



WISE-PaaS

Node-RED Plug-ins User Manual

The document is provided to you for references and is subject to change. Please always get latest version from Advantech to sync.

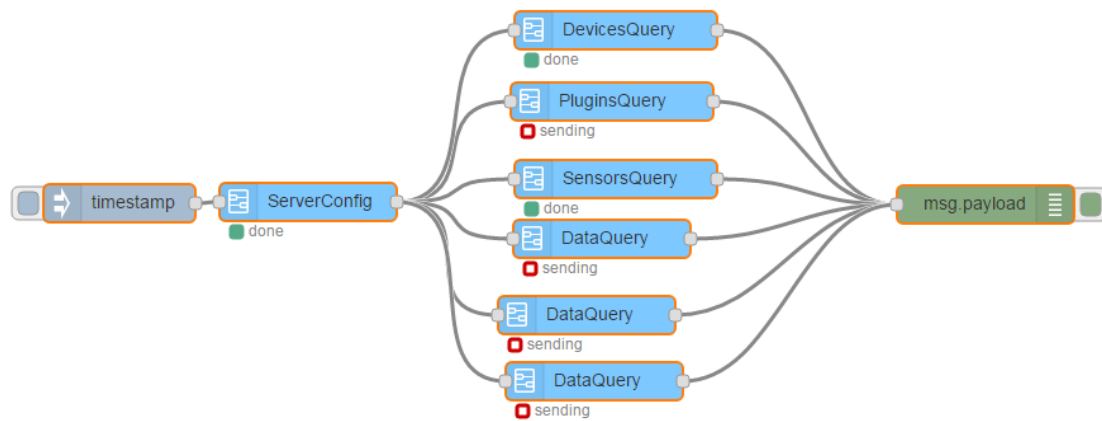
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Introduction

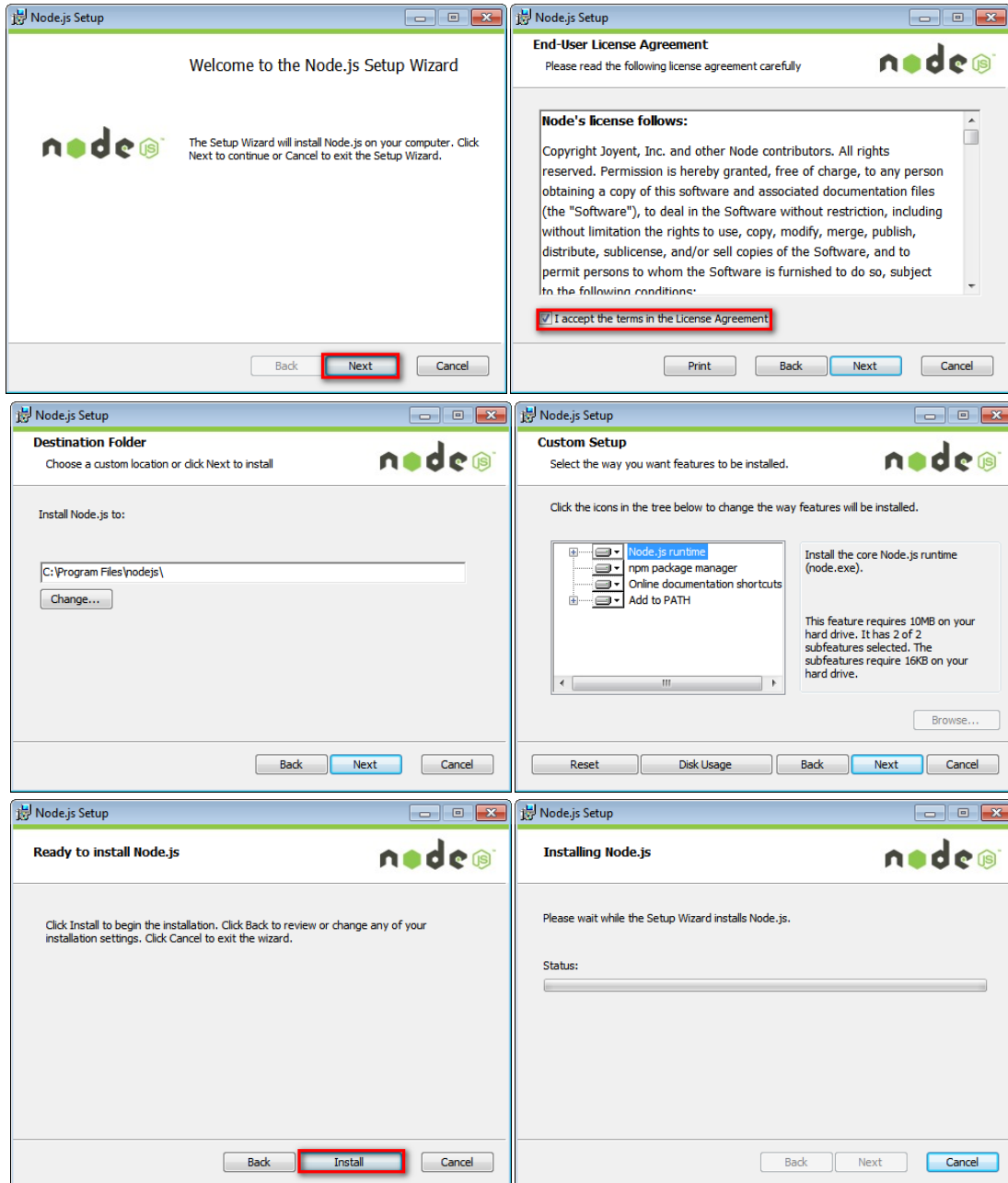
[Node-RED](#) is a visual wiring tool for the Internet of Things and is provided by [IBM Emerging Technologies](#). [Node-Red](#) has several features, including browser-based flow editing, built on [Node.js](#) and social development. Because of browser-based, the user can use it more easily. [Node-Red](#) is based on [Node.js](#), so user can use its nodes by using JavaScript. [Node-Red](#) also have many active communities. If the user finds bugs, he can find a solution and fix it easily. The user can use JSON format string to import or export the created flow easily.

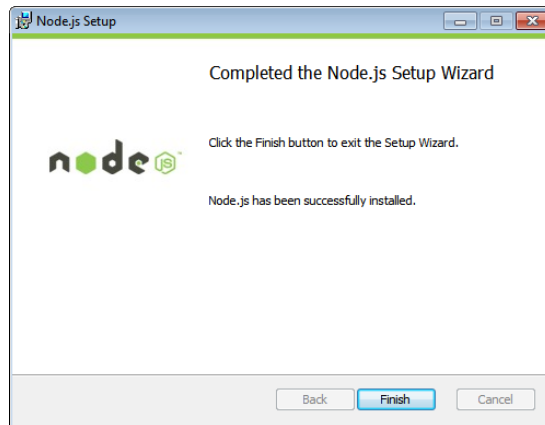
According to the restful API of WISE-PaaS 2.0, we created several nodes.



How to install Node-Red Plug-ins for WISE-PaaS

- Install Node.js
 - ◆ Download installer from <https://nodejs.org>
 - ◆ Double-click to install **Node.js**





- Clone [EI-NodeRed](#) from GitLab
- Open **cmd.exe** and navigate to **./EI-NodeRed** folder
- Type command line "**npm install**" to install the node-red dependencies
- Type command line "**npm run build**" to build the code of [Node-Red](#)
- Type command line "**npm start**" or "**node red.js**" to run [Node-Red](#)

Node-Red Plug-ins Categories

Category	Description	Nodes
General	The settings of IP address, port number, login username/password of WISE-PaaS server. Retrieval of device and sensor information.	1. ServerConfig
Common	Query the data and the information of devices, plugins and sensors	1. DevicesQuery 2. PluginsQuery 3. SensorsQuery 4. DataQuery

Node-Red Plug-ins Description

Node Name	Description	Input	Output
ServerConfig	Set url, port, username and password for WISE-PaaS 2.0 server. The node provides Basic type and SSO type.	A timestamp trigger or button trigger.	msg.url, msg.port, msg.encodedstr .
DevicesQuery	Retrieve devices information from WISE-PaaS 2.0 server. User can fill a specific Device ID. The text of Device ID can be blank if user wants to retrieve all devices.	ServerConfig Node.	Devices information list.
PluginsQuery	Retrieve plugins by device ID within a time range. The maximum number of values is 10000 from WISE-PaaS 2.0 server. User can set the conditions about plugins here. Ex: Device ID, Agent ID, begin timestamp, end timestamp, amount and type.	ServerConfig Node.	Plugins Information list.
SensorsQuery	Retrieve sensors by Device ID & plugin within a time range. The maximum number of values is	ServerConfig Node.	Sensors Information list.

	10000 from WISE-PaaS 2.0 server. User can set the conditions about sensors here. Ex: Device ID, Agent ID, Plugin Name, begin timestamp, end timestamp, amount and type.		
DataQuery	Retrieve data from WISE PaaS 2.0 server. The node provides three types, they are history , latest and statistic	ServerConfig Node.	The data of history , statistic or latest by specific device Id within a time range.

Node-Red for WISE-PaaS 2.0

- **General**

- **ServerConfig**

Description: Set url, port, username and password for WISE-PaaS 2.0 server. The node provides Basic type and SSO type.

- ◆ **Basic**

Description: User can set **Username** and **Password**. If user calls the restful API of common server, the text box can be blank.

The screenshot shows the configuration interface for the ServerConfig node in Node-Red, set to the 'Basic' type. The fields are as follows:

- Type:** A dropdown menu with 'Basic' selected.
- Name:** A text input field containing 'Node Name'.
- URL:** A text input field containing 'localhost' and a port input field containing '8080'.
- Username:** A text input field containing 'admin'.
- Password:** A password input field containing '.....'.

- ◆ **SSO**

Description: User can get accessToken here and call the restful API by the accessToken.

* Type	SSO	
ID	f028644c-20dbb8	
Name	Node Name	
URL	localhost	8080

Input: A timestamp trigger or button trigger.

Output: msg.url, msg.port, msg.encodedstr.

- **Common**

- **DevicesQuery**

Description: Retrieve devices information from WISE-PaaS 2.0 server. User can fill a specific Device ID. The text of Device ID can be blank if user wants to retrieve all devices.

Edit DevicesQuery node

Cancel Done

Name	<input style="width: 80%;" type="text" value="Node Name"/>
DeviceID	<input style="width: 80%;" type="text" value="Blank is available for all devices"/>

Input: ServerConfig Node.

Output: Device information list.

- **PluginsQuery**

Description: Retrieve plugins by device ID within a time range. The maximum number of values is 10000 from WISE-PaaS 2.0 server. User can set the conditions about plugins here. Ex: Device ID, Agent ID, begin timestamp, end timestamp, amount and type.

Edit PluginsQuery node

✎ Name	<input style="width: 90%;" type="text" value="Node Name"/>
➔ DeviceID	<input style="width: 90%;" type="text" value="Device ID"/>
➔ AgentID	<input style="width: 90%;" type="text" value="Agent ID"/>
➔ BeginTs	<input style="width: 90%;" type="text" value="Begin Timestamp, e.g.,2017-04-06 00:00:00:000"/>
➔ EndTs	<input style="width: 90%;" type="text" value="End Timestamp, e.g.,2017-04-30 00:00:00:000"/>
➔ Amount	<input style="width: 90%;" type="text" value="Amount"/>
➔ Type	<input style="border-bottom: 2px solid #00aaff;" type="text" value="ASC"/>

Input: *ServerConfig Node.*

Output: *Plugins Information list.*

■ SensorsQuery

Description: *Retrieve sensors by Device ID & plugin within a time range. The maximum number of values is 10000 from WISE-PaaS 2.0 server. User can set the conditions about sensors here. Ex: Device ID, Agent ID, Plugin Name, begin timestamp, end timestamp, amount and type.*

Edit SensorsQuery node

Name	<input type="text" value="Node Name"/>
DeviceID	<input type="text" value="Device ID"/>
AgentID	<input type="text" value="Agent ID"/>
Plugin	<input type="text" value="Plugin Name"/>
BeginTs	<input type="text" value="Begin Timestamp, e.g.,2017-04-06 00:00:00:000"/>
EndTs	<input type="text" value="End Timestamp, e.g.,2017-04-30 00:00:00:000"/>
Amount	<input type="text" value="Amount"/>
Type	<input style="border-bottom: none; border-right: none; border-top: none; border-left: none; width: 100%;" type="text" value="ASC"/> ▼

Input: *ServerConfig Node.*

Output: *Sensors Information list.*

■ DataQuery

Description: *Retrieve data from WISE-PaaS 2.0 server. The node provides three types, they are **history**, **latest** and **statistic***

◆ History

Description: *Retrieve data by Device ID within a time range. The maximum number of values is 10000.*

Edit DataQuery node

◆ Name	<input style="width: 90%;" type="text" value="Node Name"/>
➔ Type	<input style="border-bottom: 1px solid #ccc; border-right: 1px solid #ccc; border-left: 1px solid #ccc; border-top: 1px solid #ccc; text-align: right; font-size: small; color: #666; padding-right: 5px;" type="text" value="History"/> ▼
➔ DeviceID	<input style="width: 90%;" type="text" value="Device ID"/>
➔ AgentID	<input style="width: 90%;" type="text" value="Agent ID"/>
➔ PluginName	<input style="width: 90%;" type="text" value="Plugin Name"/>
➔ SensorID	<input style="width: 90%;" type="text" value="Sensor Id"/>
➔ BeginTs	<input style="width: 90%;" type="text" value="Begin Timestamp, e.g.,2017-04-06 00:00:00:000"/>
➔ EndTs	<input style="width: 90%;" type="text" value="End Timestamp, e.g.,2017-04-30 00:00:00:000"/>
➔ Amount	<input style="width: 90%;" type="text" value="Amount"/>
➔ Type	<input style="border-bottom: 1px solid #ccc; border-right: 1px solid #ccc; border-left: 1px solid #ccc; border-top: 1px solid #ccc; text-align: right; font-size: small; color: #666; padding-right: 5px;" type="text" value="ASC"/> ▼

Input: *ServerConfig Node.*

Output: *The history data by specific Device ID within a time range.*

◆ Latest

Description: *Retrieve latest data by Device ID.*

Edit DataQuery node

Cancel Done

Name

Type

DeviceID

AgentID

PluginName

SensorID

Input: *ServerConfig Node.*

Output: *The latest data by specific Device ID.*

◆ **Statistic**

Description: *Retrieve statistic data by Device ID within a time range. (Less than 31 days.)*

Edit DataQuery node

Cancel Done

Name Node Name

Type Statistic

DeviceID Device ID

AgentID Agent ID

PluginName Plugin Name

SensorID Sensor Id

BeginTs Begin Timestamp, e.g.,2017-04-06 00:00:00:000

EndTs End Timestamp, e.g.,2017-04-30 00:00:00:000

Input: *ServerConfig Node.*

Output: *The Statistic data by specific Device ID within a time range.*