AN INNOVATIVE WAY TO PROVIDE VALUE-ADD SERVICE AT PRE-BOOT STAGE

Agenda

- Why do we need pre-boot service?
- Existing solutions
- The innovative way
- How it works
- Status and roadmap
- Q & A

Why do we need pre-boot services?

Value-add services during pre-boot stage is trending, especially in IoT and embedded world. E.g. :

Face recognition

Security

Manageability

Current pain points

The more we want the pre-boot services, the more pain we will get

Live transition to target OS after the pre-boot service, no reboot required

C[illegible]oftware system:

AI, multi-task, etc.

High performance peripherals:

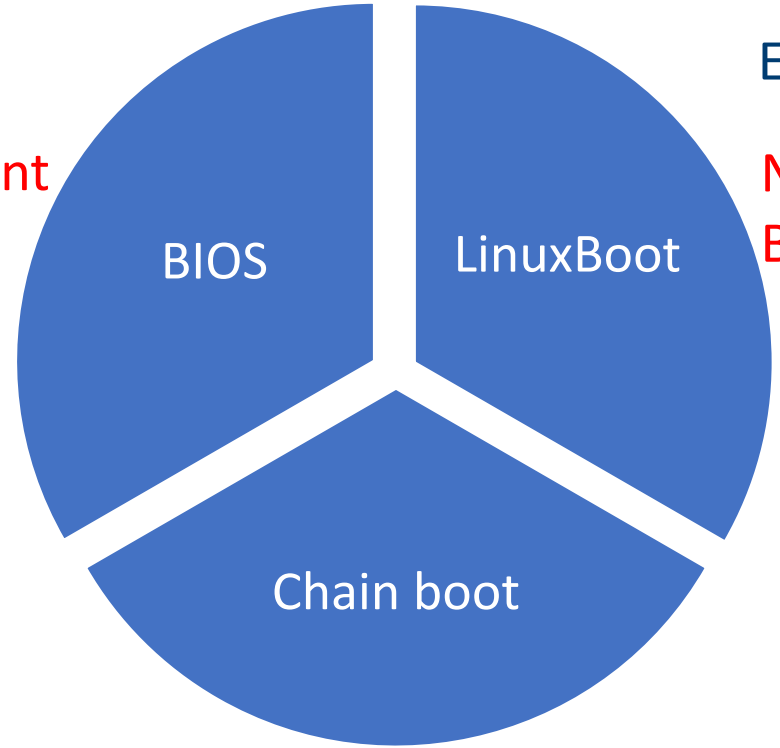
Network card, graphic card, camera, etc

Existing Solutions

Secure

Hard for development

Low performance



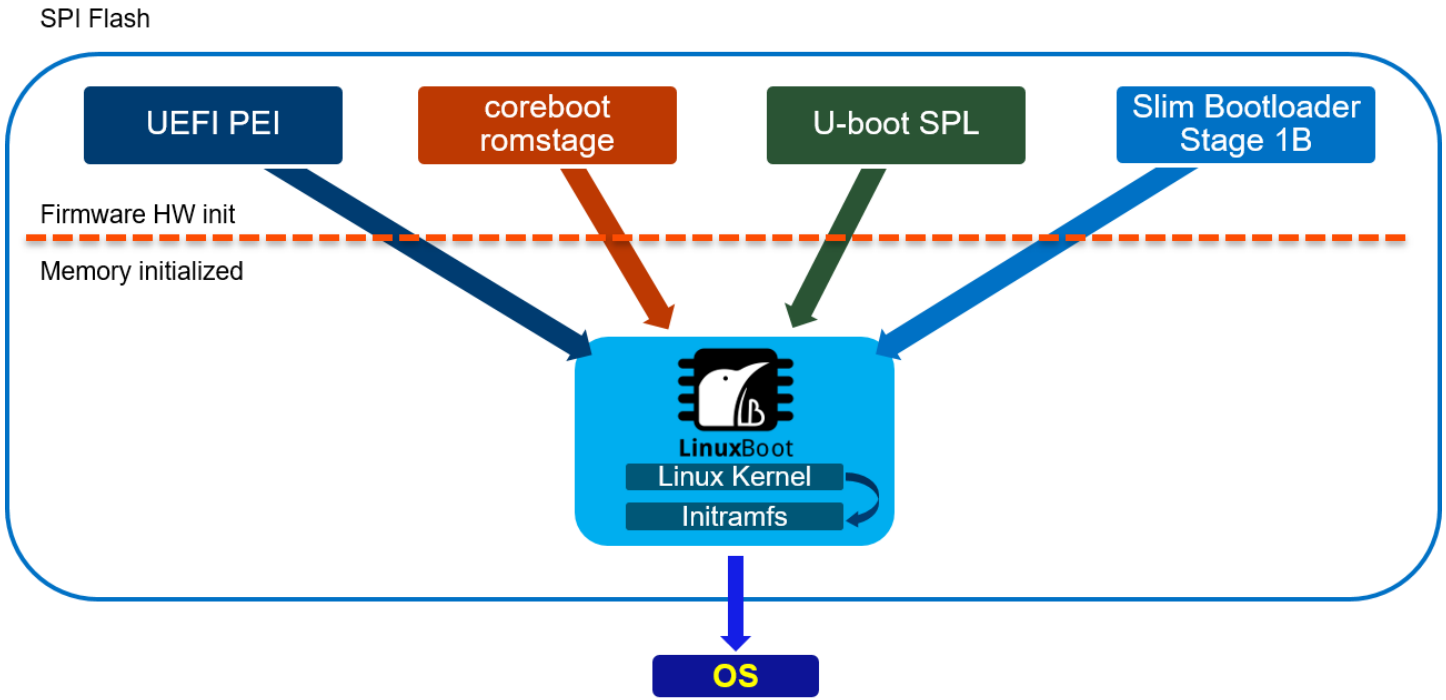
Easy customization

Need to customized BIOS

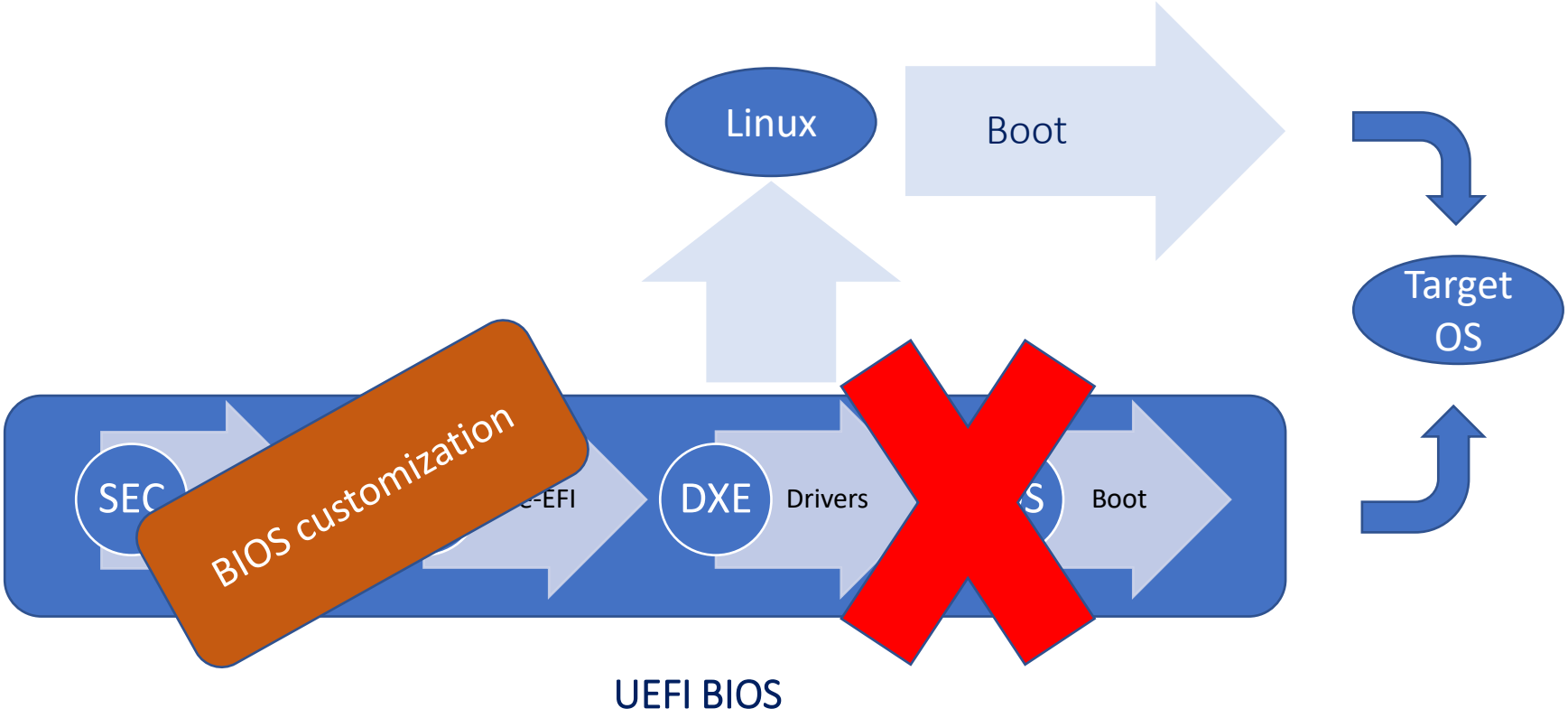
Good performance

Need to reboot system

LinuxBoot


SPI Flash
UEFI PEI
coreboot romstage
U-boot SPL
Slim Bootloader Stage 1B
Firmware HW init
Memory initialized
LinuxBoot
Linux Kernel
Initramfs
OS

Workflow


Linux
Boot
Target OS
SEC
BIOS customization
DXE
Drivers
Boot
UEFI BIOS

In summary

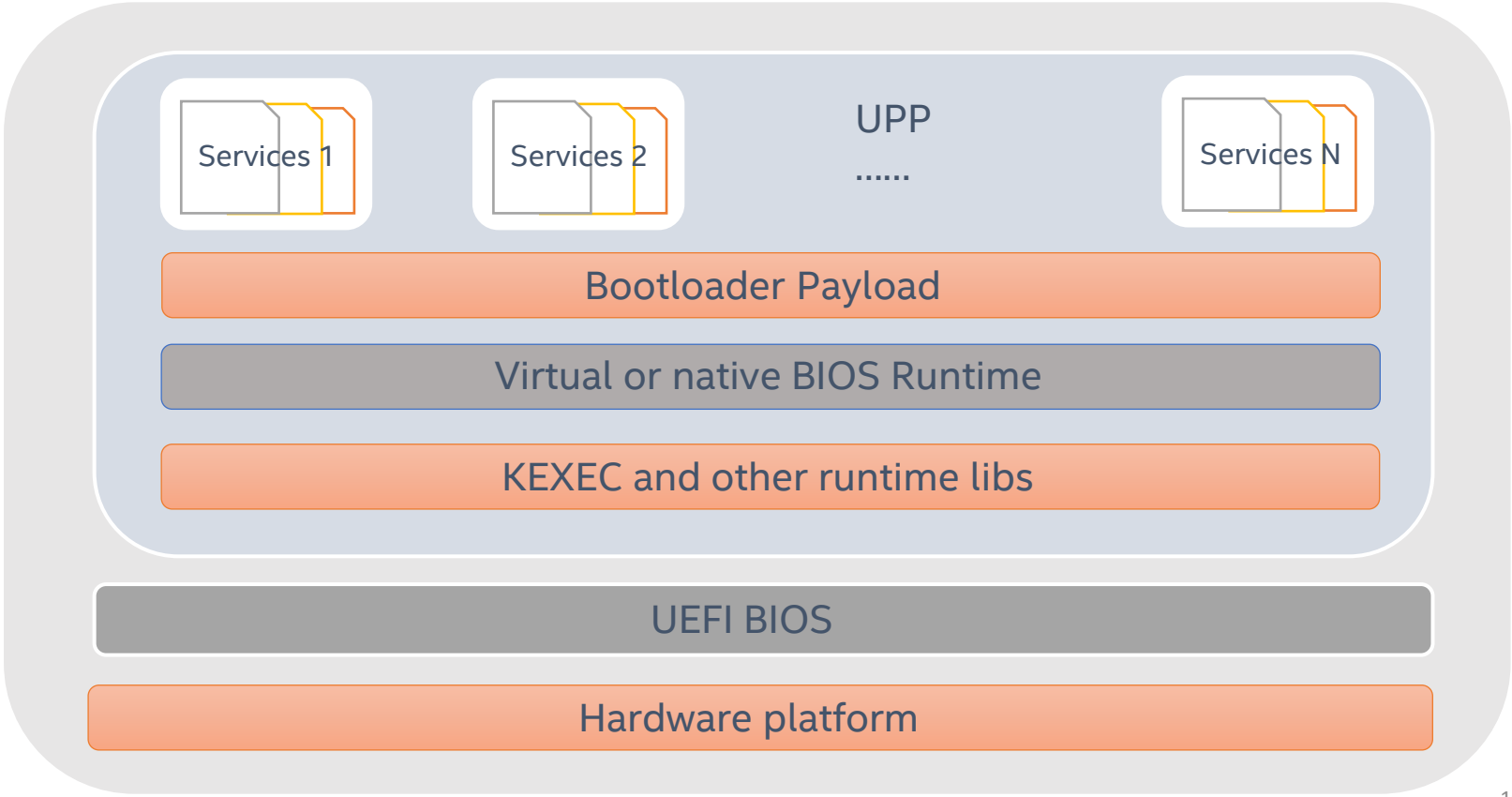

ARCHITECTURE CONSTRAINT
BIG DEVELOPMENT EFFORT
SINGLE THREADED
REBUILD BIOS
LOW PERFORMANCE
REBOOT SYSTEM

Re-think it in an innovative way…

How to：

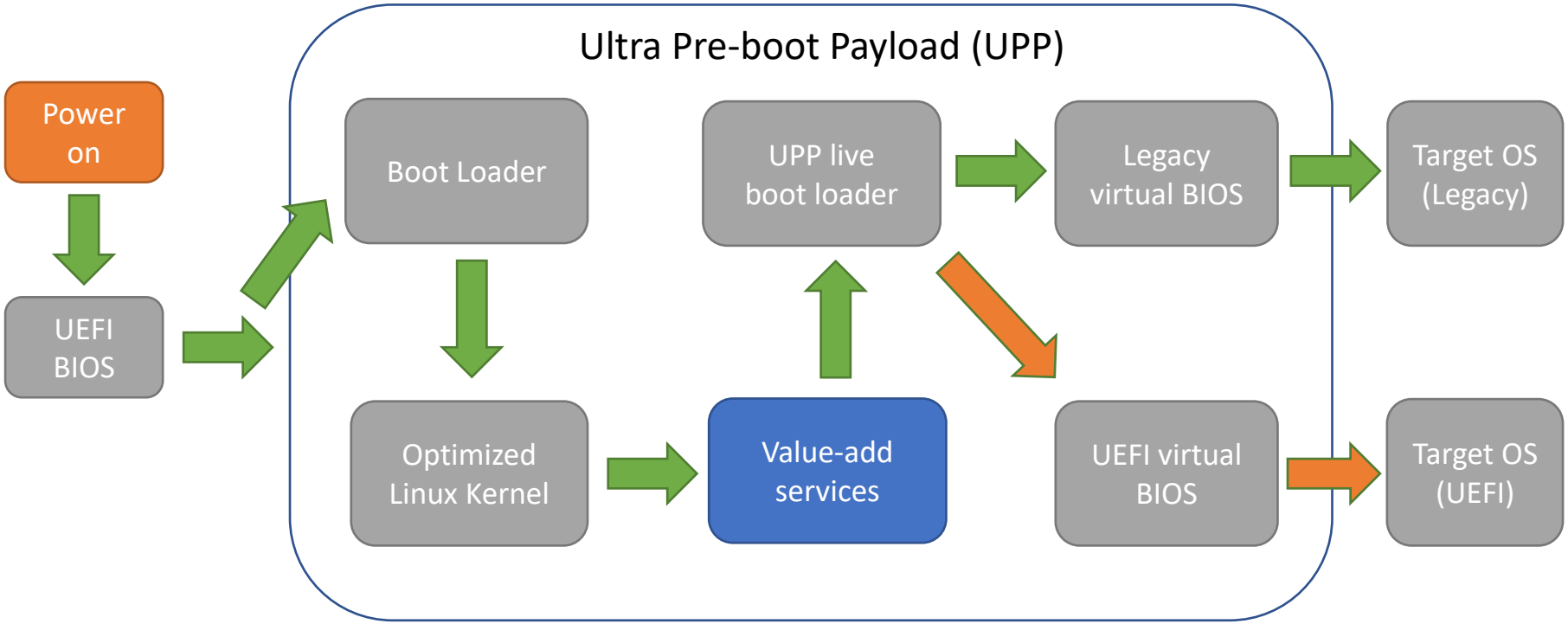
- Provide a generic and scalable running environment
  - ✓ Support multi-threading complex tasks and high-performance drivers
  - ✓ Easy to adapt to latest platforms
  - ✓ Cloud service model
- Remove the redundant system reboot just as chain boot does today
- Support all kinds of target OS and minimize the development effort
- Achieve high scalability & manageability
  - ✓ Leverage onboard BIOS to solve the platform compatibility issue

Our solution: Ultra Pre-boot Payload (UPP)

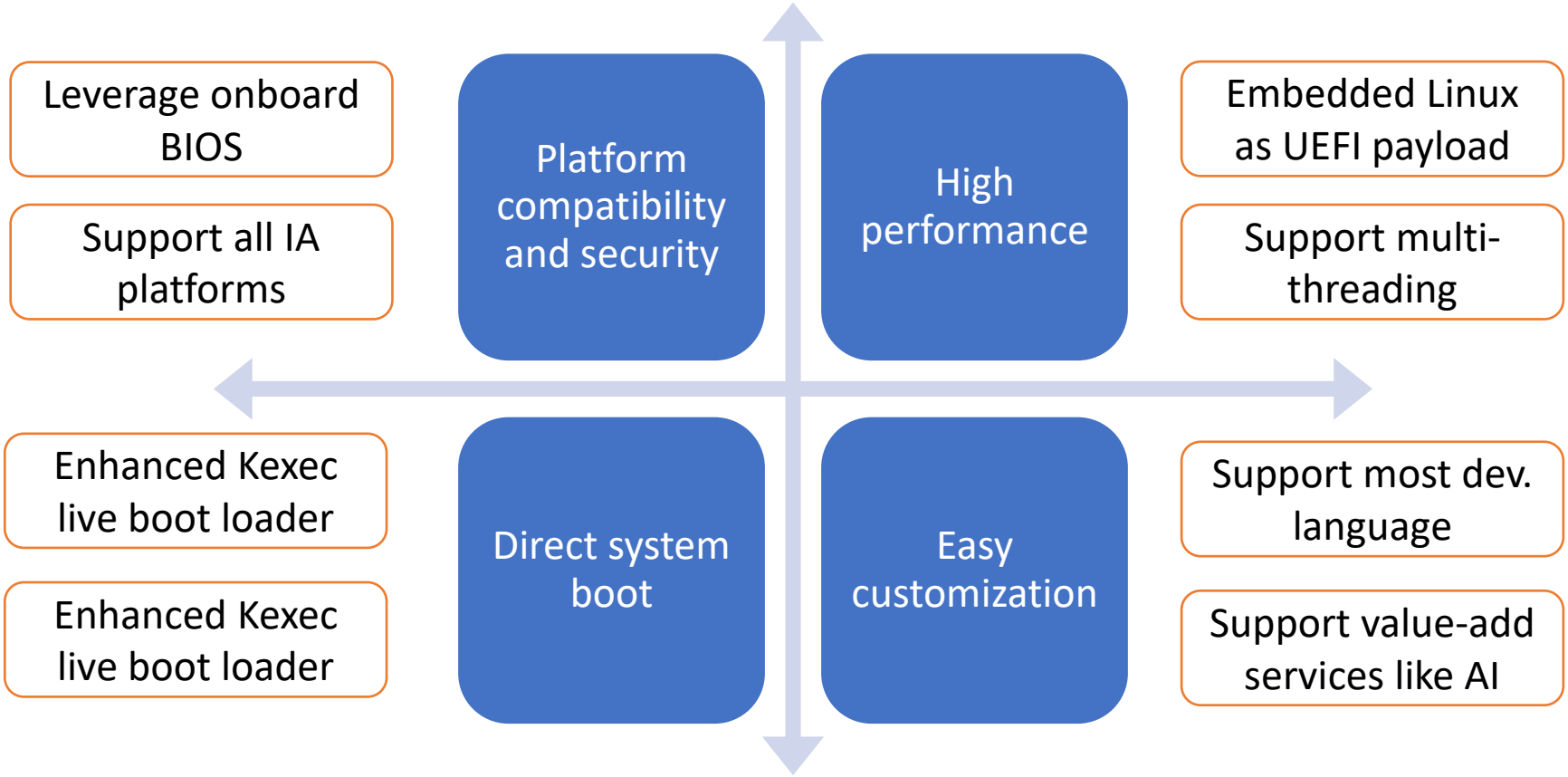


Platform compatibility

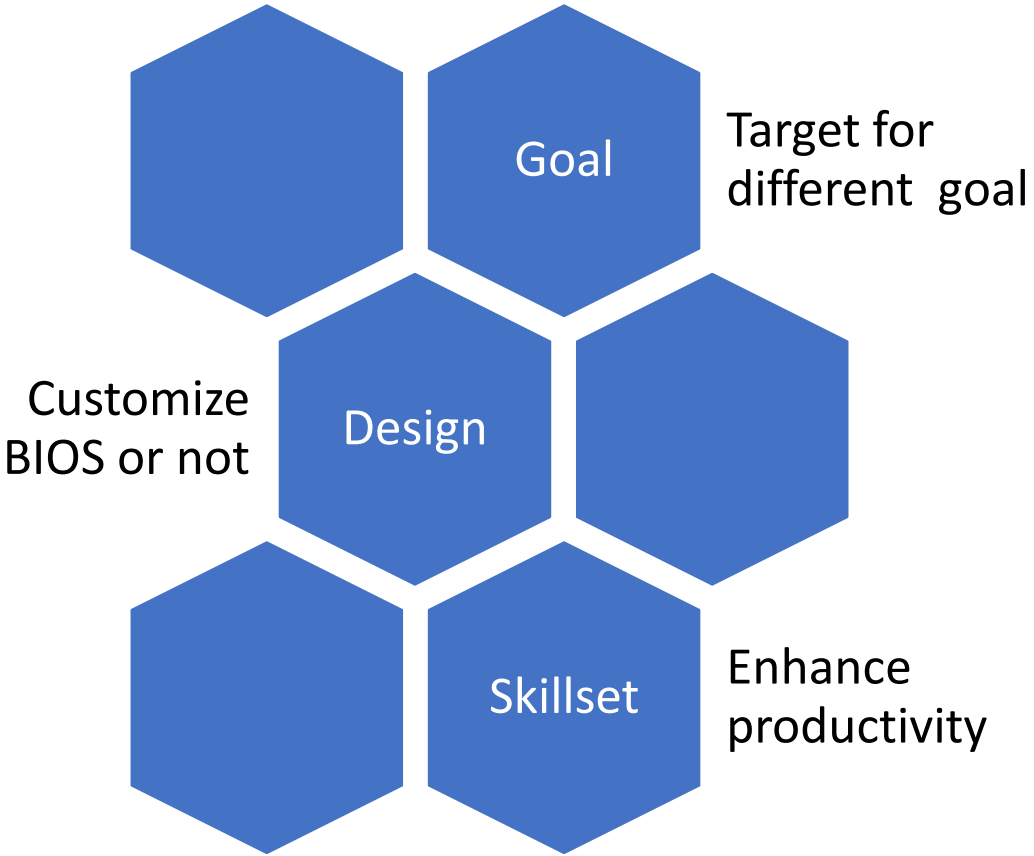
A little deep dive



Key challenges and implementation



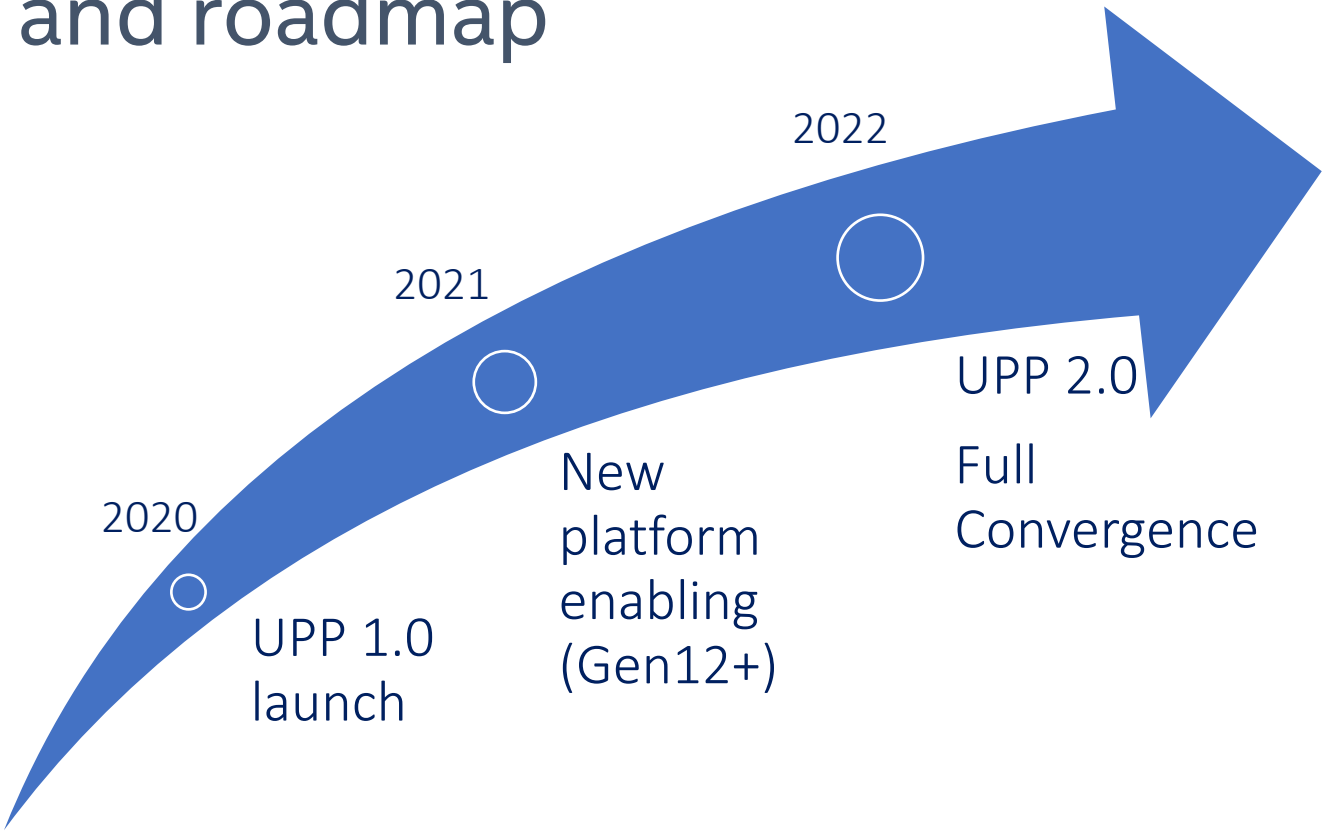
Compare between UPP and LinuxBoot



In summary


SUPPORT ALL KINDS OF OS
IA STICKINESS
DIRECT BOOT
EASY TO ADD SERVICES
HIGH PERFORMANCE

Status and roadmap



Q & A

Thank you !