

Wzzard™ Starter Kits

Energy Monitoring Bundle

SETUP MANUAL



B+B SMARTWORX

Powered by

ADVANTECH

Advantech B+B SmartWorx - Americas

707 Dayton Road
Ottawa, IL 61350 USA
Phone (815) 433-5100
Fax (815) 433-5105

Advantech B+B SmartWorx - European Headquarters

Westlink Commercial Park
Oranmore, Co. Galway, Ireland
Phone +353 91-792444
Fax +353 91-792445

www.advantech-bb.com
support@advantech-bb.com

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ENERGY MONITORING STARTER KIT**Kit Model BB-WSK-NRG**

The Wzzard™ Energy Monitoring Application makes it simple to see the real time and historical electrical consumption of any individual machine or panel. Data can be exported to Dropbox for further analysis. Email or text message alerts can be sent when user-configured high or low limits are exceeded in critical applications.

Installation costs are kept low using the Wzzard wireless sensing platform. The platform creates a self-forming, self-healing wireless mesh network that eliminates the need for wires and requires no special skills to install. Each Wzzard sensor node is powered by long life batteries.

Using Node-RED™, a simple, browser based application preinstalled on the gateway, you can monitor current draw from any web browser on your network.

The contents of the kit include:

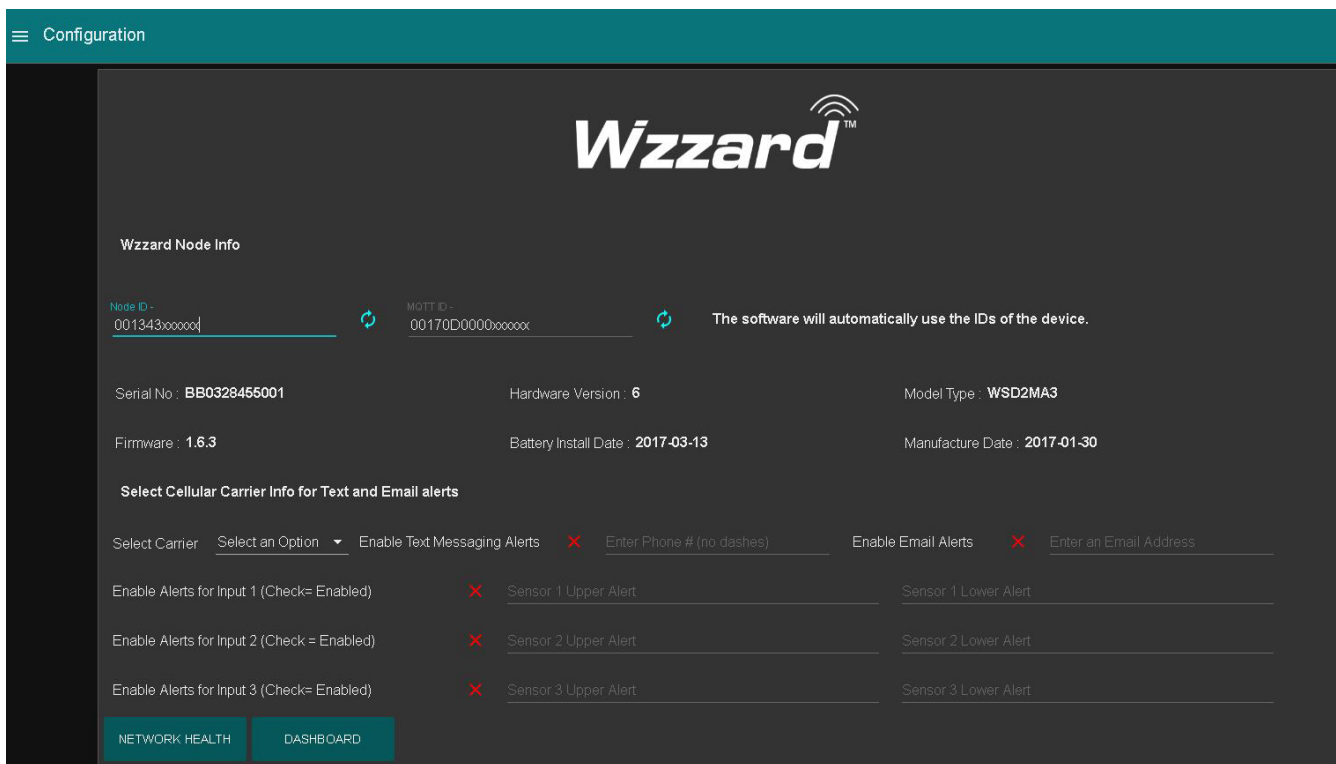
Qty 1	WSD2MA3	3 analog-in units with M12 connector and external antenna
Qty 3	JC10F50-V	50A clamp on current sensor
Qty 1	520-10256-00	M12 cable
Qty 1	SmartSwarm 341	Ethernet Gateway with Dust

WZZARD NETWORK SETUP

The Wzzard node and gateway in this kit are preconfigured. If this is the only Wzzard device in your vicinity, it will need no further configuration. If other Wzzard gateways are nearby you will need to change the network ID on both the gateway and the node. See respective node and gateway manuals for instructions.

ACCESS Node-RED UI IN THE GATEWAY

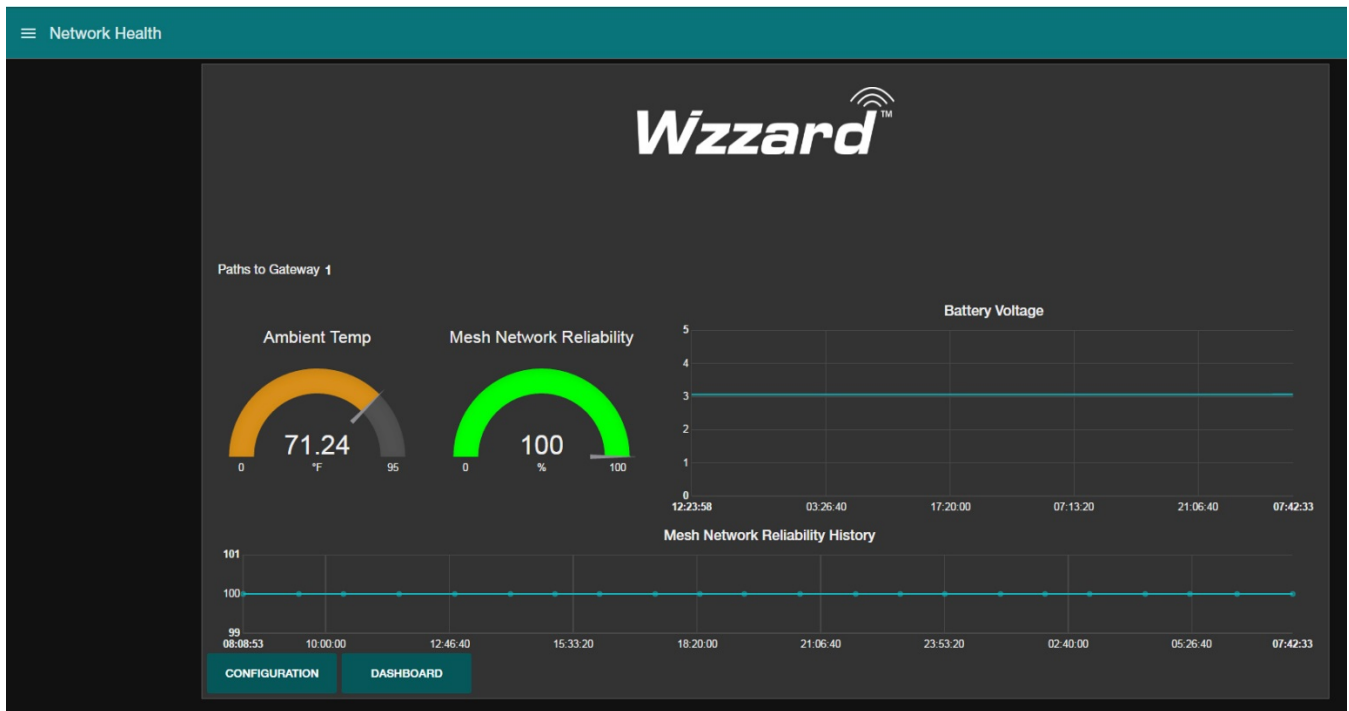
1. Attach the antenna to the Wzzard™ antenna port on the gateway.
2. Attach the Ethernet cable to the ETH port on the gateway and the other end to your PC. You will use an Ethernet connection to configure the gateway and to communicate with it.
3. Attach the supplied power supply and plug it in.
4. Open a browser on your computer and open the Node-RED™ configuration page. The default address is: **192.168.1.1:1880/ui**. (Chrome or Firefox recommended.)



5. The values on this page will populate when the node joins the network.
6. You can set up a phone number to receive text messages, an E-Mail address for receiving alerts on this page. For text messaging, you will need to select the cell carrier of the receiving phone. If the carrier is not on the list, select custom, and add the URL of the carrier to the phone number (ie: 1-123-2345@txt.abcphone.com). See Appendix A for carrier text addresses. If your carrier is not listed, contact your carrier for the address of their SMS gateway.
7. You can enable or disable alerts as well as setting the trigger values on this page also.

NETWORK HEALTH PAGE

1. Click the “Network Health” button on the lower left corner of the Configuration page. The page below appears. This page shows the status of the network.



POWER UP WZZARD EDGE NODE

1. Remove the (4) black screws that hold the top of the node in place.
2. Install your batteries
 Note: Use (2) 3.6V 2400 mAH Lithium Thionyl Chloride AA batteries.
3. Install the battery clip.
4. Replace the cover and tighten the (4) screws. Screws must be tightened to 5 in-lb torque in order to maintain IP66 rating. (This can be accomplished via hand tightening.)
5. Check LED.

After you have installed the batteries, the LED will begin to blink. This indicates that the Node is attempting to establish a network connection. The LED will cease blinking when a connection is made.

	LED Indicator	Status
Data	Solid ON	Module startup initialization (approx. 10 seconds)
	Slow Blink (1 per second)	Attempting to establish connection with SmartMesh IP network.
	Fast Blink (10 per second)	Firmware update in progress.
	OFF	Unit is connected to wireless network.

6. Attach the External Antenna.



Note: The best way to remove the clip is to insert a small flathead screwdriver between the batteries and the clip, parallel to the batteries, and give the screwdriver a gentle twist. This will remove the clip without damage.

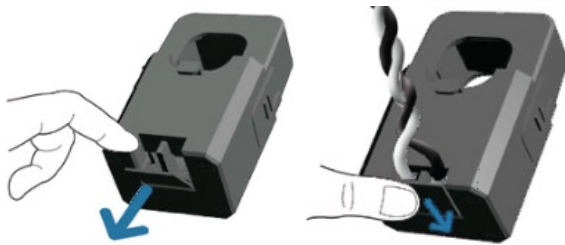
ATTACHING THE SENSORS ON THE INTELLIGENT EDGE NODES

1. Wire Your Sensors.

You can connect up to three sensors to a Wzzard™ node.

Sensor	Wzzard Industrial Node with M12 cable	Wire Color
Sensor 1	Sensor (+) to M12 cable	BROWN
	Sensor (-) to M12 cable	GREEN
Sensor 2	Sensor (+) to M12 cable	YELLOW
	Sensor (-) to M12 cable	GRAY
Sensor 3	Sensor (+) to M12 cable	PINK
	Sensor (-) to M12 cable	BLUE

- Open the wire protector clamp by pushing it away from the sensor body.
- Attach your wires.
- Close the wire protector clamp.



2. Mount Your Sensors.

The sensor can be mounted in any position.

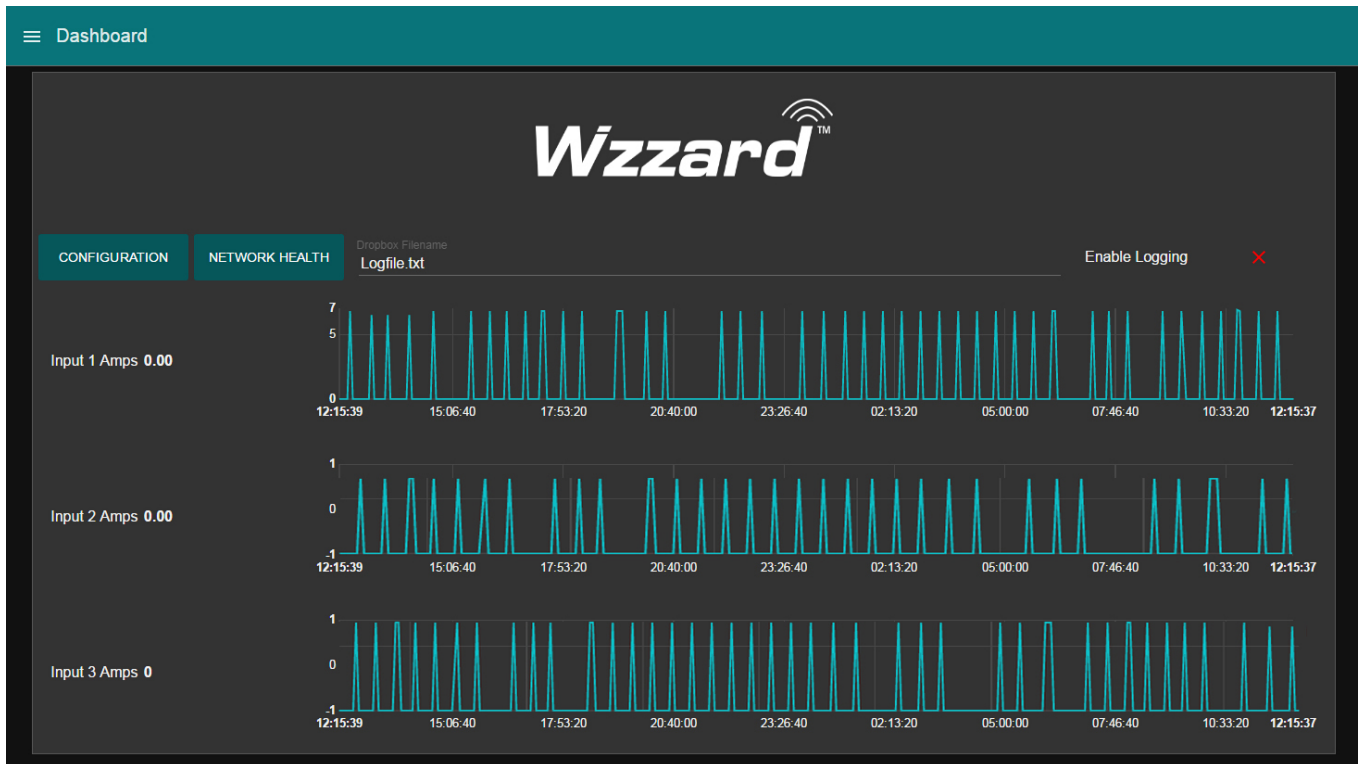
Open the clamp release by pushing it away from the sensor body. Run the wire you are monitoring through the opening in the sensor.



Close the sensor firmly around your wire and ensure that the clamp release has snapped back into place.

ACCESSING THE DASHBOARD

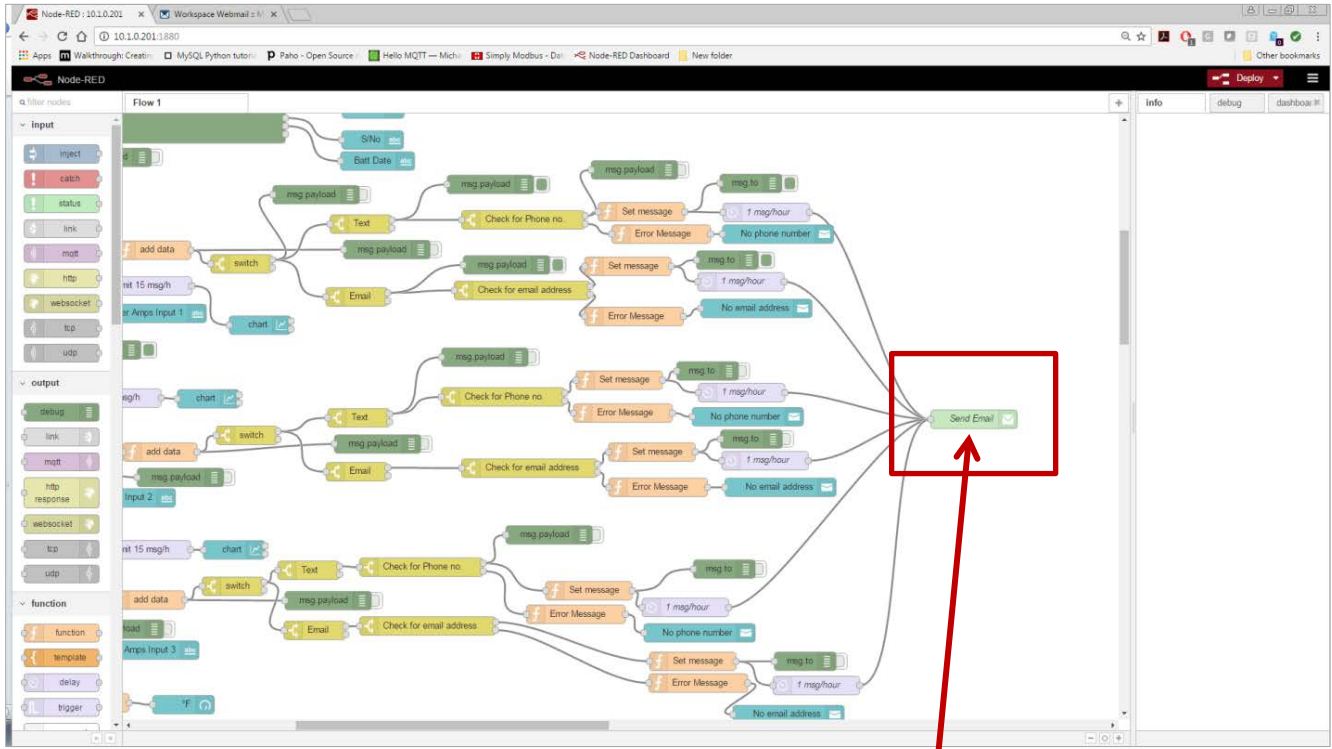
1. Open a browser on your computer and open the Node-RED™ configuration page. The default address is: **192.168.1.1:1880/ui**
2. Click on the “Dashboard” button on the lower left corner of the configuration page.
3. The dashboard should look like the screen below.



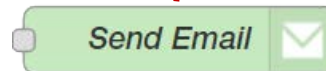
4. You can switch to the Configuration page or Network Health page by clicking on their respective buttons on the upper left.

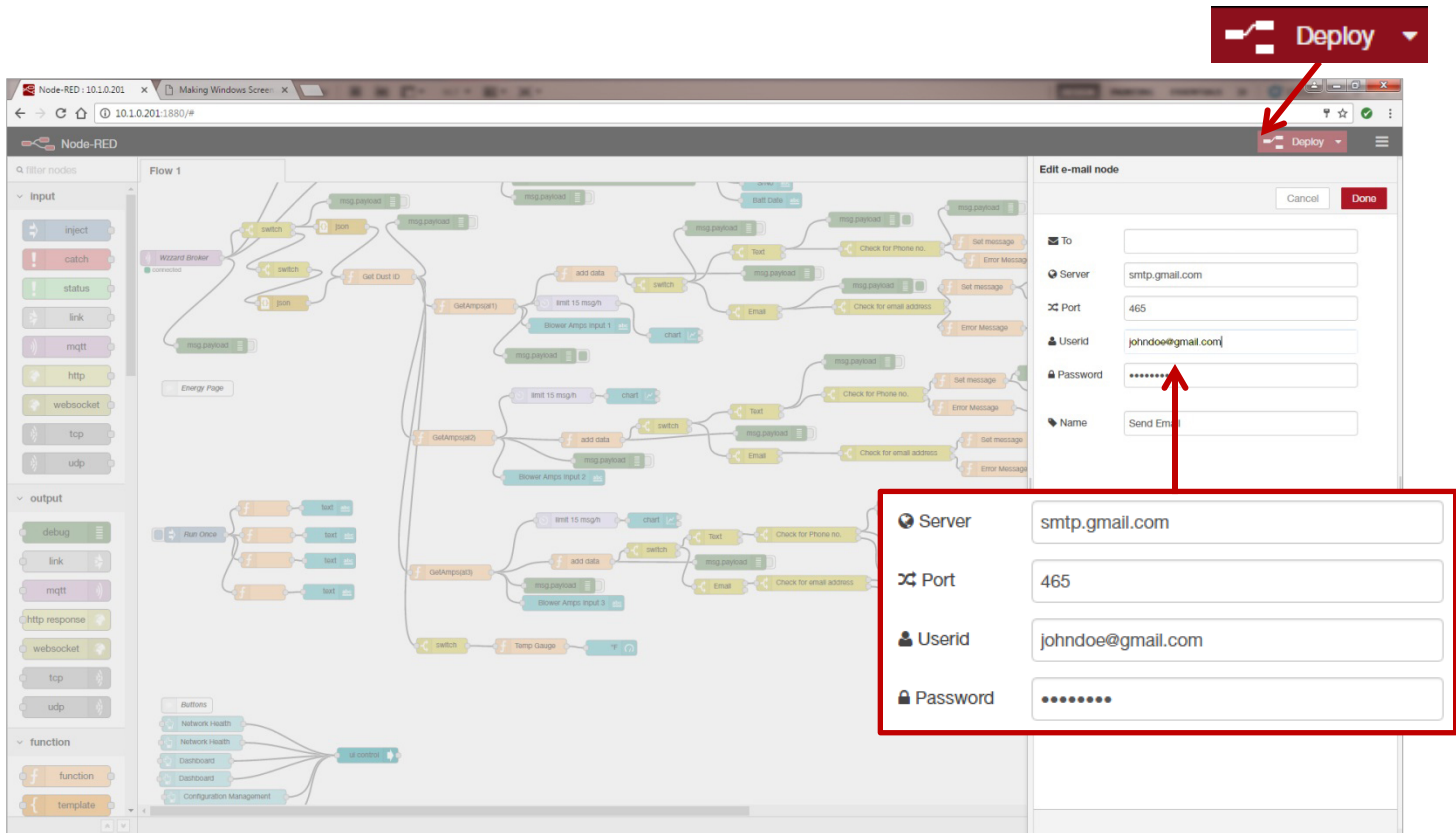
SETTING UP AN E-MAIL ACCOUNT

- 1. From your browser, open the Node-RED™ flow at 192.168.1.1:1880.



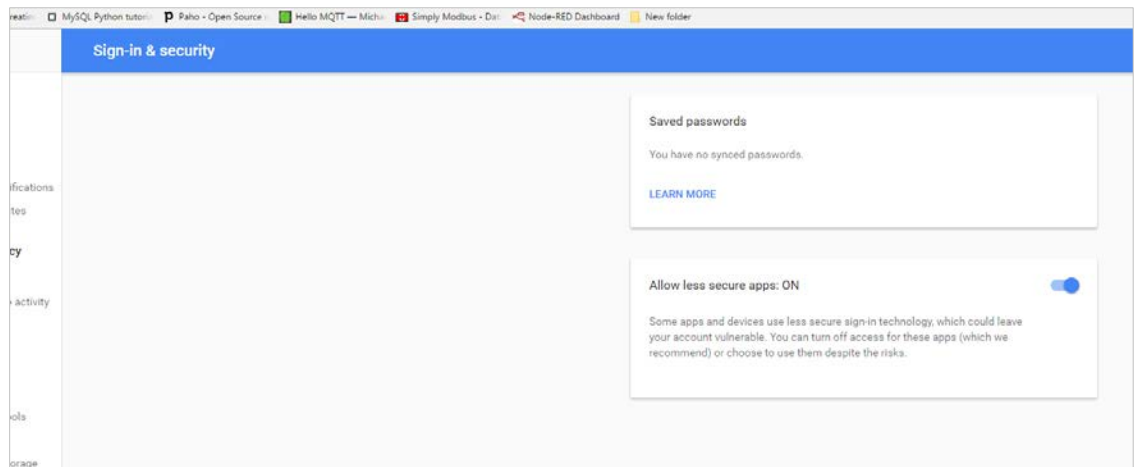
- 2. Find the “Send Email” node, and double click on it.





3. Enter The Server Address, Port, UserID and Password for your E-Mail server in the appropriate boxes. (Leave the “To” field blank.)

Note: If you are using a G-Mail account, you will need to enable “Less Secure Apps” in the Google security settings. See below.

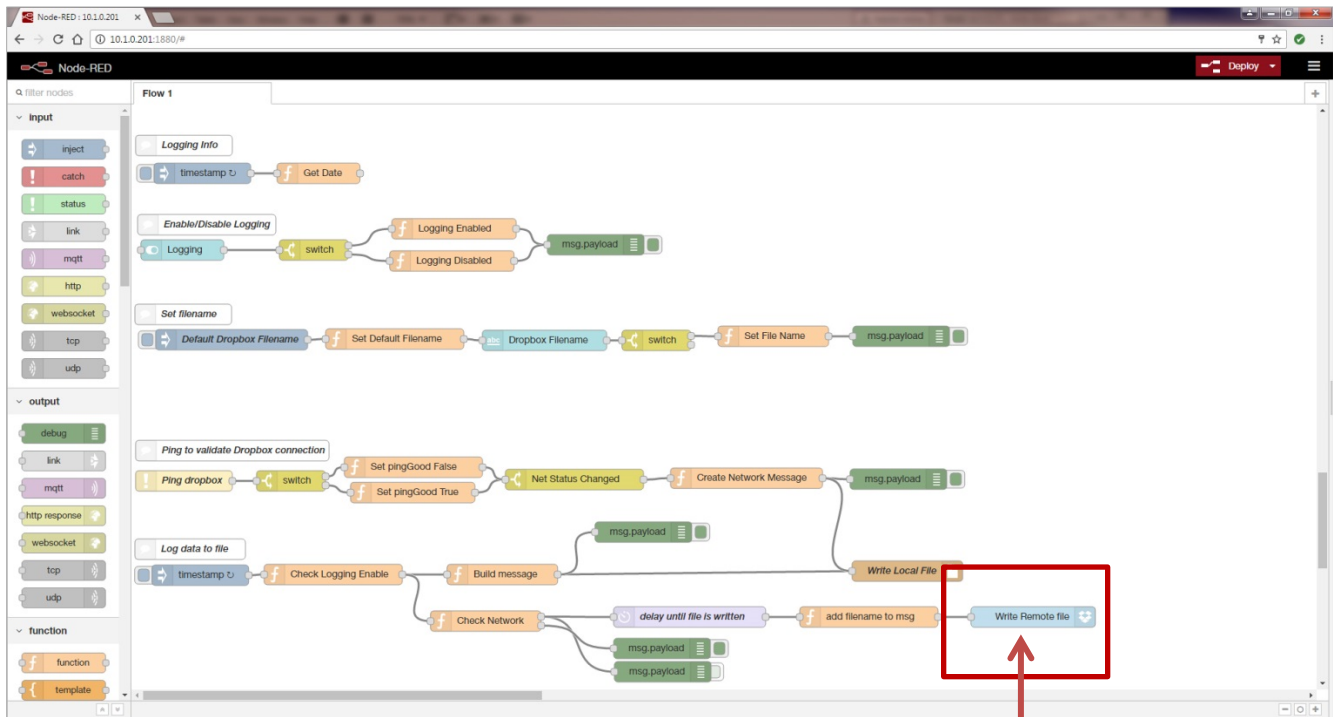


4. Click “Done”. Then Click the “Deploy” button in the upper right corner of the page.

SETTING UP YOUR DROPBOX FOR LOGGING

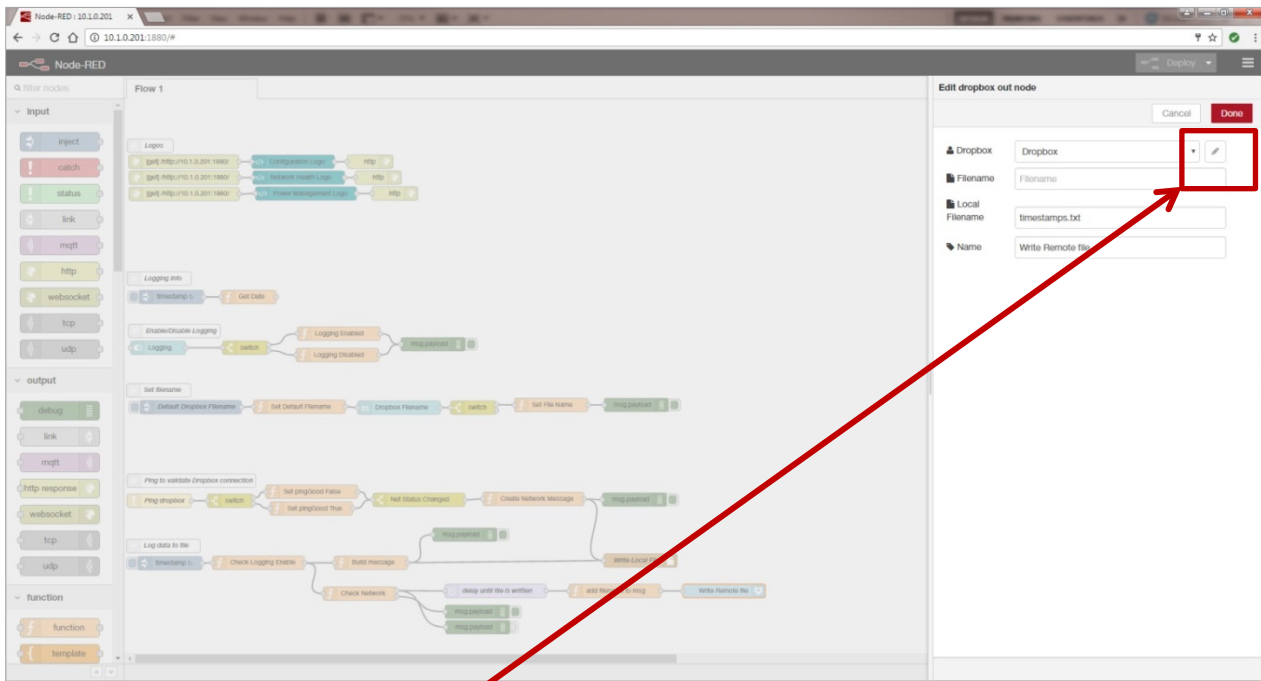
1. Log in to your Dropbox account or sign up for a new one.
2. Once signed up or logged in:
 - Go to <https://www.dropbox.com/developers>
 - Click 'Create your app' box in the center of the screen.
 - Select 'Dropbox API app'.
 - Choose an appropriate answer as to whether your node should be limited to its own folder or given full access. (TIP: This can be changed later, so choose 'Yes' to restrict the application while testing might be a good idea.)
 - Choose an app name.
 - Click 'Create app'.

The subsequent app page will contain the App key, App secret and a 'Generate' button to produce a suitable 'access token'. Save these strings so you can enter them into the application later.
3. From your browser, open the Node-RED™ flow at **192.168.1.1:1880**.

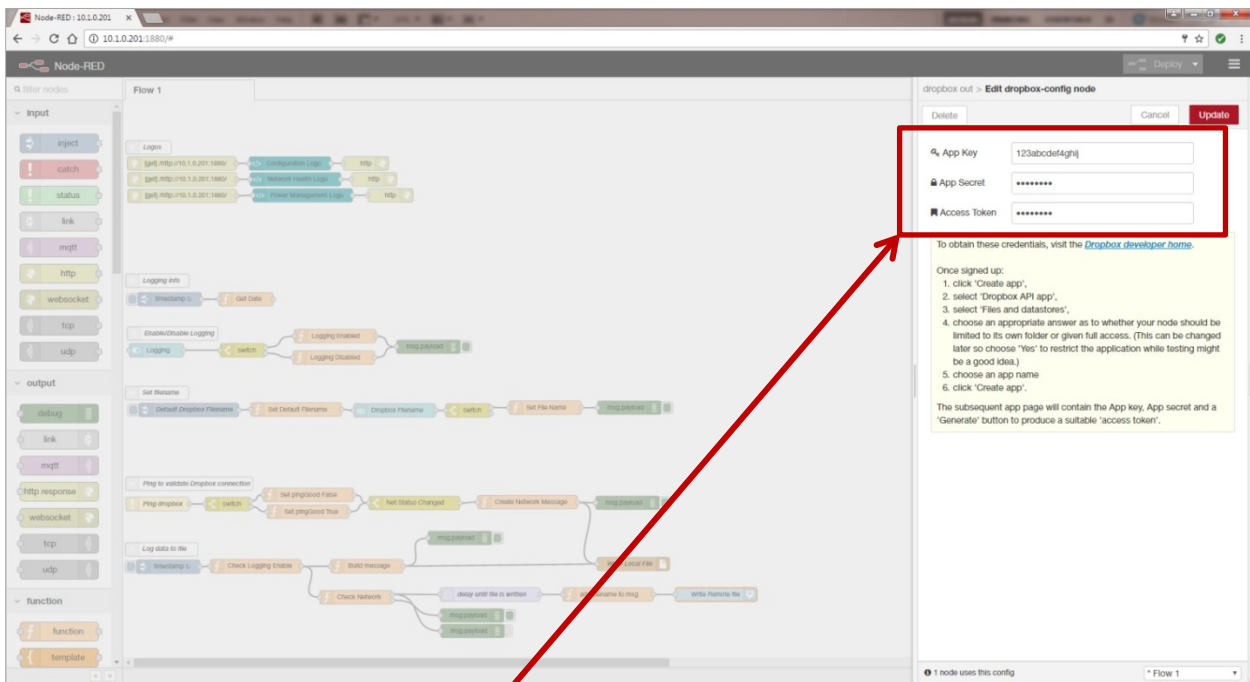


4. Double click on the blue 'Write Remote File' node.





5. Then click on the pencil icon next to the Dropbox text window.



6. Fill in the App Key, App Secret, and Access Token you got from Dropbox in their respective fields. (See yellow box for more information.)

7. Click Done, then Done again to close both windows.

8. Click the “Deploy” button in the upper right corner of the page.

APPENDIX A. CARRIER TEXT MESSAGING URL ADDRESSES

U.S.A Carriers	
Alltel	[10-digit phone number]@message.alltel.com Example: 1234567890@message.alltel.com
AT&T (formerly Cingular)	[10-digit phone number]@txt.att.net [10-digit phone number]@cingularme.com Example: 1234567890@txt.att.net
Boost Mobile	[10-digit phone number]@myboostmobile.com Example: 1234567890@myboostmobile.com
Nextel (now Sprint Nextel)	[10-digit telephone number]@messaging.nextel.com Example: 1234567890@messaging.nextel.com
Sprint PCS (now Sprint Nextel)	[10-digit phone number]@messaging.sprintpcs.com Example: 1234567890@messaging.sprintpcs.com
T-Mobile	[10-digit phone number]@tmomail.net Example: 1234567890@tmomail.net
US Cellular	[10-digit phone number]email.uscc.net (SMS) Example: 1234567890@email.uscc.net
Verizon	[10-digit phone number]@vtext.com Example: 1234567890@vtext.com
Virgin Mobile USA	[10-digit phone number]@vmobl.com Example: 1234567890@vmobl.com

International Carriers	Email to SMS Gateway
7-11 Speakout (USA GSM)	number@cingularme.com
Airtel (Karnataka, India)	number@airtelkk.com
Airtel Wireless (Montana, USA)	number@sms.airtelmontana.com
Alaska Communications Systems	number@msg.acsalaska.com
Aql	number@text.aql.com
AT&T Enterprise Paging	number@page.att.net
BigRedGiant Mobile Solutions	number@tachyonsms.co.uk
Bell Mobility & Solo Mobile (Canada)	number@txt.bell.ca
BPL Mobile (Mumbai, India)	number@bplmobile.com
Cellular One (Dobson)	number@mobile.celloneusa.com
Cingular (Postpaid)	number@cingularme.com
Centennial Wireless	number@cwemail.com
Cingular (GoPhone prepaid)	number@cingularme.com (SMS)
Claro (Brasil)	number@clarotorpedo.com.br
Claro (Nicaragua)	number@ideasclaro-ca.com
Comcel	number@comcel.com.co
Cricket	number@sms.mycricket.com (SMS)
CTI	number@sms.ctimovil.com.ar
Emtel (Mauritius)	number@emtelworld.net
Fido (Canada)	number@fido.ca
General Communications Inc.	number@msg.gci.net

Globalstar (satellite)	<i>number@msg.globalstarusa.com</i>
Helio	<i>number@messaging.sprintpcs.com</i>
Illinois Valley Cellular	<i>number@ivctext.com</i>
Iridium (satellite)	<i>number@msg.iridium.com</i>
Iusacell	<i>number@rek2.com.mx</i>
i wireless	<i>number.iws@iwspcs.net</i>
Koodo Mobile (Canada)	<i>number@msg.koodomobile.com</i>
LMT (Latvia)	<i>number@sms.lmt.lv</i>
Meteor (Ireland)	<i>number@sms.mymeteor.ie</i>
Mero Mobile (Nepal)	<i>977number@sms.spicenepal.com</i>
MetroPCS	<i>number@mymetropcs.com</i>
Movicom (Argentina)	<i>number@sms.movistar.net.ar</i>
Mobitel (Sri Lanka)	<i>number@sms.mobitel.lk</i>
Movistar (Colombia)	<i>number@movistar.com.co</i>
MTN (South Africa)	<i>number@sms.co.za</i>
MTS (Canada)	<i>number@text.mtsmobility.com</i>
Nextel (United States)	<i>number@messaging.nextel.com</i>
Nextel (Argentina)	<i>TwoWay.11number@nextel.net.ar</i>
Orange Polska (Poland)	<i>9digit@orange.pl</i>
Personal (Argentina)	<i>number@alertas.personal.com.ar</i>
Plus GSM (Poland)	<i>+48number@text.plusgsm.pl</i>
President's Choice (Canada)	<i>number@txt.bell.ca</i>
Qwest	<i>number@qwestmp.com</i>
Rogers (Canada)	<i>number@pcs.rogers.com</i>
SL Interactive (Australia)	<i>number@slinteractive.com.au</i>
Sasktel (Canada)	<i>number@sms.sasktel.com</i>
Setar Mobile email (Aruba)	<i>297+number@mas.aw</i>
Suncom	<i>number@tms.suncom.com</i>
T-Mobile (Austria)	<i>number@sms.t-mobile.at</i>
T-Mobile (UK)	<i>number@t-mobile.uk.net</i>
Telus Mobility (Canada)	<i>number@msg.telus.com</i>
Thumb Cellular	<i>number@sms.thumbcellular.com</i>
Tigo (Formerly Ola)	<i>number@sms.tigo.com.co</i>
Tracfone (prepaid)	<i>number@mmst5.tracfone.com</i>
Unicel	<i>number@utext.com</i>
Virgin Mobile (Canada)	<i>number@vmobile.ca</i>
Vodacom (South Africa)	<i>number@voda.co.za</i>
Vodafone (Italy)	<i>number@sms.vodafone.it</i>
YCC	<i>number@sms.ycc.ru</i>
MobiPCS (Hawaii only)	<i>number@mobipcs.net</i>

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B+B SMARTWORX TECHNICAL SUPPORT

Phone: 1 (800) 346-3119
Monday - Friday, 7 a.m. to 5:30 p.m. CST
Fax: (815) 433-5109
Email: [B+B SmartWorx Technical Support](mailto:TechnicalSupport@bb.com)
Web: <http://www.advantech-bb.com>