

# EE | Live!

## So You Want to Use Linux

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These slides at <http://insymbols.com/misc/so-you-want-to-use-linux-ee2014.pdf>



**Demystify** pieces and function

**Demonstrate**

How do we **develop** them?

**Observations**

**Q&A**



The pieces and their function



OS Services

App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

Bootloader





OS Services      App.

OS utilities, runtime, etc.

OS libraries

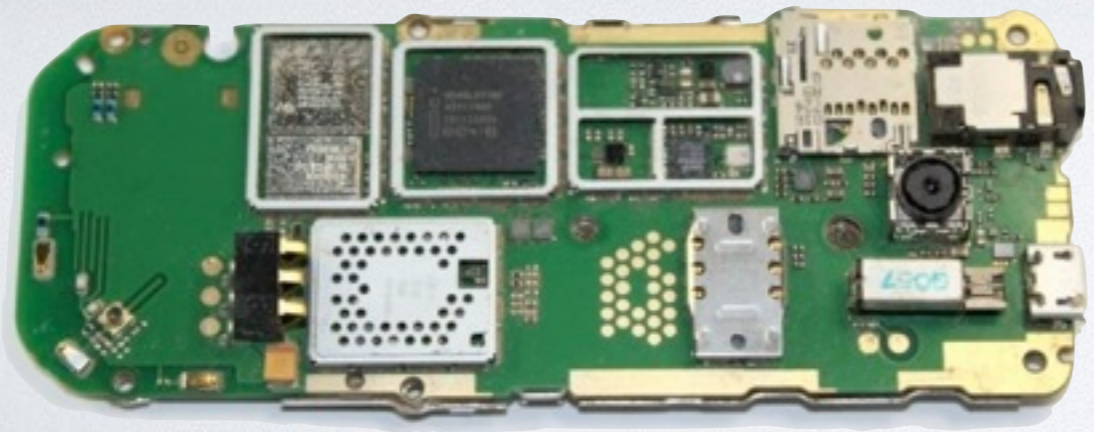
Linux Kernel

Bootloader

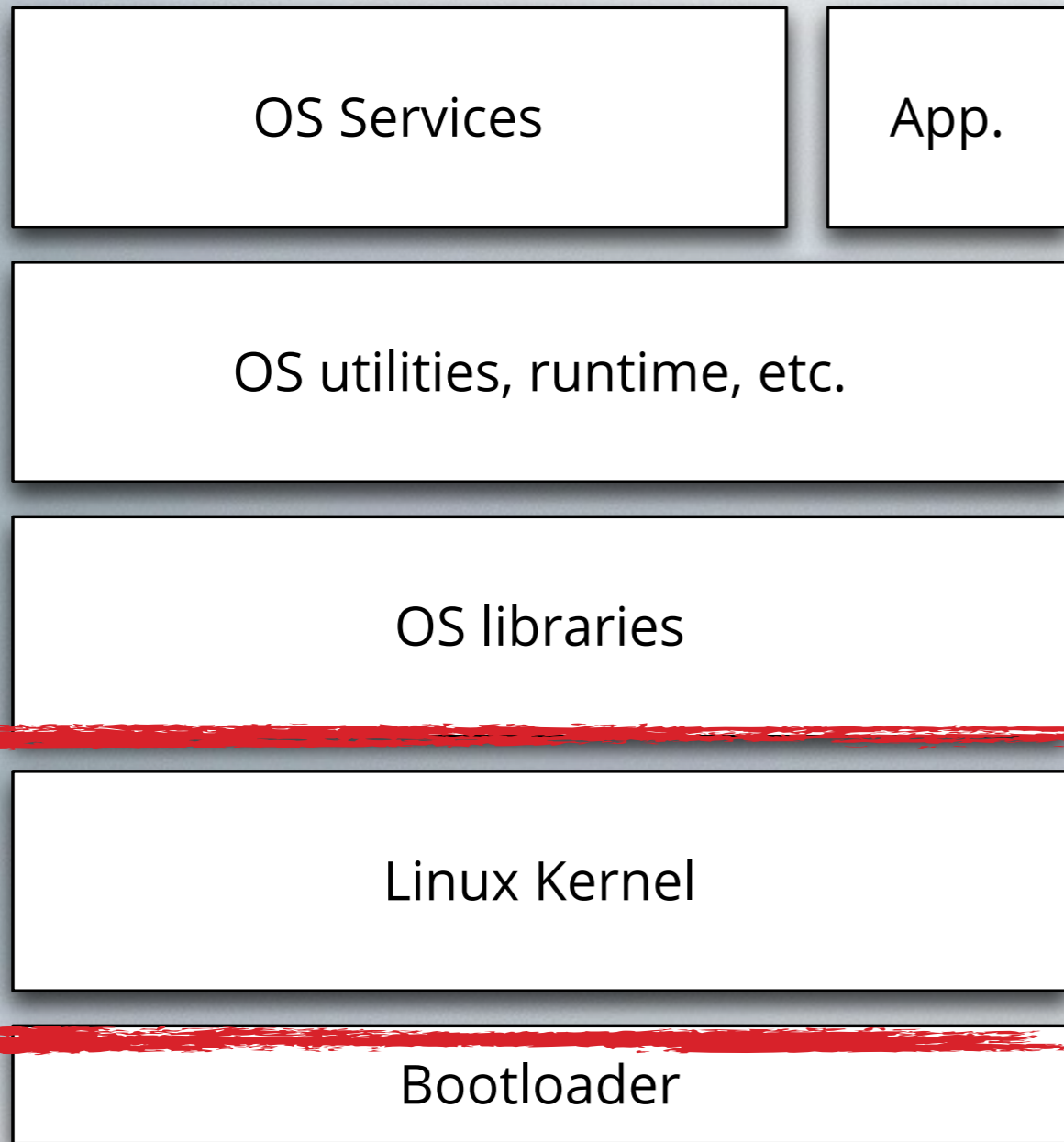
Initialize hardware

Call kernel

Program images







Initialize hardware

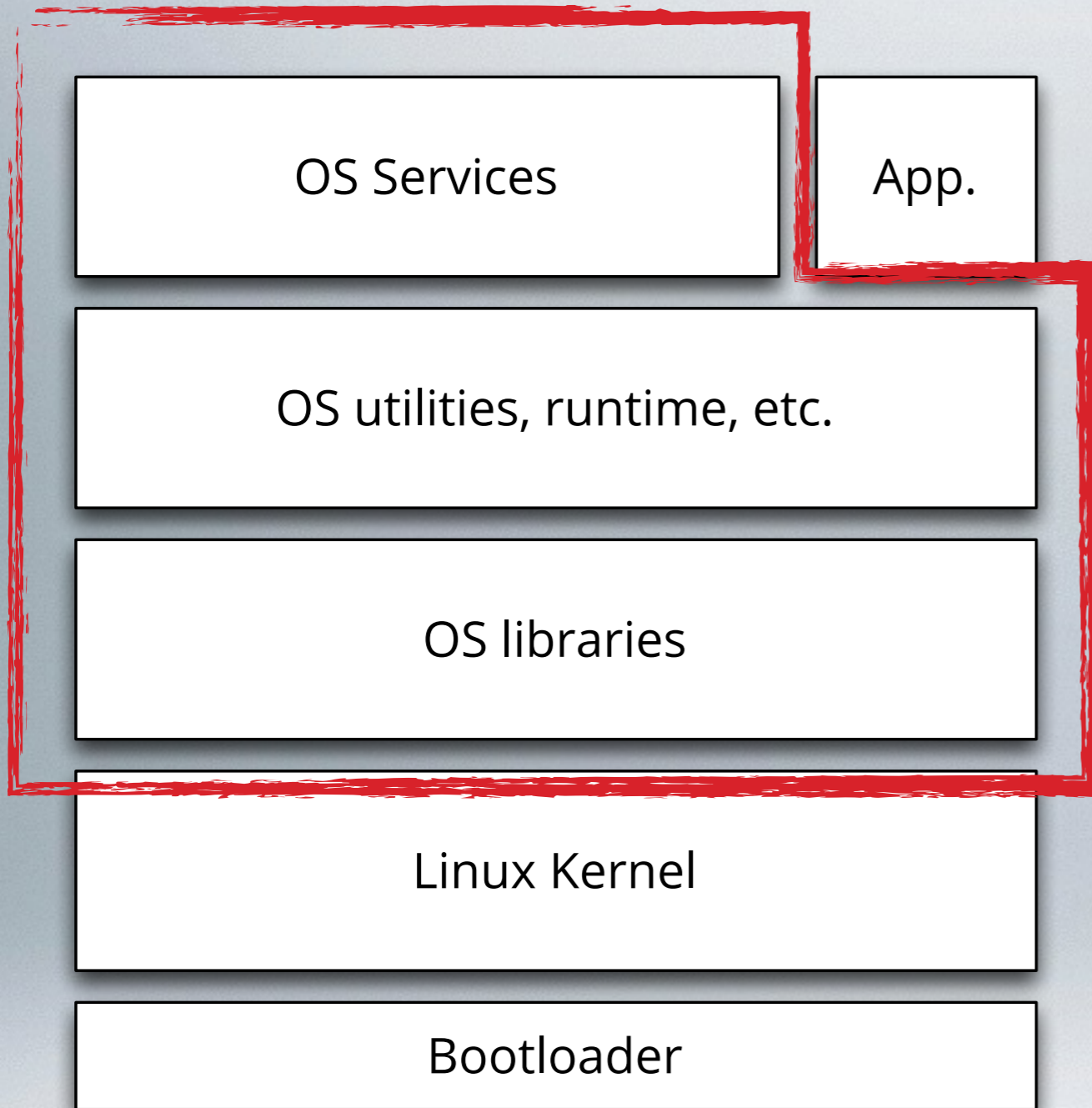
Drivers provide  
interfaces

Manage resources

Scheduling







Programs and  
libraries

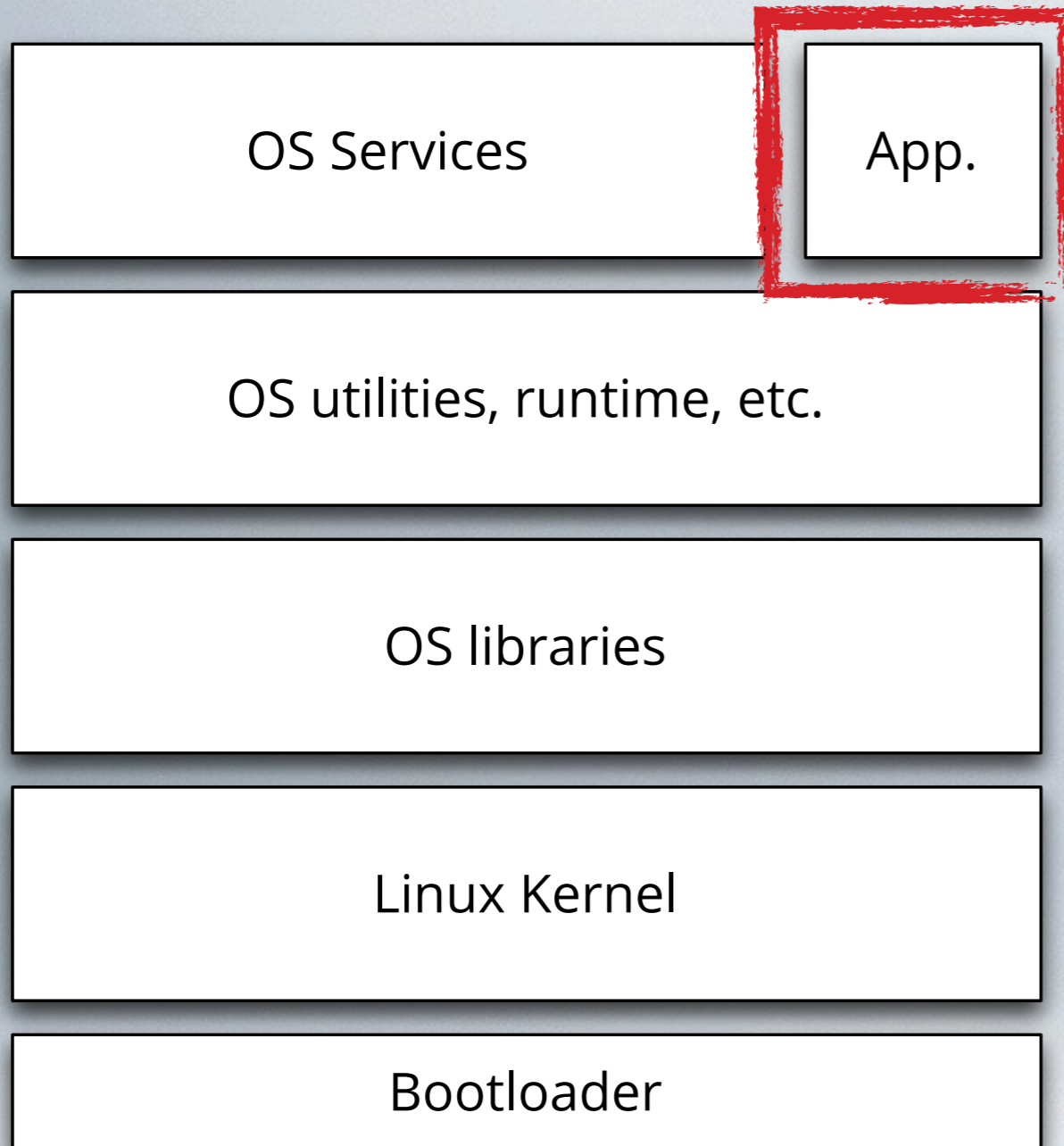
The first program:  
init

System-level  
services

Language  
runtimes







What makes your  
device unique  
GUI components  
backend





# ***Demo***

Power-up to prompt



From where do the pieces come?



Often provided by chip vendor

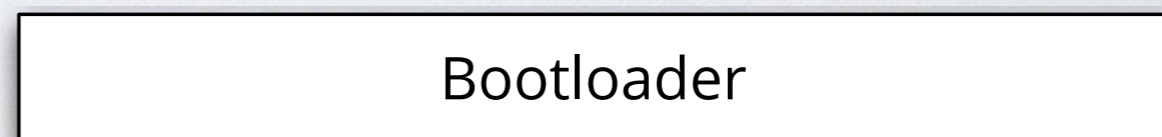
You modify to suit schematic, partitioning

Typical options:

U-Boot

uMon

custom



Bootloader

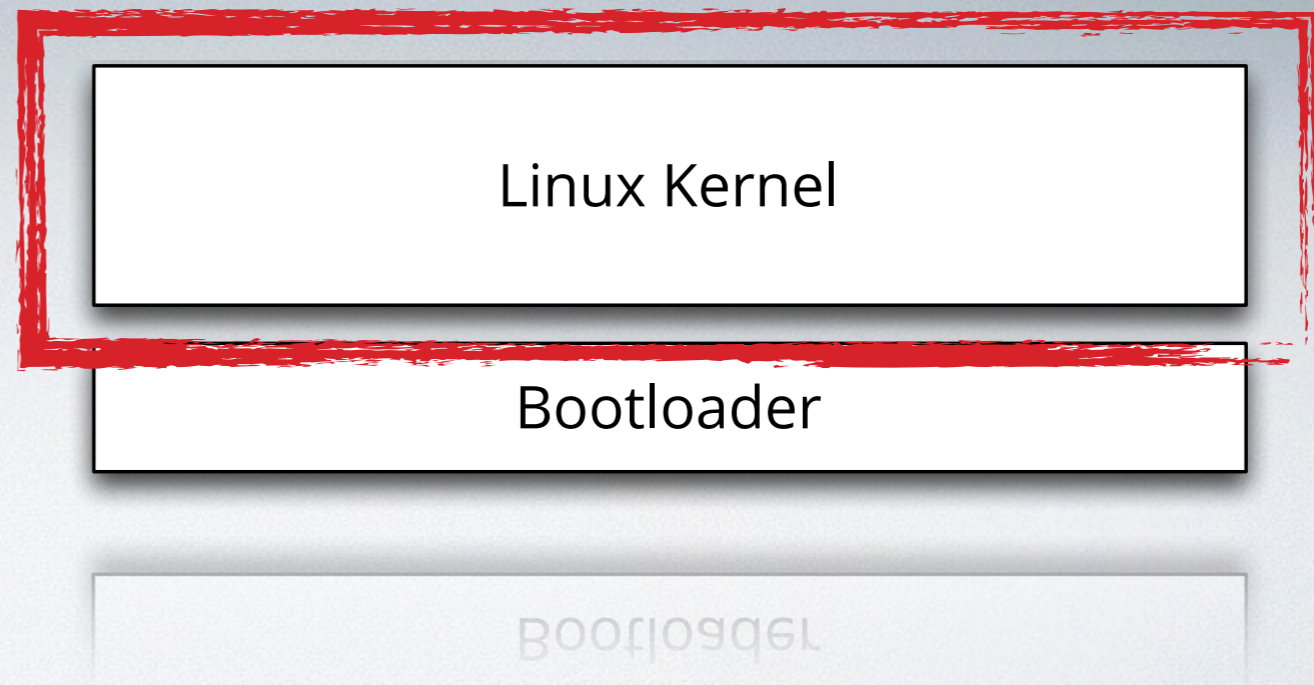


Often provided by chip vendor

You add drivers

You declare device connections and power supply hierarchy

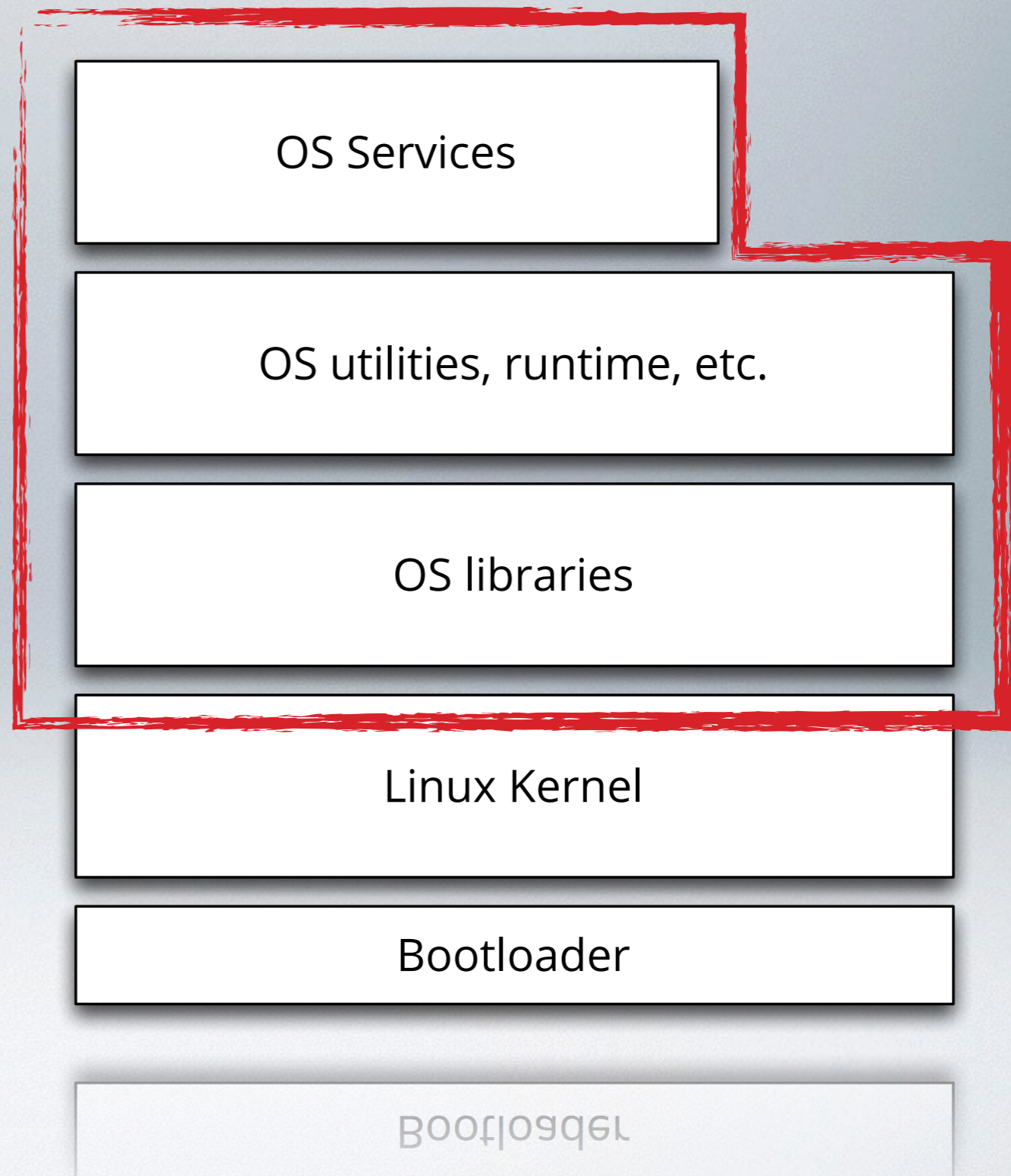
See “How Linux is Built” video from the Linux Foundation





The chip vendor will offer something...

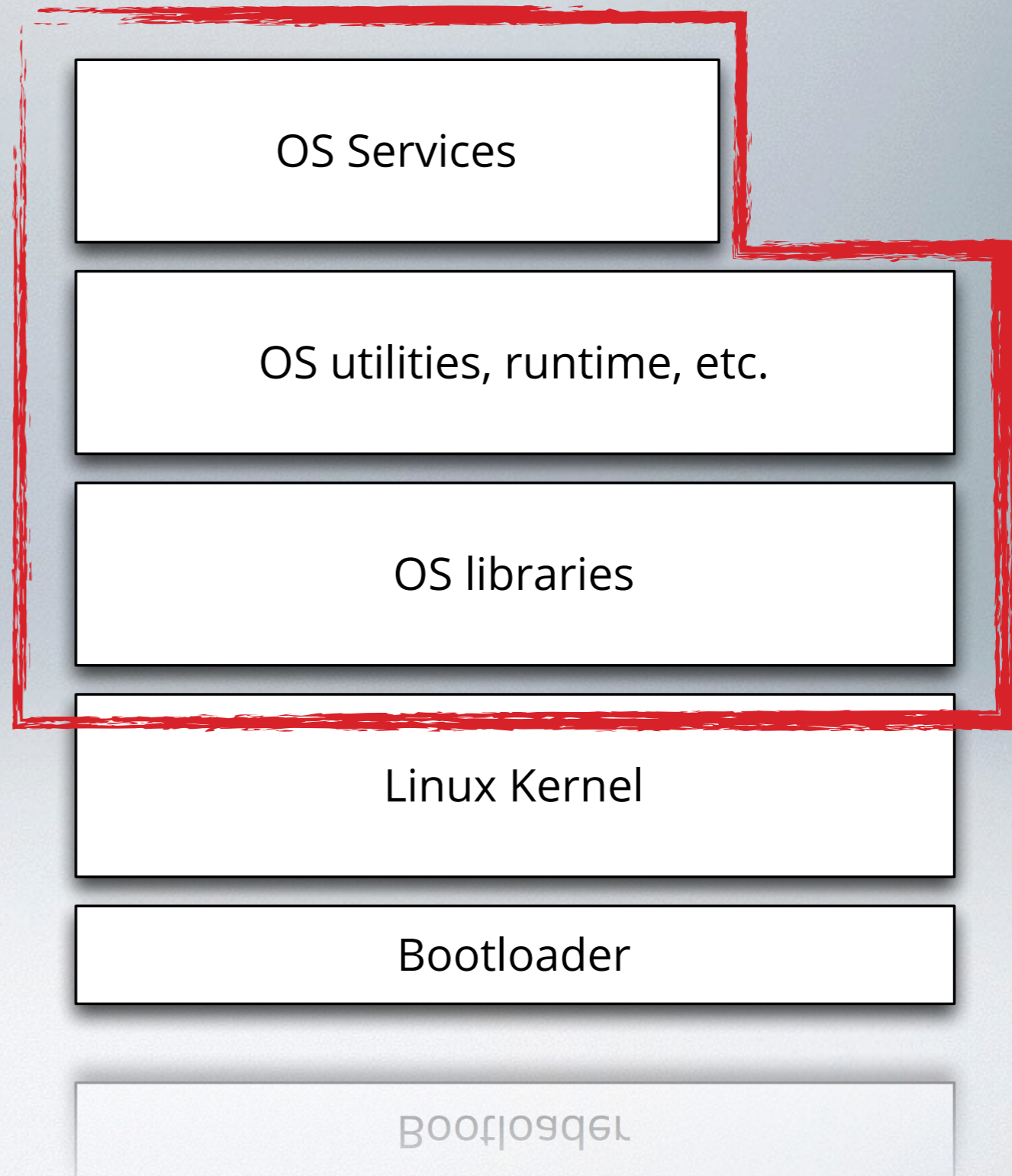
BEWARE





Heavily influences  
development  
mechanics.

Buildroot  
Open Embedded  
Yocto  
Sitara SDK  
Pragmatux  
Android?

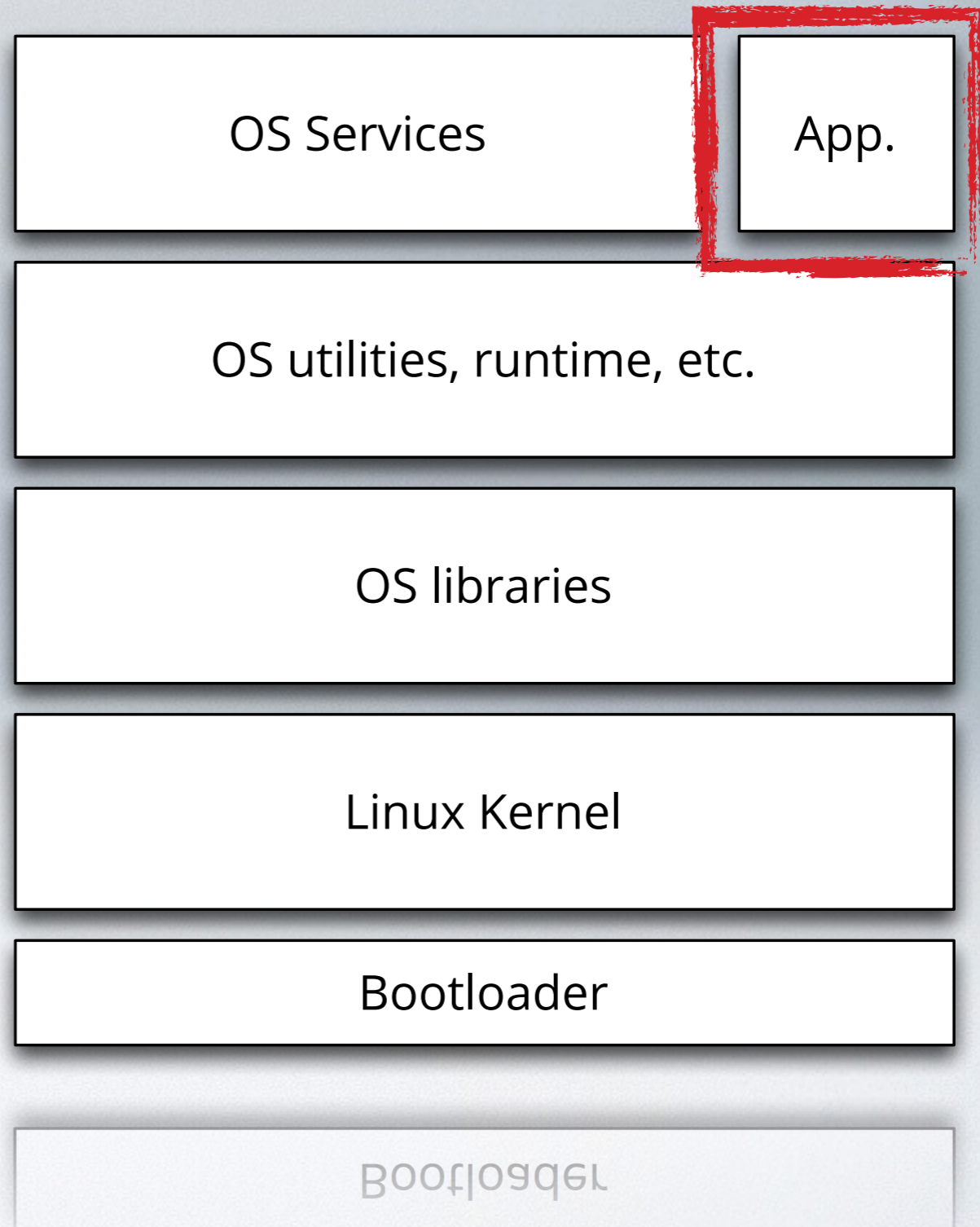




Graphical toolkit

Application  
framework

Particular libraries





# Observations on Linux projects



# Work in Parallel

- 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



# Think Beyond the Initial Images

Development workstations

Tracking OS upgrades

Deploying releases to field



# Key Takeaway

A large part of a Linux project is the platform

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



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