



Warm Welcome

to our inovex Meetup!



inovex is an IT project center driven by innovation and quality, focusing its services on 'Digital Transformation'.

*Scan here for the
Meetup Group
in Karlsruhe*





AGENDA

- 18:00 Doors Open
- 18:30 **Yocto Vendor BSPs**
Anna-Lena Marx, inovex
- 19:15 Break - Pizza, Beer & Discussions
- 19:45 **What keeps you from updating
your Yocto version?**
Vyacheslav Yurkov, OSSKeepers
- 20:30 Time for more Discussions & Socializing :)



Yocto Vendor BSPs

The good, the bad, the ugly

INNOVATE. INTEGRATE. EXCEED.



inovex



Hello,

I'm Anna-Lena Marx

Tech Lead Embedded Linux, Karlsruhe (Germany)

- with inovex since 2015
- has a Master's degree in Embedded Systems
- ~~studies~~ studied Electrical Engineering as a hobby
- Yocto user since ~2017? Pre-LTS times!

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 [@Allegra42](#)

[#embeddedsystems](#) [#yocto](#) [#linux](#) [#kernel](#) [#zephyr](#) [#aosp](#)

The Promise

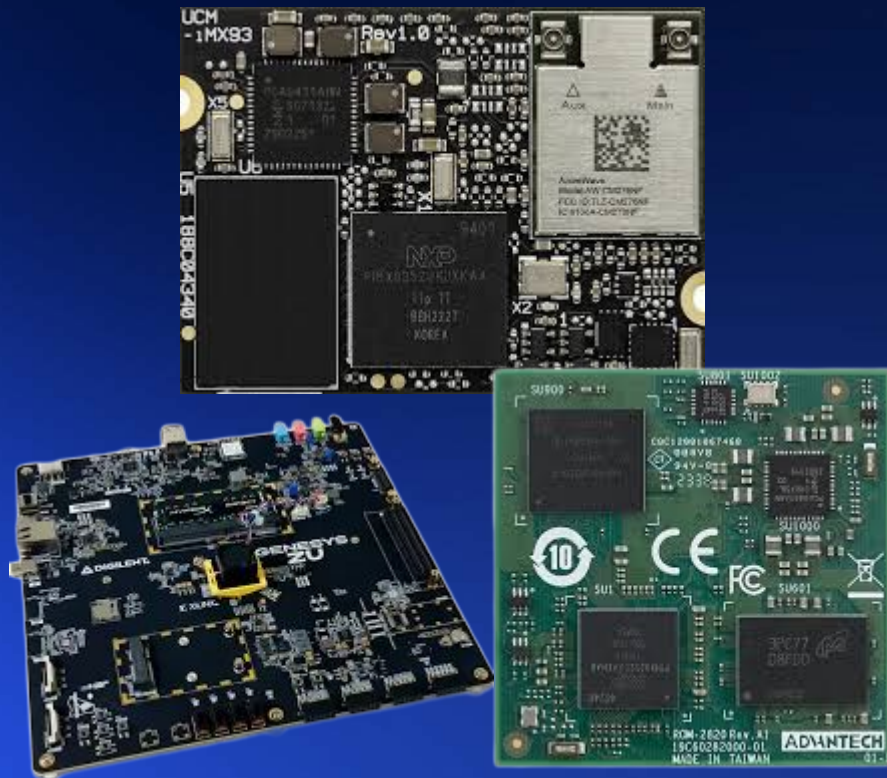
Board Support Packages

You get a new board from your hardware vendor.

It boots with the vendor BSP.

The demos run.

It feels like you're 90% done.



The Reality...

some years (or months) later



The Reality...

some years (or months) later

- Lots of CVE's to fix
... for components you don't remember why they are even part of the system
- The Yocto release just went out-of-support
... and was your BSP even based on a LTS release?
- You notice your vendor BSP utilizes a 3 years old kernel fork
... unmaintained and with critical binary blobs for the cool and shiny board features

And have you thought about updates and regulatory requirements at all?

Let's step back

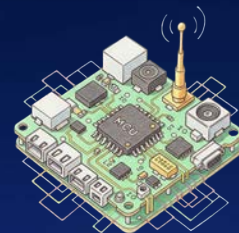
Our Goals are not Aligned

Board/Silicon Vendor Focus and Goals



- Showcase **all** product features
 - CPU
 - special co-processors
 - unique selling points
- Provide an easy starting point for customers
- Provide several BSP variants for the whole product portfolio
 - often several BSP variants needed
e.g Linux, Android, QNX, ...
 - must be easy and manageable for the vendor!
- **Sell silicon**
... and move to the next product

Integrator/Product Manufacturer Goals



- Build and ship one **product**
 - stable, secure & maintainable
 - minimal software stack
→ reduced surface for attacks and CVEs
 - low maintenance effort needed
 - expected lifespan: 5 - 20 years
- Fulfil target market regulations
 - e.g. Cyber Resilience Act, IEC 62304 (Medical Devices), ...
 - Security Updates
 - ...
- Sell **this product**
... and support it over its lifetime

The good, the bad, the ugly

Let's have a look on some real world examples

Quick reminder

The BSP quality is one aspect, but there are more factors to decide for a hardware platform, like

- hardware quality & support
- extra functionality, e.g. GPU or NPU (maybe with closed source drivers provided as binary blobs)
- general support
- pricing
- availability
- ...

No vendor blaming!

You are not obligated to use a vendor's BSP!

Let's just collect some points for our BSP wishlist!

IOT-GATE-iMX8 and SBC-IOT-iMX8 NXP iMX8M-Mini Yocto Linux

This page contains links to information about Yocto Linux distribution for the CompuLab IOT-GATE-iMX8 Internet of Things Gateway and SBC-IOT-iMX8 Single Board Computer.

The Yocto Project is an open-source collaboration focused on embedded Linux development.

Getting Started	Development	How-to Guide
Evaluation - Quick Start Guide - IOT-GATE-iMX8 Documents and Resources - SBC-IOT-iMX8 Documents and Resources Support - Getting Technical Support - Engineering Support Portal Useful Links - IOT-GATE-iMX8 Product Page - SBC-IOT-iMX8 Product Page - Accessories Guide	Building Yocto and U-Boot - Setting Up Yocto Build Environment - Building IOT-GATE-iMX8 / SBC-IOT-iMX8 Yocto Linux images - Installing Yocto on IOT-GATE-iMX8 / SBC-IOT-iMX8 - Boot Firmware Recovery - Common Yocto Build Errors Customizing O/S and Drivers - Introduction to Yocto development - Making Changes to Yocto Meta-Layers - Introduction to Device Trees - Enabling OTA update enabled images with Mender - Enabling secure boot (HAB) in Yocto	Using Interfaces - Serial Console - Login - Cellular Modem - GPS - WiFi Application Note - Production Image - Optimizing et

Releases based on Yocto LTS branches

Release Notes
11-May-2025, IOT-GATE-iMX8 / SBC-IOT-iMX8 Yocto Linux 4.1 Yocto 5.0 (Scarthgap) for IOT-GATE-iMX8 / SBC-IOT-iMX8 (release notes) - Kernel 6.6.52
25-Dec-2024, IOT-GATE-iMX8 / SBC-IOT-iMX8 Yocto Linux 4.0 Yocto 5.0 (Scarthgap) for IOT-GATE-iMX8 / SBC-IOT-iMX8 (release notes) - Kernel 6.6.3 - U-Boot 2023.04
15-Jun-2023, IOT-GATE-iMX8 / SBC-IOT-iMX8 Yocto Linux 3.2.1 Yocto 4.0 (Kirkstone) for IOT-GATE-iMX8 / SBC-IOT-iMX8 (release notes)

LTS kernel versions

Forked kernel or mainline Yocto/Linux with patches?

Very long cycles between BSP releases

No Yocto-like branch
naming following the
releases!
Harder to keep track!

Quick Start Guide

Supported CompuLab machines:

- [UCM-IMX8M-M1](#)
- [MCM-IMX8M](#)
- [IOT-GATE-IMX8M](#)

Setup Yocto

- Install the

```
mkdir ~/bin
curl http://commondatastorage.googleapis.com/git-repo-downloads/repo > ~/bin/repo
chmod a+x ~/bin/repo
PATH=${PATH}:~/bin
```

Set environmet variables:

The repo tool comes in!
NXP uses it to manage
Yocto layers.

Prepare NXP BSP

```
mkdir complab-freescale-bsp && cd complab-freescale-bsp  
repo init -u https://github.com/nxp-imx/imx-manifest -b imx-linux-scarthgap -m imx-6.6.23-2.0.0.xml
```



Download CompuLab meta layer

```
mkdir -p .repo/local_manifests  
wget --directory-prefix .repo/local_manifests https://raw.githubusercontent.com/complab-yokneam/meta-bsp-imx8mm/${CL
```



NXP and board vendor repo
manifest
→ but what layers are utilized?

Get entire BSP tree

```
repo sync
```



imx-manifest / imx-6.6.23-2.0.0.xml

 junzhuimx imx-6.6.23-2.0.0.xml: Lock demo layer revision with release tag

Code Blame 44 lines (35 loc) · 3.34 KB

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <manifest>
3
4      <default revision="scarthgap" sync-j="4"/>
5
6      <remote name="yp"          fetch="https://git.yoctoproject.org"/>
7      <remote name="oe"          fetch="https://github.com/openembedded"/>
8      <remote name="kraj"         fetch="https://github.com/kraj"/>
9
10     <remote name="community"    fetch="https://github.com/Freescale"/>
11     <remote name="ossystems"    fetch="https://github.com/OSSystems"/>
12     <remote name="qt"           fetch="https://github.com/YoeDistro"/>
13     <remote name="timesys"      fetch="https://github.com/TimesysGit"/>
14
15     <remote name="imx"           fetch="https://github.com/nxp-imx"/>
16     <remote name="imx-support"   fetch="https://github.com/nxp-imx-support"/>
17
18     <project name="poky" remote="yp" path="sources/poky" revision="02eacd385eca7aa9cf25aaaa61427aa9c126e0bc" upstream="scarthgap"/>
19     <project name="meta-openembedded" remote="oe" path="sources/meta-openembedded" revision="a72010b414ee3d73888ac9cb4e310e8f05e13aea" upstream="scarthgap"/>
20     <project name="meta-clang" remote="kraj" path="sources/meta-clang" revision="66414c17ae60e489bef9a97031323e92c247f1be1" upstream="scarthgap"/>
21
22     <project name="fsl-community-bsp-base" remote="community" path="sources/base" revision="84df0b1ff416c6739472f7f7eadff04fa90d38f6" upstream="scarthgap">
23         <linkfile dest="README" src="README"/>
24         <linkfile dest="setup-environment" src="setup-environment"/>
25     </project>

```

NXP manifest
→ YoeDistro, Poky, ...
Lots of potentially unneeded layers
for your product!

meta-bsp-imx8mm / scripts / imx_6.6.3_1.0.0-compulab.xml 



kkapranov meta: move to branch rel_imx_6.6.3_1.0.0 ...

Code

Blame

12 lines (9 loc) · 550 Bytes

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <manifest>
3
4  <remote fetch="https://github.com/compulab-yokneam" name="compulab"/>
5
6  <project name="meta-compulab" remote="compulab" revision="honister" path="sources/meta-compulab"/>
7  <project name="meta-compulab-bsp" remote="compulab" revision="honister" path="sources/meta-compulab-bsp"/>
8  <project name="meta-bsp-imx8mm" remote="compulab" revision="rel_imx_6.6.3_1.0.0" path="sources/meta-bsp-imx8mm"/>
9  <linkfile src="tools/compulab-setup-env" dest="compulab-setup-env" />
10 </project>
11
12 </manifest>

```

Oh... we found some more layers!

Thought this is an Scarthgap BSP?

 honister

 17 Branches

 3 Tags

 Code

Switch branches/tags

Branches

Tags

✓ honister

walnascar

scarthgap

master

kirkstone

imx8qx-scfw

experiment

devel-ucm8

devel-rev1.1

devel-imx8qx

default

View all branches

Update license

023b36a · 2 weeks ago

321 Commits

honister	
Add meta-base layer	
recipes-bsp: bitlinux-arm: Remove debug prints	3 months ago
Add meta-connectivity layer	last year
cl-deploy: Change the package_arch to SOCARCH	5 months ago
meta-devtool: yebian: Introduce new FEATURES	3 months ago
scarthgap: Update	last year
meta-graphics: Add compulab-mx95 support	6 months ago
meta-multimedia: alsa: Add compulab-mx91 compulab-...	6 months ago
scarthgap: Update	last year
scarthgap: Update	last year

Honister is default and updated 2 weeks ago?

scarthgap
17 Branches
3 Tags

Code

This branch is up to date with honister.


vraevsky
 meta-utils

023b36a · 2 weeks ago
 321 Commits

meta-add-ons	honister	3 years ago
meta-base	Add meta-base layer	last year
meta-bsp	recipes-bsp: bitlinux-arm: Remove debug prints	3 months ago
meta-connectivity	y layer	last year
meta-desktop	package_arch to SOCARCH	5 months ago
meta-devtool	meta-devtool: yebian: Introduce new FEATURES	3 months ago
meta-gnome	scarthgap: Update	last year
meta-graphics	meta-graphics: Add compulab-mx95 support	6 months ago
meta-multimedia	meta-multimedia: alsa: Add compulab-mx91 compulab-...	6 months ago
meta-net	scarthgap: Update	last year

... and the same as Scarthgap??

lots of potentially
unnneeded sub-layers

Code Blame 30 lines (24 loc) · 1.13 KB

```

1  # We have a conf and classes directory, append to BBPATH
2  BBPATH .= ":${LAYERDIR}"
3
4  # We have a recipes directory containing .bb and .bbappend files, add to BBFILES
5  BBFILES += "${LAYERDIR}/recipes-*//*.bb \
6             ${LAYERDIR}/recipes-*//*.bbappend"
7
8  BBFILE_COLLECTIONS += "compulab-bsp-imx8mm"
9  BBFILE_PATTERN_compulab-bsp-imx8mm := "^${LAYERDIR}/"
10 BBFILE_PRIORITY_compulab-bsp-imx8mm = "9"
11
12 BBMASK += "meta-compulab/recipes-bsp"
13 BBMASK += "meta-compulab/recipes-xfce"
14 BBMASK += "meta-compulab/recipes-kernel"
15 BBMASK += "meta-compulab/recipes-graphics"
16 BBMASK += ".*boundary.*"
17 BBMASK += "meta-compulab-bsp/meta-utils/recipes-utils/keyctl-c"
18 BBMASK += "meta-compulab-bsp/meta-utils/recipes-utils/mbpoll"
19
20 CORE_IMAGE_EXTRA_INSTALL += " kernel-modules kernel linux-compulab-headers kernel-dev firmware-imx-sdma-imx7d"
21 CORE_IMAGE_EXTRA_INSTALL += " packagegroup-tools-bluetooth "
22 CORE_IMAGE_EXTRA_INSTALL += " grub "
23 CORE_IMAGE_EXTRA_INSTALL += " iw "
24 CORE_IMAGE_EXTRA_INSTALL += " e2fsprogs-tune2fs "
25 CORE_IMAGE_EXTRA_INSTALL += " watchdog "
26
27 HOSTTOOLS += " git-lfs "
28 HOSTTOOLS += " bison "
29
30 LAYERSERIES_COMPAT_compulab-bsp-imx8mm = "kirkstone scarthgap"

```

hidden extra installs!



kkapranov meta: Fix connman removing 

Code

Blame

26 lines (21 loc) · 1.19 KB

```

1  LICENSE_FLAGS_ACCEPTED = "commercial"
2  CORE_IMAGE_EXTRA_INSTALL += " cl-uboot cl-deploy cl-stest cl-camera cl-audio "
3  CORE_IMAGE_EXTRA_INSTALL += " memtester htop iotop tmux iperf3 "
4  CORE_IMAGE_EXTRA_INSTALL += " wvdial "
5  CORE_IMAGE_EXTRA_INSTALL += " libubootenv-bin u-boot-compulab-env "
6  CORE_IMAGE_EXTRA_INSTALL += " u-boot-update-script "
7  CORE_IMAGE_EXTRA_INSTALL += " linux-firmware-ax210 firmware-imx-sdma-imx7d "
8
9  CORE_IMAGE_EXTRA_INSTALL:append = " u-boot-script linux-firmware-ax200"
10 CORE_IMAGE_EXTRA_INSTALL:append = " networkmanager networkmanager-nmcli wireless-tools "
11 CORE_IMAGE_INSTALL:remove = " connman-client connman-tools "
12 RDEPENDS:connman-client:remove = "connman"
13 RDEPENDS:connman-tools:remove = "connman"
14
15 CORE_IMAGE_EXTRA_INSTALL:append = " libgpiod-tools eeprom-util bluez5 gpsd modemmanager "
16 CORE_IMAGE_EXTRA_INSTALL:append = " gps-utils can-utils minicom ntp socat "
17 CORE_IMAGE_EXTRA_INSTALL:append = " wpa-supPLICANT pulseaudio pulseaudio-server"
18
19 EXTRA_IMAGE_FEATURES:append:iot-gate-imx8 = " ssh-server-openssh "
20 IMAGE_BOOT_FILES:append = " boot.update.scr "
21
22 HOSTTOOLS += " git-lfs"
23 PREFERRED_RPROVIDER:u-boot-fw-utils = "u-boot-fw-utils"
24
25 INHERIT += " rm_work "
26 RM_WORK_EXCLUDE += "

```

hidden extra installs!



kkapranov meta:linux: Upgrade to kernel 6.6.52

Code

Blame

4 Lines (4 loc) · 180 Bytes

```
1 SRCBRANCH = "linux-compulab_v6.6.52"
2 SRC_URI = "git://github.com/compulab-yokneam/linux-compulab;protocol=https;branch=${SRCBRANCH}"
3 SRCREV = "${AUTOREV}"
4 LINUX_VERSION = "6.6.52"
```

The Linux Kernel Archives



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Protocol	Location
HTTP	https://www.kernel.org/pub/
GIT	https://git.kernel.org/
RSYNC	https://rsync.kernel.org/pub/

Latest Release

6.17.7

mainline:	6.18-rc4	2025-11-02	[tarball]	[patch]	[inc. patch]	[view diff]	[browse]
stable:	6.17.7	2025-11-02	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
stable:	6.16.12 [EOL]	2025-10-12	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	6.12.57	2025-11-02	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	6.6.116	2025-11-02	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	6.1.158	2025-10-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	5.15.196	2025-10-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	5.10.246	2025-10-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
longterm:	5.4.301	2025-10-29	[tarball]	[pgp]	[patch]	[inc. patch]	[view diff] [browse] [changelog]
linux-next:	next-20251103	2025-11-03					[browse]

Forked kernel!
Actively developed, but no security patches applied!

Current LTS Version
6.6.116

Another example

kas-dhsom / **dh-imx8mp-dhcom-pdk3.yml** 

 **Marek Vasut** Update description compatibility version 

Code Blame 6 lines (5 loc) · 109 Bytes

```

1  header:
2    version: 14
3    includes:
4      - include/common-meta-dhsom-imx-bsp.yml
5
6  machine: dh-imx8mp-dhcom-pdk3

```

Standard tool
→ KAS for convenience

kas-dhsom / include / common-meta-dhsom-imx-bsp.yml

Marek Vasut

Code

Caution!
When adding additional features like OP-TEE, TF, A or proprietary binary blobs, the list will extend!

```
1
2
3
4   - include/common-settings.yml
5
6   distro: nodistro
7
8   target:
9     - core-image-base
10
11  repos:
12    poky:
13      url: https://git.yoctoproject.org/poky
14      layers:
15        meta:
16
17    meta-mainline-common:
18      url: https://source.denx.de/denx/meta-mainline-common.git
19      branch: main
20
21    meta-dhsom-imx-bsp:
22      url: https://github.com/dh-electronics/meta-dhsom-imx-bsp.git
23      branch: main
```

Minimal layer dependencies

ONE clear BSP layer!

kas-dhsom / include / common-settings.yml

Marek Vasut Generate SPDX SBoM list

Code

Blame

24 Lines (19 loc) · 935

Sane and minimal default configuration

```
1   header:
2     version: 14
3
4   bblayers_conf_header:
5     standard: |
6       POKY_BBLAYERS_CONF_VERSION = "2"
7       BBPATH = "${TOPDIR}"
8       BBFILES ?= ""
9
10  local_conf_header:
11    standard: |
12      BB_HASHSERVE = "auto"
13      BB_SIGNATURE_HANDLER = "OEEquivHash"
14
15  buildinfo: |
16    INHERIT += " image-buildinfo"
17    IMAGE_BUILDINFO_VARS:append = " ARM_INSTRUCTION_SET BB_VERSION BUILD_
18
19  cve-check: |
20    INHERIT += "cve-check"
21    include conf/distro/include/cve-extra-exclusions.inc
22
23  spdx-list: |
24    INHERIT += "create-spdx"
```

meta-dhsom-imx-bsp

Public

 Pull requests  Actions  Projects  Security  Insights

 main 

 6 Branches  0 Tags

 Go to file

 Marek Vasut	cypress-firmware-bcm43xx-fmac-fw: Drop i.MX8MP DHSOM extras	
 conf	machine: Switch to ifx-firmware-bcm43xx-fmac-fw	2 months ago
 recipes-bsp	machine: u-boot: Update to U-Boot 2025.01	8 months ago
 recipes-core/packagegroups	lttng: Drop lttng-modules on i.MX8MP DHSOM	3 years ago
 recipes-graphics	mesa: Enable Teflon tflite delegate on DH i.MX8M Plus D...	7 months ago
 recipes-kernel	cypress-firmware-bcm43xx-fmac-fw: Drop i.MX8MP DHS...	2 months ago
 recipes-multimedia/gstreamer	gstreamer1.0-plugins-bad: Enable support for stateless ...	3 years ago
 scripts	scripts: Add manufacturing SPI NOR image generation s...	last year
 .gitignore	layer: Update .gitignore	last year
 COPYING	layer: Add COPYING file	last year
 README.md	README: Document support for DH electronics i.MX8M ...	last year

Focus on essential components to run the board with its features
→no demo applications!



Marek Vasut machine: Switch DH i.MX6ULL DHSOM based systems to Linux 6.6.y

Code

Blame

29 lines (24 loc) · 1.19 KB

```

1  FILESEXTRAPATHS:prepend := "${THISDIR}/${PN}:"
2
3  KBRANCH:dh-imx-dhsom ?= "linux-6.6.y"
4  KMACHINE:dh-imx6-dhsom ?= "dh-imx6-dhsom"
5  KMACHINE:dh-imx6ull-dhsom ?= "dh-imx6ull-dhsom"
6  KMACHINE:dh-imx8mp-dhsom ?= "dh-imx8mp-dhsom"
7  COMPATIBLE_MACHINE:dh-imx6-dhsom = "(dh-imx6-dhsom)"
8  COMPATIBLE_MACHINE:dh-imx6ull-dhsom = "(dh-imx6ull-dhsom)"
9  COMPATIBLE_MACHINE:dh-imx8mp-dhsom = "(dh-imx8mp-dhsom)"
10
11  DEPENDS:append:dh-imx-dhsom = " lzop-native "
12
13  SRC_URI:append:dh-imx6-dhsom = " \
14      file://${BPV}/dh-imx6-dhsom;type=kmeta;destsuffix=${BPV}/dh-imx6-dhsom \
15      file://common/dh-imx6-dhsom;type=kmeta;destsuffix=common/dh-imx6-dhsom \
16      "
17  KERNEL_FEATURES:dh-imx6-dhsom = " dh-imx6-dhsom-standard.scc "
18
19  SRC_URI:append:dh-imx6ull-dhsom = " \
20      file://${BPV}/dh-imx6ull-dhsom;type=kmeta;destsuffix=${BPV}/dh-imx6ull-dhsom \
21      file://common/dh-imx6ull-dhsom;type=kmeta;destsuffix=common/dh-imx6ull-dhsom \
22      "
23  KERNEL_FEATURES:dh-imx6ull-dhsom = " dh-imx6ull-dhsom-standard.scc "
24
25  SRC_URI:append:dh-imx8mp-dhsom = " \
26      file://${BPV}/dh-imx8mp-dhsom;type=kmeta;destsuffix=${BPV}/dh-imx8mp-dhsom \
27      file://common/dh-imx8mp-dhsom;type=kmeta;destsuffix=common/dh-imx8mp-dhsom \
28      "
29  KERNEL_FEATURES:dh-imx8mp-dhsom = " dh-imx8mp-dhsom-standard.scc "
```

Appends the common
Yocto kernel!
No fork!

Same for bootloader and
other firmware
components

So what do we actually need from a BSP?

A Wishlist

- One single BSP Layer **based on a Yocto LTS release**, including
 - a **mainline Linux** or **Yocto based LTS kernel** with needed patches
→ the less patches the better!
 - same for the **bootloader**
 - a **device tree** describing the board (ARM machines)
 - for kernel and bootloader
 - a Yocto **machine.conf** configuration
→ focused on the essentials, clean, understandable and reusable
 - additional **firmware** for the board features
 - if needed binary blobs
 - board specific overlays if needed



And that's it!

So what do we actually need from a BSP?

A Wishlist

Further points:

- Standard tools like **KAS** or **bitbake-setup**
→ avoid the need to maintain yet another build and layer management tool, also as a vendor!
- A full featured demo layer or demo configuration is fine!
 - if it is separated from the actual BSP
 - and optional

As a vendor, please do not install additional packages from obscure and incomprehensible locations!



Messy Vendor BSP?

When is the time to build your own BSP Layer?

Consider setting up your own BSP if

- the vendor's BSP is based on an outdated Yocto release or a non-LTS version
- kernel or bootloader are forked and do not get security updates
- you do continuously find packages you did not add into the image
- the BSP is a mess and hard to understand and use



Setting up your own Yocto BSP layer is not that hard!
It's a valid approach and you are in control!

Messy Vendor BSP?

When it is time to build your own BSP Layer

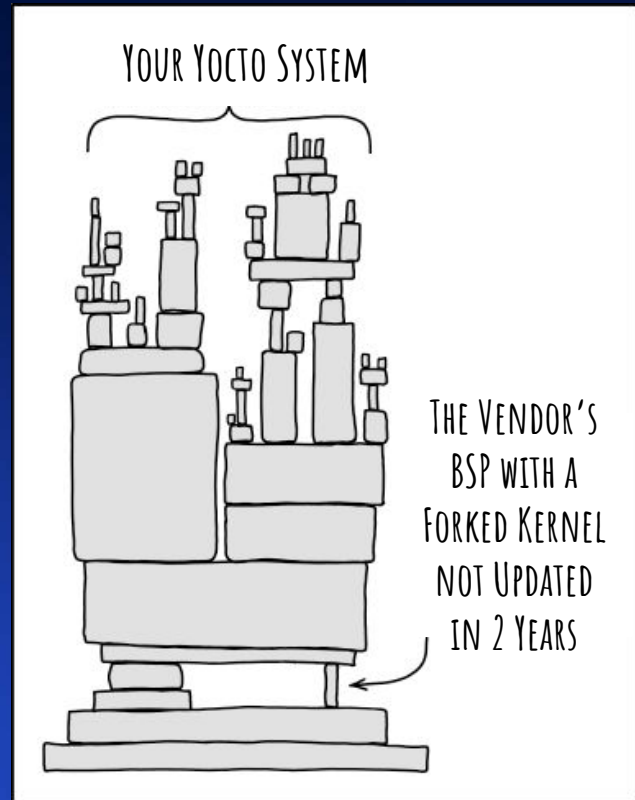
1. Start with a mainline Yocto LTS release
2. Create your own meta-<cpu>-bsp layer
3. Get the device tree for kernel and bootloader from the vendor's BSP
4. Define your bootloader and kernel
 - a. Are board specific patches needed?
 - keep as close as possible on a mainline LTS release!
 - cherry-pick needed patches
 - b. Are specific firmware blobs needed?
5. Create your machine.conf configuration
 - copy&paste only the relevant parts from the vendor's definition
 - adjust as needed
6. Integrate additional firmware components
e.g. trusted firmware, OPTEE, ...
7. Add hardware specific appends if needed



The Takeaway

Your BSP is a Foundation, Not a Demo!

- A well-maintained, up-to-date BSP is essential for security
 - a forked vendor kernel can showcase features
 - but fast and reliable security patches are crucial in production
- Most often, very few demo features are actually needed in your product
 - but demo features and additional packages increase the attack surface
- Investing in a solid and maintainable base helps on the long run
 - and lowers the ongoing effort during a product's lifecycle
- Regulations like CRA require security updates
 - have a well-tested update mechanism in place
 - establish a BSP foundation and workflow that support you to meet regulatory requirements with ease!





**Time for Questions
and your Horror Stories!**



Thank you!



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