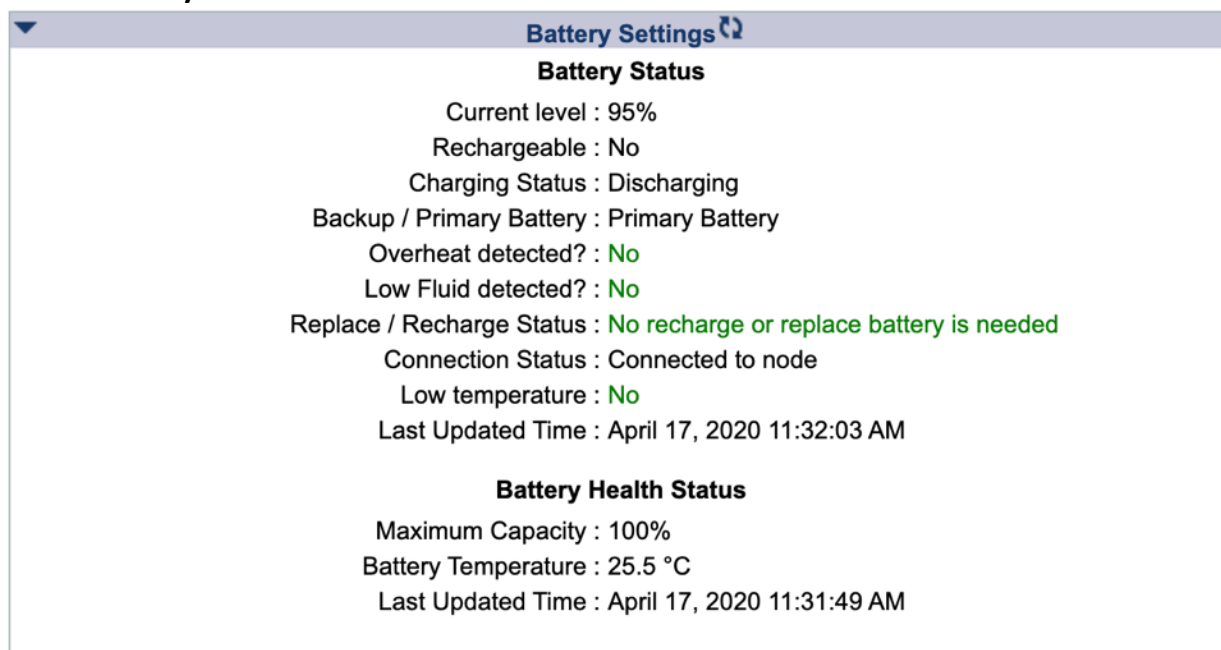
Supported Meter Type : Electric Meter
Supported Rate Type : Import

Meter Type : Electric Meter
Current state : 20.000 kVAh
Rate Type : Import
Delta : 60 s
Previous : 20 kVAh
Last Updated Time : April 02, 2020 1:03:39 AM

Supported Units : Rate Type :

Figure 28: Meter Interface

4.8.6 Battery



Battery Settings

Battery Status

Current level : 95%

Rechargeable : No

Charging Status : Discharging

Backup / Primary Battery : Primary Battery

Overheat detected? : No

Low Fluid detected? : No

Replace / Recharge Status : No recharge or replace battery is needed

Connection Status : Connected to node

Low temperature : No

Last Updated Time : April 17, 2020 11:32:03 AM

Battery Health Status

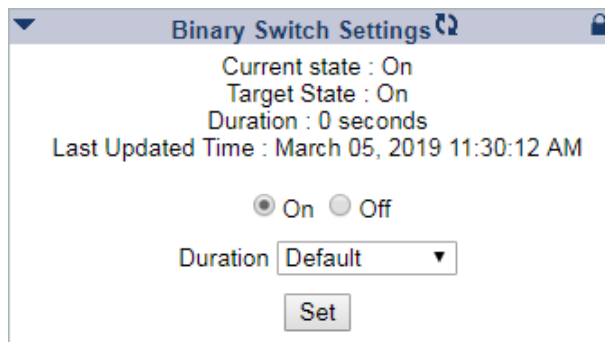
Maximum Capacity : 100%

Battery Temperature : 25.5 °C

Last Updated Time : April 17, 2020 11:31:49 AM

Figure 29: Battery Interface

4.8.7 Binary Switch



Binary Switch Settings

Current state : On

Target State : On

Duration : 0 seconds

Last Updated Time : March 05, 2019 11:30:12 AM

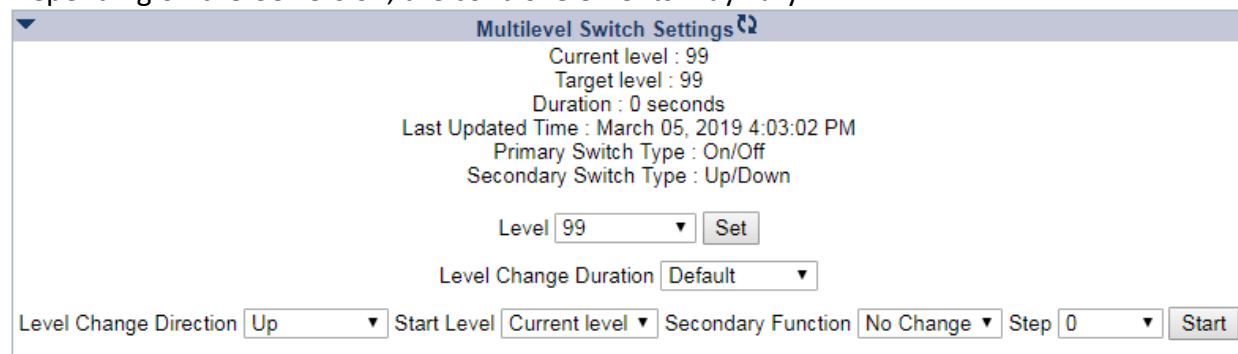
☒ On ☐ Off

Duration

Figure 30: Binary Switch Interface

4.8.8 Multi-Level Switch

Depending on the CC version, the control elements may vary.



Multilevel Switch Settings

Current level : 99

Target level : 99

Duration : 0 seconds

Last Updated Time : March 05, 2019 4:03:02 PM

Primary Switch Type : On/Off

Secondary Switch Type : Up/Down

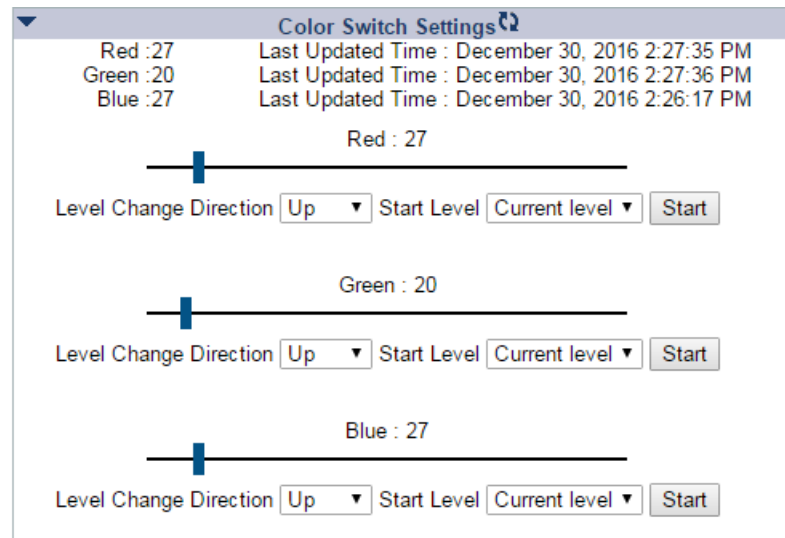
Level

Level Change Duration

Level Change Direction Start Level Secondary Function Step

Figure 31: Multilevel Switch Interface

4.8.9 Color Switch Interface



Color Switch Settings

Red :27 Last Updated Time : December 30, 2016 2:27:35 PM
Green :20 Last Updated Time : December 30, 2016 2:27:36 PM
Blue :27 Last Updated Time : December 30, 2016 2:26:17 PM

Red : 27

Level Change Direction Start Level

Green : 20

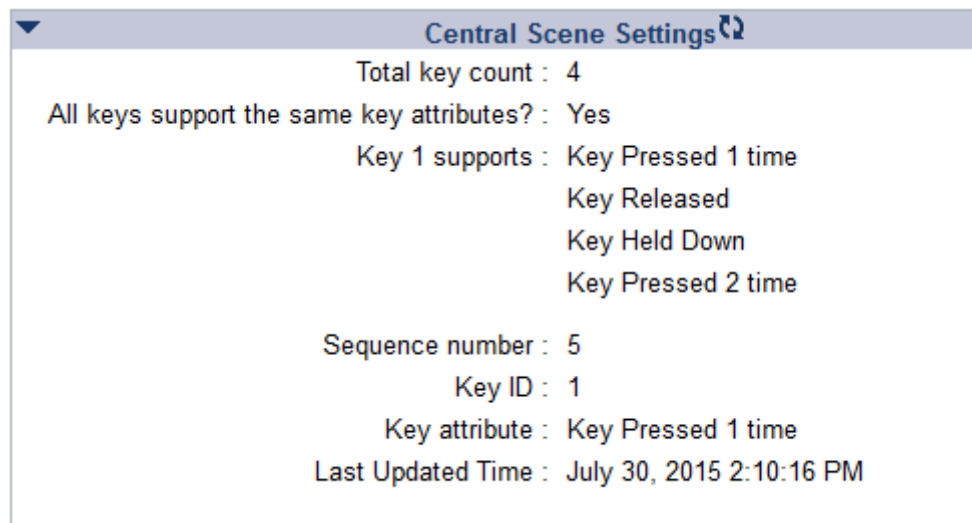
Level Change Direction Start Level

Blue : 27

Level Change Direction Start Level

Figure 32: Color Switch Interface

4.8.10 Central Scene Controller



Central Scene Settings

Total key count : 4

All keys support the same key attributes? : Yes

Key 1 supports : Key Pressed 1 time
Key Released
Key Held Down
Key Pressed 2 time

Sequence number : 5

Key ID : 1

Key attribute : Key Pressed 1 time

Last Updated Time : July 30, 2015 2:10:16 PM

Figure 33: Central Scene Controller Interface

4.8.11 Door Lock

Door Lock Settings

Supported Door Condition : Door; Bolt; Latch

Door Lock Operation

Door Lock Mode : Door Secured

Door Handle Modes :

	Handle-1	Handle-2	Handle-3	Handle-4
Outside Handles Active	N	N	Y	N
Inside Handles Active	N	Y	N	Y

Door Condition : Door Closed; Bolt Unlocked; Latch Closed

Remaining Lock Timeout : None

Target Mode : Door Secured

Duration : 0 seconds

Last Updated Time : April 25, 2018 3:44:32 PM

Door Lock Mode Door Secured Set

Door Lock Configuration

Operation Type : Timed

Door Handle States :

	Handle-1	Handle-2	Handle-3	Handle-4
Outside Handles Enable	N	N	Y	N
Inside Handles Enable	N	Y	N	Y

Configured Lock Timeout : 1 minutes 1 seconds

Auto Relock Timeout : 30 seconds

Hold and Release Timeout : 18 hours 10 minutes 17 seconds

Block to Block : Disabled

Twist Assist : Disabled

Last Updated Time : April 25, 2018 3:44:34 PM

Outside Door Handles State

☐ Handle-1

☐ Handle-2

☒ Handle-3

☐ Handle-4

Operation Type Timed

Inside Door Handles State

☐ Handle-1

☒ Handle-2

☐ Handle-3

☒ Handle-4

Lock Timeout 1 minute 1 second

Auto Relock Timeout 0 hour 0 minute 30 seconds

Hold and Release Timeout 18 hours 10 minutes 17 seconds

☐ Block to Block
☐ Twist Assist

Set

Figure 34: Door Lock Interface

4.8.12 User Code

User Code Settings

User Code Capability

Support Master Code : Yes
 Support Master Code Deactivation : Yes
 Support Checksum : Yes
 Support Multiple User Code Report : Yes
 Support Multiple User Code Set : Yes
 Supported ASCII Keys : [NUL] [Space] # 0 1 2 3 4 5 6 7 8 9

Keypad Mode

Keypad Mode : Normal mode
 Last Updated Time : April 12, 2019 3:47:44 PM

Keypad Mode Normal mode Set

Master Code

Master Code : 2567
 Last Updated Time : April 12, 2019 4:47:21 PM

Master Code ☐ Deactivate Set

User Code

Checksum : 58112
 Last Updated Time : April 12, 2019 4:48:20 PM

User Id 1 Number of Users 5 ☐ Report More Get

User Id	User Id Status	User Code	Last Updated Time	Next ID
1	Occupied	124325345	April 12, 2019 4:48:20 PM	
2	Not set		April 12, 2019 4:48:20 PM	
3	Disabled	3548416	April 12, 2019 4:48:20 PM	
4	Not set		April 12, 2019 4:48:20 PM	
5	Not set		April 12, 2019 4:48:20 PM	

Number of Users For Set 3 ☐ Delete All ?

User Id	User Id Status	User Code
1	Occupied	124325345
2	Delete the user code	
3	Disabled	3548416

Set

Figure 35: User Code Interface

4.8.13 Door Lock Logging Interface

Door Lock Logging Settings					
Total Records : 35					
Record Number		1	Number of Users		10
					Get
Record #	Event	User Id	User Code	Device Timestamp	Last Updated Time
1	Unlock Command: Keypad access code verified unlock command	1		2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
2	Key or latch operation unlocked (manual)		23456ABCDE	2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
3	Configuration changed	3		2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
4	Unlock command: Keypad unlock button pressed		4567D	2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
5	Lock Command: Keypad access code out of schedule	5		2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
6	(Empty)				September 27, 2019 4:13:52 PM
7	Auto unlock operation	7		2019/9/27 16:09:14 PM	September 27, 2019 4:13:52 PM
8	(Empty)				September 27, 2019 4:13:52 PM
9	(Empty)				September 27, 2019 4:13:53 PM
10	(Empty)				September 27, 2019 4:13:53 PM

Figure 36: Door Lock Logging Interface

4.8.14 Barrier Operator Interface

Barrier Operator Settings

Current state : Stopped. Position unknown.
 Last Updated Time : December 30, 2016 2:30:15 PM
 Subsystem Type : Visual Notification subsystem
 State : On
 Last Updated Time : December 30, 2016 2:30:33 PM

Target State ☒ Open ☐ Close

Subsystem

Figure 37: Barrier Operator Interface

4.8.15 Window Covering Interface

Window Covering Settings

Report with selected param:

Param ID	Current level	Target level	Duration	Time
Outbound towards right	47	47	0 seconds	February 15, 2019 7:12:23 PM

Cached report:

Param ID	Current level	Target level	Duration	Time
Outbound towards right	47	47	0 seconds	February 15, 2019 7:12:23 PM
Inbound towards left	50	50	0 seconds	February 15, 2019 5:28:19 PM
Vertical slats angle	Close to the right	Close to the right	0 seconds	February 15, 2019 5:28:28 PM
Outbound towards bottom	50	50	0 seconds	February 15, 2019 5:28:25 PM
Outbound towards top	60	60	0 seconds	February 15, 2019 5:28:26 PM

Parameter Target level Direction Level Change Duration

Figure 38: Window Covering Interface

4.8.16 Anti-theft Unlock Interface

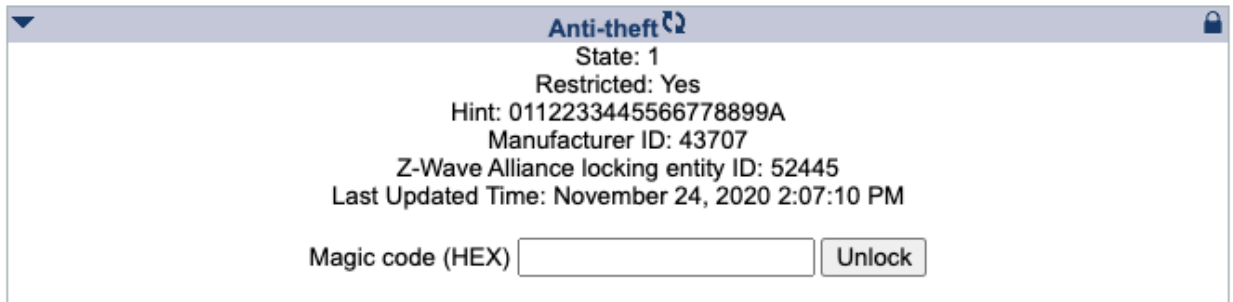


Figure 39: Anti-theft Unlock Interface

4.8.17 Thermostat-Related Interfaces

4.8.17.1 Thermostat Fan

If both Fan Mode and State interfaces are available in the endpoint, they will be shown combined in a single frame. Otherwise, they will be shown separately.

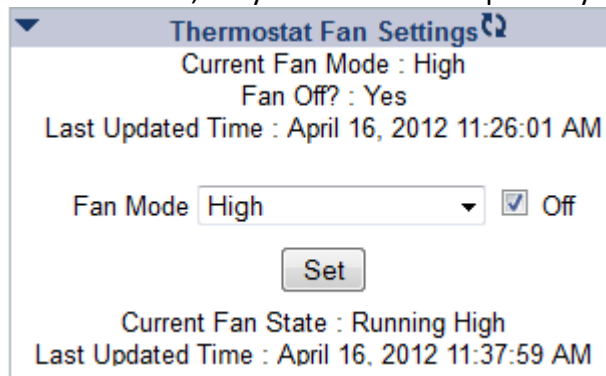


Figure 40: Thermostat Fan Interface

4.8.17.2 Thermostat Mode and Operating State

If both Mode and State interfaces are available in the endpoint, they will be shown combined in a single frame. Otherwise, they will be shown separately.

Thermostat Settings

Current Mode : Manufacturer Specific

Last Updated Time : December 12, 2017 2:22:08 PM

Current Operating State : Idle

Last Updated Time : December 12, 2017 2:22:08 PM

Operating State Log Type : Heating

Usage Today : 1 hour 2 minutes

Usage Yesterday : 3 hours 4 minutes

Last Updated Time : December 12, 2017 2:22:09 PM

Operating State Log Type : Cooling

Usage Today : 5 hours 6 minutes

Usage Yesterday : 7 hours 8 minutes

Last Updated Time : December 12, 2017 2:22:09 PM

Mode

Manufacturer Specific

Number of Manufacturer Data Fields

2

Manufacturer Data 1

1

Manufacturer Data 2

2

Set

Figure 41: Thermostat Mode and State Interface

4.8.17.3 Thermostat SetPoint

Thermostat Setpoint Settings

Setpoint Type: Away Cooling
Last Updated Time : April 11, 2018 2:47:51 PM

	Minimum	Maximum
Value	1	26.5
Size	2	2
Precision	0	1
Unit	°C	°C

Setpoint Type: Away Cooling
Last Updated Time : April 11, 2018 2:47:51 PM

	Minimum	Maximum
Value	1	99
Size	2	2
Precision	0	1
Unit	°F	°F

Setpoint Type: Away Cooling
Current Setpoint: 79 °F
Setpoint Size: 2
Last Updated Time : April 11, 2018 2:49:35 PM

Setpoint
Away Cooling

Setpoint 79 °F Size 2 Set


Figure 42: Thermostat Setpoint Interface

4.8.18 Sound Switch

Sound Switch Settings

Default tone id : 3
Current volume : 90
Last Updated Time : April 11, 2018 3:23:57 PM
No tone is currently playing.
Last Updated Time : April 11, 2018 3:22:38 PM

Tone Id	Name	Duration	Default
1	Door bell tone 1	00:30	
2	Door bell tone 2	00:45	
3	Fire Alarm notification part 1	01:01	✓
4	Fire Alarm notification part 2	02:15	
5	Siren	00:44	



90

Play

Stop

Play Default

Set Default

Figure 43: Sound Switch Interface

4.8.19 Indicator

Indicator Settings

Indicator ID: Armed
Level: OFF
Binary: OFF
On/Off Periods: 1 seconds
On/Off Cycles: 10 times
On Time Within a Period: Symmetric On/Off
Last Updated Time: June 19, 2018 2:49:39 PM

Indicator ID Armed

Property Group Toggleing

On/Off Periods 1 seconds

On/Off Cycles 10 times

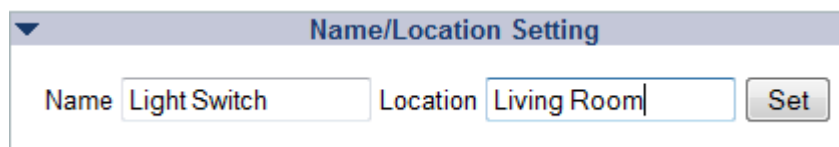
On Time Within a Period Symmetric On/Off

Set

Figure 44: Indicator Interface

4.8.20 Naming/Location

The name/location interface always exists, at least on the local machine, even if the device does not support the corresponding CC. The name/location is used to set the name/location strings for easier identification. If the device supports the CC, the name is initialized from the device during inclusion and is only refreshed after a node update and setting will set to the device as well.

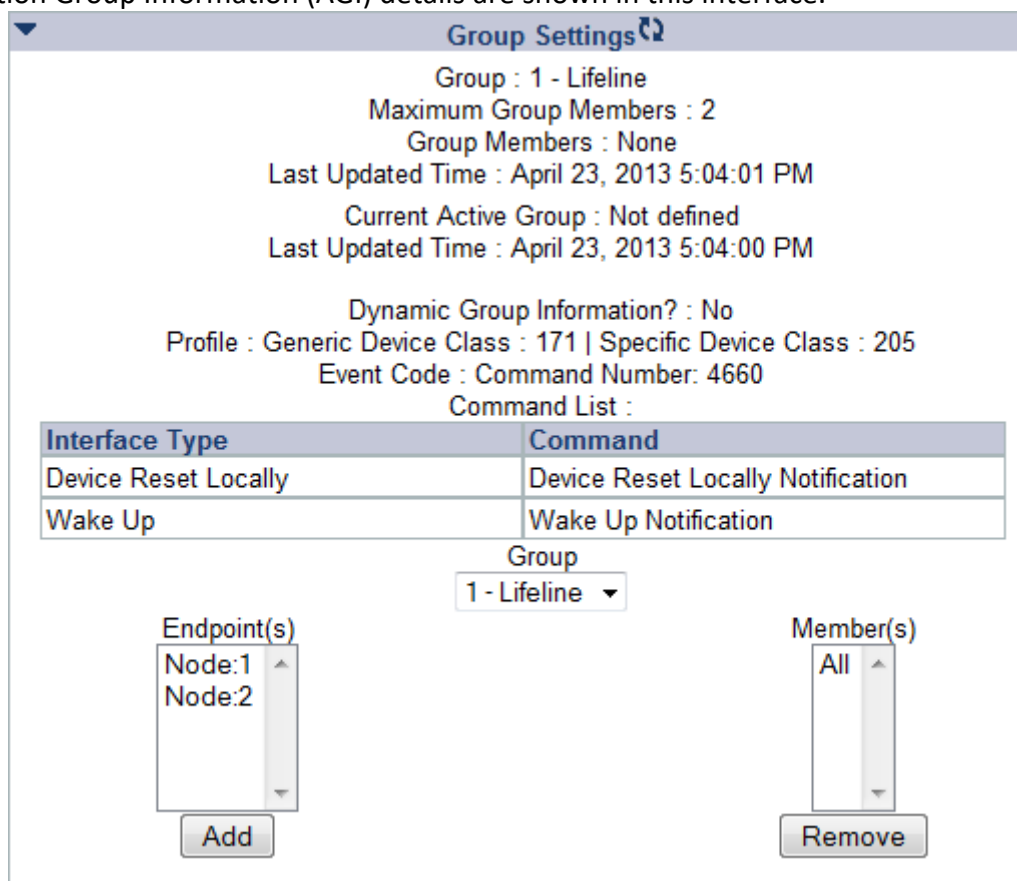


The interface is titled "Name/Location Setting". It contains two text input fields: "Name" with the value "Light Switch" and "Location" with the value "Living Room". To the right of the "Location" field is a "Set" button.

Figure 45: Name/Location Interface

4.8.21 Association

The user can add or remove node or endpoints (depending on interface support) to any group supported by the interface limited by its storage. Association, Multichannel Association, and Association Group Information (AGI) details are shown in this interface.



The interface is titled "Group Settings". It displays the following information:

- Group : 1 - Lifeline
- Maximum Group Members : 2
- Group Members : None
- Last Updated Time : April 23, 2013 5:04:01 PM
- Current Active Group : Not defined
- Last Updated Time : April 23, 2013 5:04:00 PM
- Dynamic Group Information? : No
- Profile : Generic Device Class : 171 | Specific Device Class : 205
- Event Code : Command Number: 4660
- Command List :

Interface Type	Command
Device Reset Locally	Device Reset Locally Notification
Wake Up	Wake Up Notification

Below the table, there is a "Group" dropdown menu set to "1 - Lifeline".

At the bottom, there are two sections:

- Endpoint(s)**: A list box containing "Node:1" and "Node:2", with an "Add" button below it.
- Member(s)**: A list box containing "All", with a "Remove" button below it.

Figure 46: Group Interface

4.8.22 Configuration

Configuration is a manufacturer-specific setting which requires referring to the product manual. 'Size' can be specified explicitly or as the minimum size needed for the given value. Enabling 'Default' ignores the 'Value' and resets the configuration parameter after 'Set'. 'Number of parameters', available only if the device supports it, allows setting multiple

parameters and as many 'Value' fields will appear. Enabling 'Handshake', available only if the device supports it, returns a report after 'Set'.

Configuration

Configuration Parameter Properties

Parameter #	Name	Format	Minimum	Maximum
1	parameter1	Signed Integer	-2147483648	2147483647
2	parameter2	Unsigned Integer	1	4294967295

Detail Info

Parameter # : 2

Name : parameter2

Info : colorswitchproperty2

Format : Unsigned Integer

Size (in bytes) : 4

Minimum : 1

Maximum : 4294967295

Default Value : 5

Bulk Support : Yes

Re-inclusion Required : No

Read Only : No

Advanced : Yes

Last Updated Time : October 10, 2018 2:58:16 PM

3	parameter3	Enumerated	2	150
4	parameter4	Bit field	3	160

Configuration Parameter Current Values

Parameter 1 : -2147483648

Last Updated Time : October 10, 2018 2:58:16 PM

Parameter 2 : 4294967295

Last Updated Time : October 10, 2018 2:58:16 PM

Parameter 3 : 80

Last Updated Time : October 10, 2018 2:58:16 PM

Parameter 4 : 70

Last Updated Time : October 10, 2018 2:58:16 PM

Parameter Number

1

Number of Parameters

4

Size

1

Format

Signed Integer

☐ Default
 ☐ Handshake
 ☐ Reset all parameters

Parameter 1

-2147483648

Parameter 2

4294967295

Parameter 3

80

Parameter 4

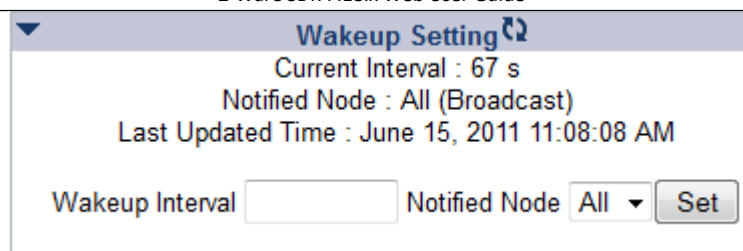
70

Set

Figure 47: Configuration Interface

4.8.23 Wakeup

Set the controller as the notified node. Otherwise, it will not be able to de-queue commands for this node. This is automatically done by Z-Ware. Users should not change anything on this interface because the newer versions of the underlying ZIPGW expect the current settings for its mailbox service.



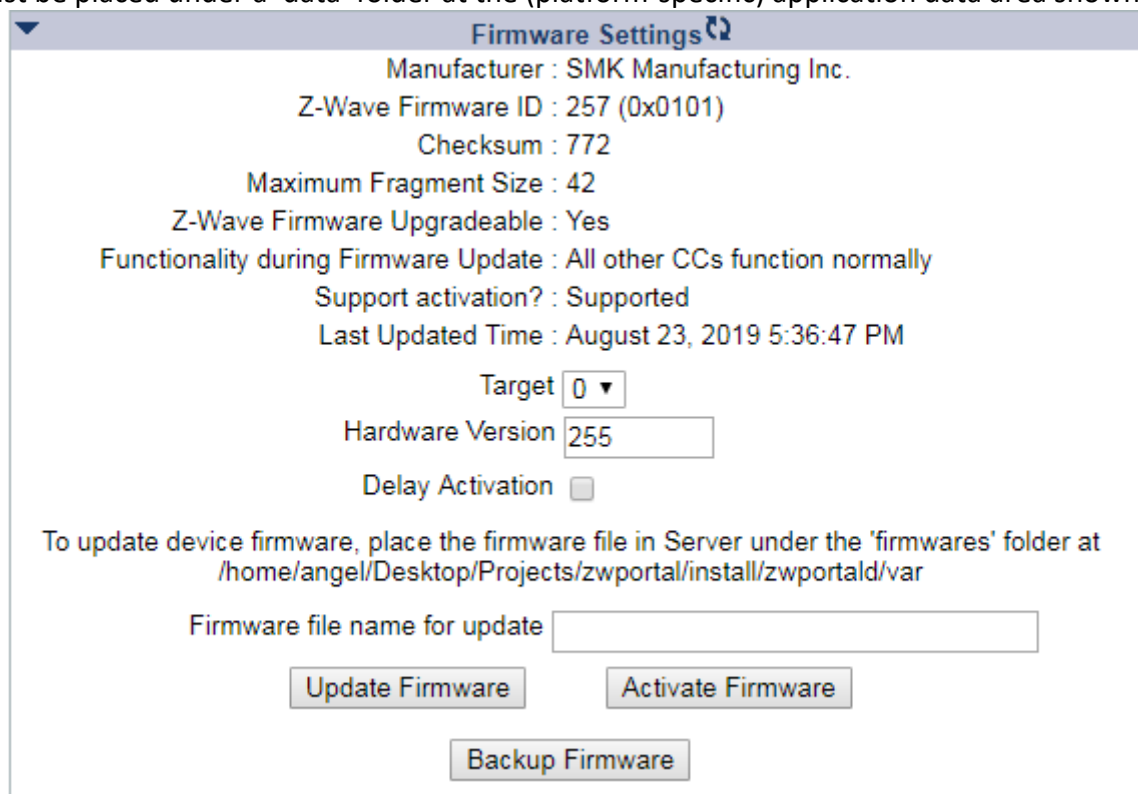
The 'Wakeup Setting' interface is a web-based configuration window. It features a title bar with a dropdown arrow and a refresh icon. The main content area displays the following information: 'Current Interval : 67 s', 'Notified Node : All (Broadcast)', and 'Last Updated Time : June 15, 2011 11:08:08 AM'. At the bottom, there are two input fields: 'Wakeup Interval' with an empty text box, and 'Notified Node' with a dropdown menu currently set to 'All'. A 'Set' button is located to the right of the 'Notified Node' dropdown.

Figure 48: Wakeup Interface

4.8.24 Firmware Update

Use this interface to upgrade firmware (Z-Wave chip or others, such as a host controller) in the node. This can also be used to push security certificates and network configurations to the node. The usage of multiple firmware/targets and checksum are manufacturer-dependent and should be found in the relevant production manual or upgrade documentation.

Limitation: Instead of uploading the firmware files from the a web client (browser), these files must be placed under a 'data' folder at the (platform-specific) application data area shown.



The 'Firmware Settings' interface is a web-based configuration window. It features a title bar with a dropdown arrow and a refresh icon. The main content area displays the following information: 'Manufacturer : SMK Manufacturing Inc.', 'Z-Wave Firmware ID : 257 (0x0101)', 'Checksum : 772', 'Maximum Fragment Size : 42', 'Z-Wave Firmware Upgradeable : Yes', 'Functionality during Firmware Update : All other CCs function normally', 'Support activation? : Supported', and 'Last Updated Time : August 23, 2019 5:36:47 PM'. Below this information, there are three input fields: 'Target' with a dropdown menu set to '0', 'Hardware Version' with a text box containing '255', and 'Delay Activation' with an unchecked checkbox. A text block below these fields states: 'To update device firmware, place the firmware file in Server under the 'firmwares' folder at /home/angel/Desktop/Projects/zwportal/install/zwportald/var'. Below this text is a text box for 'Firmware file name for update'. At the bottom, there are three buttons: 'Update Firmware', 'Activate Firmware', and 'Backup Firmware'.

Figure 49: Firmware Update Interface

4.8.25 Protection

Protection Settings

Protection State

Current Local State : No operation possible
Current RF State : No RF Control
Last Updated Time : November 11, 2019 5:39:23 PM

Local State RF State

Protection Exclusive Control

Exclusive Control Node : 50
Last Updated Time : November 11, 2019 5:39:24 PM

Exclusive Control Node

Protection Timeout

Current Timeout : Infinite (No Timeout)
Last Updated Time : November 11, 2019 5:39:24 PM

Timeout

Figure 50: Protection Interface

4.8.26 Z/IP Gateway

Z/IP Gateway is an interface to configure the ZIPGW with a peer name, peer IP address, and peer port number. Unsolicited destination addresses and port numbers can also be configured. 'Set to Local' button allows to set the locally reachable IP address and local listening port number as unsolicited destination. Despite the fact, the Portal mode has been removed from Z-Ware, the Engineering UI still has functions to configure the Gateway for the Portal mode.

Gateway Settings

Mode : Portal

Peer IP Address 10.40.30.159

Peer Name : zip-gateway.sigmadesigns.com

Peer Port : 44123

Last Updated Time : April 23, 2013 4:51:08 PM

Mode Portal

Peer IP Address 10.40.30.159

Peer Name zip-gateway.sigmadesigns.com

Peer Port 44123

Set

Configuration Parameters

☒ Lock ☐ Unlock

☒ Show ☐ Hide

Configuration Parameter controls does not indicate the current state of these settings

Set

Unsolicited Destination Address 2050::40

Unsolicited Destination Port : 5678

Last Updated Time : April 23, 2013 4:51:07 PM

Local Address 3000::1

Local Port : 4123

Unsolicited Destination Address 2050::40

Unsolicited Destination Port 5678

Set Set to Local

Figure 51: ZIPGW Interface Portal Mode

Gateway Settings

Mode : Stand-alone
Last Updated Time : August 22, 2013 2:44:17 PM
Mode Stand-alone
Set

Configuration Parameters
☒ Lock ☐ Unlock
☒ Show ☐ Hide
Configuration Parameter controls does not indicate the current state of these settings
Set

Unsolicited Destination Address 10.40.30.110
Unsolicited Destination Port : 4123
Last Updated Time : August 22, 2013 2:44:17 PM
Local Address 10.40.30.110
Local Port : 4123
Unsolicited Destination Address 10.40.30.110
Unsolicited Destination Port 4123
Set Set to Local

Figure 52: ZIPGW Interface Standalone Mode

4.9 Scenes

Scenes

Name	Status	Last Updated Time
At Home	Active	January 01, 1970 1:34:15 PM
Out	Inactive	January 01, 1970 1:34:15 PM

[+ Add New Scene](#)

Scene

Name : At Home
 Status : Active
 Last Updated Time : January 01, 1970 1:34:15 PM
 Last Activation Trigger : None
 Last Activation Time : None

Actions

Node 3 - Multilevel Power Switch - Multilevel Switch Settings - Level: On/Enable
 Node 4 - Door Lock (Keypad - Lever) - Door Lock Settings - Door Lock Mode: Door Unsecured

Schedules

ON Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday AT 18:30

Events

Node 5 - Thermostat - Multilevel Sensor Settings - Temperature - 20 - 25 °C

Figure 53: Scenes Page

A list of scenes is shown with their activity information. Status can be Active, Inactive, or Unknown. To update the scene status, use the cycle icon next to the Status header. To add a scene addition, use “+ Add New Scene” at the foot of the list. To select a scene, click on it.

The selected scene is shown in a panel below the list. To edit, use the pen icon at the top left of this panel. To delete, use the cross icon. To refresh status, use the cycle icon. To execute the scene, use the play icon.

Actions, Schedules, and Events are listed in this panel. Actions that match the current state of the device are shown in Green while others are shown in Orange. Actions with unknown states are shown in default black.

Scene

Name

Actions (max: 10)

Node 2 - DEVICE 1 - On/Off Power Switch - Binary Switch Settings - State: Off ✕

Node 1 - undefined - Sigma Designs (Zensys) ▲
Node 2 - undefined - AEON Labs ⌵
Node 4 - undefined - Id: 265

Endpoint 0 - On/Off Power Switch ▼

Basic Settings: Level Add

Binary Switch Settings: ☐ On ☒ Off Add

Schedules (max: 1)

Timezone : Asia/Singapore

☐ Everyday ☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

12 AM ▼ 00 ▼

Add

Events (max: 2)

Node 4 - Notification Sensor - Alarm - Vendor Alarm Type: 0 - Level: 0 - Z-Wave Alarm Type: Burglar Alarm - Event: "Tampering, product covering removed", "Motion Detection, Unknown Location" ✕ ⏏

Node 1 - undefined - Sigma Designs (Zensys) ▲
Node 2 - undefined - AEON Labs ⌵
Node 4 - undefined - Id: 265

Endpoint 0 - Notification Sensor ▼

Basic Event Settings:

Low Value High Value Add

Alarm:

Vendor Alarm Type Level

Z-Wave Alarm Type Event

Tampering, product covering removed
Motion Detection, Unknown Location

Add

Multilevel Sensor Settings:

Sensor Type

Low Value High Value Unit

Add

Save
✕

Figure 54: Scene Edit

The Scene Edit screen looks exactly like the “Add New Scene” screen except that the Scene information (e.g., Scene name, Actions, Schedules and Events) is already populated. Any Scene information (including its name) may be changed. The maximum number of actions, schedules and events allowed are displayed. The Save and Cancel buttons are at the bottom. At least 1 action is necessary for a valid scene. On the right of every added action is a delete button. When an endpoint is chosen in the action endpoint list, the candidate interfaces within are listed below for a SET operation. These include the Basic, Binary/Multi-Level Switch, Door Lock, and Thermostat SetPoint CCs. On the right of every added schedule and event are delete and disable buttons. The disable button turns into an enable (tick) button when an item is disabled. Disabled schedules and

events are shown in orange and do not trigger a scene even when the conditions specified are met. When an endpoint is chosen in the event endpoint list, the candidate interfaces within are listed below to respond to a Binary/Multi-Level Sensor, Door Lock, or Alarm/Notification CC report, or a Basic Set command. Other than Door Lock, these CCs can support multiple types, and these types are listed for selection as well.

4.10 Security Scenes

Security Scenes

Name	State	Last Change Time	Last Alarm Trigger Time
Bugler Alarm	Armed	July 30, 2015 1:45:36 PM	July 30, 2015 1:43:45 PM
+ Add New Security Scene			

Security Scene

Name : Bugler Alarm
State : Armed, No Alarm
Last Change Time : July 30, 2015 1:45:36 PM

▶

Disarm

Last Trigger Time : None
Last Trigger Type : None
Trigger :
Node 16 - DEVICE 1 - Routing Multilevel Sensor - Central Scene Settings - Key ID : 1 - Key attribute : Key Pressed 1 time
Scene : ABC

▶

Arm

Last Trigger Time : July 30, 2015 1:43:22 PM
Last Trigger Type : Manual
Trigger :
Node 17/6 - DEVICE 8 - Door Lock - Door Lock Settings - Door Lock Mode: Door Unsecured

Alarm

Last Trigger Time : July 30, 2015 1:43:45 PM
Last Trigger Type : Device Event
Last Trigger :
Node 20 - Routing Binary Sensor - Binary Sensor Settings - State: Event detected
Last Dismiss Time : July 30, 2015 1:45:36 PM
Trigger :
Node 20 - Routing Binary Sensor - Alarm - Vendor Alarm Type: 0 - Level: 0 - Z-Wave Alarm Type: Burgler Alarm - Event: Intrusion detected
Node 20 - Routing Binary Sensor - Binary Sensor Settings - State: Event detected

Alarm Notification

SMS : +6512345678
eMail : somemail@sigmadesigns.com

Figure 55: Security Scenes Page

A list of security scenes is shown with their arm status, time of change, and last triggered time. The play icon on the arm and disarm compartments can be used to manually arm or disarm the scene. The pen and cross icons on the security scene compartment allow editing and deleting of the scene.

When editing or creating a security scene, disarm/arm/alarm triggers/scenes can be chosen.

Security Scene

Name

Disarm Triggers (max: 10)
 Node 15/5 - DEVICE 12 - Door Lock - Door Lock Settings - Door Lock Mode: Door Unsecured ✕

Node 5 - undefined - Sigma Designs (Zensys)
 Node 7 - undefined - Sigma Designs (Zensys)
 Node 8 - undefined - Sigma Designs (Zensys)
 Node 13 - undefined - Id: 271
 Node 15 - undefined - Sigma Designs (Zensys)

Endpoint 3 - Multilevel Power Switch
 Endpoint 4 - Routing Multilevel Sensor
 Endpoint 5 - Door Lock
 Endpoint 6 - Satellite Receiver V2
 Endpoint 7 - General Thermostat (HVAC)

Door Lock Settings: Door Lock Mode

Disarm Scene (max: 1)
 (No Scene Selected)

Arm Triggers (max: 10)
 Node 15/5 - DEVICE 12 - Door Lock - Door Lock Settings - Door Lock Mode: Door Secured ✕

Node 5 - undefined - Sigma Designs (Zensys)
 Node 7 - undefined - Sigma Designs (Zensys)
 Node 8 - undefined - Sigma Designs (Zensys)
 Node 13 - undefined - Id: 271
 Node 15 - undefined - Sigma Designs (Zensys)

Endpoint 3 - Multilevel Power Switch
 Endpoint 4 - Routing Multilevel Sensor
 Endpoint 5 - Door Lock
 Endpoint 6 - Satellite Receiver V2
 Endpoint 7 - General Thermostat (HVAC)

Door Lock Settings: Door Lock Mode

Arm Scene (max: 1)
 (No Scene Selected)

Alarm Triggers (max: 16)
 Node 13 - DEVICE 4 - Routing Alarm Sensor - Alarm - Vendor Alarm Type: 0 - Level: 0 - Z-Wave Alarm Type: Water Alarm - Event: "Event inactive (push mode)/Previous Events cleared (pull mode)" , "Water Leak detected, Unknown Location" ✕

Node 1 - undefined - Sigma Designs (Zensys)
 Node 5 - undefined - Sigma Designs (Zensys)
 Node 7 - undefined - Sigma Designs (Zensys)
 Node 8 - undefined - Sigma Designs (Zensys)
 Node 13 - undefined - Id: 271

Endpoint 0 - Routing Alarm Sensor
 Endpoint 1 - Routing Binary Sensor
 Endpoint 2 - Routing Multilevel Sensor

Basic Event Settings: Low Value High Value

Alarm Settings: Vendor Alarm Type Level

Z-Wave Alarm Type Event


Alarm Scene (max: 1)
 (No Scene Selected)

Figure 56: Security Scene Edit

At the bottom of the page is the notification section where email and/or SMS can be used.

Alarm Notification

SMS

☒ 

eMail

☒

Default State

Start this security scene in state.



 

Figure 57: Security Scene Notification Edit

References

- [1] Silicon Labs, INS14167, INS, Z-Wave Web Developer's Guide
- [2] Silicon Labs, INS14606, INS, Z-Wave Library User Guide
- [3] Silicon Labs, INS14416, INS, Z-Wave Library C API Reference Manual
- [4] Silicon Labs, SDS12089, SDS, Z/IP Gateway Bootstrapping
- [5] Silicon Labs, APL13031, APL, Z-Wave Networking Basics
- [6] Silicon Labs, SDS10242, SDS, Z-Wave Device Class
- [7] Silicon Labs, SDS13781, SDS, Z-Wave Application CC
- [8] Silicon Labs, SDS13782, SDS, Z-Wave Management CC
- [9] Silicon Labs, SDS13783, SDS, Z-Wave Transport-Encapsulation CC
- [10] Silicon Labs, SDS13784, SDS, Z-Wave N/W Protocol CC