ADVANTECH

WISE-PaaS 2.0

Node-RED Plug-ins User Manual

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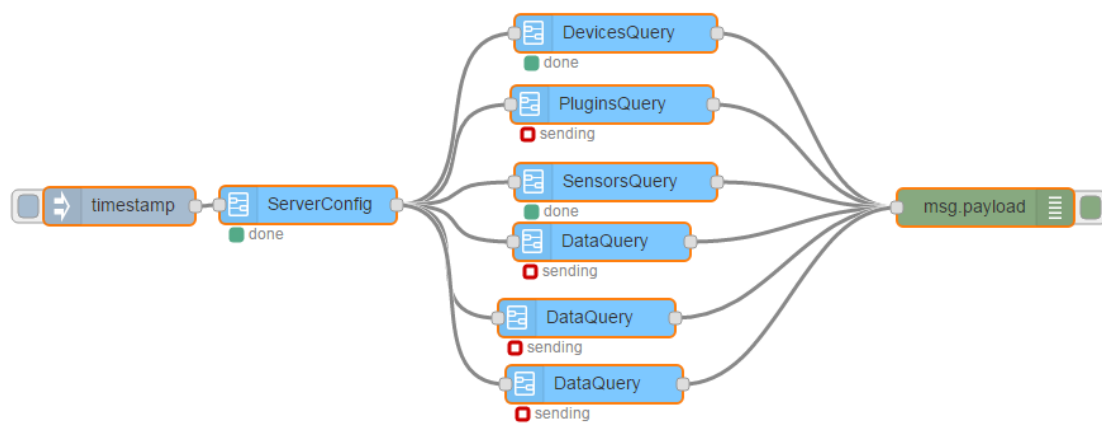
How to install Node-Red Plug-ins for WISE-PaaS

- Install Node.js
  - ◆ Download installer from https://nodejs.org
  - ◆ Double-click to install **Node.js**
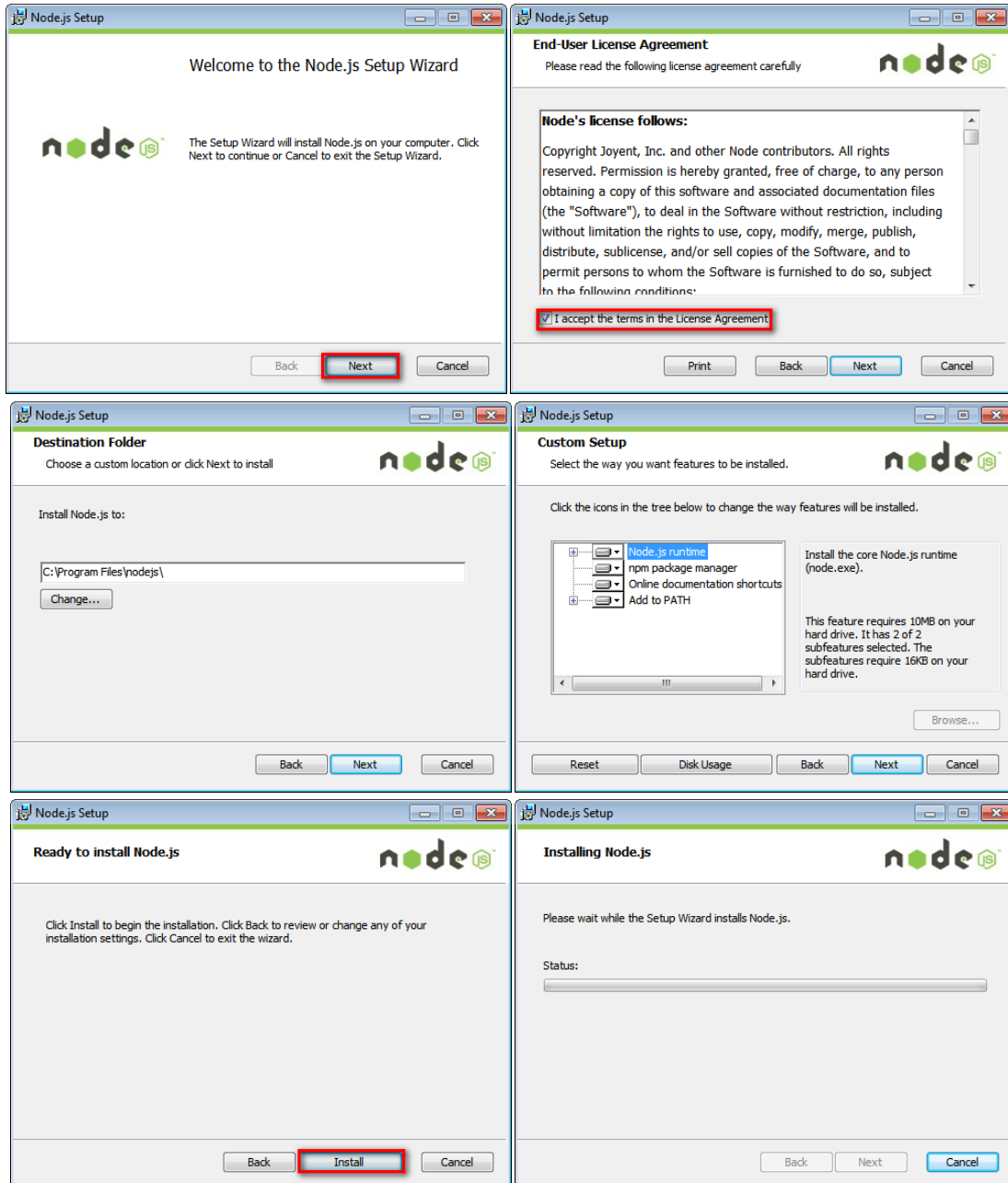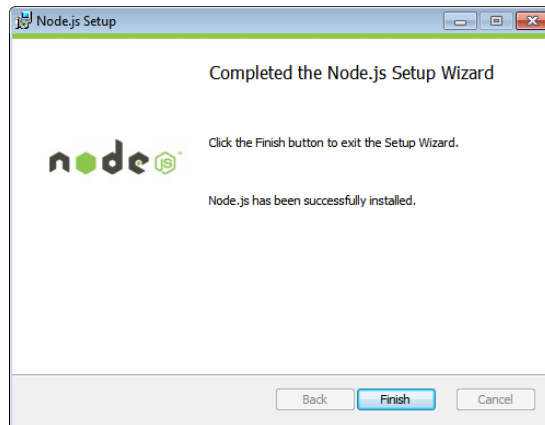
- Clone **EI-NodeRed** from GitLab

- 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.encodestr.*
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** *infor mation 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** *Infor mation list.*
SensorsQuery	*Retrieve sensors by Device ID & plugin within a time range. The maximum number of values is*	**ServerConfig** *Node.*	**Sensors** *Infor mation 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.*

◆ **SSO**

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

Input: *A timestamp trigger or button trigger.*

Output: *msg.url, msg.port, msg.encodestr.*

● Common

■ DevicesQuery

Description: *Retrieve devices information from WISE-PaaS 2.0 server. User can fill a specific device id. The text of DeviceID can be blank if user wants to retrieve 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.*

Input: *ServerConfig Node.*

Output: P*lugins 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	Node Name
DeviceID	Device ID
AgentID	Agent ID
Plugin	Plugin Name
BeginTs	Begin Timestamp, e.g.,2017-04-06 00:00:00:000
EndTs	End Timestamp, e.g.,2017-04-30 00:00:00:000
Amount	Amount
Type	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.*

Input: *ServerConfig Node.*

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

◆ **Latest**

Description: *Retrieve latest data by Device ID.*

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.*