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Open Build Service

Open Build Service: Reference Guide

List of Authors: Adrian Schröter

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Contents

About this Guide

This book is part of the official Open Build Service documentation. These books are considered to be reviewed and edited to be 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 get written by the OBS community, please check the chapter how to work on these books. We request esp. 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

OBS Motivation

An overview about OBS history and motivation to build it.

1.1 Pre OBS times

SUSE built all distributions with an inhouse developed autobuild system. It was designed to collect source ....

1.1.1 Initial Goals for OBS

...

1.1.2 OBS history

...

1.2 Current Motivation of OBS

...

1.3 Future dreams

...

2 OBS Concepts

..

2.1 Project organization

All sources and binaries which are hosted inside of OBS are organized in projects.

2.1.1 Project meta data

A project gets configured in the project `/source/$PROJECT/_meta` path. It can be edited in web interface in the `RAW Config` tab or via command line via

```
osc meta prj -e $PROJECT
```

This file contains

- generic description data in `title` and `description` elements.
- An ACL list of users and groups connected with a role. The `maintainer` role defines the list of users permitted to commit changes to the project.
- A number of flags, controlling the build and publishing process and possible read access protections.
- A list of repositories to be created. This list defines what other repositories should be used, which architectures shall be built and build job scheduling parameters.

The following flags can be used to control the behavior of a package or project. Most of them can also be limited to specified repositories or architectures.

- `build` flag defines if package sources should get build. If enabled, it signals the scheduler to trigger server side builds based on events like source changes, changes of packages used in the build environment or manual rebuild triggers. A local build via CLI is possible independent of this flag. Default is enabled.

- `publish` can be used to enable or disable publishing the build result as repository. This happens after an entire repository has finished build for an architecture. A publish also gets triggered, when the publish flag is enabled after a repository finished the build. Default is enabled.

- `debuginfo` can be used to modify the build process to create debuginfo data along with the package build for later debugging purposes. A flag change is not triggering rebuilds, it just affects the next build. Default is disabled.

- `useforbuild` is used to control if a built result shall be copied to the build pool. This means it will get used for other builds in their buildenvironment. When this is disabled, the build has no influence on builds of other packages using this repository. In case a former build exists the old binaries will be used. Disabling this flag also means that "wipe" commands to remove binary files will have no effect on the build pool. A flag change is not triggering rebuilds, it just affects the next build. Default is enabled.

- `access` flag can be used to hide an entire project. This includes binaries and sources. It can only be used at project creation time and can just be enabled (making it public again) afterwards. This flag can only be used on projects. Default is enabled.

- `sourceaccess` flag can be used to hide the sources, but still show the existence of a project or package. This also includes debug packages in case the distribution is supporting this correctly. This flag can only be used at package creation time. There is no code yet which is checking for possible references to this package. Default is enabled.

- `downloadbinary` permission still exists like before. However, unlike "access" and "sourceaccess" this is not a security feature. It is just a convenience feature, which makes it impossible to get the binaries via the API directly. But it is still possible to get the binaries via build time in any case. Default is enabled.

2.1.2 Project build configuration.

A project gets configured in the project `/source/$PROJECT/_config` path. It can be edited in web interface in the `Project Config` tab or via one of the following command lines

```
osc meta prjconf -e $PROJECT
osc co $PROJECT _project
```

This file contains information on how to setup a build environment.

2.1.3 Project build macro configuration

The macro configuration is part of the build configuration in `/source/$PROJECT/_config`. It can be added at the end behind a `Macro:`

2.1.4 An OBS Package

An OBS Package is a sub name space below a project. It contains the specification of a single package build for all specified repositories.

2.2 The API

...

2.3 The OBS Interconnect

...

2.4 Attribute System

...

2.5 Automatic source processing

...

3

Build Process

Each package build is done in a fresh environment. This is done to ensure that no dependencies are missing and every later build produces identical results.

3.1 How is a build process defined

...

3.2 How does a build process work

All sources and binaries which are hosted inside of OBS are organized in projects.

3.2.1 Preinstall phase

...

3.2.2 Install Phase

..

3.2.3 Package build

..

3.2.4 Post build steps

..

3.3 Different ways to build

...

3.4 Security aspects

...

4 Source Management

..

4.1 Find Package Sources

OBS is adding information to each created package about the origin of the sources. This information is stored in the `DISTURL` tag of an rpm, which can be displayed as follows

```
rpm -q --queryformat '%{DISTURL}\n' glibc
```

```
rpm -q --queryformat '%{DISTURL}\n' -p glibc-2.1.0-1.i586.rpm
```

The disturl can look like this: `obs://build.opensuse.org/openSUSE:Factory/standard/80d21fdd2299302358246d757b4d8c4f-glibc` It always starts with obs://. The second part is the name of the build instance, which usually also hosts the webui. Next comes the project name and the repository name where the binary got built. Last part is the source md5 sum and the package name.

The disturl can also be entered in the search field of the web interface of the build service.

The Request And Review System

5

..

6 Package Formats

OBS is written to not be package format specific. However, every new format needs support in OBS. So far it does support rpm, debian, kiwi appliances and products.

6.1 Setup a format

The default format in OBS is rpm, other formats need to be specified in prjconf.

6.2 Format Specials

Each format has some specials

6.2.1 rpm

For building rpms you need a .spec file for each package, containing its build description. ...

6.2.2 deb

...

6.2.3 pkg

Archlinux...

6.2.4 kiwi appliance

...

6.2.5 kiwi product

...

7

Build Configuration

The build configuration is needed at least in each base project to define the setup of the build system. In addition to that it can be used to handle compatibility layers or to switch on or off certain features during the build.

The build config is reachable via API /source/PROJECT/_config, via `osc meta prjconf` or via webui via Project Config tab.

7.1 Setup a format

The default format in OBS is rpm, other formats need to be specified in prjconf.

7.2 Keywords

The build configuration is parsed by OBS in rpm style independend of the used packaging format.

7.2.1 Required: <PACKAGES>

Required lines contain one or more packages which are needed always to start the build. When these packages do change a new build of all packages get triggered automatically.

7.2.2 Support: <PACKAGES>

Support lines contain one or more packages which are needed always to start the build. However it is considered that changes in these packages do not affect other builds, therefore no builds get triggered automatically.

7.2.3 Preinstall: <PACKAGES>

Preinstall packages are needed to run the package installation tool. They get unpacked before the VM gets started. Included scripts are NOT executed during this phase. However these packages will get installed again inside of the VM including script execution.

7.2.4 Keep: <PACKAGES>

The building package does not get installed by default, even when it is required. Keep is overwriting this behaviour and lets the old build installed. It is usually needed for most preinstalled packages and critical required packages at least.

7.2.5 VMInstall: <PACKAGES>

VMInstall is like Preinstall, but these packages get only installed when XEN or KVM is used.

7.2.6 Runscripts: <PACKAGES>

Runscripts defines the scripts of preinstalled packages which needs to be executed directly after preinstall phase, before installing the remaining packages.

7.2.7 Order: <PACKAGE_A>:<PACKAGE_B>

The build script takes care about the installation order if they are defined via PreRequires inside of the packages. However, there might be dependency loops (reported during setup of the build system). The Order statement can be used then to give a hint where to break the loop. <PACKAGE_A> will get installed before <PACKAGE_B>.

7.2.8 ExportFilter: <GLOB> <ARCHITECTURES>

The export filter can be used to export build results from one architecture to others. This is required when one architecture needs packages from another one to build against. The glob must match the resulting binary name of the package. It will export it to all listed scheduler architectures. Using a single dot will export it to the architecture which was used to build it. So not using a dot there will filter the package.

7.2.9 Prefer: <PACKAGES>

In case multiple packages could be installed to satisfy a dependency, the OBS server will complain about that situation (Unlike like most standard package installation tools, which just pick one). This is done to avoid the situation that builds are not reproducable since random packages would get used. The Prefer: tag lists packages to be prefered in case a choice exists. When the package name is prefixed with a dash, this is a de-prefer.

7.2.10 Prefer: <PACKAGE_A>:<PACKAGES>

It is possible to define the prefer only when one package is creating the choice error. This package must be listed first with a colon.

7.2.11 Ignore: <PACKAGES>

Ignore can be used to override dependencies. This can be usefull to break dependency cycles in cases when a package dependency is only required in installed systems, but not required to build against this package.

7.2.12 Ignore: <PACKAGE_A>:<PACKAGES>

It is possible to define the ignore only for one package. This package must be listed first with a colon.

7.2.13 FileProvides: <FILE> <PACKAGE>

Required dependendencies to files (instead of package names) are ignore by OBS by default. FileProvides can be used to map a file to a certain package name. File needs to have the full path. Keep in mind that some publish repository formats do not export filenames or only some of them. So installing these packages may not be possible for the user.

7.2.14 Substitute: <PACKAGE_A> ;<PACKAGES>

It is possible to replace to BuildRequires with other packages. This will have only an affect on direct BuildRequired packages, not on indirect required packages.

7.2.15 Optflags: <TARGET_ARCHITECTURE> <FLAGS>

rpm only: Optflags exports compiler flags to the build. They will only have an effect when the spec file is using $RPM_OPT_FLAGS. The target architecture may be * to affect all architectures.

7.2.16 Target: <TARGET_ARCHITECTURE>

rpm only: Defines the target architecture. This can be used to build for i686 on i586 schedulers for example.

7.2.17 HostArch: <HOST_ARCHITECTURE>

This is used for cross builds via qemu emulation. It defines the host architecture, while the scheduler architecture remains the target architecture by default.

7.2.18 Repotype: <TYPE> <HINT>

Defines the repository format. Valid values are: none, rpm-md(default), rpm-md:deltainfo, rpm-md-legacy, suse, debian, hdlist2, comps. To split the debug packages in an own published repository the hint splitdebug:$REPOSIORY_SUFFIX can be used.

7.2.19 Binarytype: <TYPE>

(OBS 2.4 or later):.

7.2.20 Patterntype: rpm-md ymp: <TYPES>

Defines the pattern format. Valid values are: rpm-md(default), ymp.

7.2.21 Conditions

The following conditions can be used to modify the config.

%define <KEY> <VALUE>

Defines a key with a value. This value can be used in the entire build config by using %{KEY}

%if ... %else ... %endif

Lines can become conditional using the rpm syntax. It may test one keys set by define or predefined keys (%_project or %_repository).

%ifarch <SCHEDULER_ARCHS> ... %else ... %endif

Lines can become conditional using the rpm syntax.

%ifnarch <SCHEDULER_ARCHS> ... %else ... %endif

Lines can become conditional using the rpm syntax.

7.3 Macro Section

The macro section of the build configuration starts behind a Macros: line and is only used on rpm builds. The content gets exported to be used by rpmbuild during the build. It can be used to export a define using "%key value" lines.

8

Source Services

Source Services are tools to validate, generate or modify sources in a trustable way. They are designed as smallest possible tools and can be combined following the powerful idea of the classic UNIX design.

Design goals of source services were:

- server side generated files must be easy to identify and must not be modifiable by the user. This way others user can trust them to be generated in the documented way without modifications.
- generated files must never create merge conflicts
- generated files must be a separate commit to the user change
- services must be runnable at any time without user commit
- services must be runnable on server and client side in the same way
- services must be designed in a safe way. A source checkout and service run must never harm the system of a user.
- services shall be designed in a way to avoid unnecessary commits. This means there shall be no time-dependent changes. In case the package already contains the same file, the newly generated file must be dropped.
- local services can be added and used by everybody.
- server side services must be installed by the admin of the OBS server.

- service can be defined per package or project wide.

8.1 Using services for validation

Source Services may be used to validate sources. This can happen per package, which is useful when the packager wants to validate that downloaded sources are really from the original maintainer. Or validation can happen for an entire project to apply general policies. These services can't get skipped in any package

Validation can happen by validating files (for example using the `verify_file` or `source_validator` service. These services just fail in the error case which leads to the build state "broken". Or validation can happen by redoing a certain action and store the result as new file as `download_files` is doing. In this case the newly generated file will be used instead of the committed one during build.

8.2 Different Modes when using services

Each service can be used in a special mode defining when it should run and how to use the result. This can be done per package or globally for an entire project.

8.2.1 Default Mode

The default mode of a service is to always run after each commit on the server side and locally before every local build.

8.2.2 trylocal Mode

The trylocal mode is running the service locally when using current osc versions. The result gets committed as standard files and not named with _service: prefix. Additionally the service runs on the server by default, but usually the service should detect that the result is the same and skip the generated files. In case they differ for any reason (because the webui or api was used for example) they get generated and added on the server.

8.2.3 localonly Mode

The localonly mode is running the service locally when using current osc versions. The result gets committed as standard files and not named with _service: prefix. The service is never running on the server side. It is also not possible to trigger it manually.

8.2.4 disabled Mode

The disabled mode is neither running the service locally or on the server side. It can be used to temporarily disable the service but keeping the definition as part of the service definition. Or it can be used to define the way how to generate the sources and doing so by manually calling

```
osc service disabledrun
```

The result will get committed as standard files again.

8.3 How are source service definitions stored

The called services are always defined in a `_service` file. It is either part of the package sources or used project-wide when stored inside the `_project` package.

The _service file contains a list of services which get called in this order. Each service may define a list of parameters and a mode. The project wide services get called after the per package defined services. The _service file is an xml file like this example:

```
<services>
  <service name="download_files" mode="trylocal" />
  <service name="verify_file">
    <param name="file">krabber-1.0.tar.gz</param>
    <param name="verifier">sha256</param>
    <param
 name="checksum">7f535a96a834b31ba2201a90c4d365990785dead92be02d4cf846713be938b78</
param>
  </service>
  <service name="update_source" mode="disabled" />
</services>
```

This example downloads the files via download_files service via the given URLs from the spec file. When using osc this file gets committed as part of the commit. After-

wards the krabber-1.0.tar.gz file will always be compared with the sha256 checksum. And last but not least there is the `update_source` service mentioned, which is usually not executed. Except when `osc service disabledrun` is called, which will try to upgrade the package to a newer source version available online.

8.4 How to write a source service

..

8.5 Interfaces for using source services

..

9

Signing

OBS can sign build results.

9.1 Package signing

Each package is signed with a PGP key to allow checking its integrity on user's machines.

9.2 Repository signing

...

9.3 Product signing

...

9.4 Configure sign key

...

10 Product Building

OBS is used to build complete product lines. It is employed for openSUSE and also for SUSE Linux Enterprise products.

10.1 Requirements of a product

...

10.2 Possible shapes of a product

product media, appliance, repository...

10.3 Product Setup in OBS

....

10.3.1 Package building

A project is configured in the project meta data. This meta data contains ... These projects contain ...

10.3.2 Appliance setup with kiwi

...

10.3.3 Product creation with kiwi

...

10.3.4 Product Line Setup

Bigger products, like openSUSE or SUSE Linux Enterprise usually contain multiple media. These media must be kept in sync in various ways, for example for installation patterns, version numbering and other meta data. To guarantee this, OBS provides the product definition xml. Submitting such a product xml will create all necessary sources for meta packages and also all needed kiwi source files.

10.4 Release Management

...

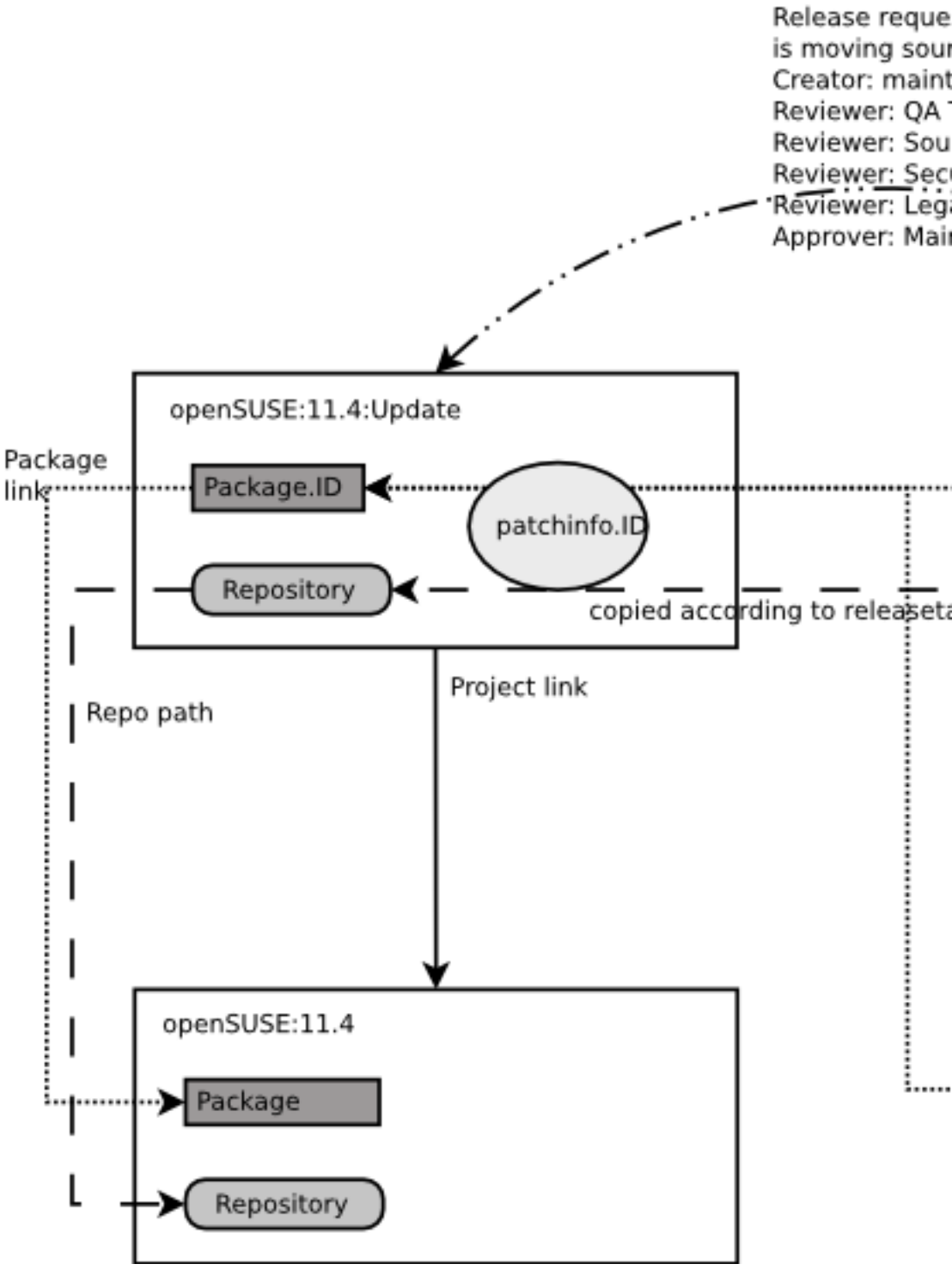
10.5 Typical Review Process Setup

...

11 The Maintenance Support

This chapter explains the setup and workflow of an maintenance update in the openSUSE way. However, this should not be limited to openSUSE distribution projects but be usable anywhere (the entire workflow or just parts of it).

The goal of the OBS maintenance process is to publish updates for a frozen project, in this example an entire distribution. These updates need to be approved by a maintenance team and the published result must contain documentation about the changes and be applicable in the easiest way by the users. The result is a package repository with additional informations about the solved problems and defined groups of packages to achieve that. Also binary delta data may get generated to reduce the needed download size for the clients.


Release reque
is moving sour
Creator: maint
Reviewer: QA
Reviewer: Sou
Reviewer: Sec
Reviewer: Lega
Approver: Mai
openSUSE:11.4:Update
Package
link
Package.ID
patchinfo.ID
Repository
copied according to releaseta
Project link
Repo path
openSUSE:11.4
Package
Repository

This figure is giving a basic overview about the project setup and general workflow for a single package and single maintained distribution. It shows the "openSUSE:11.4" project, which is considered to be frozen and not changing at all anymore. The "openSUSE:11.4:Update" projects hosts all officially released updates. It does not build any binary, just gets it sources and binaries from the maintenance incident project via the release process. The incident project is named "openSUSE:Maintenance:IDxxx" in this example, which is under control of the maintenance team. Official updates get built and reviewed here. QA teams are also testing the binaries from here. However, a user can prepare it in the same way in his project and start the maintenance process via doing a "maintenance" request.

- openSUSE:11.4 is the GA Project (page 47) in this example. Frozen and not changing anymore.
- openSUSE:11.4:Update is the Update Project (page 48) to release official updates.
- openSUSE:Maintenance is the Maintenance Project (page 48).
- openSUSE:Maintenance:IDxxx is the Incident (page 48) project.

11.2 How to use the maintenance process

This describes all required steps by all involved persons from preparing to releasing a maintenance update.

11.2.1 Way A: A maintainer builds an entire update incident for submission

A user is usually starting to prepare an update by creating a maintenance branch. This is typically done by creating an own maintenance project. Usually multiple released products are affected, so the server can find out which one are maintained by a given source package name, in this example for glibc including checkout via

```
osc mbranch glibc
osc mbranch --checkout glibc
```

This is equivalent to the api call `/source?cmd=branch&package=glibc`.

It is also possible to branch only one defined version, if it is known that only one version is affected. In this example the openSUSE:12.1 version:

```
osc branch --maintenance openSUSE:12.1 glibc
osc branch -M -c openSUSE:12.1 glibc
```

NOTE: both branch commands do support the --noaccess parameter, which will create a hidden project. This may be used when a not yet public known security shall get fixed.

Afterwards the user needs to do the needed modifications. Packages will be built and can be tested. Afterwards he may add informations about the purpose of this maintenance update via

```
osc patchinfo
```

If the source changes contain references to issue trackers (like bugzilla, CVE or FATE) these will be added to the _patchinfo file.

The server will create a full maintenance channel now, in case the user wants to test this as well. After the user has tested, he has to create a maintenancerequest to ask the maintenance team to accept this as official update incident:

```
osc maintenancerequest
```

On accepting this request all sources of the entire project will get copied to the incident project and be rebuild. The origin project gets usually removed (based on the request cleanup options).

11.2.2 Way B: Submitting a package without branching

You may submit a package source from a project which is not prepared as maintenance project. That works via the maintenancerequest mechanism by specifing one or more packages from one project. As a consequence it means also that the first testable build will happen in the maintenance incident project. Also the maintenance team need to write the update information on their own.

```
            osc maintenancerequest [ SOURCEPROJECT [ SOURCEPACKAGES
 RELEASEPROJECT ] ]
```

The following example is submitting two packages (kdelibs4 and kdebase4) from the project KDE:Devel project as update for openSUSE:12.1

```
osc maintenancerequest KDE:Devel kdelibs4 kdebase4 openSUSE:12.1
```

NOTE: it is also possible to specify an existing incident as target via the --incident parameter. The packages will be merged into that existing incident project then.

11.2.3 Way C: Process gets initiated by the maintenance team

The maintenance team may start the process (for example because a security issue was reported and the maintenance team decided that a fix is required). In this case the incident gets created via the webui or via the api call

```
osc createincidient [PROJECT]
```

```
osc api /source/PROJECT?cmd=createmaintenanceincident
```

```
osc api /source?
cmd=createmaintenanceincident&attribute=OBS:Maintenance.
```

To document the expected work the creation of a patchinfo package is needed. This can be done via

```
osc patchinfo [PROJECT]
```

It is important to add bugzilla entries inside of the _patchinfo file. As long these are open bugzilla entries, the bug assignee will see this patchinfoi on his "my work" webui and osc views, so he knows that work is expected for him.

11.2.4 Maintenance Incident Processing

The maintenance incidents are usually managed by a maintenance team. In case the incident got started by a maintainer a maintenance request is targeted towards the defined maintenance project, in our example this is openSUSE:Maintenance. The de-

fined maintainer and reviewers in this project need to decide about this request. In case it gets accepted, the server is creating a subproject with a unique incident ID and copies the sources and build settings to it. The origin project will get removed usually via the cleanup option. This maintenance project is used to build the final packages.

If the maintenance team decides to merge a new maintenance request with an existing incident, they can run the `osc rq setincident $REQUESTID $INCIDENT` before accepting the request.

The maintenance team may still modify them or the patchinfo data at this point. An outside maintainer can still submit changes via standard submit request mechanism, but direct write permissions are not granted. When the maintenance people are satisfied with the update, they can create a request to release the sources and binaries to the final openSUSE:11.4:Update project.

```
osc releaserequest
```

The release request needs to specify the source and target for each package. In case just the source package or project is specified the api is completing the request on creation time. It is using this based on the source link target of each package and the release information in the repository definitions.

11.2.5 Incident gets released

The release process gets usually started via creating a release request. This sets all affected packages to the locked state, which means that all commands for editing the source or triggering rebuilds are not allowed anymore.

The release request typically needs to be approved by QA and other teams as defined in the Update project. In case something gets declined, the necessary changes need to be submitted to the maintenance project and a new release request has to be created.

A unique release ID will be generated and become part of the updateinfo.xml file in the target project on release event. This ID is different from the incident ID and is usually in the style of "YEAR-COUNTER". The counter is strictly increasing on each release. In case of a re-release of the same incident a release counter will be added.

A different naming scheme can be defined via the OBS:MaintenanceIdTemplate attribute value. The release will move all packages to the update project and extend the target package name with the incident ID. Binaries will be moved as well without

modification. The exception is the updateinfo.xml which will be modified by replacing its incident id with the release id.

11.2.6 Incident gets reopened and re-released

An update should not, but may have an undetected regression. In this case the update needs a re-release. (If another problem shall be fixed a new incident should be created instead.)

If the current update harms the systems, the maintenance team may decide to take it back immediatly. It can be done by removing the patchinfo.ID package container in the Update projects. This will create a new update channel without this update.

To re-open a release incident project, it must get unlocked and marked as open again. Unlocking can be done either via revoking a release request or via explicit unlocking the incident. The explicit unlock via osc:

```
osc unlock INCIDENT_PROJECT
```

is also triggering a rebuild to ensure to have higher release numbers and adding the "trigger=maintenance" flags to the release target definitions. Afterwards the project can be edited again and also gets listed as running incident again.

11.2.7 Using custom update IDs

The used string of update IDs can be defined via the OBS:MaintenanceIdTemplate attribute value of the master maintenance project.

11.3 OBS Internal Mechanisms

OBS is tracking maintenance work and can be used as a database for future and past updates.

11.3.1 The workflow step by step

A maintenance incident is started by creating the incident project, either via a developer request or by the maintenance team.

1. Incident project container is created. This is always a sub project to the maintenance project. A unique ID (counter) is used as subproject name. Build is disabled by default project wide.

2. Default content for an incident is added via branch by attribute call:

   - Package sources get added based on given package and attribute name from all existing project instances. The package name is extended by the source project name to allow multiple instances of same package in one project. Source revision links are using the xsrcmd5 to avoid that other releases will affect this package instance. TBD: how to raise the source revision to current version manually ?

   - Build repositories are added if missing. All repositories from all projects where the package sources gets branched from are used. The build flags in the package instances gets switched on for these.

   - A release target definition is added to the repository configuration via additional releasetarget element. The special release condition "maintenance" gets defined for this.

3. Fixes for the packages need to get submitted now.

4. A patchinfo file need to get added describing the issue.

5. OBS server is building packages according to the sources and update information according to the patchinfo data.

6. one or more release requests get created. It does also set the project to "freeze" state by default, this means no source changes are possible anymore and all running builds get canceled.

7. Usually the request is in review state with defined reviewers from the release project. All reviewers need to review the state in the incident project.

8. Request changes into state "new" when all reviewers accepted the release request.

9. The release happens on accepting the request by the maintainers of the release project.

   - All package sources and binaries get copied into a package container where the package name gets extended by the incident number.

- A main package gets created or updated, it just contains a link to the current incident package. Eg glibc points to glibc.42. The purpose of this main package is to have a place to refer to the current sources of a package.
- The release target condition=maintenance gets removed.
- The updateinfo.xml gets updated with the existing or now created unique updateinfo ID.
- The server will update the repository based on all existing binaries.

10. OPTIONAL: A maintenance coordinator may remove the release by removing the package instances inside the release project. The source link has to be fixed manually. (We may offer a function for this).

11. OPTIONAL: A maintenance incident can be restarted by

- Removing the lock flag.
- Adding again the condition=maintenance attribute to the release target which requires a re-release.

NOTE: The step 1 and 2 may be done via accepting an incident request instead.

11.3.2 Search for incidents

The webui shows the running and past incidents when going to the maintenance project (openSUSE:Maintenance in our example). It shows the open requests either for creating or release an incident. Also the open incidents, which are not yet released are visible.

All users need usually just to visit their "my work" screen in webui or osc to see requests or patchinfog were actions of them are expected:

```
osc my [work]
```

The following items list some common ways to search for maintenance incidents via the api:

- A developer can see the work to be done by him via searching for patchinfos with open bugzilla entries:

```
/search/package?match=([kind='patchinfo' and issue/[@state='OPEN' and
 owner/@login='$USER_LOGIN']])
```

- A maintenance coordinator can see requests for doing a maintenance release via searching for open requests with maintenance_incident action against the maintenance project. They are visible in the webui request page of that project or via

```
/search/request?match=(state/@name='new') and action/
@type='maintenance_incident' and action/target/
@project='openSUSE:Maintenance')
```

- A maintenance coordinator can see open incidents via searching for incidents project repositories which have a release target with maintenance trigger. Note: this search result is showing all repositories of a matching project.

```
/search/project?match=(repository/releasetarget/@trigger='maintenance')
```

- A maintenance coordinator can see updates which currently are reviewed (for example by a QA team) via

```
/search/request?match=(state/@name='review') and action/
@type='maintenance_release')
```

- A maintenance coordinator can see updates ready to release via searching for open requests with maintenance_release action.

```
/search/request?match=(state/@name='new') and action/
@type='maintenance_release')
```

11.4 How to setup projects for doing a maintenance cycle

11.4.1 Defining a maintenance space

An OBS server is using by default a maintenance space defined via the OBS:Maintenance attribute. This must get created on a project where maintenance incident projects should get created below. This project is also defining the default maintenance maintainers and reviewers in it's acl list.

It is possible to have multiple and independent maintenance name spaces, however the maintenance request must be created against this other namespace manually or using a different attribute.

11.4.2 Maintained Project Setups

Maintained projects must be frozen, this means no changes in sources or binaries. All updates will be hosted in the defined update project. This project gets defined via the OBS:UpdateProject attribute which must contain a value with the update project name. In addition to this, an attribute to define the active maintenance should also be defined, by default the OBS:Maintained attribute. The osc mbranch command will take packages from this project as a result.

The Update project should be defined as build disabled as well. Also define a project link to the main project and at least one repository building against the main project.

12

Cross Architecture Build

OBS can build for architectures without having the hardware. This is done via emulation steps. However, this is not a classic build with cross tool chains. The advantage is that the build environments of the packages don't need support for cross tools.

13 Administration

This chapter describes the components of an OBS server and the typical administration tasks for an OBS administrator.

This chapter is not intended to describe special installation hints for a certain OBS version, please refer to the online resources or the README.SETUP file for this.

13.1 Server Components

To be written...

13.2 Tools for the admin

To be written...

13.2.1 obs_admin

To be written...

13.3 Integrate OBS into your environment

To be written...

13.3.1 Integrate Notifications

To be written...

13.3.2 Integrate your user management in OBS

To be written...

14 openSUSE Factory

This chapter describes how the development of the future openSUSE distribution is done within OBS.

14.1 openSUSE:Factory project

The main project is openSUSE:Factory. This project is controlled by a small group which does review all submissions according to the policies. Submissions are possible via submit requests, which get reviewed by default by two groups: The Legal team and the code review team. ...

14.2 Devel Projects

The goal of openSUSE:Factory is to always have a working state. This is needed to allow all developer groups to use it as a base for testing their own, possibly experimental work in their own projects. To have a complete test of ...

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 (page 47) from the openSUSE project at http://build.opensuse.org.

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 (page 47).

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 (page 48) of this project.

Update Project

The update project is a Release Project (page 48) which provides official updates for the products generated in the GA Project (page 47). The Update project is usually linking (sources and repositories) against the GA Project (page 47).

Maintenance Project

The maintenance project is a project without sources and binaries, defined by the maintenance team. Incident (page 48)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

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```
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```

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B

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