

(망고220 ubuntu 포팅)

```
$ wget http://launchpadlibrarian.net/52888742/rootstock_0.1.99.4-0ubuntu1_i386.deb
--2014-09-23 18:02:26-- http://launchpadlibrarian.net/52888742/rootstock_0.1.99.4-0ubuntu1_i386.deb
Resolving launchpadlibrarian.net (launchpadlibrarian.net)... 91.189.89.229, 91.189.89.228
접속 launchpadlibrarian.net (launchpadlibrarian.net)[91.189.89.229]:80... 접속됨.
HTTP request sent, awaiting response... 200 OK
Length: 17790 (17K) [application/x-debian-package]
Saving to: `rootstock_0.1.99.4-0ubuntu1_i386.deb'

100%[=====
=====>] 17,790 68.4K/s in 0.3s

2014-09-23 18:02:28 (68.4 KB/s) - `rootstock_0.1.99.4-0ubuntu1_i386.deb' saved [17790/17790]
```

```
$ sudo apt-get install qemu-kvm-extras-static qemu-kvm-extras debootstrap fuseext2 fuse-utils genext2fs
```

```
$ sudo dpkg -i rootstock_0.1.99.4-0ubuntu1_i386.deb
Selecting previously unselected package rootstock:i386.
(데이터베이스 읽는중 ...현재 193222개의 파일과 디렉터리가 설치되어 있습니다.)
rootstock:i386 패키지를 푸는 중입니다 (rootstock_0.1.99.4-0ubuntu1_i386.deb에서) ...
dpkg: 의존성 문제로 rootstock:i386을(를) 설정할 수 없습니다:
 rootstock:i386 패키지는 다음 패키지에 의존: qemu-kvm-extras-static.
 rootstock:i386 패키지는 다음 패키지에 의존: qemu-kvm-extras.
 rootstock:i386 패키지는 다음 패키지에 의존: debootstrap (>= 1.0.10ubuntu3).
 rootstock:i386 패키지는 다음 패키지에 의존: fuseext2.
 rootstock:i386 패키지는 다음 패키지에 의존: fuse-utils.
 rootstock:i386 패키지는 다음 패키지에 의존: genext2fs.
 rootstock:i386 패키지는 다음 패키지에 의존: fakeroot.
dpkg: rootstock:i386을(를) 처리하는데 오류가 발생했습니다 (--install):
 의존성 문제 - 설정하지 않고 남겨둠
man-db에 대한 트리거를 처리하는 중입니다 ...
처리하는데 오류가 발생했습니다:
 rootstock:i386
```

무시하고 진행 합니다.

```
$ sudo rootstock -d precise --seed ubuntu-standard -x en_US.UTF-8 -f ubuntu -l ubuntu -p ubuntu -i 2G
```

```
I: Running on a x86_64 machine
I: Creating temporary qemu Image to be used as rootfs
I: Mounting temporary Image
I: Running first stage
I: Retrieving Release
I: Retrieving Release.gpg
I: Checking Release signature
I: Valid Release signature (key id 630239CC130E1A7FD81A27B140976EAF437D05B5)
I: Retrieving Packages
I: Validating Packages
I: Resolving dependencies of required packages...
I: Resolving dependencies of base packages...
.....생략...
I: Chroot done
I: Umounting temporary Image
I: Creating tarball from rootfs
I: Mounting temporary Image
I: ARM rootfs created as /home/treego/PROJECT/temp2/ubuntu_mango220/armel-rootfs-201409231809.tgz
I: Umounting temporary Image
I: Rootstock finished successfully
I: Cleaning up...
.....
I: A logfile was saved as /home/treego/PROJECT/temp2/ubuntu_mango220/rootstock-201409231809.log
I: Done
```

```
$ ls
```

```
armel-rootfs-201409231809.tgz      rootstock-201409231809.log      rootstock_0.1.99.4-
Oubuntu1_i386.deb
```

Ubuntu용 rootfs생성이 됩니다. "armel-rootfs-201409231809.tgz"

Ubuntu로 부팅하기 위한 스크립트를 생성합니다.

```
$ mkdir rootfs
$ sudo tar xf armel-rootfs-201409231809.tgz -C rootfs/
$ cd rootfs/
```

```
$ sudo vi etc/init/serial-auto-detect-console.conf
# serial-auto-detect-console - starts getty on serial console
#
# This service starts a getty on the serial port given in the 'console' kernel argument.
#

start on runlevel [23]
stop on runlevel [!23]

respawn

exec /bin/sh /bin/serial-console
```

```
$ sudo vi bin/serial-console
for arg in $(cat /proc/cmdline)
do
  case $arg in
    console=*)
      tty=${arg#console=}
      tty=${tty#/dev/}

      case $tty in
        tty[a-zA-Z]* )
          PORT=${tty%%,*}

          # check for service which do something on this port
          if [ -f /etc/init/$PORT.conf ];then continue;fi

          tmp=${tty##$PORT,}
```

```
SPEED=${tmp%%n*}
BITS=${tmp##${SPEED}n}

# 8bit serial is default
[ -z $BITS ] && BITS=8
[ 8 -eq $BITS ] && GETTY_ARGS="$GETTY_ARGS -8 "

[ -z $SPEED ] && SPEED='115200,57600,38400,19200,9600'

GETTY_ARGS="$GETTY_ARGS $SPEED $PORT"
exec /sbin/getty $GETTY_ARGS

    esac
esac
done

$ sudo chmod +rx bin/serial-console
```

암호 부분 제거

```
$ sudo vi etc/shadow

root::16336:0:99999:7:::
daemon*:16336:0:99999:7:::
bin*:16336:0:99999:7:::
sys*:16336:0:99999:7:::
sync*:16336:0:99999:7:::
games*:16336:0:99999:7:::
man*:16336:0:99999:7:::
ubuntu::16336:0:99999:7:::
```

```
$ sudo mv securetty securetty.old
```

```
$ sudo tar zcf ../rootfs.tar *
```

PC에 SD카드 삽입

```
$ dmesg | tail

[32174.191412] EXT3-fs (loop0): mounted filesystem with ordered data mode
[33675.788065] kjournald starting. Commit interval 5 seconds
```

```
[33675.788133] EXT3-fs (loop0): using internal journal
[33675.788138] EXT3-fs (loop0): mounted filesystem with ordered data mode
[34117.713115] sd 6:0:0:0: [sd] 15523840 512-byte logical blocks: (7.94 GB/7.40 GiB)
[34117.714658] sd 6:0:0:0: [sd] No Caching mode page present
[34117.714663] sd 6:0:0:0: [sd] Assuming drive cache: write through
[34117.719406] sd 6:0:0:0: [sd] No Caching mode page present
[34117.719411] sd 6:0:0:0: [sd] Assuming drive cache: write through
[34117.726452] sdc: sdc1 sdc2 sdc3 sdc4
treego@treego-C2SBA:~/PROJECT/temp2/ubuntu_
```

파티션 설정을 해줍니다.

```
$ sudo fdisk -c /dev/sdc
```

파티션을 확인 하고,

Command (m for help): p

```
Disk /dev/sdc: 7948 MB, 7948206080 bytes
253 heads, 60 sectors/track, 1022 cylinders, total 15523840 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

   Device Boot      Start         End      Blocks   Id  System
/dev/sdc1             4250400     15377339     5563470    c   W95 FAT32 (LBA)
/dev/sdc2             136620          1168859     516120    83   Linux
/dev/sdc3             1168860          3218159     1024650    83   Linux
/dev/sdc4             3218160          4250399     516120    83   Linux

Partition table entries are not in disk order
```

모든 파티션을 삭제 합니다.

Command (m for help): d

Partition number (1-4): 4

Command (m for help): d

Partition number (1-4): 3

Command (m for help): d

Partition number (1-4): 2

Command (m for help): d

Selected partition 1

Command (m for help): n

Partition type:

p primary (0 primary, 0 extended, 4 free)

e extended

Select (default p): p

Partition number (1-4, default 1): 엔터

Using default value 1

First sector (2048-15523839, default 2048): 20480

Last sector, +sectors or +size{K,M,G} (20480-15523839, default 15523839): 엔터

Using default value 15523839

Command (m for help): p

```
Disk /dev/sdc: 7948 MB, 7948206080 bytes
253 heads, 60 sectors/track, 1022 cylinders, total 15523840 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sdc1		20480	15523839	7751680	83	Linux

Command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

Syncing disks.

```
$ sudo mkfs.ext4 /dev/sdc1
```

```
mke2fs 1.42 (29-Nov-2011)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
484800 inodes, 1937920 blocks
96896 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=1988100096
60 block groups
32768 blocks per group, 32768 fragments per group
8080 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
```

sd카드 1번째 파티션에 rootfs를 write합니다.

```
$ mkdir temp
```

```
$ sudo mount /dev/sdc1 temp
```

```
$ sudo tar xf rootfs.tar -C temp/
```

```
$ sync
```

```
$ sudo umount /dev/sdc1
```

```
setenv bootargs "quiet rw root=/dev/mmcblk0p1 init=/sbin/init rootfstype=ext4
console=ttySAC1,115200 rootwait"
```

sdwriter 스크립트....

```
* Starting load fallback graphics devices [ OK ]
* Starting Userspace boot splash [ OK ]
[ 7.288722] init: Failed to create pty - disabling logging for job
[ 7.301407] init: Failed to create pty - disabling logging for job
[ 7.409207] init: Failed to create pty - disabling logging for job
[ 7.416699] init: Failed to create pty - disabling logging for job
[ 7.489066] init: Failed to create pty - disabling logging for job
[ 7.494021] init: Failed to create pty - disabling logging for job
[ 7.592832] init: Failed to create pty - disabling logging for job
[ 7.598650] init: Failed to create pty - disabling logging for job
[ 7.602190] init: Failed to create pty - disabling logging for job
[ 7.609260] init: Failed to create pty - disabling logging for job
[ 7.616014] init: Failed to create pty - disabling logging for job
[ 7.622358] init: Failed to create pty - disabling logging for job
[ 7.631903] init: Failed to create pty - disabling logging for job
[ 7.638051] init: Failed to create pty - disabling logging for job
[ 7.644170] init: Failed to create pty - disabling logging for job
[ 7.649965] init: Failed to create pty - disabling logging for job
[ 7.694576] init: Failed to create pty - disabling logging for job
[ 7.901479] init: Failed to create pty - disabling logging for job

Ubuntu 12.04 LTS ubuntu ttySAC1

ubuntu login: root
Last login: Mon Jan 3 09:02:25 KST 2000 on ttySAC1
Welcome to Ubuntu 12.04 LTS (GNU/Linux 3.0.51 armv7l)

* Documentation: https://help.ubuntu.com/
root@ubuntu:~#
```

Apt-get install 동작 확인

```
root@ubuntu:~# ifconfig eth0 192.168.55.254 up
root@ubuntu:~# ping 192.168.55.32
PING 192.168.55.32 (192.168.55.32) 56(84) bytes of data:
64 bytes from 192.168.55.32: icmp_req=1 ttl=64 time=5.79 ms
64 bytes from 192.168.55.32: icmp_req=2 ttl=64 time=0.560 ms
64 bytes from 192.168.55.32: icmp_req=3 ttl=64 time=0.542 ms
64 bytes from 192.168.55.32: icmp_req=4 ttl=64 time=0.572 ms
64 bytes from 192.168.55.32: icmp_req=5 ttl=64 time=0.564 ms
64 bytes from 192.168.55.32: icmp_req=6 ttl=64 time=0.543 ms
64 bytes from 192.168.55.32: icmp_req=7 ttl=64 time=0.573 ms
```

```
root@ubuntu:~# apt-get update
Err http://ports.ubuntu.com precise InRelease

Err http://ports.ubuntu.com precise Release.gpg
Temporary failure resolving 'ports.ubuntu.com'
Reading package lists... Done
W: Failed to fetch http://ports.ubuntu.com/ubuntu-ports/dists/precise/InRelease

W: Failed to fetch http://ports.ubuntu.com/ubuntu-ports/dists/precise/Release.gpg Temporary failure resolving 'ports.ubuntu.com'

W: Some index files failed to download. They have been ignored, or old ones used instead.
```



```
root@ubuntu:~# ping -n 8.8.8.8
connect: Network is unreachable
```

```
root@ubuntu:~# route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
192.168.55.0 * 255.255.255.0 U 0 0 0 eth0
root@ubuntu:~# route add gw 192.168.55.1 eth0
gw: Host name lookup failure
root@ubuntu:~# route add default gw 192.168.55.1 eth0
root@ubuntu:~# ping -n 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_req=1 ttl=44 time=74.2 ms
64 bytes from 8.8.8.8: icmp_req=2 ttl=44 time=69.7 ms
64 bytes from 8.8.8.8: icmp_req=3 ttl=44 time=68.9 ms
64 bytes from 8.8.8.8: icmp_req=4 ttl=44 time=69.3 ms
64 bytes from 8.8.8.8: icmp_req=5 ttl=44 time=69.4 ms
^C
--- 8.8.8.8 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 68.933/70.352/74.298/1.989 ms
```

```
echo "nameserver 8.8.8.8" > /etc/resolv.conf
```

```
route add default gw 192.168.55.1 eth0
```

우분투 화면 출력

```
apt-get install ubuntu-desktop
```

```
root@ubuntu:~# apt-get install ubuntu-desktop
```

```
Do you want to continue [Y/n]? Y
```

엄청오래걸림 3시간 가량 걸립니다.

다 하고.. rootfs저장 해 놓읍시다....

```
setenv bootargs "quiet rw root=/dev/mmcblk0p2 init=/sbin/init rootfstype=ext4
console=ttySAC1,115200 rootwait"
```

```
sudo apt-get install xorg openbox
```

```
sudo apt-get install fxlrg
```

```
sudo apt-get install xserver-xorg-core
```

```
sudo apt-get install xserver-xorg
```

위 설치

```
[ 3.870513] hub 1-2:1.0: over-current condition
```

```
root@ubuntu:~# x-window-manager
```

```
Openbox-Message: Failed to open the display from the DISPLAY environment variable.
```

```
root@ubuntu:~# export DISPLAY=10.10.10.1:0.0
```

```
root@ubuntu:~#
```

```
root@ubuntu:~# x-window-manager
```

모두 다하고, kernel HDMI포팅 합시다....

용량이 부족해서... 다시 하였습니다.

6월 23일 소스로 진행 하였습니다.

2기가 이상을 잡아야 합니다.

idle 상태에서 CPU점유율 확인

```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
top - 09:01:00 up 1 min, 1 user, load average: 1.97, 0.61, 0.21
Tasks: 113 total, 2 running, 111 sleeping, 0 stopped, 0 zombie
Cpu(s): 0.7%us, 0.6%sy, 0.0%ni, 98.1%id, 0.4%wa, 0.0%hi, 0.2%si, 0.0%st
Mem: 655956k total, 189184k used, 466772k free, 34204k buffers
Swap: 0k total, 0k used, 0k free, 80432k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
 1484 syslog    20   0 30208 1096  876  S   1.0   0.2   0:00.36 rsyslogd
   852 root      20   0     0     0     0  S   1.0   0.0   0:02.04 mmqad/0
 2121 lightdm   20   0 68316 9208 6632  S   1.4   1.4   0:00.85 gnome-settings-
 2260 colord    20   0 49916 8892 6728  S   1.4   1.4   0:00.36 colord
 1525 messageb 20   0 3352 1452  660  S   1.0   0.2   0:00.89 dbus-daemon
 2340 root      20   0 2152  952  696  R   1.0   0.1   0:00.60 top
   819 root      20   0     0     0     0  S   0.0   0.0   0:00.21 kworker/0:2
 1655 root      20   0  9412 2748 1952  S   0.4   0.4   0:00.08 cupsd
 1920 root      20   0 23476 3032 2220  S   0.5   0.5   0:00.49 polkitd
 1992 root      20   0 32176 3056 2152  S   0.5   0.5   0:00.38 console-kit-dae
     1 root      20   0  3104 1656  968  S   0.3   0.3   0:04.44 init
     2 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kthreadd
     3 root      20   0     0     0     0  S   0.0   0.0   0:00.00 ksoftirqd/0
     4 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kworker/0:0
     5 root      20   0     0     0     0  S   0.0   0.0   0:00.38 kworker/u:0
     6 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/0
     7 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/1
```

아래 명령어로 돌리고, CPU점유율 확인

root@ubuntu:~# dd if=/dev/zero of=/dev/zero &

```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help
top - 09:03:02 up 3 min, 1 user, load average: 2.45, 1.23, 0.48
Tasks: 112 total, 2 running, 109 sleeping, 1 stopped, 0 zombie
Cpu(s): 8.6%us, 16.6%sy, 0.0%ni, 74.9%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st
Mem: 655956k total, 186328k used, 469628k free, 34204k buffers
Swap: 0k total, 0k used, 0k free, 80428k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
 2352 root      20   0  3144  552  456  R  100.0  0.1   0:22.92 dd
 2353 root      20   0  2152  952  696  R   0.0   0.1   0:00.08 top
     1 root      20   0  3104 1656  968  S   0.3   0.3   0:04.45 init
     2 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kthreadd
     3 root      20   0     0     0     0  S   0.0   0.0   0:00.00 ksoftirqd/0
     4 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kworker/0:0
     5 root      20   0     0     0     0  S   0.0   0.0   0:00.38 kworker/u:0
     6 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/0
     7 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/1
     8 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kworker/1:0
     9 root      20   0     0     0     0  S   0.0   0.0   0:00.00 ksoftirqd/1
    10 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/2
    11 root      20   0     0     0     0  S   0.0   0.0   0:00.00 kworker/2:0
    12 root      20   0     0     0     0  S   0.0   0.0   0:00.01 ksoftirqd/2
    13 root      RT   0     0     0     0  S   0.0   0.0   0:00.00 migration/3
    14 root      20   0     0     0     0  S   0.0   0.0   0:00.07 kworker/3:0
    15 root      20   0     0     0     0  S   0.0   0.0   0:00.00 ksoftirqd/3
```