Booting Quest on Intel Edison

1   Things You Need

This document uses Intel Edison SoC with Sparkfun breakout boards. You may use other daughterboards, as long as they have microUSB interfaces. Apart from that, we need two microUSB to USB cables. Make sure they are able to transfer data as some of them can only be used for power supply.

2   U-boot

The original U-boot on Edison doesn't support multiboot. You will need a customized version of U-boot is provided at https://github.com/QuestOS/Support/u-boot.bin

3   Build Quest

Before we build Quest, we need to set up the docker container that is used as building environment. This only needs to be done once. So skip this if you've already done this before.

- Start your docker service you haven't done so:

  ```
  sudo service docker start
  ```

- Download the docker image from
  https://github.com/QuestOS/Support/pre-built-toolchain.tar.gz

- Unzip and install the docker image:

```
sudo docker load < ./pre-built-toolchain.tar
```

Now we can proceed to build Quest.

- Clone the quest-edison repo from https://github.com/QuestOS/quest

- Checkout to the branch named *edison*

- In the kernel directory, the default-config.mk is already customized for Edison. Simply copy it to create config.mk. No need for modification.

- In the Quest top directory, run the script *use-docker*. You will enter the docker container.

- In the new shell, go to */quest_src*. Then build quest by:

```
make
make ramdisk.img
```

- After this, you will see *ramdisk.img* in the top directory, *quest* in the kernel directory and *shell* in the sysprogs directory. These are all you need.

4   Flash Everything to Edison

- Install dfu-util. Should be available in your distro package repo.

- Install xfstk. You can follow instructios here:
  `https://communities.intel.com/message/257193`
  or here:
  `https://sourceforge.net/projects/xfstk/files/`
  or here:
  `https://github.com/missimer/quest-edison`

- Clone the tools for flashing from /research/quest/imaging-tools.

- Go to the imaging-tools directory. In grab-quest.sh, modify those cp's so that it copies from where your quest image is. The same with grab-uboot.sh.

- Make sure Edison is unplugged. In imaging-tools directory, run quest-flash.sh. When it starts printing texts like *Attempt #*, plug in one microUSB cable into the microUSB interface labelled OTG.

- After about 4 mins, the flashing will finish.

5 Boot Quest

- Plug microUSB cable into the microUSB interface labelled *console*.

- The board will be powered up and information will be printed in *minicom*.