NYX

Administrator‘s Guide

2016. 11

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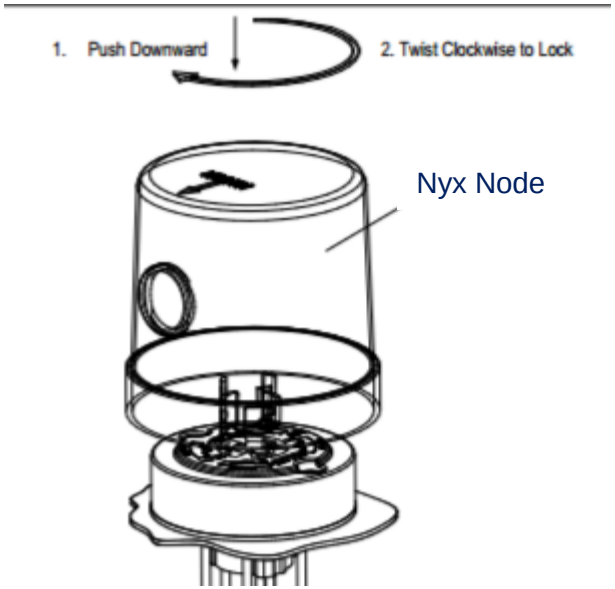
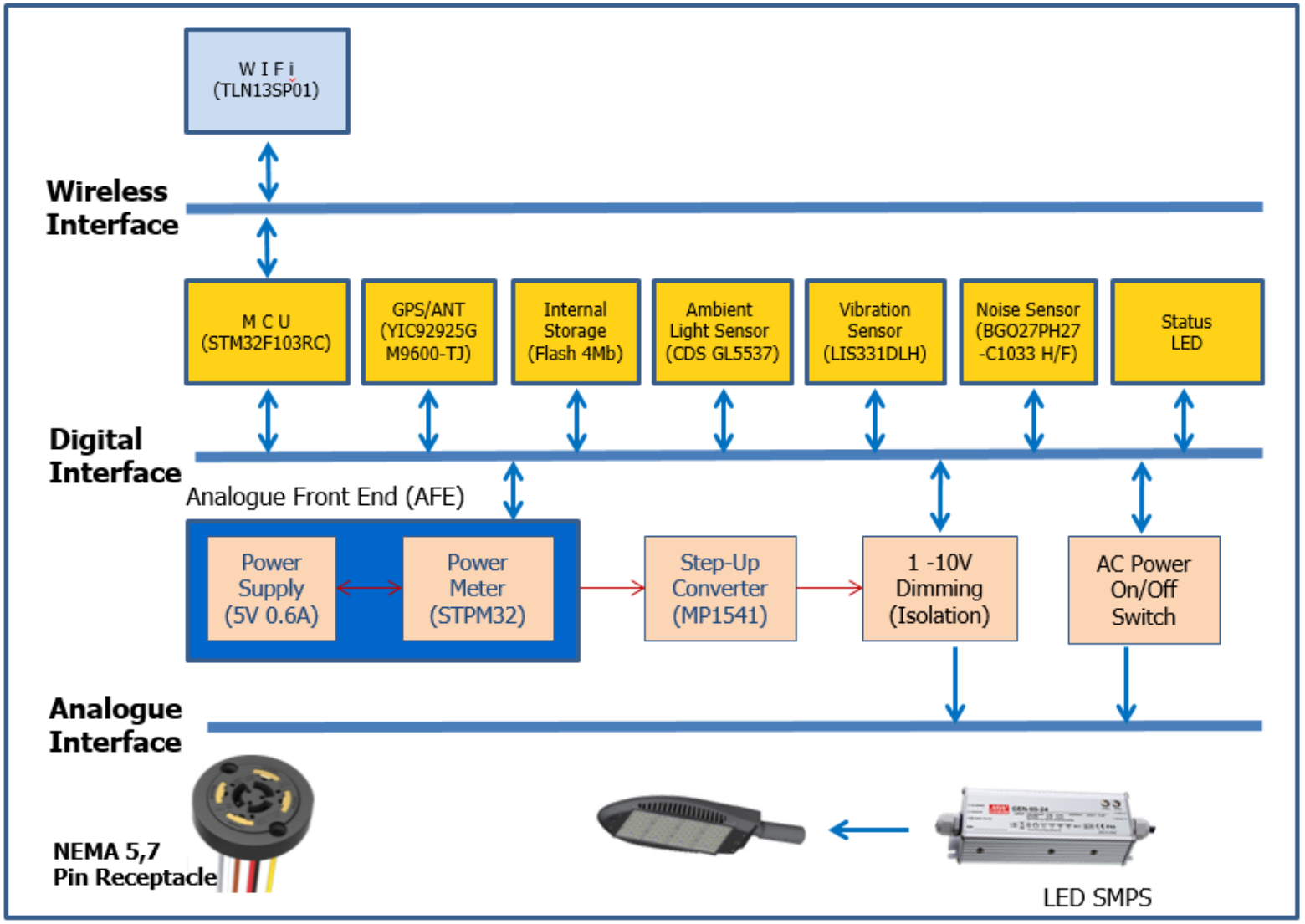
Nyx Node Installation

To install Nyx Node to NEMA Receptacle,

1. align Nyx blades with receptacle power contact circuits. Note that the neutral photocell blade is larger than the line and load blades, providing mating polarization.
2. After properly aligning the blades to the receptacle power contact circuits, push downward until the Nyx is bottomed on the receptacle's mating surface, slightly compressing gasket of the Nyx.
3. Then complete locking by twisting the Nyx in a clockwise direction.
4. The Nyx will lock into position.
5. To un-mate, reverse the aforementioned mating process.



Nyx Node – Block Diagram



Nyx Node – Environment

Parameter	Min	Typ.	Max	Unit
Operation temperature (WiFi)	-20		50	℃
Storage temperature	-30		85	℃
Operation Humidity	0		85	%
Storage Humidity	0		95	%

Parameter	Min	Typ.	Max	Unit
Supply Voltage	100	220	240	V
Current Consumption	0.4	1	1.5	W

Parameter	Product	Description
MCU	STM32F103RC	ARM 32-bit Cortex™-M3, 72Mhz, Internal 256Kbytes Flash memory
Memory	FM25Q32A-1AIA1	Serial Flash Memory 4 MBytes

Nyx Node – Environment

Parameter	Min	Typ.	Max	Unit
Wireless Standard	IEEE 802.11b/g Standard			
Receiver Sensitivity	802.11b: -82 dBm @ 11Mbps 802.11g: -68 dBm @ 54Mbps			
Data Rate	802.11b: 1,2,5.5,11 Mbps 802.11g: 6,9,12,18,24,36,48,54 Mbps			
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, QAM16/64			
Network Type	Infra/Adhoc/AP			
Authentication Method	WEP/WPA-PSK/WPA2-PSK			
Encryption Method	WEP64/WEP128/TKIP/CCMP(AES)			
Transmit Power	802.11b: 16±2 dBm (typical) 802.11g: 13±2 dBm (typical)			
Frequency Range	2.412		2.484	GHz
Operating Temperature	-20		50	℃
Antenna Gain	3			dBi
Multi Hop			7	ea
communication distance			100	m
communication coverage (Hop)	100		700	m

Nyx Node – Environment

Parameter	Min	Typ.	Max	Unit
Noise Light				
Frequency response	20		20,000	Hz
Sensitivity (f=1 kHz, S.P.L =1Pa, 0 dB=1V/Pa)	-30		-24	dB
Output impedance (f= 1 kHz)			2.2	kΩ
Current Consumption (VCC=2.0V, RL = 2.2 kΩ)			200	μA
Signal to Noise Ratio (f=1 kHz, S.P.L =1Pa (A-Weighted Curve)	58			dB
Decreasing Voltage (VCC=2.0V to 1.5V)			-3	dB
Maximum input S.P.L.			110	dB
Ambient Light				
Light Resistance at 10Lux (at 25℃)	18		50	KΩ
Dark Resistance at 0Lux	2.0			MΩ
Gamma value at 100-10Lux		0.7		
Power Dissipation (at 25℃)		100		mW
Max Voltage (at 25℃)			150	V
Spectral Response peak (at 25℃)		540		nm

Nyx Node – Environment

Vibration				
Acceleration (any axis, powered, Vdd = 2.5 V)	3000 g for 0.5 ms 10000 g for 0.1 ms			
Wide supply voltage	2.16		3.6	V
FS bit set to 00 X axis	120	300	550	LSb
FS bit set to 00 Y axis	120	300	550	LSb
FS bit set to 00 Z axis	140	350	750	LSb
±2g/±4g/±8g dynamically selectable full-scale				
16 bit data output				
2 independent programmable interrupt generators for free-fall and motion detection				
6D orientation detection				

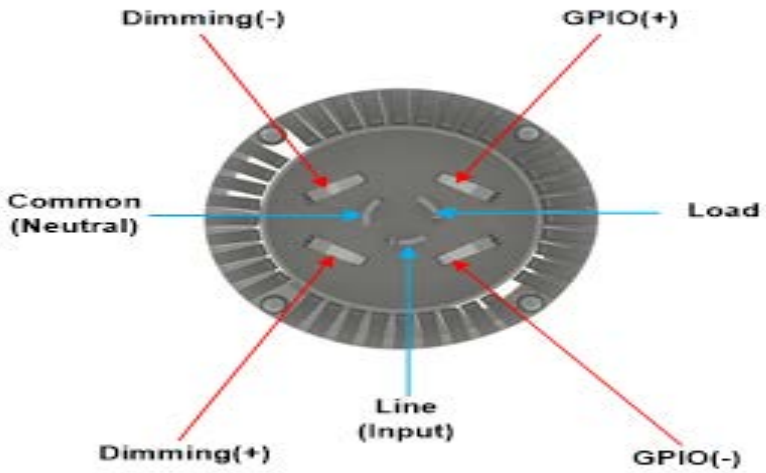
Nyx Node – Environment

Parameter	Min	Typ.	Max	Unit
standard	EN 50470-x, IEC 62053-2x, ANSI12.2x			
Analog inputs				
Maximum input signal levels	-300 -150 -75 -37.5		+300 +150 +75 +37.5	mV
Voltage channel input impedance			8	MΩ
Current channel input differential impedance		90 170 300 510		MΩ
Channel gain error (Input VMAX/2)		±5		%
Voltage to current channels		-120		dB
Current to voltage channels		-120		dB
Digital I/O				
Input high-voltage	0.75		3.3	V
Input low-voltage	-0.3		0.6	V
Output high-voltage	-0.4			V
Output low-voltage			0.4	V
Energy measurement accuracy				
Active power			0.1	%
Reactive power			0.5	%

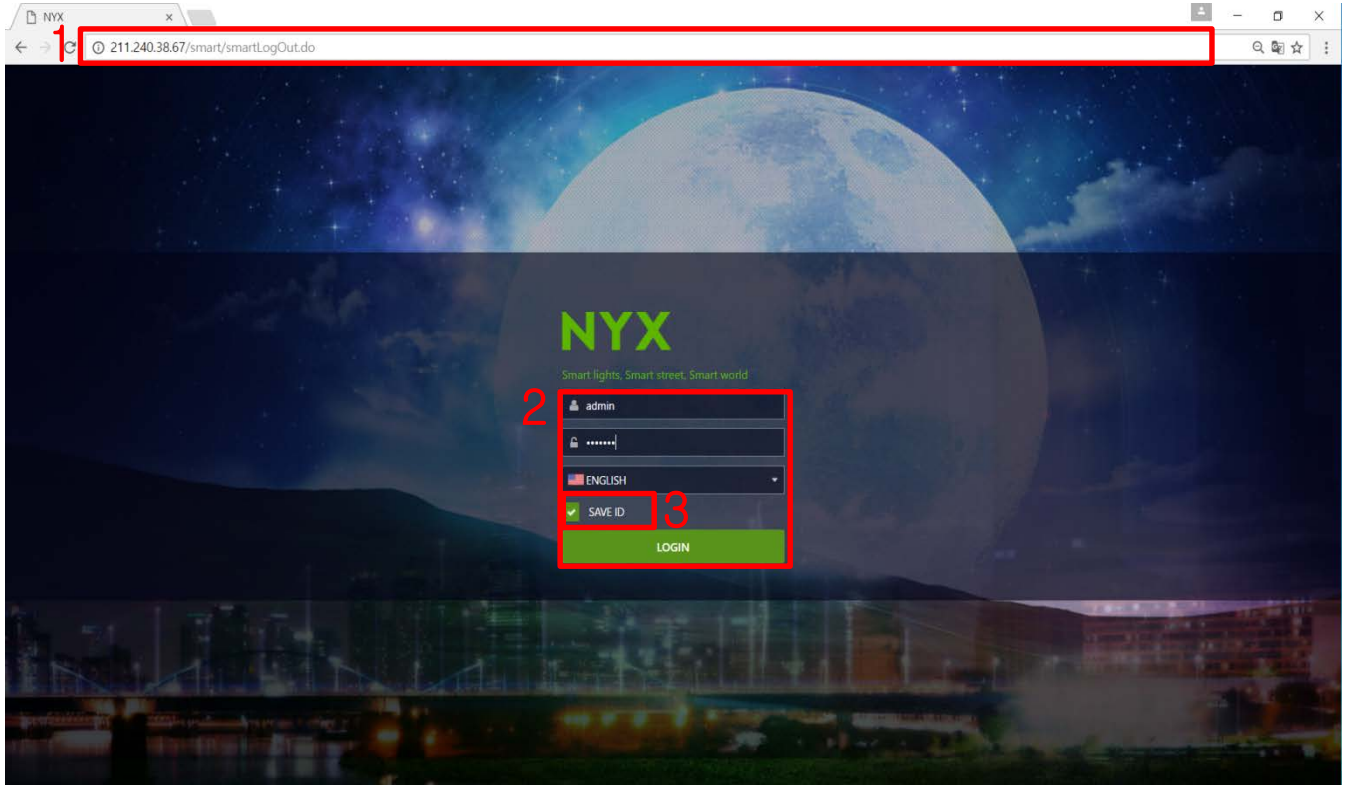
Nyx Node – Environment

Dimensions	U.S. Measurements	Metric Measurements
Weight (oz/g)	9.06	257
Length (in/mm)	3.78	93
Width (in/mm)	3.78	93
height (in/mm)	4.33	110.2
Housing	NEMA IP 68 compliance	
Connector	ANSI C136.41 compliance	

Nyx Node – Environment

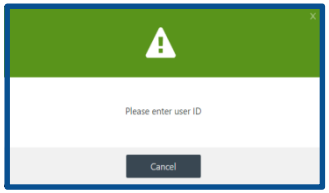


1. Log-In

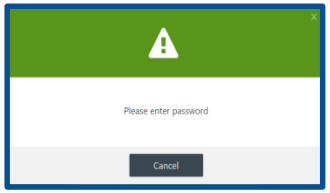


1. Enter address **http://211.240.38.90/smart** in the Web browser to connect to Nyx system.
2. Enter the issued ID and Password and press [Enter] key or [LOGIN] button below.
   Upon entering ID and Password successfully, login is completed and it moves to the system's initial screen.
3. You can select one of the languages supported by the multi-language selection box, and if [SAVE ID] is checked, ID is saved for reconnection convenience, so only password needs to be entered.

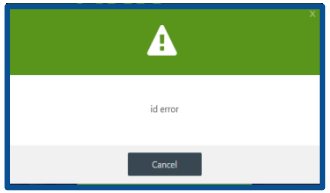
- Exceptions 1 : Warning window is displayed when ID is not entered.
- Exceptions 2: Warning widow is displayed when Password is not entered.
- Exceptions 3 : Contact NYX administrator because access to NYX database is not possible. Error will occur when ID or password is incorrect. Contact NYX administrator in case you forgot the issued ID or Password.



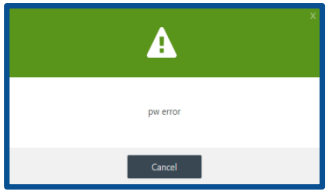
Exceptions 1



Exceptions 2

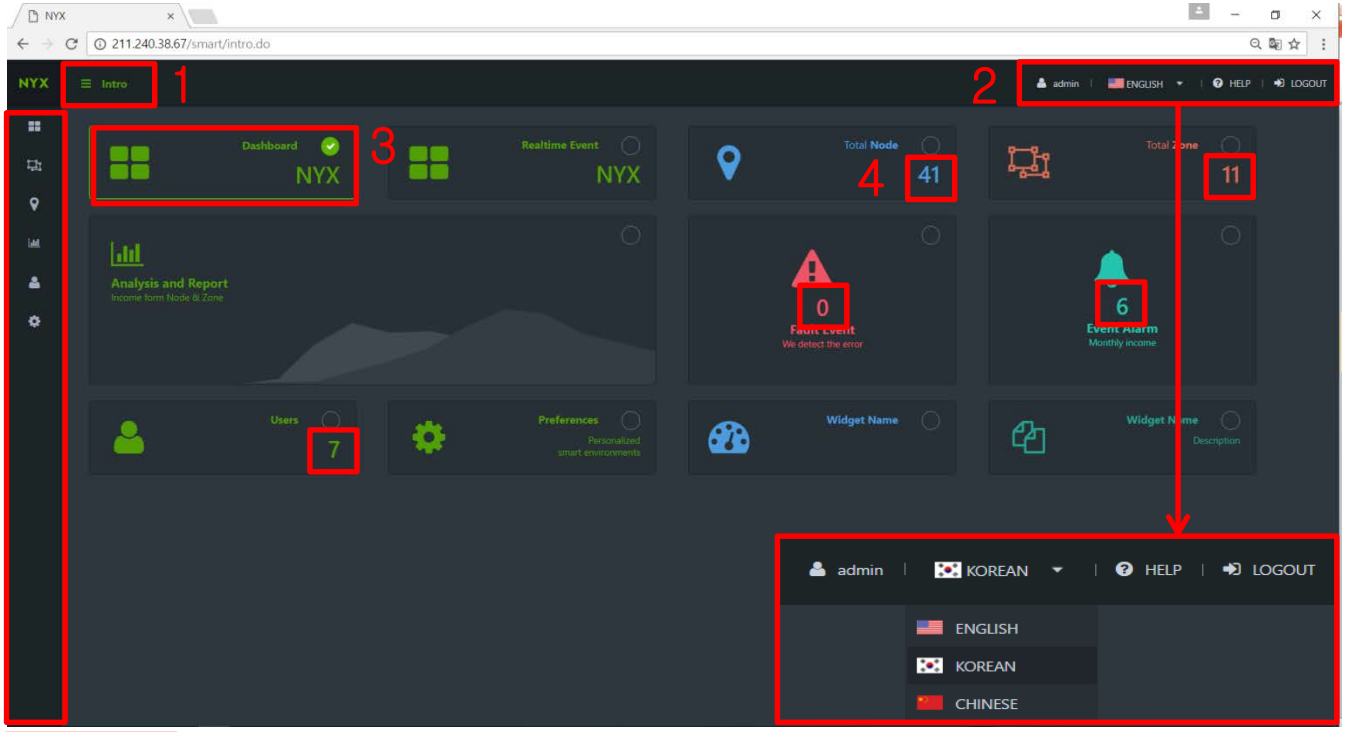


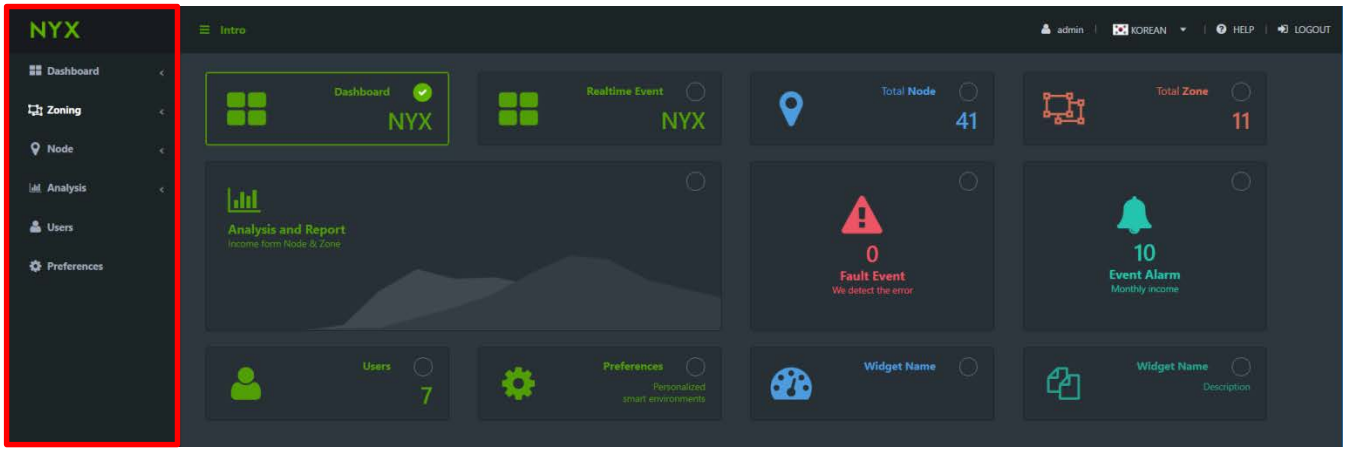
Exceptions 3



Exceptions 4

2. Intro

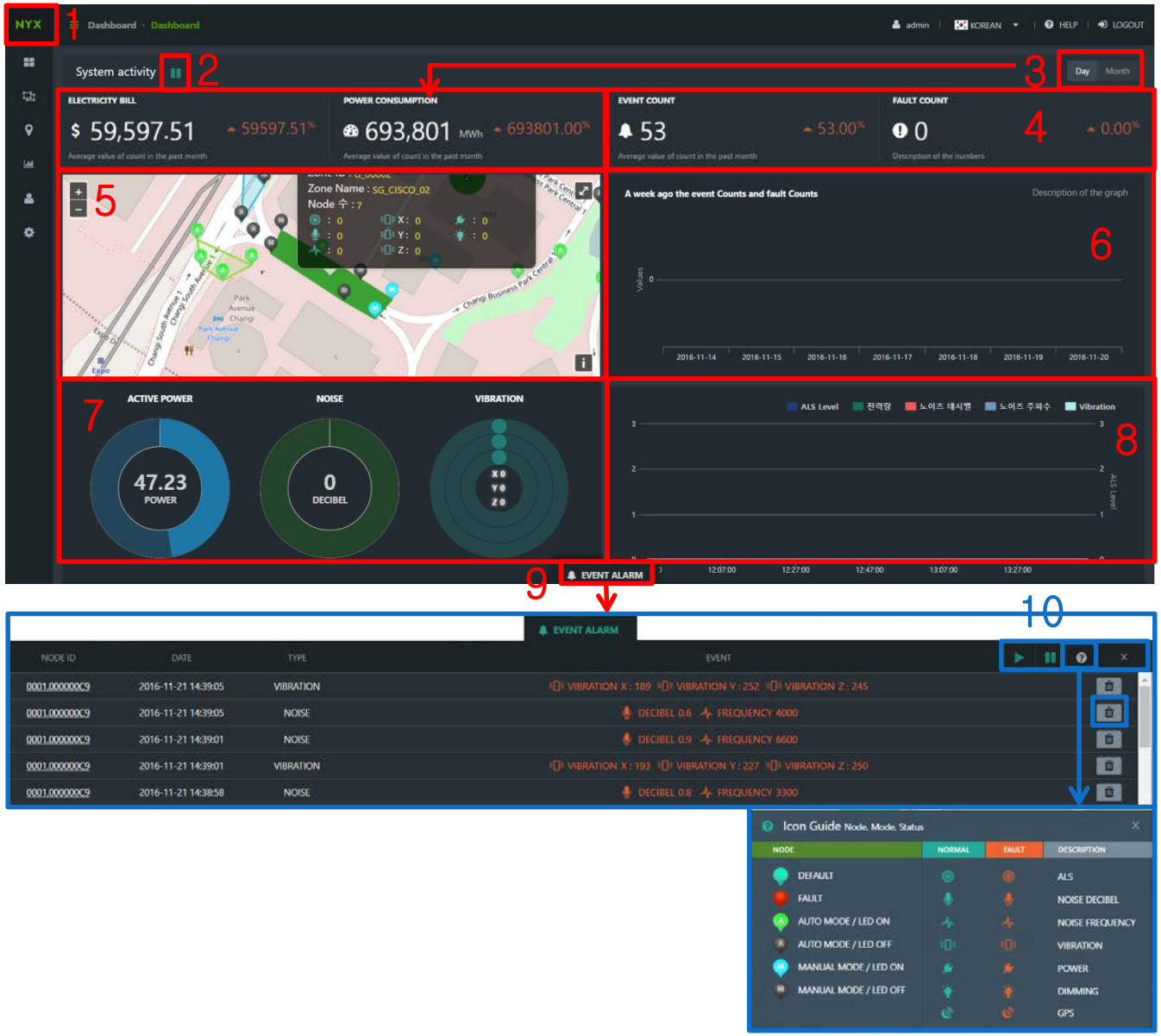




- Intro screen that appears when you first log into the system.

1. You can change the form of the table of contents when you click.
2. You can select one of the multilingual languages supported by the selection box, it conveniently indicates the currently logged in user.
3. Each widget shows a page that can be moved when clicked. At the same time, the user selects the page to set as the initial screen at login.
4. Each number in the widget represents the total number. Total number of nodes, total number of zones, number of events, number of users, etc.

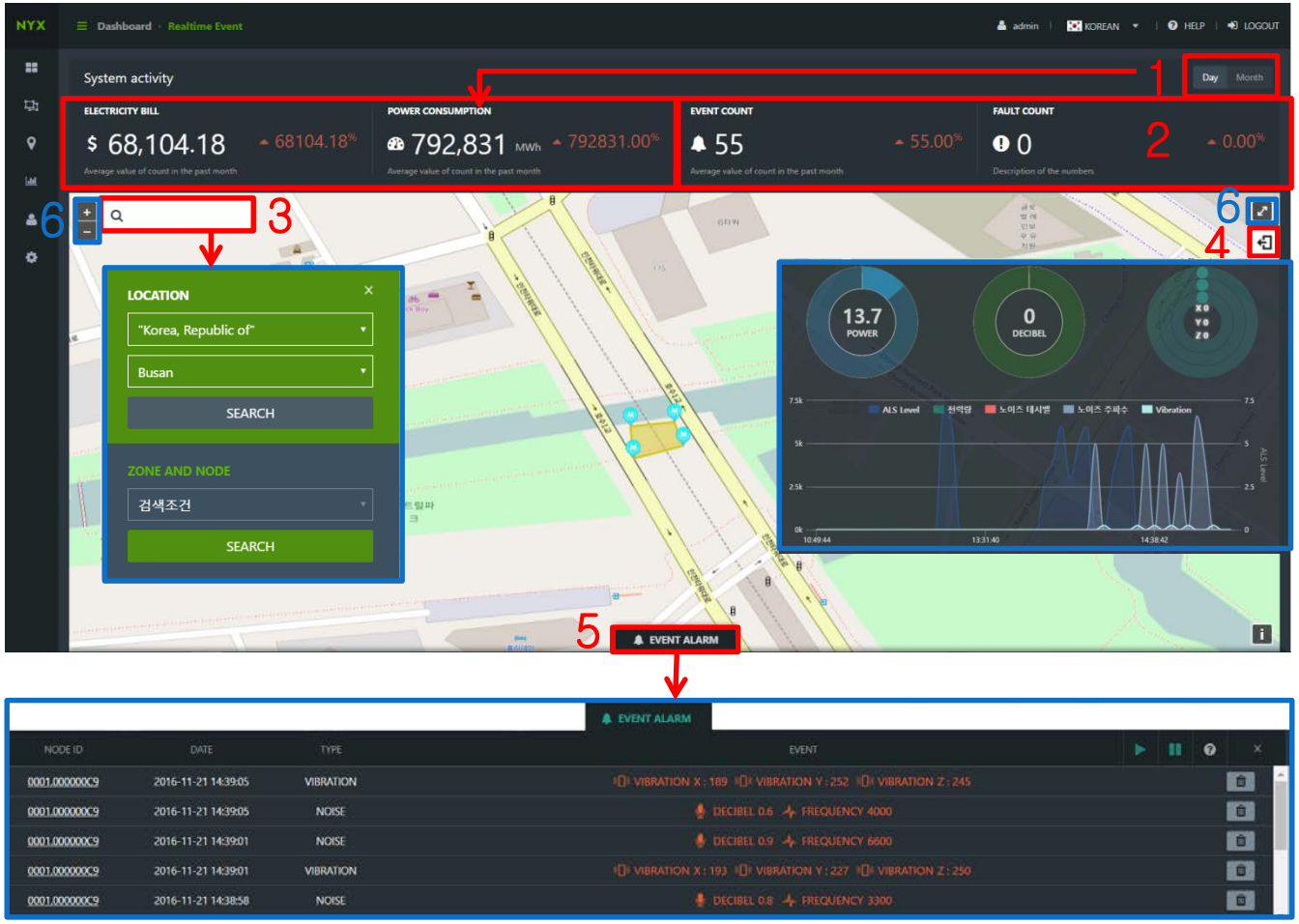
3. Dashboard - Dashboard



- Dashboard screen appears when you click [Dashboard] - [Dashboard].

1. Click to go to the Intro screen.
2. Function to pause the continuous display of Zone information repeatedly on the areas 5,6,7,8.
3. This button is used to display the power consumption and usage charge by day or month. Power usage, usage charges and the rate of change are displayed.
4. Displays the number of Realtime events and the number of faults along with the day-to-day rate of change.
5. Displays the location of the zone on the map. At this time, Tooltip displays basic information about Zone.
6. Displays a bar graph of Realtime event counts and fault counts over seven days.
7. POWER, NOISE, VIBRATION data on the Zone is visualized as a gauge.
8. Displays line graphs related Zone-level Realtime data like ALS Level, power consumption, NOISE decibel, NOISE frequency, and vibration.
9. The area where you can see the Realtime data when clicked is displayed from bottom to top. There are Pause, Continue button to confirm incoming data and you can delete event alarms that you do not need to display on the screen by clicking on the trash can icon..
10. Clicking the ? icon will bring up a window explaining the node status.

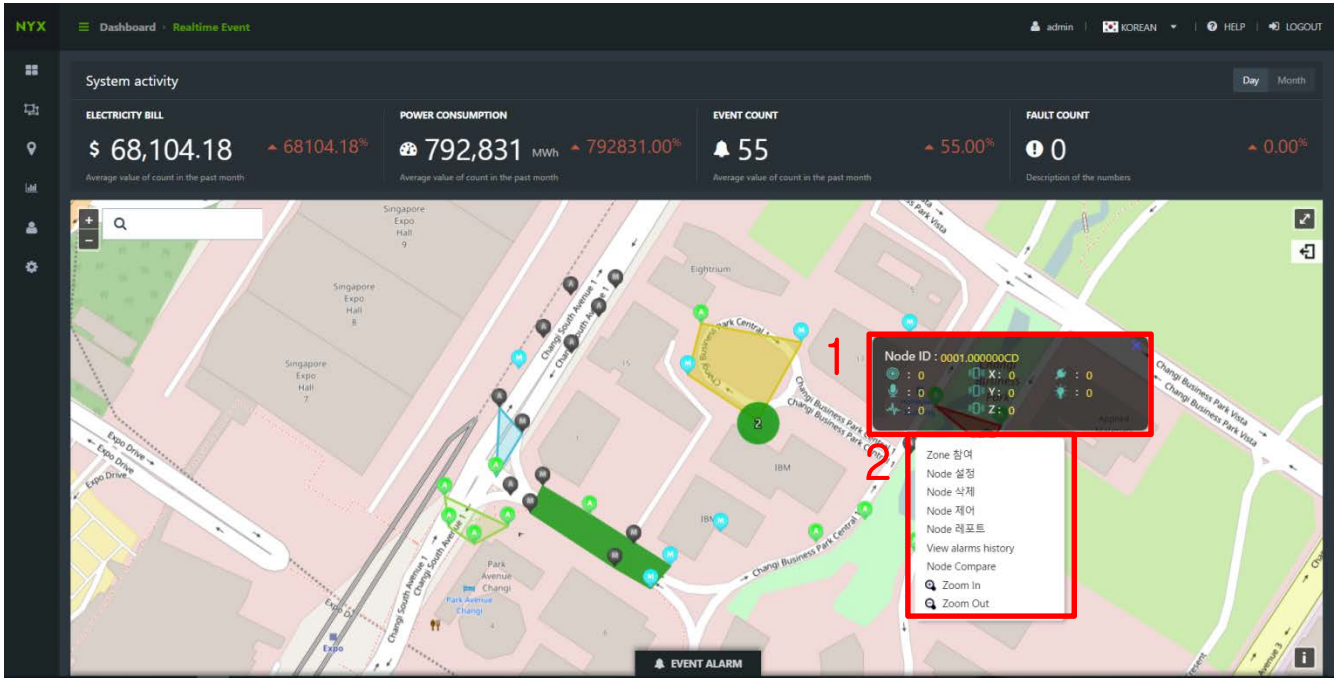
4. Dashboard – Realtime Event

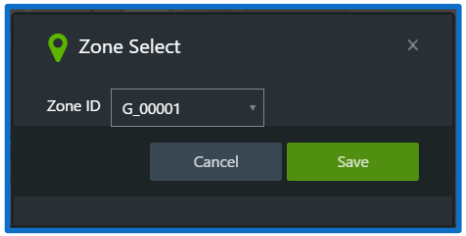


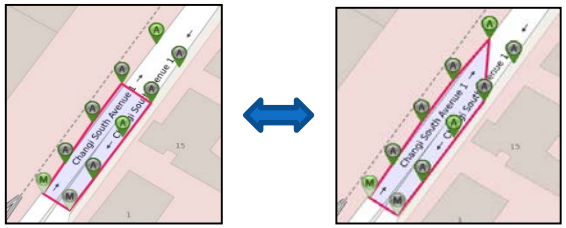
- Realtime Event screen appears when you click [Dashboard] – [Realtime Event] .

1. This button is used to display the power consumption and usage charge by day or month. Power usage, usage charges and the rate of change are displayed.
2. Displays the number of Realtime events and the number of faults along with the day-to-day rate of change.
3. Search for Country, City.. Retrieves the location of the Zone and Node. (Zone ID, Zone Name, Node ID) After searching, it moves to the searched position.
4. Button to expand the area where Realtime data is visualized as a gauge and a line graph when Realtime events occur.
5. Same function as in Dashboard, the area where you can see the Realtime data when clicked is displayed from bottom to top.
6. Function button for the map. (Zoom In/Out, Full screen)

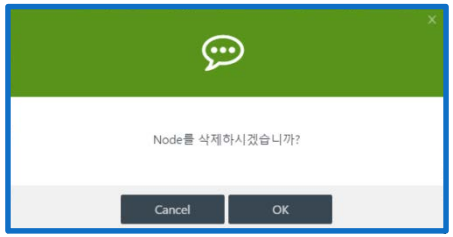
4. Dashboard – Realtime Event : Node







Join / Leave Zone



Node Delete

- Realtime Event screen when you click [Dashboard] - [Realtime Event].

1. Mouse over Node's basic information is displayed as Tooltip.
2. Context menu displayed when right click the Node.
   - Add to Zone : In case Node doesn't belong to Zone, Menu displays Join Zone , Leave Zone .
   - Configure node : Moves to the screen where you can update node information. ([Nodes] – Node is selected to move to the screen where you update information.)
   - Delete node : delete the Node.

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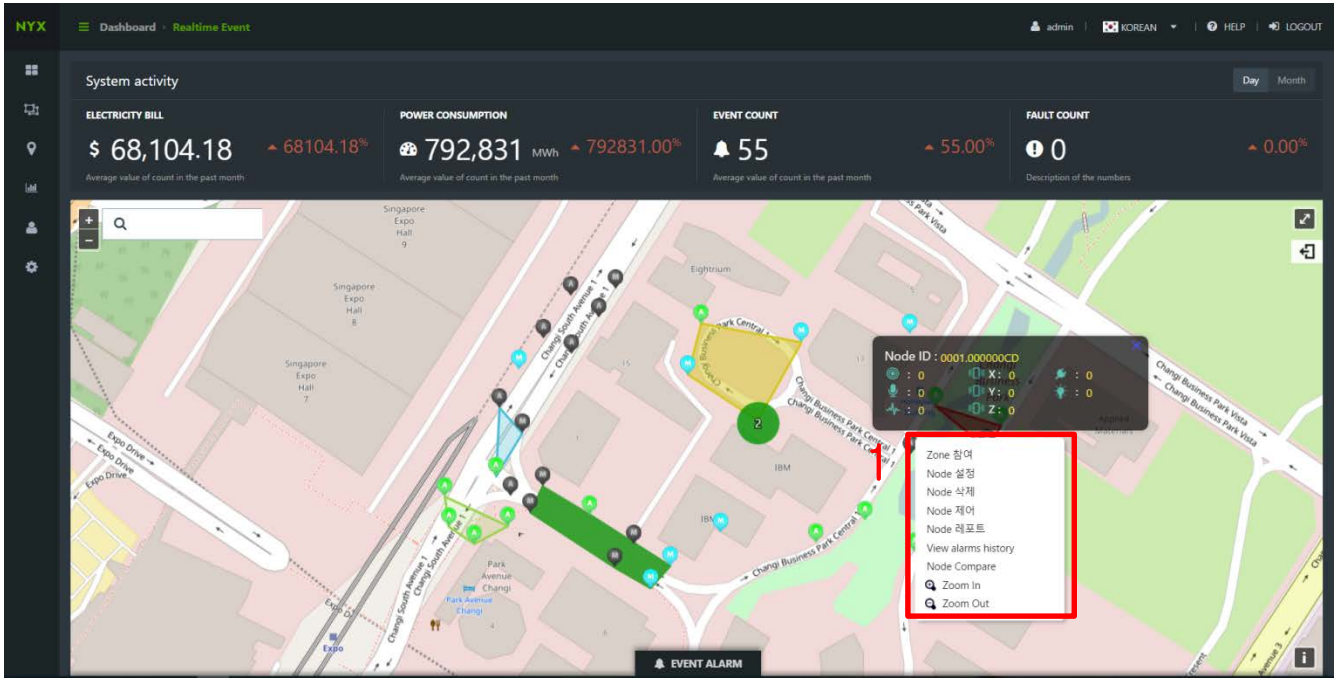
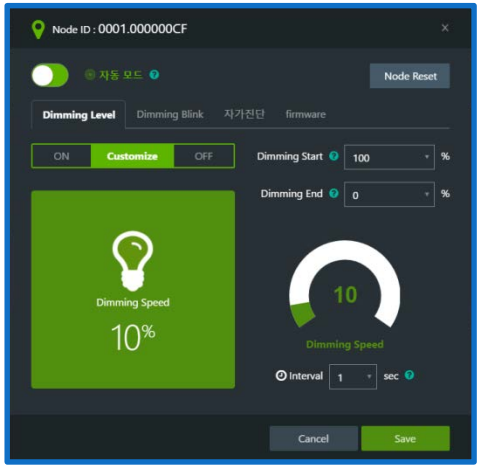
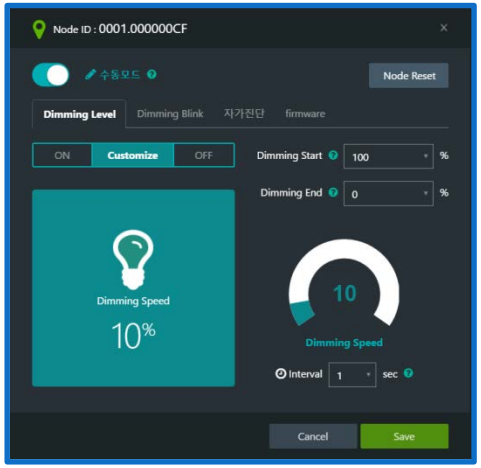
4. Dashboard – Realtime Event : Node





Node Control Auto Mode

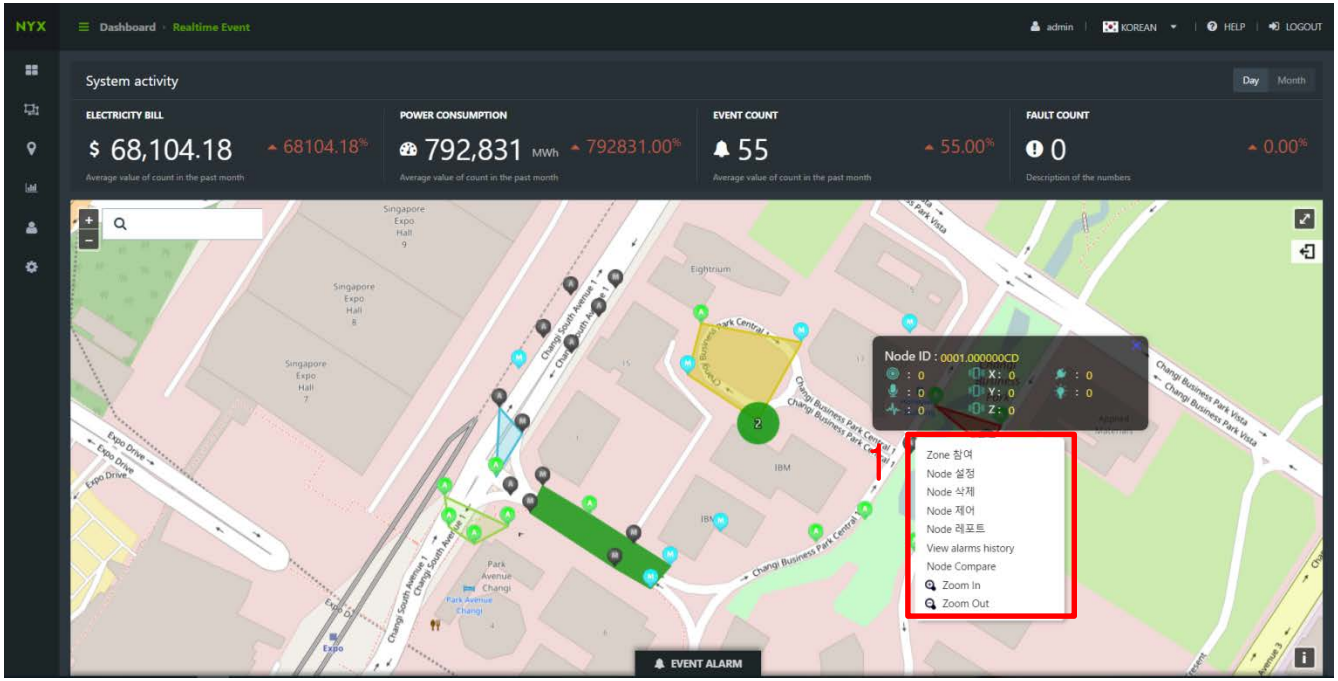


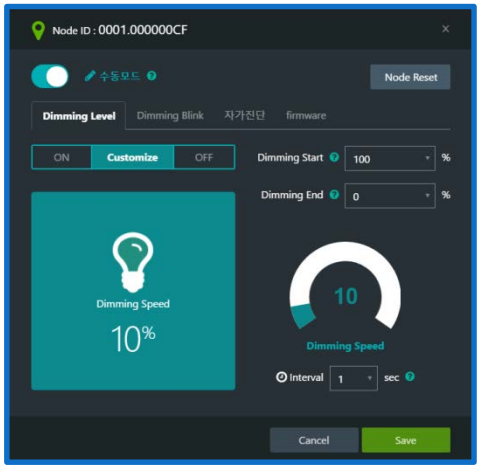
Node Control Manual Mode

- Realtime Event screen when you click [Dashboard] - [Realtime Event]

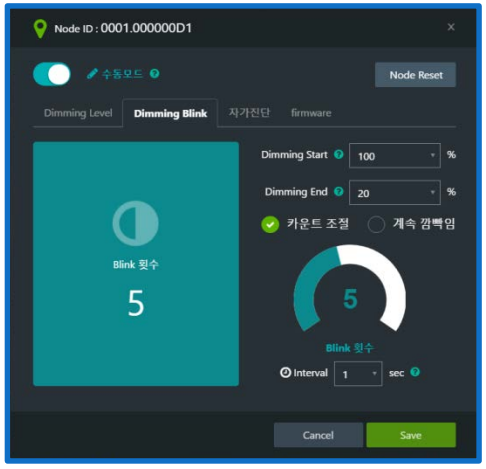
1. Context menu displayed when right click the Node.
   - Node Operational Control : A pop-up window appears to control Node.
     ▶Auto Mode: Sensor-controlled mode of Node.
     ▶Manual Mode: This mode is controlled by the user.

4. Dashboard – Realtime Event : Node





Dimming Level Control



Dimming Blink Control

- Realtime Event screen when you click [Dashboard] - [Realtime Event].

1. Context menu displayed when right click the Node.
   - Node Operational Control : A pop-up window appears to control Node.
     ▶Dimming Level : User turns ON/ OFF the light and can control Dimming Level.
     ▶Dimming Blink : User can control Blinking of the light

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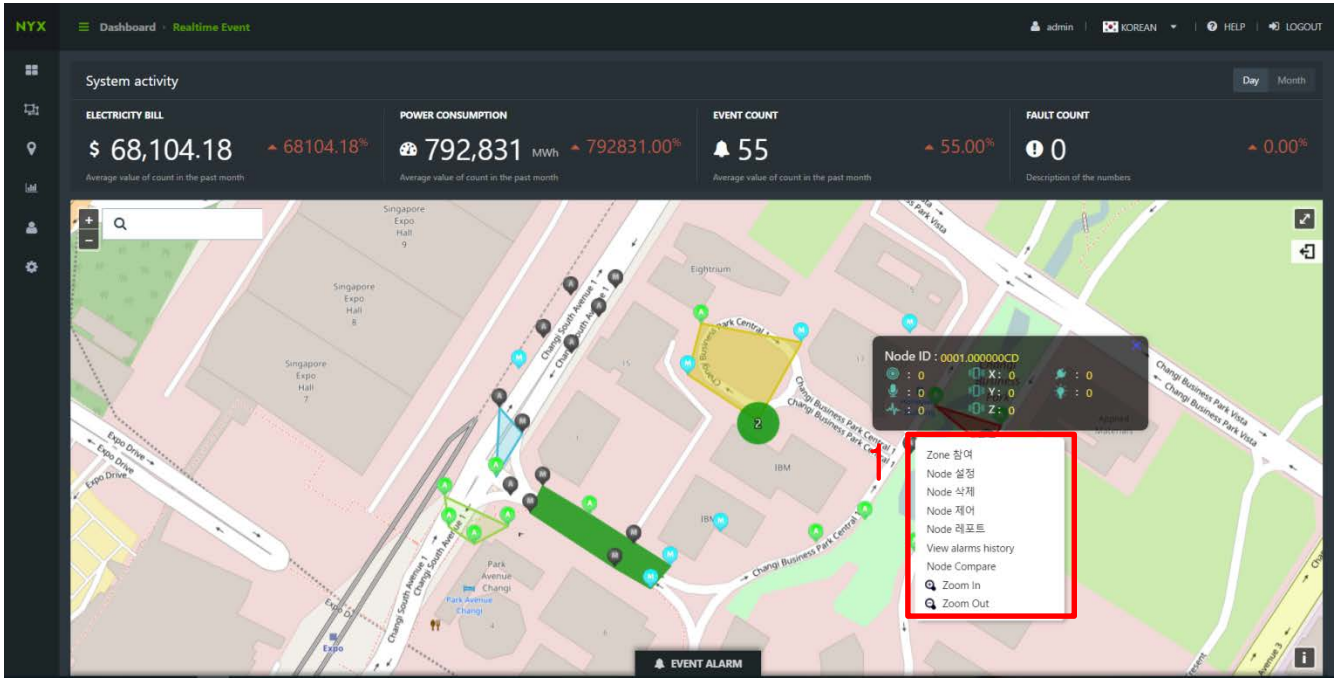
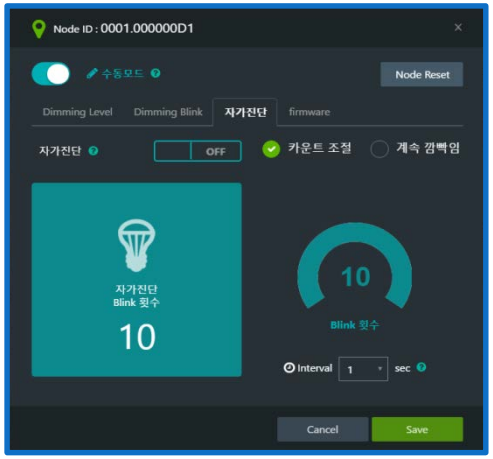
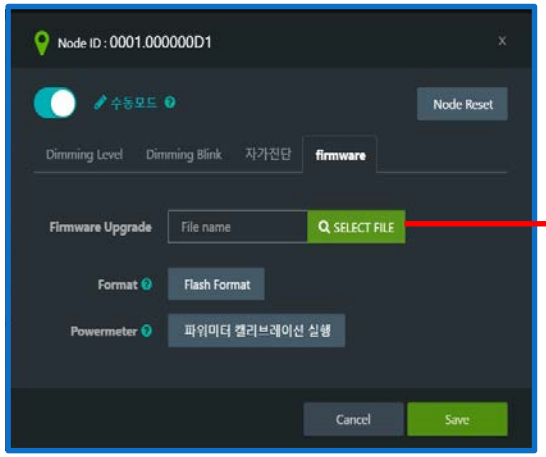
4. Dashboard – Realtime Event : Node

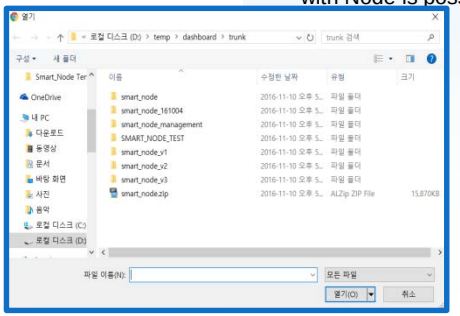




Self-diagnosis Control



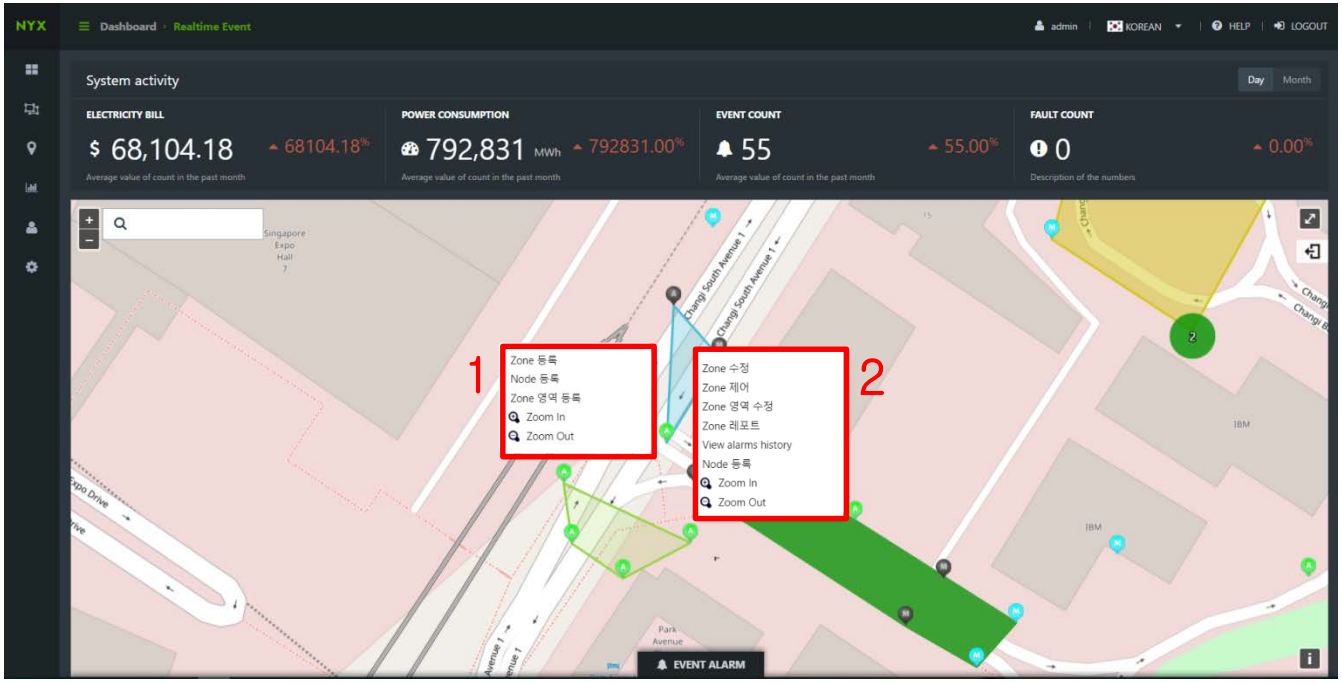
Firmware Control

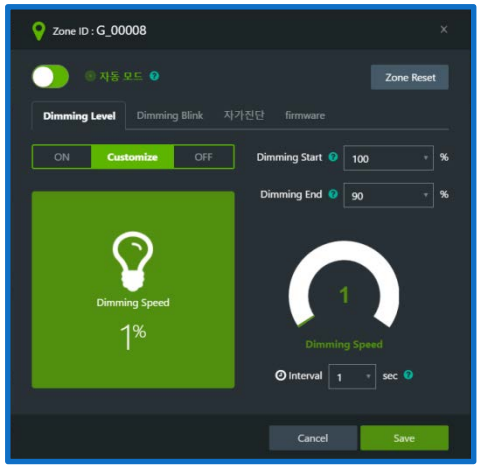


- Realtime Event screen when you click [Dashboard] - [Realtime Event].

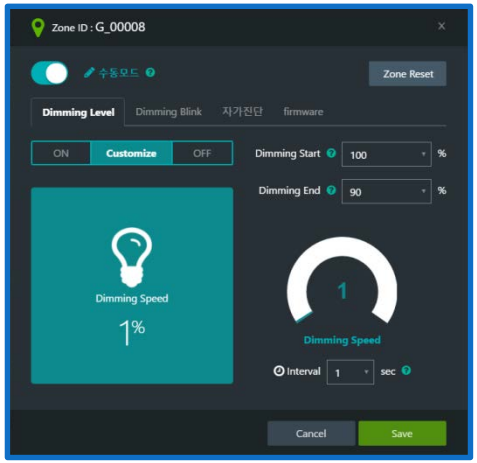
1. Context menu displayed when right click the Node.
   - Node Operational Control : A pop-up window appears to control Node.
     ▶Node diagnostics : User can control self-diagnosis.
     ▶Firmware : User can perform firmware update, Flash Format and Power Meter Calibration, etc for Node.
   - Create Node Report : Go to the page that charts the data of the Node for easy use by the user.
   - View alarms history : Go to the page where you can check the event alarm history of Node.
   - Node Compare : Navigate to a page where you can compare Node's own data with the data stored in the database. (Only when communicating with Node is possible.)

4. Dashboard – Realtime Event : Zone





Zone Control Auto Mode

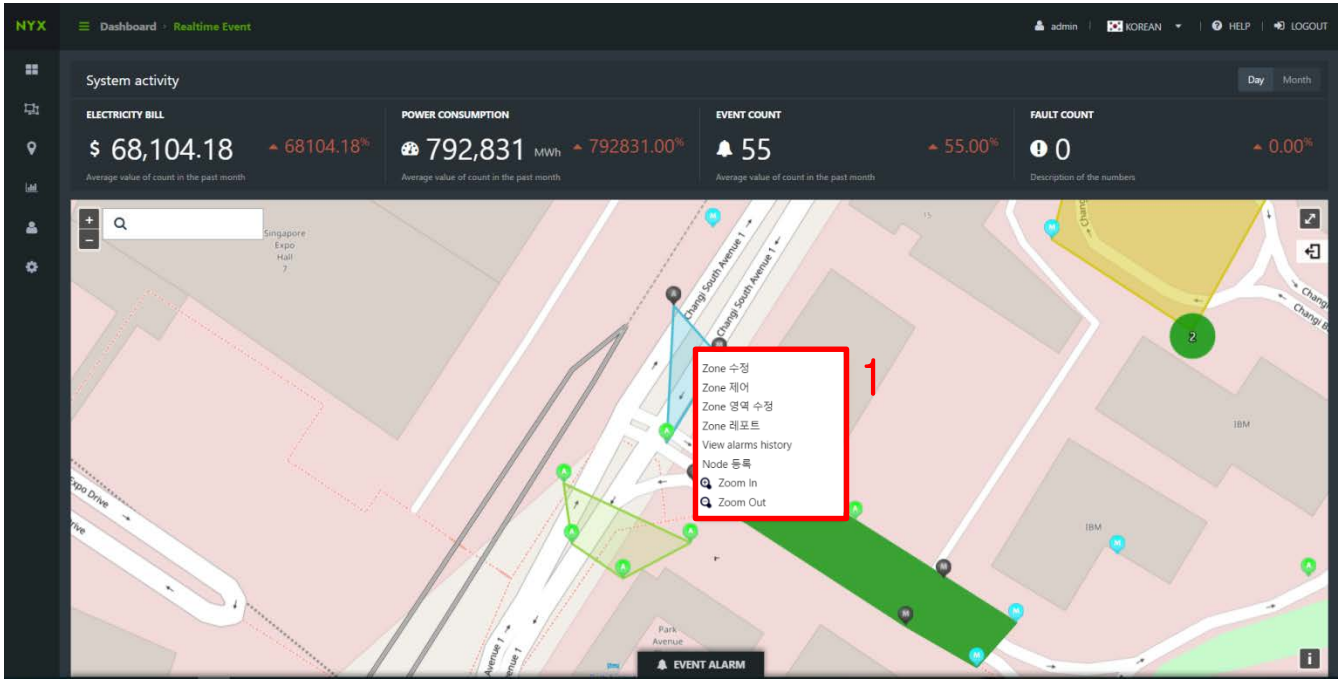


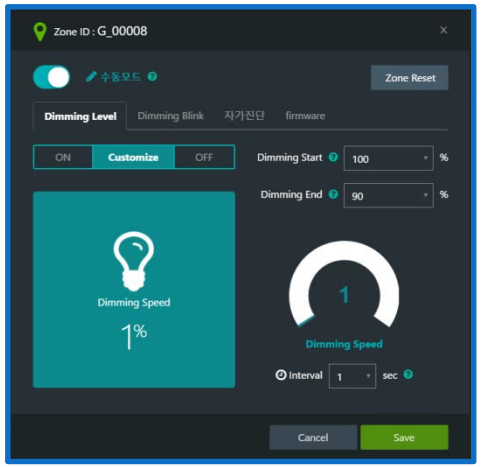
Zone Control Manual Mode

- Realtime Event screen when you click [Dashboard] - [Realtime Event].

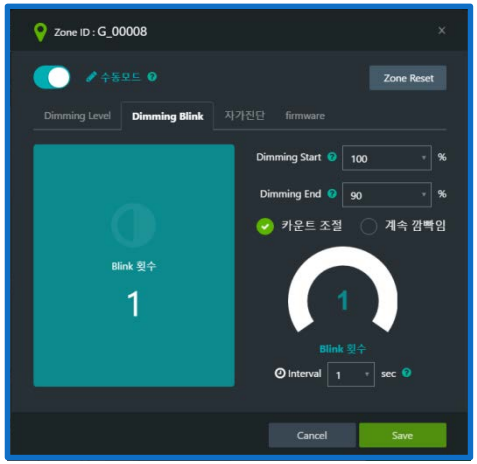
1. Context menu displayed when right click the Map.
   - Register zone : Moves to the zone registration screen.
2. Context menu displayed when right click the Zone.
   - Configure Zone : Moves to a screen where you can modify the information of the zone.
   - Zone Operational Control : A pop-up window appears to control the Zone.
     ▶Auto Mode : This mode is controlled by the sensor that belongs to Zone.
     ▶Manual Mode: User directly control the Node belonging to Zone.

4. Dashboard – Realtime Event : Zone





Dimming Level

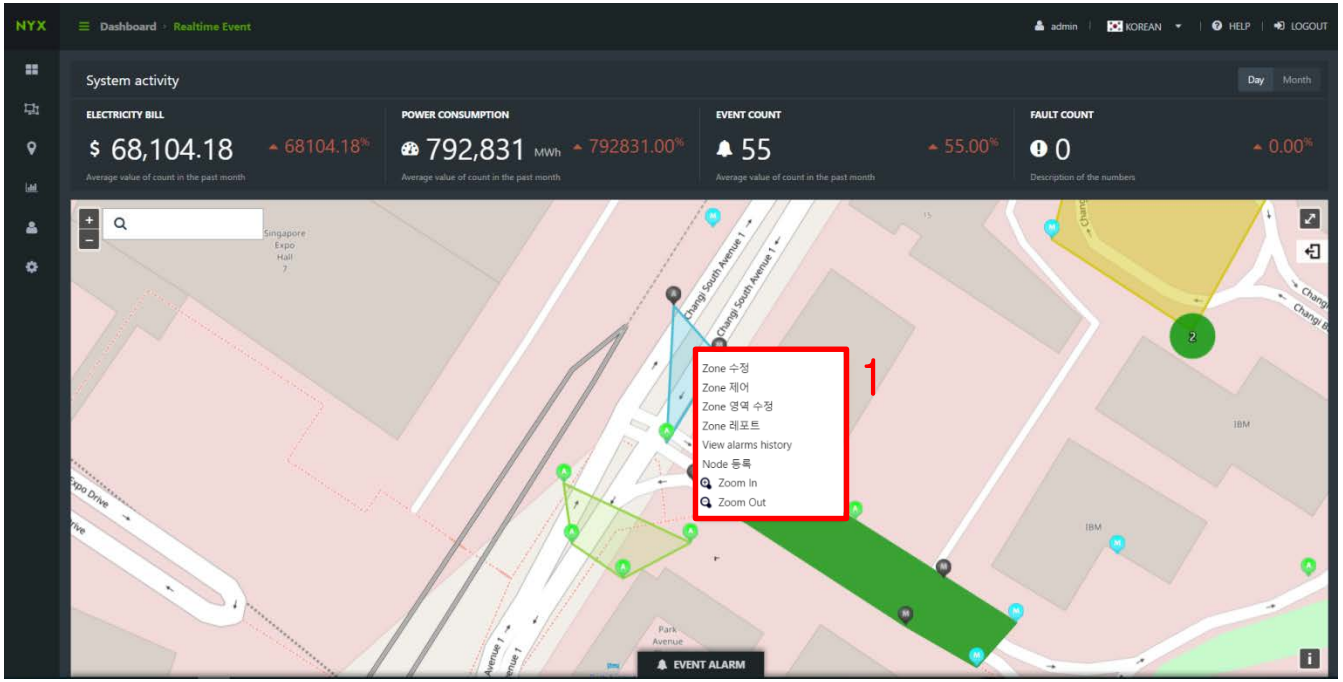


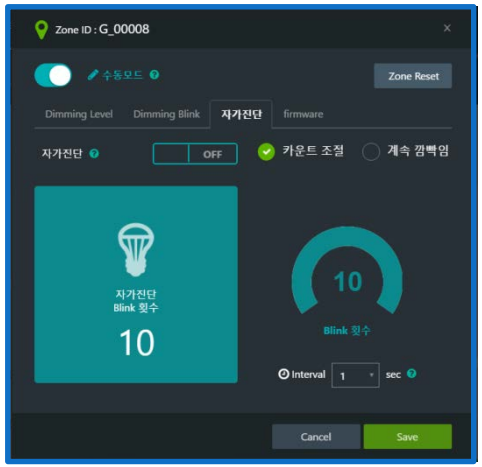
Dimming Blink

- Realtime Event screen when you click [Dashboard] - [Realtime Event].

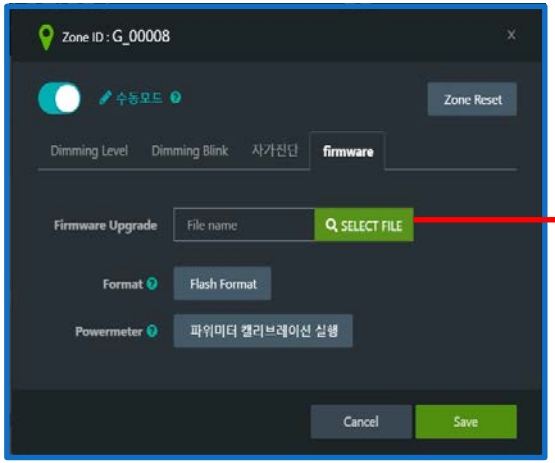
1. Context menu displayed when right click the Zone.
   - Zone Operational Control : A pop-up window appears to control the Zone.
   ▶Dimming Level : Dimming Level : User turn ON/ OFF the light and can control Dimming Level.
   ▶Dimming Blink : User can control Blinking of the light.

4. Dashboard – Realtime Event : Zone

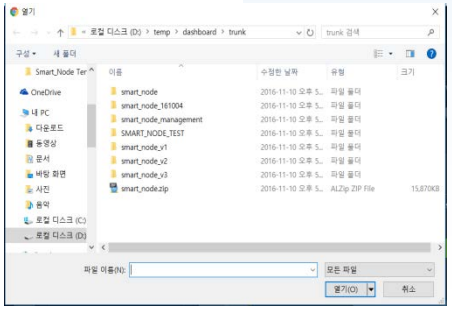




Self-diagnosis Control



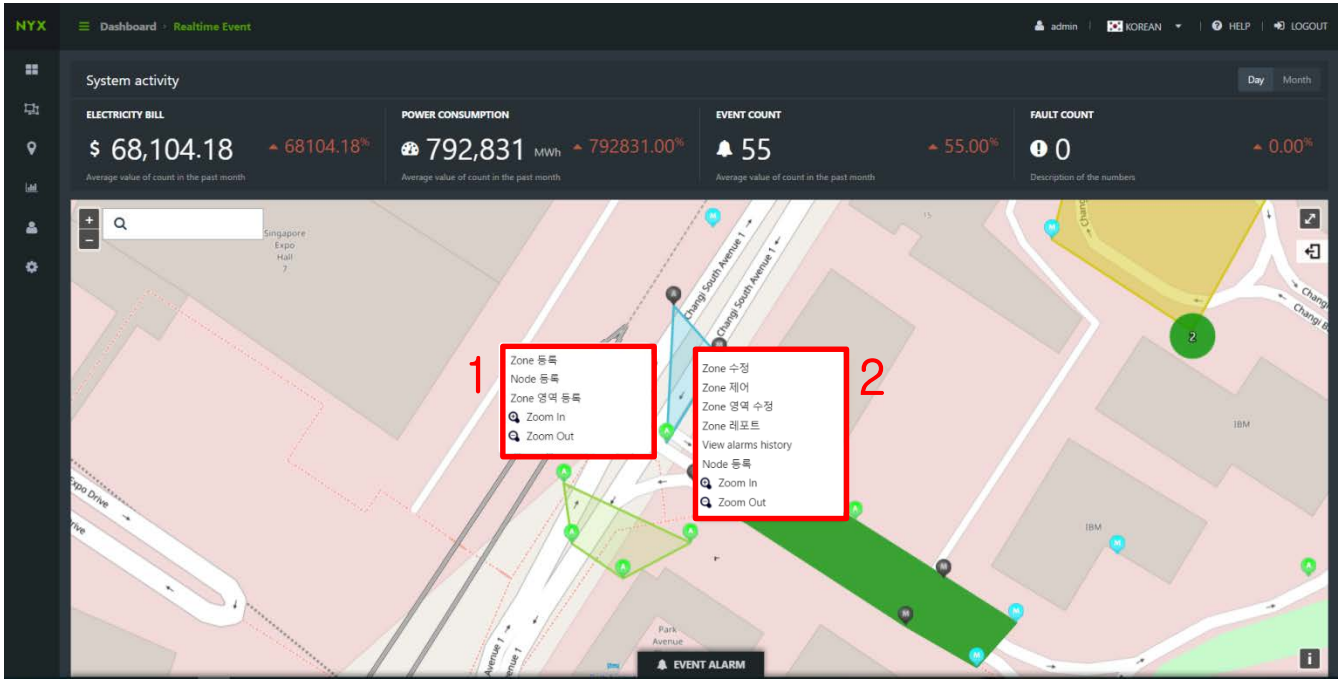
Firmware Control



- Realtime Event screen when you click [Dashboard] - [Realtime Event].

1. Context menu displayed when right click the Zone.
   - Zone Operational Control : A pop-up window appears to control the Zone.
   ▶Node Diagnostics : User can control self-diagnosis.
   ▶ Firmware : User can perform firmware update, Flash Format and Power Meter Calibration, etc. for Node.

4. Dashboard – Realtime Event : Zone



Only the nodes that have entered the dragged area join the Zone.

- Realtime Event screen when you click [Dashboard] - [Realtime Event].

1. Context menu displayed when right click the Map.
   - Register Zone : Moves to the zone registration screen.
   - Register Node : Go to the screen to register a new node.
2. Context menu displayed when right click the Zone.
   - Zone Area : You can join a Node by dragging the Zone's area.
   - Create zone Report : Go to the page that charts the data of the Zone for easy use by the user.
   - View alarms history : Go to the page where you can check the event alarm history of Node.
   - Register Node : Move to the screen where you can register Node.

4. Dashboard Screen – Realtime Event

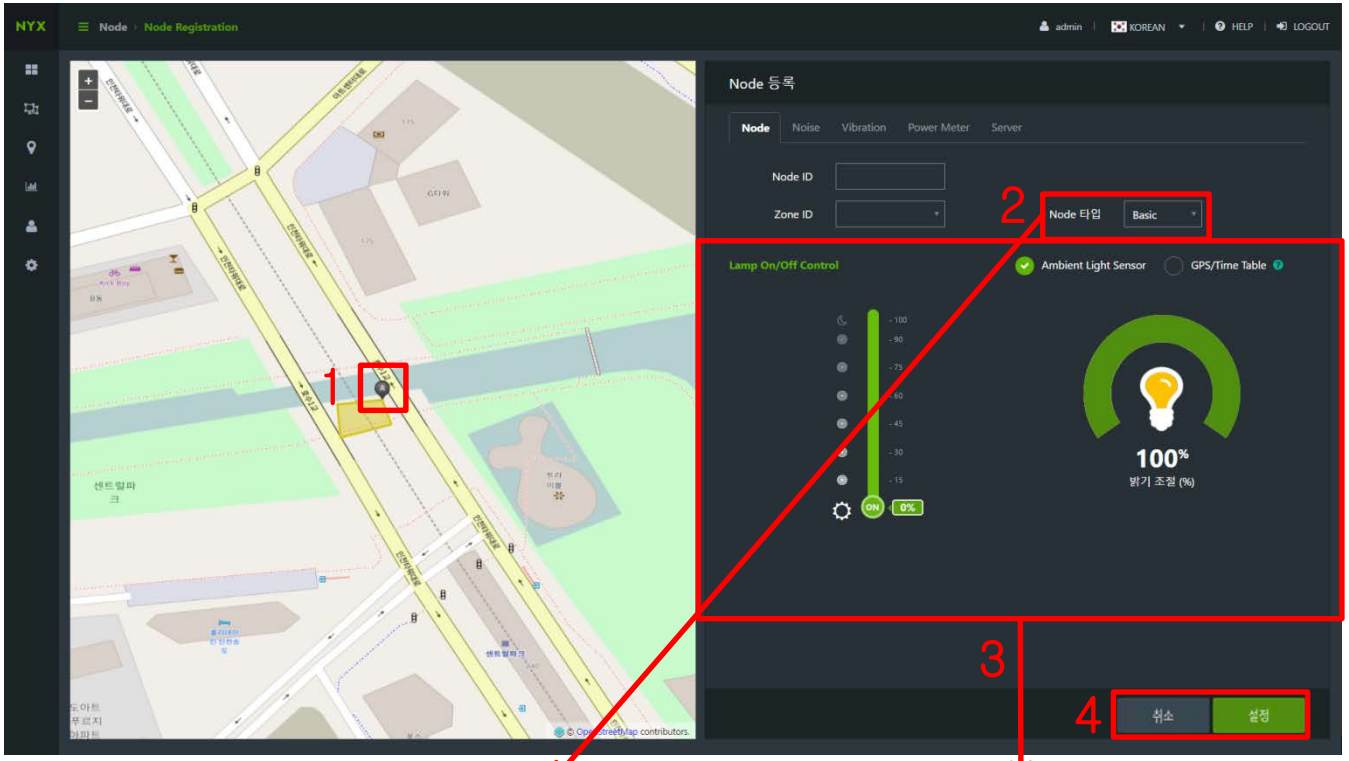
Node Control

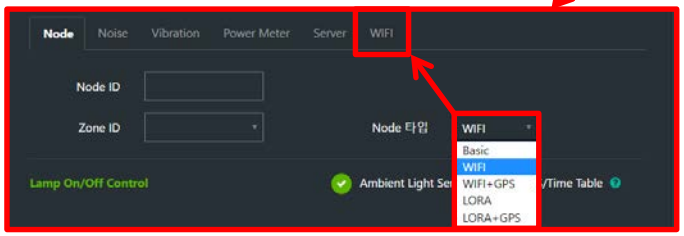
Name	Description
Node Reset	Node Reset
Node Operational Mode (Auto Mode / Manual Mode)	Change the operational mode of Node. No ALS / time table method is applied from the time of conversion to manual mode, and responds only to the user's command. If you switch to automatic mode, you can restore it to the previous state immediately.
Flash Format	If it is judged that there is a problem in storing the event because the flash memory to store the event is broken, the flash memory of the node can be forcibly initialized.
Power Meter Calibration	The power meter is calibrated for each node at the time of production at the factory, but the applied voltage and the expected current may vary depending on the installation environment, so the calibration is performed again remotely for the correct operation after installation. When this command is sent, the calibration is performed with the existing voltage / current value
Dimming Level	Change the dimming level After waiting for Start Level ~ End Level Interval (Unit: sec), then dimming is done by subtracting de (in) crement level. Start/End Level = 0 ~ 31, or 0xff : current operational level Interval = 1 ~ 255 sec, De(In)crement = 1 ~ 31 (for example, LED On --> Start Level(255), End Level(31), Interval(1), De(In)crement(31) LED Off --> Start Level(255), End Level(0), Interval(1), De(In)crement(31))
Dimming Blink	Blink by repeating the levels: Start Level -> End Level -> Start Level. Wait for Interval(Unit: sec).
Blink Count	Blink Count: 1~254, or 0xff: Continuous

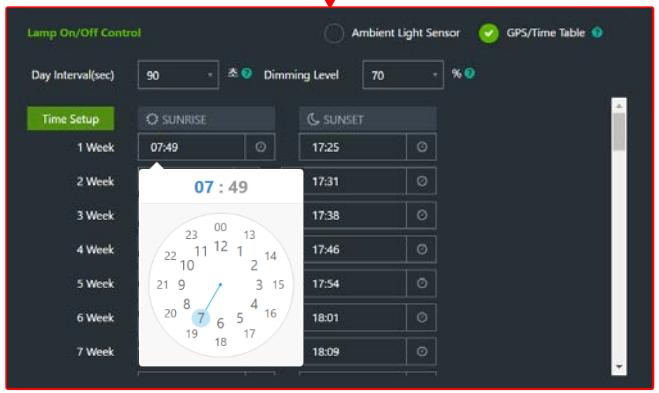
4. Dashboard Screen – Realtime Event

Name	Description
Interval	Dimming interval between start and end levels to blink
In(De)crement	Dimming Level In(De)crease (Increase or decrease of LED Dimming level after dimming Interval)
Self-diagnostics LED On/Off	Operate blinking of Self-diagnosis LED. Wait for Interval(Unit: sec) amount of time.
Firmware Upgrade	Upgrading firmware

5. Node – Node Registration







- Node Register screen when you click [Node] - [Node Registration].

1. Indicates the location of the Node that is set by default. The location of the Node can be moved by dragging it wherever you want.
2. Depending on the type of Node, a tab is displayed that shows WIFI related information.
3. Lamp On / Off Control can be decided. The right screen is the Ambient Light Sensor case. When GPS / Time Table is clicked, an area is created to set the time corresponding to 52 weeks as shown below.
4. Register / Cancel Button
   Register : Register a new Node.
   Cancel : Cancels the Node registration operation and moves to the screen where you can see the registered nodes.

5. Node – Node Registration

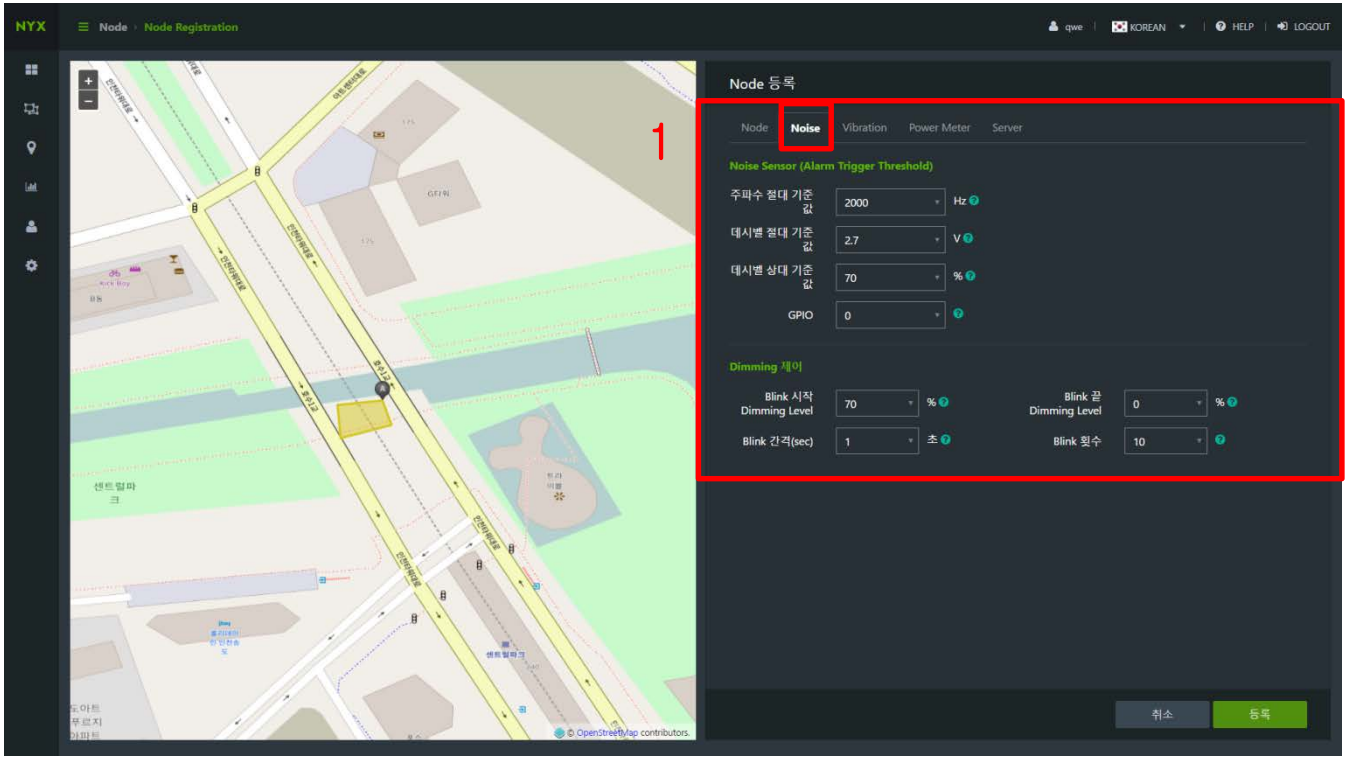
1. Dimming Control

Name	Default Value	Description
Dimming Control Method	0	Select whether the streetlight control is changed to the ALS value or the time set in the time table
ALS Level vs. Dimming Level Mapping Table	ALS Dimming 0 - 31 1 - 26 2 - 22 3 - 17 4 - 13 5 - 9 6 - 4 7 - 00 (Off)	Matching table that maps 8 levels of ALS value to dimming level to control brightness of light. Setting maps that matches 8 levels of ALS value to 32 levels (0~31) of dimming range ALS Level : 0(Dawn) -> 7(Midday), Dimming Level: 0(Off) -> 31(Highest brightness)

2. Time Table

Name	Default Value	Description
Streetlight On Time	190(19:00)	Divide the year by week (52 weeks) at a weekly interval and register the streetlight On / Off time corresponding to the first day of each week. 1440 Minutes which is 24 hours divided by 6 minutes For example) 14:20 is 860 minutes, divided by 6 minutes resulting in the value 143
Streetlight Off Time	60(60:00)	
Dimming Level	22	Dimming level when the streetlight turns to be On
Daily Incremental Time	90 sec	Daily incremental time amount from starting day of 52 weeks for a week

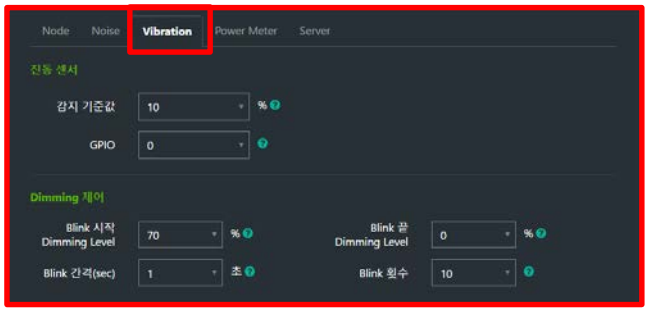
5. Node – Node Registration



- Node Registration screen when you click [Node] - [Node Registration].

1. This is a tab for configuring the Noise sensor. By, The default setting information is displayed, and the user can change as needed..
   You can set the dimming control according to the Noise sensor. The default setting information is displayed.
2. You can set the dimming control according to the Vibration sensor. The default setting information is displayed.
3. The default configuration information related to the self-diagnosis LED of the Node is displayed and can be changed according to the user's convenience.
   The default configuration information related to the Power Meter of the Node is displayed and can be changed according to the user's convenience.

2. Vibration



3. Power Meter

5. Node – Node Registration

1. Noise

Name	Default value	Description
Frequency Absolute	10	Absolute reference value of Frequency to be detected in Noise sensor (An Event occurs when the value or above value is detected)
Decibel Absolute	25	Absolute reference value of Decibel to be detected in Noise sensor (Confirm as Voltage, Range : 0~3.3V, Unit : 0.1V)
Decibel Relative	50	Relative reference value of Decibel to be detected in Noise sensor (Confirm as Voltage, if the voltage is higher than the normal voltage + pre-defined ratio, an event occur)
Blink Start Dimming Level	22	Starting value of dimming level when an event in noise sensor occurs
Blink End Dimming Level	0	Ending value of dimming level when an event in noise sensor occurs
Blink Interval	1	Interval between the Starting value and the Ending value of dimming level
Blink Count	10	Number of times to blink
GPIO Signal Duration	0	Time to reset the GPIO value to OFF. (When an event in noise sensor occurs, GPIO value is set to ON)

5. Node – Node Registration

2. Vibration

Name	Default value	Description
Event Trigger Threshold	10	An event occurs if the measured value of the sensor is higher than the Reference Value plus normal value
Blink Start Dimming Level	22	Starting value of dimming level when an event in vibration sensor occurs
Blink End Dimming Level	0	Ending value of dimming level when an event in vibration sensor occurs
Blink Interval	1	Interval between the Starting value and the Ending value of dimming level
Blink Count	10	Number of times to blink
GPIO Signal Duration	0	Time to reset the GPIO value to OFF. (When an event in vibration sensor occurs, GPIO value is set to ON)

3. Power Meter – Self-Diagnosis

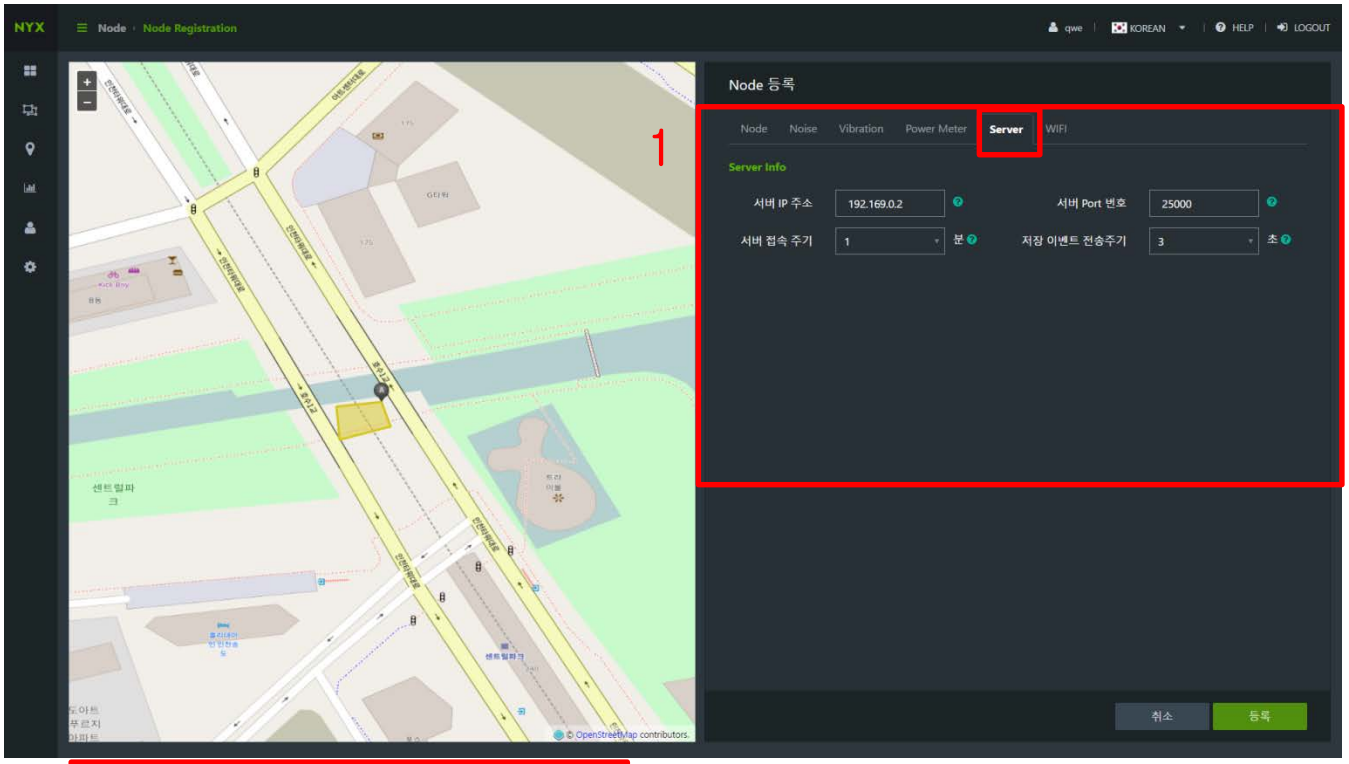
Name	Default value	Description
Blink Interval	1	Time interval between LED on and off during self-diagnosis (Alarm functionality to notify bad/faulty LED)
Blink Count	10	Number of times to blink

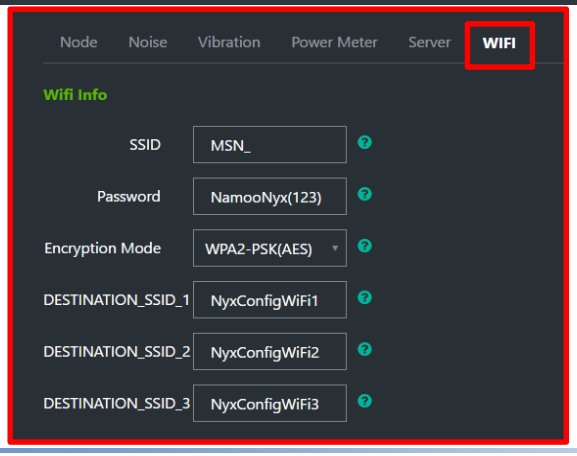
5. Node – Node Registration

3. Power Meter - Power Meter

Name	Default value	Description
Voltage	220	Reference value to calibrate the power meter
Amperage	2	Estimated reference current value to calibrate the power meter
Frequency	60	
Pulses	41600	
Sensitivity	3	
Blink Interval	15	Interval to measure the power meter. Transmit the power meter information to the server as the interval. If NW is fail, store the information in the memory.

5. Node – Node Registration





- Node Registration screen, when click node id in [Node] - [Node Registration].

1. Default values for the server are displayed and you can change them to what you want .
2. When you select node type, the WIFI tap appears . Default values are displayed and you can change them.

5. Node – Node Registration

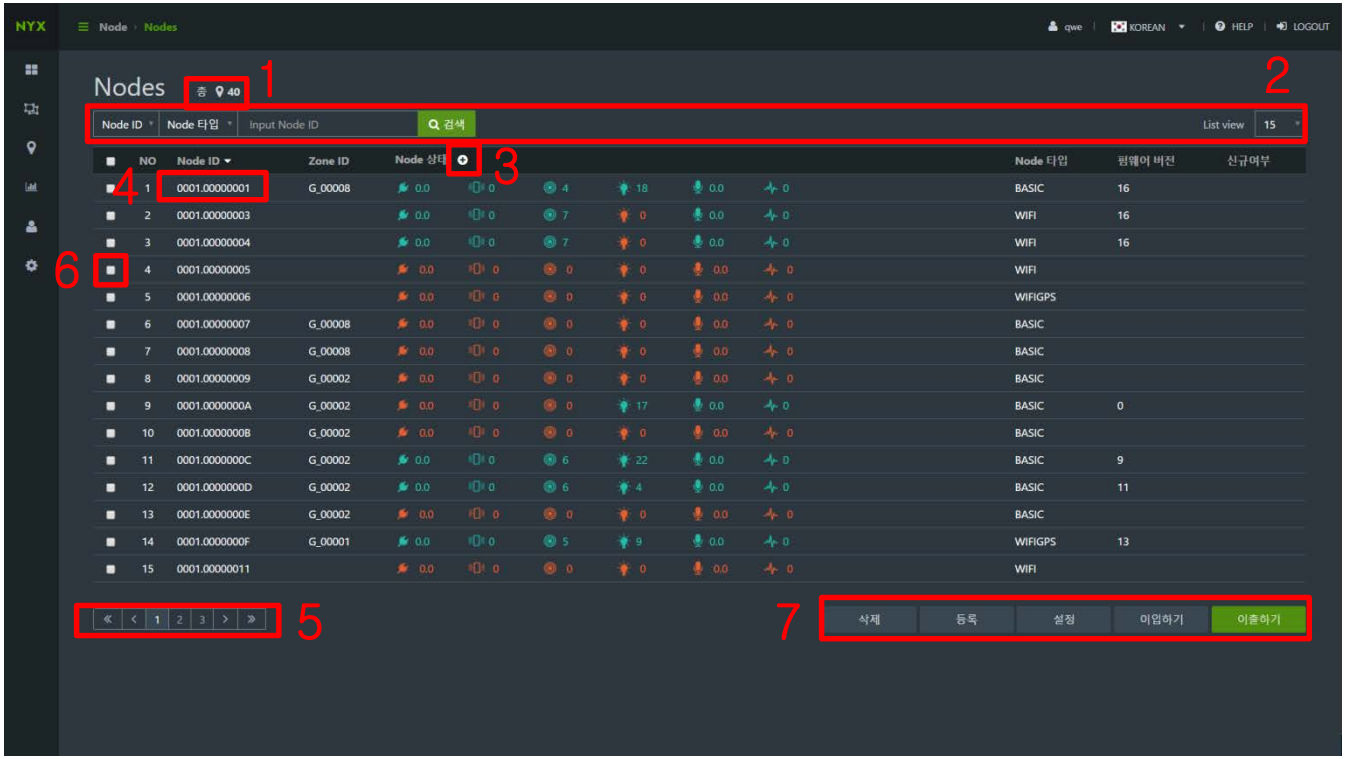
1. Server

Name	Default value	Description
Server IP	192.169.0.2	IP Address of the server
Port	25000	Port Number of the server (Little-Endian)
Server (Re)connection Interval	1	Interval to try re-connect when server connection is fail
Transmission Interval for stored events	3	Interval to transmit stored events during the NW failure After recovering from it.

2. WIFI

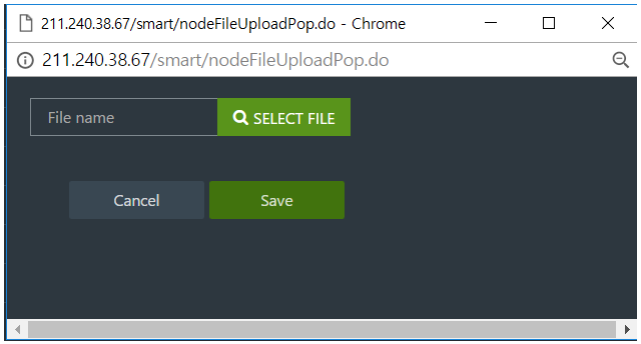
Name	Default value	Description
My_SSID	NyxConfigWiFi	My SSID (Real SSID = Default value + HexaString of my unique Id)
Key	NamooNyx(123)	Need to set the value as Encryption Key of the Wireless AP, which is connected recently.
Encryption Mode	1	Set Encryption mode. Need to set the value as Encryption Mode of the Wireless AP, which is connected recently.
Dest_SSID_1	NyxConfigWiFi1	Interval to transmit stored events and power information during the NW failure after recovering from it.
Dest_SSID_2	NyxConfigWiFi2	Determine the method of Street Light control – based on photo sensor or value in Time Table
Dest_SSID_3	NyxConfigWiFi3	Set Wireless AP ID(SSID), which is needed to connect. To prepare NW connection problems, Add 3 possible SSIDs of Wireless AP which are nearby. SSID is case-sensitive and max 32 byte long – alphabet, numeric and special characters are allowed. If it's length is less than 32 byte, remaining portion need to be padded as 0x00.

6. Node – Nodes

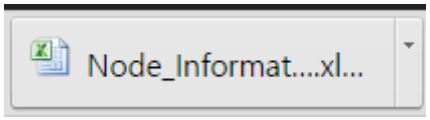


- View Node screen when click node id in [Node] - [Nodes].

1. Total number of Nodes.
2. Search nodes via various criteria combinations - direct input of Node ID, node type, max # of nodes to lookup
3. Display extra information of nodes which are displayed on the screen.
4. When click Node ID, move to a screen in which you can change detail information on it.
5. You can choose a page among multi pages.
6. If checked, you can view more detail information on the node.
7. Buttons which can be viewed only to administrator.
   ▶Delete : Delete the node(s) which is/are checked in the box
   ▶Register : Move to Node Registration screen.
   ▶Setup : Move to Configure Node Screen.
   ▶Import : Import multiple node information from a excel file.
   ▶Export : Export Node information to a excel file..

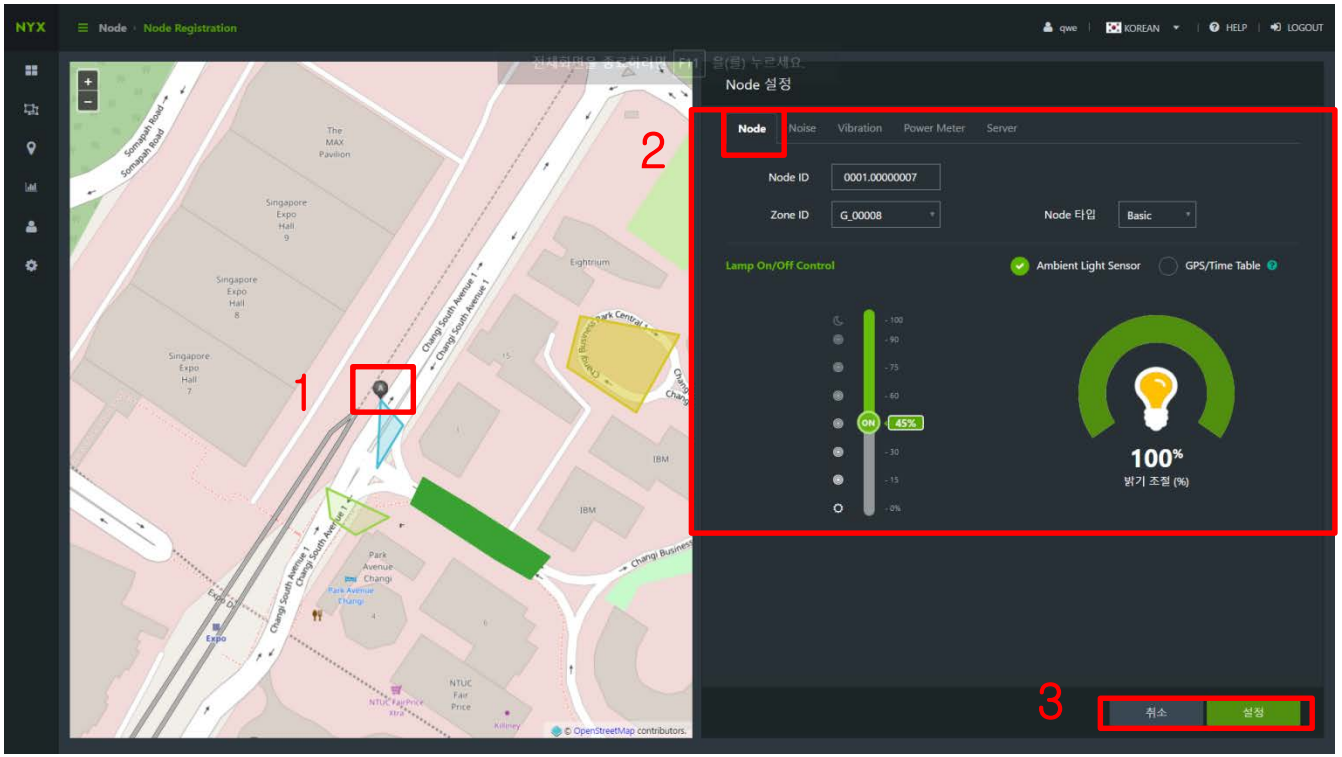


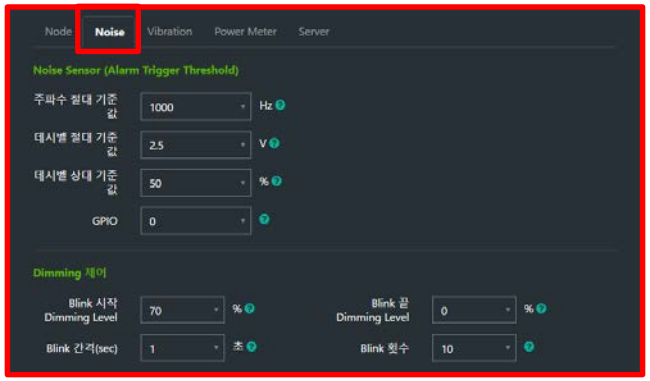
Import from an Excel File



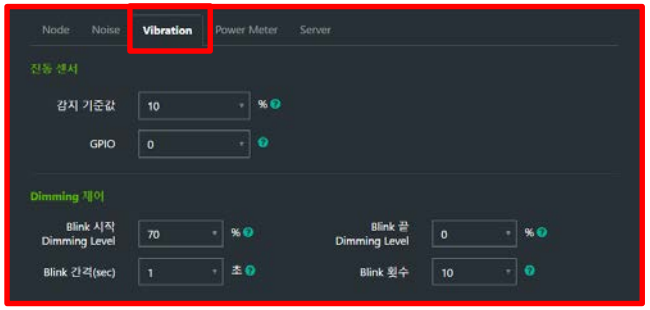
Export to an Excel file

7. Node – Configure Node





Noise

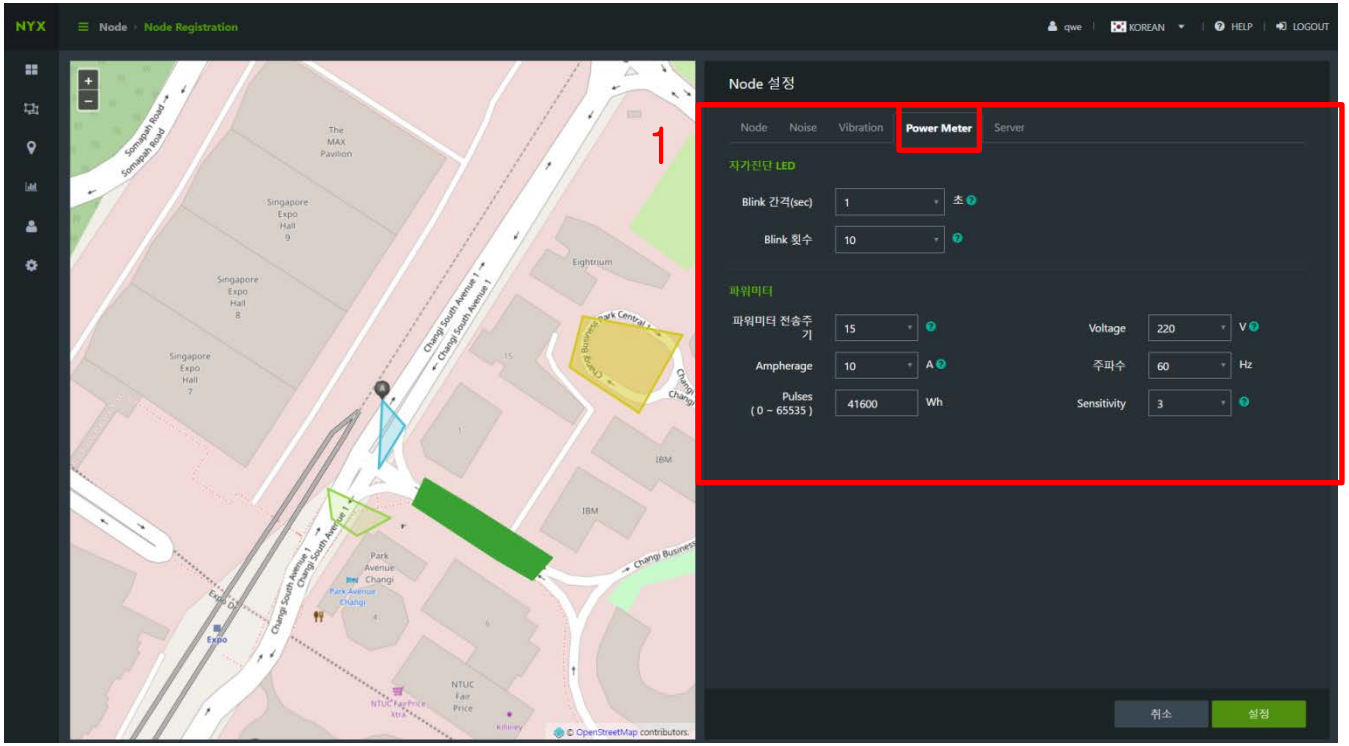


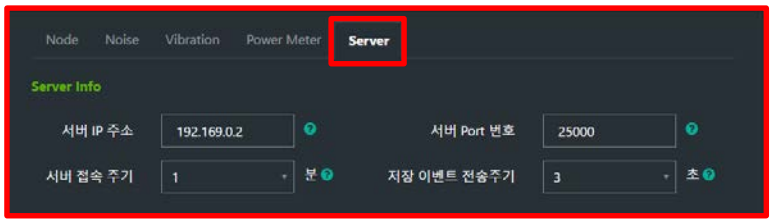
Vibration

- Configure Node screen, when click node id in [Node] - [Nodes].

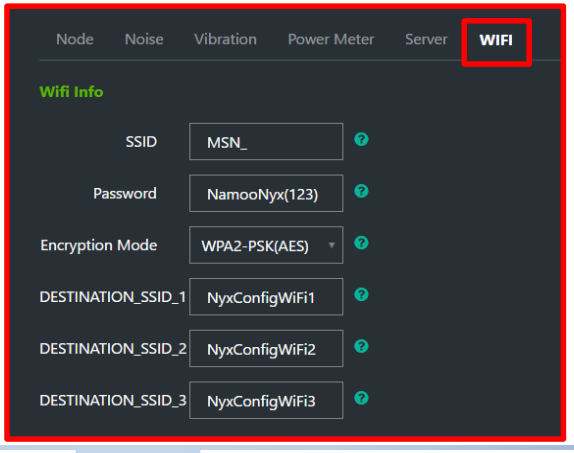
1. Display the position of node what you want to configure.
2. Display default values of Node, Noise, and Vibration, and you can change them.
3. Setup / Cancel Buttons
   ▶Setup : Update the information what you changed.
   ▶Cancel : Cancel what you changed.

7. Node – Configure Node





Server

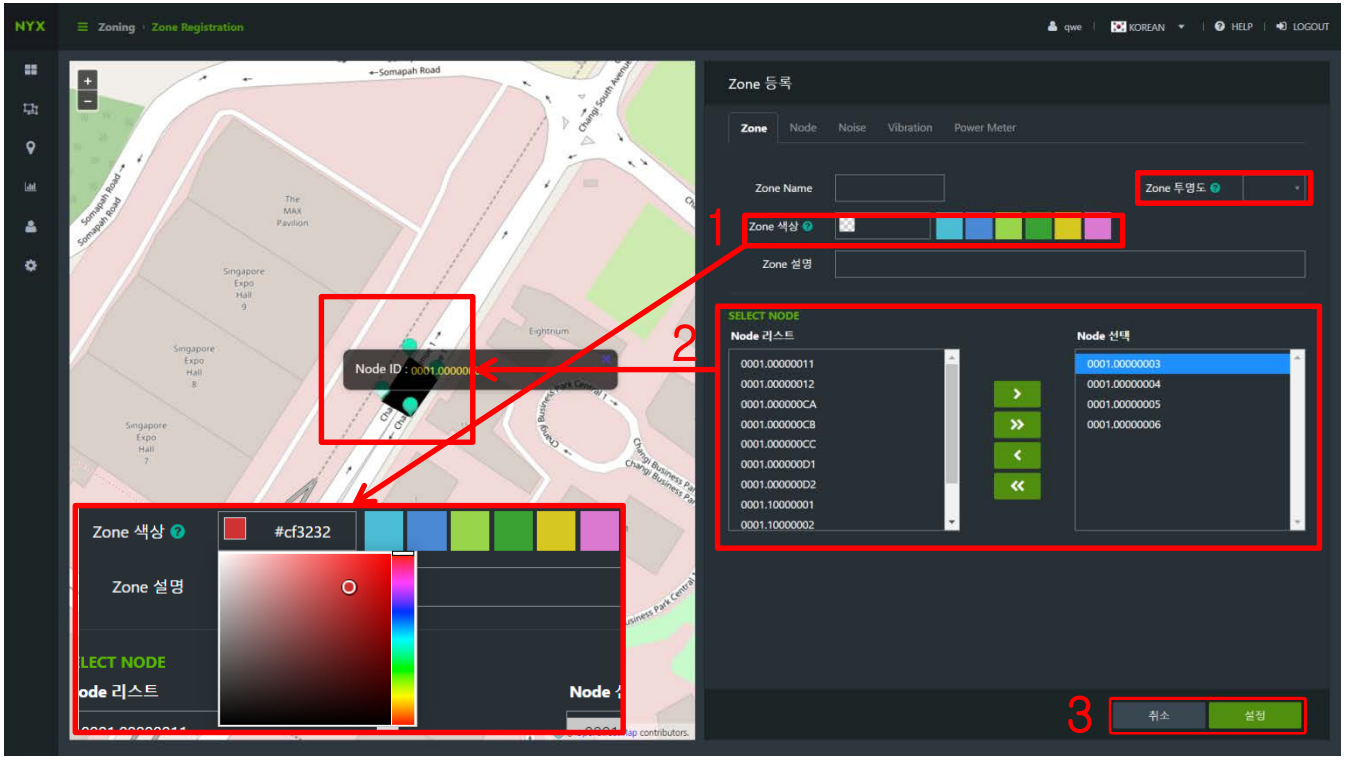


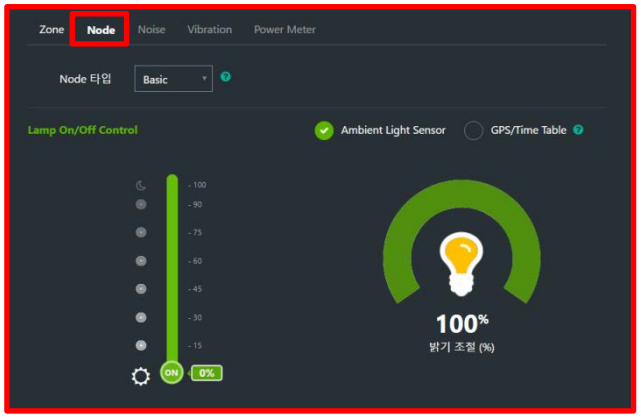
Wifi

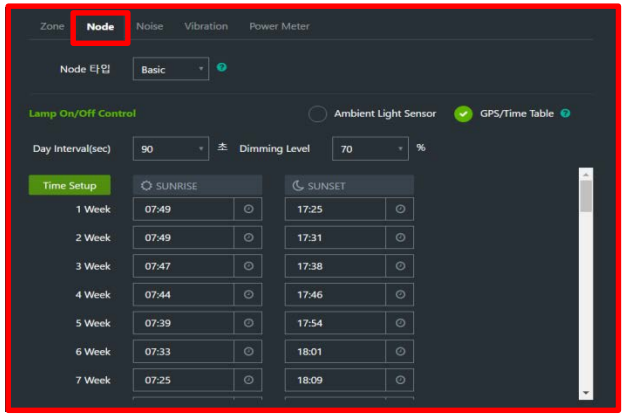
- Configure Node screen, when click node id in [Node] - [Nodes]

1. Default values for the Power Meter, Server and WIFI are displayed and you can change them .
2. When you select node type, the WIFI tap appears . Default values are displayed and you can change them.

8. Zone – Zone Registration



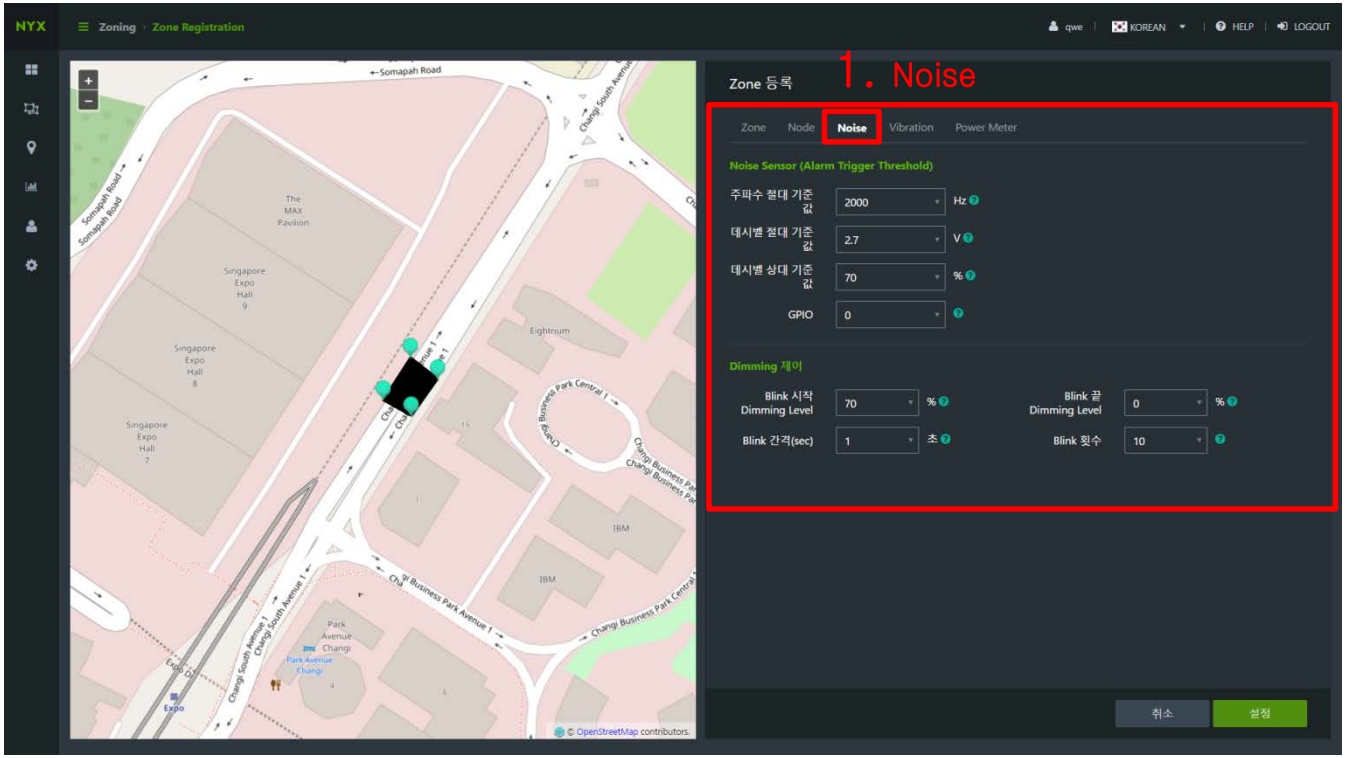


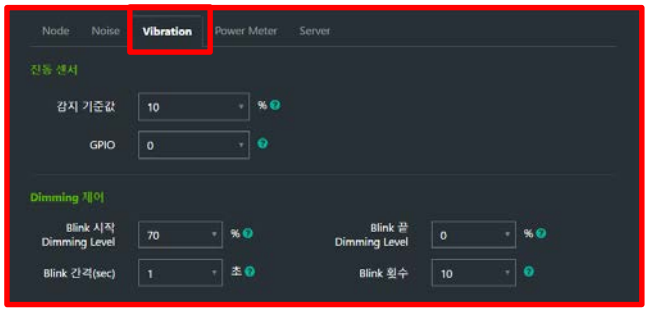


- Zone Registration screen, when click [Zone] - [Zone Registration]

1. User need to configure the basic information on the Zone.
   Select a color for the Zone from Color palette or sample colors.
2. Select a Node, and move it using >, >>, <, << buttons. Then A zone will be displayed on the map automatically. Whenever you select a node, Tool tip for node location will be displayed.
3. Setup / Cancel buttons
   Setup : Add new Zone.
   Cancel : Cancel the job and return to View Zone screen.
4. Default values of nodes are displayed and they can be changed.
   Determine the Lamp On/Off Control methods among Ambient Light Sensor and GPS/Time Table. When select method of GPS/Time Table, A table appear, in which you can configure time for 52 weeks.

8. Zone – Zone Registration

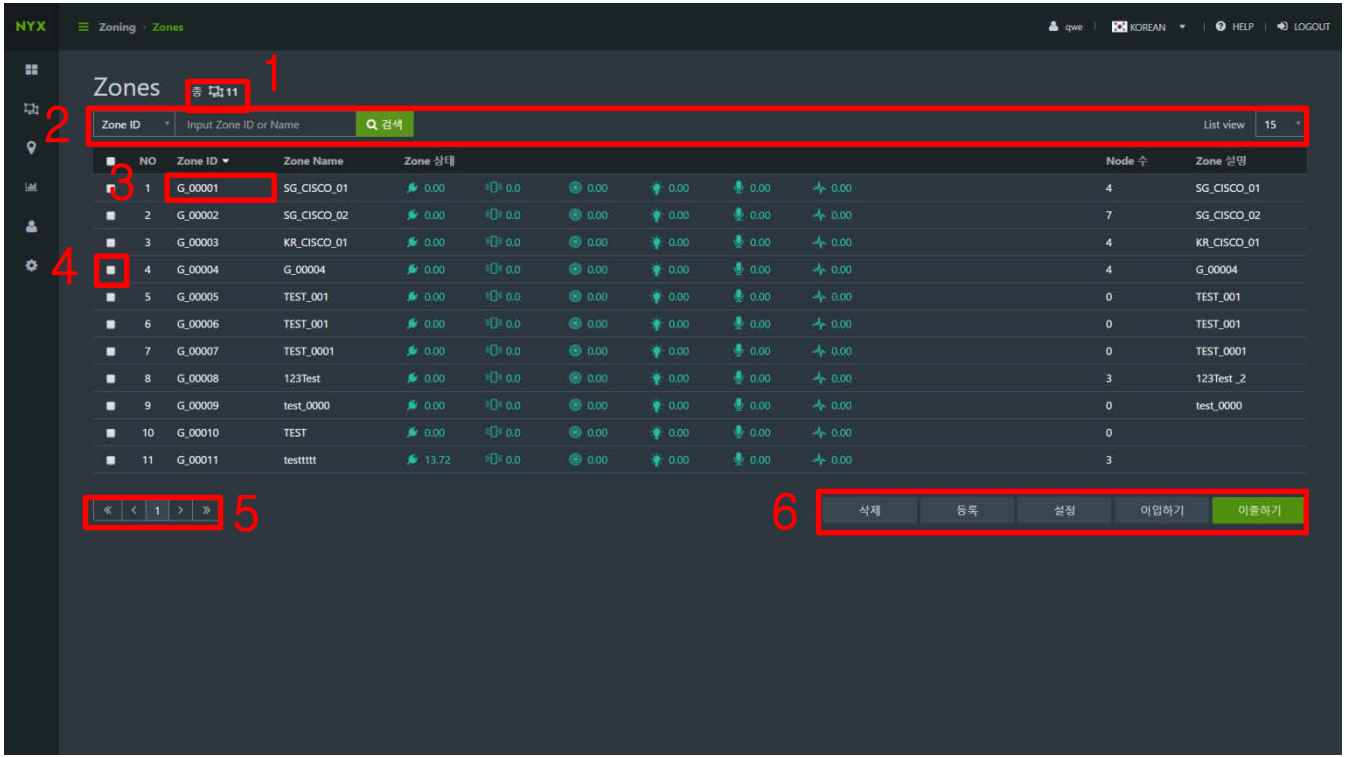




- Zone Registration screen, when click [Zone] - [Zone Registration]

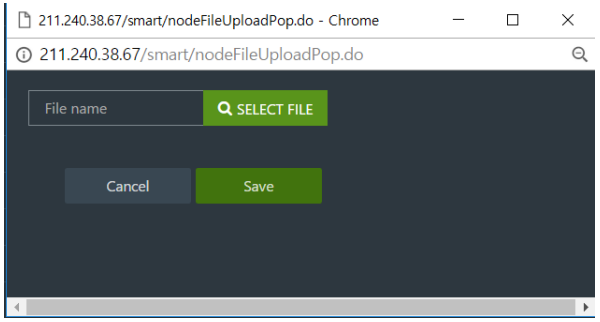
1. A Tab in which configure Noise sensor. Initially, default values are displayed and you can change them.
   Dimming Control information according to Noise sensor values is also displayed and can be changed.
2. A Tab in which configure Vibration sensor. Initially, Default values are displayed and you can change them.
   Dimming Control information according to Vibration sensor values is also displayed and can be changed.
3. A Tab in which Node Diagnostics LED information of the node is displayed. Initially, default values are displayed and you can change them.
   Power Meter information of the node is also displayed and can be changed.

9. Zone – Zones

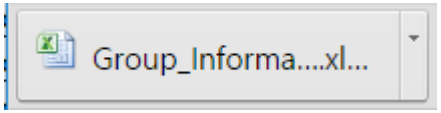


- View Zone screen, when click [Zone] - [Zones]

1. Total number of zones.
2. Search zones via various criteria combinations - direct input of Zone ID, Zone Name, max # of zones to lookup
3. When click Zone ID, move to a screen in which you can change detail information on it.
4. If checked, you can delete it.
5. You can choose a page among multi pages.
6. Buttons which can be viewed only to administrator.
   ▶Delete : Delete the zone(s) which is/are checked in the box
   ▶Register : Move to Zone Registration screen.
   ▶Setup : Move to Zone Configuration Screen.
   ▶Import : Import multiple zones information from a excel file.
   ▶Export : Export zone information to a excel file.

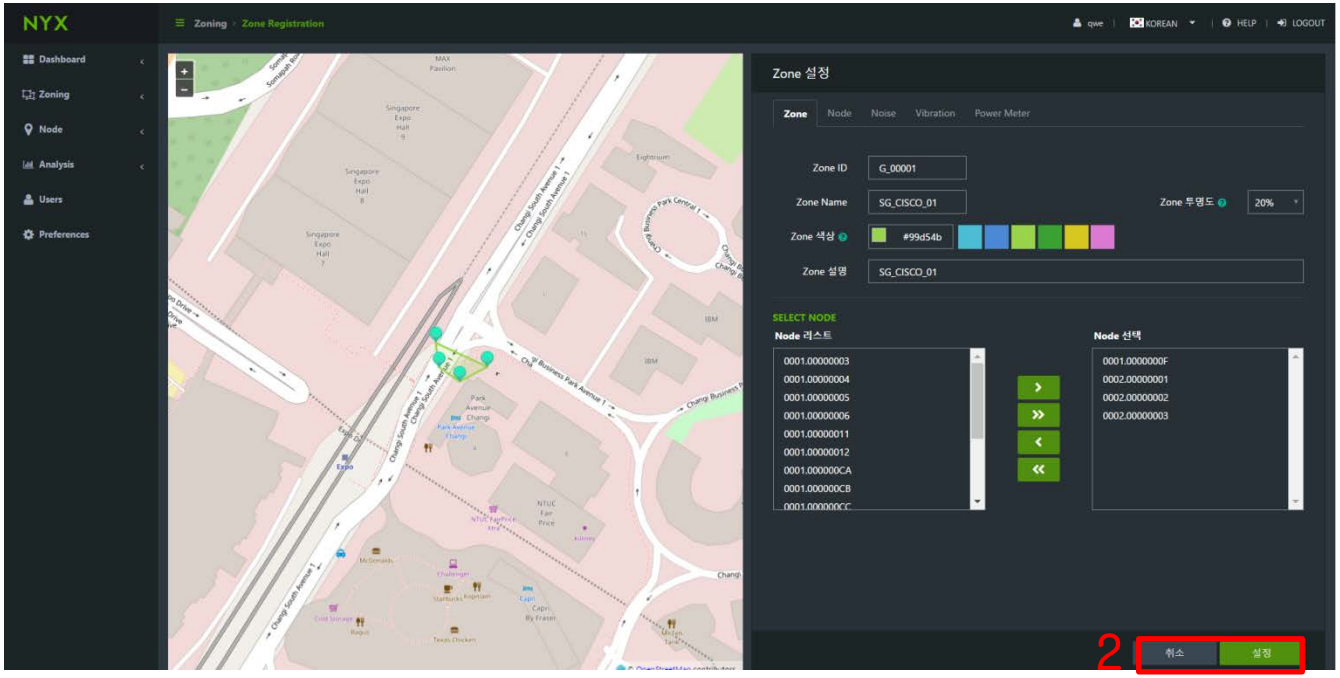


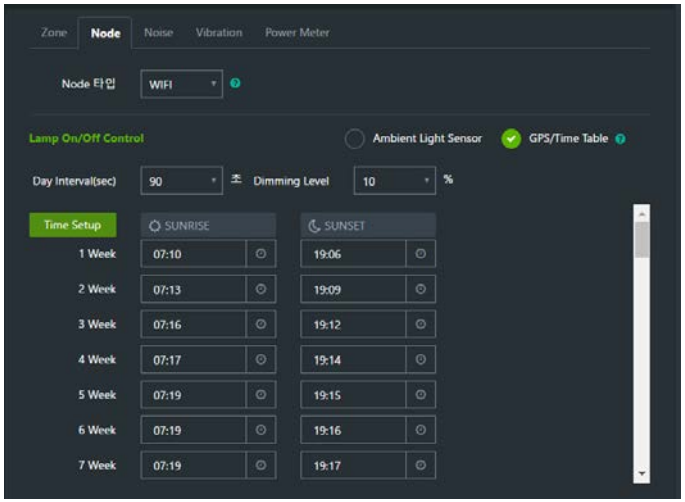
Import from an Excel file

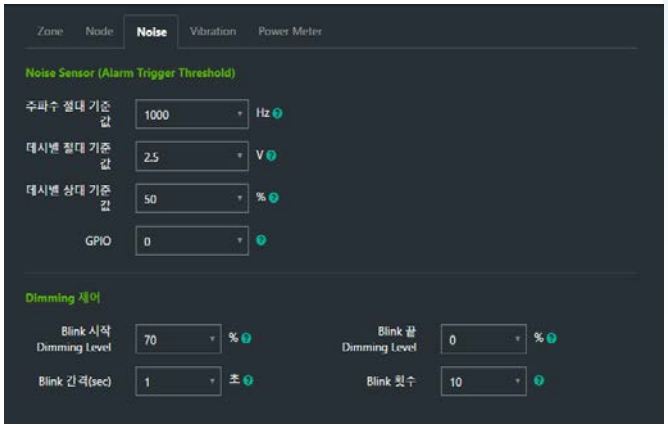


Extract to an excel file

10. Zone – Zone Configuration



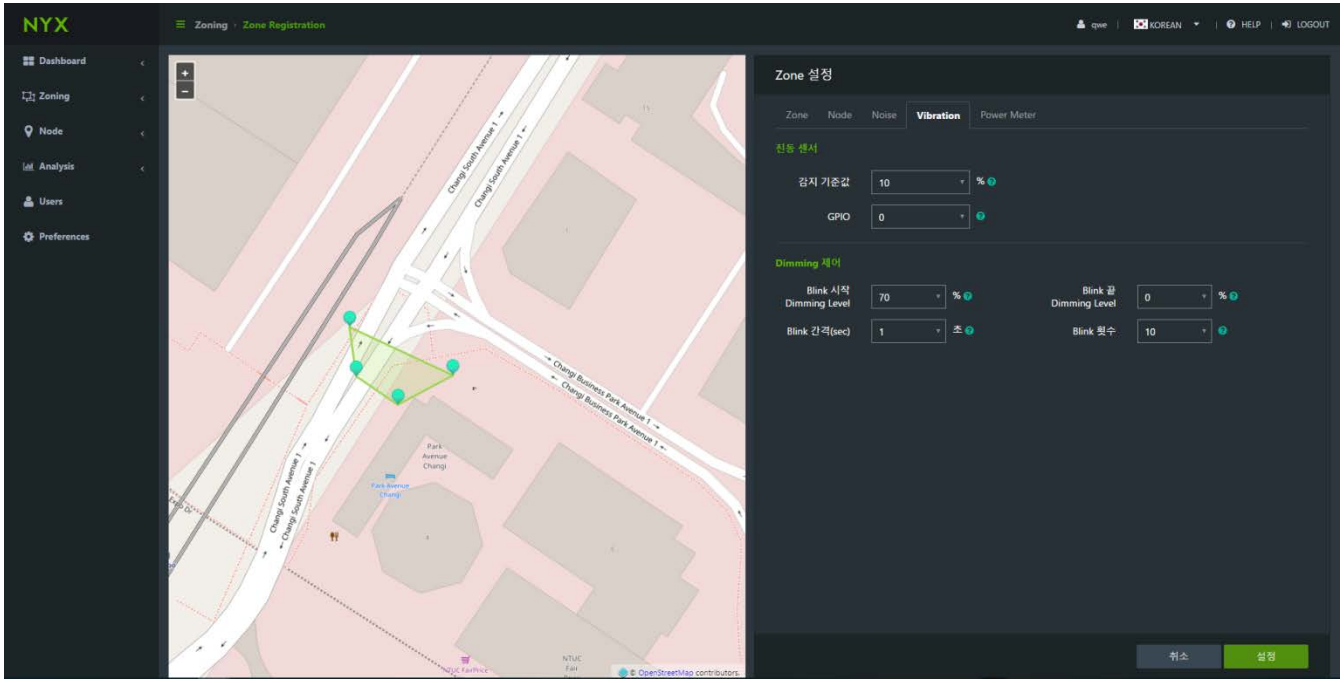


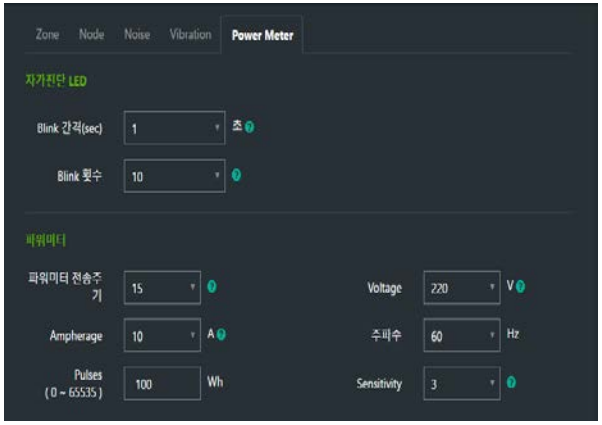


- Zone Configuration screen, when click ZoneID in [Zone] - [Zones].

1. Update the information on a zone.
2. ▶Setup : Update the information what you changed.
   ▶Cancel : Cancel the update.

10. Zone – Zone Configuration

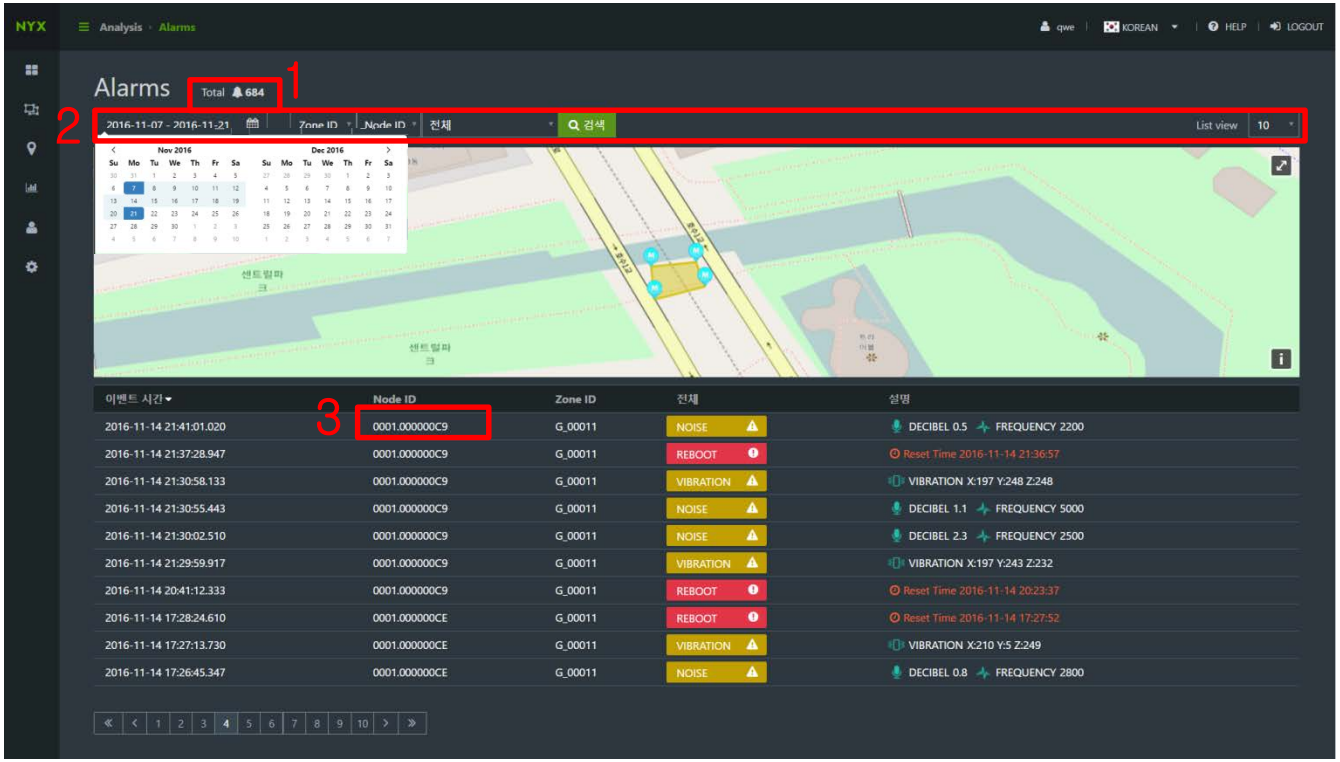




- Zone Configuration screen, when click ZoneID in [Zone] - [Zones].

1. Update the information on Zones.

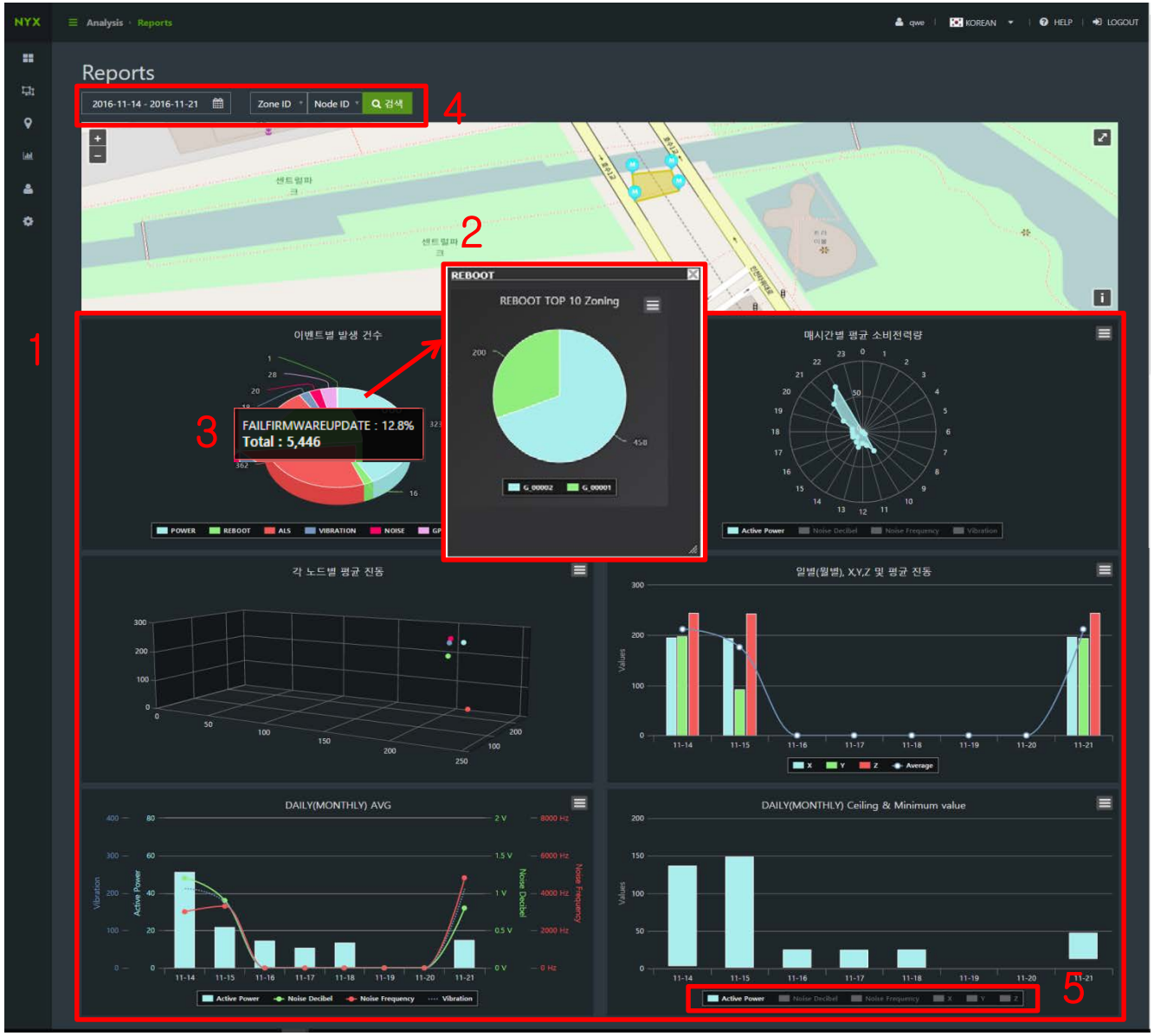
11. Analysis - Alarms



- View Alarms screen, when click [Analysis] - [Alarms]

1. Total number of Alarms.
2. Initially, View Alarms screen displays histories of total Node. Search histories of specific zones or nodes via various criteria combinations - Period, ZoneID, NodeID, Node Event, max # of histories. When move to View alarms history in Dashboard Context menu, Alarms for a specific zone or node appear
3. When click Node ID, The map move to the point and display it on the map

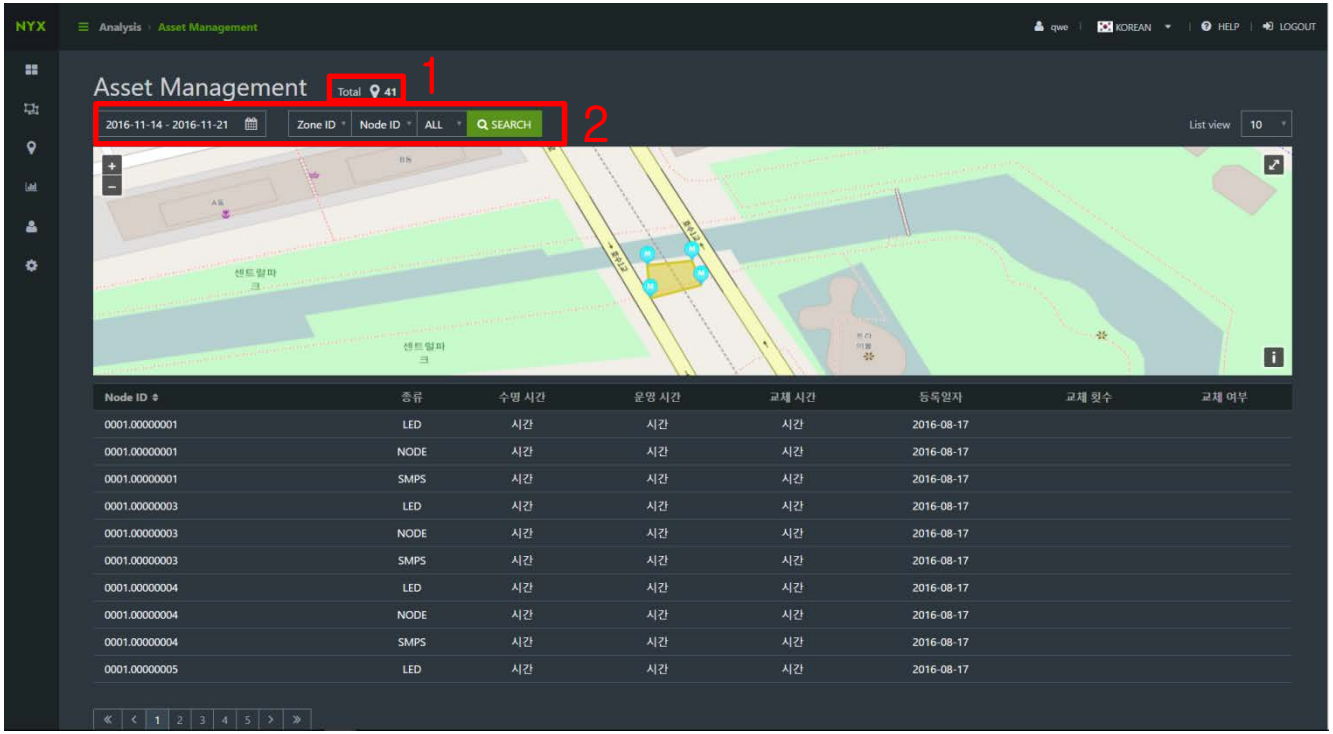
12. Analysis - Reports



- View Reports Screen, when clicked [Reports]

1. Various charts which display data on Node & Zone.
   When Move to Zone report or Node report which is a Context menu of the Dashboard, A report on the Zone or the Node appears.
2. If you want to see more specific graphs for a chart, click the column of the chart what you want. Then a pop-up screen will appear
3. When move mouse onto a chart, a Tool Tip which display data will appear
4. View report on another zone or nodes via search criteria.
5. For multi-axis graph, you can choose a axis what you want to view.

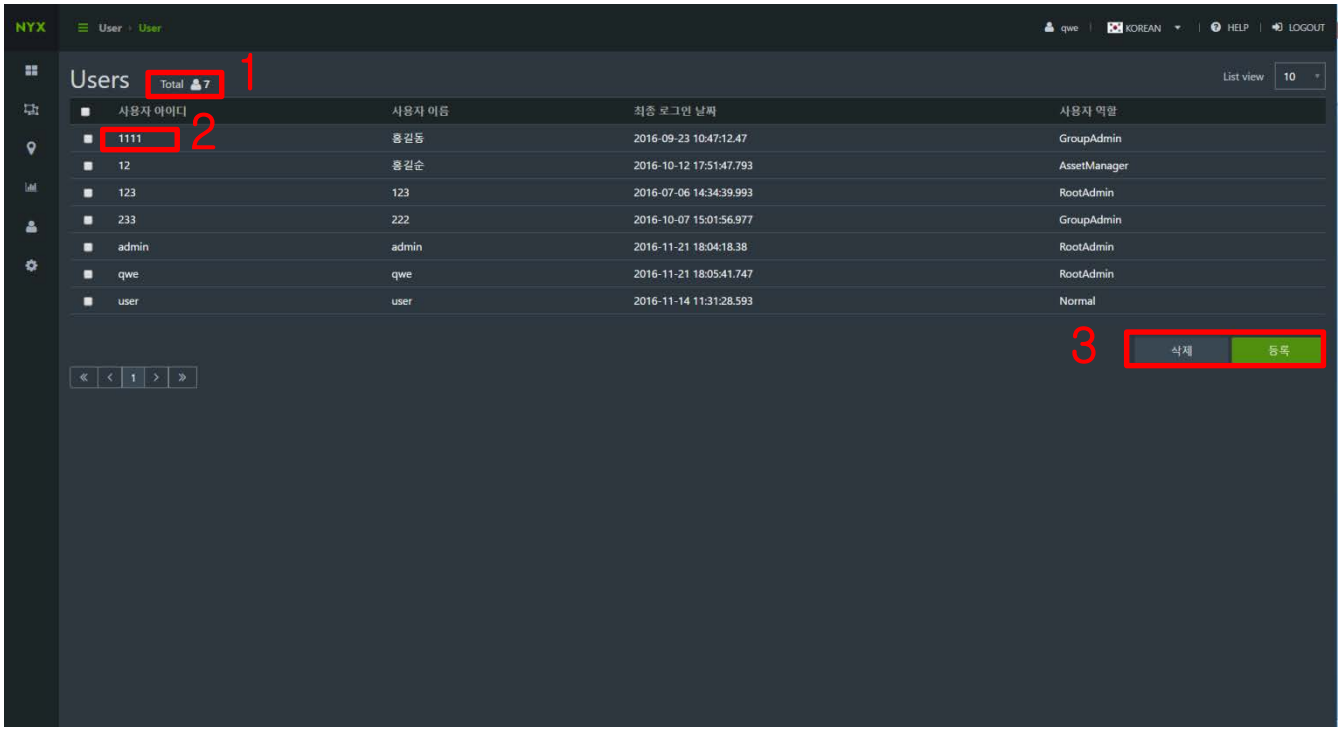
13. Analysis – Asset Management



- Asset management Screen, when clicked [Analysis] - [Asset Management]

1. Total number of managed Node.
2. Search specific nodes via various criteria combinations - Period, ZoneID, NodeID.

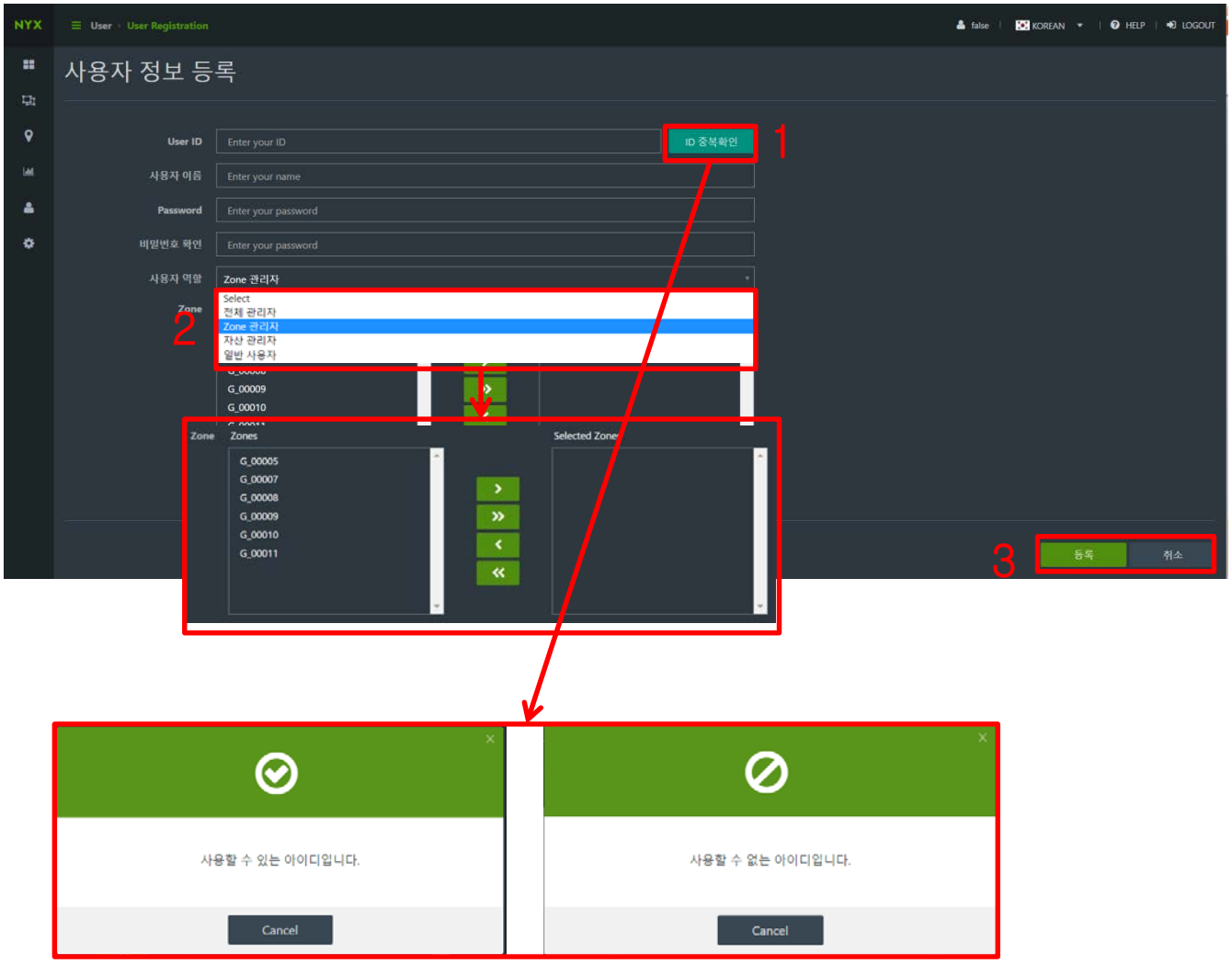
14. Users



- View Users Screen, when clicked [User]

1. Total number of users
2. When click the user id, move to the Update User Info Screen
3. Delete & Register buttons which are shown only to Administrator
   ▶ Delete : Remove the user what you checked the box.
   ▶Register : Move to Register User Info Screen for new user registration

15. Register User Info

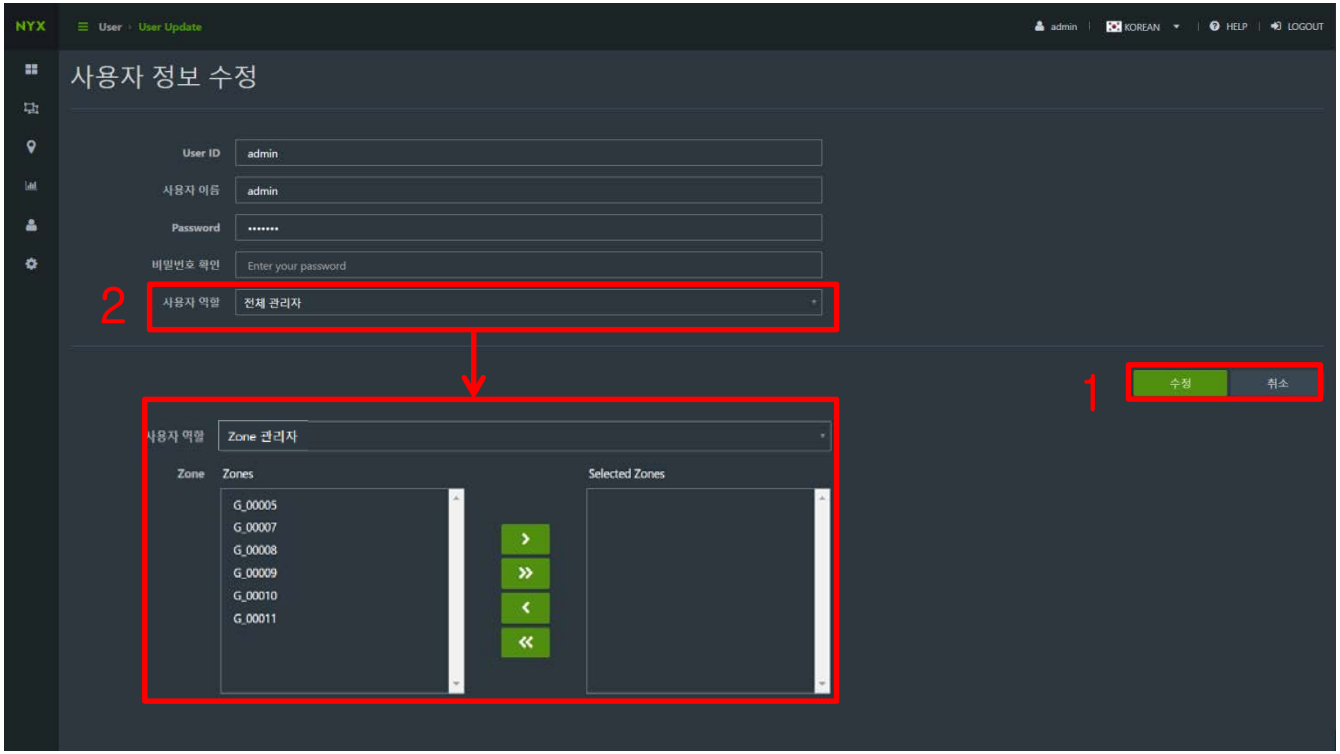


사용자 ID 중복 체크 처리

- Register User Info Screen, when clicked [User]

1. Check whether User id is unique or not
2. When choose “Zone Administrator” in the User Role field, A screen appear to choose appropriate zones.
3. Register & Cancel buttons
   ▶ Register : Register new user using the information.
   ▶Cancel : Cancel the user registration and return to Users screen.

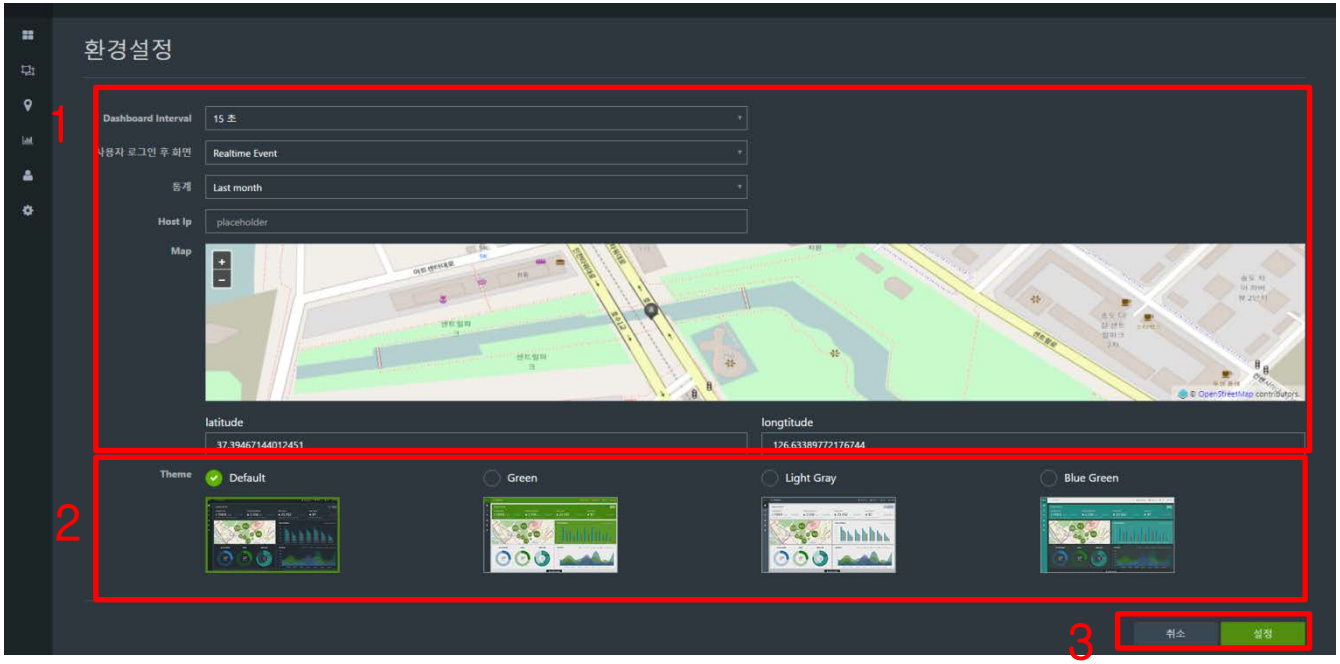
16. Update user Information



- Update user Information Screen, when clicked user-id in [User]

1. Update, Cancel buttons
   ▶Update: Setting the information what user updated and return to Users screen.
   ▶Cancel : Cancel what user updated and return to Users screen.
2. When choose “Zone Administrator” in the User Role field, A screen appear to choose appropriate zones.

17. Preferences



- Configuration Screen, when clicked [Preferences]

1. Setting dashboard interval for which to display data per each zone in dashboard, setting Strat up Page after user log-in, setting initial map display for anchor node in dashboard.
2. Choose one of the 4 themes among which system provides.
3. Cancel & Setup buttons
   ▶Cancel : Cancel what user chose and return to Dashboard screen
   ▶Change: Setting the user preferences what user chose.

FCC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC notification to users

This equipment has been tested and found to comply with the limits for a CLASS B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by consulting with a dealer or an experienced technician for technical assistance.

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.

The antenna(s) used for this device must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

- The End -