

# Open Build Service (OBS)

Facts, Features, Future



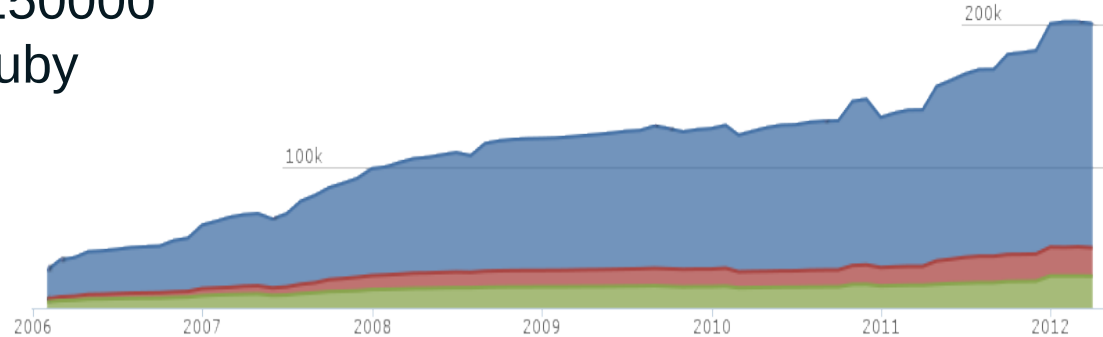
# OBS History

- Created in 2005 as a rewrite of SUSE's internal *autobuild* system
  - Goals: transparency, flexibility, openness
  - First presented at FOSDEM 2006
- 2010: OBS-2.0 with features for the MeeGo project
- 2011: OBS-2.1 with workflow features for openSUSE source handling
- Current Release: OBS-2.3
  - Support for maintenance updates



# Development

- Licensed under GPLv2
  - <https://github.com/openSUSE/open-build-service/>
- Lines of Code: > 150000
  - Perl/Python/Ruby



- Mostly maintained by SUSE, but many contributions from community members & other companies

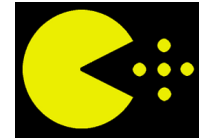


# Example Users

- Distribution development, Maintenance Updates



- Open Source Communities



- Add-Ons: Driver Developer and ISVs

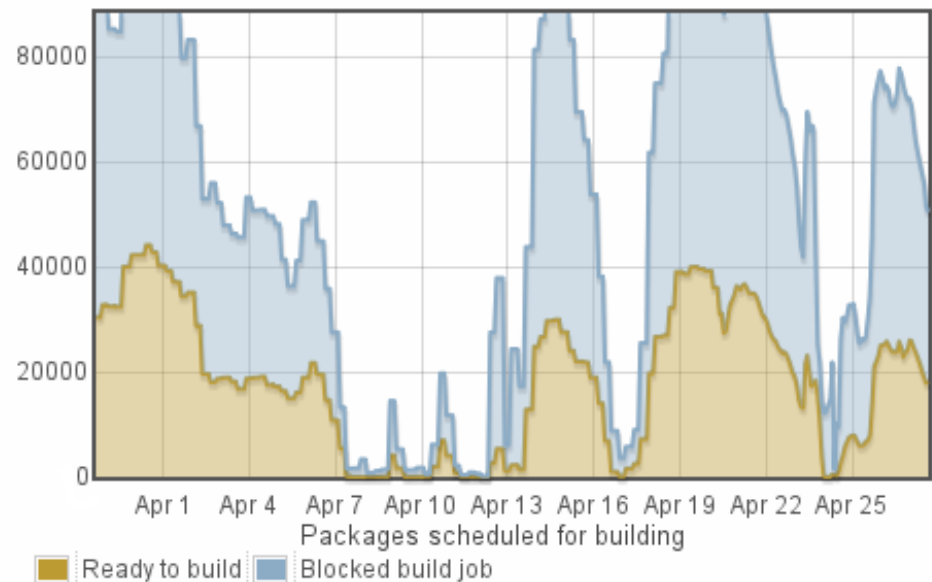
- Researchers/Universities

- Administration Teams



# Numbers (from build.opensuse.org)

- Confirmed Users: >32000
- Package builds per day: > 51000
  - Build farm: 38 hosts, 310 workers
- Storage:
  - Sources: 3.3 TBytes
  - Binaries: 6.9 TBytes



# Features

- Multiple distributions, multiple architectures
  - rpm, deb, archlinux, image creation
- Sand-boxed builds (kvm/xen) on a build farm
- Easy branching with automatic merges
- Continuous Integration
  - Automatic rebuilds on changes (both source and build packages), automatic ordering of builds
  - **Consistent, reproducible builds**



# User Interface

- REST based API, so multiple interfaces can co-exist
- Web UI
  - Great to get an overview of a project
  - Simple package fixes
- OSC command line client
  - Works like an SCM system (svn, git)
  - Supports local builds for testing



# User Interface

The screenshot displays the openSUSE Build Service web interface in a browser window. The URL is `https://build.opensuse.org/project/show?project=devel%3Alanguages%3Aparrot`. The interface includes a navigation bar with links for Downloads, Support, Community, and Development. The main content area shows the project details for 'devel:languages:parrot', including a list of packages, build results, and a 'My Actions' section. A terminal window in the foreground shows the output of the `osc results` command, listing the build status for various architectures and packages.

**Parrot related packages**

This project contains packages related to the parrot project ([www.parrot.org](http://www.parrot.org)).

**Information**

- 4 packages
- 1 build error

**Build Results**

Project	Architecture	Build Status
Fedora_15	i586	succeeded: 3 disabled: 1
	x86_64	succeeded: 3 disabled: 1
openSUSE_11.4	i586	succeeded: 3 disabled: 1
	x86_64	succeeded: 3 disabled: 1
openSUSE_Factory	i586	succeeded: 2 failed: 1 disabled: 1
	x86_64	succeeded: 3 disabled: 1

**My Actions**

- Report bug
- Create package
- Create subproject
- Edit description
- Delete project

**Terminal Output:**

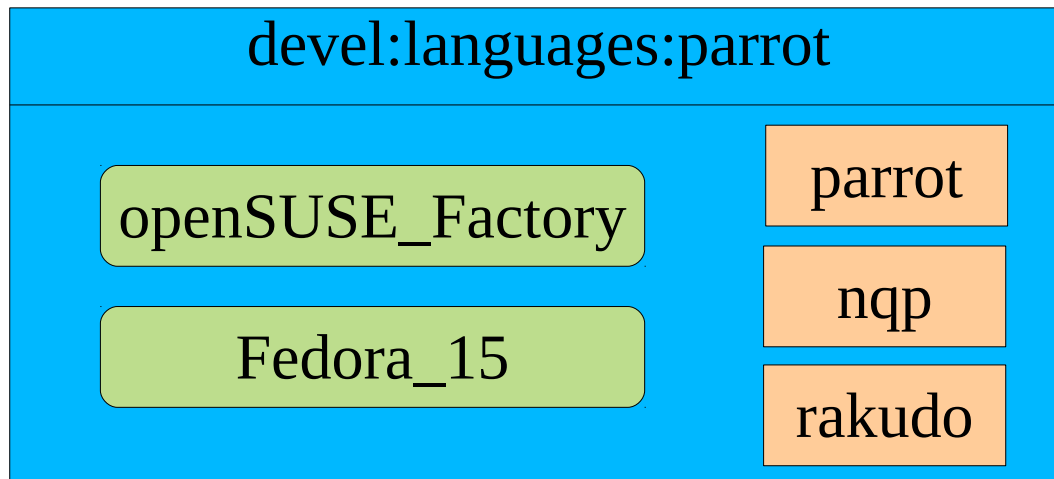
```
544 (rudin:devel:languages:parrot)> ls
nqp parrot rakudo
545 (rudin:devel:languages:parrot)> osc results
525 (rudin:devel:languages:parrot)> osc r
nqp
| parrot
| | post-build-checks
| | | rakudo
. . . Fedora_15 i586 (published)
. . . Fedora_15 x86_64 (published)
. . . openSUSE_11.4 i586 (published)
. . . openSUSE_11.4 x86_64 (published)
F . . openSUSE_Factory i586 (published)
. . . openSUSE_Factory x86_64 (published)

Legend:
disabled
. succeeded
F failed
546 (rudin:devel:languages:parrot)>
```



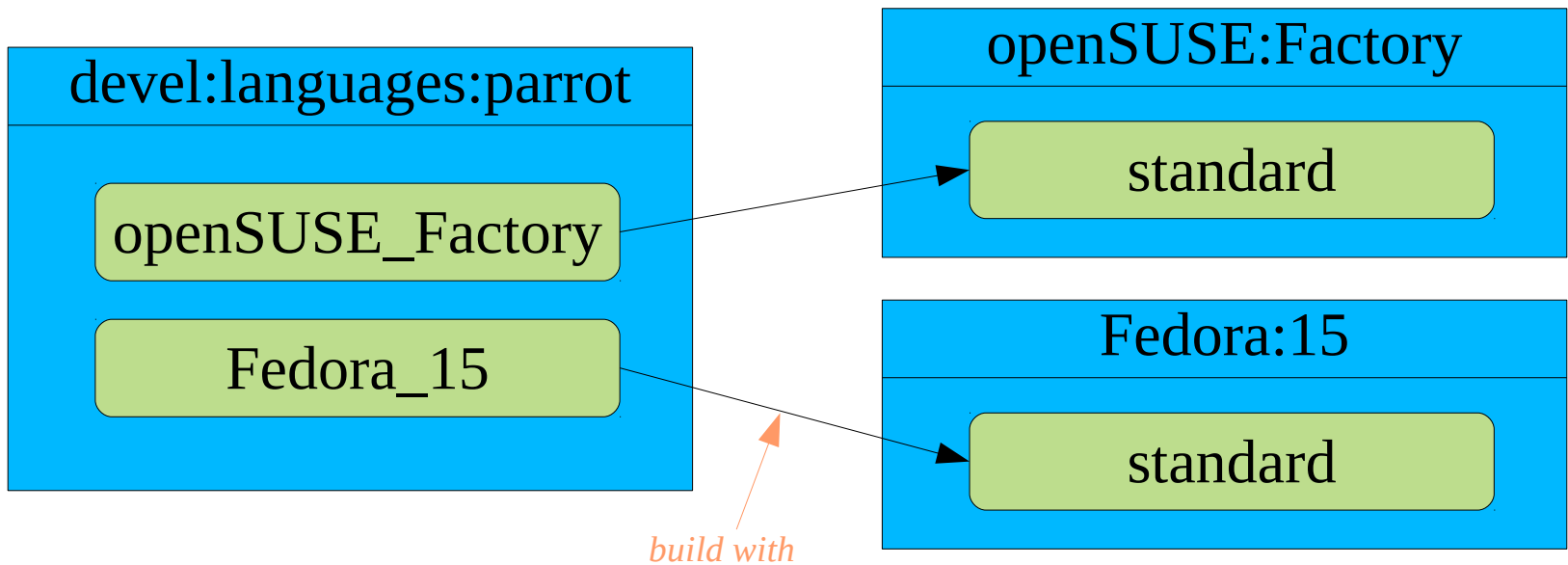
# Build Service Projects

- Main organizational element: projects
  - Contains a set of packages with sources
  - Defines which repositories and architectures to build
  - Defines access control



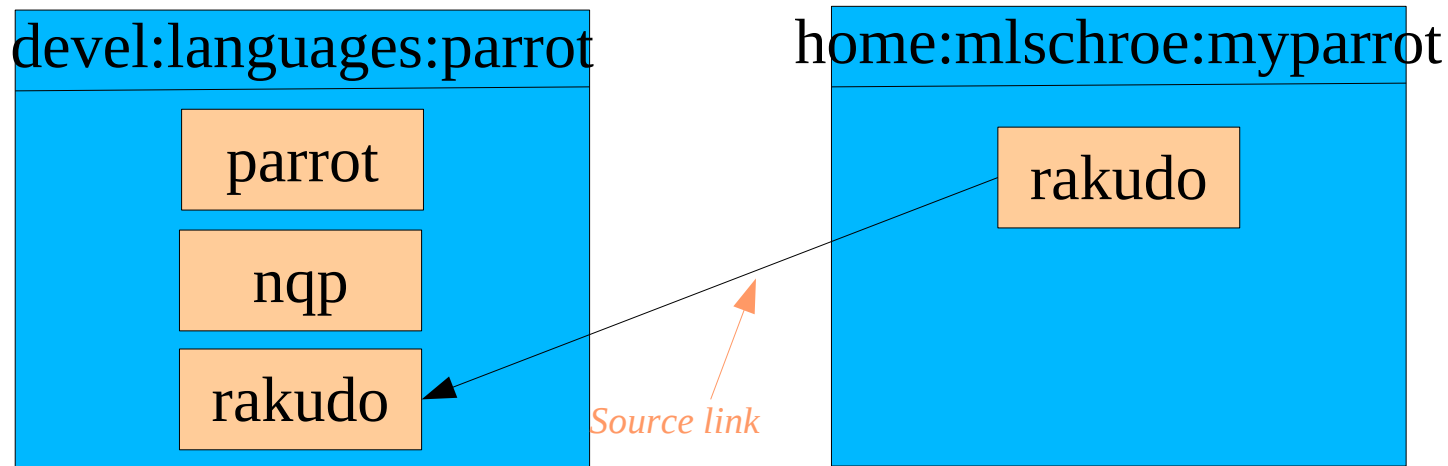
# Build Service Projects

- Repositories can build on top of other projects' repositories
  - The “base” distributions are good examples



# Collaboration

- Like SCM if multiple people have write access
- Otherwise, create a branch:



# Collaboration

- If you're done, ask to merge your changes with a “submit request”
- Notification through mail
- osc, Web UI

The screenshot displays the openSUSE Build Service web interface for a request. At the top, the breadcrumb navigation shows 'openSUSE Build Service > Requests > 115520'. The user 'mlschroe' is logged in, with links for '1 Request', 'Home Project', and 'Logout'.

The main section is titled 'Request 115520 (new)' and indicates the package 'Fixed package Requires, please accept'. It shows the request is in state 'new' and was created 19 minutes ago by 'mlschroe'.

Below the request details, there is a 'My Decision' section with a text input field for comments and buttons for 'Accept request', 'Revoke request', and 'Add a review'.

The 'Submit' section shows the request is for 'home:mlschroe:myparrot / rakudo' to be merged into 'devel:languages:parrot / rakudo'. There is an option to 'Forward to developed package openSUSE:Factory / rakudo'.

The 'Source Diff' section shows a diff for 'rakudo.changes' with the following content:

```
1 @@ -1,3 +1,9 @@
2 +-----
3 +Wed Apr 25 19:30:54 CEST 2012 - mls@suse.de
4 +
5 + fix package Requires
6 +
7 +-----
8 Sat Mar 24 06:40:00 CES 2012 - carlin@glass.org.nz
9
10 - update to 2012.03
11
```

The 'Build Results' section shows the build status for various architectures and projects:

Project	Architecture	Status
Fedora_15	i586	building
Fedora_15	x86_64	building
openSUSE_11.4	i586	succeeded
openSUSE_11.4	x86_64	building
openSUSE_Factory	i586	scheduled
openSUSE_Factory	x86_64	succeeded



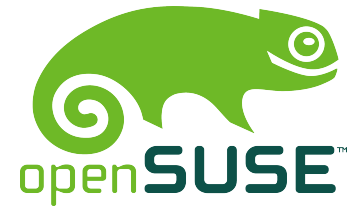
# Interconnect

- Access Sources and Binaries of a remote OBS instance
  - Support different architectures and distributions
  - Proprietary sources that must not leave the company
- Remote Instance is “mounted” in the project space
  - Source and binary package caching
  - Automatic merging & rebuilds also work with remote data
- [build.opensuse.org](https://build.opensuse.org): connections from 90 other instances



# Support

- Community
  - `opensuse-buildservice@opensuse.org`
  - Irc: `#opensuse-buildservice` on freenode
- Professional
  - <http://www.open-build-service.org/contact/>
  - B1 Systems (L3 backing by SUSE)



# Future

- 2.5 Release
  - Due end of this year
  - Product content tracking
  - Cross build (implemented by B1-Systems)
- 2.6 Release
  - Improved QA integration
  - More package formats, other operating systems



Learn more about the  
Open Build Service  
[www.openbuildservice.org](http://www.openbuildservice.org)

Thank you.

