用 mattertool 实现 Multi-Admin

硬件准备

安装Ubuntu虚拟机的电脑一台
MG24 Breakout开发板一块
USB Stick
树莓派一台

主要特点

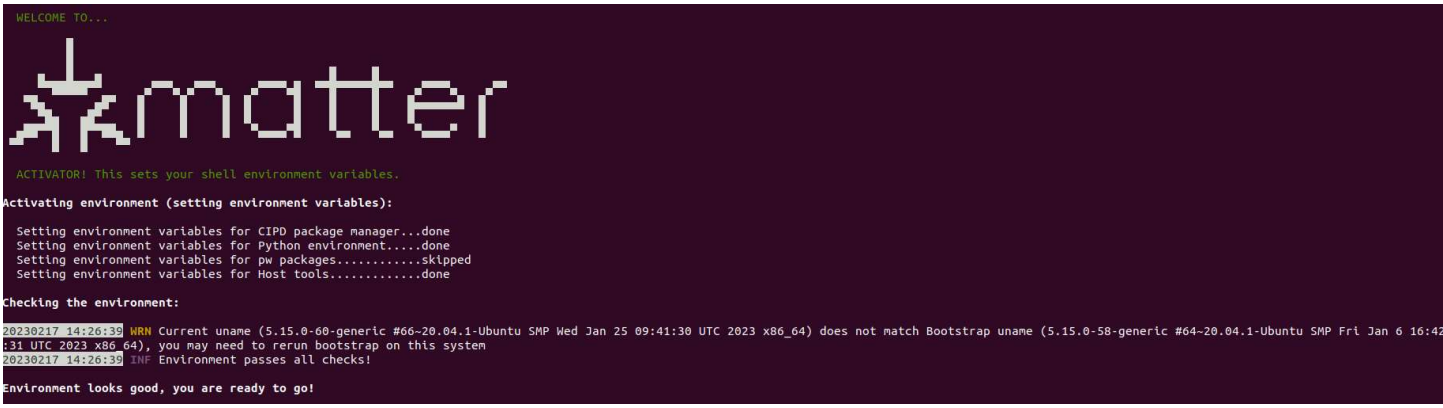
- 用 mattertool 实现 multi-admin

软件准备

下载 SilabsMatterPi.img 烧入 TF 卡 （16GB）
默认用户名：ubuntu ， 密码： raspberrypi
下载 Silicon Labs 提供的 scripts_.zip

实验步骤

1. 确定 Virtual Box 里的 Matter 开发环境 是正常被激活的
   $ cd ~/matter
   $ source scripts/activate.sh



2. 将 script_.zip 拷贝 到 ~ 路径下，并用 unzip 解压缩, ~ 路径下将会出现 scripts 路径

3. 将下面的内容粘贴到 ~/.bashrc 里的最后 （用编辑器打开 ~/.bashrc 文件，vi ~/\.bashrc)

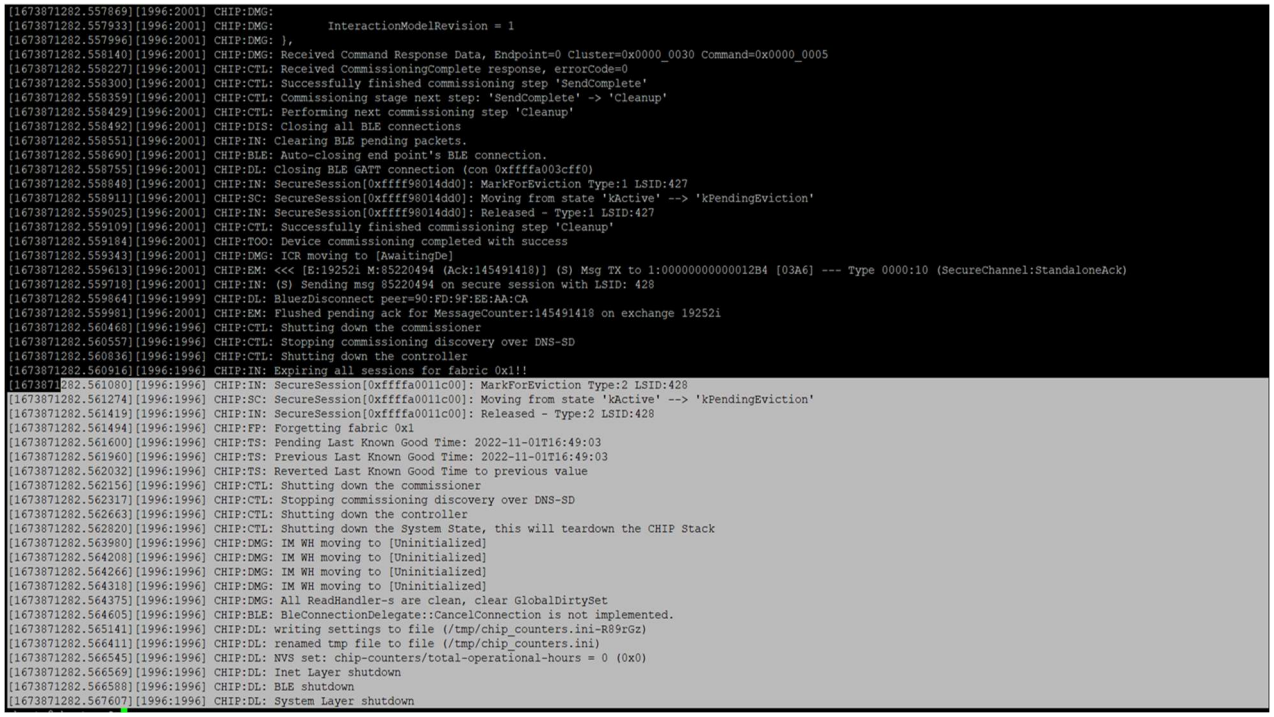
alias mattertool='source $HOME/scripts/matterTool.sh'

保存后关闭编辑器。然后关闭 Ubuntu 当前的 console, 然后重新启动一个 控制端

4. Commissioning Matter device

- 按压 MG24 开发板上的 BTN0 按键，至少 6 秒中，确保 MG24 上的参数被清除。
- 用 ssh 登录第一台 Raspberry PI 4，打开一个 console
- 执行 mattertool startThread

5. mattertool bleThread



6. 打开 Commissioning 窗口

对已加入第一个 Fabric 的 Matter 设备，用下列的命令 打开 commissioning 窗口

$ mattertool pairing open-commissioning-window 4788 1 300 1000 3840

mattertool pairing open-commissioning-window <node_id> <option> <window_timeout> <iteration> <discriminator>

In this command:

- <node_id> 可以用 mattertool -h 获取 nodeId
- <option> is equal to 1 for 增强 Commissioning 方法 and 0 for 基本 Commissioning 方法
- <window_timeout> commissioning 窗口打开的时间
- <iteration> is the number of PBKDF iterations to use to derive the PAKE verifier
- <discriminator> is the device-specific discriminator determined during commissioning

Note: The <iteration> and <discriminator> values are ignored if the <option> is set to 0.

执行上述命令的相应，可以获取 Manual pairing code: [35653060889]

```
[1673872037.310199][2051:2056] CHIP:DMG: },
[1673872037.310335][2051:2056] CHIP:DMG: Received Command Response Status for Endpoint=0 Cluster=0x0000_003C Command=0x0000_0000 Status=0x0
[1673872037.310403][2051:2056] CHIP:CTL: Successfully opened pairing window on the device
[1673872037.310477][2051:2056] CHIP:CTL: Manual pairing code: [35653060889]
[1673872037.310549][2051:2056] CHIP:CTL: SetupQRCode: [MT:6FCJ1AFN00IDWU14420]
[1673872037.310693][2051:2056] CHIP:DMG: ICR moving to [AwaitingDe]
[1673872037.310899][2051:2056] CHIP:EM: <<< [E:54303i M:153476107 (Ack:77879341)] (S) Msg TX to 1:0000000000012B4 [03A6] --- Type 0000:10 (SecureChannel:StandaloneAck)
[1673872037.310994][2051:2056] CHIP:IN: (S) Sending msg 153476107 on secure session with LSID: 4831
[1673872037.311392][2051:2056] CHIP:EM: Flushed pending ack for MessageCounter:77879341 on exchange 54303i
[1673872037.311838][2051:2051] CHIP:CTL: Shutting down the commissioner
[1673872037.311920][2051:2051] CHIP:CTL: Stopping commissioning discovery over DNS-SD
[1673872037.312196][2051:2051] CHIP:CTL: Shutting down the controller
[1673872037.312267][2051:2051] CHIP:IN: Expiring all sessions for fabric 0x1!!
[1673872037.312326][2051:2051] CHIP:IN: SecureSession[0xffff6800ad90]: MarkForEviction Type:2 LSID:4831
[1673872037.312384][2051:2051] CHIP:SC: SecureSession[0xffff6800ad90]: Moving from state 'kActive' --> 'kPendingEviction'
[1673872037.312441][2051:2051] CHIP:IN: SecureSession[0xffff6800ad90]: Released - Type:2 LSID:4831
[1673872037.312503][2051:2051] CHIP:FP: Forgetting fabric 0x1
[1673872037.312579][2051:2051] CHIP:TS: Pending Last Known Good Time: 2022-11-01T16:49:03
[1673872037.312873][2051:2051] CHIP:TS: Previous Last Known Good Time: 2022-11-01T16:49:03
[1673872037.312938][2051:2051] CHIP:TS: Reverted Last Known Good Time to previous value
[1673872037.313021][2051:2051] CHIP:CTL: Shutting down the commissioner
[1673872037.313052][2051:2051] CHIP:CTL: Stopping commissioning discovery over DNS-SD
[1673872037.313178][2051:2051] CHIP:CTL: Shutting down the controller
[1673872037.313209][2051:2051] CHIP:CTL: Shutting down the System State, this will teardown the CHIP Stack
[1673872037.313726][2051:2051] CHIP:DMG: IM WH moving to [Uninitialized]
[1673872037.313759][2051:2051] CHIP:DMG: IM WH moving to [Uninitialized]
[1673872037.313785][2051:2051] CHIP:DMG: IM WH moving to [Uninitialized]
[1673872037.313811][2051:2051] CHIP:DMG: IM WH moving to [Uninitialized]
[1673872037.313840][2051:2051] CHIP:DMG: All ReadHandler-s are clean, clear GlobalDirtySet
[1673872037.313956][2051:2051] CHIP:BLE: BleConnectionDelegate::CancelConnection is not implemented.
[1673872037.314263][2051:2051] CHIP:DL: writing settings to file (/tmp/chip_counters.ini-5vHVZR)
[1673872037.315136][2051:2051] CHIP:DL: renamed tmp file to file (/tmp/chip_counters.ini)
[1673872037.315214][2051:2051] CHIP:DL: NVS set: chip-counters/total-operational-hours = 0 (0x0)
[1673872037.315247][2051:2051] CHIP:DL: Inet Layer shutdown
[1673872037.315276][2051:2051] CHIP:DL: BLE shutdown
[1673872037.315305][2051:2051] CHIP:DL: System Layer shutdown
```

7. 将 Matter 设备加入到第二个 Fabric: 用 ssh 登录第二台树莓派，打开一个 console (如果只有一台树莓派，可以用 ssh 登录并打开第二个 console):

   $ mattertool pairing code 4788 35208859639 --commissioner-name beta

   [1673876074.647804][1578:1583] CHIP:CTL: Generating NOC
   [1673876074.648922][1578:1583] CHIP:FP: Validating NOC chain
   [1673876074.651187][1578:1583] CHIP:FP: NOC chain validation successful
   [1673876074.651565][1578:1583] CHIP:FP: Added new fabric at index: 0x2
   [1673876074.651597][1578:1583] CHIP:FP: Assigned compressed fabric ID: 0x926F7A5 D5B53E783, node ID: 0x000000000001B669
   [1673876074.659890][1578:1583] CHIP:CTL: Joined the fabric at index 2.

8. 控制两个 Fabric 的同一盏灯

```
# 在 第一台 树莓派上发送控制命令

$ mattertool onoff toggle 4788 1

#  在 第二 台 树莓派上发送控制命令

$ mattertool onoff toggle 4788 1 --commissioner-name beta
```