

ML00-AR0
Training Notes
GIGABYTE Software

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Authors:

Wesley Ku

Approved By:

Storm Chen

TS Hwang

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Contents

0. General Information	3
0.1. Issue Control	3
0.2. Record of Changes	3
0.3. References	3
0.4. Acronyms	3
1. Serial port.....	4
1.1. Connect to UART_PH	4
1.2. Connect UART by Windows tool.....	4
1.2.1. Using TeraTerm to connect device UART	4
1.2.2. Setup Serial port	4
2. SSH connect.....	5
2.1. Get Board IP address	5
2.2. Connect to device by SSH	5
2.2.1. Using TeraTerm to connect device SSH	5
3. SOFT RAID	6
3.1. Create Raid-0	6
3.2. Create Raid-1	6
3.3. Create Raid-5	7
3.4. Create Raid-6	7
4. UPDATE UBOOT , Kernel and FileSystem	7
4.1. Setup TFTP server	7
4.1.1. Windows.....	7
4.1.2. Linux (Ubuntu).....	8
4.2. Update Firmware.....	8
4.2.1. Update by TeraTerm TTL (auto update)	8
4.2.2. Update by command	9
5. I2CSlave tool.....	10
5.1. Open I2CSlave.....	10
5.2. Check I2CSalve daemon.....	10

Figures

Tables

0. General Information

0.1. Issue Control

This document was edited with **Microsoft Word, Version 2003**. The graphic drawings are originally sketched in **Microsoft PowerPoint Version 2003**.

0.2. Record of Changes

Table 0-1. Record of Changes

Issue	Date	Authors	Reason for Changes
1.00	2015/10/29	Wesley Ku	First release.
1.01	2016/04/12	Wesley Ku	Add Raid 6 command.

0.3. References

NO	Document title

0.4. Acronyms

1. Serial port

1.1. Connect to UART_PH

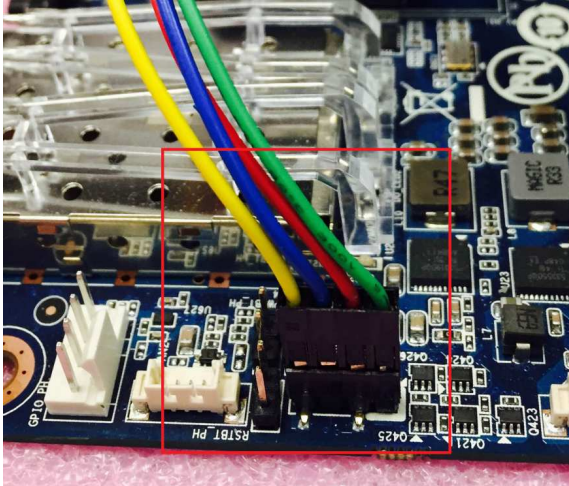
UART Pin Define:

Green: UART VCC

Red: UART RX

Blue: UART TX

Yellow: UART Ground



1.2. Connect UART by Windows tool

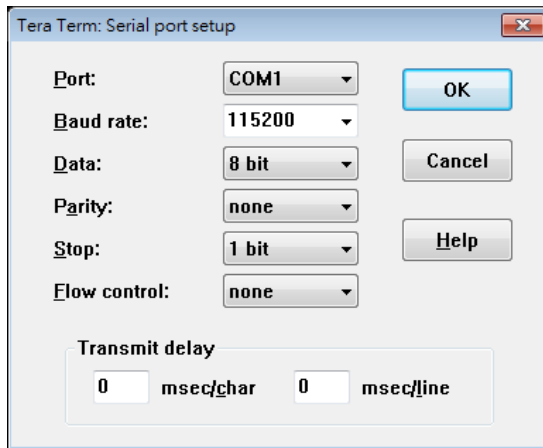
1.2.1. Using TeraTerm to connect device UART

Open “Tera Term” and select “serial” in new connection dialog and Select PC COM port.



1.2.2. Setup Serial port

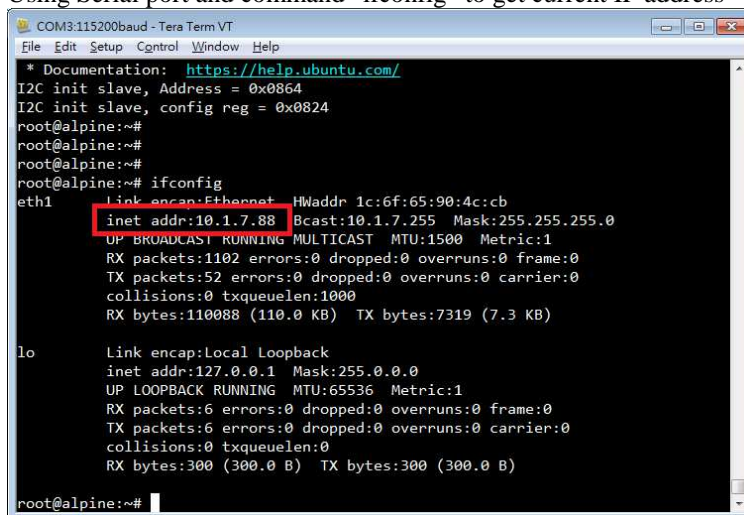
In Tera Term menu “Setup -> Serial port”, make sure all setting as follow.



2. SSH connect

2.1. Get Board IP address

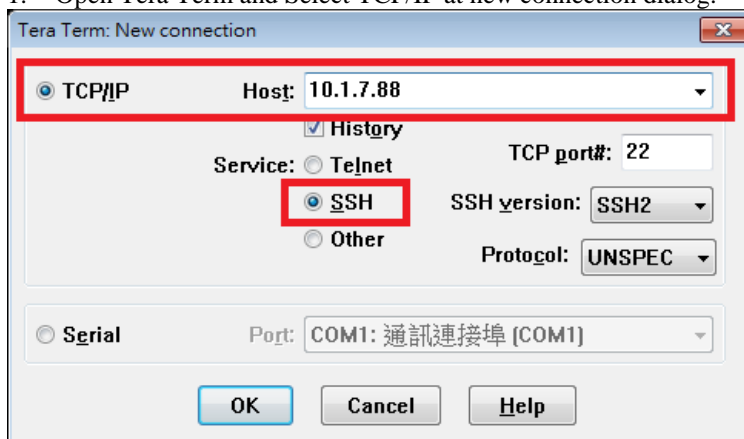
Using Serial port and command “ifconfig” to get current IP address



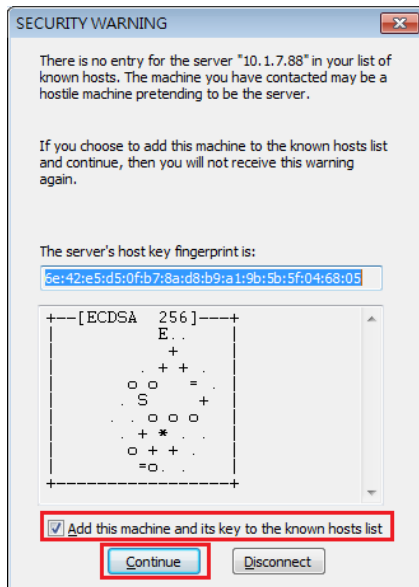
2.2. Connect to device by SSH

2.2.1. Using TeraTerm to connect device SSH

1. Open Tera Term and Select TCP/IP at new connection dialog.



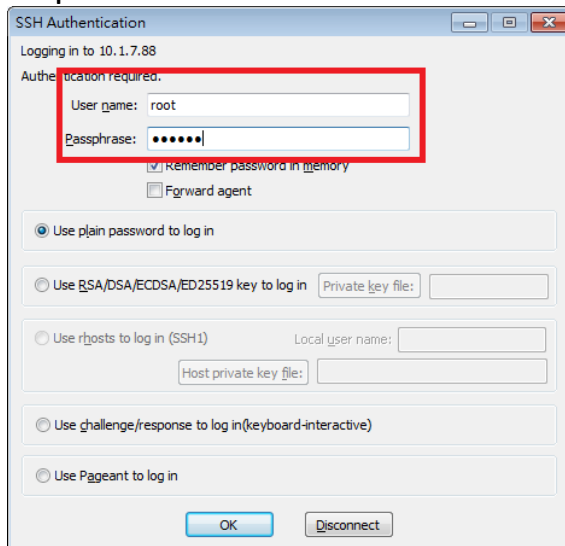
2. Select “add key” and “Continue”



3. Enter user name and passphrase

User name: root

Passphrase: 123456



3. SOFT RAID

3.1. Create Raid-0

1. Create a RAID-0 Array
`mdadm --create --verbose /dev/md0 --level=0 --raid-devices=16 /dev/sd[abcdefghijklmnop]1`
2. Check the progress with the following command
`cat /proc/mdstat`
3. Get more information about a RAID array
`mdadm --detail /dev/md0`
4. Formatting and Mounting a RAID Array
`mkfs.ext4 /dev/md0`
`mount /dev/md0 /mnt/md0`
5. Stop raid
`dd if=/dev/zero of=/dev/md0 bs=1M count=50`
`mdadm --stop /dev/md0`

3.2. Create Raid-1

1. Create a RAID-1 Array
`mdadm --create --verbose /dev/md1 --level=1 --raid-devices=2 /dev/sd*1 /dev/sd*1`
2. Check the progress with the following command
`cat /proc/mdstat`
3. Get more information about a RAID array
`mdadm --detail /dev/md1`
4. Formatting and Mounting a RAID Array
`mkfs.ext4 /dev/md1`
`mount /dev/md1 /mnt/md1`
5. V. Stop raid
`dd if=/dev/zero of=/dev/md1 bs=1M count=50`
`mdadm --stop /dev/md1`

3.3. Create Raid-5

1. Create a RAID-5 Array
`mdadm --create /dev/md5 --level 5 --raid-devices=16 /dev/sd[abcdefghijklmnop]1`
2. Check the progress with the following command
`cat /proc/mdstat`
3. Get more information about a RAID array
`mdadm --detail /dev/md5`
4. Formatting and Mounting a RAID Array
`mkfs.ext4 /dev/md5`
`mount /dev/md5 /mnt/md5`
5. Stop raid
`dd if=/dev/zero of=/dev/md5 bs=1M count=50`
`mdadm --stop /dev/md5`

3.4. Create Raid-6

1. Create a RAID-6 Array
`mdadm --create /dev/md6 --level 6 --raid-devices=16 /dev/sd[abcdefghijklmnop]1`
2. Check the progress with the following command
`cat /proc/mdstat`
3. Get more information about a RAID array
`mdadm --detail /dev/md6`
4. Formatting and Mounting a RAID Array
`mkfs.ext4 /dev/md6`
`mount /dev/md6 /mnt/md6`
5. Stop raid
`dd if=/dev/zero of=/dev/md6 bs=1M count=50`
`mdadm --stop /dev/md6`

4. UPDATE UBOOT , Kernel and FileSystem

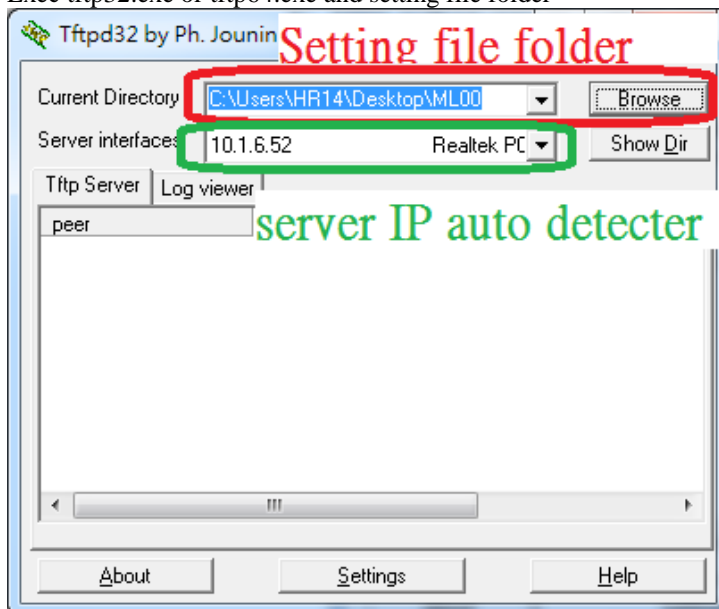
4.1. Setup TFTP server

4.1.1. Windows

1. Download tftpd32 or tftp64
http://tftpd32.jounin.net/tftpd32_download.html



2. Exec tftp32.exe or tftp64.exe and setting file folder



4.1.2. Linux (Ubuntu)

Reference Website link:

<http://www.mmweg.rwth-aachen.de/~philipp.michalschik/wordpress/running-tftp-server-on-ubuntu-12-04-lts-precise/>

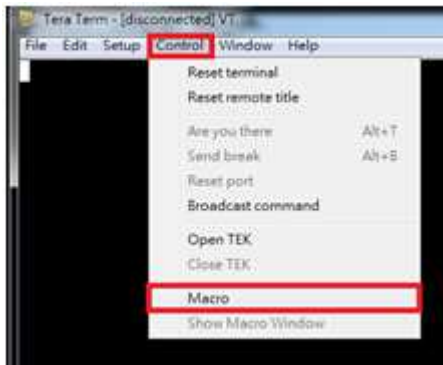
4.2. Update Firmware

Update firmware by TeraTerm TTL will keep u-boot setting (MAC will not be erased).

Update firmware by command will erase u-boot setting (MAC will be erased) if run command "run delenv".

4.2.1. Update by TeraTerm TTL (auto update)

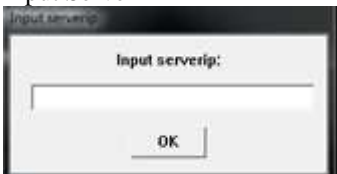
1. Control->marco->Annapurna_V1.1.ttl



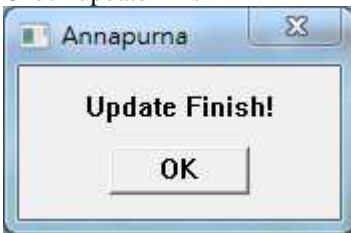
2. Boot on DUT
3. Input DUT IP



4. Input Server IP



5. Wait 15~20 minute to updated
6. Check update finish



7. Check FW version

```

root@alpine:~#
root@alpine:~# cat /etc/ML00_release
ML00 File System Version = 1.03S
root@alpine:~#

```

4.2.2. Update by command

1. Into u-boot shell after power-on.
2. Get current device MAC setting
printenv ethaddr
(Will return ethaddr=[current MAC], save [current MAC] to text file)
3. Set up tftp server on PC side
setenv ipaddr [IP for device]
setenv serverip [IP for tftp server]
4. Updating the board's Device Tree
run dtupd
5. Updating the AL-Boot image on flash
run bootupd
reset
6. Into u-boot shell after reset command in step 5.
7. Updating the kernel image on the NAND

- run kernelspiupd
- 8. Update Ubuntu file system
run rootfsupd
- 9. Set default env(option, **will erase MAC setting**)
run delenv
reset
- 10. Into u-boot shell after reset command in step 9.
- 11. Write MAC address(option)
eth_addr [current MAC] 4
saveenv
reset
- 12. Check MAC address
printenv ethaddr eth1addr eth2addr eth3addr
(Will return ethaddr=[current MAC] eth1addr=[current MAC +1] eth2addr=[current MAC +2]
eth3addr=[current MAC +3])

5. I2CSlave tool

5.1. Open I2CSlave

When boot complete, i2cslave daemon will start automatically.

5.2. Check I2CSlave daemon

Run command “ps | grep i2cslave” in Linux shell.

