Open Build Service

Open Build Service: Best Practice Guide

by Adrian Schröter, Björn Geuken, and Moisés Déniz Alemán

Contents

About this Guide

This book is part of the official Open Build Service documentation. These books are considered to contain only reviewed content, establishing the reference documentation of OBS.

These books are not considered to be focused on a special OBS version. They are also not a replacement of the documentation inside of the openSUSE wiki. But content from the wiki may get consolidated and included in these books.

Furthermore these books are written by the OBS community; please check the chapter how to work on these books. We request especially experienced users and administrators to join and to contribute to these books. It is not required to be a very good or even native English speaker, because we rely on community editors to improve the language.

1 How to use OBS web UI

This chapter explains and shows how you could use OBS web UI. We will show and use OBS web UI based on http://build.opensuse.org ↗. You need to make an account first to follow this chapter contents.

1.1 Start page and Login

Open your favorite browser and navigate to https://build.opensuse.org ↗

Welcome to openSUSE Build Service

The openSUSE Build Service is the public instance of the Open Build Service (OBS) used for development of the openSUSE distribution and to offer packages from same source for Fedora, Debian, Ubuntu, SUSE Linux Enterprise and other distributions..

Please find further details of this service on our wiki pages

This instance offers a special package search interface. Users of any distribution can search their for built packages for their distribution. For developers it is an efficient place to build up groups and work together through its project model.

All Projects   Search   Status Monitor

System Status

The above graphs show the number of active build jobs last week, currently 454 of 782 build hosts are busy building packages. At the moment 3298 packages are waiting on the different architectures.

FIGURE 1.1: START PAGE

openSUSE Build Service hosts **43,522** projects, with **359,621** packages, in **66,352** repositories and is used by **44,166** confirmed developers.

To proceed, you'll need to log in and authenticate with your username and your password. Click on Login and enter the data in the upper right corner.

🏠 openSUSE Build Service

Welcome to openSUSE Build Service

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All Projects   Search   Status Monitor

System Status

The above graphs show the number of active build jobs last week, currently 454 of 782 build hosts are busy building packages. At the moment 3298 packages are waiting on the different architectures.

FIGURE 1.2: LOGIN

openSUSE Build Service hosts **43,522** projects, with **359,621** packages, in **66,352** repositories and is used by **44,166** confirmed developers.

After successful authentication, you'll end up on the start page again - with new options visible. We'll go through most of them in detail, but first lets create your home: in the next step.

openSUSE Build Service

Welcome to openSUSE Build Service

The openSUSE Build Service is the public instance of the Open Build Service (OBS) used for development of the openSUSE distribution and to offer packages from same source for Fedora, Debian, Ubuntu, SUSE Linux Enterprise and other distributions..

Please find further details of this service on our wiki pages

This instance offers a special package search interface. Users of any distribution can search their for built packages for their distribution. For developers it is an efficient place to build up groups and work together through its project model.

Your Home	All Projects	Search	New Project	Status Monitor

System Status
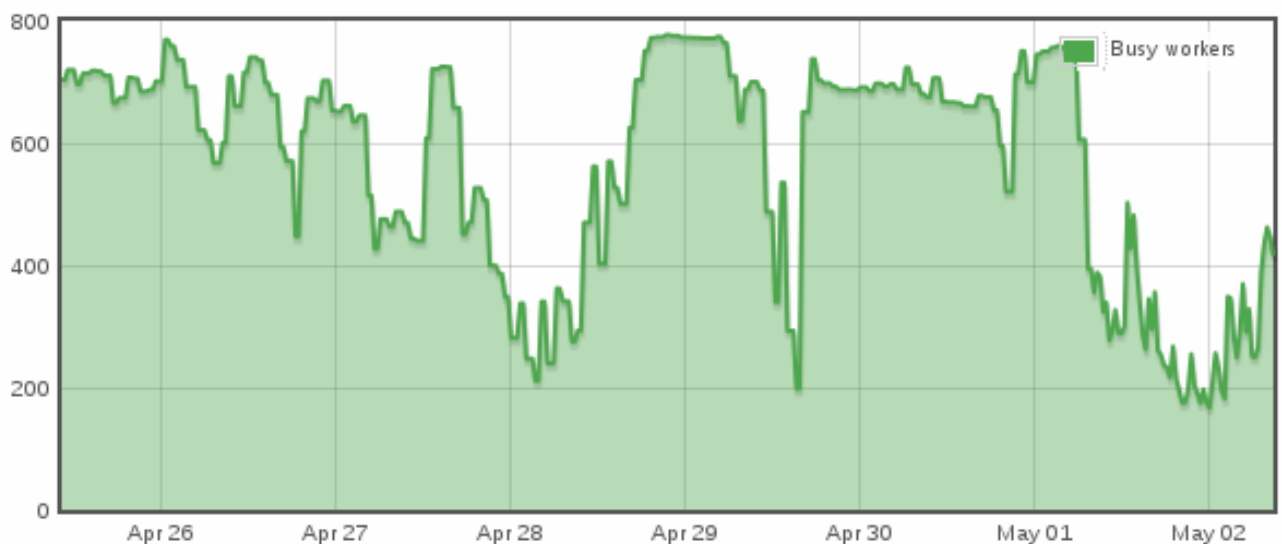
The above graphs show the number of active build jobs last week, currently 454 of 782 build hosts are busy building packages. At the moment 3298 packages are waiting on the different architectures.

FIGURE 1.3: LOGGED IN

openSUSE Build Service hosts **43,523** projects, with **359,627** packages, in **66,363** repositories and is used by **44,166** confirmed developers.

1.2   Home project

Every user has a home project (home:[userid]) where he/she has write access by default. This is your personal workspace where you can experiment and play. Click on the link "Home Project" at the upper right to get to your home project.

1.2.1   The project page

Your home project will be empty for now, but you can add packages containing sources/build recipes and projects which are containers for the build targets. As you can see, you're the default maintainer which grants you full write access to this project. You're also the bug owner of your project.
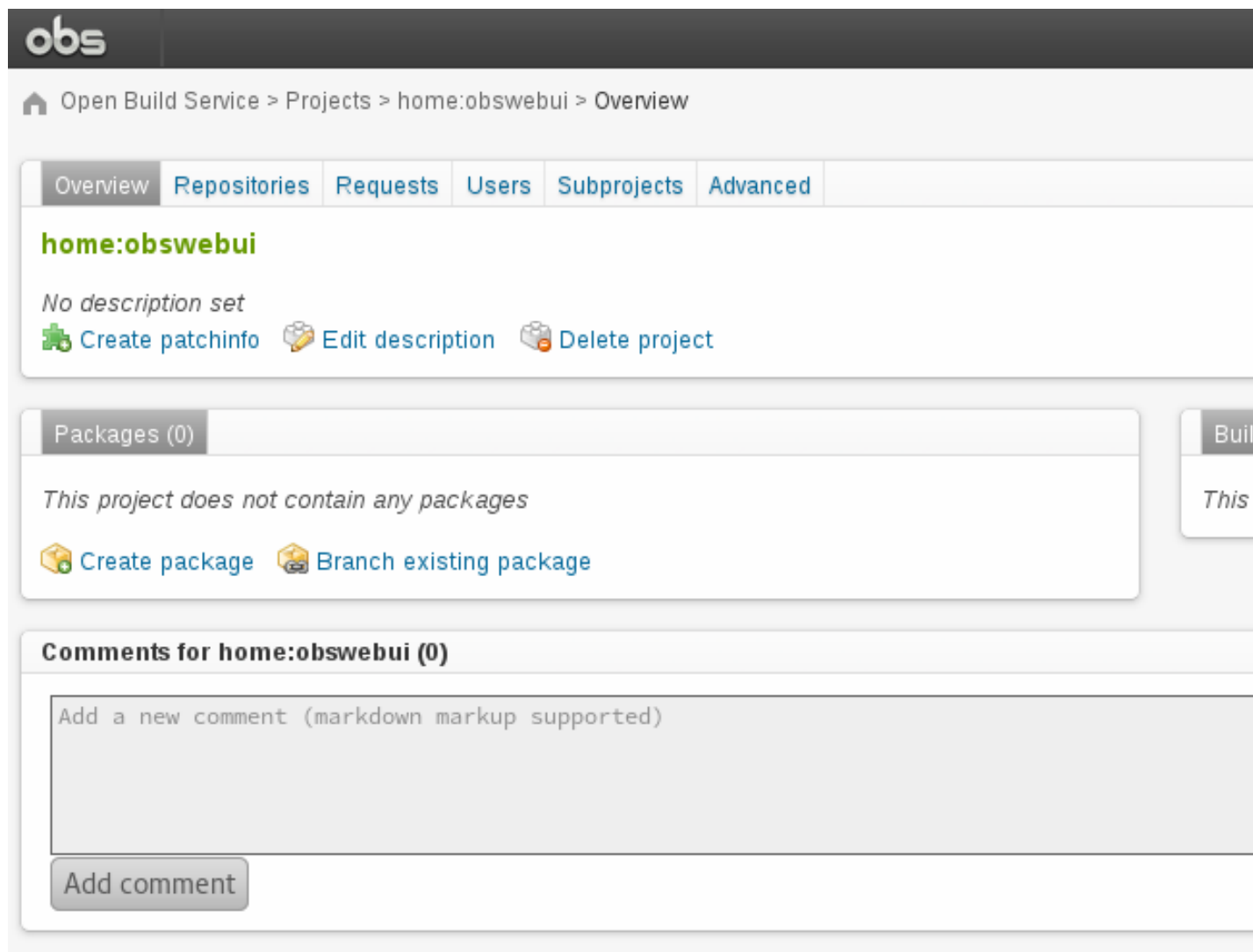
FIGURE 1.4: PROJECT PAGE

1.2.2 Changing a project's title and description

On every project page you will find a "Edit description" link. This link will lead you to a place were you can review and change your project's title and description. Click on the "Update project" button to save.

FIGURE 1.5: UPDATING PROJECT DESCRIPTION

Changing a project's title and description

1.2.3   Creating subprojects to a project

Subprojects are projects that are part of another projects namespace. Subprojects are an easy way to organize multiple projects. On the "Subprojects" tab you can find a list subprojects that belong to a project. To create a new subproject click on the "New subproject" link, fill in the form and press the "Create project" button.

> **Note**
>
> Please note that maintainer of upper projects always can modify the sub projects. Apart from that all projects are separated and have no influence to each other.

FIGURE 1.6: CREATING SUBPROJECTS

Creating subprojects to a project

1.3 My Projects, Server Status

Let's leave for now your home: for a bit and explore the build service. Click on "My Projects" on the left at the bottom. This opens a page listing your watched projects and your involvements in projects or packages.
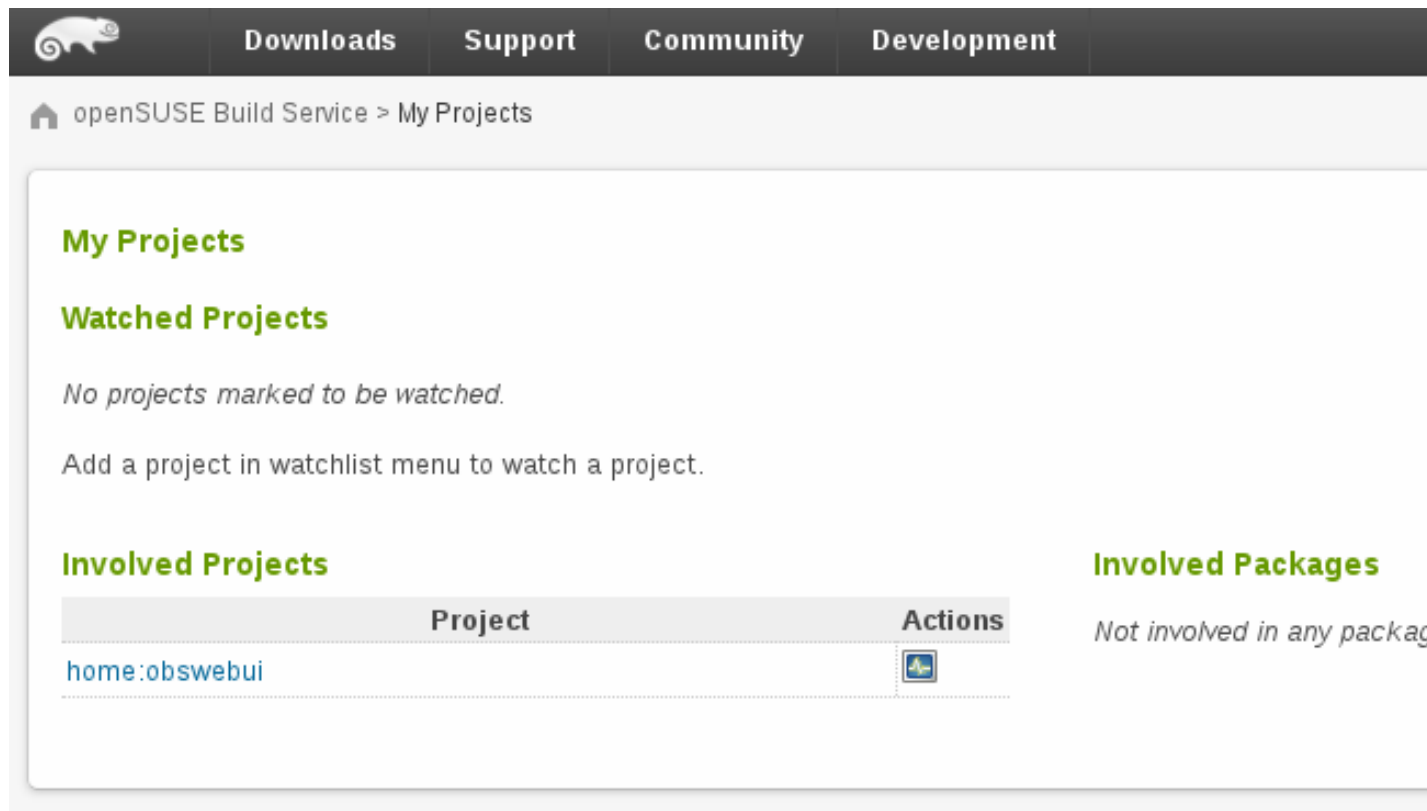
FIGURE 1.7: MY PROJECTS

Now, let's visit the main monitor page by clicking on "Status Monitor". You see here the status of the services, some graphs and graphics are showing the currently running and completed jobs an the overall load.
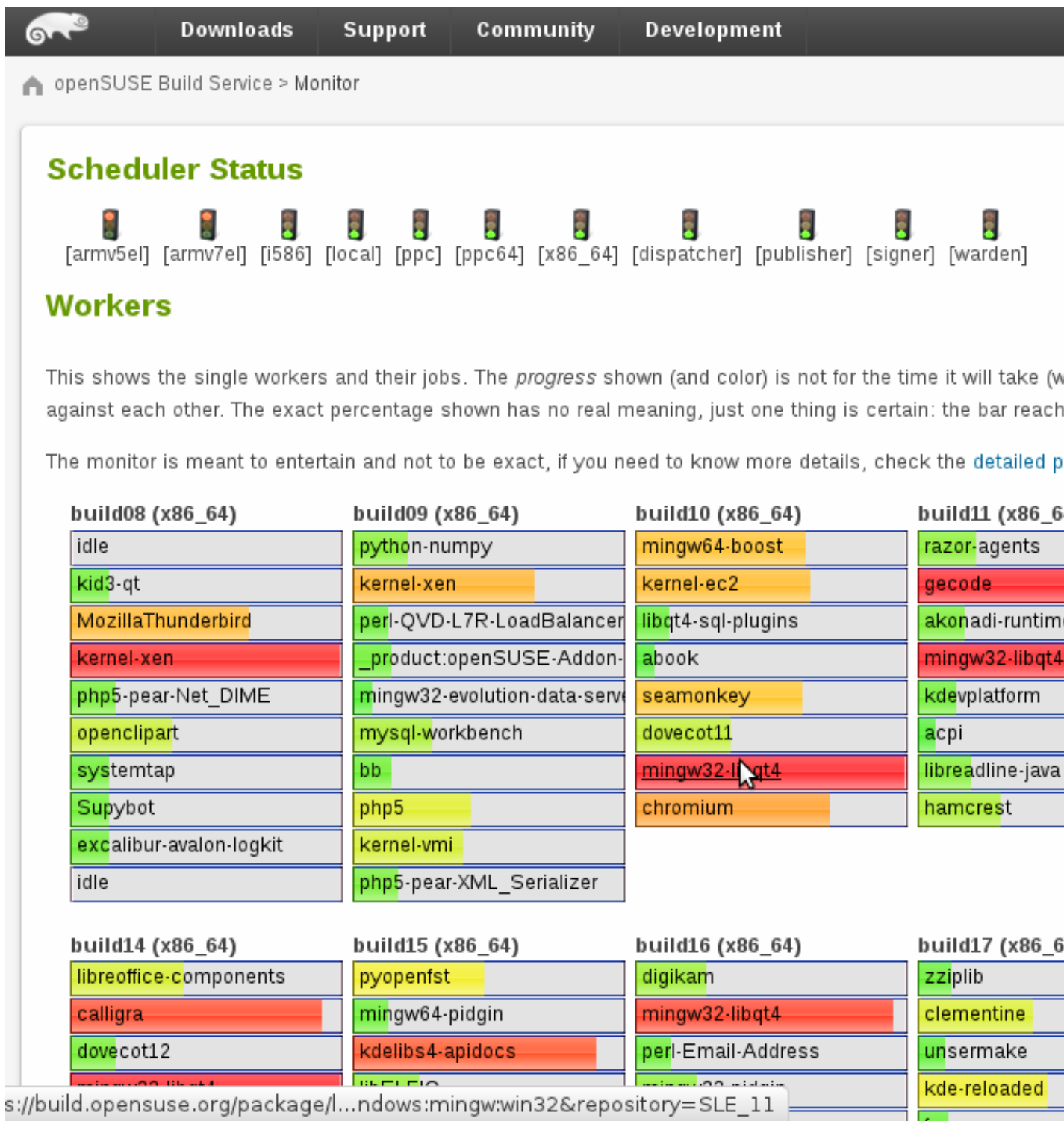
FIGURE 1.8: STATUS MONITOR

1.4 Create a link to a package in your home:

We'll show you how you can log in and use the web interface hosted at build.opensuse.org. This includes login, adding a link to a package in your personal workspace (home:) and how to build that package by adding a repository. First, let's enter "My Projects" by clicking on the link at the bottom left.
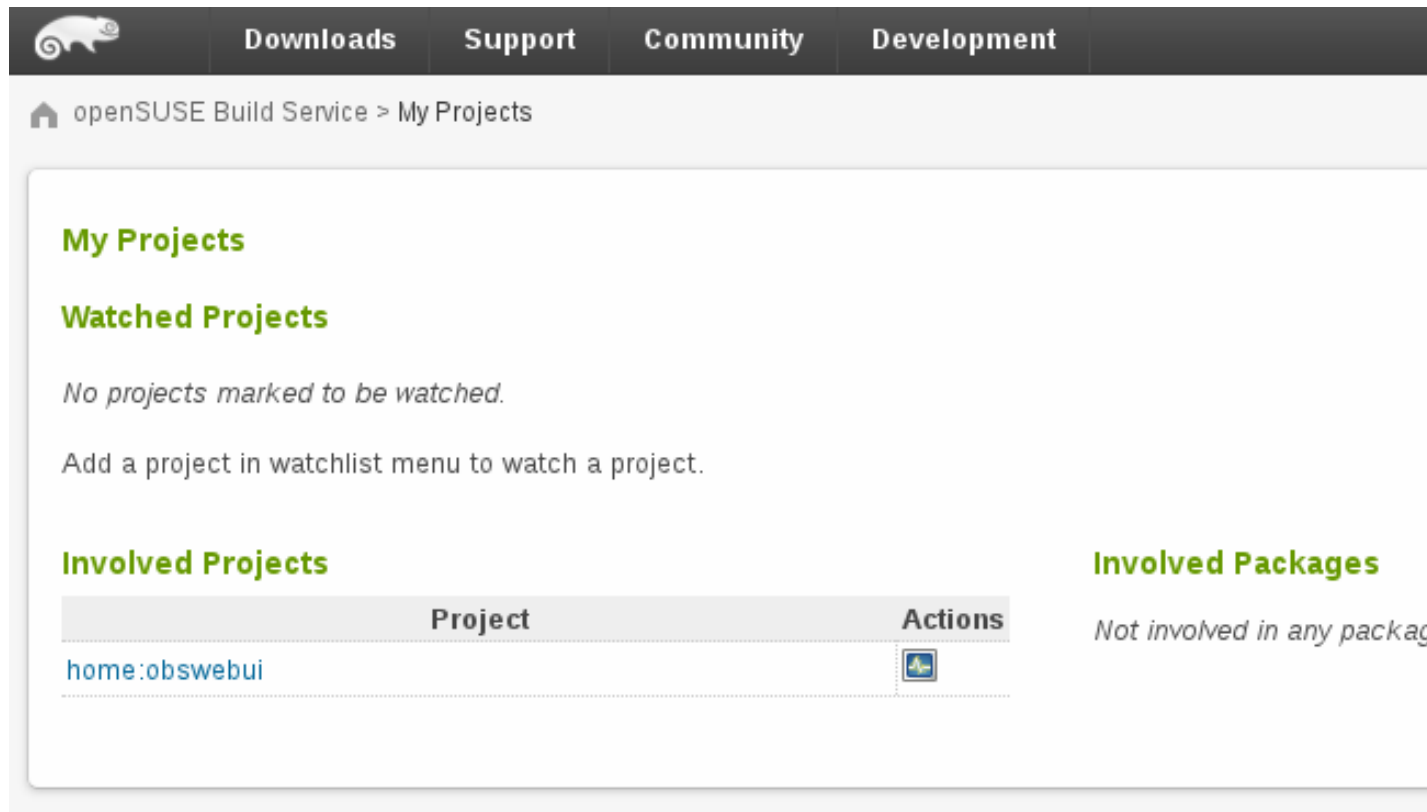
FIGURE 1.9: MY PROJECTS

Now let's create a link to a package and add a repository to build against. A link is basically a pointer to sources of an already existing package. By "repository" we mean container of built binary packages like Debian_8 or openSUSE_13.2. Let's follow these steps:

1. Add link to the existing package.

2. Add repository.

3. Observe the build on the monitor page.

4. Look at package's page.

1.4.1 Add link to existing package

Right below packages, there's "Branch Package from other Project" .
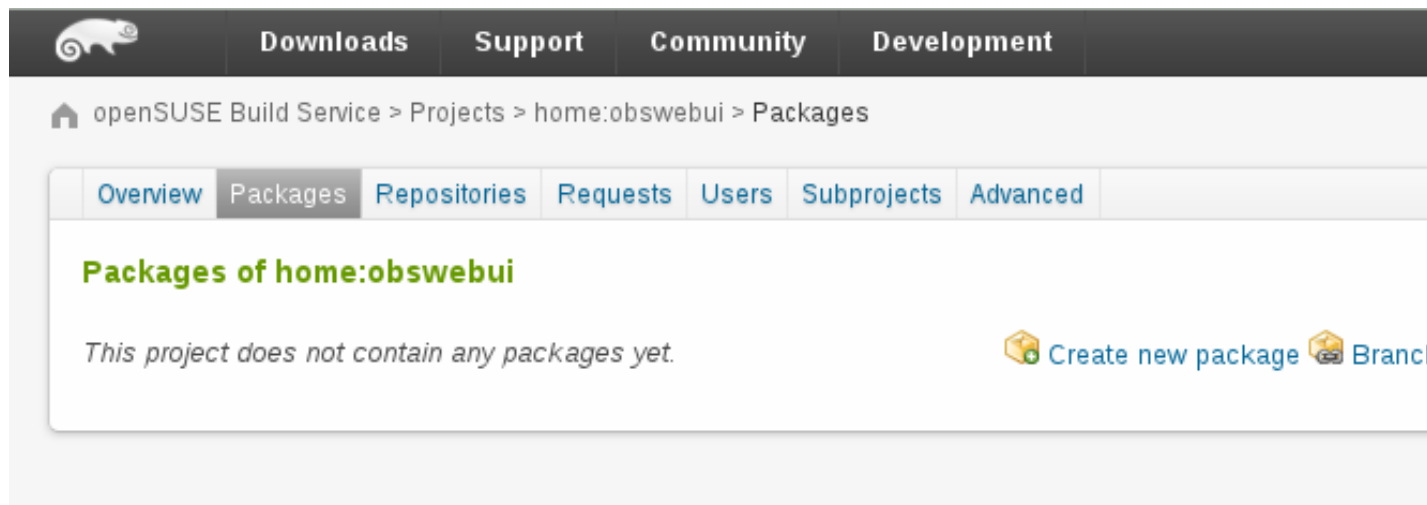
FIGURE 1.10: BRANCH PACKAGE

Open that page and enter for

```
        Name of original project:
        Apache
```

and for

```
        Name of package in original project:
        flood
```

- we'll leave "Name of linked package in target project" empty. This is shown on the next picture:

FIGURE 1.11: APACHE FLOOD BRANCH

Proceed with "Create Branch" and you'll be redirected to your home again. You'll see a new package "flood" and a notice about the branch being added.

Branched package home:obswebui / flood

Overview | Sources | Repositories | Revisions | Requests | Users | Advanced

flood

Flood--a Profile-Driven HTTP/HTTPS Load Tester

Flood is a profile-driven HTTP load tester. It can be used to gather important performance metrics for your Web site.

See the FAQ for common questions about flood:
http://httpd.apache.org/test/flood/faq.html

Authors:

Aaron Bannert <aaron@clove.org>
Justin Erenkrantz <jerenkrantz@apache.org>
...and other members of the Apache Software Foundation, please see
<http://www.apache.org/>

Information

✅ 5 files

Actions

🐞 Report Bug

↪ Branch package

The project this
targets defined

FIGURE 1.12: BRANCHED PACKAGE

Wonderful, we've added a pointer to the sources! Now we need to add a repository, so the builder knows the target-distribution to build packages for. How to add a repository to a project is documented at *Section 1.6.1, "Adding a repository"*.

1.4.2 Package page, build log and project monitor page

Next, it is time to explore the Monitor page, the package detail page and the build log. Just click on the links and explore the web interface. I recommend starting with your home project's top level 'overview' page - click on the Overview tab and you may see something like this:
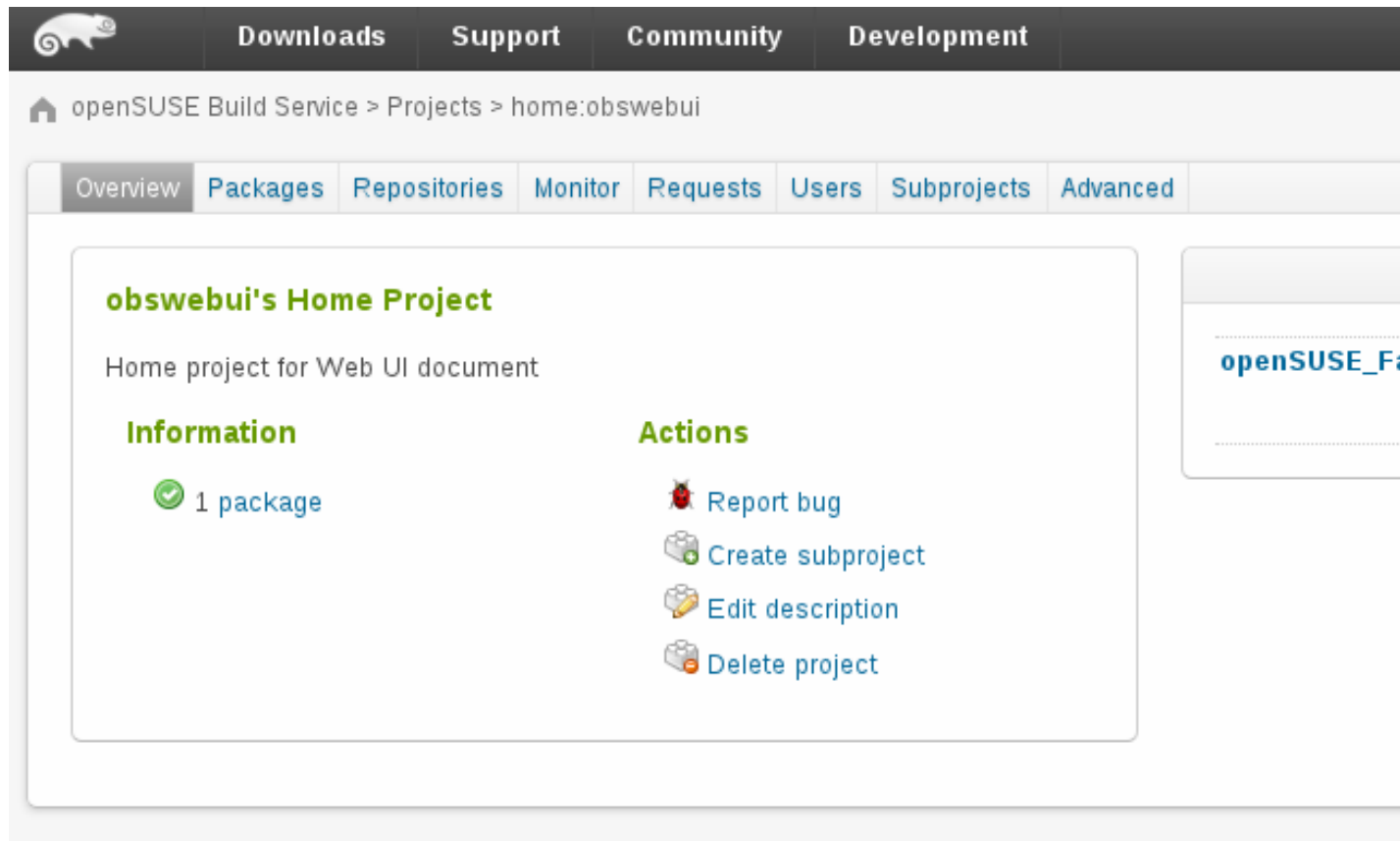
FIGURE 1.13: FLOOD_SUCCEEDED_FINISHED

If you wait a bit, you would see the below building suceess screen
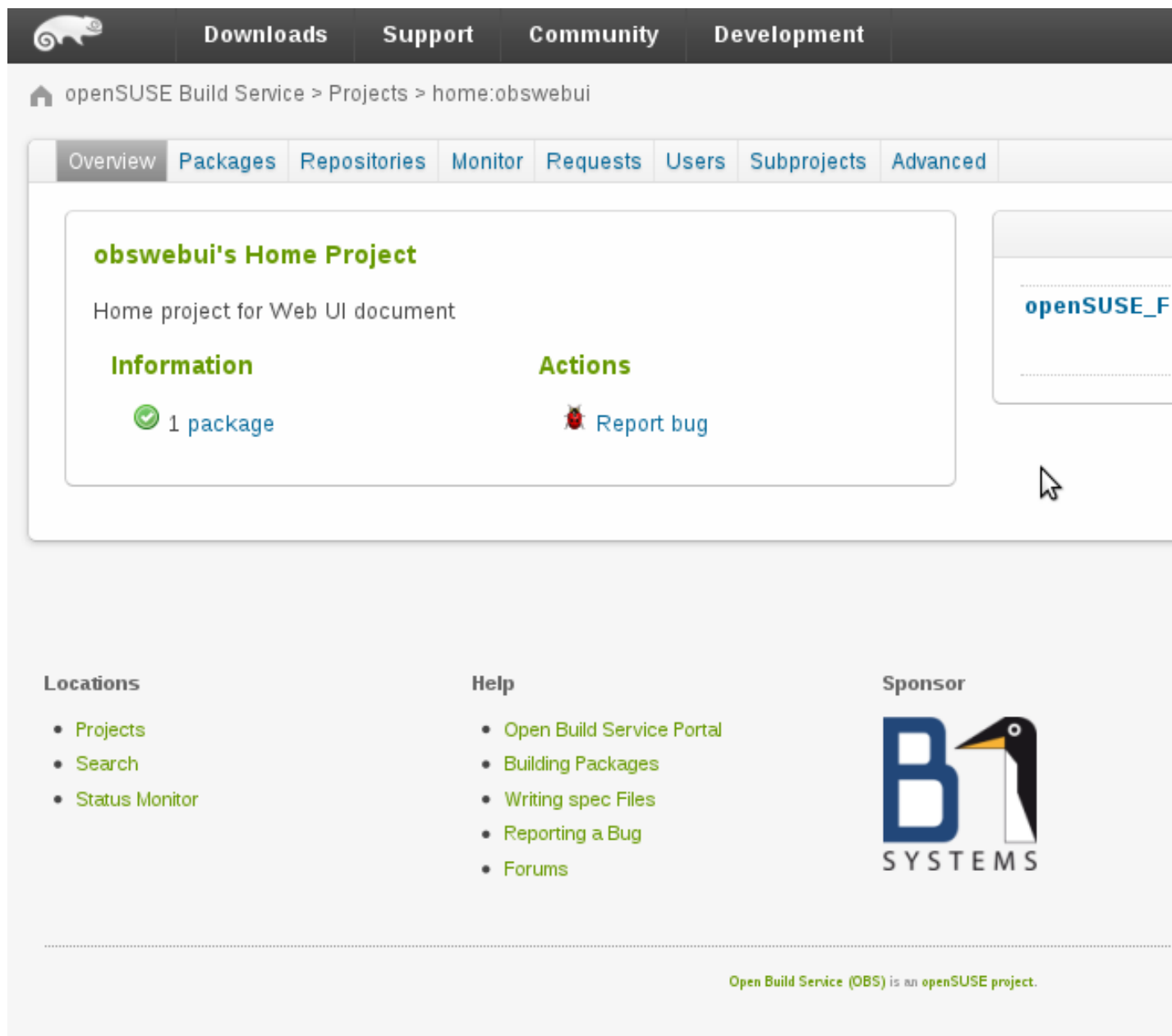
FIGURE 1.14: FLOOD_BUILD_SUCCESS

please try to click blue "succeeded" message, then you could see the build log as below.

FIGURE 1.15: FLOOD_BUILD_LOG

Package page, build log and project monitor page

1.5 Repository Output: Built Packages

To find the RPMs you built, go to your home project page and click Repositories. From there click on the blue repository name. For example, openSUSE_Factory:
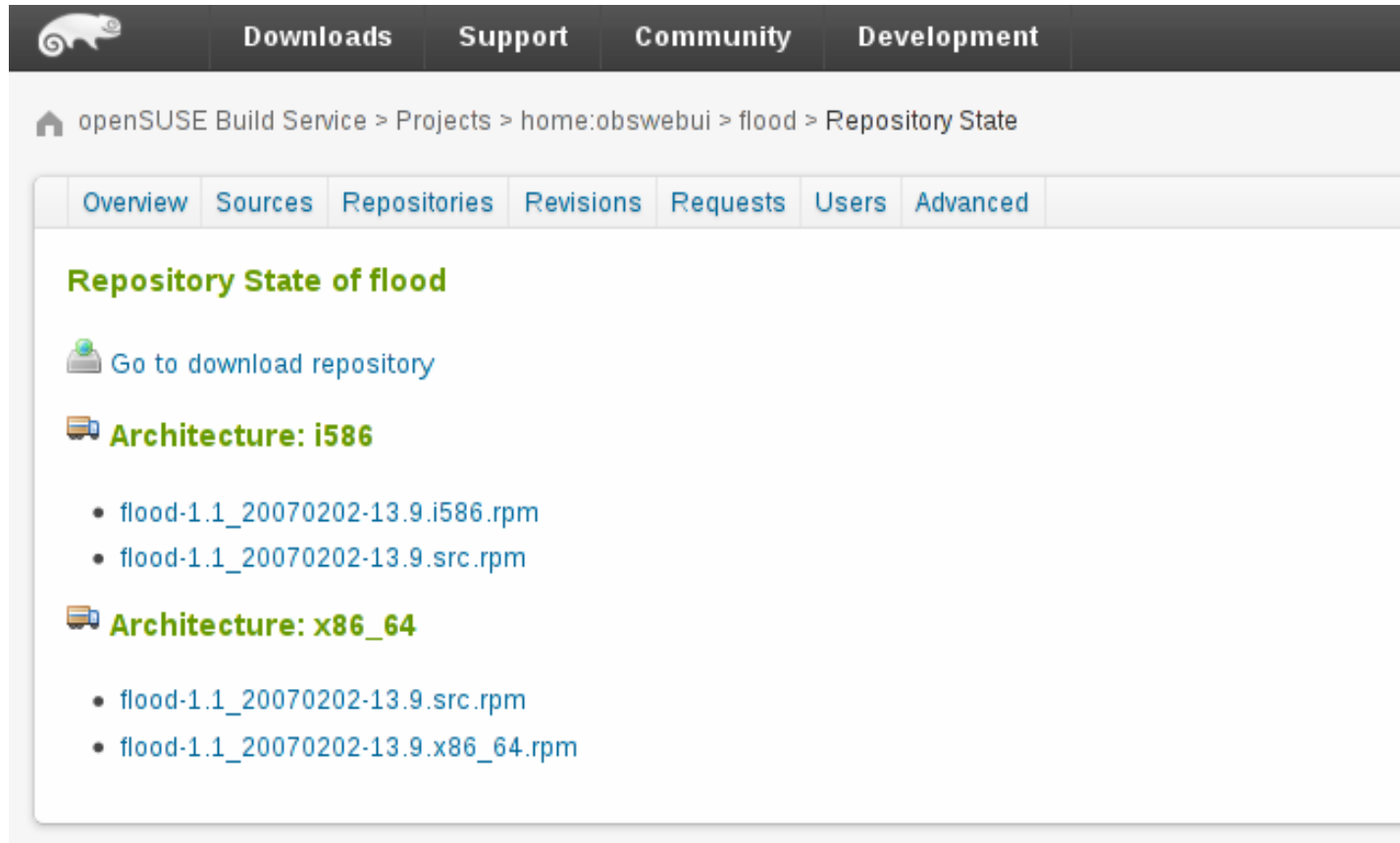
FIGURE 1.16: MY_REPOSITORY

> **Note**
>
> Published repositories are marked with the OBS LKW 🚚

Now click on Go to download repository. Note that publishing the repository might take a while. Until then you will get a 404 error. Once the binaries are there, you'll see something like this:
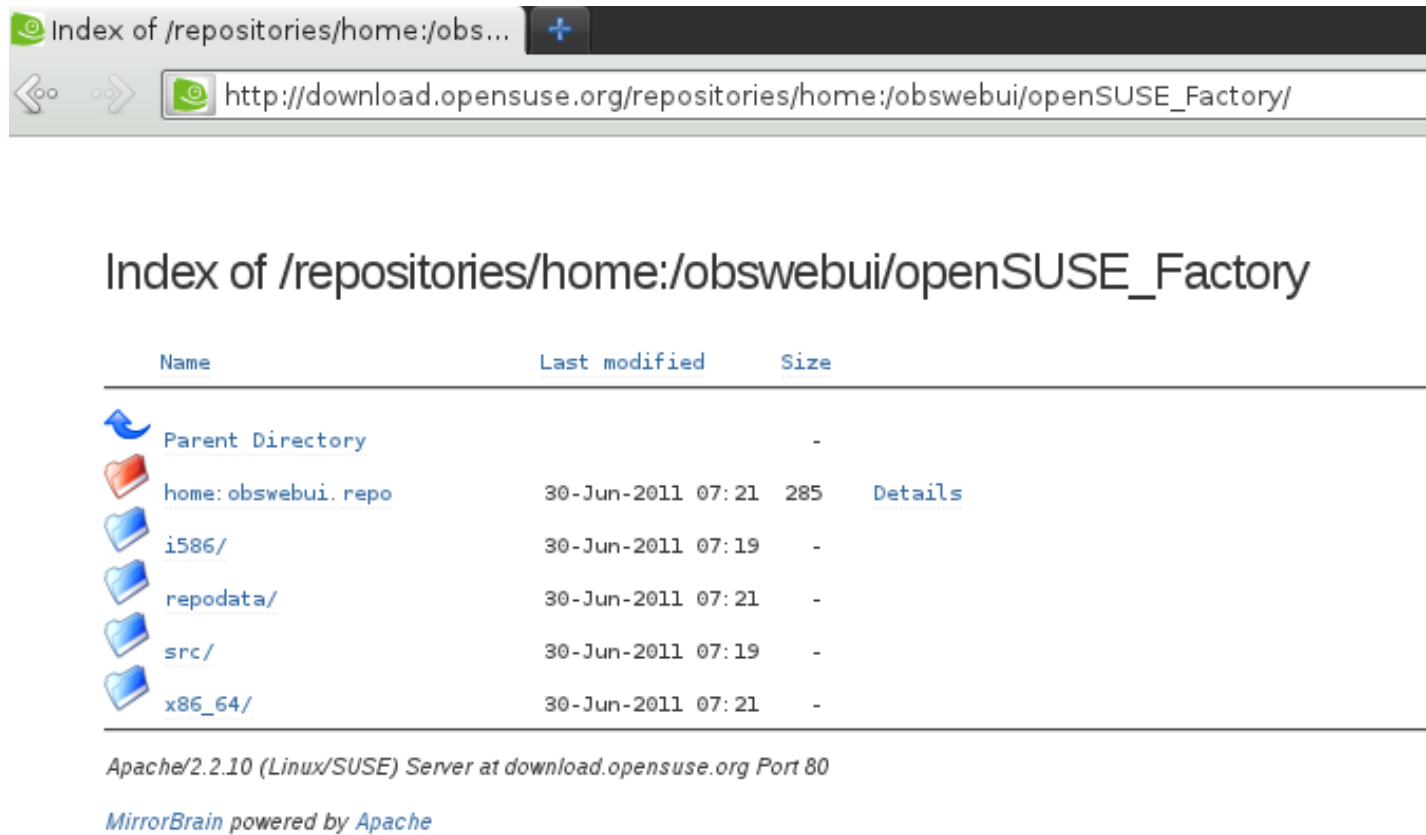
FIGURE 1.17: REPOSITORY_STRUCTURE

Your rpms can be found in the subdirectories, and the .repo file is suitable for use with zypper, yum or other repository-friendly package management tools.

1.6   Managing Repositories

This section will show how you can manage your project's repositories.

1.6.1 Adding a repository

To add a repository to your project, click on "Add Repositories" on the project's repository tab. This will direct you to a list of possible distributions you can built packages for, see *Figure 1.18, "Add Repository to project"*.
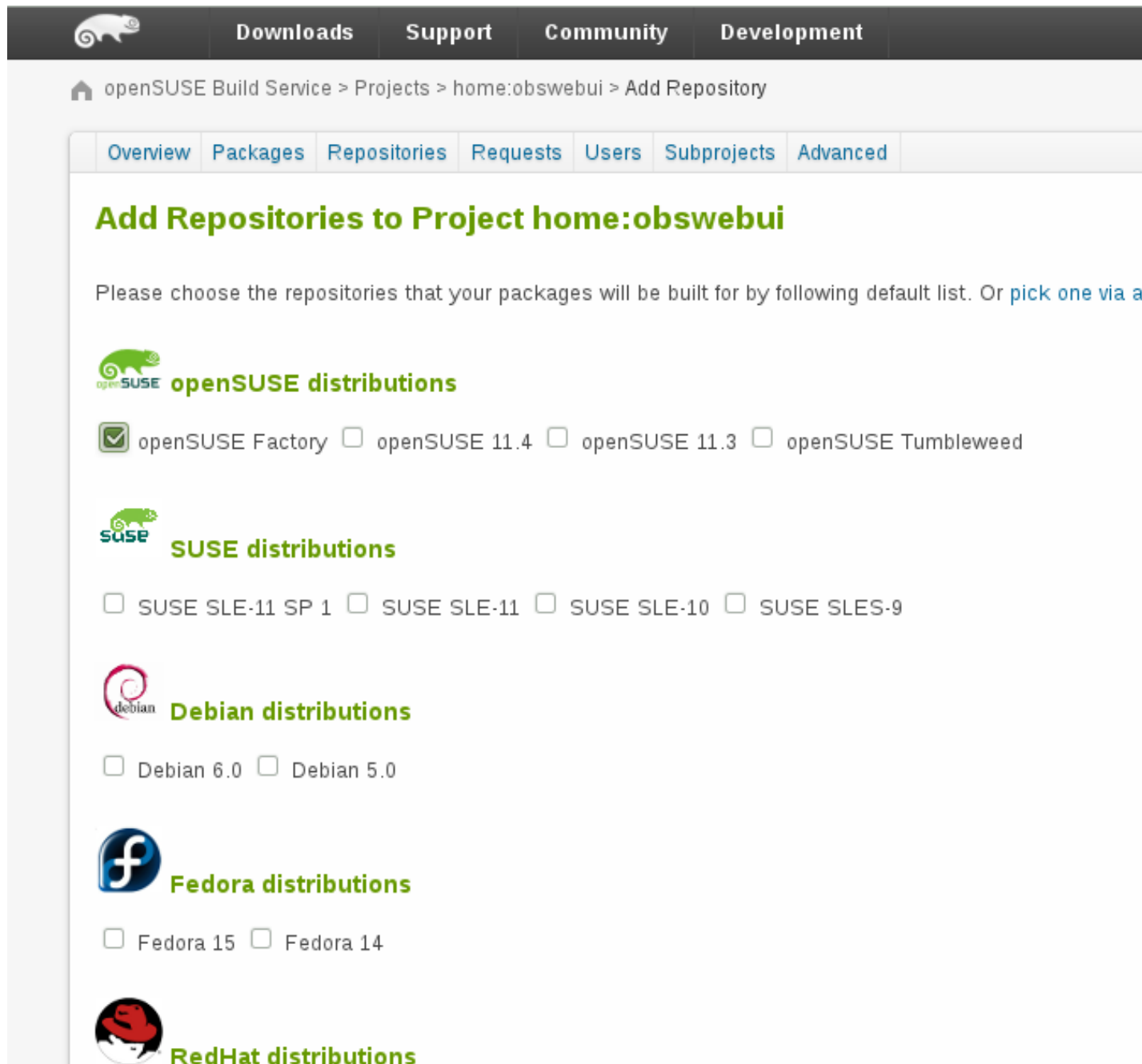
FIGURE 1.18: ADD REPOSITORY TO PROJECT

> **Note**
>
> If you could not find a repository that fits your needs, you might want to switch to the expert mode. Click on the "Expert mode" link right to the button. This page allows you to search and select a repository of any project available in OBS and add it to your projects repository list.

This will take you back to your home: project. The build repository might be disabled: if so, klick on the cogwheel to enable it. Congratulations, it is configured. On a heavily loaded server, it can sometimes take a few minutes for your changes to become effective, but your linked package will automatically begin building.

1.6.2   Add Download on Demand repositories to a project

When you have administrator rights you will be able to add Download on Demand repositories to your project. To do so, click on the "Add DoD repository" link and enter your DoD repository data into the form.
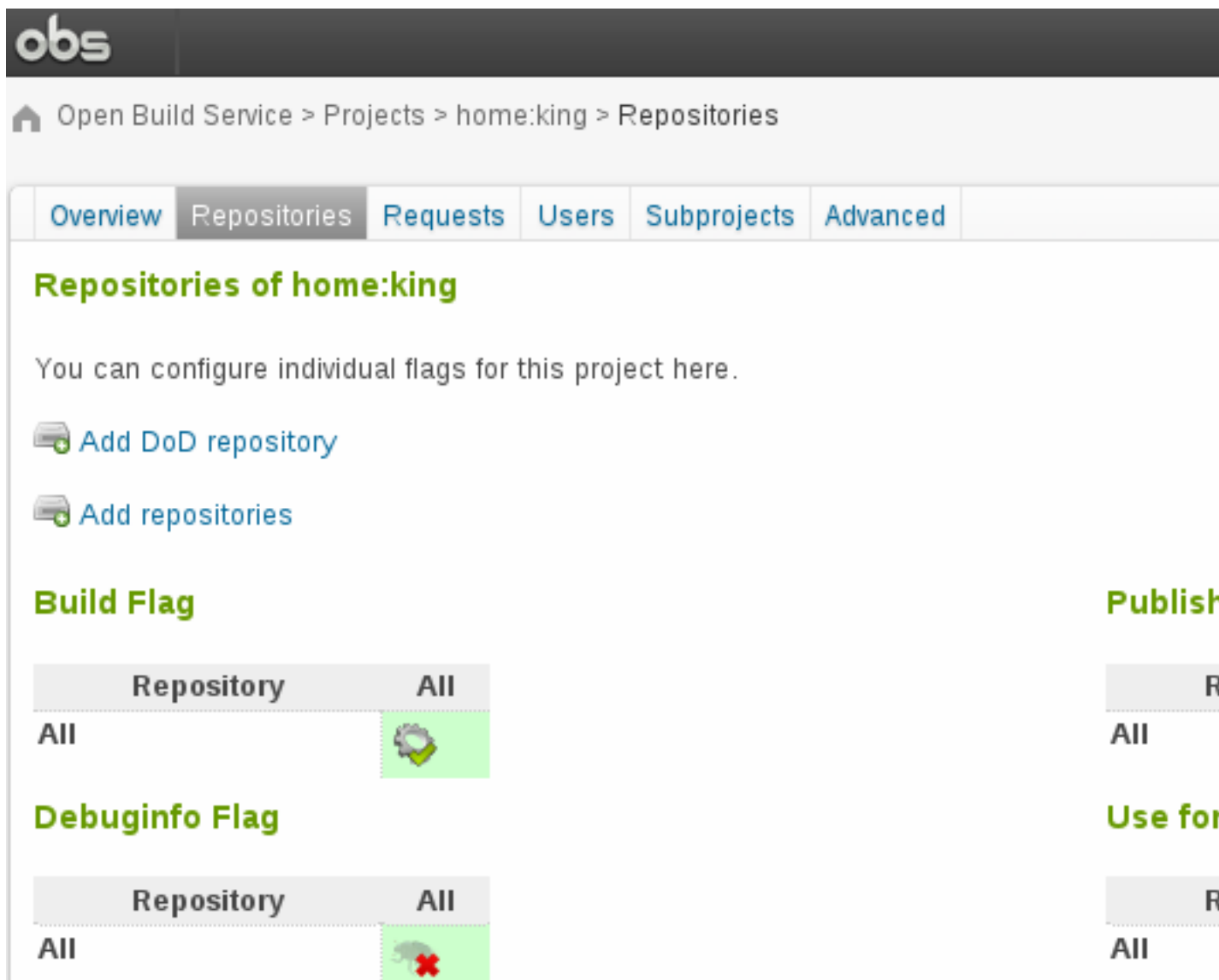
FIGURE 1.19: ADD DOWNLOAD ON DEMAND REPOSITORY

The minimal set of fields you have to enter are architecture, repository type and the url that provides the binary packages. Detailed information about the data you can enter here you can find at the DoD concept section (http://openbuildservice.org/help/manuals/obs-reference-guide/cha.obs.concepts.html#concept_dod)↗. Press "Save" to create the repository.

Repositories of home:king

You can configure individual flags for this project here.

Add DoD repository

Repository name | DoD test repository

Download on Demand Source

Architecture	x86_64 ⌄
Type	rpmmd ⌄
Url	http://opensuse.org/repo
Arch. Filter	
Master Url	
SSL Fingerprint	
Public Key	

Save

Add repositories

FIGURE 1.20: DOWNLOAD ON DEMAND REPOSITORY FORM

Once the repository got added you are able to edit, delete or add additional DoD repository sources.

1.6.3 Add additional DoD repository sources to a repository

FIGURE 1.21: ADDING DOWNLOAD ON DEMAND REPOSITORY SOURCES

Open the DoD repository sources form by clicking the "Add" link. Here you can enter your additional DoD repository source. Click the "Add Download on Demand" button.

Add additional DoD repository sources to a repository

FIGURE 1.22: FORM FOR ADDING DOD REPOSITORY SOURCES

1.6.4   Edit DoD repository sources

To edit DoD repository sources after they got added click on the "Edit" link that you find right to each DoD repository source.

Repositories of home:king

You can configure individual flags for this project here.

DoD test repository *(i586, x86_64)*

🗑 Delete repository 🖥 Go to download repository

Download on demand sources 🗑 Add

x86_64 : http://opensuse.org/repo/x86_64 (rpmmd)

Edit Download on Demand for DoD test repository / x86_64

Architecture	x86_64 ⌄
Type	rpmmd ⌄
Url	http://opensuse.org/repo/x86_
Arch. Filter	
Master Url	http://master.opensuse.org/foc
SSL Fingerprint	sha256:0a64...0303
Public Key	

Update Download on Demand

FIGURE 1.23: FORM FOR EDITING DOD REPOSITORY SOURCES
i586 : http://opensuse.org/repo/i586 (rpmmd) ✏ Edit 🗑 Delete

1.6.5 Edit DoD repository sources

To delete a repository or repository source, click on the "Delete" link and accept the confirmation dialog.

1.7 Image Templates

Image templates are pre-configured image configurations. The image templates page (https://build.opensuse.org/image_templates) ↗ provides a list of these templates. Users can clone these templates and further configure them as they like.

How you can create your own image templates will be shown here.
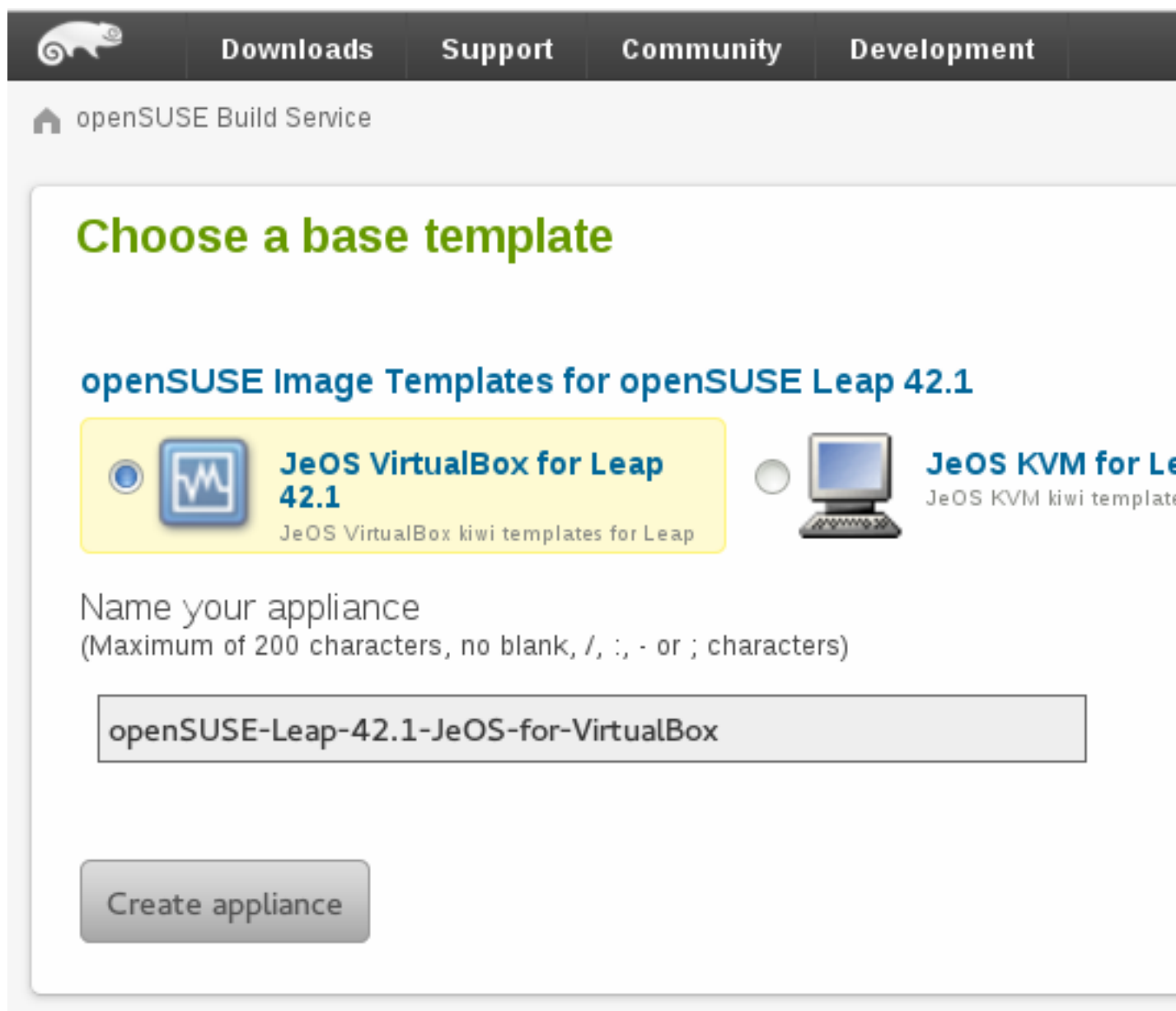
FIGURE 1.24: OBS TEMPLATES PAGE

1.7.1 Creating Your Own Image Templates

Create a subproject of your home project.

Creating Your Own Image Templates

Overview	Repositories	Monitor	Requests	Users	Subprojects	Advanced

Subprojects of home:bgeuken

Subproject	▲	
branches:devel:languages:ruby:extensions		Branch proj
branches:home:justlest:prometheus		Branch proj
branches:OBS:Server:Unstable		Branch proj

Subproject Name:

home:bgeuken: `my_image_templates`

Title:

Björn's collection of image templates

Description:

☐ Disable build results publishing.

Create Project

FIGURE 1.25: FORM FOR CREATING IMAGE TEMPLATE SUBPROJECT

Creating Your Own Image Templates

Published image templates are fetched via a project's attribute. Any package container living in a published project will be visible on the image templates page.

Within that project create a new package. That will be your actual image template.

FIGURE 1.26: NEW IMAGE TEMPLATE

Add the 'KIWI image build' repository to your project. This repository is needed to build KIWI images in your project. Go to the 'Repositories' tab, click on 'Add repositories' and chlick on the 'KIWI image build' checkbox.
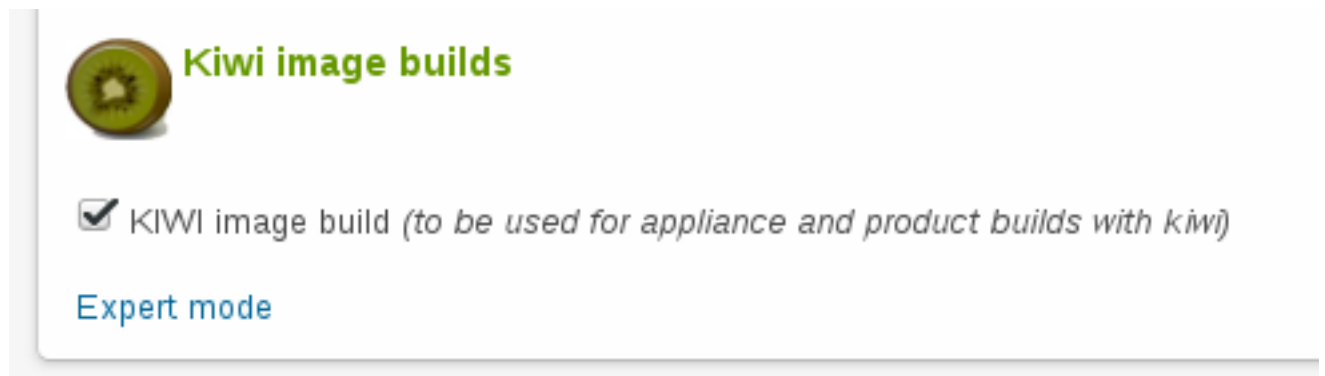
FIGURE 1.27: **ENABLING THE KIWI IMAGE BUILD REPOSITORY**

Add sources for your image configuration.
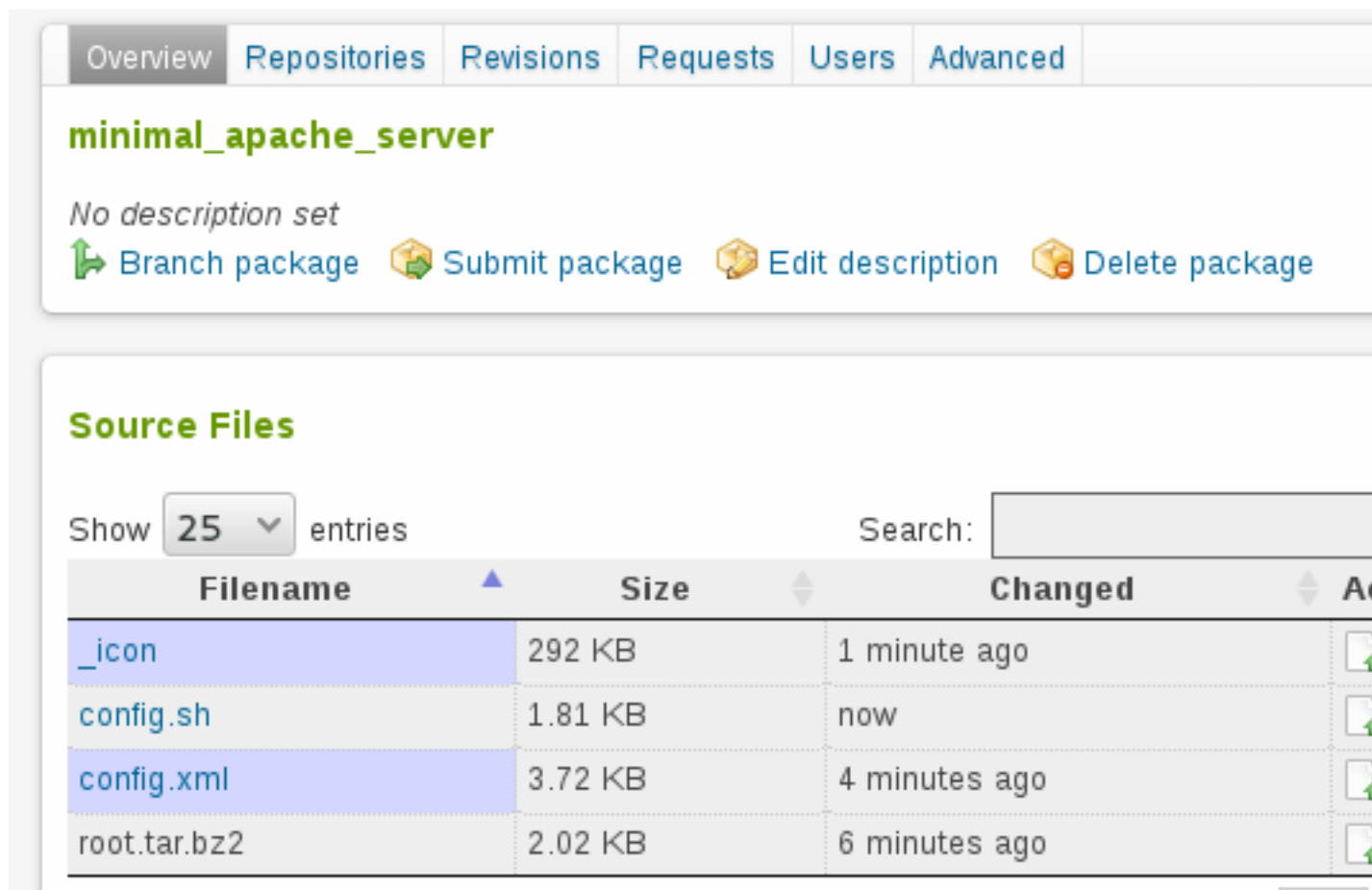
FIGURE 1.28: **OVERVIEW OF SOURCES OF CUSTOM IMAGE TEMPLATE**

Creating Your Own Image Templates

KIWI configurations usually consists of an xml configuration root tarball.

In addition you can define an icon for your image templates by adding graphical image (eg. png, jpg) to your template sources and name it `_icon`. If that file exists, it will be used as icon for your image on the image templates page.

For a full list of image descriptions and general information about building images with KIWI please refer to the KIWI project page (http://opensuse.github.io/kiwi/) ↗ and the KIWI cookbook (https://doc.opensuse.org/projects/kiwi/doc/) ↗.

1.7.2 Publishing Image Templates on the Official Image Templates Page

Once everything is set up and your templates are building, you might want to publish them. In that case contact the admin of the OBS instance you are using and ask them kindly to do so. If you happen to use the official OBS (https://build.opensuse.org/) ↗, that would be admin@opensuse.org.

1.8 KIWI Editor

You can edit the KIWI file associated to your project. It is only possible, at the moment, to edit the repository list. If you are running your own instance of OBS be sure you have the kiwi_image_editor feature enabled in your config/feature.yml file.

1.8.1 Accessing the KIWI Editor

Go to your package, and upload a file with the .kiwi extension (i.e. "test.kiwi"), with a valid KIWI content.

obs

Open Build Service > Projects > home:tom > hey

Overview Repositories Revisions Requests Users Advanced

hey

hey

Branch package   Submit package   Edit description   Delete package

Source Files

Show 25 ∨ entries   Search:

Filename ▲	Size	Changed	Acti
hola.txt	0 Bytes	about 2 months ago	
test.kiwi	1.65 KB	1 minute ago	

Showing 1 to 2 of 2 entries   Previous   1

Add file

Latest Revision

Thor (tom) committed 1 minute ago (revision 56)

Files changed   Browse Source

Comments for home:tom (0)

Add a new comment (markdown markup supported)

FIGURE 1.29: EXAMPLE OF A PACKAGE WITH A KIWI XML FILE

Add comment

> **Note**
>
> You should see now a "Edit KIWI" link (next to "Delete package" link).

Click on the "Edit KIWI" link.

FIGURE 1.30: KIWI EDITOR. SHOW SCREEN

Click on the "Edit" button.

obs

🏠 Open Build Service

| Kiwi | Overview | Repositories | Revisions | Requests | Users | Advanced |

Christians_openSUSE_13.2_JeOS

Repositories

Type:
rpm-dir ⌄

Priority:
20 ⌃⌄

Alias:

Source:
http://download.opensuse.org/distribution/13.2/repo/oss/

User:

Password:

☐ Prefer license   ☐ Image include   ☐ Replaceable

Type
apt

Sour
http

User
Tom

☐

Type:
rpm-md ⌄

Priority:
20 ⌃⌄

Alias:

Source:
http://download.opensuse.org/distribution/13.1/repo/oss/

User:

Password:

☐ Prefer license   ☐ Image include   ☐ Replaceable

Type
rpi

Sour
http

User

☐

FIGURE 1.31: KIWI EDITOR. EDIT SCREEN

Save

Modify the KIWI configuration as you want, and click the "Save" button when you finish.

2   Basic Concepts and Work Styles

These best practices should be known by every OBS user. They describe how to setup projects, working with own or foreign sources.

2.1   Setup a project re-using other projects binaries

Binaries are the

2.2   Setup a project reusing other projects sources

You can also setup your own project using the sources, spec files and patches from another project and develop within this project.

```
#osc copypac SOURCEPRJ SOURCEPAC DESTPRJ
```

By default, Open Build Service will strip the maintainer info and now make it part of your own project. To clarify, when we speak of a project, it can mean just one package or a complete set of packages with their own build dependencies.

2.3   Contribute Directly to External Projects

In case a user does not have commit permissions to a project, he can request maintainership permissions for this project. This makes sense if the user is already known to the project owners and they trust him as a maintainer. There is a way to do this via the request system of OBS, but only via osc so far:

```
# osc createrequest -a add_me maintainer PROJECT
```

2.4   Contribute Indirectly to Foreign Projects

Users who are new to a given project, either because they are new users with Open Build Service or packaging or don't have any deeper knowledge about a certain project won't have direct commit permissions. However, they can still create a copy of any package source and ask back to merge their changes. Open Build Service has support to make this easy.

Wiki reference: User comment page (http://en.opensuse.org/openSUSE:Build_Service_Collaboration) ↗

3 Publishing upstream binaries

This chapter covers main step of using OBS to publish binaries of your project for multiple distributions.

3.1 Which instance to use?

3.1.1 Private OBS instance

OBS is open source project and therefore you can setup your own instance and run it by your own. The main advantage of this approach is that you can keep all your sources and recepies unpublished if you need to (for example because of NDA). Obvious downside of this approach is that you need to maintain your own server/servers for running builds, publishing and mirroring. Also making your project public may attract some potencial contributors.

More information about setting up your own private OBS instance can be found in *Chapter 4, OBS Local Setup* .

3.1.2 openSUSE Build Service

Other option is to use some publically available instance of OBS. One good example is openSUSE Build Service - http://build.opensuse.org ↗ . This OBS instance can be used by anybody to freely create binaries for any of the supported distributions. Big advanatage is that somebody is already taking care of all the infrastructure. You can store your sources there, build your packages and got them mirrored around the world. You don't need to get your own server a configure it, you can start using it right a way.

3.2 Where to place your project?

This part helps you to decide on how to name and where to place your project and what project structure to create. This is more important if you are sharing your OBS instance with other people like in openSUSE Build Service (http://build.opensuse.org) ↗ .

3.2.1   Base project

If there are more packages in OBS, like for example in openSUSE Build Service (http://build.opensuse.org) ↗, these packages needs to be somehow divided into projects so it is easier to find what people are looking for and it isn't all just one big mess.

In openSUSE Build Service, packages are divided into categories regarding their function. MySQL is in *server:database* repository, lighttpd in *server:http* and for example KMyMoney has its own subproject in *KDE:Apps*. So it is a good idea to think about in what category available on the OBS your application will fit the best.

If you need whole project for yourself - for example some of your dependencies is being built in the same project, you need to request creating subproject. In openSUSE Build Service, this is done through asking OBS admins for it on opensuse-buildservice mailing list (mailto:opensuse-buildservice+subscribe@opensuse.org) ↗. Its archive and link for subscribing can be found at http://lists.opensuse.org/opensuse-buildservice/ ↗ .

If you need to just put yout package somewhere, you can create it in your home project and then send submitrequest to the project you want your packge to get included in.

3.2.2   More supported versions?

If you want to support more than just one version of your program, you will need to use several projects for that. There can't be same packages with.

3.2.2.1   Stable and development version

Let's asume that you have found project suitable for your program. Some projects already have something like *STABLE* and *UNSTABLE* subprojects. So you can use these, if you discuss it with maintainers of these project. Other way is to ask somebody from the maintainers of the project to create either these subprojects (if they don't exists) or something similar. Always try to discuss it with the maintainers of the project. They might have good ideas, sugestions and may help you in various ways.

3.2.2.2   Multiple stable versions

If you want to support multiple version, you would need more projects then just two as suggested in previous section. These special project should contain version they are supposed to support in their name. If you are creating them under some project you are sharing with other packages, having you package name in the name of projects is a good idea as well. Good example can be Gnome. It has *GNOME* project and many subprojects projects. Among them are for example *GNOME:STABLE:2.30*, *GNOME:STABLE:2.32* and *GNOME:STABLE:3.0*. These projects holds different stable versions of Gnome with latest fixes.

3.3   Creating a package

Packaging is quite a complex topic. Instead of trying to cover it in this book, it is a good idea to start with available internet documentation. One of the recomended online resource is Portal:Packaging on openSUSE wiki. You can find it at http://en.opensuse.org/Portal:Packaging ↗. It contains links to several packaging tutorials and other packaging related documentation.

3.4   Getting binaries?

> ✎ Note
>
> This sections discuss feature available only in openSUSE Build Service - one of the freely availble instances of OBS.

If you want a nice download page for your software published on openSUSE Build Service, you can use openSUSE download page. You can include it for example using either `iframe` or `object` on newer webs . Example of download page can be following one http://software.opensuse.org/download.html?project=openSUSE:Tools&package=osc ↗. You can see how it looks like in *Figure 3.1, "openSUSE download page for package from OBS"*. It contains links to the packages and instructions how to install them.

FIGURE 3.1: OPENSUSE DOWNLOAD PAGE FOR PACKAGE FROM OBS

Url always has to start with http://software.opensuse.org/download.html? ↗ .You can attach any number of '&'-separated parameters. But at least two of them - *project* and *package* - are required. All parameters with descriptions can be found in *Table 3.1, "Possible parameters for download page"*.

parameter	description
`project`	Project in which your package is located
`package`	Name of your package as it is specified in OBS
`bcolor`	Background color in hexa (for example `bcolor=004`) to make the download page better match your project page
`fcolor`	Text color in hexa (for example `fcolor=fff`) to make the download page better match your project page
`acolor`	Link color in hexa (for example `acolor=ff0`) to make the download page better match your project page
`hcolor`	Highlight color in hexa (for example `hcolor=0ff`) to make the download page better match your project page

3.4.1 Examples

Now we will take a look at how to include the download page into your project pages. As example we will use *osc* client from *openSUSE:Tools* project. To demonstrate the colors change, we will use theme that would match Midnight Commander.

First we will start with recent web page supporting new standarts. On such a website, we would use `object` to include download code:

```
<object type="text/html"
    data="http://software.opensuse.org/download.html?
project=openSUSE:Tools&amp;package=osc&amp;bcolor=004&amp;acolor=ff0&amp;fcolor=fff&amp;hcolor=0f
    width="100%" height="100%">
    <param name="src"
```

```
        value="http://software.opensuse.org/download.html?
project=openSUSE:Tools&amp;package=osc&amp;bcolor=004&amp;acolor=ff0&amp;fcolor=fff&amp;hcolor=0f
>
    Your browser doesn't support objects, please continue to the
    <a href="http://software.opensuse.org/download.html?
project=openSUSE:Tools&amp;package=osc&amp;bcolor=004&amp;acolor=ff0&amp;fcolor=fff&amp;hcolor=0f
    download page</a>
</object>
```

If you are using php on your server, you can make it easier by using following code:

```
<?php
    $url = "http://software.opensuse.org/download.html?
project=openSUSE:Tools&amp;package=osc&amp;bcolor=004&amp;acolor=ff0&amp;fcolor=fff&amp;hcolor=0f
    echo '
<object type="text/html"
    data="' . $url . '"
    width="100%" height="100%">
    <param name="src"
        value="' . $url . '" />
    Your browser doesn't support objects, please continue to the
    <a href="' . $url . '">download page</a>
</object>
';
?>
```

If you are running some legacy website, you might have to use `iframe`:

```
  <iframe src="http://software.opensuse.org/download.html?
project=openSUSE:Tools&amp;package=osc&amp;bcolor=004&amp;acolor=ff0&amp;fcolor=fff&amp;hcolor=0f
>
```

4   OBS Local Setup

This chapter explains how you could setup/Install/test OBS in your system. This chapter is written for those who are not so familiar with Linux and OBS. So in case you are confident to setup OBS, please skip this chapter. Following would be explained in this chapter.

- OBS 1 click install, then manual setup in openSUSE 13.1;

- OBS 1 click install, then manual setup in SLES11;

- OBS test run on Microsoft Windows using VMware player;

- OBS appliance installed manually in a VirtualBox.

Unfortunately, didn't have a chance to install OBS in other Linux distribution yet. The last section will explain your first steps with the new OBS server.

How you could install and purchase openSUSE 13.1 and SLES12 will not be explained in this chapter. VMware player install and purchase also won't be explained. For these topics, you could visit for help:

- http://software.opensuse.org/131/en ↗

- http://www.suse.com/products/server/ ↗

- http://my.vmware.com/web/vmware/free#desktop_end_user_computing/ vmware_player/6_0 ↗

4.1   OBS test run on Microsoft Windows using VMware player

Those who are not familiar with Linux can run and test OBS. To run and test OBS in Windows, you could use a virtual machine program such as VMware or VirtualBox, etc. This chapter explains, how you can run OBS using VMware player. To check and test with VirtualBox or another virtual machine, please check in below.

After you are done installing VMware player on Windows, you need to download the OBS appliance program. You could get OBS appliance file by visiting http://openbuildservice.org/ download/other/ ↗ and clicking on *Virtualbox/VMWare Image.* After downloading, uncompress with some Windows archiving program that understands the `.tar.bz2` file format.

Now, open VMware Player application and select *File* › Open a Virtual Machine, or you could press ⌨Ctrl–⌨O directly. Open the decompressed virtual machine in *Open Virtual Machine* dialog box. Click on *Play virtual machine* icon or hyper link in VMware player.

At the Linux prompt, you can login using "root" as a login name and "opensuse" as a password. Now, OBS local instance should be already loaded and running in your system. To make sure OBS webui is successfully up and running, you probably want to see OBS web ui.

To access OBS web user interface, open your web browser and try the address http://vm.ip.address You can check the virtual machine's IP address by using **ifconfig** Linux command. Now, you probably could see a screen like the one below in your Windows:

To login your local OBS instance, you could use default login name as "Admin" and password as "opensuse". Check if you could login properly by clicking *Login* on your local OBS instance web UI. Welcome to the Open Build Service ;-)

4.2   OBS 1 click install on openSUSE 13.1

This section explains, how you can install OBS on top of openSUSE 13.1. Open your web browser and go to that URL http://download.opensuse.org/repositories/openSUSE:/Tools/openSUSE_13.1/OBS_Server.ymp ↗

This YaST Meta Package file lets you install OBS by 1 click. In case you are using openSUSE 11.2 or below version, please check if you could find 1 click install file in this URL http://en.opensuse.org/openSUSE:Build_Service_Installation_SUSE ↗

After you click on the above URL, you would see *Opening OBS_Server.ymp* window, Select default selection which is *Open with YaST Meta Package Handler* and press *OK* button. Then *OBS_Server Installation - YaST* window will appear. Select *Next* button after that till you get successful OBS setup message.

TIPS : In case you didn't install libMagickCore.so.2 in openSUSE, you might face dependency warning. In that case, stop the OBS install by pressing *Abort* button in *OBS_Server Installation - YaST* window. Then search and install libMagickCore using a search engine like Google or others and repeat above processes. Then you will get an OBS setup message.

Now, OBS Server is installed in your openSUSE. To run OBS server, you need to work on several further steps. Open /usr/share/doc/packages/obs-api/README.SETUP file. To run OBS server, you need to follow each step of README.SETUP carefully based on your system situation. You can also find this `README.SETUP` file in our public git repository (https://github.com/openSUSE/

open-build-service/blob/master/dist/README.SETUP.md) ↗. If you are using our stable release, you might want to switch to the corresponding branch, eg. 2.7 (https://github.com/openSUSE/open-build-service/blob/2.7/dist/README.SETUP) ↗.

If you follow instructions from README.SETUP file, you should be able to run OBS server in your system. There are several tips that I would like to comment regarding README.SETUP file.

TIP #1 : Check *3.1 Initialize fresh Database*. It might be described as

```
# cd /srv/www/obs/api/
# sudo RAILS_ENV="production" rake db:setup
# sudo chown lighttpd.lighttpd log/*


# cd /srv/www/obs/webui/
# sudo RAILS_ENV="production" rake db:setup
# sudo chown lighttpd.lighttpd log/*
```

but it should be

```
# cd /srv/www/obs/api/
# sudo RAILS_ENV="production" rake db:migrate
# sudo chown lighttpd.lighttpd log/*


# cd /srv/www/obs/webui/
# sudo RAILS_ENV="production" rake db:migrate
# sudo chown lighttpd.lighttpd log/*
```

You could check this Tip in below URL also.

```
http://en.opensuse.org/openSUSE:Build_Service_Installation_SUSE
```

You would find same description in above URL for this TIP #1.

TIP #2 : If you get fail message because of "apisrv" in "6. Using osc with your local build service:", please try apiurl instead.

You might face some issues during process to follow README.SETUP file. If you read and follow instructions carefully, you could run OBS local instance on your system successfully.

4.3   OBS 1 click install on SLES (SUSE Linux Enterprise Server) 12

1 click install for OBS in SLES12. This section explains how you install OBS in SLES12. Installation of OBS in SLES12 is quite similar to OBS install method on openSUSE. I would skip same contents so you might need to have a look for prior section "OBS 1 click install on openSUSE 13.1".

Before you install OBS on SLES12, you need to download and install SLES12 SDK first. you could download SLES12 SDK in here http://download.novell.com ↗ .

After you download and install SLES12 SDK, We could use YMP file for OBS 1 click install like openSUSE 13.1. Open your web browser and go to this URL http://download.opensuse.org/repositories/openSUSE:/Tools/SLE_11/OBS_Server.ymp ↗ .

Like for openSUSE 11.3, I have referenced the previous from http://en.opensuse.org/openSUSE:Build_Service_Installation_SUSE ↗ .

After you clicked on that URL, you would see *Opening OBS_Server.ymp* window as described in the previous openSUSE 13.1 section. Press *OK* button and *Next* button after YaST2 window pops up. If YaST lets you know successful install of OBS server, then you are ready to activate and run OBS on SLES12.

To run OBS server on SLES12, you need to follow instructions based on /usr/share/doc/packages/obs-api/README.SETUP file as described in prior section. From here, you could refer to prior section for successful OBS run on your SLES12.

4.4 Installing a readymade OBS appliance in a VirtualBox

This method is slightly less easy than the method using the readymade vmdk VMWare disk, but it enables you to determine the size of your virtual disks to your convenience. It could also work with a real computer with two disks. It requires some knowledge of command line and partitioning.

1. Download the OBS appliance installer. Visit: http://www.openbuildservice.org/download ↗ and press the *Download the OBS Appliance Installer* button. It will start downloading an ISO image.

2. In VirtualBox, create a virtual machine with:

    - 4 GB memory

    - 1 virtual hard disk of 20 G for `/` and `/var/cache/obs`

    - 1 virtual hard disk of 50 G for `/srv/obs`

    - a virtual CD-ROM driver pointing to the downloaded ISO image

    - network bridging with real Ethernet card

3. Boot the virtual machine and choose to install the OBS server on the smaller virtual hard disk.

4. Log into the virtual machine with Login: root and Password: opensuse. If needed, switch to German/French/whatever keyboard: `# loadkeys de`. Inspect partitioning: `# df -h`. It shows you that the root partition is small and already almost full (1.6 GB used out of 1.8). Let's prepare the other partitions to get a bit more working space. First, `# fdisk /dev/sda` and prepare `/dev/sda2` to use the remaining space. Second, `# fdisk /dev/sdb` and prepare `/dev/sdb1` to use all the space, with type 8e (Linux LVM):

    ```
    # pvcreate /dev/sdb1
    # vgcreate OBS /dev/sdb1
    # lvcreate -n server -L 48G OBS
    # mkfs.ext4 /dev/OBS/server
    ```

5. Reboot, this time onto the hard disk. The CD-ROM might be disconnected, we won't need it anymore. Log in as root user, change keyboardi if needed, and format `/dev/sda2`: `# mkfs.ext4 /dev/sda2`. Add following entry to /etc/fstab:

```
/dev/sda2  /var/cache/obs  ext4  defaults  2 1
```

Mount the new partition: `# mount /dev/sda2`. Get your IP address: `# ifconfig`.

4.5   First steps with your new OBS server

At this point, one of the methods above should have provided you with a running OBS instance. Let's get our first package building.

1. From a web browser, access the web interface: https://vm.ip.address/. Accept the self-signed certificate.

2. In the top right corner of the web interface, there is a *Log In* option. Use it to log in as: Admin opensuse.

3. Click on the *Configuration* button to give your server a name and a description. Click on the *Interconnect* option. Choose *openSUSE* as the remote repository where we will pick up the packages of the build environment. Log out of the web interface.

4. Use *Sign Up* option to create a regular user account (for example: hmustermann).

5. As this normal user, click on the *Home Project* option and create your home project (that would be: "home:hmustermann").

6. Go to this home project, and click on *Create package* to create your first package (let's say: "mypackage").

7. Go back to your home project, and click the *Repositories* button. Choose to add a new repository and pick *openSUSE 13.1* (for example).

8. Reboot the virtual machine to ensure all projects are rescanned.

9. From outside the virtual machine and as a normal user, declare in `~/.oscrc` your new OBS user:

```
[https://vm.ip.address]
user=hmustermann
pass=bond007
```

then checkout your new package: `$ osc -A https://vm.ip.address co home:hmustermann`. go to your first package: `$ cd home:hmustermann/mypackage`. and add some sources there (tarball, spec file, changelog, patches). Check them in, then trigger a remote build:

```
$ osc add *
$ osc commit
$ osc rebuild
```

10. The built packages can be seen at: http://vm.ip.address:82/

5   Boot Strapping

This chapter explains Boot strapping. In this chapter, You would learn how you could have other OBS projects and packages to your local OBS instance after your OBS install. There are some useful OSC commands examples and OBS working mechanism explanation in this chapter also. Basically this chapter is a copy from Build Service portal. please check below for OBS bootstrap from Build Service portal.

```
http://en.opensuse.org/openSUSE:Build_Service_private_instance_boot_strapping
```

5.1   The issue

If you create a private instance of an OBS it is likely to be be fully independent. This means that your OBS needs to build its full reference tools chain. This process - called Bootstrap - presents the same problem as the Chicken and the Egg, which one came first ! In other words, you need to create a tool chain with the tool chain that you want to create.

5.2   A cheat sheet

5.2.1   Create your first project

Log on to the Web API. The default user Admin, with the password opensuse is available. Create your own login and password and set yourself as Admin. Log on to the Web UI as Admin and click on the Icon "Configuration" and add the openSUSE Build Service as remote instance. Select from under 'Locations' -> 'Projects'. At the end of the list click on 'Add_Project'. Give it a name (e.g. Meego-test) Select your new project and create a sub-project 0.1. You have now a project Meego-test:1.0 Sub projects are handy to propagate Access Control Lists (acl) and for creating the version as a sub project simplifies the user and project administration.

5.2.2 Import your base Linux project

We are now going to import the base project. I will describe two methods, one where you have a login on a remote OBS instance, one where you have only access to the rpm repository. In both cases you will need access to binary and source rpm.

5.2.2.1 With a login on a remote OBS

The osc copypac (I assume that you have installed the osc package on your workstation) has an option -t which enables copying towards a remote target OBS instance. osc help and osc help command will advise on how to use these. First you need to import the project configuration.

```
        $ export PROJECT=MeeGo-test:0.1
        $ osc -A http://api-url-source-obs meta prjconf $PROJECT >
my_project.conf
        $ osc -A http://api-url-target-obs meta prjconf -F my_project.conf
$PROJECT
```

Then import the project. As you might have some Links in the project that you import, it is a good idea to keep the source and target project names identical.

```
      $ PRJ=ProjectToCopy; for i in `osc -A http://api.source.obs.domain ls $PRJ`;
 do \\
osc -A http://api.source.obs.domain \\
copypac -t http://api.target.obs.domain $PRJ $i $PRJ ;done
```

5.2.2.2 Without a Login on a remote OBS

If you have access only to the repositories of your source reference target, then your life will be a bit more difficult. My advice would be to recheck if you find you cannot get a login on a public OBS service - such as provided by openSUSE or MeeGo - before proceeding this way.

You will not be able to import the project config and you will have to create it by hand. This is too long to be covered in this HowTo. For more explanation about Build Service project config, please visit below.

```
http://en.opensuse.org/openSUSE:Build_Service_prjconf
```

Then you need to download all your rpm source on to a local machine and import it into your project with the command.

```
$ osc importsrcpkg
```

5.2.2.3   Bootstrapping

To initiate the build process, we will copy the rpm binary from the source OBS of the source project. These binary rpms, from which we will remove any reference to release and version, will be used to trigger the first build. The OBS appliance will recompile all the rpms until all rpms in the project have been compiled only with packages compiled from their source code. Some base packages (e.g. tool chains) will be compiled several times during that process. Alternative You can build a first time against a target which is similar to the base that you need to boot strap in lieu of building against your own base and change the build reference to your bootstrap base once that the first build has been successful. Remember that you can also build against remote baseline. Double check that the preliminary step have been executed correctly. You must have already : copied a Linux base distribution in an OBS project defined a build target for that base project. Note : If you have not defined a build target the need directory structure will not exist. It's a preliminary mandatory step. stop the scheduler as it will create a mess if the system is not stable

```
# rcobsscheduler stop
```

* Add binaries to the :full directory of the Project ssh onto the OBS server. Now go to the project's build directory, and create a directory called ":full". Note : standard is the default name of your Build repository as defined in your project. It might change depending of who created the initial build repo.

```
# cd /obs/build/$PROJECT/standard/i586
```

This directory structure should already exist. If not, there is a problem (note that /obs is link and the target may vary with your implementation). Now create the ":full" directory. $ mkdir :full Copy over all the binary rpms of the project you are trying to build from scratch. These rpms should have the release and version numbers stripped from them. e.g. alsa-utils-1.0.22-2.7.i586.rpm -- should be – alsa-utils.rpm Note : If the original project has a :full directory you can copy from there to avoid the issue of stripping version and release numbers. * Add binaries to the :full directory of the Project. Change all user/group privileges under /srv/obs/build/ to "obsrun"

```
# chown -R obsrun:obsrun /srv/obs/build
```

If you leave root as owner of :full, it will still build but the scheduler will fail (almost silently) to upgrade :full with the latest built packages. Except in very special cases, it is very unlikely that you want to do so. * Start the OBS scheduler

```
# rcobsscheduler start
```

* Force the obs to reindex your new :full directory. It will send an event to the scheduler which will create a file named :full.solv

```
        # obs_admin --rescan-repository $OBS-PROJECT $REPO $ARCH
```

5.2.2.3.1 Troubleshooting

At that time you should see your project restarting to build. If that would not be the case. * check that your files in your target :full directory are all own by the user obsrun. The following command should not return any file name.

```
        #find /obs/build ! -user obsrun
        #chown -R obsrun:obsrun  /obs/build   (will correct ownership issue)
```

* Force the obs to reindex your new :full directory. It will create a file named :full.solv

```
$obs_admin --rescan-repository $OBS-PROJECT $REPO $ARCH
```

* Check that your rpm are valid (e.g. not damaged during transfer)

```
         #cd /obs/build/$PROJECT/standard/i586:full
         #for I in `ls *.rpm` ; do rpm -qlp $I >/dev/null; if [ $? -ne
 0 ] ;then echo $I >>../error.lst ; fi ; done
         #cat ../error.lst (must be empty, all rpm in error needs re-
 installation)
```

* Still not working, get a look in the log files in the directory /obs/log. You can start by having a look at /obs/log/scheduler_TARGET_ARCH.log and search from the end for the string "expanding dependencies". You will find from there why the scheduler fails.

```
  #tail -f /obs/log/scheduler_i586.log
```

5.3   Creating my first project

After creating a dedicated user via the web API, relog onto the web UI with your new login. Open your home project and create a sub project called "MyTest". To add a package in your new Home project, simply create a link [link Package from other Project] with one of the packages recently copied in your new OBS instance (see previous chapter Import your base project). Pick up a small one to speed compilation time. Click on the "+" near Build Repositories to add a repository. Move to the end of the page where all the standard Linux distributions are listed and click on [Advance]. Give a name to your repo, e.g. my-test and pick fom the list the project/ repo that you have just imported and rebuilt. This will request the OBS to build your new Home project against that repository. You can now check out your Home project with the ocs command, modify a file or two and at your next check-in, the OBS will rebuild your Home project. If your reference project changes, the OBS will also rebuild your Home project.

6   OSC commands examples

This chapter explains and shows OSC commands examples. You could use OBS much more efficiently with OSC commands. $man OSC will show you [GLOBALOPTS], SUBCOMMAND, [OPTS][ARGS....]. You also could find some OSC commands examples from OBS Build Service portal. This chapter will take every OSC command examples from OBS Build Service portal and describes it in here. You could visit Build Service portal OSC command explanation via below described URL.

```
http://en.opensuse.org/Build_Service/CLI
```

6.1   osc, the Python command line client

osc is written in Python, and in addition to the commandline interface it also provides a Python module, for use by other Python programs. Packages can be found at http://download.opensuse.org/repositories/openSUSE:/Tools/ for various distributions (openSUSE, SLES, Fedora, Mandriva, Debian, etc.). If you want to check out the latest source code, you can do so with Git:

```
git clone git@github.com:openSUSE/osc.git
```

osc is a subversion-like client. It serves as client for the source code repository part of the build service, and it is used to edit metadata or query about build results. Introductory usage examples are shown below. Note the Build Service Tutorial, which gives a more systematic introduction. osc is extensible. You can modify the behavior or write your own commands. osc will ask you for your credentials when you use it for the first time, and store them in ~/.oscrc. The password is stored in plain text. Protect your ~/.oscrc file and your filesystem appropriately.

Show usage info on a command

```
osc help
osc help [cmd]
```

List existing content on the server

```
        osc ls                  #list projects
        osc ls Apache           #list packages in a project
        osc ls Apache flood     #list files of package of a project
```

"osc ls" shows you a list of projects on OBS. But which OBS it would show? it depends on your .oscrc setting. please have a look on your .oscrc file. If it is set as "apiurl = https:// api.opensuse.org". osc ls would show build.opensuse.org OBS projects list to you. So what if you would like to list projects of another OBS?

```
        osc -A http://localhost:81 ls      #list your local OBS instance
 projects
        osc -A https://api.opensuse.org ls   #list build.opensuse.org
 projects
```

Check out content

```
        osc co Apache                   #entire project
        osc co Apache flood             #a package
        osc co Apache flood flood.spec  # single file
```

Update a working directory

```
        osc up
        osc up [directory]
        osc up *           # from within a project dir, update all packages
        osc up             # from within a project dir, update all packages
 AND check out all newly added packages
```

Upload changed content

```
Upload changed content

osc ci                          # current dir
osc ci [file1] [file2]          # only specific files
osc ci [dir1] [dir2] ...        # multiple packages
osc ci -m "updated foobar"      # specify a commit message
```

See the commit log

```
osc log
```

Show the status (which files have been changed locally)

```
osc st
osc st [directory]
```

If an update cannot be merged automatically, a file is in 'C' (conflict) state, and conflicts are marked with special lines. After manually resolving the problem, use

```
osc resolved [file]
```

Mark files to be added or removed on the next 'checkin'

```
osc add foo
osc rm foo
```

Add all new files in local copy and removes all disappeared files.

```
    osc addremove
```

Let OBS create a tar ball out of an SCM repository. This just creates or extend a _service file with some rules how to download and package sources. The actual work happens on a local build or on a service side build. Pleast note that you need at least the following packages installed for local runs: obs-service-tar_scm, obs-service-set_version, obs-service-recompress.

```
    osc add git://....
```

Generate a diff to view the changes

```
    osc diff [file]
```

Show the build results of the package

```
    osc results
    osc results [platform]
```

Show the log file of a package (you need to be inside a package directory)

```
    osc buildlog [platform] [arch]
```

Show the URLs of .repo files which are packages sources for Yum/YaST/smart

```
    osc repourls [dir]
```

Trigger a package rebuild for all repositories/architectures of a package

```
  osc rebuildpac [dir]
```

Build a package on your local plattform

```
  osc build [platform] [arch] [specfile] [--clean|--noinit|...]
```

Show the configured platforms/build targets.

```
  osc platforms [project]
```

Show the possible build targets for your project.

```
  osc repos
```

Show meta information

```
  osc meta prj [project]
  osc meta pkg [project] [package]
  osc meta user [username]
  osc meta prjconf [project]
```

Edit meta information. Creates new package/project if it doesn't exist. It will open an Editor with the raw XML metadata. If unsure about XML, you can use the web client instead.

```
  osc meta prj -e [project]
  osc meta pkg -e [project] [package]
  osc meta prjconf -e [project]
```

(The project configuration (prjconf) may well be empty. It is needed in special cases only.)
Update package meta data with metadata taken from spec file

```
    osc updatepacmetafromspec [dir]
```

6.2   Package tracking

With osc it is also possible to manage packages in a svn like way. This feature is called package tracking and has to be enabled in ~/.oscrc's [general] section

```
        # manage your packages in a svn like way
        do_package_tracking = 1
```

Add a new package to a project

```
  osc mkpac [package]
```

Add an already existing directory and its files to a project

```
    osc add [directory]
```

Remove a package and its files from a project

```
  osc deletepac [package]
```

All the commands above only change your local working copy. To submit your changes to the buildservice you have to commit them (osc ci -m [message]). The status command also displays the state of the packages

```
    osc st
```

6.3   .oscrc cheatsheet

The [general] section Storage:

```
# Downloaded packages are cached here. Must be writable by you.
# default:
packagecachedir = /var/tmp/osbuild-packagecache
```

```
# rootdir to setup the chroot environment
# can contain %(repo)s and/or %(arch)s for replacement
# /[path]/%(repo)s-%(arch)s-%(project)s-%(package)s
# default:
build-root = /var/tmp/build-root/
```

API communication:

```
# use this API server (hostname[:port])
# (it needs a section [api.opensuse.org] with the credentials)
# default:
apiurl = api.opensuse.org
```

```
# use this protocol to access the API server (http or https)
# default:
scheme = https
```

API host:

```
# API hosts can be referenced by aliases, e.g. 'osc -A alias ...'
```

```
# List aliases for API hosts under the API host section.
# https://api.opensuse.org
# user=jdoe
# aliases=
```

Local build:

```
# Wrapper to call build as root (sudo, su -, ...)
# default:
su-wrapper = su -c
# no password required with:
#su-wrapper = sudo
#with entry in sudoers file:
# [username] ALL = NOPASSWD: /usr/bin/build
```

```
# For convenience/debugging, osc adds internally vim gdb strace to
# the packages installed in the build chroot if extra-pkgs is not set
 to:
#extra-pkgs=
```

```
# build type - possibe values:
#  * empty -> chroot
#  * xen -> xen VM
#  * kvm -> kvm VM (testing needed)
# default: not set/chroot
#build-type=xen
```

```
# build-device - root filesystem to use for VM
```

```
                # default: not set
                #build-device=/tmp/FILE.root
```

```
                # build-swap - swap filesystem to use for VM
                # default: not set
                #build-swap=/tmp/FILE.swap
```

```
                # build-memory - amount of memory for VM
                # default: not set
                #build-memory=512
```

7 Advanced Project Setups

These best practices describe more complex setups, for example how to rebuild an entire stack with minimal effort.

7.1 Rebuild an entire project with changes

To be written...

7.2 Integrate Source Handling

To be written...

7.3 Use OBS for automated QA

To be written...

8 Kernel Module Building

Ann Davis wants to write this ...

9 HOW TO -- a list of common questions and solutions

This currently an unsorted list of asked questions.

9.1 How to work best with limited bandwidth

Packages can contain large files, esp. some tar balls can become quite large, in some real life examples several hundred mega bytes. This can be a problem when you need to work on the package via a slow connection.

9.1.1 Use the web interface

The web interface is the easiest way to edit simple things without the need of the checkout.

Disadvantages are

- Not the preferred solution for power packagers

- No local build possible

- Still a significant bandwidth is needed compared to the size of the edited file.

9.1.2 Use osc with size limit

`osc` offers to skip files with a certain size (specified with `-l` switch) on checkout. The limit is stored locally and you can also run an update later without downloading any large files. All other files can be edited, diffed and committed as usual.

Disadvantages are

- The checkout is incomplete

- No local build possible

9.1.3 Use `download_url`

Manage your large files via source services. The easiest way is to use

```
osc add $URL
```

which just stores a small **`_service`** file. The check will not contain the large files by default, but they get downloaded when needed via the service. However, they will never get committed, so this is the best approach when you have a fast downstream, but slow upstream like with standard DSL connections. Also other users can trust your tar ball, esp. important when you do version upgrades on foreign packages.

Disadvantages are

- The generated files have the _service: prefix in check out (but not during build).

9.1.4   Use source service in trylocal mode

Manage your large files via source services in try local mode for example with **`download_url`** or **`download_files`** service. This means you can be flexible depending on your current connection without changing the setup. The service is generating the file on the server side when you decide not to commit it, but you can also decide to commit it and avoid the _service: prefix on the files. Also other users can trust your tar ball, esp. important when you do version upgrades on foreign packages.

Disadvantages are

- A checkout may still need the size limit switch when last commit contained the large files.

Glossary

Open Build Service

The Open Build Service and its acronym OBS is used to speak about the server part of the build service. When speaking about OBS all possible instances are affected.

openSUSE Build Service

The openSUSE Build Service is the concrete instance of *Open Build Service* from the openSUSE project at http://build.opensuse.org.

osc

The Command Line Interface to work with an instance of *Open Build Service* called opensuse-commander with svn like handling. More info: https://github.com/openSUSE/osc

Appliance

A software appliance is a preconfigured combination of an application (for example, a Web server) and its configuration, and includes an operating system (for example, SUSE Linux Enterprise Server). All these parts are integrated into a single image and can be deployed on industry hardware or on a virtual environment.

EULA

End User License Agreement. For software that needs a special license (usually non-open source) which the user has to agree to before installing.

KIWI

KIWI provides a complete operating system image solution. It can create images for Linux supported hardware platforms or for virtualization systems.

Overlay Files

Files which are created, removed, or modified in your testdrive are considered as *overlay files*. These files can be added later as a supplement to your appliance.

Binaries

Binaries are considered as build results of OBS Projects. Binaries can be reused in an environment to build further binaries. Currently OBS is supporting rpm, deb and all formats generated by *KIWI*.

GA Project

The GA project builds an initial release of a product. It gets frozen after releasing the product. All further updates get released via the *Update Project* of this project.

Update Project

The update project is a *Release Project* which provides official updates for the products generated in the *GA Project*. The Update project is usually linking (sources and repositories) against the *GA Project*.

Maintenance Project

The maintenance project is a project without sources and binaries, defined by the maintenance team. *Incident*s are created as sub projects of this project.

Incident

The maintenance incident describes a concrete problem and the required updates. If the problem exists for multiple code streams, one incident covers all of them. An incident is started by creating a maintenance incident project and the update get built here.

Release Project

A release project is hosting a release repository which is not building any packages ever. It is just used to copy sources and binaries to this project on a release event.

A How to work on this Book

These books are written with docbook and can be converted to html or pdf documentation. Please use the following command to checkout the official source of this book:

```
git clone https://github.com/openSUSE/open-build-service-documentation.git
```

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