

A short note on Subversion

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Subversion, an open source version control (also known as revision control, source control or (source) code management) system, is a tool to keep track of changes made by a team over time to any type of digital information. It is most commonly used in writing source code, web pages or other documents.

On-line resources

An text book on Subversion can be found here: <http://svnbook.red-bean.com>.

Initial setup

Suppose we have a folder called “BTC”. Now we want to use version control system provided by SVN. We could follow the steps below.

1. setup a new repository
 - `mkdir BTCSVN`
 - `cd BTCSVN`
 - `mkdir trunk`
 - `cd`
 - `svnadmin create --fs-type fsfs ~/BTCSVN/trunk`
2. initial import
`svn import BTC file:///mnt/nfs/fileserv/grad/dafeng/BTCSVN/trunk -m "import"`
3. remove the folder
`rm -r BTC`
4. checkout the folder
`svn checkout file:///mnt/nfs/fileserv/grad/dafeng/BTCSVN/trunk BTC`

Work cycle

The typical work cycle includes: `cd BTC` and do the following:

1. Update working copy
`svn update`
When working with a team, we want to update our working copy to incorporate any changes made since our last update by other members.

2. Make changes

- (a) `svn add`
- (b) `svn delete`
- (c) `svn copy`
- (d) `svn move`

3. See an overview of our changes

`svn status`

After run `svn status`, we could see the following message:

```
A      BTC/R/BTCmcmc.R
D      BTC/R/BTCsubmcmc.R
M      BTC/R/BTC.R
```

the capital letters on the first column mean:

- A: file is scheduled for addition
- D: file is scheduled for deletion
- M: file has local modifications

4. Undo the changes

`svn revert filename`

5. Check the difference between two versions

```
svn diff --revision 96:97 or
svn diff -r 96:97
```

6. Check an earlier version of the file "BTC.R"

`svn cat -r 2 BTC.R`

7. Check the log of a version.

```
svn log --revision 97 or
svn log -r 97
```

8. Upload the changes.

```
svn commit --message "What we have changed." or
svn commit -m "What we have changed."
```