

Fedora Secondary Architectures

FUDCon Milano, 2011

fedora™



Welcome
Why and what
How is Fedora
built
Common
programming
issues
Architectures in
RHEL
Architectures
overview
Q/A
Links



Welcome



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Agenda

- Why and what
- How is primary Fedora built
- How is secondary Fedora built
- Common programming issues
- Architectures in RHEL
- Secondary architectures overview
- Questions/Answers



Why and what

- Linux kernel supports 20+ arches
- primary vs. secondary in Fedora
 - depends mainly on userbase
 - build failures in secondary are not blockers
- secondary arch provides own
 - build system
 - file storage
 - does own composes
 - uses/provides tracker bugs

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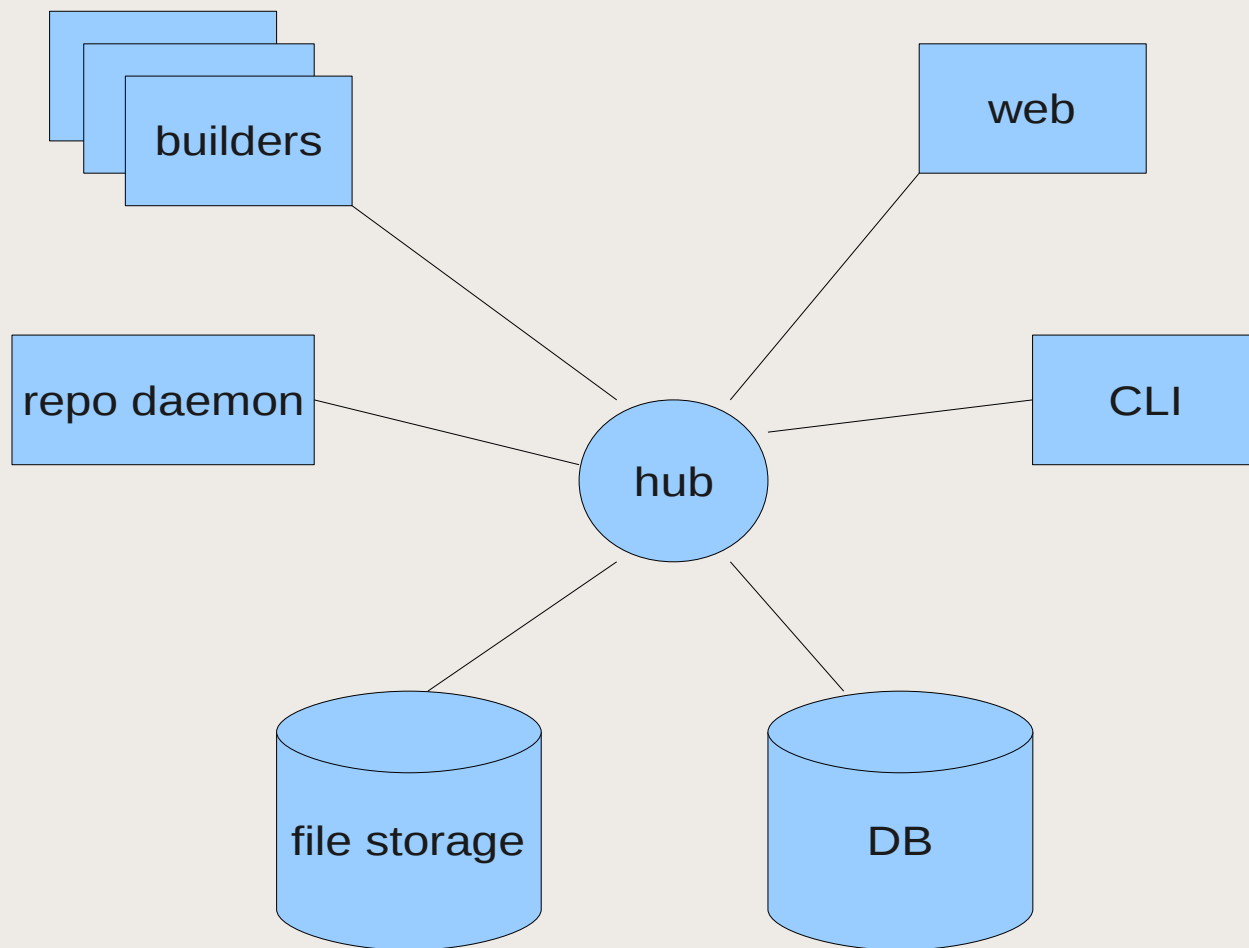
How is primary Fedora built

- rpm + rpmbuild
- mock => build in chroot
- koji => build with defined package set

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How is primary Fedora built



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How is secondary Fedora built

- 2 ways
 - collection of ad-hoc builds
 - own Koji instance
- koji-shadow
 - mirrors builds from primary
 - can import noarchs
 - can use newer builds instead of exact NVRs
- tools to sync packages/users and compare the content of tags



Secondary arches for maintainers

- no real support in fedpkg yet
- <arch>-koji wrappers exists for secondary arches
- some devel machines should be available

```
s390-koji build fX «$(fedpkg giturl)»
```

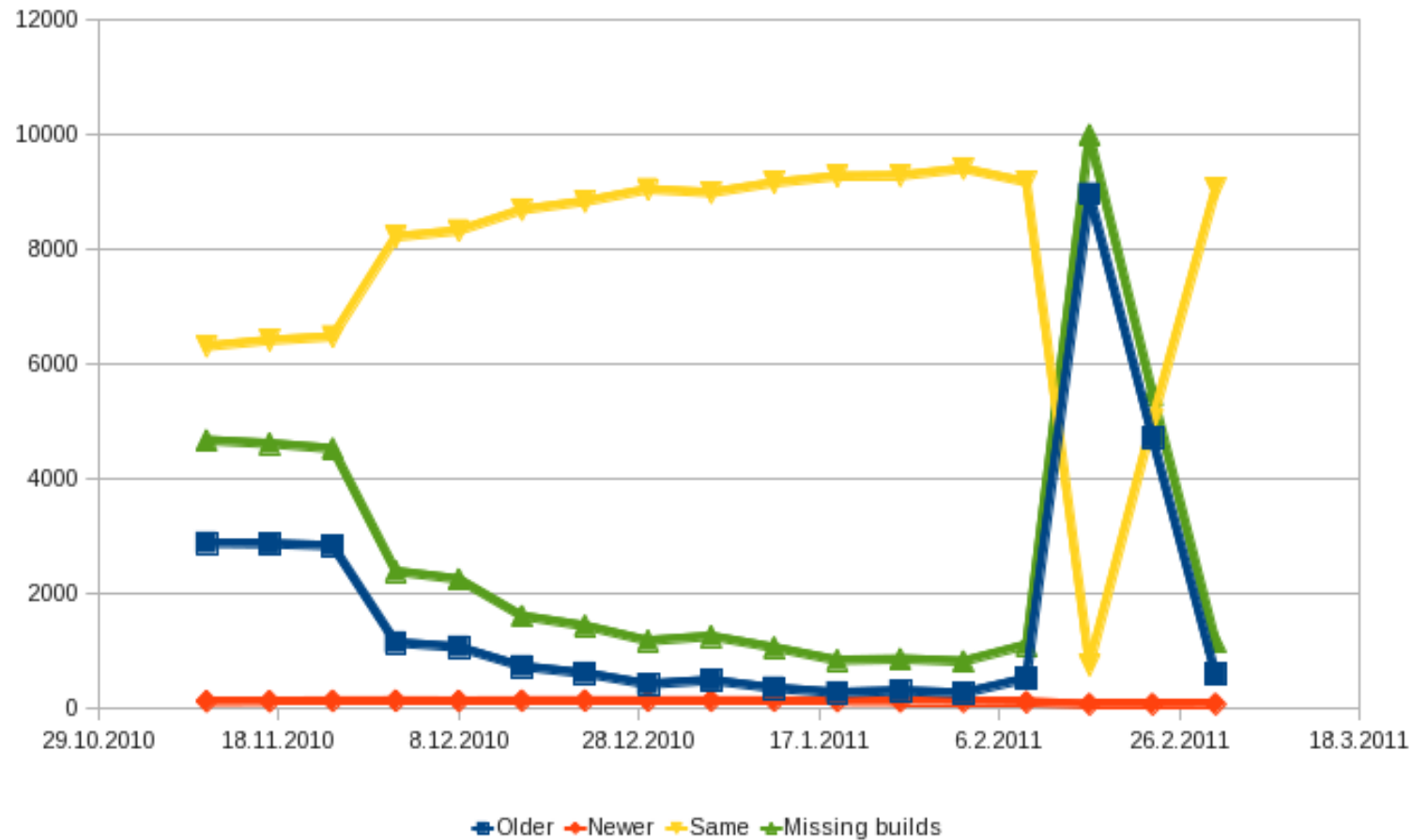
```
s390-koji build fX-updates-candidate «$(fedpkg giturl)»
```


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How is secondary Fedora built

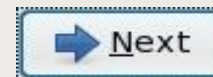
Fedora 15 for s390x package build statistics





Common programming issues

- limited languages availability
 - gnat(ada), ghc(haskell), mono, ocaml, ...
- big vs. little endian – pointers to intergers
- char is unsigned by default on arm, s390(x)
- size_t is unsigned long on s390 – C++ templates
- exhaustion of 2 GB address space on s390
- some hardware can be missing
 - USB
 - FireWire
 - InfiniBand



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Common programming issues

- reinventing the wheel again and again
 - atomic primitives
 - gcc
 - C++0x, C1x
 - libatomic_ops
 - timestamp counters

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Fedora/s390x

- <http://fedoraproject.org/wiki/Architectures/s390x>
- targets
 - IBM mainframes (z9 or better)
 - emulators (Hercules)
- starts in RHL 7.1
- branches : F-14, F-15, F-16
- #fedora-s390x



Fedora/ppc

- <http://fedoraproject.org/wiki/Architectures/PowerPC>
- targets
 - IBM servers & workstations
 - ppc based Macs (G3, G4, G5)
- restart after F-12
- branches : F-16
- #fedora-ppc



Fedora/ARM

- <http://fedoraproject.org/wiki/Architectures/ARM>
- targets
 - multimedia/entertainment devices
 - netbooks/nettops
 - SOHO NAS
- subarchs = armv5te, armv7+hardfp
- branches : F-13, F-14, F-15
- very broad range of SoCs complicates the life
- #fedora-arm



Fedora/SPARC

- <http://fedoraproject.org/wiki/Architectures/SPARC>
- targets
 - Sun/Oracle workstations/servers
 - Fujitsu hw?
- branches : F-15, F-16
- originates in AuroraLinux
- #fedora-sparc

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Fedora/MIPS

- <http://fedoraproject.org/wiki/Architectures/MIPS>
- targets
 - Loongson based devices (netbook, nettop)
- #fedora-mips

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Fedora/ia64

- <http://fedoraproject.org/wiki/Architectures/IA64>
- dead since F-10

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Questions / Answers





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- **Fedora Project**
 - <http://fedoraproject.org/>
- **Fedora Architectures**
 - <http://fedoraproject.org/wiki/Architectures>
- **Releases of secondary arches**
 - <http://secondary.fedoraproject.org/pub/fedora-secondary/>
- **Koji**
 - <http://fedoraproject.org/wiki/Koji>
- **Notes for developers and maintainers**
 - <https://fedoraproject.org/wiki/Architectures/s390x>

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Thanks you for your attention



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