BT NCP Commander

Overview

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The Simplicity Bluetooth NCP Commander is a tool for sending BGAPI commands to NCP target applications. It offers an intuitive GUI for controlling BLE or Bluetooth Mesh NCP targets, allowing users to learn the Bluetooth API, launch commands via a smart console, perform common BLE functions, manipulate GATT databases, and provision Bluetooth Mesh devices.

Key Features

- Control the NCP target intuitively through a graphical user interface and learn the inner workings of the Bluetooth API
- Launch commands effortlessly through the smart console with built-in documentation and intellisense
- Perform the most common BLE functions (advertising, scanning, connections)
- Manipulate the GATT database on the NCP target leveraging Dynamic GATT feature on the embedded stack
- Provision and configure Bluetooth Mesh devices

For detailed information about using NCP Commander and developing Bluetooth NCP-Host applications, see Silicon Labs Bluetooth Stack v3.x and Higher in Network Co-Processor Mode.

Two versions of the tool are available:

- Bluetooth NCP Commander Standalone
- Bluetooth NCP Commander on the Web (See here)

Before launching Bluetooth NCP Commander, make sure that the correct board is connected. If you are just getting started, build and flash a project based on Bluetooth - NCP.

To launch the Simplicity Bluetooth NCP Commander:

1. In the Simplicity Studio v6, click Tools > NCP Commander.
2. In the Connection Manager dialog, select the target device and click Connect.

Once the UART connection to the mainboard is established, an Interactive view opens, which you can use to issue BGAPI commands. Note that the connected device is shown in the lower right. You can change target devices without leaving Bluetooth NCP Commander by clicking that area. It will show Disconnected if not connected to any device. Check the log for the NCP target response and status messages.

You can also issue commands manually. For example, you can issue the `sl_bt_system_hello()` command at any time to verify that communication between the host and the device is working. The Smart Console provides auto completion and documentation for the possible commands.

NCP Commander provides a simple scripting feature. Create or import an existing script using the controls in the top right corner. You can use any BGAPI commands in the script, but it has no additional features, such as branching or error handling. Click Export to save the commands sent through the console to a file that can be imported back as a script.

Release Notes

Simplicity Bluetooth NCP Commander Version 6.0.2 (Oct 16, 2025) Release Notes

Test and control Bluetooth NCP devices with Bluetooth NCP Commander, an interactive tool for sending BGAPI commands and evaluating Bluetooth functionality.

Release Summary

Key Features

Added in 6.0.2

- Initial release of Bluetooth NCP Commander as a standalone analysis tool

Bug Fixes

Fixed in 6.0.2

None

Removed/Deprecated Features

None

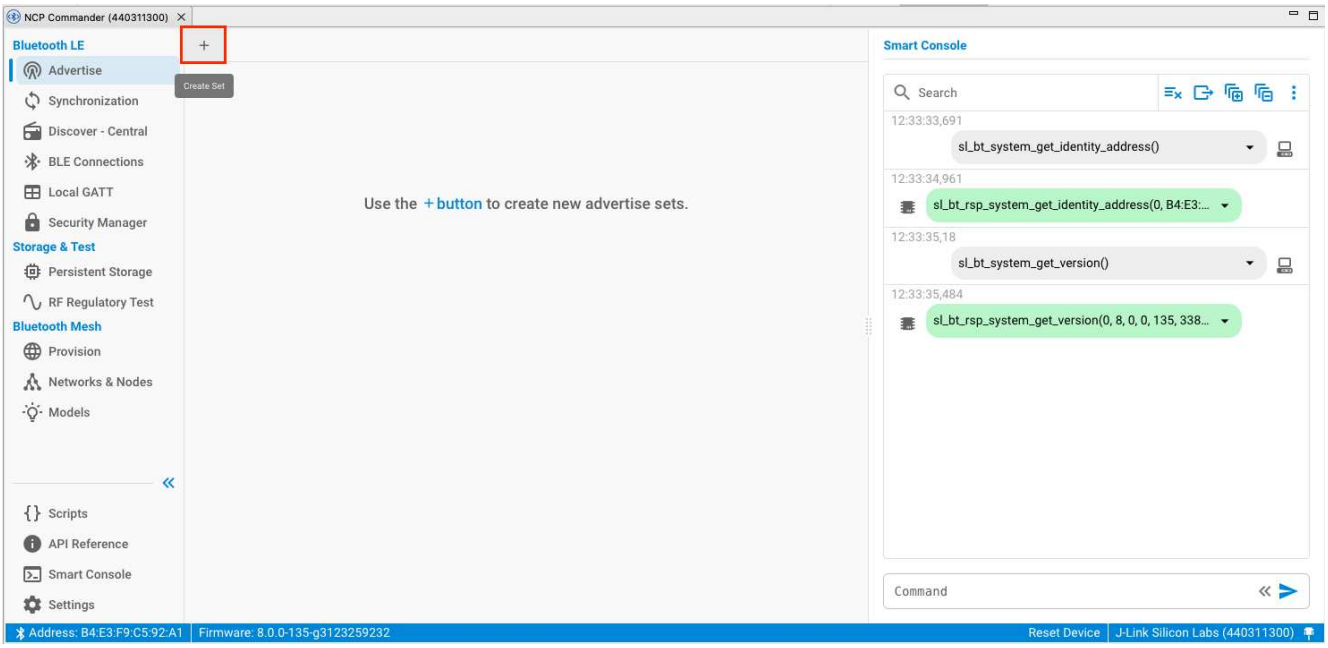
Known Issues and Limitation

None

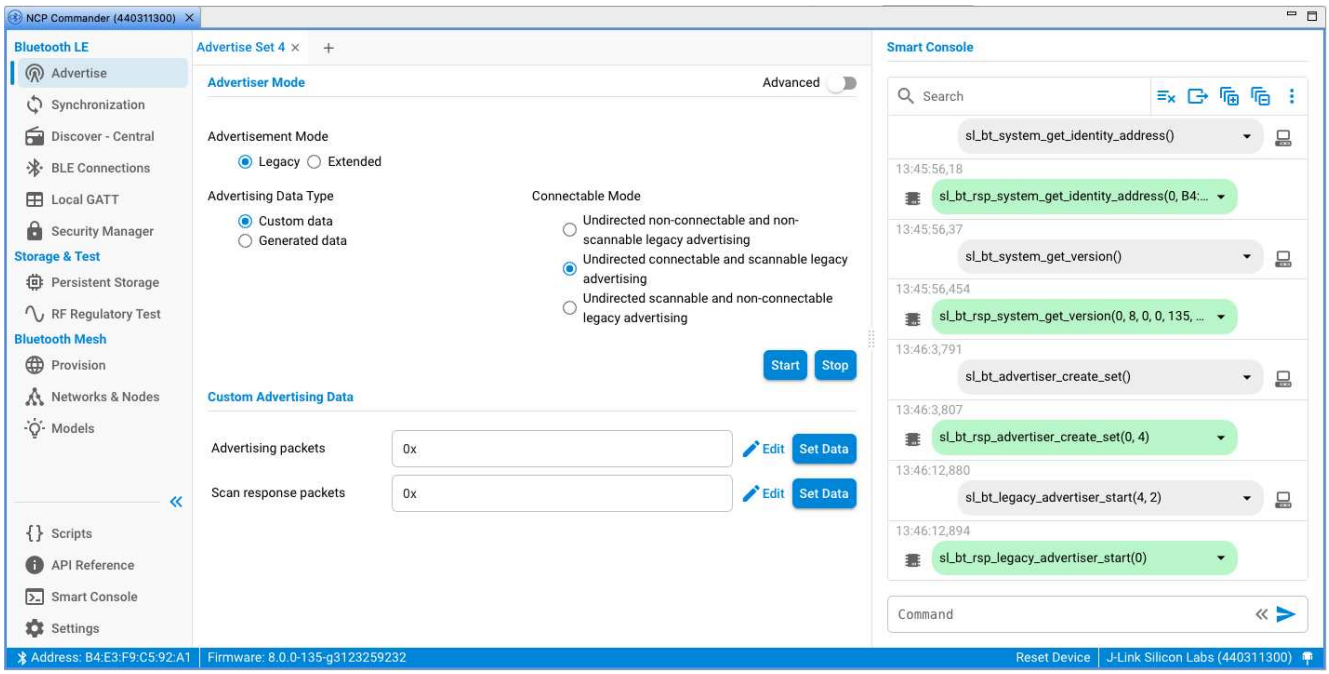
Advertising

Advertising

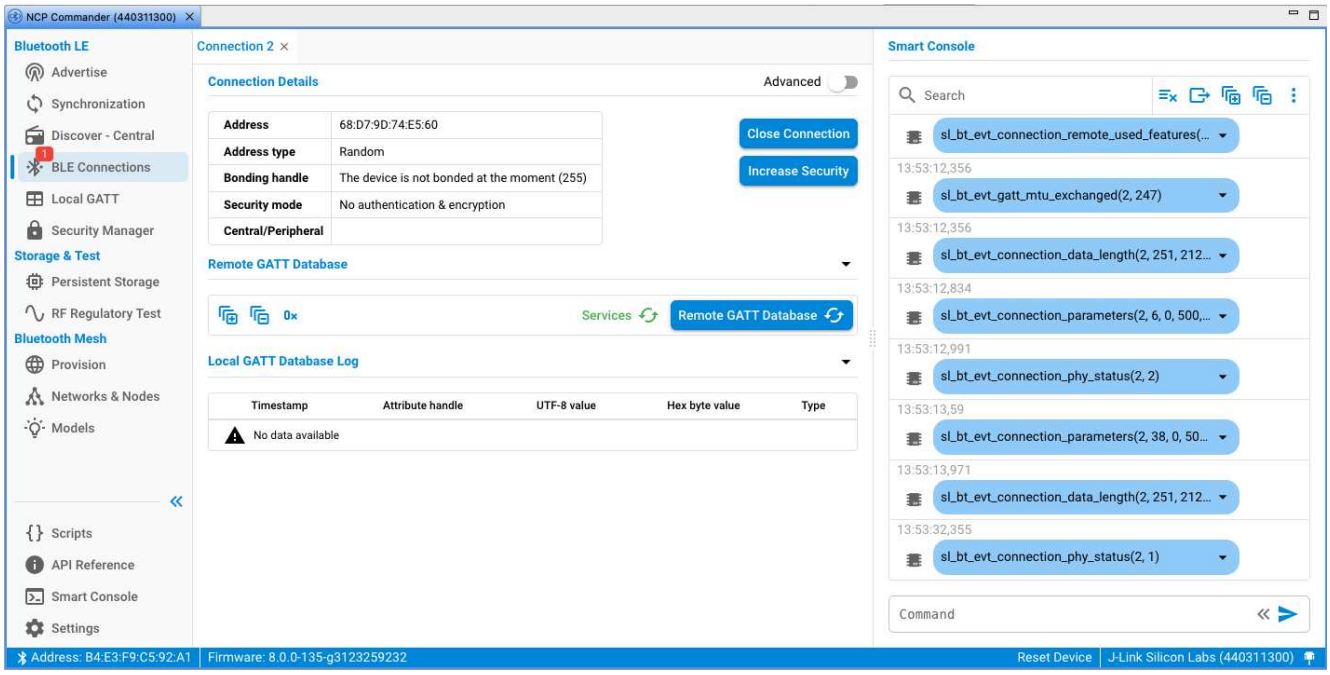
To start advertising, click "+" next to "Advertise" to create an advertiser set.



Select the desired advertising mode, create custom advertising packets if desired, and click Start.



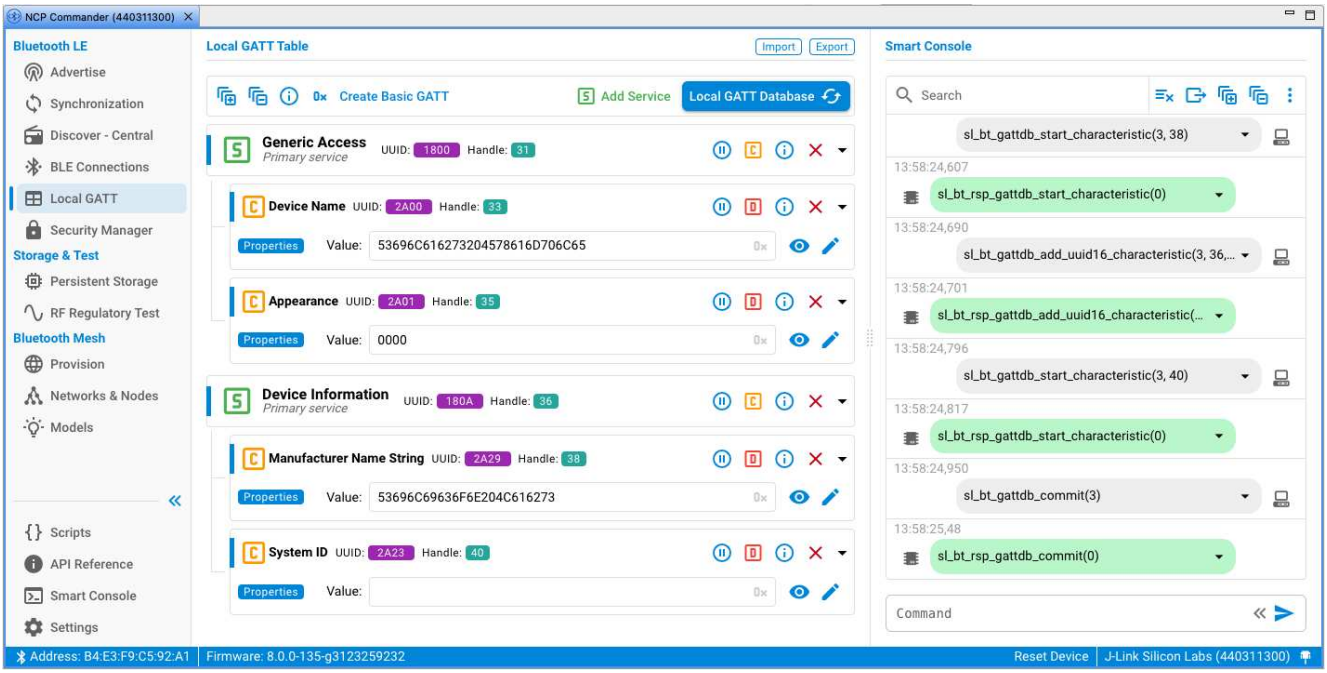
When advertising, the NCP target example accepts Bluetooth connections. If you connect to a WSTK or with another central device (for example with your phone), you can see the events and commands on the log.



GATT Database

GATT Database

NCP commander supports creating a GATT database. To generate a basic GATT database, open the Local GATT view, and click Create Basic GATT. The following database is generated.



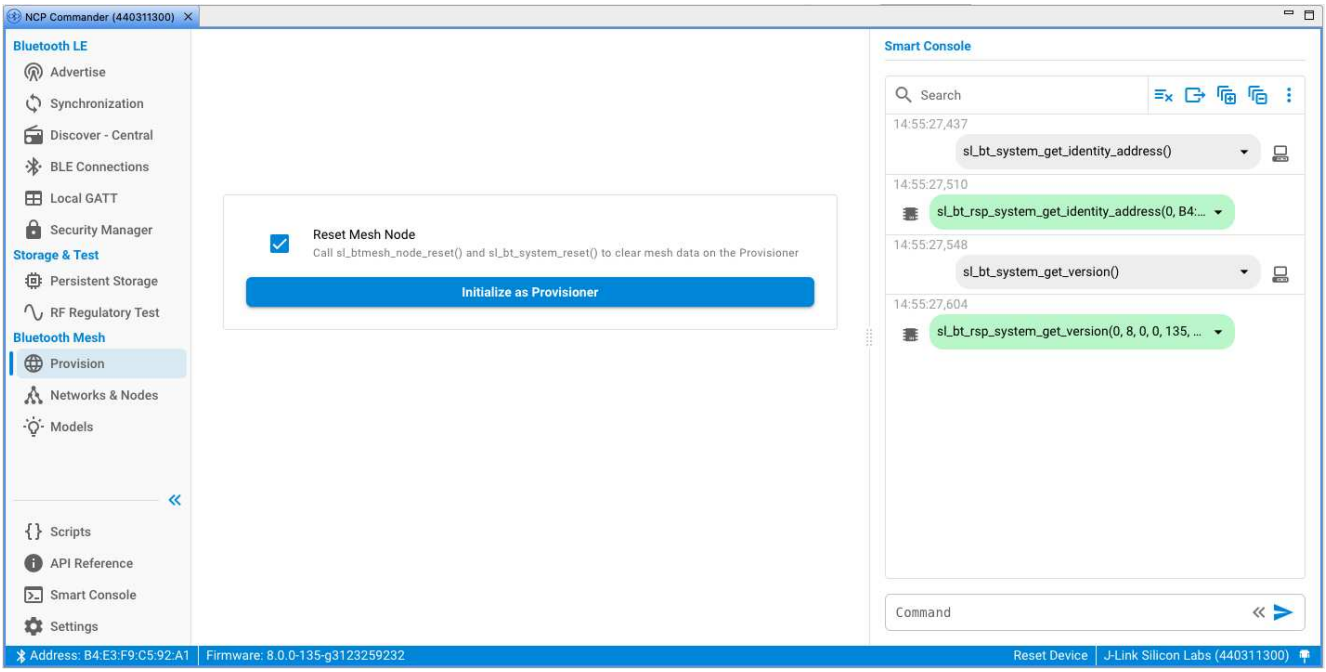
Here you can add services and characteristics. You can also read out the local GATT database from the device.

Bluetooth Mesh

Bluetooth Mesh

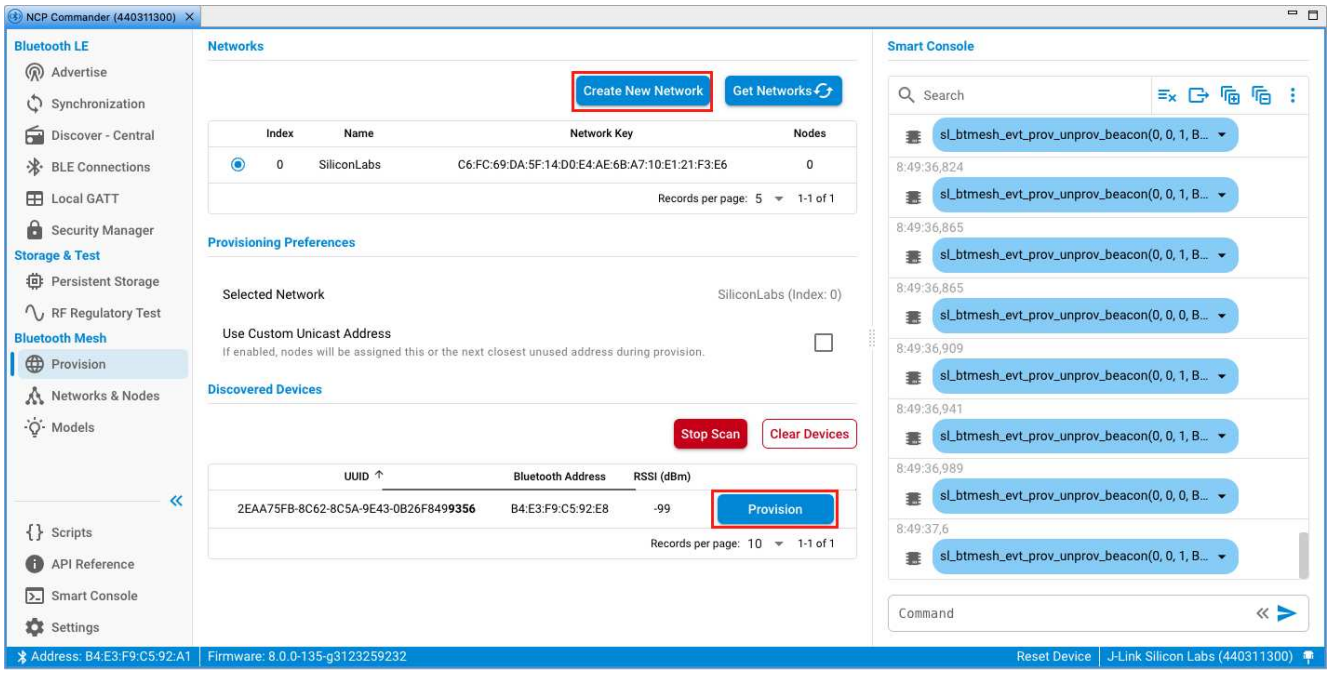
NCP Commander supports Bluetooth mesh features. You can issue Bluetooth mesh commands manually in the Smart Console, or use the interactive host provisioner feature to provision and configure mesh nodes and manage mesh networks, instead of using a Bluetooth mesh mobile application. To use the Bluetooth Mesh features, create, build, and flash the device with an NCP example supporting Mesh features, such as Bluetooth Mesh - NCP Empty. This section provides a summary of host provisioning. For details, see Silicon Labs Bluetooth Stack v3.x and Higher in Network Co-Processor Mode.

To start using the host provisioner, select either Provision or Networks & Nodes on the left menu, and click Initialize as Provisioner.



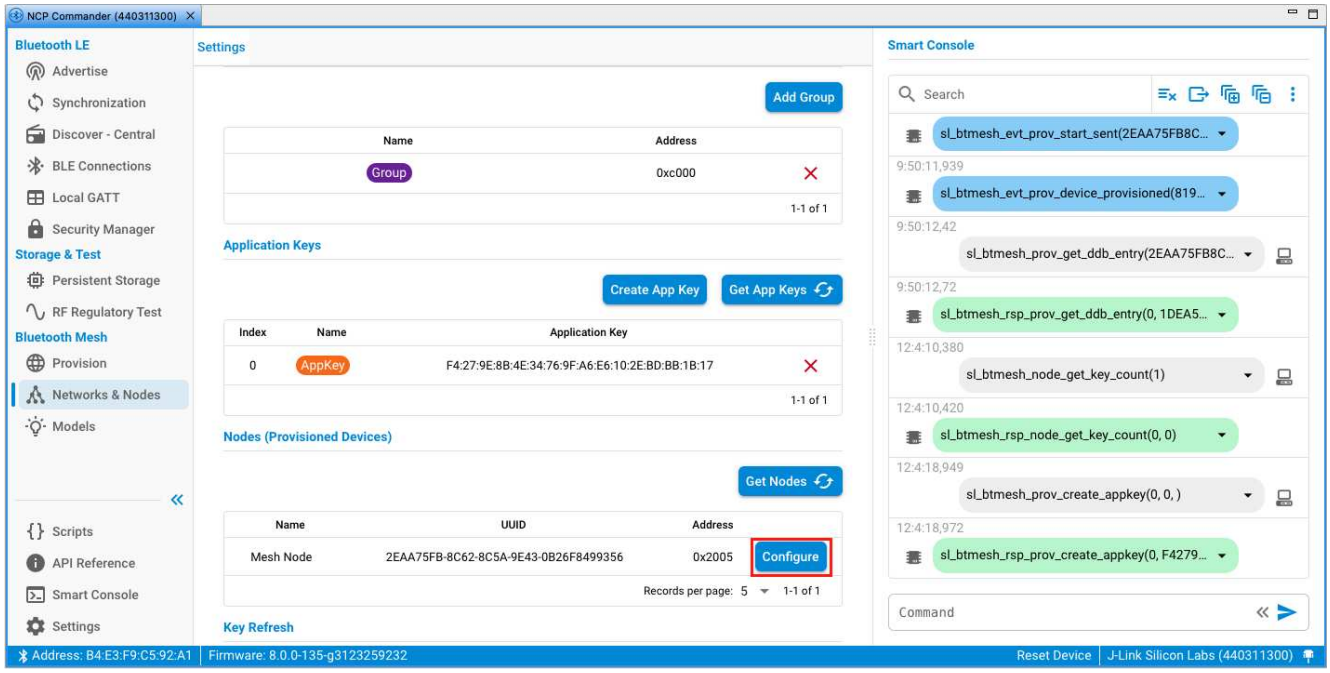
If you do not have a network from a previous configuration or have reset the provisioner node, you must create a new network with Create New Network.

To provision devices, select Provision on the left menu, and click Start Scan in the right panel. The devices that are transmitting unprovisioned beacons are shown in the Discovered Devices section. Click Provision next to the device you want to provision.

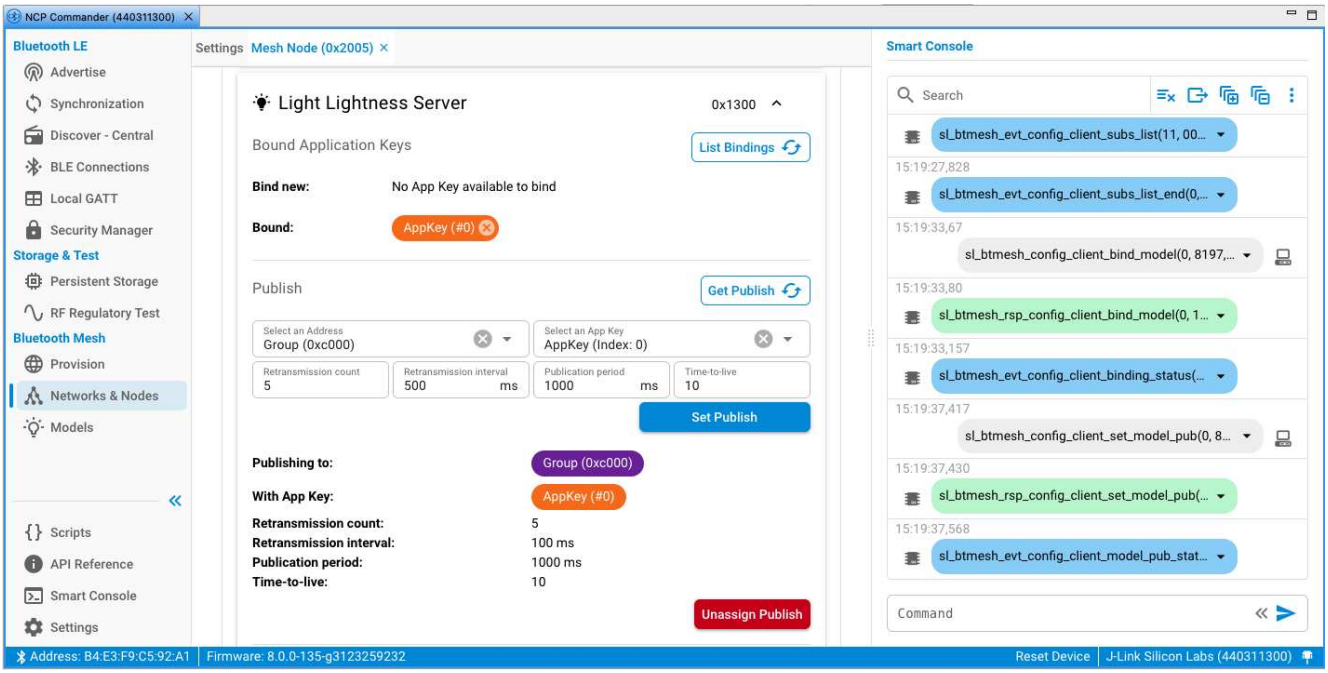


Before configuring provisioned devices, you may need to create application keys and groups. Application keys, groups, and other network settings can be managed in the Settings tab of the Networks & Nodes menu item.

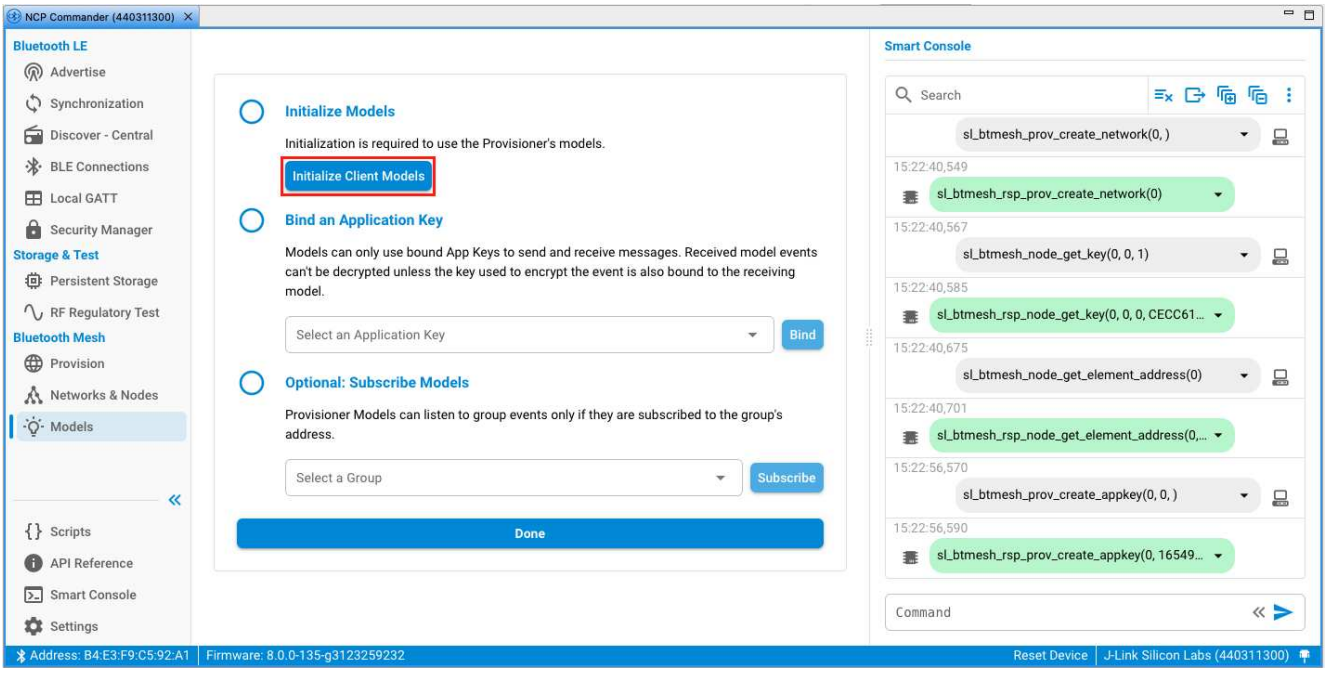
To configure provisioned devices, select Networks & Nodes on the left menu. Provisioned devices are shown in the Provisioned Devices section of the Settings tab. Click Configure.



This opens a Mesh Node tab in which you can add an application key. Once you have added the key, the interface changes to include a Get DCD control (not shown). Click Get DCD to configure all the Models available on your node(s), bind to app keys, set publishing or subscription to groups, fine tune parameters, and so on.

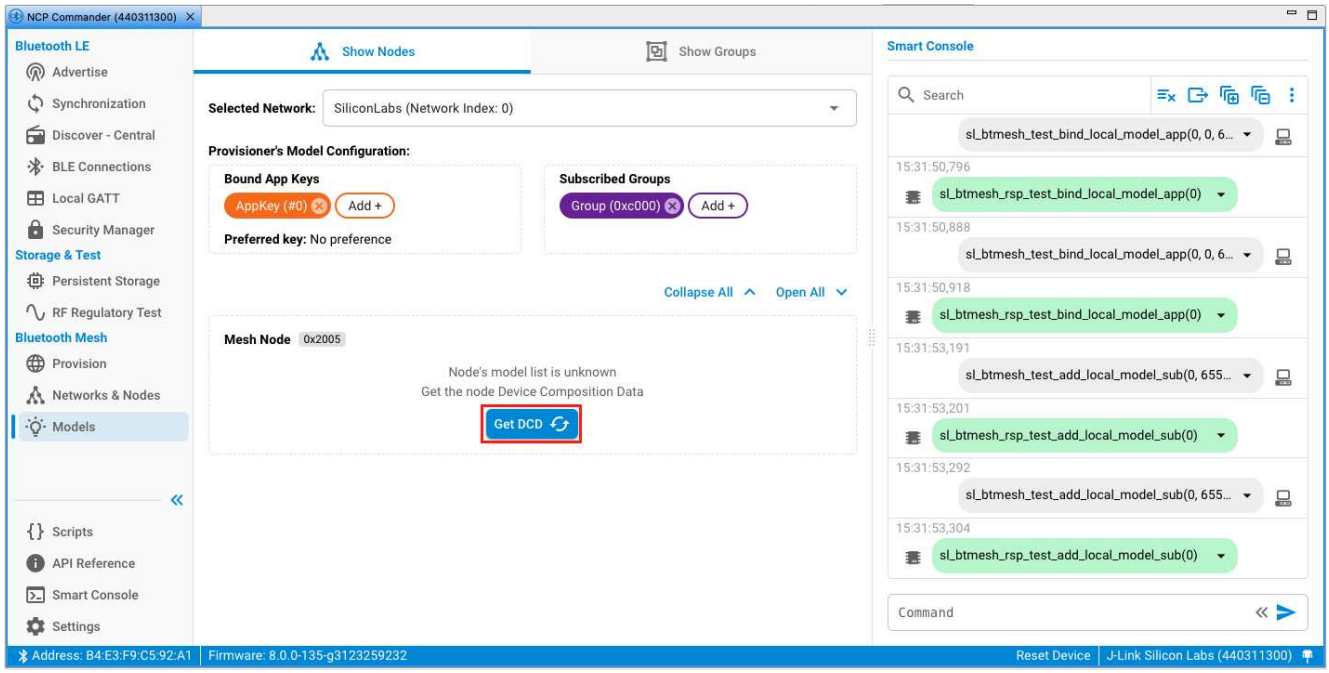


To configure the host provisioner, first initialize models using Initialize Client Models.

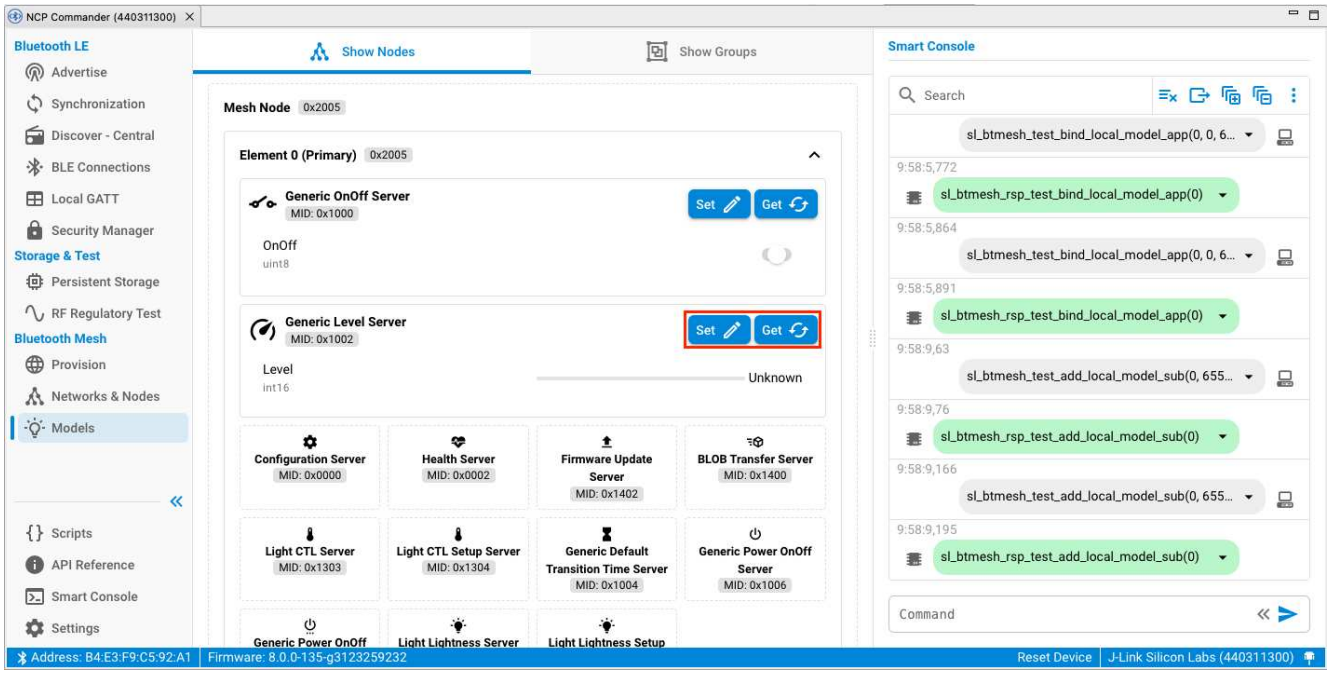


Bind an application key to the models and, optionally, subscribe the models to a group. When configuration is complete, click Done.

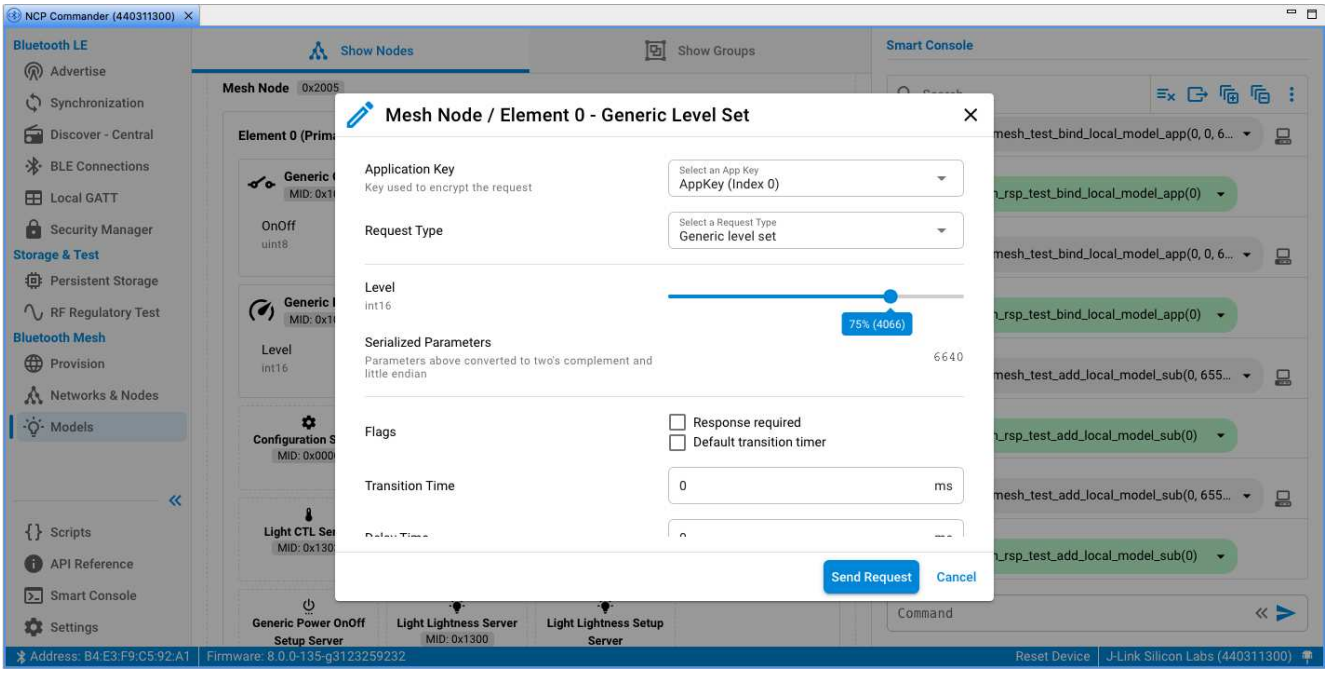
The Show Nodes tab is displayed. Click Get DCD to configure all the models available on your node(s), bind to app keys, set publishing or subscription to groups, fine-tune parameters, and so on.



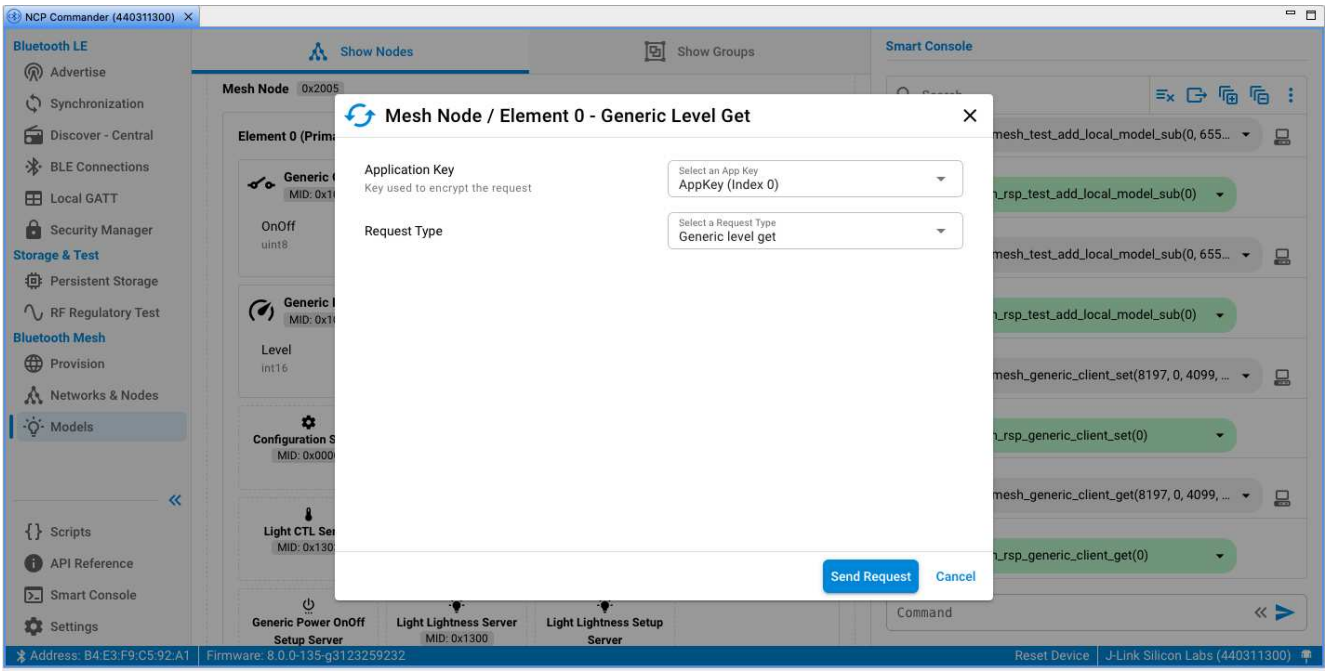
After listing, you can Get or Set the server states of the node(s).



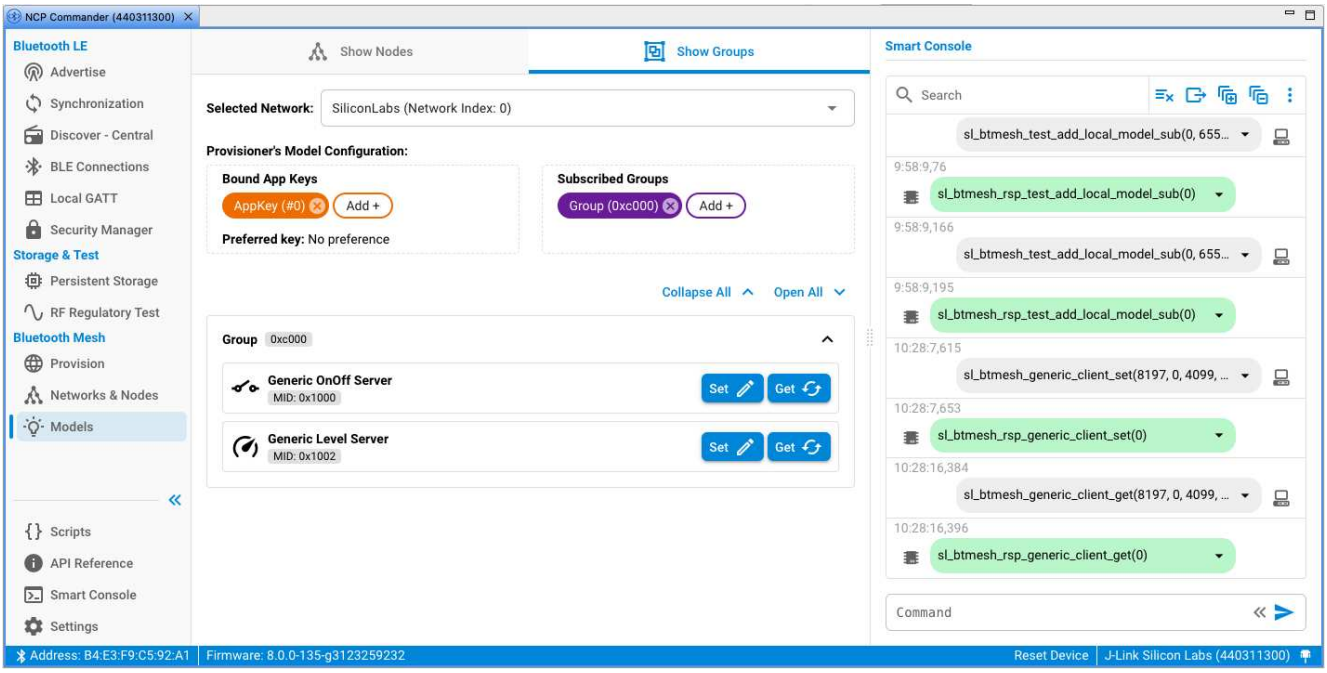
Click Set to set the current state of the selected server of the selected node.



Click Get to get the current state of the selected server of the selected node.



On the Show Groups tab, you can Set or Get the Server Model(s) states on a Group level.



In Settings, if the Reset Mesh Node before Initializing as Provisioner option is enabled, the host provisioner does a factory reset (the `sl_btmesh_node_reset()` command) on the NCP target device before initializing the node. Clicking Clear Data next to Remove all locally saved mesh data removes the network and application keys that were configured during initialization.