

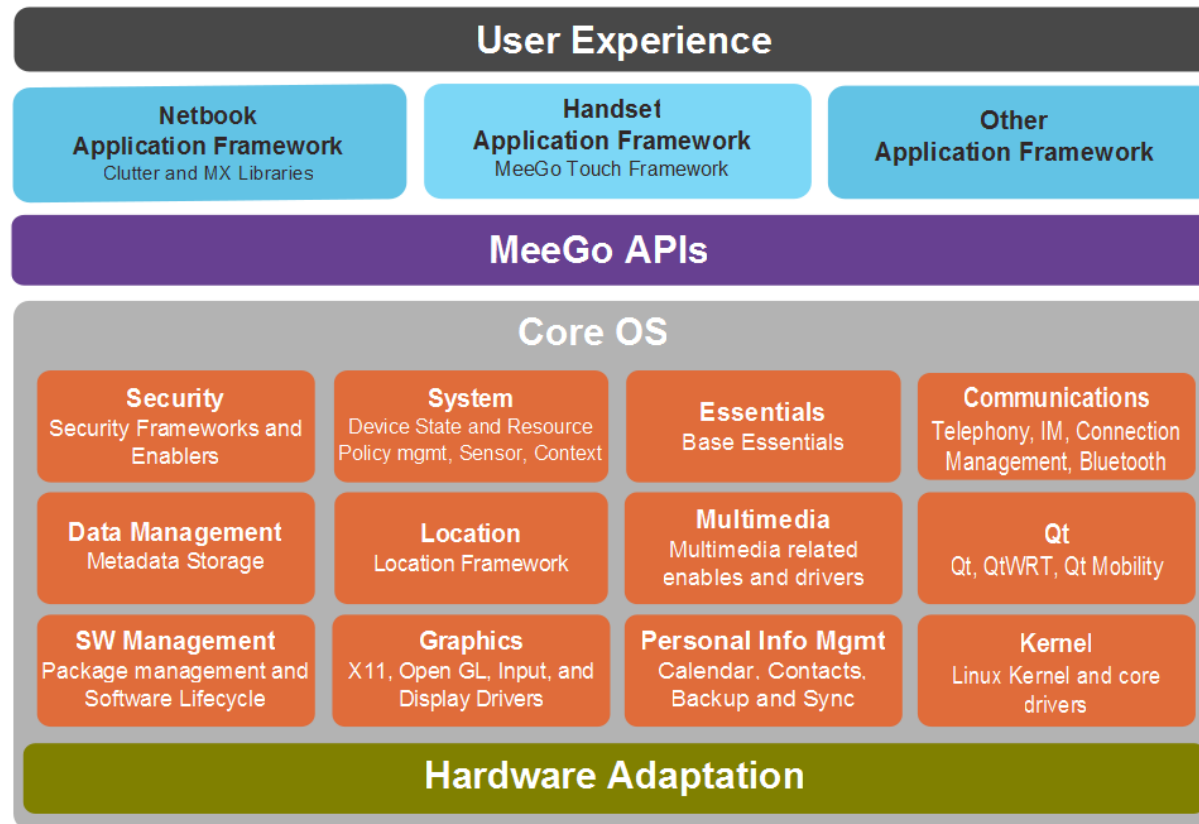
MeeGo Device Adaptation: Lessons Learned and Available Resources

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Who am I ?

- Contract Software engineer
- Background
 - Sea-King/Merlin Avionics (2 years) (GEC)
 - Harrier Fly-by-Wire Research (14 years) (QinetiQ)
 - Helicopter Simulation (8 years) (cueSim)
- MeeGo project (18 months)

Architecture



Compliance

- Meet the minimum HW performance and component requirements for the applicable device category
- Include all SW components that form the MeeGo core OS
- Include the additional SW components required to be present in devices in the applicable device category
- Not break the API/ABI of any of the components coming from MeeGo
- Follow the MeeGo SW packaging conventions
- <http://wiki.meego.com/Quality/ComplianceTools>

Adaptation Subsystems and Interfaces

- System Core, boot, kernel, Power/Thermal Management, Device State
- Security, left up to device manufacturer
- Device Mode, udev, MCE (keys, screen brightness)
- Display and Graphics, X-Windows, Open GL ES, OpenVG, EGL
- Audio, GStreamer and PulseAudio frameworks, ALSA, OpenMAX
- Camera, GStreamer, V4L2 , OpenMax
- Video and Imaging, GStreamer, V4L2 , OpenMax
- Communications, oFono, Pulseaudio, USB, WLAN, BlueZ
- Location, QtMobility, GeoClue
- Sensor, Sensor Framework, kernel drivers
- Input, MTF, Qt, Xinput Driver, mtev
- Haptics and Vibra, MeeGo Touch Framework, Non-Graphical Feedback Framework

Initial Adaptation Workflow

- Tools – git, osc, Mic
- Initial Bring up
- Kernel
- First image

Initial Bring up

- Grab a root file system close to your device, write to storage device
- Build a kernel for your device
- Configure boot loader (uboot, bootloader.bin)
- Copy in kernel modules, user-space drivers

Kernel

- Check N900/Pinetrail Configs
- 2.6.36
 - CONFIG_PARANIOD_ANDRIOD=n
 - CONFIG_DUMMY=n
 - CONFIG_AUTOFS4=y
 - CONFIG_DEVTMPFS=y
 - CONFIG_CGROUPS
 - CONFIG_SYSVIPC
 - CONFIG_IPV6=n
 - CONFIG_IPV6_SIT=n
- Android Kernels

Initial Adaptation Packages

- Kernel Adaptation Package
 - MeeGo CONFIG_
 - Architecture CONFIG_
 - Device Specific CONFIG_
- Graphics user-space packages, EGL, GLES
 - Basic Frame-buffer with Mesa
 - HW Accelerated Driver libs, IMG, nVidia, TI
- MeeGo Core Packages
- MeeGo UX Packages

Building an Image

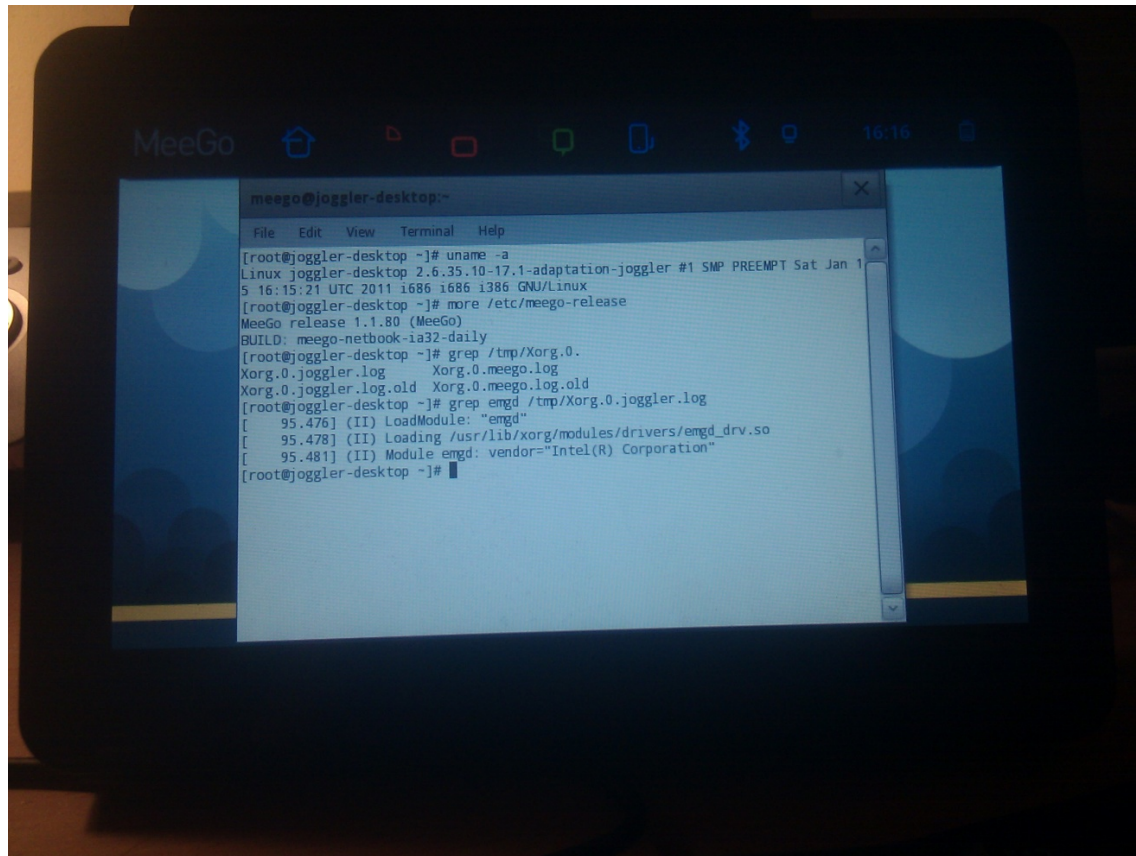
- Mic Image Creator Tool – git – fedora VM
- Kickstart Files
 - Partition Layout
 - Repos
 - Package Groups
 - Post install
- Image types, raw, live, file system, compressed

Example Adaptations

- O2 Joggler
- Advent Vega
- Trimslice
- Raspberry Pi

O2 Joggler

- 7" Touchscreen device from O2
- EFI Bootloader – grub booting from VFAT
- GMA500 graphics – not well supported at first
- 2.6.38 kernel
- EMGD driver
- Netbook, Tablet, Mer, Cordia, xbmc, plasma active

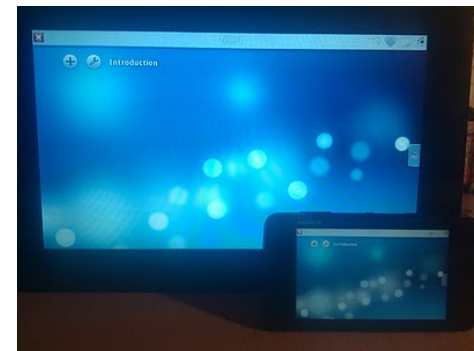
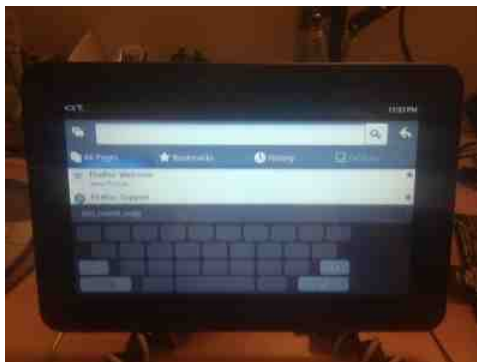
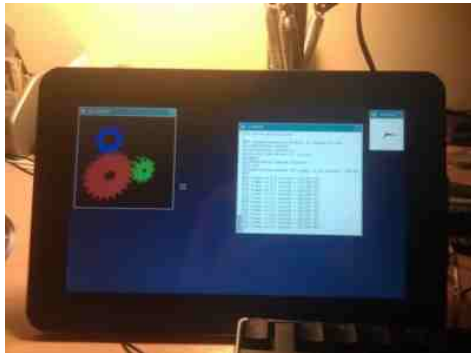


O2 Joggler running MeeGo Netbook 1.0

Advent Vega

- nVidia Tegra 2 – Linux4Tegra Distribution
- Initial port framebuffer
- Hardfp Vs Softfp
- Android based
 - Nvflash tool
 - Boot.bin - split and merge
- Plasma Active

Vega Bringup Flow



Trimslice

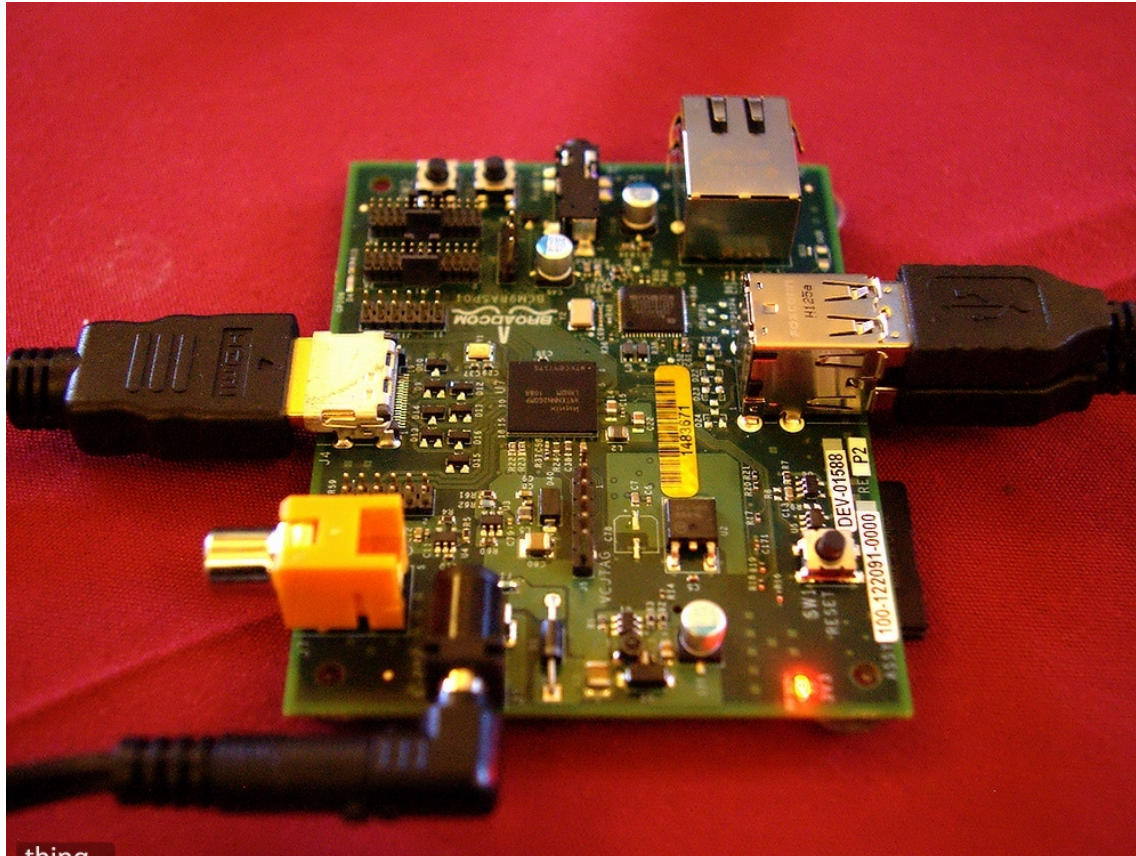
- Tegra 2 Based STB
- Uboot
- nVidia hardfp drivers
- Tablet UX and XBMC
- Good adaptation kernel and GFX packages available from COBS



XBMC On Trimslice

Raspberry Pi

- 25\$ Board with ARM11 CPU and Broadcom GPU.
- HDMI out
- Mer build (ARMv6)
- Acceleration used by Qt5
- OpenWF support,



Raspberry Pi

Resources

MeeGo porting Guide - http://wiki.meego.com/MeeGo_Porting_Guide

OBS Guide - <http://wiki.meego.com/OBS>

Image Creation -
http://wiki.meego.com/Image_Creation

Kernel Guide -
[http://wiki.meego.com/How-to_getting_new_chipset_support_to_the MeeGo_kernel](http://wiki.meego.com/How-to_getting_new_chipset_support_to_the_MeeGo_kernel)

Resources

Joggler Bringup -

<http://jogglerwiki.info/index.php?title=MeeGo>

Tegra Bringup -

<http://wiki.meego.com/ARM/TEGRA2/Notes>

Raspberry Pi Bringup -

[http://wiki.meego.com/
User:Vgrade#Raspberry Pi](http://wiki.meego.com/User:Vgrade#Raspberry_Pi)

Where Next

- MeeGo
- Tizen
- Mer
- Yocto
- Linaro
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Questions