

# The Subversion Version Control System

## *An introduction for new users*

Clifford Wolf

ROCK Linux - <http://www.rocklinux.org/>

Csync2 - <http://oss.linbit.com/csync2/>

SPL - <http://www.clifford.at/>



## Introduction

- What is Subversion (1)
- What is Subversion (2)

Using Subversion

References

# Introduction



# What is Subversion (1)

## Introduction

### ● What is Subversion (1)

### ● What is Subversion (2)

## Using Subversion

## References

- Subversion is a a version control system
- The entire history of a project including all branches is stored in a Database called Subversion Repository
- A Subversion Repository can also be seen as a filesystem with special capabilities
- People can check out files or directories from a Subversion Repository, change them and commit the changes back to the repository
- Some changes can be done directly on the repository without creating a working copy



# What is Subversion (2)

## Introduction

- What is Subversion (1)
- What is Subversion (2)

## Using Subversion

## References

- Subversion Repositories can be accessed thru the filesystem, using HTTP/WebDAV or by a special SVN:// protocol
- The tool for creating and maintaining the database behind a Subversion Repository is called 'svnadmin'
- The tool for working with the Subversion Repository and Working copies is called 'svn'
- The calling convention for 'svn' is similar to the calling convention for 'cvs'



[Introduction](#)

---

**[Using Subversion](#)**

- [Creating a repository](#)
- [Creating a working copy](#)
- [Making changes \(1\)](#)
- [Making changes \(2\)](#)
- [Committing changes](#)
- [Branches and tags](#)

[References](#)

---

# Using Subversion



# Creating a repository

Introduction

Using Subversion

● Creating a repository

● Creating a working copy

● Making changes (1)

● Making changes (2)

● Committing changes

● Branches and tags

References

- Creating the repository itself is easy:

```
svnadmin create /home/svn/repos
```

- If the repository should be accessible thru HTTP/WebDAV (http://), you need to configure your apache to load the Subversion module and set it up.

- If the repository should be accessible thru the Subversion protocol (svn://), you need to set up the Subversion server `svnserve`.



# Creating a working copy

## Introduction

## Using Subversion

- Creating a repository
- Creating a working copy
- Making changes (1)
- Making changes (2)
- Committing changes
- Branches and tags

## References

- Using the tool `svn` is very similar to using `cv`s.
- A Working copy can be created with:

```
svn co file:///home/svn/repos localdir
cd localdir
```
- Note that no equivalent to `$CVSROOT` exists.
- Within the working copy, every directory has a `.svn` subdirectory containing the Subversion metadata.



# Making changes (1)

## Introduction

### Using Subversion

- Creating a repository
- Creating a working copy
- Making changes (1)
- Making changes (2)
- Committing changes
- Branches and tags

## References

- Modifying files:
  - ◆ Just edit them as usual with your favorite editor
  - ◆ Note that Subversion is using binary deltas and has good support for non-ascii files
- Adding files:
  - ◆ First create the new file as usual
  - ◆ Then execute `svn add filename`
- Removing files:
  - ◆ Just execute `svn rm filename`
  - ◆ The file will automatically removed by `svn`





# Making changes (2)

Introduction

Using Subversion

- Creating a repository
- Creating a working copy
- Making changes (1)
- Making changes (2)
- Committing changes
- Branches and tags

References

## ■ Moving/renaming files:

- ◆ Using `svn mv` instead of `mv`

## ■ Copying files:

- ◆ Using `svn cp` instead of `cp`

## ■ Making changes without a working copy:

- ◆ Most operations can also be performed directly on the repository:

- ◆ `svn copy -m "Commit message" \`  
    `file:///home/svn/repos/demo2.txt \`  
    `file:///home/svn/repos/demo3.txt`



# Committing changes

## Introduction

### Using Subversion

- Creating a repository
- Creating a working copy
- Making changes (1)
- Making changes (2)
- Committing changes
- Branches and tags

## References

- Committing changes made in the working copy:

```
svn commit
```

- Listing status (modified, etc) of files in working copy:

```
svn status
```

- Bringing changes from the repository into the working copy:

```
svn up
```



# Branches and tags

## Introduction

## Using Subversion

- Creating a repository
- Creating a working copy
- Making changes (1)
- Making changes (2)
- Committing changes
- Branches and tags

## References

- Subversion has no explicit support for branching.
- But it has support for copying directories in  $O(1)$ .
- Creating a branch is just the same as creating a copy:

```
svn copy -m "Creating branch dummy" \  
    file:///home/svn/repos/trunk \  
    file:///home/svn/repos/branches/dummy
```

- Merging changes from somewhere else to working copy:

```
svn merge -r70:86 \  
    file:///svn/repos/branch/testing .  
  
svn merge file:///svn/repos/branch/stable \  
    file:///svn/repos/branch/testing .
```

- A “tagged version” is also just a copy. It just never gets modified.



[Introduction](#)

[Using Subversion](#)

**[References](#)**

- [Getting Help \(1\)](#)
- [Getting Help \(2\)](#)
- [URLs - Subversion and SubMaster](#)
- [URLs - Related Projects](#)

# References



# Getting Help (1)

Introduction

Using Subversion

References

● Getting Help (1)

● Getting Help (2)

● URLs - Subversion and SubMaster

● URLs - Related Projects

- The command `svn help` lists all subcommands for `svn`:  
`add, blame (praise, annotate, ann), cat, checkout (co), cleanup, commit (ci), copy (cp), delete (del, remove, rm), diff (di), export, help (?, h), import, info, list (ls), lock, log, merge, mkdir, move (mv, rename, ren), propdel (pdel, pd), propedit (pedit, pe), propget (pget, pg), proplist (plist, pl), propset (pset, ps), resolved, revert, status (stat, st), switch (sw), unlock, update (up)`
- The command `svn help subcommand` gives a detailed description



# Getting Help (2)

Introduction

Using Subversion

References

- Getting Help (1)
- Getting Help (2)
- URLs - Subversion and SubMaster
- URLs - Related Projects

- The command `svnadmin help` **does it for** `svnadmin:`  
`create, deltify, dump, help (?, h), hotcopy,`  
`list-dblogs, list-unused-dblogs, load,`  
`lslocks, lstxns, recover, rmlocks, rmtxns,`  
`setlog, verify`
- The command `svnadmin help subcommand` gives a detailed description
- The Subversion Handbook is a great Subversion tutorial:  
<http://svnbook.red-bean.com/>



# URLs - Subversion and SubMaster

Introduction

Using Subversion

References

- Getting Help (1)
- Getting Help (2)
- URLs - Subversion and SubMaster
- URLs - Related Projects

- The Subversion Handbook:  
<http://svnbook.red-bean.com/>
- The Subversion Homepage:  
<http://subversion.tigris.org/>
- The SubMaster Homepage:  
<http://www.rocklinux.org/submaster.html>



# URLs - Related Projects

Introduction

Using Subversion

References

- Getting Help (1)
- Getting Help (2)
- URLs - Subversion and SubMaster
- URLs - Related Projects

- SVK: A decentralized system based on Subversion  
<http://svk.elixus.org/>
- Transvn: A patch-scripts clone based on Subversion  
<http://alexm.here.ru/transvn/>
- SVM: Mirror Remote Subversion Repository to local  
<http://search.cpan.org/~clkao/SVN-Mirror/>