Tizen:Common
A new development profile for Tizen 3

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Eurogiciel

- IT Services Company
- Open source development and integration:
  - Several maintainers in multiple domains on tizen.org
- Embedded systems for real-time multimedia:
  - Widi/Miracast stack
  - Wayland/Weston
  - Webkit2 with HW acceleration
- Applications development
  - HTML5/CSS3, jquery, jqmobi, Cordova ...
- Location: Vannes (Brittany), France
Agenda

- Why Tizen:Common?
- Overall view
- Inside Tizen:Common
- Roadmap
- Demo & Questions
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
  - Work done in Tizen: Common benefits to all 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
  - ...
Overall view
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**
  • Toolkits: EFL, Qt5
  • Middleware: Ofono, Calendar
How to Create a New Tizen Profile

Profiles
- Mobile
- IVI
- ...

Common
- QA & Tests
- Devel
- HAL / platform
- Core
- EFL
- Qt
- Ofono
- ...

Tools
- Base (mandatory)
- Shared (optional)
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 ...

• Private packages
  • 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
Inside Tizen: Common
Build Workflow

- **Uses the new 'repa' tool**
  - Creates a prerelease build for every submission
  - OBS Project: home:prerelease:<target project>:<submission id>

- **Prerelease Builds:**
  - All packages depending on the submitted packages are rebuilt
  - Prerelease Images are also available for testing
    Available on: http://download.tizen.org/build/prerelease/tizen/common/...
    URL is also indicated in prerelease project description (header on OBS UI)
  - Automatic QA sanity tests can then be run on prerelease images
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:
  • Prerelease build is clean in all architectures: ia32, x86_64, armv7l ...
    AND
  • Prerelease images are all built successfully
    AND
  • QA Sanity tests pass on all prerelease images
Guidelines for Maintainers

- **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 & Bug Tracking

- **On OBS: 'Tizen:Common' project**
  - ~730 packages
  - cleanup in progress
- **5 repositories (4 architectures)**
  - x86
  - x86_64
  - armv7l (repository published, images for ODroid-U3 coming soon)
  - aarch64 (ARM 64 bits): coming soon
  - emulator32 (x86 repository for SDK)
- **Bug reports**
  - new JIRA project 'TC'
Images Types and Flavours

- **Main:**
  - common-wayland-mbr-<arch> : raw image for USB/SSD/HDD
- **Minimal:**
  - common-minimal-mbr-<arch> : raw image for USB/SSD/HDD
- **Emulator:**
  - common-emulator-wayland-i586 : ia32 only, tarball for qemu (SDK)
- **Installer:**
  - common-installer-mbr-i586 : ia32 only, small raw image for USB sticks
- **Extra tags:**
  - *-qa-unsafe-*: allows automatic login through SSH (QA tests, Developers)
  - *-mbr-* or *-efi-*: type of boot loader (EFI support coming soon)
Snapshots & Releases

- **Snapshots**
  - created at the end of a build cycle in the main OBS project
  - automatic QA Sanity tests are run on each snapshot
- **Daily Release**
  - Selection of the best snapshot of the day
  - Extra automatic QA tests are run
- **Weekly Release**
  - Selection of the best daily release of the week
  - Extensive automatic & manual QA tests
  - Published on Wednesday
Keeping Synced with Tizen: Common

Submissions on `tizen_$profile` (specific pkgs)

Submissions on `tizen: accepted on tizen_$profile` only if accepted on `tizen_common` (bug fixes)

Submissions on `tizen_common` (new features)
Recent History

**Components:**
- Multiuser mode (partial)
- Single Weston instance (RDP available for developers)
- Crosswalk 7.35.x
- EFL 1.9.3
- Mesa 10.1.3
- Qt5 5.3.0
- Gumd, Cynara (early integration)

**Snapshots and Images:**
- ARM build (armv7l with neon FPU, beta image for AllWinner-A20/Olimex)
- Emulator image (32 bits)
- Installer image
Roadmap

- **Milestones:**
  - 3.0 Common 2014 Q2 : end of May 2014, currently in development
  - 3.0 Common 2014 Q3 : end of Aug 2014
  - 3.0 Common 2014 Q4 : end of Nov 2014

- **Features**
  - Alpha Q2 2014
    - Crosswalk, Multiuser, Smack, Wayland
    - Buxton, Cynara coming in June 2014
  - Beta Q3 2014
    - 3D UI, new Bluetooth FW, Wifi FW, ARM64, EFL upgrade, User accounts management
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)