

# ***What is Subversion and what does it do?***

A version control system

Manages files and directories and any changes made to those files and directories

Can be used across networks to promote remote collaboration

You can manage any files “anything from grocery shopping lists to digital video mixdowns and beyond”



# *Why Subversion if CVS exists?*

Revision Control System (RCS) can only deal with one file at a time. It can branch but the syntax is difficult.

RCS back end cannot store binary files efficiently

Networking is slow. Only server to client.

CVS code is hard to understand. “Sequence of hacks”

# *Goals of Subversion*

To replace CVS by fixing bugs, weak network, and project management

Draw from the CVS audience

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# *Intended use of Subversion*

It should not be used for everything  
archive old versions of files and directories, possibly  
resurrect them, or examine how logs have changed  
over time  
collaborate with people on documents and keep track  
of who made which changes



# *Costs of Subversion*

COST: administrative overhead.

manage a data repository to store the information and all its history

be diligent about backing it up. Y

you won't be able to copy, move, rename, or delete files the way you usually do.

NOT a distribution tool

It should not be used to distribute files that are not changing like photos, music, etc.

Overkill

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# *History of Subversion*

Karl

Ben



CollabNet

2000 to 2001

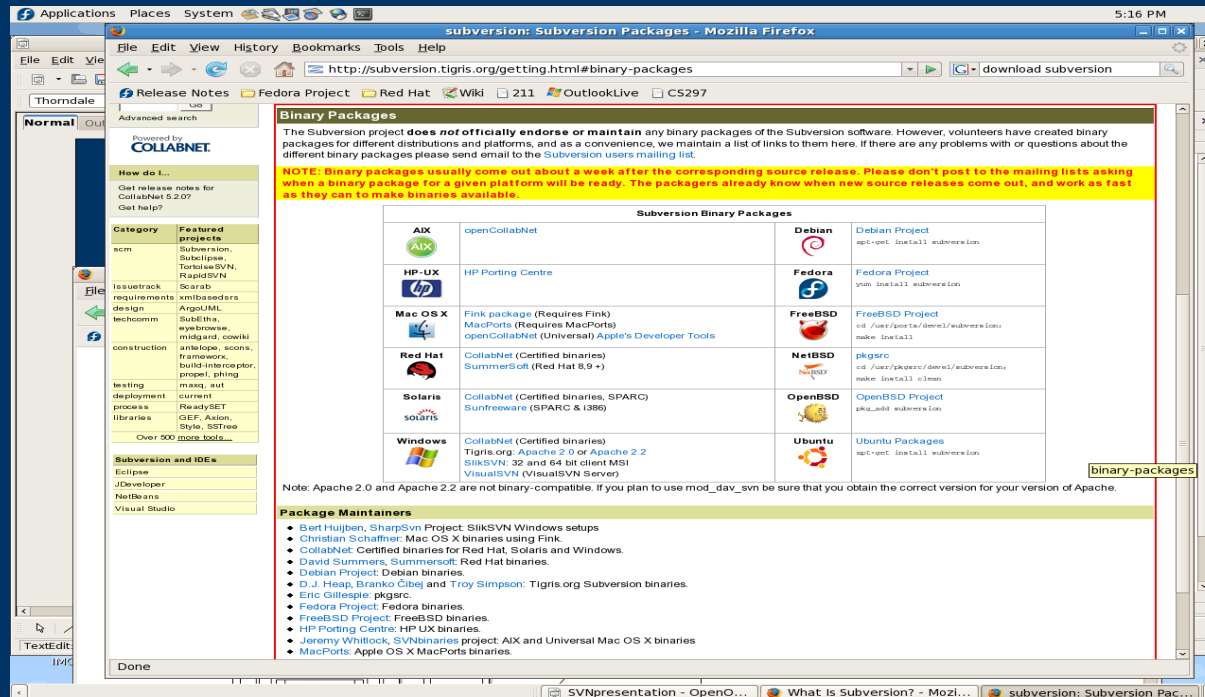
Karl Fogel and Ben Collins-Sussman

Now, open-source run

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# Environment for Subversion



Almost everyone  
Can use on multiple operating systems including  
Mac OS X, Windows, Ubuntu, and Fedora.  
Also available as a plug-in from Eclipse and Net-  
beans

# *How to get subversion?*

<http://subversion.tigris.org/>

Both subversion binaries and third-party clients  
Through Eclipse...





# *Getting started with Subversion from the Command line*

## Create repository

```
svnadmin create $cs297/shared/DemoAlexAnne
```

## Checkout

```
svn checkout file:///home/courses/cs297/shared/DemoAlexAnne ~/workspace/project
```

## Commit

```
svn commit ~/workspace/project -m "What I Did"
```

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# *Getting started in Eclipse...*

## Two Choices

### Subversive

“Official” Eclipse plugin

Maintained by the Eclipse people

<http://download.eclipse.org/technology/subversive/0.7/updat>

<http://community.polarion.com/projects/subversive/download/eclipse/2.0/update-site/>

### Subclipse

Maintained by the Subversion people

[http://subclipse.tigris.org/update\\_1.6.x](http://subclipse.tigris.org/update_1.6.x)

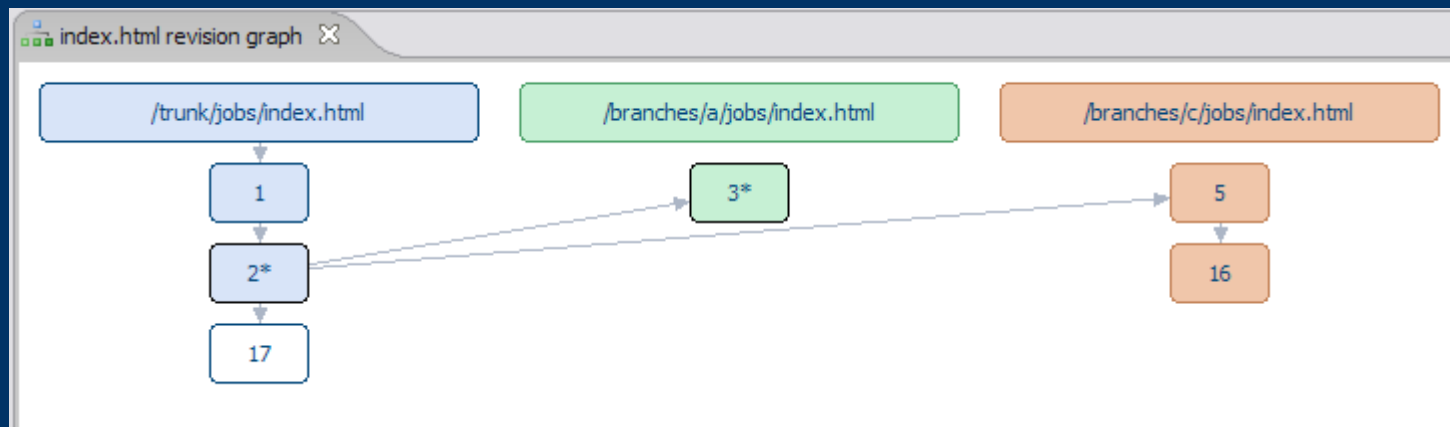
# Subclipse

Easy to use

Plugin, give repository path and go!

Cool Features

Revision Graphs



# *Basic Features*

Functional replacement of CVS

- Does everything cvs does

Copy/Move files

Tracks filesystem trees

Atomic commits

- Commit non-interruptible

File properties versioned as well

- Permissions, etc.



# Advanced Features

## Merge

- Resolve file conflicts

  - Can manually combine

  - Can toss one of the revisions

## Branch

- New copy of a file

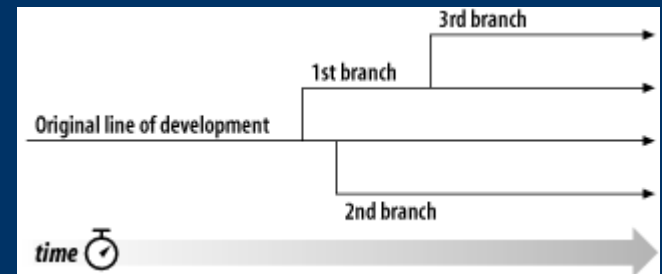
  - Shares common history

  - Useful for maintaining two versions

## Revert

- Made a serious mistake?

  - Revert to an older version



Branch History

# *Limitations*

No support for distributed repositories

Lack of visualization tools for complex processes like branching and merging

Renamed files are not renamed in older revision trees.



# *Related Tools*

CVS

The Original

Tortoisetsvn

Use subversion on your windows machine



# *Comparison to CVS*

## SVN

- “All-or-nothing philosophy

  - Atomic Commits

- Faster Network Access

- Stores Meta-Data

## CVS

- No Atomic Commits

- File Contents Only





# Works Cited

Collins-Sussman, B. 2002. The subversion project: buiding a better CVS. Linux J. 2002, 94 (Feb. 2002), 3. <<http://portal.acm.org/citation.cfm?id=513039.513042>>  
"Revision Control System." Wikipedia, The Free Encyclopedia. 13 Apr 2009, 22:47 UTC. 15 May 2009 <[http://en.wikipedia.org/w/index.php?title=Revision\\_Control\\_System&oldid=28366](http://en.wikipedia.org/w/index.php?title=Revision_Control_System&oldid=28366)>.  
<http://www.red-bean.com/kfogel/photos/> (picture of Karl Fogel)  
<http://www.red-bean.com/sussman/> (picture of Ben Collins-Sussman)