Intel Galileo - Support #632

Build a Yocto Linux Image for Intel Galileo on Ubuntu 14.04

06/25/2015 01:43 PM - Daniel Curtis

Status:	Closed	**Start date:**	05/08/2015
Priority:	Normal	**Due date:**	
Assignee:	Daniel Curtis	**% Done:**	100%
Category:	Image Compiling	**Estimated time:**	10.00 hours
Target version:	Ubuntu	**Spent time:**	5.00 hours

Description

This is a guide for creating a Yocto Linux image on an Ubuntu 14.04 derivative. This has also been tested on Debian 8 and works.

Prepare the Environment

- Make sure the system is up to date:

```
sudo apt-get update && sudo apt-get upgrade
```

- Install a few prerequisite packages:

```
sudo apt-get install gawk wget git diffstat unzip texinfo gcc-multilib build-essential chrpath
 socat libsdl1.2-dev xterm parted
```

Download the Source Code

- Create a directory for the source code:

```
mkdir ~/git && cd ~/git
```

- Get the latest IoT Yocto Development Kit:

```
git clone -b devkit-daisy git://git.yoctoproject.org/meta-intel-iot-devkit iotdk
cd iotdk
```

- Source the iot-devkit-init-build-env script:

```
source iot-devkit-init-build-env
```

Build the Yocto Image

- Fix the grub bitbake source:

```
nano ~/git/iotdk/meta-quark-bsp/recipes-bsp/grub/grub_0.97.bb
```

  - And the SRC_URI to the following:

```
SRC_URI = "git://github.com/intel-iot-devkit/grub-fedora.git"
```

NOTE: Bitbake is no longer in the Ubuntu repositories, however the IoT development kit comes with a copy bitbake.

- Run bitbake to build iot-devkit-image:

```
../bitbake/bin/bitbake iot-devkit-image
```

  - **NOTE**: There are many types of image targets for bitbake to use, such as:
  1. **iot-devkit-image**: A fully functional image to be placed on an SD card
  2. **iot-devkit-prof-dev-image**: A fully functional image to be placed on an SD card with full profiling and dev tools
  3. **iot-devkit-prof-image**: A fully functional image to be placed on an SD card with full profiling
  4. **iot-devkit-spi-image**: A small image capable of fitting into the on-board SPI flash

- (Optional) To use the Hob GUI to assist in building, run:

```
../bitbake/bin/bitbake -u hob
```

Deploy the Yocto Image

- Use wic to create a bootable micro SD image:

```
~/git/iotdk/scripts/wic create -e iot-devkit-image ~/git/iotdk/scripts/lib/image/canned-wks/iot-devkit.wks
```

- Write the image using dd:

```
sudo dd if=/var/tmp/wic/build/iot-devkit-201506161028-mmcblkp0.direct of=/dev/mmcblk0 bs=1M
sudo sync
```

  NOTE: Make sure to update the timestamp for the image in /var/tmp/wic/build/

Connect Over Ethernet

- Once the micro SD card is inserted into the Galileo, plug a network cable to a network with DHCP and look for the host named "quark". Log in as root:

```
ssh root@quark
```

  - **NOTE**: Make sure to set a root password:

```
passwd
```

Resources

- https://software.intel.com/en-us/blogs/2015/03/04/creating-a-yocto-image-for-the-intel-galileo-board-using-split-layers
- http://www.yoctoproject.org/docs/1.7.1/mega-manual/mega-manual.html
- http://www.yoctoproject.org/docs/1.7.1/bsp-guide/bsp-guide.html
- http://www.yoctoproject.org/docs/1.7.1/bitbake-user-manual/bitbake-user-manual.html
- http://wiki.ros.org/IntelGalileo/HydroGalileoInitialInstall
- http://www.malinov.com/Home/sergey-s-blog/intelgalileo-buildinglinuximage
- https://www.yoctoproject.org/downloads
- http://layers.openembedded.org/layerindex/branch/master/layer/meta-intel-iot-devkit/

Related issues:

Copied from Intel Galileo - Support #618: Build a Yocto Linux Image for Intel...	**Closed**	**05/08/2015**

History

#1 - 06/25/2015 01:43 PM - Daniel Curtis

- Copied from Support #618: Build a Yocto Linux Image for Intel Galileo on Ubuntu 12.04 added

#2 - 06/26/2015 03:26 PM - Daniel Curtis

- Description updated

- Status changed from New to Resolved

- % Done changed from 0 to 100

#3 - 07/13/2015 02:07 PM - Daniel Curtis

- Status changed from Resolved to Closed