Edison setup on Windows

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Flashing and using Edison under Windows

Test done on Win 7 platform

Test done on Win 8 platform

Flashing setup

Sum-up Actions Sequence

- install phone flash tools
- install dfu utils
- start flashing IFWI
- · setup driver with zadig
- restart
- run flashall to update all the device

Download the pre-built image

In order to perform any setup it is necessary to first download the latest pre-built image and extract it to a folder.

Installing Phone Flash tools

First you need to install Phone flash tools from Intel to be able to flash a blank board. See Phone Flash Tool v4.4.4

During setup don't forget to check the add to Path checkbox.

Installing Dfu utils

To update the flash you will need dfu-util for win 32, you can use this link http://dfu-util.gnumonks.org/releases/dfu-util-0.7-binaries.7z

You need to add manually dfu-util directory to Path, you can do that by :

- right-clicking Properties on Computer icon
- choosing Advanced System Setting in left pane
- clicking Environment Variables
- editing Path in System Variables list

If you installed dfu-util in C:\Program Files (x86), you should add C:\Program Files (x86)\dfu-util-0.7-binaries\win32-mingw32 don't forget to append a semi-colon ";" before.

You will also need Zadig program to make dfu-util work on Windows, you can use this link http://zadig.akeo.ie/downloads/zadig_2.1.0.exe

The first time the board is plugged into the PC, USB download gadget is not recognized by Windows, so you need to flash IFWI in the board,

IFWI flashing

When you have a blank board, the first thing to do is to flash low level boot part called IFWI using the phone flash tools, this step enable dfu firmware.

To do this, run the script flashall.bat which should have been in the same archive as the prebuilt image by issuing -i option, note that in early version script this option can be enabled by default.

Once done, the script should be unable to continue board flashing due to the fact that USB Download gadget isn't installed yet.

So you need to install it by launching Zadig.exe.

The setup process is described under. First select USB Download Gadget and install driver WinUsb.

Device Options Help	
USB download gadget	✓ ☐ Edit
Driver WinUSB (v6. 1. 7600. 16385) WinUSB (v6.	1.7600.16385)
WCID ²	Il Driver



Device Option	s Help	
	Driver Installation	
BCM20702A	The driver was installed successfully.	- Edit
Driver BTH		ormation
USB ID 0A	Close	e <u>32</u>
wcid ?		WinUSB (Microsoft)
devices found.		Zadig v2.0.1.160

A You need to restart your computer.

To Verifying dfu-utils installation, open a terminal and issue the command:

dfu-util -v -l -d 8087:b6b6

and you should see :

Copyright 2005-2008 Weston Schmidt, Harald Welte and OpenMoko Inc. Copyright 2010-2012 Tormod Volden and Stefan Schmidt
This program is Free Software and has ABSOLUTELY NO WARRANTY
Filter_on_vendor_=_0x8087_product =_0xb6b6
Found Runtime: [0a5c:21e1] devnum=0, cfg=1, intf=3, alt=0, name="UNDEFINED"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=0, name="u-boot0"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=1, name="u-boot1"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=2, name="u-boot-env0"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=3, name="u-boot-env1"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=4, name="boot"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=5, name="rootfs"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=6, name="log"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=7, name="update"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=8, name="home"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=9, name="vmlinuz"
Found DFU: [8087:b6b6] devnum=0. cfg=1. intf=0. alt=10. name="initrd"

you can also verify the availability of USB Download gadget in the Windows device manager



Flashing the Edison Board

You should at least have an Edison image archive composed of all binary and configuration files needed to flash the board. You can get it from Artifactory.

You could also be in a Yocto environment which provide you also the scripts and configuration files.

In bothy cases shell scripts are provided for flashing. Theses last allows severals tasks to be performed.

For now there are two configurations supported one for MCG board and one for Edison, depending of your board you should use -m (for MCG board) or -e (for Edison) swtichs.

Kernel flashing

To do this, run the script flashall.bat -b, It should automatically flash all needed piece of software, ifwi, kernel, rootfs.

Connection setup

(1) You may need to follow this procedure again and again each time if you change the USB port you plug the board.

Installing FTDI driver to use serial debug interface

If you have a debug extension board with 4 extra serial USB interfaces you can get the driver from ftdi website.

You can use this link http://www.ftdichip.com/Drivers/CDM/CDM%20v2.10.00%20WHQL%20Certified.exe executable

You can use putty if you need terminal for serial link http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe .

Accessing the board through ssh

Once the kernel is launched, you can access the root shell through an ssh connection made over USB.

You need first to update driver RNDIS Gadget. Go to Devices and Printers as shown below



- Right click on RNDIS/Ethernet Gadget
- Select Property
- Select Hardware Pane

RNDIS/Ethernet	Gadget Properties
General Hardwar	e
	S/Ethernet Gadget
Device Function	ns:
Name	Туре
RNDIS/Ethe	rnet Gadget Other devices
- Device Function	Summary
Manufacturer:	Unknown
Location:	Port_#0001.Hub_#0005
Device status:	The drivers for this device are not installed. (Code 28) Properties
	OK Cancel Apply

- Click Properties
 Click Change Settings
 Click Update Driver
 Click Browse my computer for driver software
 Click Let me pick from a list of device driver in my computer
 Scroll the list to Networks Adapters

Select your device's t	ype fro	om the list	t below.			
Common hardware types:						
Retwork adapters						
Network Client						
- Network Protocol						
Network Service						
Non-Plug and Play Drive	ers					
Ports (COM & LPT)						
Printers						=
Processors						
SBP2 IEEE 1394 Devices						
SD host adapters						
Security Devices						-
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the list Remote NDIS Comp	patible D	evice from M	licrosoft Corpc	ration	Next	Car
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- Click Next and finish driver installation
 Driver now needs to be configured, to do that right click on Network Activity and choose Open Network and sharing center
 Click change adapter setting on left pane
 Select the Network connection corresponding to the RNDIS gadget as shown below

	- 🛬 « Netwo	 Network Connect 	tions 🕨	▼ 47	Search	Network	Connecti
Organize	e ▼ Disable t	his network device	Diagno	se this conn	ection	» ==	•
	Bluetooth Netw	ork Connection		Local Area	Connec	tion	
< ₿	Bluetooth Devic	e (Personal Area	×	Intel(R) 82	577LM G	ligabit Ne	etwork
	Local Area Conr	nection 2		Local Area	Connec	tion 3	
40	Cisco AnyConne	ct Secure Mobility	- P	RNDIS/Eth	iernet Ga	adget	
	Wireless Netwo	rk Connection		Wireless N Not conne	letwork (Connectio	on 2
all	Intel(R) Centrino	(R) Ultimate-N 63	×	Microsoft	Virtual W	/iFi Minip	oort A
	Wireless Netwo	rk Connection 3					
click a	nd select proper	ies in context men	u				
Loc	al Area Con	nection 3 Prop	perties				
Notw	orking Shari						
Netw	Shari	ng					
Cor	nnect using:						
ſ	RNDIS/Et	hernet Gadget					
_					_		
						Config	ure
Thi	s connection	uses the followi	ng items:			Config	ure
Thi	s connection	uses the followi Microsoft Netw	ng items: orks			Config	ure
Thi:	s connection (Client for QoS Pac	uses the followi Microsoft Netw ket Scheduler	ng items: orks			Config	ure
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- As shown above, keep only QOS Packet Scheduler and IPv4
 Select IPV4 and then click Properties
 Configure manually IP address to 192.168.2.2 and Subnet mask to 255.255.255.0 as shown below

nternet Protocol Version 4 (TCP/	/IPv4) Properties
General	
You can get IP settings assigned a supports this capability. Otherwis administrator for the appropriate	automatically if your network e, you need to ask your network IP settings.
Obtain an IP address autom	atically
• Use the following IP address	3:
IP address:	192.168.2.2
Subnet mask:	255.255.255.0
Default gateway:	· · ·
Obtain DNS server address	automatically
Ose the following DNS serve	er addresses
Preferred DNS server:	1.00 · · ·
Alternate DNS server:	· · ·
Validate settings upon exit	Advanced
	OK Cancel

Now you should be able to access the board through shh by using 192.168.2.15 as root user

Installing the serial ACM driver

Once the kernel is launched, you can access a serial port over USB.

You need first to instal CDC Serial driver Gadget.

Download the needed driver:

- Windows 7 driver
- Windows 8 driver (you need to unzip the folder)

Go to Devices and manager as shown below:

12	Device Manager -	×
File	Action View Help	
(الت 📰 🛐 🚱 🔛 🚱	
	- ·	
	> S Bluetooth	
	Display adapters	- 11
	DVD/CD-ROM drives	
	Human Interface Devices	
	DE ATA/ATAPI controllers	
	Imaging devices	
	🖻 💇 Intel Soc	
	keyboards	
	Memory technology devices	
	Mice and other pointing devices	
	De Modems	
	Monitors	
	Network adapters	
	Other devices	
	Ports (COM & LPT) FOR Details (LPT1)	
	The second secon	
	The Intel(K) Active Management Technology - SOL (COM4)	
	ISB Serial Port (COM10)	
	TISE Serial Port (COM12)	
	WSB Serial Port (COM13)	
	_ т	Y
		_

- Right click on CDC Serial GadgetSelect Update driver Software

From this point the procedure to install driver is different on Windows 8 and Windows 7. ≙

- Windows 7 procedure:
 Select "browse my computer for driver software"
 Select "browse" in location driver as shown below:

🚔 Device Manager				
File Action View Help				
tilab012				
▷				
Disk drives				
Display adapters				
🖂 👔 Update Driver Software - CDC Serial				
		podified	Tune	Size
Browse for driver software on your computer		noamea	туре	SIZE
		2014 10:53	File folder	1 012 KB
Search for driver software in this location:		2014 09:50	Application	1 913 KB
Browse	Browse	For Folder		23
Include subfolders	Select	the folder that	contains drivers for y	our hardware.
		Desktop		
		Libraries		
Let me nick from a list of device drivers on my computer.		Administrat Computer	or	
This list will show installed driver software compatible with the device, and all driver		🕰 IntelBuild	(C:)	
software in the same category as the device.	Þ	🛃 DVD RW (Drive (D:)	
	4	👝 TEST (E:)		
		🔰 Galileo		
	D 📢	🖣 Network		
Next Cancel				
	Folder	: TEST (E:))	
> - Universal Serial Bus controllers			ОК	Cancel
				th.
		1		

Select the folder where ".inc" file for Windows 7 is saved



- Windows 8 procedure:
 - Windows 8 only accepts signed drivers, so we use the Galileo driver to enable CDC serial
 - Select "Let me pick on a list of device driver"

📀 🧕 Update Driver Software - CDC Serial

Show All Devices	^
U 1883 devices	
Audio inputs and outputs	
Audio/video control devices	
Batteries	
Biometric devices	
Bluetooth	
🖳 Computer	
Data Acquisition Devices	
🖵 Digital Media Devices	
Disk drives	
Note: Sentence of the sentence	¥

Select "Show all devices"

Select the device driver you want to install for this hardware.



Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.

Have Disk
Next Cancel

Select "Have Disk..."

Select the ".inc" file for Windows 8

4		Locate File					×
Look in:	\mu Galileo		~	G	1	• • • • •	
Recent places Desktop Libraries	Name	m.inf					Date m 9/30/20
Network	File name: Files of type:	linux-cdc-acm.inf Setup Information (*.inf)			~		> Open Cancel

Select "Open" then validate with "OK"

		×
Ð	Update Driver Software - CDC Serial	
	Select the device driver you want to install for this hardware.	
	Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
	Model	
	This driver has an Authenticode(tm) signature. Have Disk Tell me why driver signing is important Have Disk	
	Next Cance	

- Select the Galileo driver the "Next"
- Select "Yes", "Install", click Ok, validate windows and stuff until you get your driver installed.
 End of specific Windows procedure
- At this point you will have the CDC gadget serial installed. Depending on your platform you will see a Gadget Serial (windows 7) or Galileo (windows 8).

🚔 Device Manager	
File Action View Help	
⊿ .∰ tllab012	
Batteries	
⊳ dia Computer	
Disk drives	
Display adapters	
DVD/CD-ROM drives	
Iman Interface Devices	
We little 1394 Bus nost controllers	
Keyboards	
New York Stranger	
Mice and other pointing devices	
Modems	
Monitors	
A 👰 Network adapters	
Intel(R) 82579LM Gigabit Network Connection	
Intel(R) Centrino(R) Ultimate-N 6300 AGN	
RNDIS	
▲ ① Other devices	
Quad RS232-HS	
Quad RS232-HS	
Unknown device	
Unknown device	
PORS (CUMI & LPT) ECP. Printer Det (LDT1)	
Codect Scient (COMS)	
The local series (COND)	
Sound video and game controllers	
System devices	
🔈 🕛 Universal Serial Bus controllers	

Configure CDC ACM Serial driver

- In device manager, right click on the peripheral
- Select "properties"
- Select "Port Settings"
 Configure fields as shown below

	Gadget Serial (COM5) Properties
2	General Port Settings Driver Details
t :c	Bits per second: 115200
y	Data bits: 8
1	Parity: None 👻
	Stop bits:
1	Flow control: None
	Advanced Restore Defaults
2	
2	
	OK Cancel
10	magement rechnology - SOL (COMS)

Related articles

I

- Bluetooth Low Energy
 Building Edison with Jenkins CI
 Edison setup on Windows

- Edison setup on MacOS X
 AllJoyn™ SC (standard client) QuickStart instructions for Intel® Galileo Yocto Linux tiny image

Showing first 5 of 8 results