

Creating a profile from Tizen:Common



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ANDROID FOR INTEL ARCHITECTURE INTEL LINUX WIRELESS GUPNP KVM POKY
TIZEN OPENSTACK POWERTOP YOCTO CONNMAN XEN POFONO LINUX KE
INTEL LINUX GRAPHICS SYNCEVOLUTION SIMPLE FIRMWARE INTERFACE (SFI) ENTERPRISE SECURITY IN

Agenda

- ▶ **Why Tizen:Common ?**
- ▶ **Inheriting from Tizen:Common**
- ▶ **Inside Tizen:Common**
- ▶ **Changelog & Roadmap**
- ▶ **Q & A**



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Why Tizen:Common ?

More Profiles

► More profiles to handle:

- Mobile
- IVI
- TV
- Household equipments
- Wearables



► Creating a common base was becoming critical:

- Keep compatibility between profiles
- Not all hardware can be made available to all developers
- The work done in Tizen:Common benefits to all Tizen profiles



Easing Development Process

- ▶ **Access to a platform development kit for anyone**

- ▶ **Intel Architecture:**

- 32 bits & 64 bits
100% Open Source including Graphic Drivers
- Classic : Laptop, NUC, ...
- Industrial : VTC1010
- Hackers : Minnowboard-Max



- ▶ **ARM Architecture:**

- 32 bits & 64 bits
- Odroid-U3 (Samsung Exynos 4412 Prime, Mali 400 GPU)
- Other -unsupported- boards are reported to work



An Integration Point

► Define a common base for most profiles

- Any package in 2 or more profiles should be included in Tizen:Common
- Most packages in Tizen:Common are integrated in all profiles
- Control of memory foot print / dependencies

► Tool to test that major features should not break other profiles

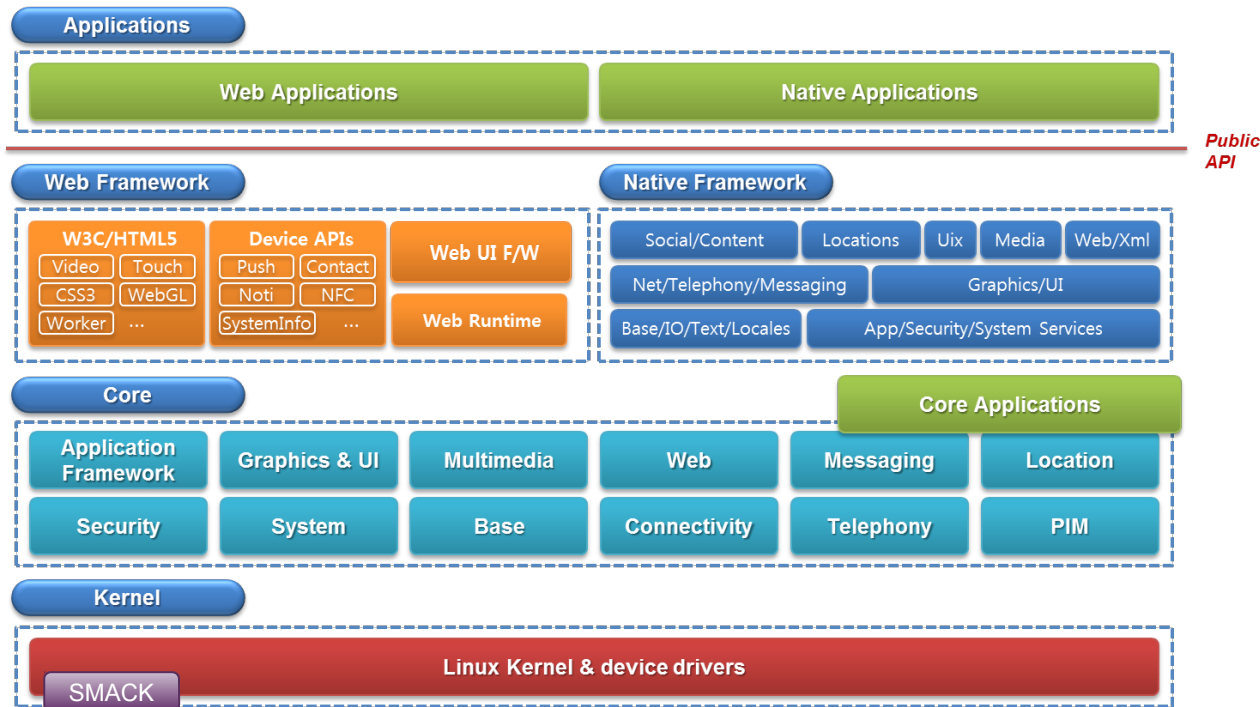
- Multi user
- SMACK
- Cynara
- Crosswalk
- Weston/Wayland
- ...



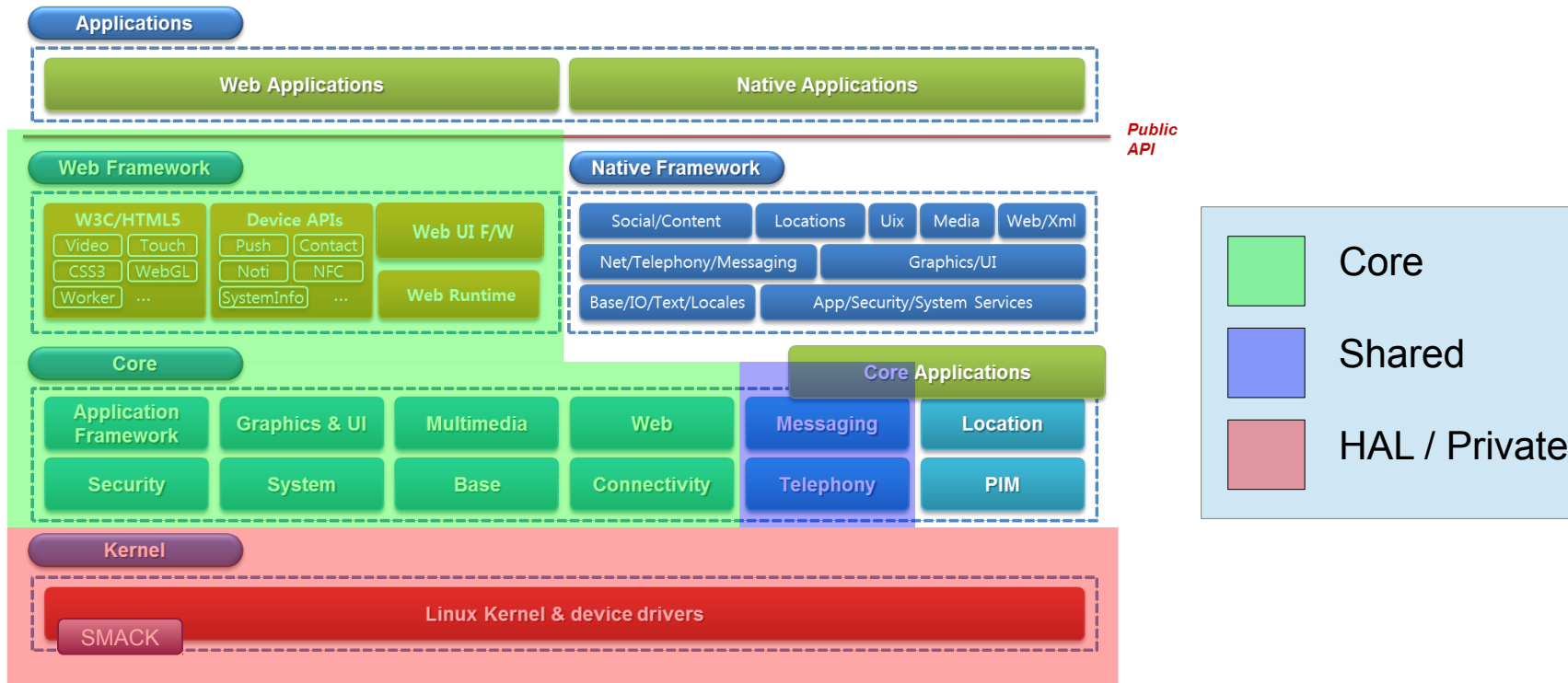


Inheriting from Tizen:Common

Architecture Coverage – where is Tizen:Common ?



Architecture Coverage – where is Tizen:Common ?



Subprojects

▶ Common-Micro

- HAL (kernel, firmwares)
- Systemd, PAM, SMACK
- Base tools (coreutils, rpm ...)
- Network connectivity

▶ Common-Light

- Wayland
- Crosswalk
- Middleware
- Bluetooth
- Multimedia

▶ Dev-Tools

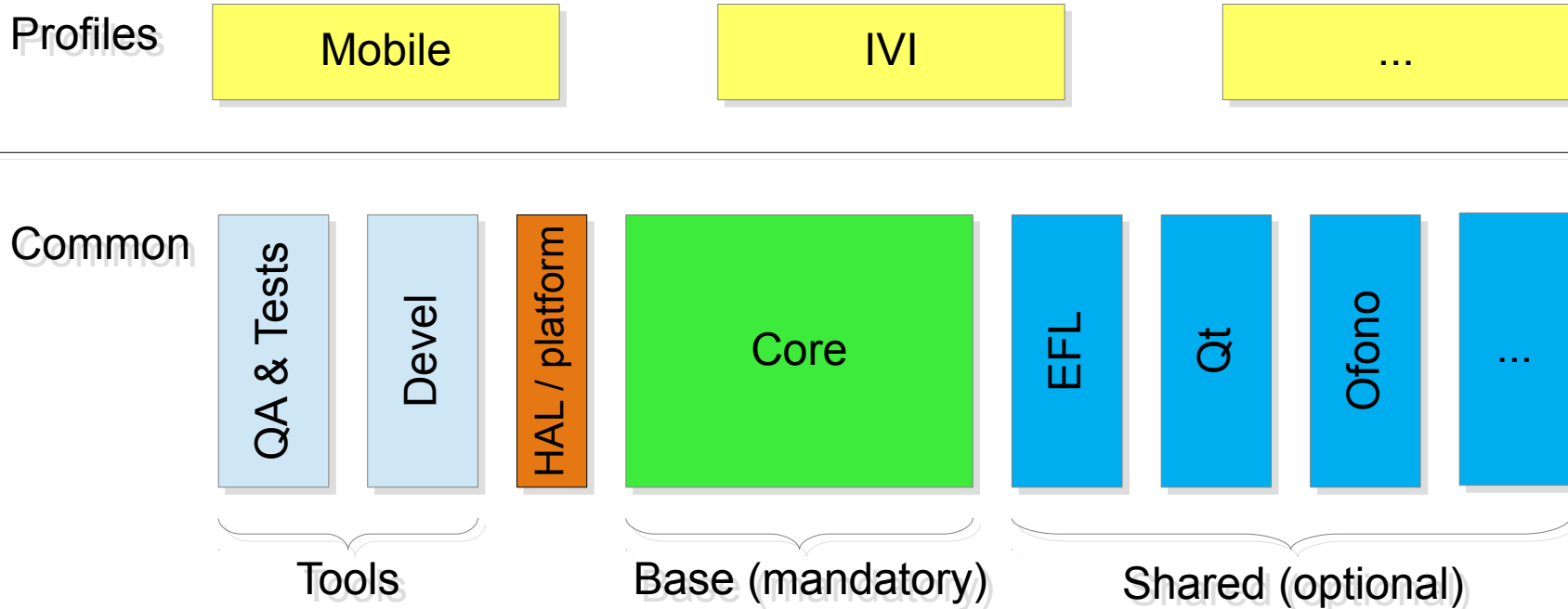
- Build toolchain
- Debug tools
- Console tools
- Test applications
- QA Tools and Test Suites

▶ Shared components

- Display system: X11
- Toolkits: EFL, Qt5
- Middleware: Ofono, Calendar



How to Create a New Tizen Profile



Packages Types

► Core packages

- Used in **all** Tizen 3 profiles
- Examples: Core APIs, Application Framework, Cynara, Crosswalk ...

► Shared packages

- Used in **some** Tizen 3 profiles, but not all
- Examples: EFL, Qt5, Ofono ...

► Tools (dev & QA)

- Used exclusively in Tizen:Common, not to be used by any profile
- Includes all packages located in `gerrit:profile/common/*`
- Example: `kernel-common`, `weston-common`, `profile/common/meta` ...



Multi-product Support from a Unified Code Base

► New feature:

- Integration on Tizen:Common first
- Enable multi-architecture quick test
- Enable synchronized integration for key features

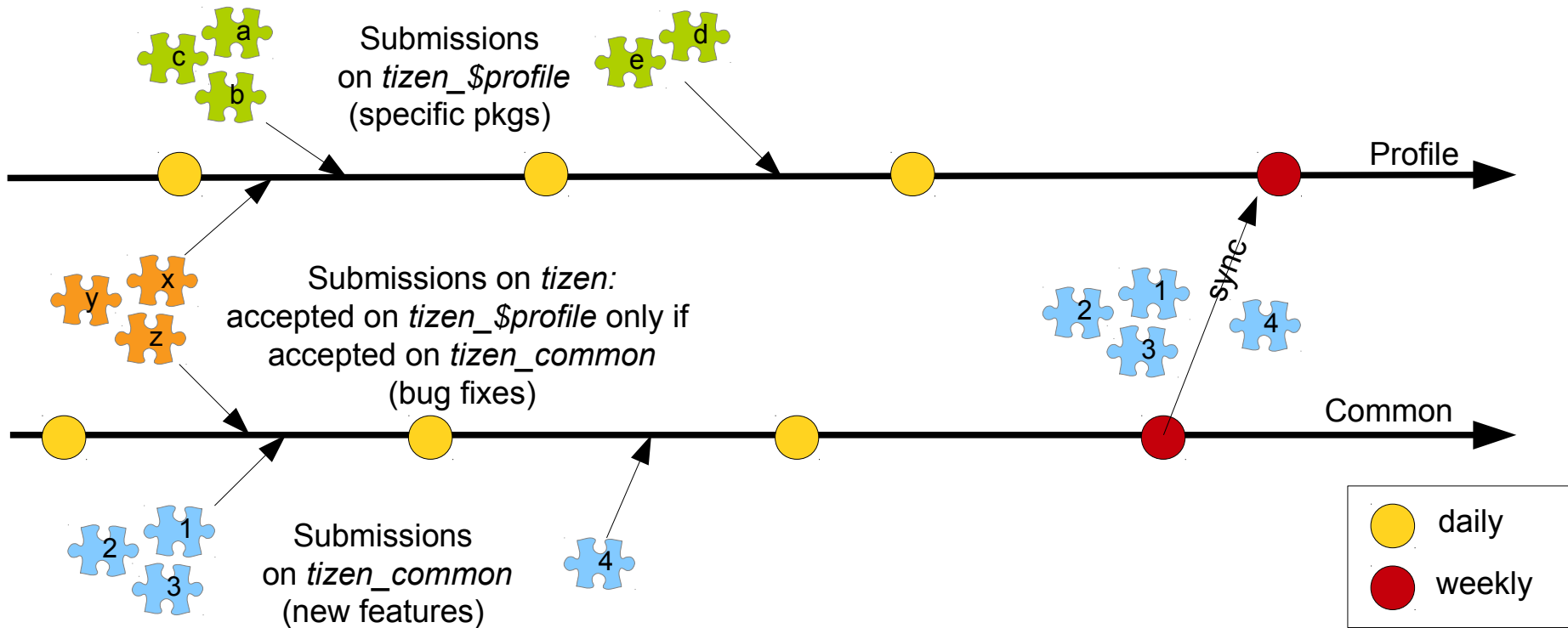
► Major changes to be tested against Tizen:Common

► Profile synchronization on Tizen:Common very regularly

- Syncing every week is advisable
- A profile remains master of its own integration pace



Keeping Synced with Tizen:Common



LTSI Kernel Latest 3.14

FUJITSU HITACHI

hp IBM

intel JVCKENWOOD

Mentor Graphics montavista

NEC NVIDIA

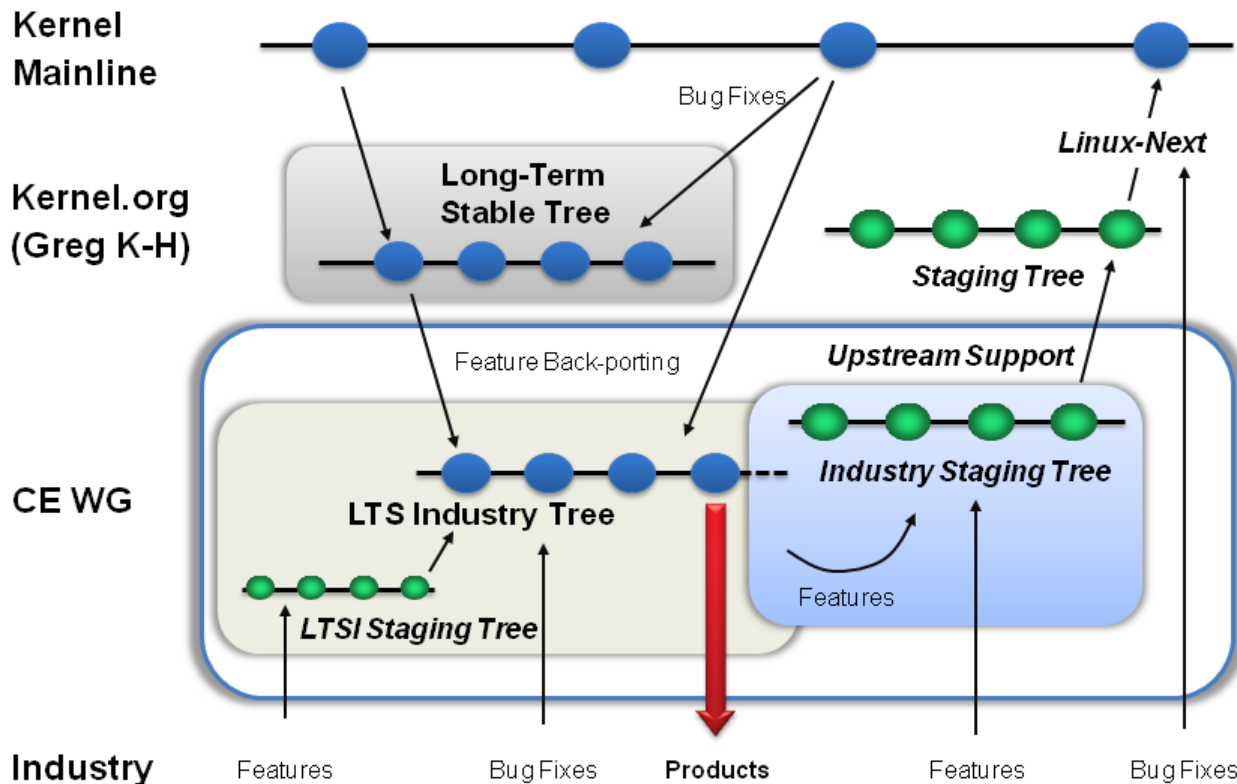
Panasonic Qualcomm ATHEROS

QUALCOMM INNOVATION CENTER, INC. QILIC RENESAS

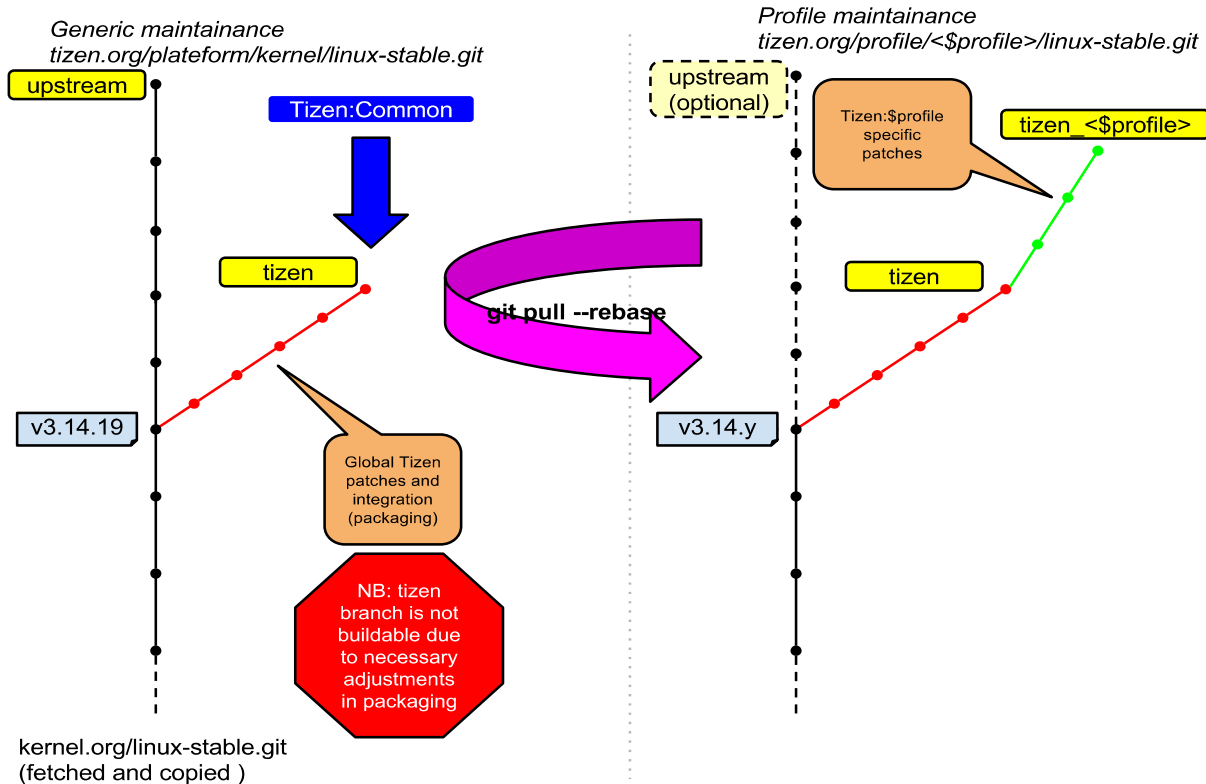
SAMSUNG SONY

TOSHIBA TURBOSYSTEMS

WIND RIVER

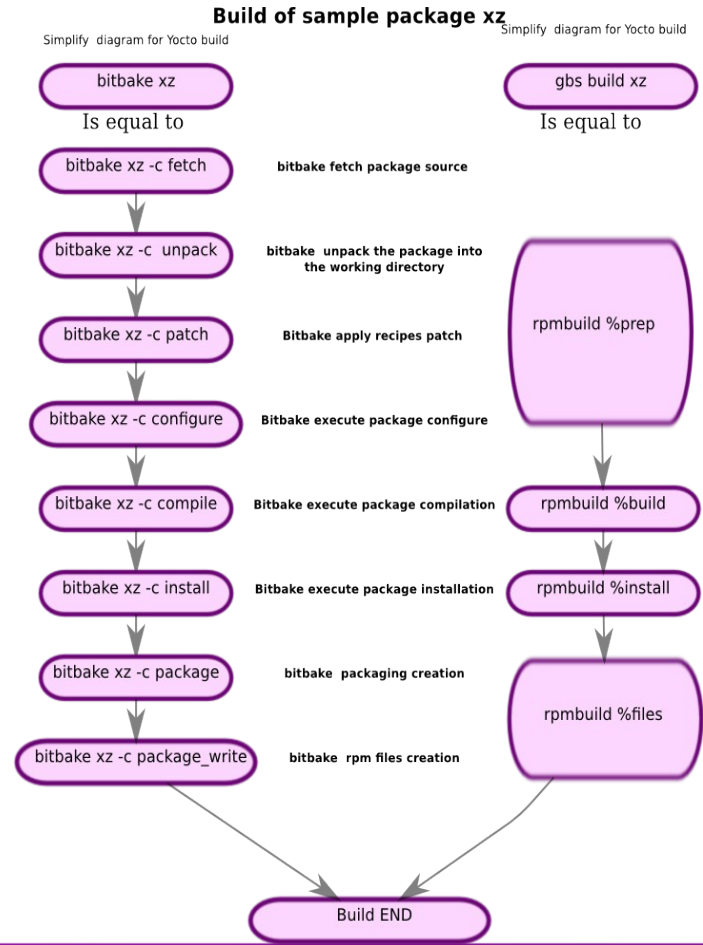


Kernel inheritance model



Recipe to build a new profile

- ▶ **Choose the build method**
 - Using a private OBS
 - Using Yocto (base 1.7 + Tizen meta)
- ▶ **Take the base packages from Common**
- ▶ **Decide of the shared packages to add**
- ▶ **Define the hardware abstraction layer**
 - Kernel, extra drivers, firmwares ...
- ▶ **Add your profile-specific packages**
- ▶ **Build !**



Use Case : Tizen:IVI

- ▶ **Maintained on tizen.org**
- ▶ **Built using OBS (build.tizen.org)**
- ▶ **752 source packages**
 - 691 packages pulled from Tizen:Common
 - 61 packages specific to Tizen:IVI
- ▶ **IVI and Common share the same base kernel: LTS 3.14.20**
- ▶ **Synchronization on the 691 packages occurs after each daily release of Common**
- ▶ **Benefit: IVI owns 61 packages, which is easier to maintain.**



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Inside Tizen:Common

Acceptance Criteria

- ▶ **Most packages in Tizen:Common will be pulled by other profiles**
- ▶ **High acceptance criteria are needed**
- ▶ **Consequence: a submission will be accepted if:**
 - It does not break Security, Data Integrity, Multi User mode, HTML5 Support
 - Prerelease build is clean in **all architectures**: ia32, x86_64, armv7l ...
 - Prerelease images **are all built** successfully
 - QA Sanity tests **pass** on all prerelease images



Guidelines for Submitters to tizen.org

- ▶ **Local build with multiple architectures:**
 - use 'gbs build -A <arch>' to test before submitting
- ▶ **Use 'gbs submit -t <target>' to choose the right project:**
 - Target = 'tizen_common' to send to Tizen:Common only
Typical usage: integrate new features
 - Target = 'tizen_<profile>' to send to a specific profile only
Typical usage: submit a change on a profile-specific package
 - Target = 'tizen' to broadcast to all profiles
Typical usage: bug fixing
- ▶ **Use group submissions when needed:**
 - when multiple packages must be changed simultaneously
 - use 'gbs submit --tag <tag>'



OBS Project

- ▶ **On OBS: 'Tizen:Common' project**
 - ~830 source packages
- ▶ **7 repositories (3 hardware architectures)**
 - x86
 - x86_64
 - armv7l (repository published, images for ODroid-U3 coming soon)
 - aarch64 (ARM 64 bits): coming soon
 - emulator32 (x86 repository for SDK)
- ▶ **2 'flavours'**
 - Wayland
 - X11



Tizen-Yocto – Alternative building tool set

- ▶ **HowTo**
https://wiki.tizen.org/wiki/Tizen_on_yocto
- ▶ **Support**
<https://lists.tizen.org/listinfo/dev>
- ▶ **Code**
<https://review.tizen.org/gerrit/#/admin/projects/scm/bb/meta-tizen>
- ▶ **Bugs**
<https://bugs.tizen.org/jira/browse/BTY>



Images Types and Flavours

► Main images – 8 raw images for USB/SSD/HDD

- common-<flavour>-<boot type>-<arch>
 - <flavour>: X11, wayland
 - <boot type>: mbr, efi, 2parts
 - <arch>: i586, x86_64, armv7l
- NB: only combinations that make sense are built !

► Emulator - ia32 only, tarball for qemu (SDK)

- common-emulator-wayland-mbr-i586

► Installer - small raw image to install Tizen from USB sticks

- common-installer-mbr-i586
- common-installer-efi-x86_64



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Changelog & ToDo

Recent History

► Components:

- Kernel LTS 3.14.20 with SMACK
- Weston 1.5 / Xorg 1.16 / Mesa 10.1.3
- Crosswalk 10.38.222.X
- EFL 1.9.3 / Qt5 5.3.99 beta1
- Multiuser mode, Gumd (user management)
- Cynara (security policy), Buxton (secured registry)

► Snapshots and Images:

- ARM images
- X11 images
- Emulator image (32 bits)
- Installer image
- **NEW!**: images are runnable inside VMWare player



Roadmap

► 3.0 Common 2014 Q3:

- Release expected mid October 2014 (now!)
- Features:
 - LTS Kernel 3.14, Crosswalk 10, Multiuser, Smack, Wayland or X11 flavour, Qt5.4, Buxton, Cynara, ...

► 3.0 Common 2014 Q4:

- Release expected in December 2014
- Planned features:
 - ARM64,
 - 3D UI,
 - new Bluetooth FW, Wifi FW,
 - EFL and Qt upgrades,
 - User accounts management
 - Security manager



Q & A



Gulf of Morbihan, south of Brittany, France

Links

- ▶ **Snapshots:** <http://download.tizen.org/snapshots/tizen/common>
- ▶ **Daily Releases:** <http://download.tizen.org/releases/daily/tizen/common>
- ▶ **Weekly Releases:** <http://download.tizen.org/releases/weekly/tizen/common>
- ▶ **Wiki**
 - Tizen Common: <http://wiki.tizen.org/wiki/Common>
 - Tizen 3.0: https://wiki.tizen.org/wiki/Tizen_3.0
- ▶ **OBS Project:** <https://build.tizen.org/project/show?project=Tizen%3ACommon>
- ▶ **JIRA Project:** <https://bugs.tizen.org/jira/browse/TC>

