Install Ubuntu 14.04 LTS

User: hcmf8ddwm1 - Pass: amcc1234

1. Boot with to Ubuntu

* Open teminal:

sudo apt-get update

sudo apt-get install git minicom screen ssh \

make cmake automake curl xmlto gperf texinfo \

unzip bc dos2unix lzma vim cscope g++ gcc wget locate emacs tree

sudo apt-get install libtool autoconf libusb-dev libexpat1 \

libexpat1-dev libftdi-dev libftdi1

* Configure mini

1. Install tftpboot

sudo apt-get install xinetd tftpd tftp ssh

touch /etc/xinetd.d/tftp

vi /etc/xinetd.d/tftp

service tftp

{

protocol = udp

port = 69

socket\_type = dgram

wait = yes

user = nobody

server = /usr/sbin/in.tftpd

server\_args = /tftpboot

disable = no

}

sudo mkdir /tftpboot

sudo chmod -R 755 /tftpboot

chown -R amcc:users /tftpboot

sudo /etc/init.d/xinetd stop

sudo /etc/init.d/xinetd restart

reset

#test tftpboot

tftp 10.38.14.180

tftp> get a.txt

Sent 159 bytes in 0.0 seconds

tftp> quit

1. Install OpenOCD for OZZY
   1. Setup packages/tools on Ubuntu desktop/laptop

* Install requirement packages

# sudo apt-get install automake libtool autoconf texinfo libusb-dev libexpat1 libexpat1-dev libftdi-dev

Note: Even though board deploys FT4232H chip, it is recommended to use old FT2232H library with openOCD

### Install On-board OpenOCD driver

* As On-board OpenOCD uses FT4232H chip, we need install driver package for it

# sudo apt-get install libftdi1

* After install this driver, when you plug in On-Board OpenOCD, Ubuntu detects as below

[14980231.610611] ftdi\_sio 1-3.2:1.0: FTDI USB Serial Device converter detected  
[14980231.610697] usb 1-3.2: Detected FT4232H  
[14980231.610705] usb 1-3.2: Number of endpoints 2  
[14980231.610711] usb 1-3.2: Endpoint 1 MaxPacketSize 512  
[14980231.610718] usb 1-3.2: Endpoint 2 MaxPacketSize 512  
[14980231.610724] usb 1-3.2: Setting MaxPacketSize 512  
[14980231.612882] usb 1-3.2: FTDI USB Serial Device converter now attached to ttyUSB0  
[14980231.613248] ftdi\_sio 1-3.2:1.1: FTDI USB Serial Device converter detected  
[14980231.613321] usb 1-3.2: Detected FT4232H  
[14980231.613328] usb 1-3.2: Number of endpoints 2  
[14980231.613335] usb 1-3.2: Endpoint 1 MaxPacketSize 512  
[14980231.613341] usb 1-3.2: Endpoint 2 MaxPacketSize 512  
[14980231.613347] usb 1-3.2: Setting MaxPacketSize 512  
[14980231.613727] usb 1-3.2: FTDI USB Serial Device converter now attached to ttyUSB1  
[14980231.614070] ftdi\_sio 1-3.2:1.2: FTDI USB Serial Device converter detected  
[14980231.614140] usb 1-3.2: Detected FT4232H  
[14980231.614147] usb 1-3.2: Number of endpoints 2  
[14980231.614154] usb 1-3.2: Endpoint 1 MaxPacketSize 512  
[14980231.614160] usb 1-3.2: Endpoint 2 MaxPacketSize 512  
[14980231.614166] usb 1-3.2: Setting MaxPacketSize 512  
[14980231.614577] usb 1-3.2: FTDI USB Serial Device converter now attached to ttyUSB4  
[14980231.614937] ftdi\_sio 1-3.2:1.3: FTDI USB Serial Device converter detected  
[14980231.615016] usb 1-3.2: Detected FT4232H  
[14980231.615022] usb 1-3.2: Number of endpoints 2  
[14980231.615029] usb 1-3.2: Endpoint 1 MaxPacketSize 512  
[14980231.615035] usb 1-3.2: Endpoint 2 MaxPacketSize 512  
[14980231.615041] usb 1-3.2: Setting MaxPacketSize 512  
[14980231.615461] usb 1-3.2: FTDI USB Serial Device converter now attached to ttyUSB5

Note: As above example, UART for Ozzy output is ttyUSB5

### Compile OpenOCD

* Untar ozzy\_onboard.tgz

$ cd ozzy\_onboard

* Untar apm\_xgene\_ocd\_1.00.01.tgz

$ tar xf apm\_xgene\_ocd\_1.00.01.tgz

$ cd Storm\_OCD\_1.00.01/

* Untar OpenOCD source code

$ tar xf openocd-storm-src.tgz

After untar, you will have “openocd-storm” folder, cd into this folder

$ cd openocd-storm

* Run bootstrap to create the autotools scripts

$ ./bootstrap

Note:

- On successfully executing this command. You will seefollowing message at the end:

"Bootstrap complete; you can './configure --enable-maintainer-mode ...."

- Ignore any other error messages you might be seeing.

- This command may fail if the following tools/packages are not installed: automake, libtool, autoconf, texinfo, libusb-dev, libexpat1, libexpat1-dev, libftdi-dev

* Configure

$ ./configure --enable-maintainer-mode --disable-werror --disable-shared --enable-ft2232-libftdi

$ make

* Install

$ sudo make install

## On-Board OpenOCD config file

Create a config file (Ex, ozzy\_onboard.cfg) with content as below

#daemon configuration

tcl\_port 6666

telnet\_port 4444

gdb\_port 3333

#interface

interface ft2232

#ft2232\_device\_desc "Olimex OpenOCD JTAG ARM-USB-OCD-H"

#ft2232\_layout "olimex-jtag"

ft2232\_vid\_pid 0x0403 0x6011

#

# For running multiple instances of openocd, need to specific serial number for the JTAG debugger

#ft2232\_serial "OLUMGKRBA"

#jtag\_speed

#jtag\_khz 50

jtag\_khz 1200

# commented Farhan for partition. revert to 500 for original settings

#jtag\_khz 100

if { [info exists CHIPNAME] } {

set \_CHIPNAME $CHIPNAME

} else {

set \_CHIPNAME potenza\_64

}

if { [info exists ENDIAN] } {

set \_ENDIAN $ENDIAN

} else {

set \_ENDIAN little

}

if { [info exists CPUTAPID ] } {

set \_CPUTAPID $CPUTAPID

} else {

set \_CPUTAPID 0x4ba00477

}

jtag\_nsrst\_delay 200

jtag\_ntrst\_delay 200

#use combined on interfaces or targets that can't set TRST/SRST separately

#reset\_config trst\_and\_srst srst\_pulls\_trst

#reset\_config srst\_only

#reset\_config srst\_only separate

#reset\_config trst\_and\_srst

jtag newtap $\_CHIPNAME cpu -irlen 4 -ircapture 0x1 -irmask 0x3 -expected-id $\_CPUTAPID

set \_TARGETNAME [format "%s.cpu" $\_CHIPNAME]

target create $\_TARGETNAME potenza\_64 -endian $\_ENDIAN -chain-position $\_TARGETNAME -variant potenza\_64-s\_r2

#$\_TARGETNAME configure -event {

# load\_image bin\_source/code.bin 0x0

#}

#proc loadimage {} {

# load\_image bin\_source/code.bin 0x0

#ptzreset halt

# puts "load image"

# mww 0x80001000 0xa5a55a5a

#}

sleep 500

#$\_TARGETNAME load\_image bin\_source/code.bin 0x0

#$\_TARGETNAME mww 0x80001000 0xa5a5a5a5

#$\_TARGETNAME configure -work-area-virt 0 -work-area-phys 0x40000000 -work-area-size 0x4000 -work-area-backup 0

#$\_TARGETNAME configure -event reset-start { jtag\_khz 30 }

#$\_TARGETNAME configure -event reset-init {

# Force target into ARM state.

# soft\_reset\_halt

# Do not remap 0x0000-0x0020 to anything but the flash (i.e. select

# "User Flash Mode" where interrupt vectors are \_not\_ remapped,

# and reside in flash instead).

#

# See section 7.1 on page 32 ("Memory Mapping control register") in

# "UM10139: Volume 1: LPC214x User Manual", Rev. 02 -- 25 July 2006.

# http://www.standardics.nxp.com/support/documents/microcontrollers/pdf/user.manual.lpc2141.lpc2142.lpc2144.lpc2146.lpc2148.pdf

# mwb 0xE01FC040 0x01

# jtag\_khz 1500

#}

#jtag scan chain

#format L IRC IRCM IDCODE (Length, IR Capture, IR Capture Mask, IDCODE)

#jtag newtap cortex\_m3 cpu -irlen 4 -expected-id 0x4ba00477

#target create target0 cortex\_m3 -endian little -chain-position 0

#target names

#target cortex\_m3 little run\_and\_init 0

#target cortex\_m3 little reset\_init 0

#target cortex\_m3 little run\_and\_halt 0

## OpenOCD usage

cd /home/hcmf8ddwm1/openocd/ozzy\_onboard/Storm\_OCD\_1.00.01/openocd-storm/src

sudo ./openocd -f ../../../ozzy.cfg

telnet localhost 4444

Potenza> poll on; reset; halt; halt

Potenza> script /tftpboot/ocd/mustang\_resetall.tcl

Potenza> load\_image /tftpboot/ocd/u-boot-ocm.bin 0x1d000000

Potenza> script /tftpboot/ocd/mustang\_start0.tcl

Potenza> load\_image /tftpboot/ocd/ozzy\_media.img 0x4001000000

Size ozzy\_media.img: 538624 (dec) → 83800 (hex)

Ozzy# setenv filesize 83800

Ozzy# setenv filesize 83800

Ozzy# sf probe 0

Ozzy# sf erase 0x0 83800

Ozzy# sf write ${media\_addr\_r} 0x0 83800

Ozzy# reset

export LD\_LIBRARY\_PATH=usr/local/lib && ./usr/local/bin/openocd –f

export LD\_LIBRARY\_PATH= openocd-storm-ozzy-x86\_64-bin/lib

./ openocd-storm-ozzy-x86\_64-bin/bin/ openocd –f ./../../../ ozzy.cfg

openocd-storm-ozzy-x86\_64-bin/lib

export LD\_LIBRARY\_PATH=${LD\_LIBRARY\_PATH}:/home/hcmf8ddwm1/openocd/ozzy\_onboard/openocd-storm-ozzy-x86\_64-bin/lib

reset halt; apbmww 0x7e200008 0x00800003; ocm\_map; load\_image /tftpboot/dthnguyen/dora-4-p1a/cisco\_p0c\_tianocore\_sec\_spi.fd 0x1d000000; mww 0x1d000004 0xfeedfeed; bp 0x82000000; resume 0x0  
load\_image /tftpboot/dthnguyen/dora-4-p1a/tianocore\_media.img 0x83000000  
load\_image /tftpboot/dthnguyen/dora-4-p1a/cisco\_p0c\_tianocore\_spi.fd 0x82000000; rbp 0x82000000; resume