Step by step guide mesctl with Zephyr

# Introduction

This step-by-step guide is based on the "Tutorial-How-to-set-up-BlueZ\_Part2-3" guide [1]. In the following chapters, all steps are given to switch on and off an LED on the nRF52-DK, using bluez meshctl on the Raspberry Pi 4. In addition, pictures are added to visualise the steps. Also, PuTTY will be running on a Windows 10 laptop.

Within all chapters, the left column shows the (meshctl) commands that should typed in the Raspberry Pi terminal. The right column shows a short description about the left command. Pictures about the steps are given below the specific command(s) for this step.

# Staring meshctl

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| --- | --- | --- |
| **Step** | **Raspberry Pi terminal - command** | **Description** |
| **1.** | cd | Go back to main directory |
| **2.** | cd bluez-5.50/mesh | Go to directory with meshctl |
| **3.** | meshctl | Launch meshctl |

# Provisioning

First turn on the nRF52-DK and connect its micro-USB input to the USB input of the Windows 10 laptop (can be any other device with a serial monitor, like PuTTY, installed).

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| **Step** | **meshctl - command(s)** | **Description** |
| **4.** | Press Enter | Reveal meshctl prompt |
| **5.** | discover-unprovisioned on | Deiscover unprovisioned devices |
| When a new device appears, make sure it states the correct name after [NEW] (Here: Zephyr) and copy the Device UUID: → continue with step 6a-1.    When no new device appears, it may already be provisioned: → continue with step 6b. | | |
| **6a-1.** | Provision 34ab739aa2f000000000000000000000 | Provision device with this UUID (see step 5). (Note: this is 1 command). |
| When done correctly, this can be seen on the terminal:    Somewhere in between that, it should now ask for an (ASCII) key: → continue with step 7.    The serial terminal should look like this:      Coy the OOB String ( 851IR7K - step 6a-2) and the Primary Element without 0x (0108 - step 8).  Continue with step 6a-2. | | |
| **6a-2.** | 851IR7K | This is the OOB string from the serial terminal (see step 6a-1.) Note that this will be different very time for security purpose.  Provisioning is only accepted when the correct key is provided. |
| Copy the OOB String and paste it here in the Raspberry Pi terminal (meshctl):    Something similar to this should appear:      Continue with step 7. | | |
| **6b.** | connect | Connect to the nRF52-DK, which was previously provisioned and not changed. |
| Something similar should appear:    Note the line with “Connection successful”. The new command request look like this:    Note that it contains the device name (Zephyr) and the net idx (Net-000) between [].  Something similar to this should appear on the serial terminal (PuTTY):      Coy the Primary Element without 0x (0108 - step 8).  Continue with step 7. | | |

# Configuration

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| **7.** | menu config | Entering Configuration Menu of meshctl |
| **8.** | target 0108 | This Unicast Address (Primary Element from serial terminal) will from now on be used for any target command. |
| The name should change to [config: Target = 01008]:    Note that the Unicast Address in the screenshot is 0100, because another Unicast Address was given via the serial terminal (step 6a-2 or step 6b). All following screenshots will contain Unicast Address 0100, but keep in mind that you should use your own Unicast Address. | | |
| **9.** | appkey-add 1 | Load AppKey #1 from prov\_db.json |
| After hitting the enter key, something similar to this should appear:    Note the line: *Node 0100 AppKey status Success*. | | |
| **10.** |  |  |