



designwest

# So You Want to Use Linux?

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**Demystify** pieces and function

**Demonstrate**

How do we **develop** them?

**Observations**

**Q&A**

OS Services

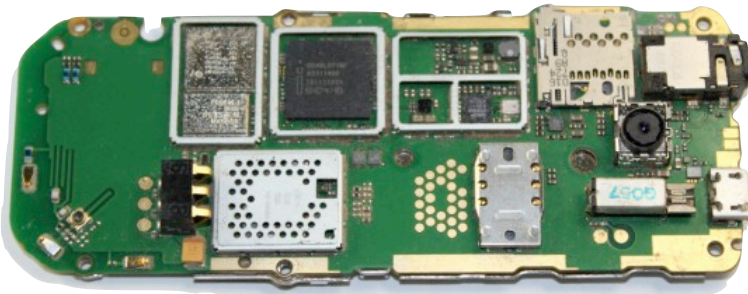
App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

Bootloader



OS Services

App.

OS utilities, runtime, etc.

OS libraries

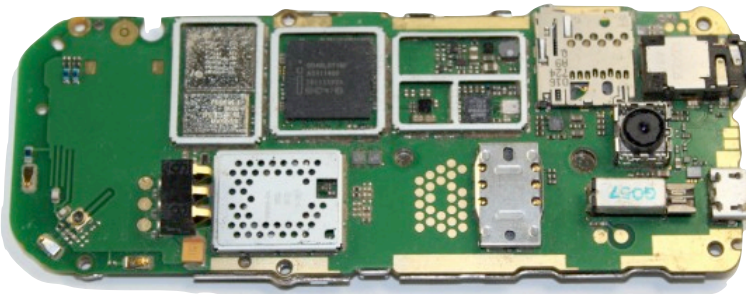
Linux Kernel

Bootloader

Initialize hardware

Call kernel

Program images



OS Services

App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

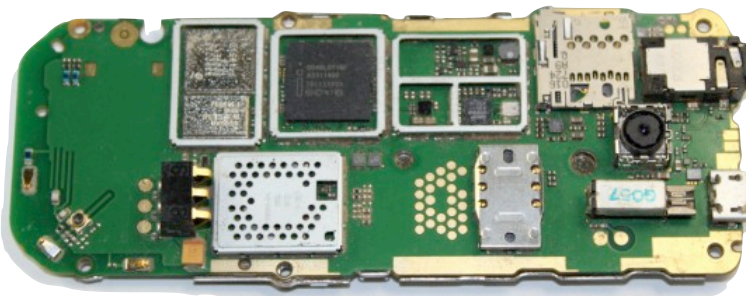
Bootloader

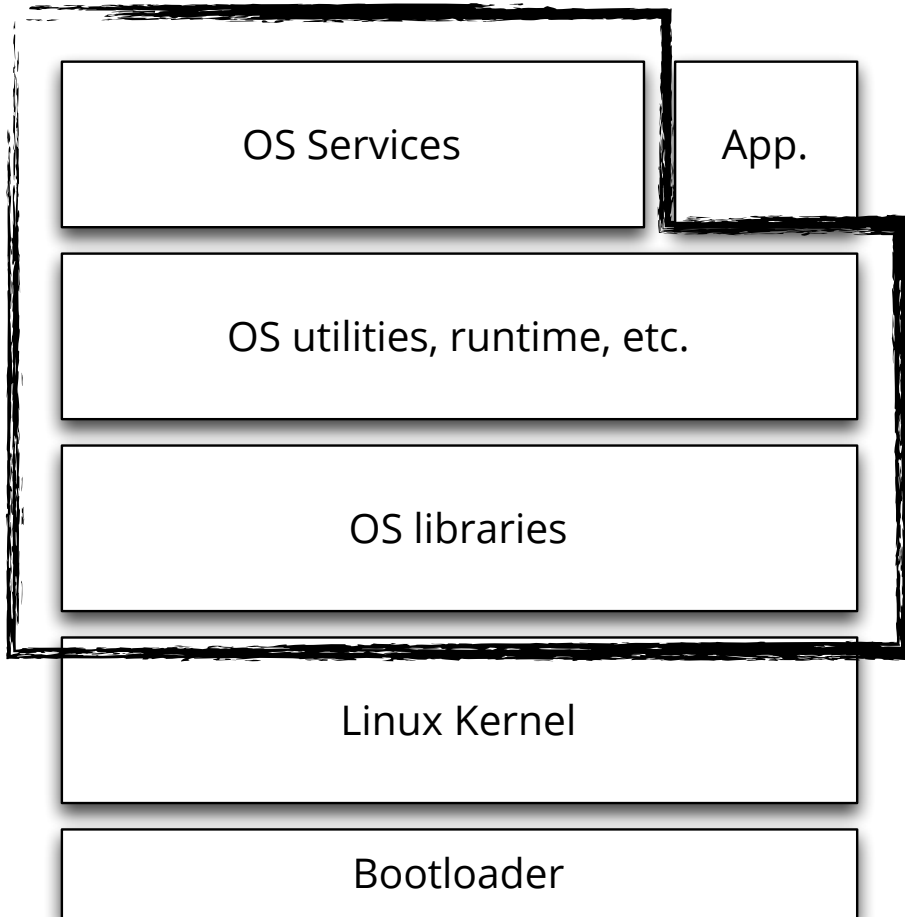
Initialize hardware

Drivers provide  
interfaces

Manage resources

Scheduling



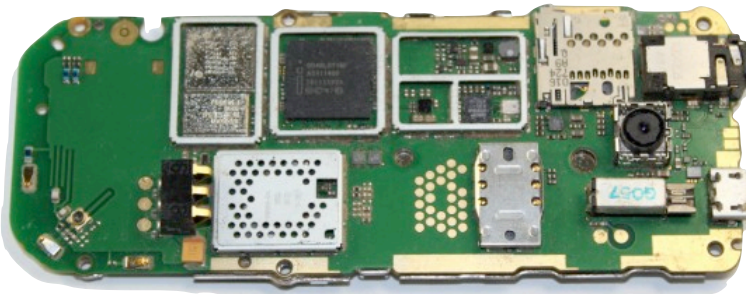


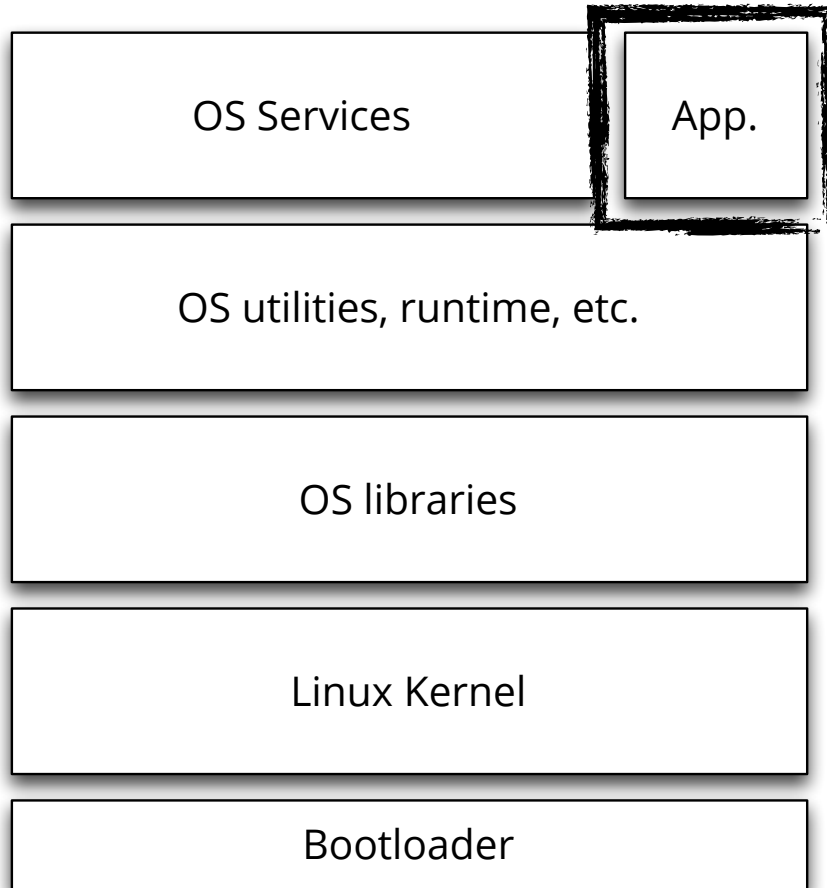
Programs and  
libraries

The first program:  
init

System-level  
services

Language  
runtimes

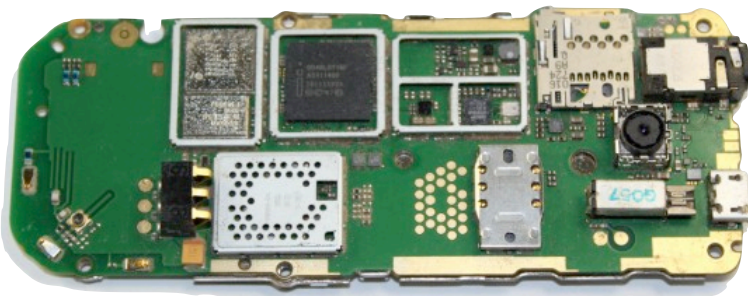




What makes your  
device unique

GUI components

backend



# ***Demo***

Power-up to prompt



Often provided by chip  
vendor

You modify to suite  
components and  
schematic, partitioning

Typical options:

U-Boot

uMon

custom

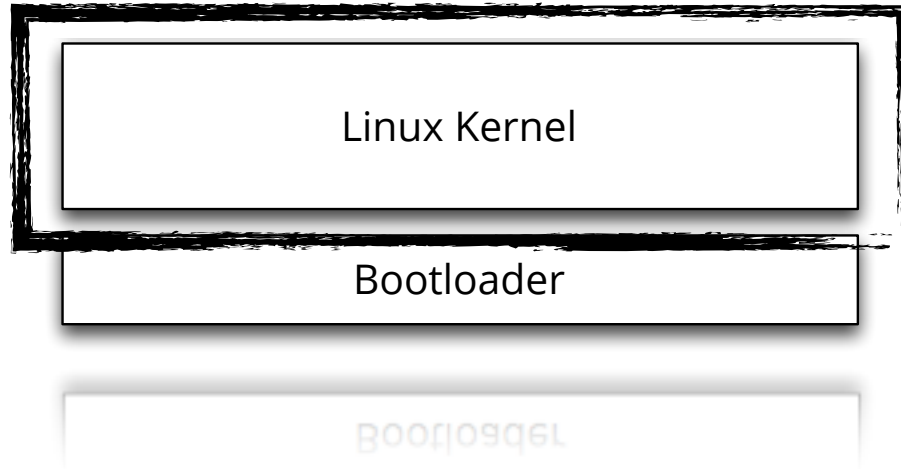


Bootloader

Often provided by chip vendor. You:

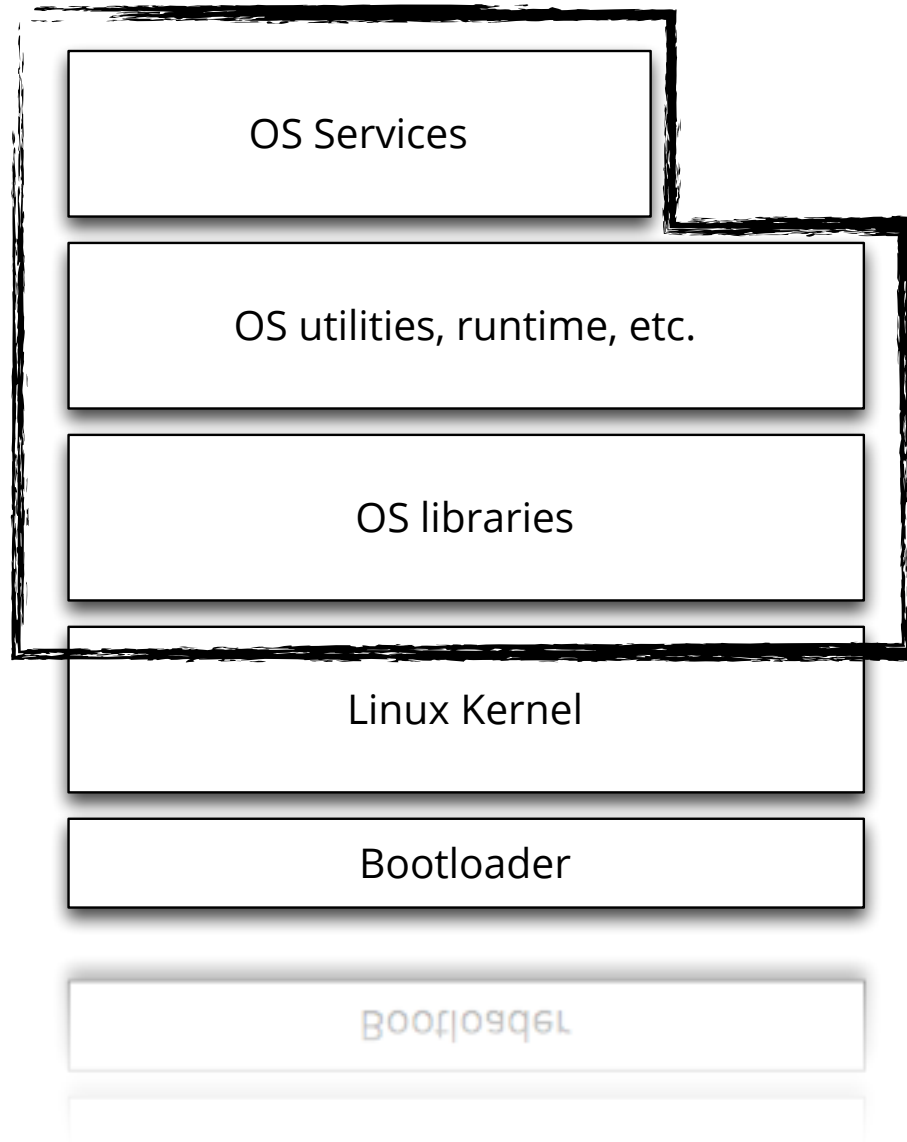
Add drivers

Declare connections, device hierarchy, power hierarchy



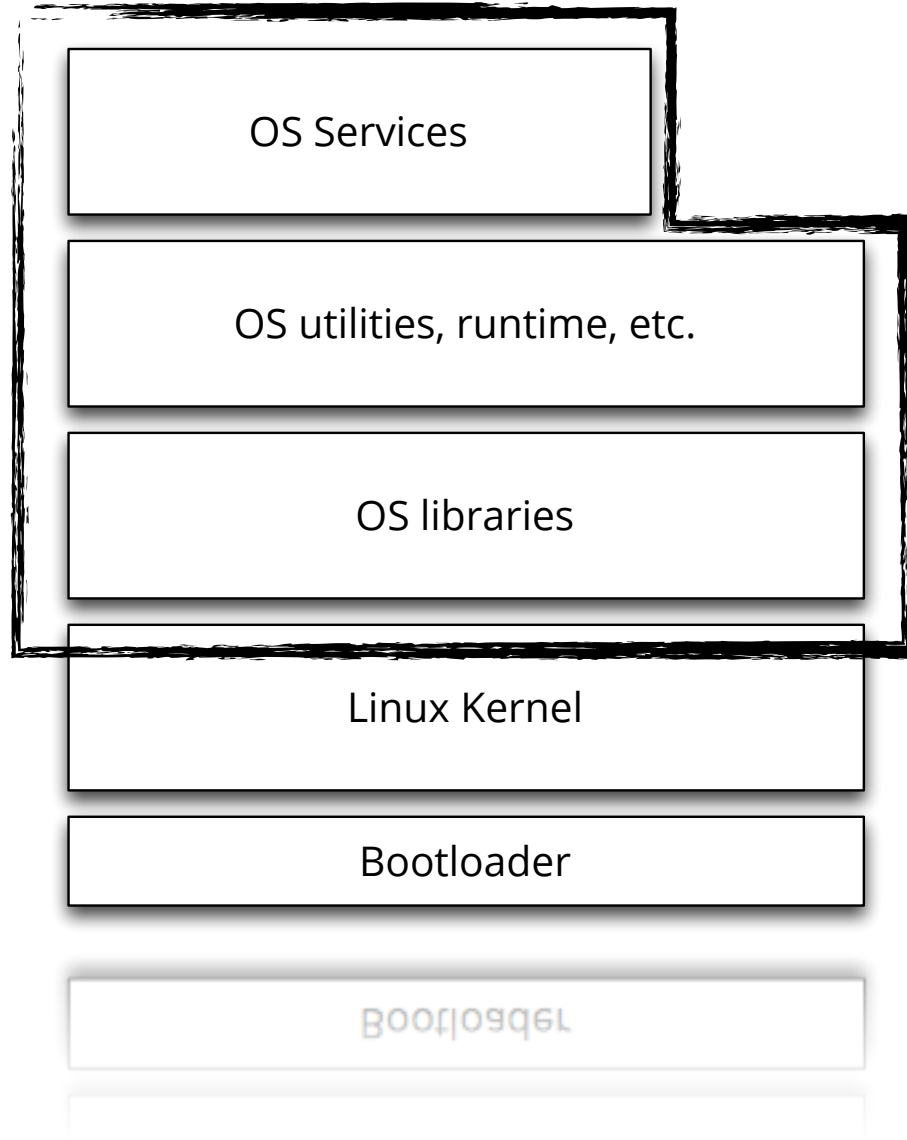
The chip vendor will offer something...

BEWARE



Heavily influences  
development  
mechanics.

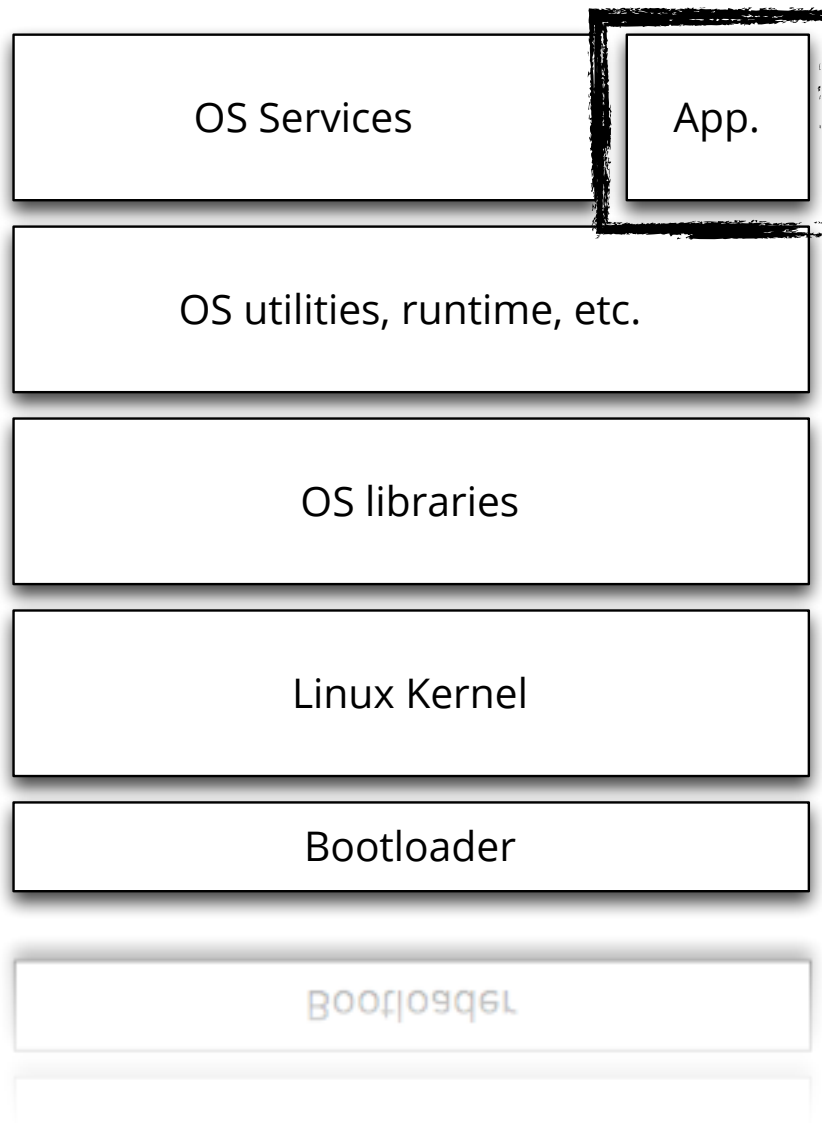
Buildroot  
Open Embedded  
Yocto  
Pragmatux  
Android?



Graphical toolkit

Application  
framework

Particular libraries



# Phasing

Begin on processor development kit

Application development can begin on  
workstations

Provide ample prototypes

# Licensing

attribution

source distribution

may affect code your code

# Working with Open Source Software

Don't diverge too far from the project

Extend your development team by working with the community

Send changes upstream



# Observations and Recommendations

A large part of a Linux project is the platform

If this is your first project, get help with the  
platform

# Observations and Recommendations

Think beyond the initial images:

Development workstations

Tracking OS upgrades

Deploying releases to field



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