Creating a profile from Tizen:Common

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Agenda

► Why Tizen:Common ?
► Inheriting from Tizen:Common
► Inside Tizen:Common
► Changelog & Roadmap
► Q & A
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 footprint / 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

Profiles:
- Mobile
- IVI
- ...

Common Tools:
- QA & Tests
- Devel
- HAL / platform

Base (mandatory):
- Core

Shared (optional):
- EFL
- Qt
- Ofono
- ...

Profiles:
- Mobile
- IVI
- ...

Creating a profile from Tizen: Common

Dominig ar Foll – Intel Open Source
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

Submissions on `tizen_$profile` (specific pkgs)

- a
- b
- c
- d

Submissions on `tizen: common` (bug fixes)

- x
- y
- z

Submissions on `tizen_common` (new features)

- 1
- 2
- 3
- 4

Profile

Common

daily
weekly
Kernel inheritance model

Generic maintenance
zizen.org/platform/kernel/linux-stable.git

upstream

Tizen:Common

v3.14.19

Global Tizen patches and integration (packaging)

NB: zizen branch is not buildable due to necessary adjustments in packaging

kernel.org/linux-stable.git (fetched and copied)

Profile maintenance
zizen.org/profile/<$profile>/linux-stable.git

upstream (optional)

Tizen:$profile
specific patches

tizen <$profile>

git pull --rebase

v3.14.y
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.
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
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
Gulf of Morbihan, south of Brittany, France
Links

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