**REMOTE HARDWARE CONTROL**

**I. How to access Raspberry Pi Target Board through Minicom:**

**Step 1:** Access the host at **192.168.200.100** (Training Lab).

**Step 2:** Use **minicom** to access Raspberry Pi .

**Note:** Only one user is allowed to access minicom at a time.

For Raspberry Pi (**MAC: B8:27:EB:4B:A1:91**) run this command:

**minicom -D /dev/serial/by-path/pci-0000\:00\:1a.0-usb-0\:1.4.1.4\:1.0-port0**

For Raspberry Pi (**MAC: B8:27:EB:01:E2:F8**) run this command:

**minicom -D /dev/serial/by-path/pci-0000\:00\:1a.0-usb-0\:1.4.1.3\:1.0-port0**

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**II. How to Create an Account for Network Boot with PXELINUX**

To enable network boot using PXELINUX, you need to create your account. You can either build your own kernel, device tree, rootfs, overlay, or copy them from the default account.

**Step 1:** Access the host at **192.168.200.100** (Training Lab).

**Step 2:** Access the **tftpboot** directory and create your own directory

**cd /home/tftpboot**

Inside **tftpboot** directory, you'll find three existing folders:**jetson, pxelinux.cfg** and **rpi3.**

* **jetson**: Contains configurations for Jetson devices.
* **pxelinux.cfg**: Holds configurations for PXELINUX.
* **rpi3**: Includes configurations for Raspberry Pi 3.

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Access the **rpi3** directory and navigate to the **<MAC ID Raspberry Pi>** directory that you want to use and create your own folder (should use your BV account name). This folder will contain your **kernel, device tree, overlay.**

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**Step 3:** Access the **nfs** directory and create your own directory

Do the same as **step 2** to create your folder in **/home/nfs/rpi3/<MAC ID Raspberry Pi>.** This folder will contain your **rootfs**.

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**Step 4:** Configure **pxelinux.cfg** to register your boot account

Edit the file **/home/tftpboot/pxelinux.cfg/ <MAC ID Raspberry Pi>**

Add your information to this file (you can copy the **default** and modify it), for example:

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After following these steps, access Rasp 3B+ (**using minicom**) and type **reboot**.

When the Raspberry is booting, it will display a table containing all users. You need to choose your ID number (please do this quickly because Raspberry will boot to the Default if you lose it)."

**III. How to control Raspberry Pi Training board by Hub Control Master**

The function of the Hub Control Master allows users to power on/off the Raspberry Pi Training board, set IO, check the power source, etc

**Step 1:** Access the host at **192.168.200.100** (Training Lab)

**Step 2:** Run **hubcontrol** software

Move to /home/prj/Lab-sw

**cd /home/prj/Lab-sw**

To use default .json, run this command

**./hubcontrol**

Or if you want to use your custom template, run this command (**with <path> is the direct path to your template file**)

**./hubcontrol -m <path>**

**Step 3:** Select board Raspberry Pi training which you want to control

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**Step 4:** Select command to control

* **Power On Board**: Turn on power board Raspberry Pi training
* **Power Off Board**: Turn off power board Raspberry Pi training
* **Reset**: Reset board Raspberry Pi training

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