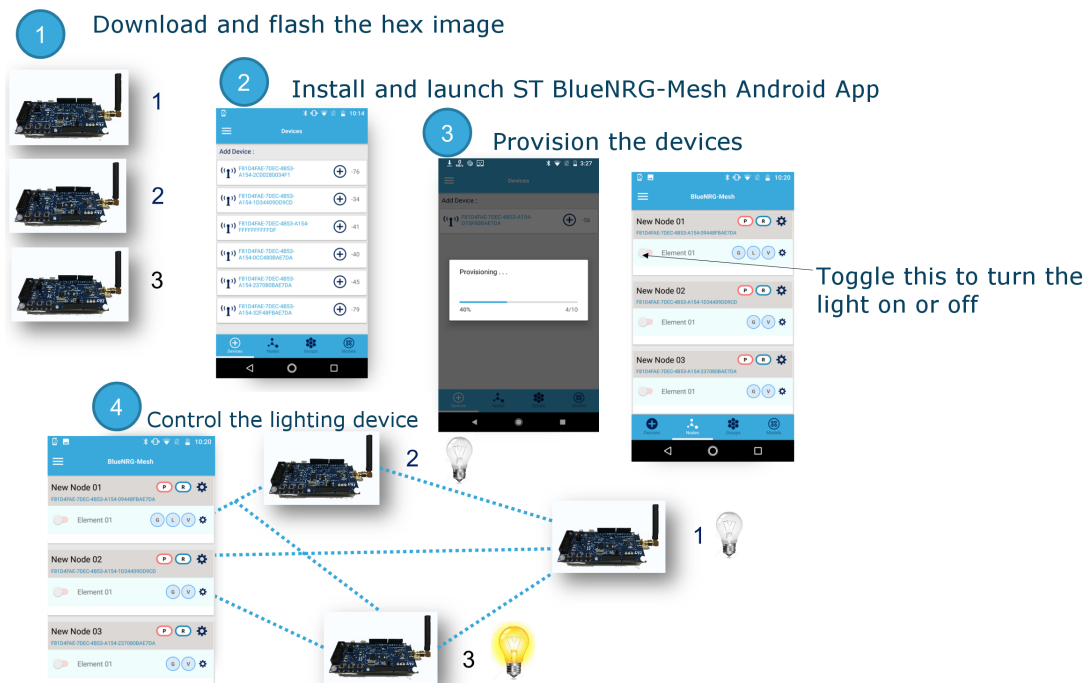# Getting started with the ST BlueNRG-Mesh Android application

Introduction

The BlueNRG-Mesh Android App is designed to help you evaluate the ST Bluetooth low energy Mesh solution.

The application works with ST BLE devices running the embedded Mesh over Bluetooth low energy (MoBLE) library. You can use it to evaluate provisioning, un-provisioning and controlling MoBLE embedded nodes in a mesh network over the Bluetooth low energy protocol to create distributed control system such as smart lighting and home automation.

**Figure 1.** ST BlueNRG-Mesh scenario

1   Getting started with the App

1.1   Installing and running the App

Follow the instructions below to install the BlueNRG-Mesh Android App on a compatible Android device.

Step 1.   Download the application in one of the following ways:

- a.   Follow the link to Google Play® store at BlueNRG-Mesh to download the app directly to your Android device

    or

- a.   download the app apk file to your PC at STSW-BNRG-Mesh
- b.   transfer the apk to your Android device
- c.   find and launch the apk on your Android device

Step 2.   Ensure that Bluetooth radio is enabled.

Step 3.   Click on the appropriate icon and accept the request prompt to turn on the Bluetooth radio to work with the App.

Figure 2. Turning the Bluetooth radio on
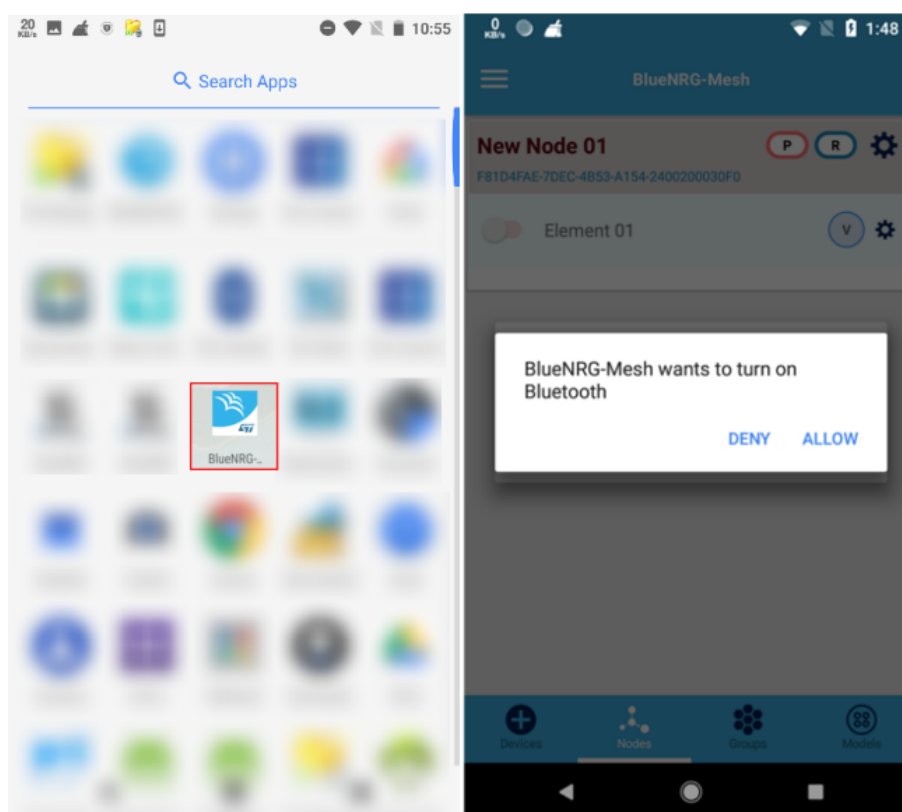
Step 4.   For Android 6.0 onwards, you must allow the location services (GPS) to work with BLE.

1.2   Introduction to the App controls

The app has views for provisioned, un-provisioned, group nodes and models. The provisioned node view opens by default, as shown below.
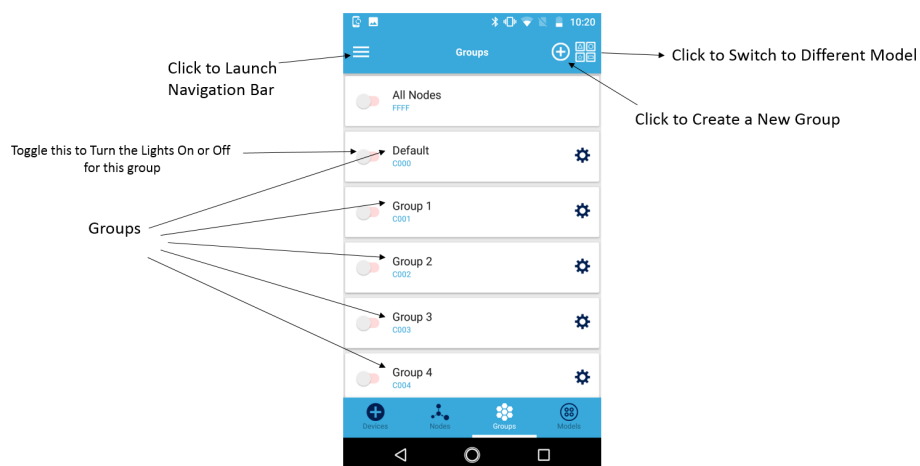
Figure 3. ST BlueNRG-Mesh Android App home page with un-provisioned nodes

All the provisioned nodes are represented as New Node NN (NN is the Provisioned Node number) showing the related elements, numbered as Element YY as shown below.

Figure 4. ST BlueNRG-Mesh Android App home page with provisioned nodes
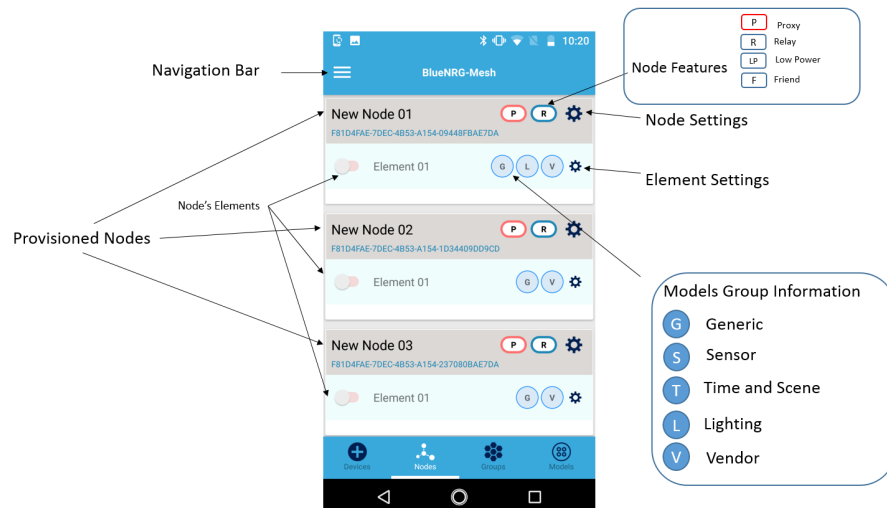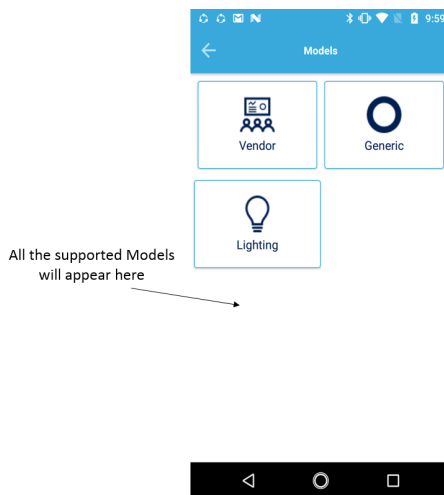
The following figure shows the Group management.

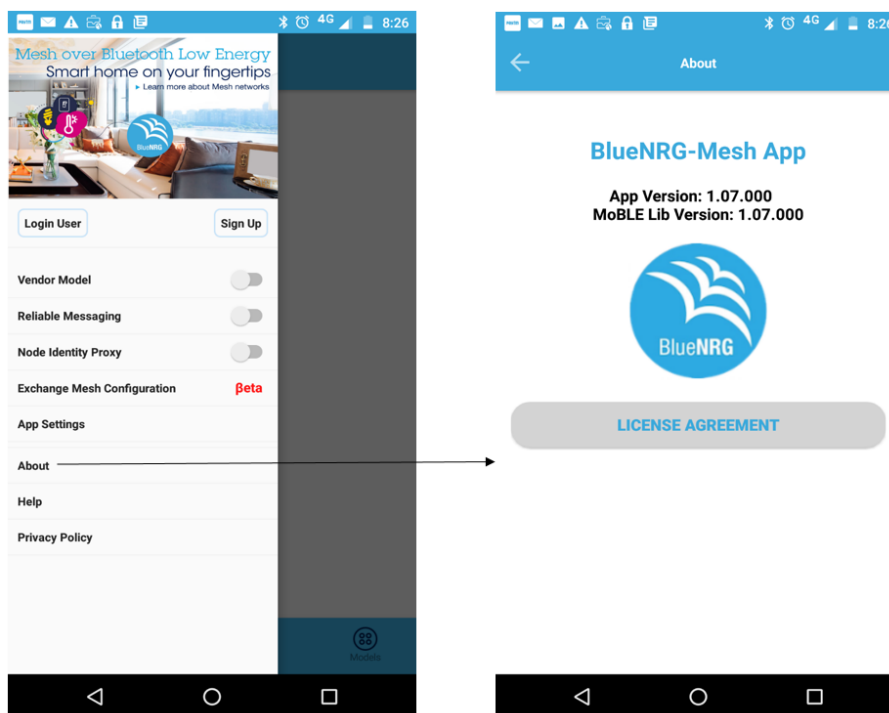**Figure 5. Group management screen**

The following figure shows the Model View: models supported by the device.

Figure 6. Models view screen

The following figure shows the Settings of the Navigation Bar.

Figure 7. **About screen**

2 ST BlueNRG-Mesh Android App functionality

2.1 Provisioning the node

Provisioning is a process of authenticating the un-provisioned devices and bringing them into the BLE Mesh network.

Step 1. Launch the app.

It shows the list of un-provisioned devices along with their UUIDs, and a plus (+) button to provision the nodes.
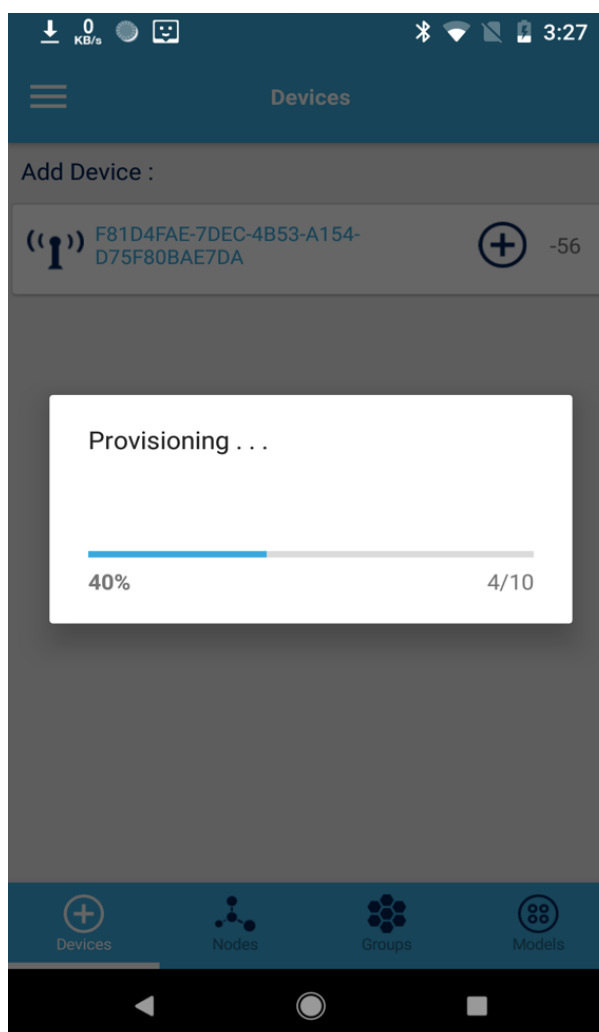
Figure 8. Unprovisioned device view

Step 2. Click the add (+) button to begin provisioning.

Once the provisioning starts, you will see a window showing the provisioning status.

**Figure 9. Provisioning process**

Step 3.   Keep the devices near your Android Smartphone during provisioning procedure.

The provisioning takes 10 seconds to 12 seconds depending on the smartphone.

The provisioned node is listed with a default node name as New Node YY along with the UUID and setting icon for individual node.

Step 4.   Toggle the switch near the Element right to left to turn the LED on-off, respectively. The proxy node is indicated by bold brown color. The provisioned Node is listed with a default New Node NN and all the Elements within the node as Element ZZ (New Node 01 and Element 01 in this example).

Figure 10. Provisioning process

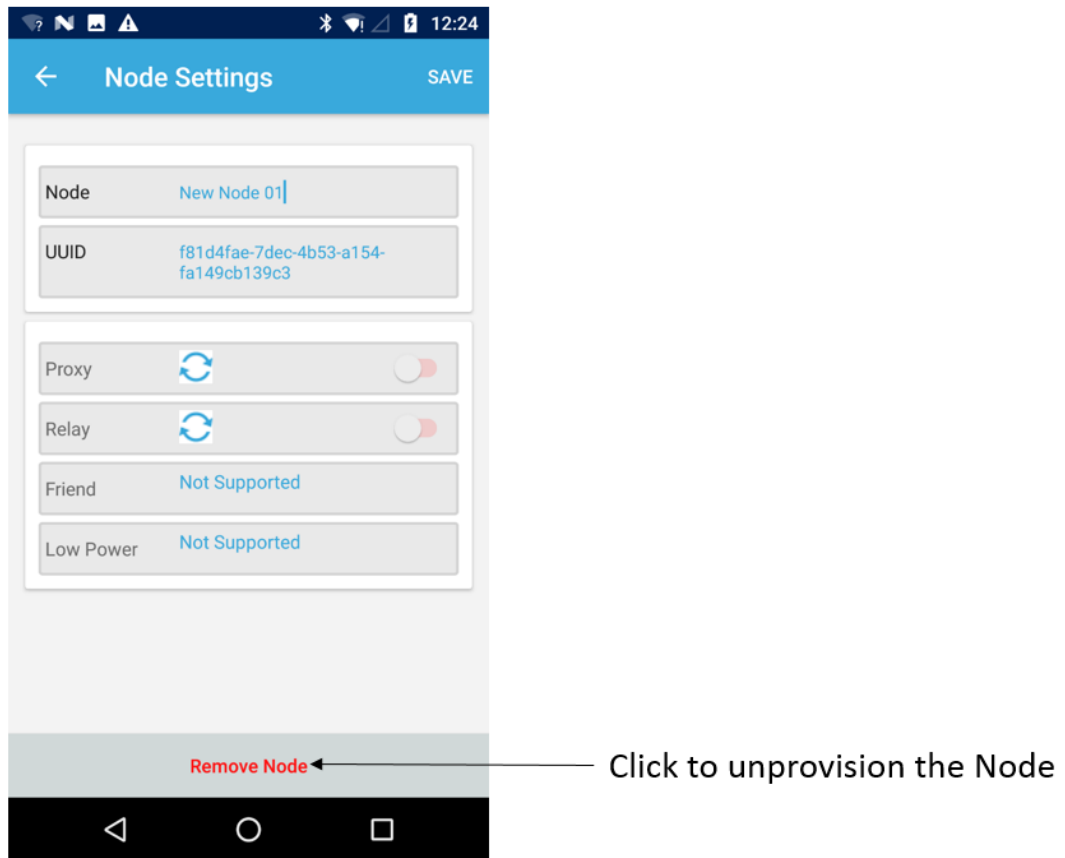Toggle this to Turn the Light On or Off
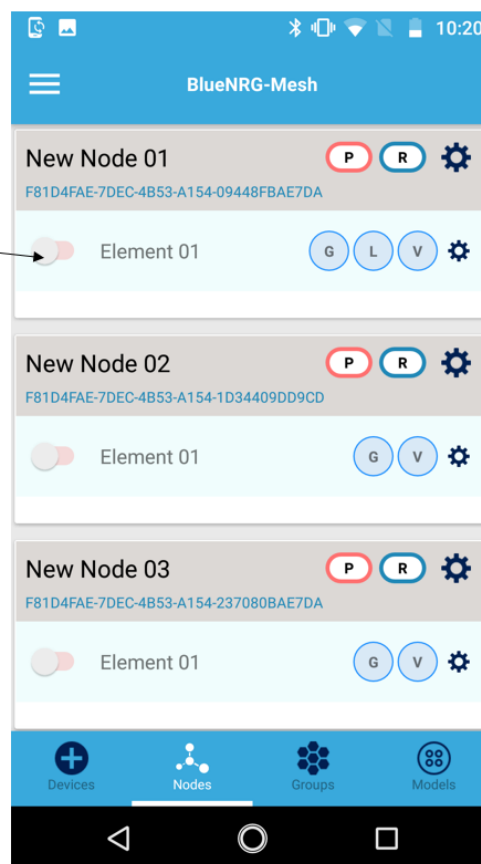
2.2   Un-provisioning the node

Un-provisioning the node involves removing the node from the BLE Mesh network.

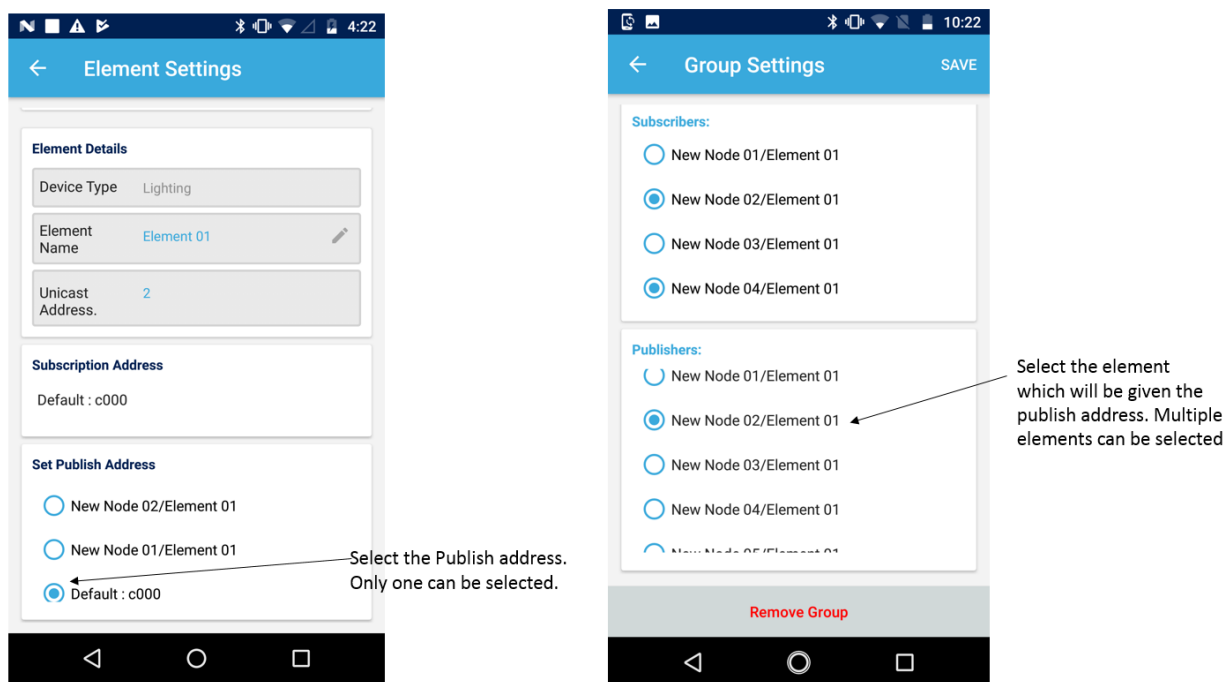**Step 1.**   To un-provision the nodes, go to the node settings and click the "Remove Node" button.

Figure 11. Un-provisioning the node

2.3 Publication address

Publication address can be set for a node from the Element Settings and the Group Settings pages.
Unlike subscription address, publication address cannot be deleted.

Figure 12. Publication address set up

Select the element which will be given the publish address. Multiple elements can be selected

Select the Publish address. Only one can be selected.

2.4 Model selection

Model selection can be done using the Models tab.

Figure 13. Models

All the supported Models will appear here
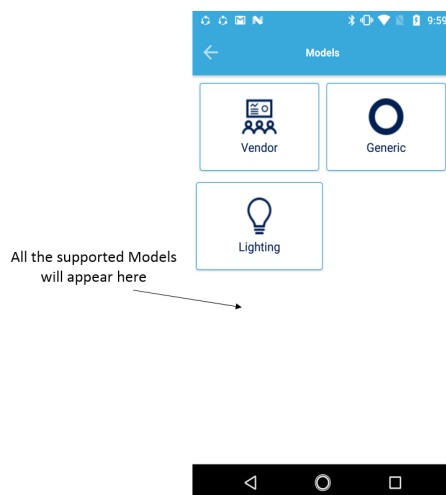
Figure 14. Lighting model
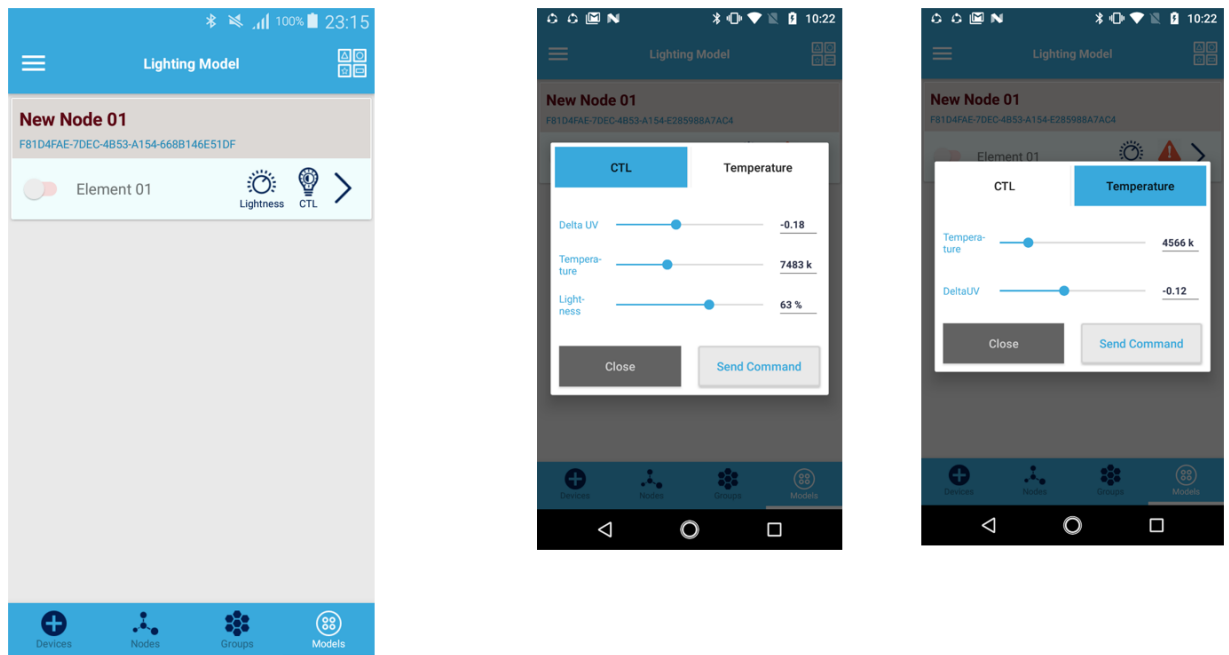
Figure 15. Vendor model
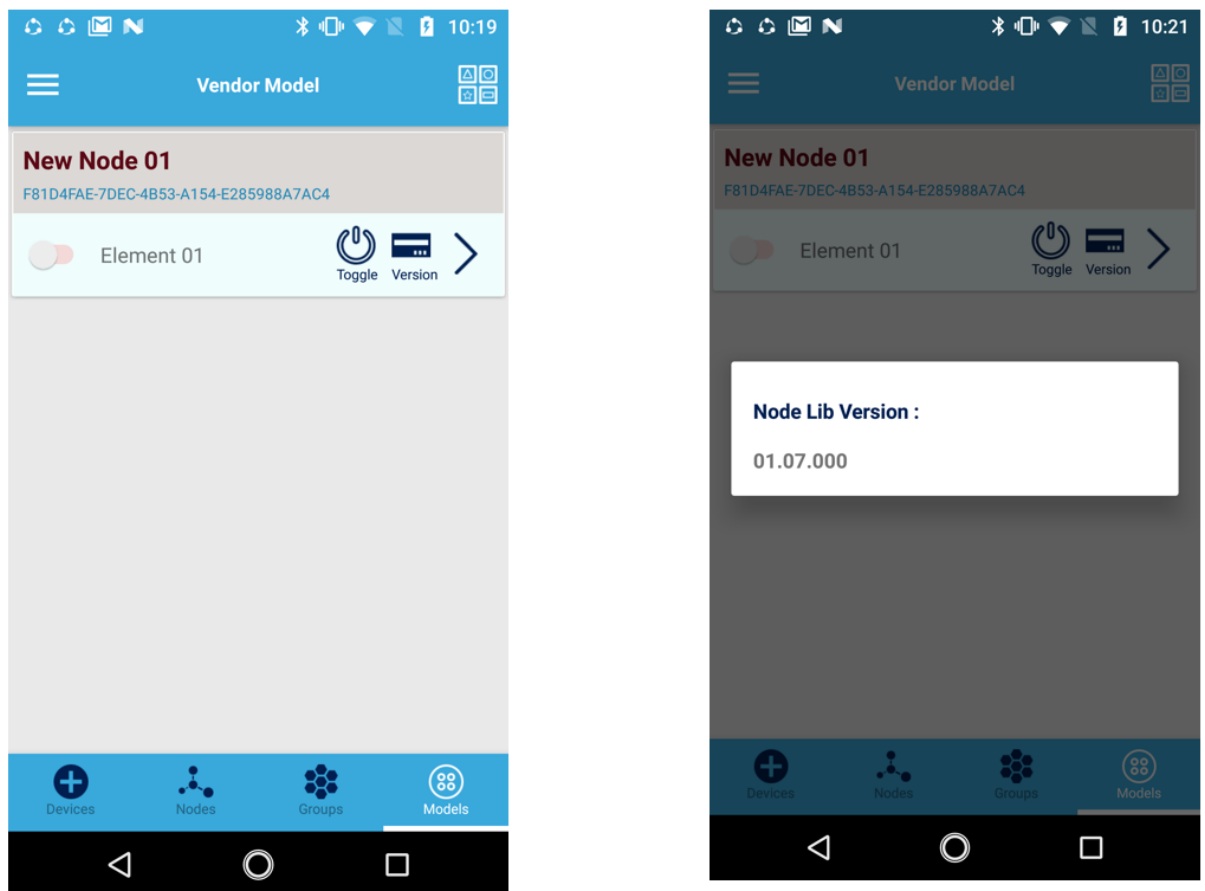
Figure 16. Generic model
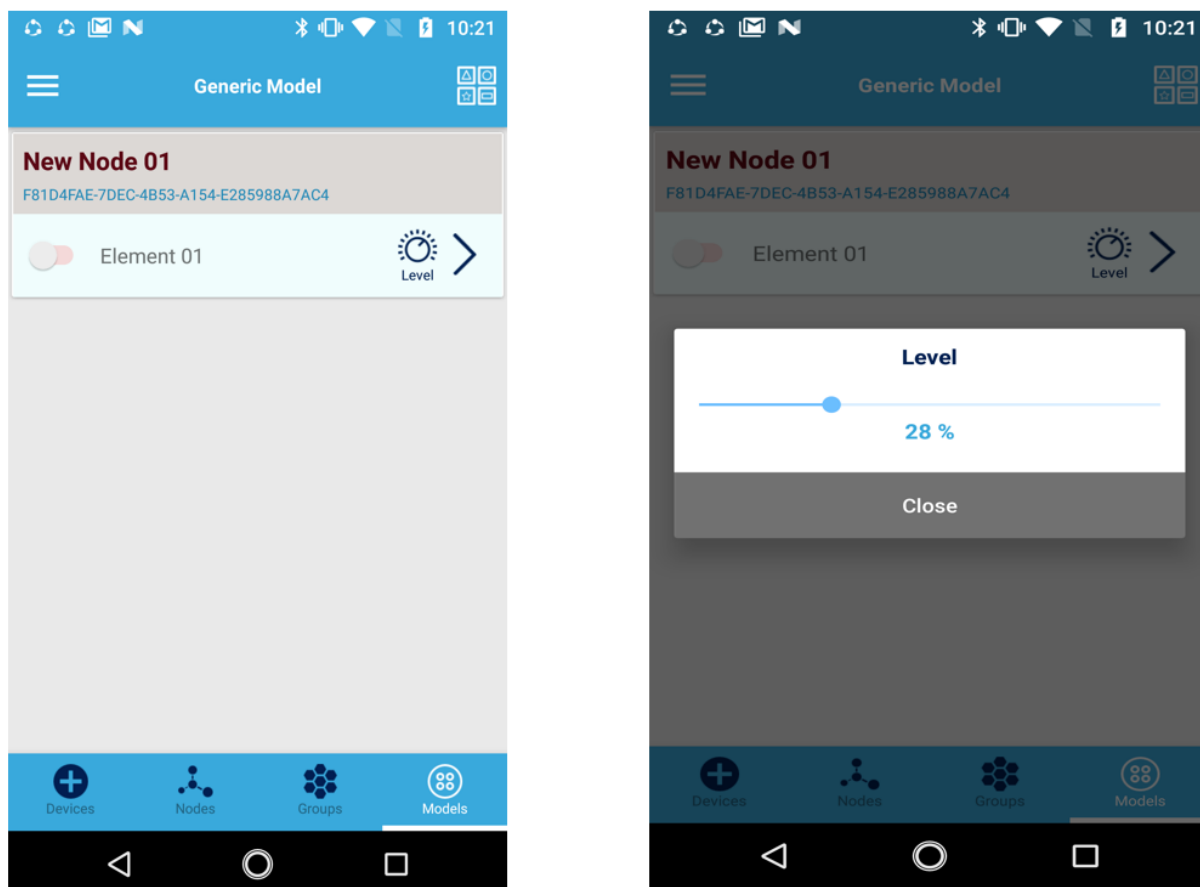
2.5 Provisioner database sharing

The provisioner database can be shared using the Cloud Application or via e-mail.

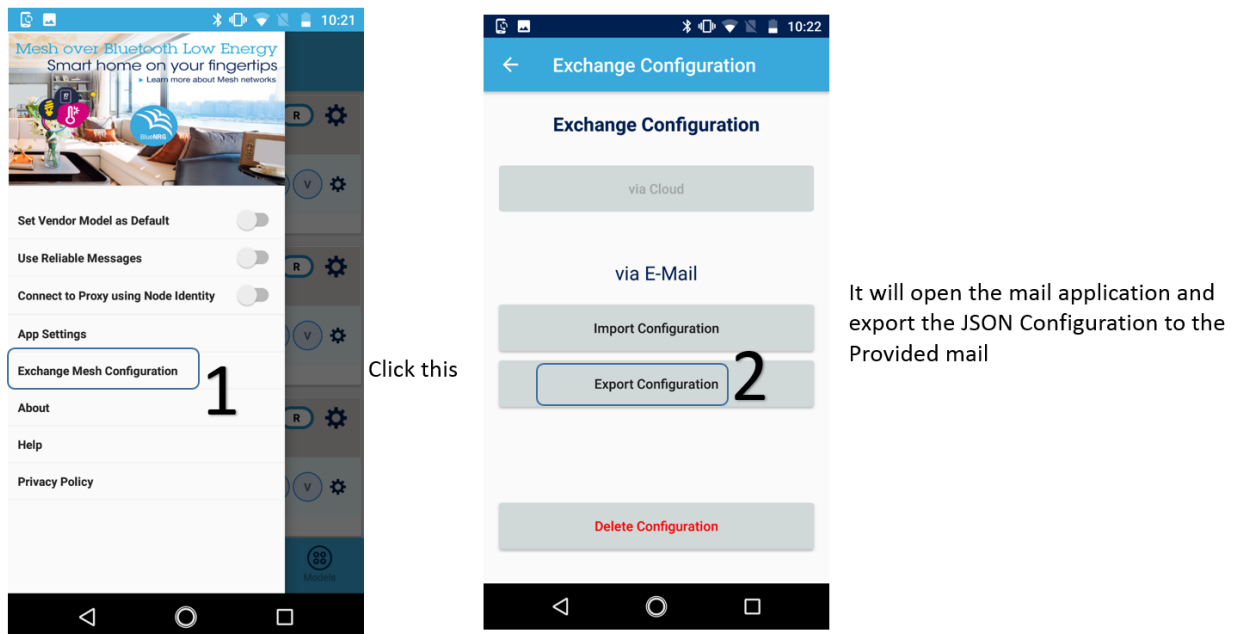**Figure 17. Exporting the configuration database via e-mail**

Click this **1**

2 It will open the mail application and export the JSON Configuration to the Provided mail

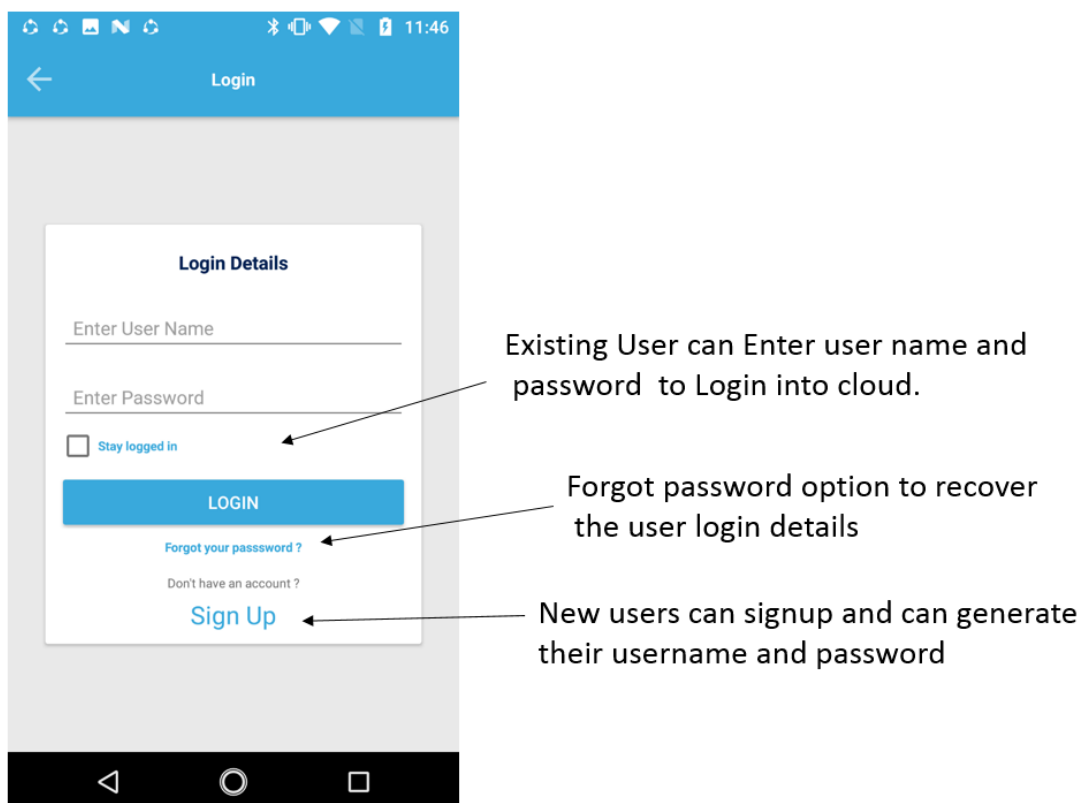**Figure 18. Importing the configuration database via e-mail**

1

2 It will import JSON Configuration from the Download Folder(JSON previously downloaded)
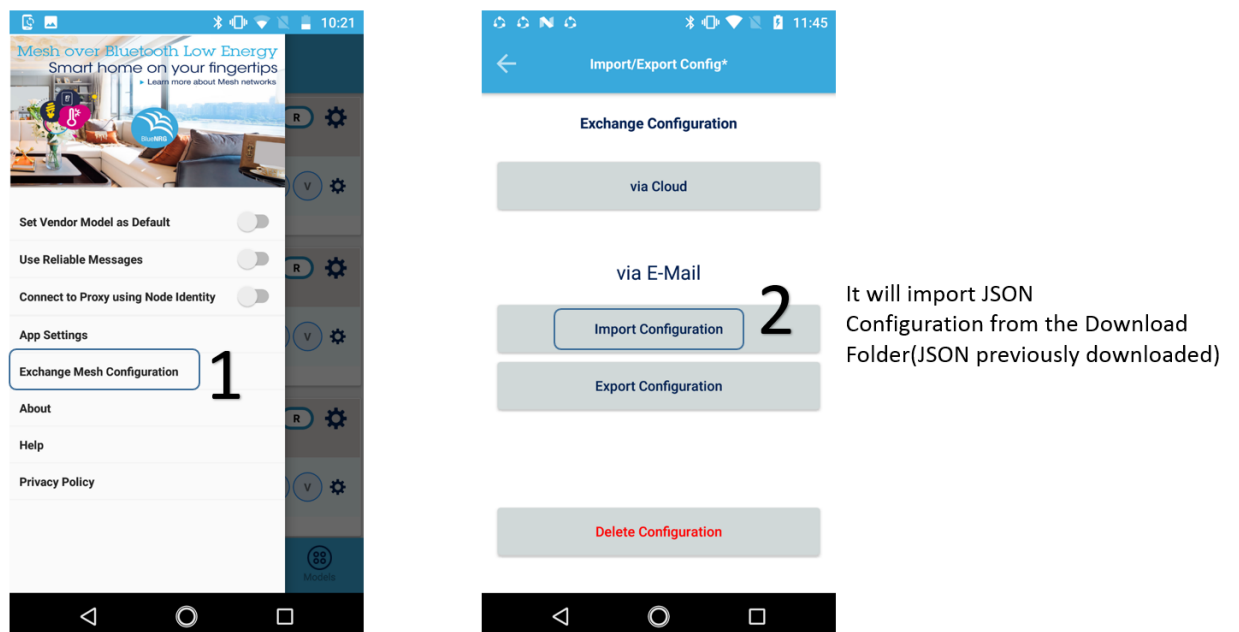
Figure 19. Importing the configuration database via cloud
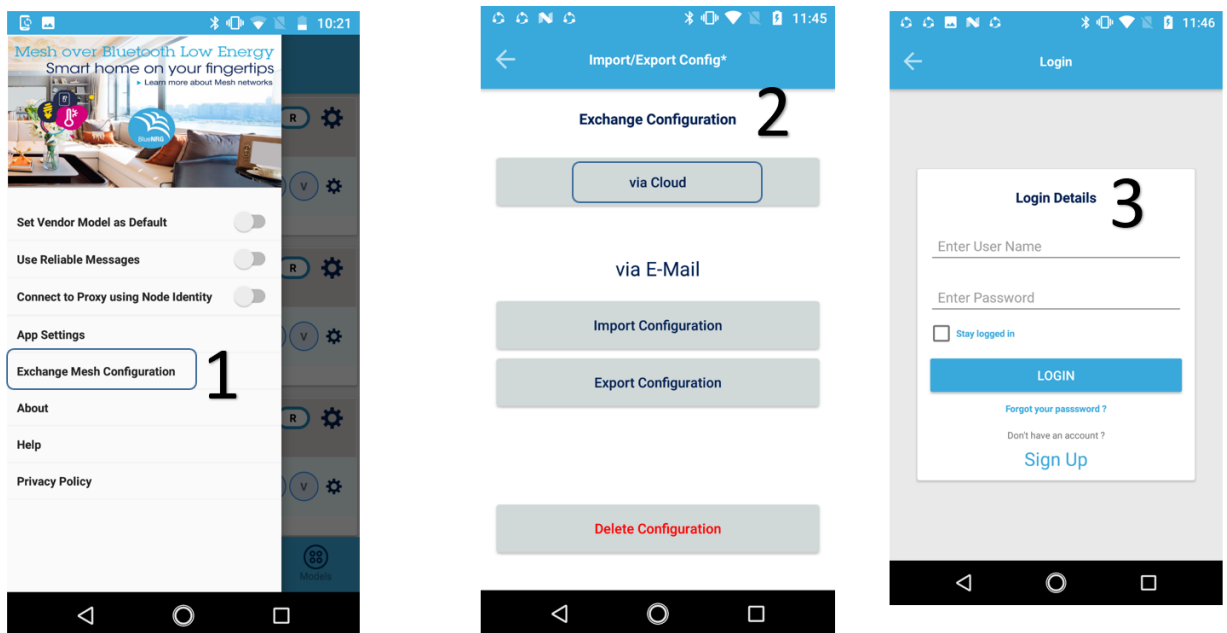
By clicking on the **via Cloud** button, you are redirected to the following page.

Figure 20. Importing the configuration database via cloud - login

Existing User can Enter user name and password to Login into cloud.

Forgot password option to recover the user login details

New users can signup and can generate their username and password

2.6 Communication security

All communication between Android app and the mesh network is secured by encryption and authentication. The underlying standards of secured communication are compliant with the BLE Mesh technology standards.

2.7 Smart lighting application using the app

The ST BlueNRG-Mesh Android App has a smart lighting demonstration that you can use to control the nodes provisioned in a BLE Mesh network. The following commands are available:
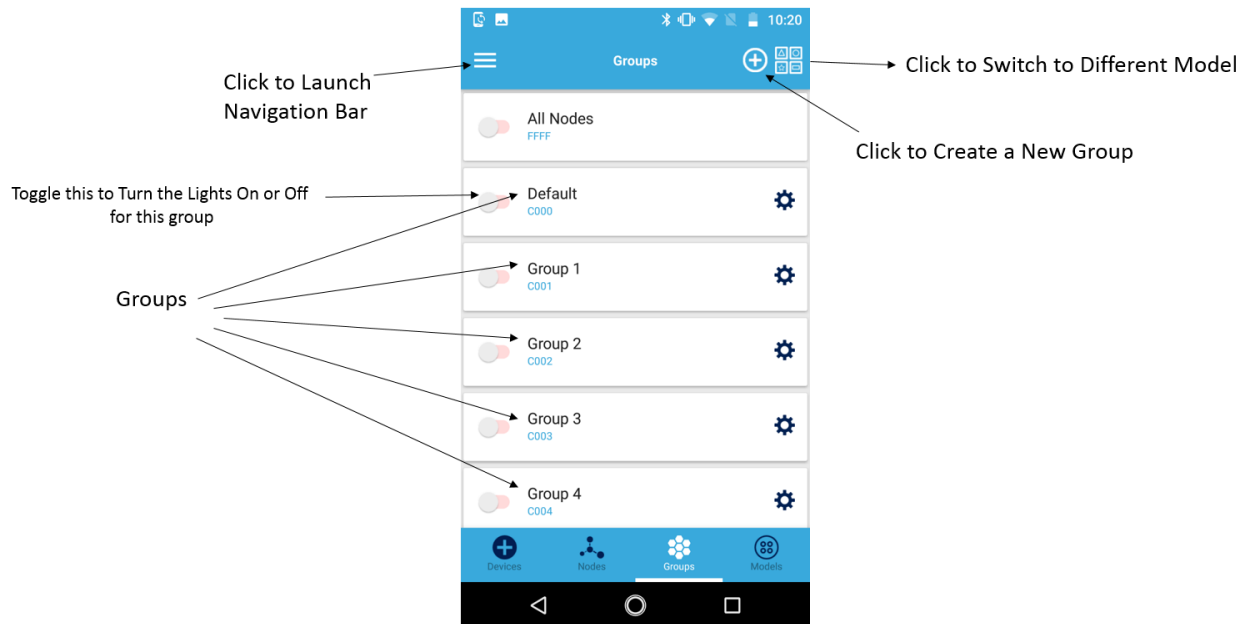
Step 1. Toggle any individual light on or off from the node tab.

Figure 21. Toggling lights on/off from the node tab
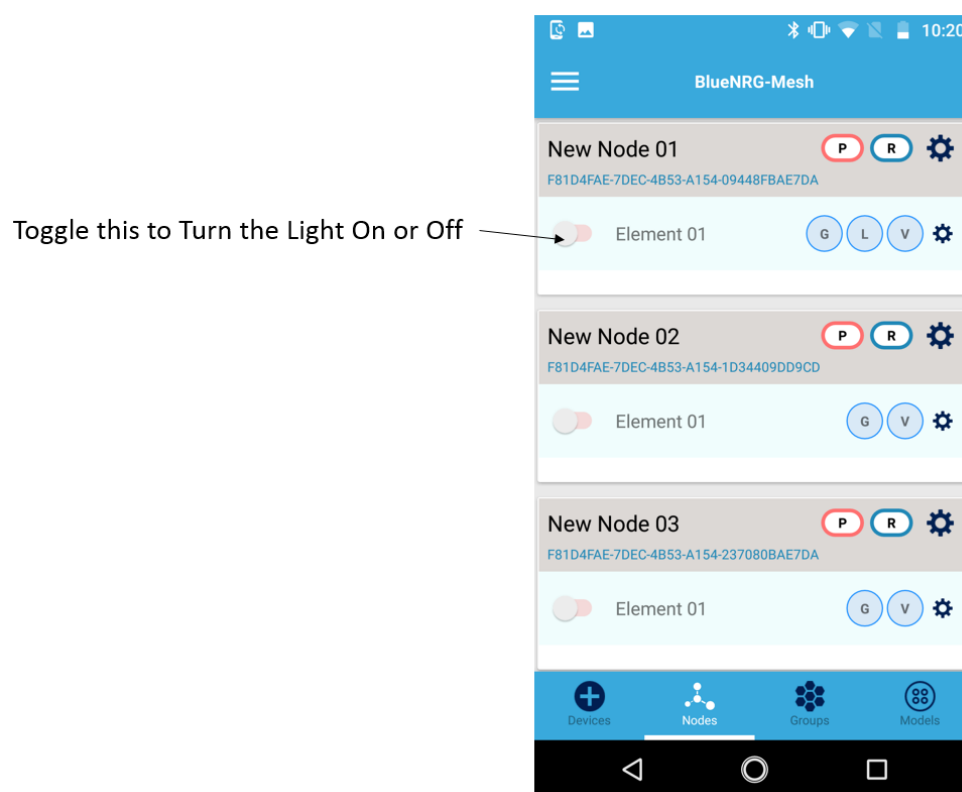
Step 2. Toggle any individual group on or off from the groups tab.

Figure 22. Toggling lights on/off from the group tab

Click to Launch
Navigation Bar

Click to Switch to Different Model

Click to Create a New Group

Toggle this to Turn the Lights On or Off
for this group

Groups

Step 3. Create a new group by clicking '+' on the group tab.

Step 4. Add a node in an existing group by clicking the radio button next to the nodes you wish to add.
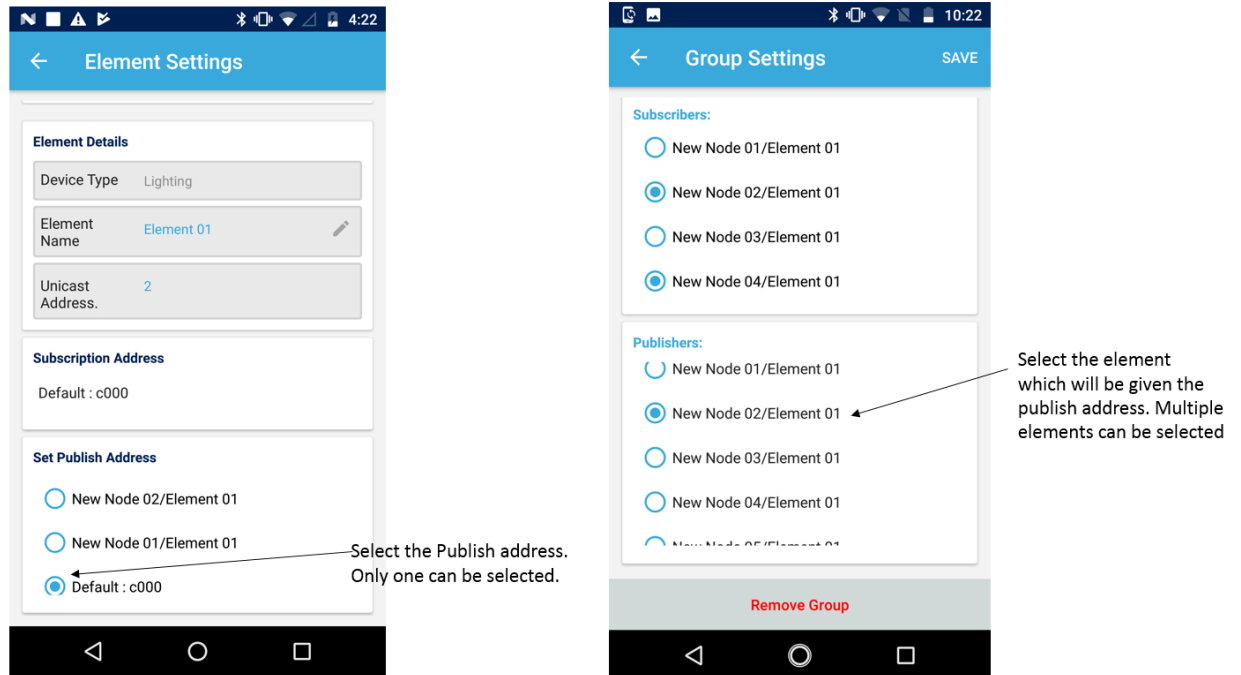
Figure 23. Adding a node to an existing group

Click to Create New Group

Click any Element to Add it to
Group

Click any Element to Give
Publication Address to it.
Publication address can
Also be given from the
Element Setting.
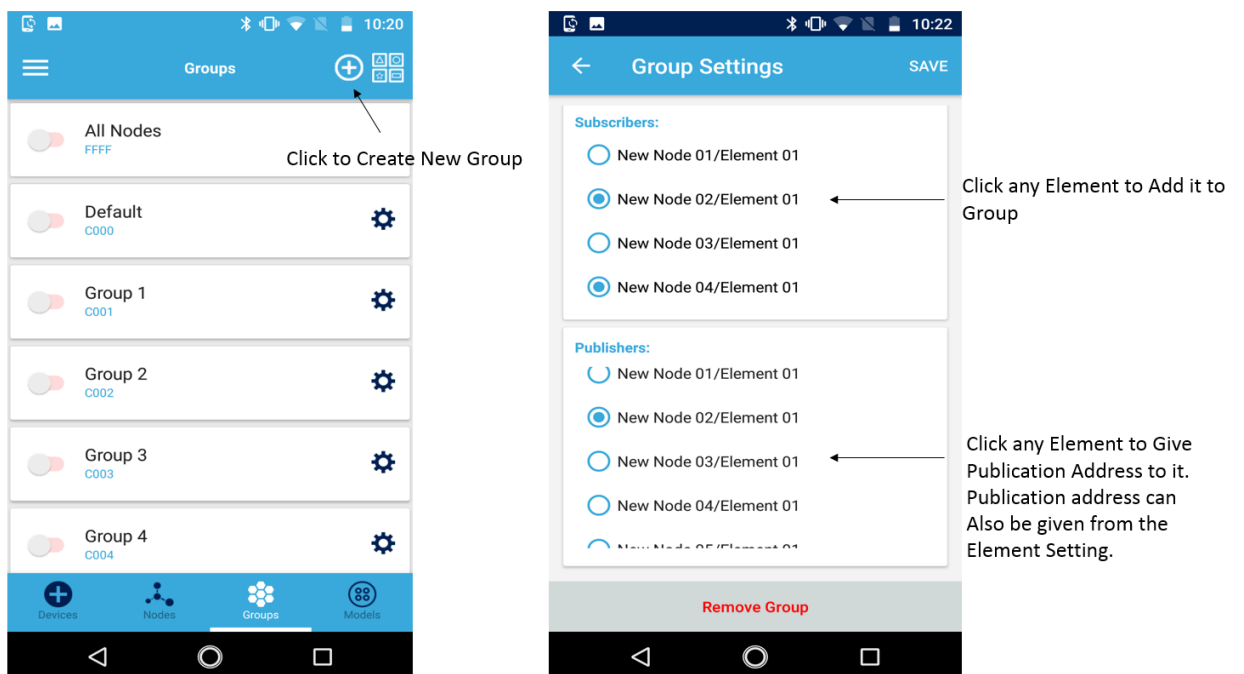
Step 5. Assign a publication address to the element by selecting the check box of any provisioned node address or group address already created.

Only one check box can be selected at a time from the Element Settings window while multiple elements can be selected from the Group Settings page.

Figure 24. Setting the publication address

Select the Publish address. Only one can be selected.

Select the element which will be given the publish address. Multiple elements can be selected

A Licensing and other information

Developer-friendly license terms

The initial BlueNRG-Mesh is built over Motorola's Mesh Over Bluetooth Low Energy (MoBLE) technology.

The present solution involving both the Mesh library and applications is developed and maintained solely by STMicroelectronics.

Revision history

Table 1. Document revision history

Date	Version	Changes
01-Feb-2018	1	Initial release.
13-Sep-2018	2	Updated Figure 1. ST BlueNRG-Mesh scenario, Section 1.1 Installing and running the App, Section 1.2 Introduction to the App controls, Section 2.1 Provisioning the node and Section 2.2 Un-provisioning the node. Added Section 2.3 Publication address, Section 2.4 Model selection and Section 2.5 Provisioner database sharing.

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IMPORTANT NOTICE – PLEASE READ CAREFULLY