

Using Subversion for Source Code Control



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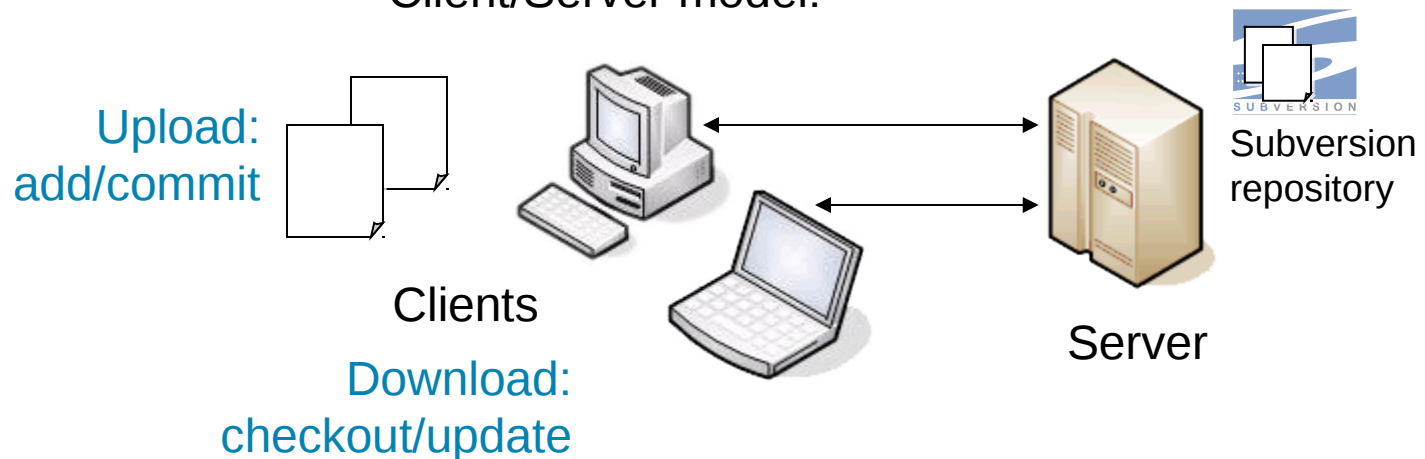
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What is Subversion?

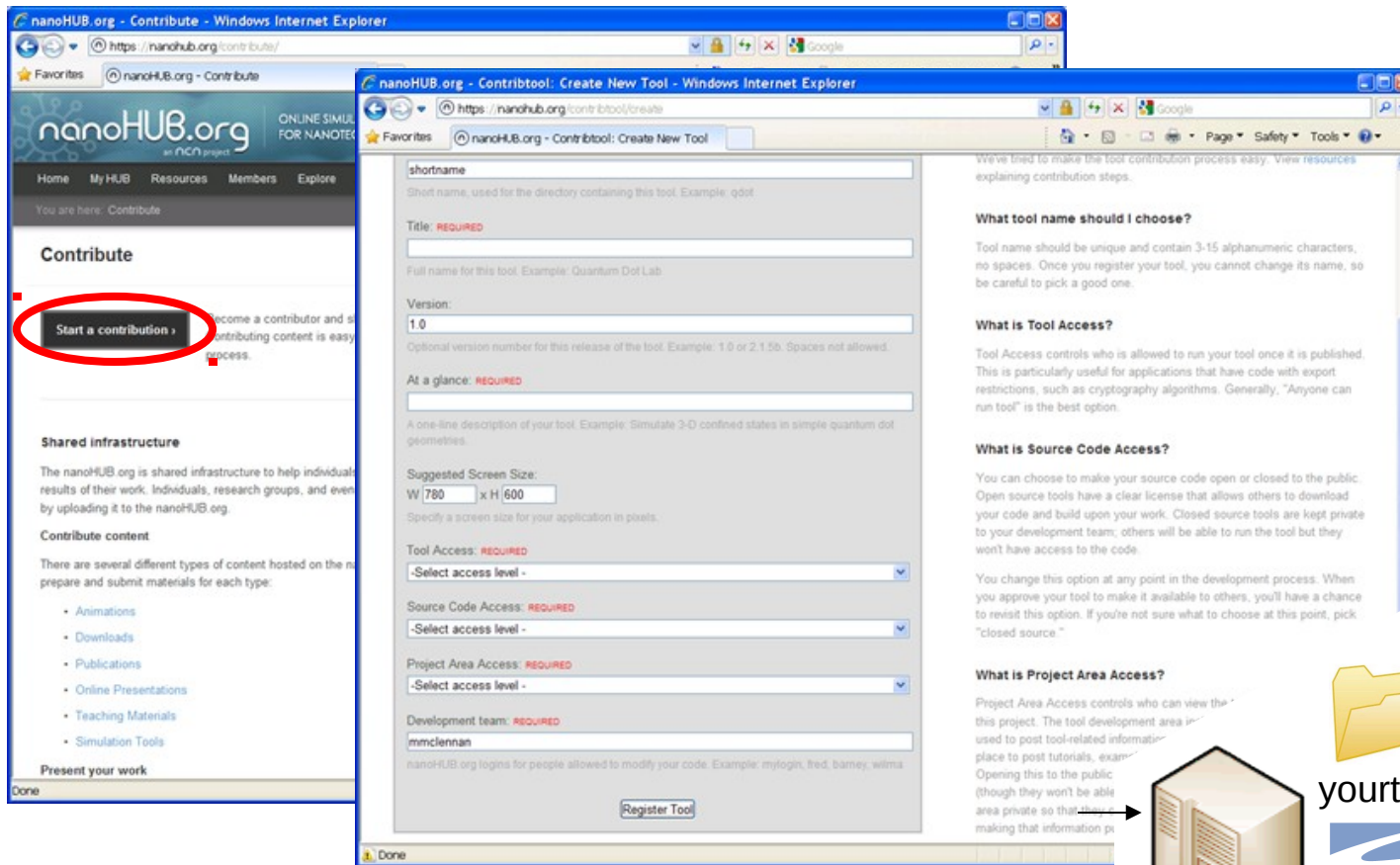


- CVS on steroids
- Created by developers at CollabNet
- In development since 2000
- In production (version 1.0) since Feb 2004
- Open source (Apache/BSD-style license)
- Unix/Linux, Win32, BeOS, OS/2, MacOS X
- Home page: <http://subversion.tigris.org/>

Client/Server model:



Getting Started



*Once you register your tool,
your repository is created automatically*

Check out your code



```
svn checkout https://ccehub.org/tools/yourtool/svn/trunk yourtool
```

```
A  yourtool/rappture
```

```
A  yourtool/doc
```

```
A  yourtool/src
```

```
A  yourtool/bin
```

```
A  yourtool/data
```

```
A  yourtool/middleware
```

```
A  yourtool/examples
```

```
Checked out revision 1.
```

```
mkdir examples/ex1
```

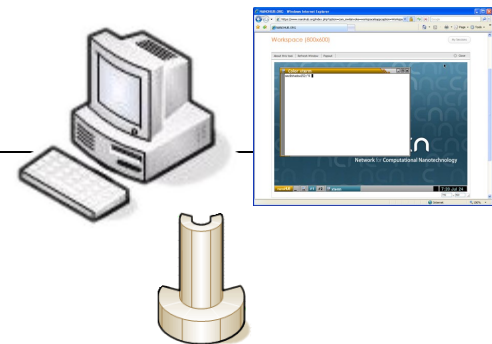
```
vi examples/ex1/README
```

```
svn add examples/ex1
```

```
A  examples/ex1
```

```
A  examples/ex1/README
```

From any machine...



*Instructions in your project area
at [wiki/GettingStarted](#)*

Commit your changes



cd yourtool ← commit at the top level, so you don't miss anything

svn status

A examples/ex1

A examples/ex1/README

? a.out

brings up your favorite editor:

Created ex1 directory and added the README file.

| Date | Rev | Chgset | Author | Log Message |
|-------------------|-----|--------|--------|--|
| 07/25/07 21:31:14 | 2 | 2 | mmc | Created ex1 directory and added the README file. |
| 07/25/07 21:23:09 | 1 | 1 | root | initial directory structure |

svn commit

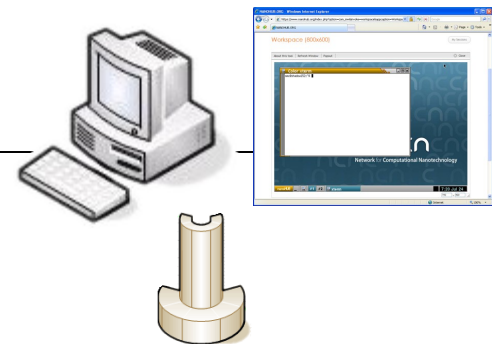
Adding examples/ex1

Adding examples/ex1/README

Transmitting file data .

Committed revision 2.

Instructions in your project area
at [wiki/GettingStarted](#)



What about Windows?

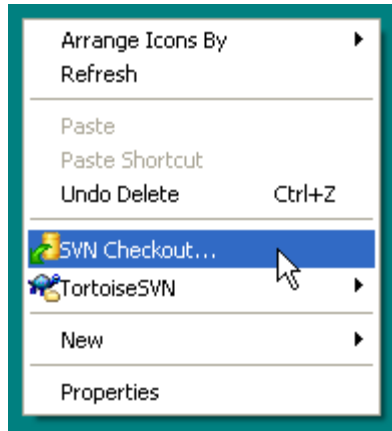


TortoiseSVN

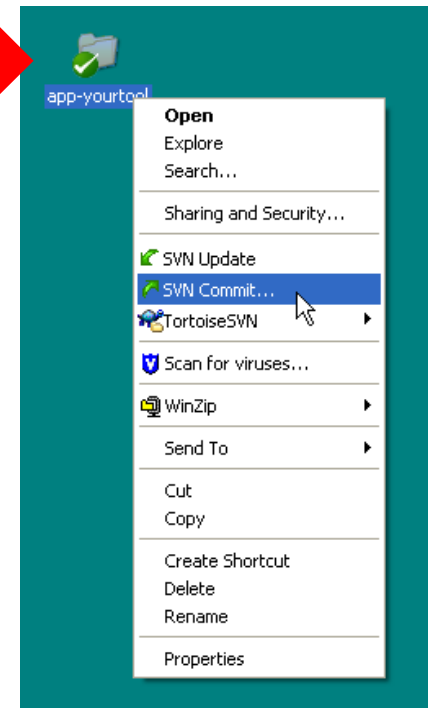
More info:

<http://tortoisesvn.net>

Puts svn commands onto the right-mouse-button menu:



Like any other file on your Desktop, but icon shows Subversion control



Try it yourself: checkout

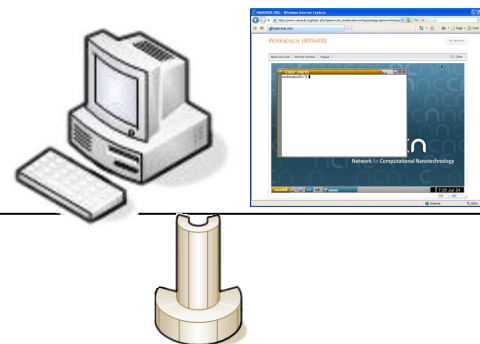


```
use -r -p geany
svn checkout https://ccehub.org/tools/bootcamp/svn/trunk bootcamp
A  bootcamp/devteamone
A  bootcamp/devteamtwo
A  bootcamp/devteamthree
A  bootcamp/devteamfour
A  bootcamp/devteamfive
A  bootcamp/devteamsix
A  bootcamp/devteamseven
Checked out revision 2.
```

geany devteamone/README

```
svn add devteamone/README
A  devteamone/README
```

From any machine...



*Instructions in your project area
at [wiki/GettingStarted](#)*

Try it yourself: commit

cd bootcamp ← commit at the top level, so you don't miss anything

svn status

A devteamone/README

brings up your favorite editor:

Created README file for my team.

--This line, and those below, will be ignored--

A devteamone/README

svn commit

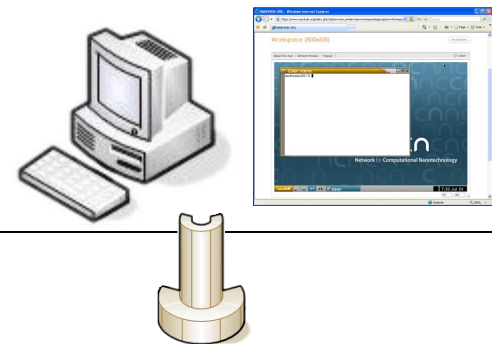
Adding devteamone/README

Transmitting file data .

Committed revision 2.

svn update

Adding devteamone/README



Instructions in your project area
at [wiki/GettingStarted](#)

Moving and removing files

```
cd examples/ex1
svn mv README README.txt
A  README.txt
D  README
```

brings up your favorite editor:

Moved some files around.

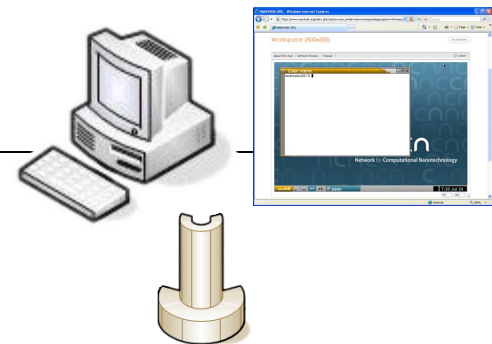
```
cd ../..
svn delete doc
D  doc
```

```
svn status
D  doc
```

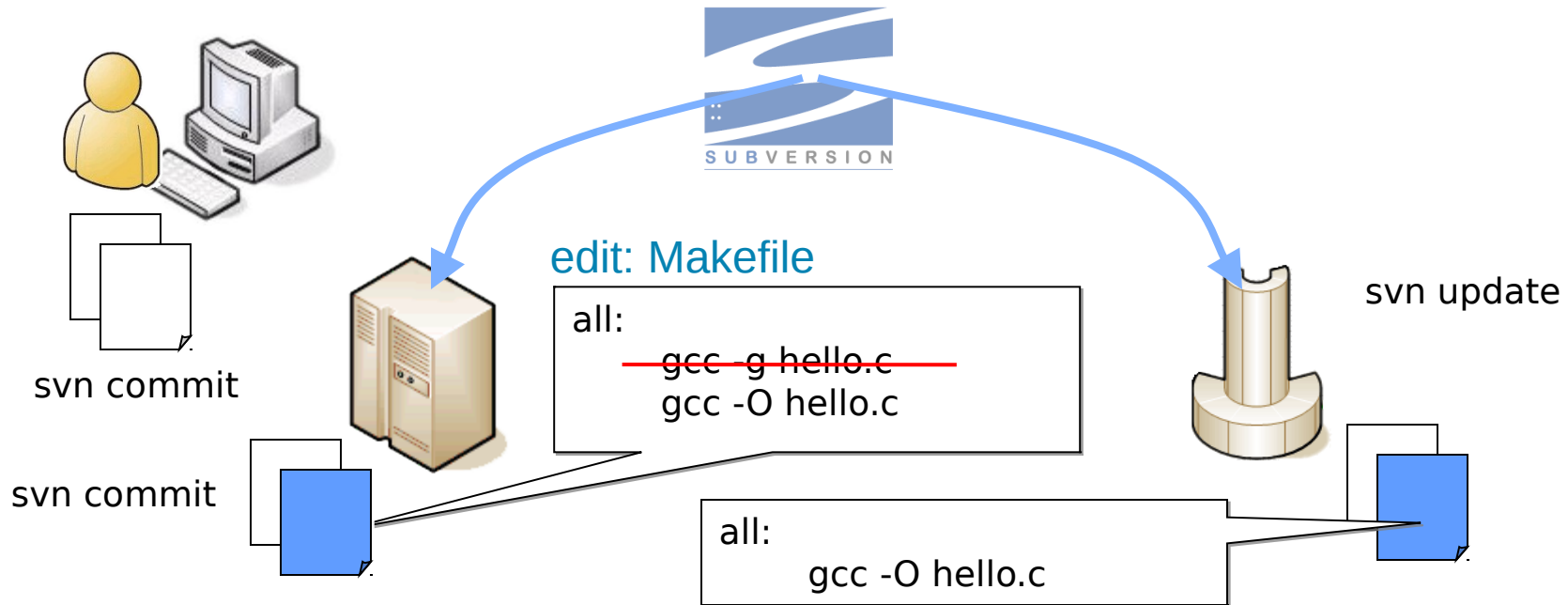
```
A + examples/ex1/README.txt
D  examples/ex1/README
```

```
svn commit
```

| Date | Rev | Chgset | Author | Log Message |
|-------------------|-----|--------|--------|--|
| 07/26/07 09:46:35 | 3 | 3 | mmc | Moved some files around. |
| 07/25/07 21:31:14 | 2 | 2 | mmc | Created ex1 directory and added the README file. |
| 07/25/07 21:23:09 | 1 | 1 | root | initial directory structure |



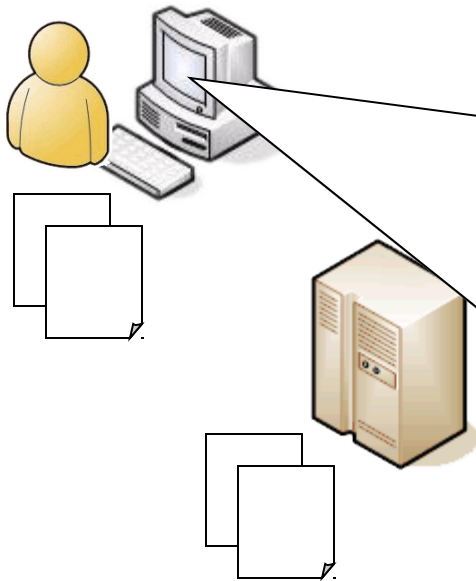
Editing and updating



svn checkout <https://nanohub.org/tools/yourtool/svn/trunk> yourtool

- ~~• Copy code around~~
- Move code to new machines with “svn checkout”
- Move changes around with “svn commit” and “svn update”

Looking for differences and reverting



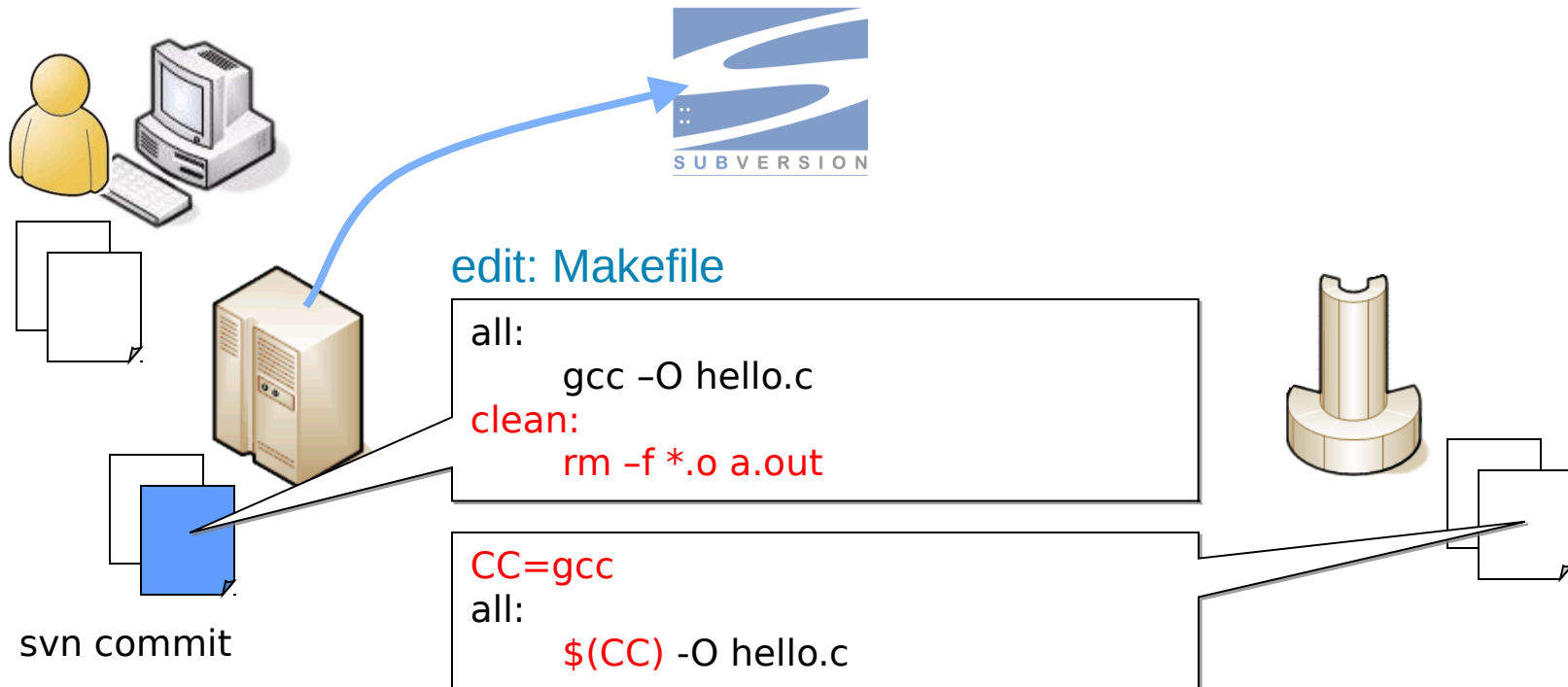
```
svn status
M   src/hello.c

svn diff src/hello.c
Index: src/hello.c
=====
--- src/hello.c    (revision 4)
+++ src/hello.c    (working copy)
@@ -4,6 +4,7 @@
 int
 main(int argc, char **argv)
 {
-   printf("Hello, World!\n");
+   /* say hello to everyone */
+   printf("Hello, Universe!\n");
   exit(0);
 }

svn revert hello.c
Reverted 'hello.c'
```

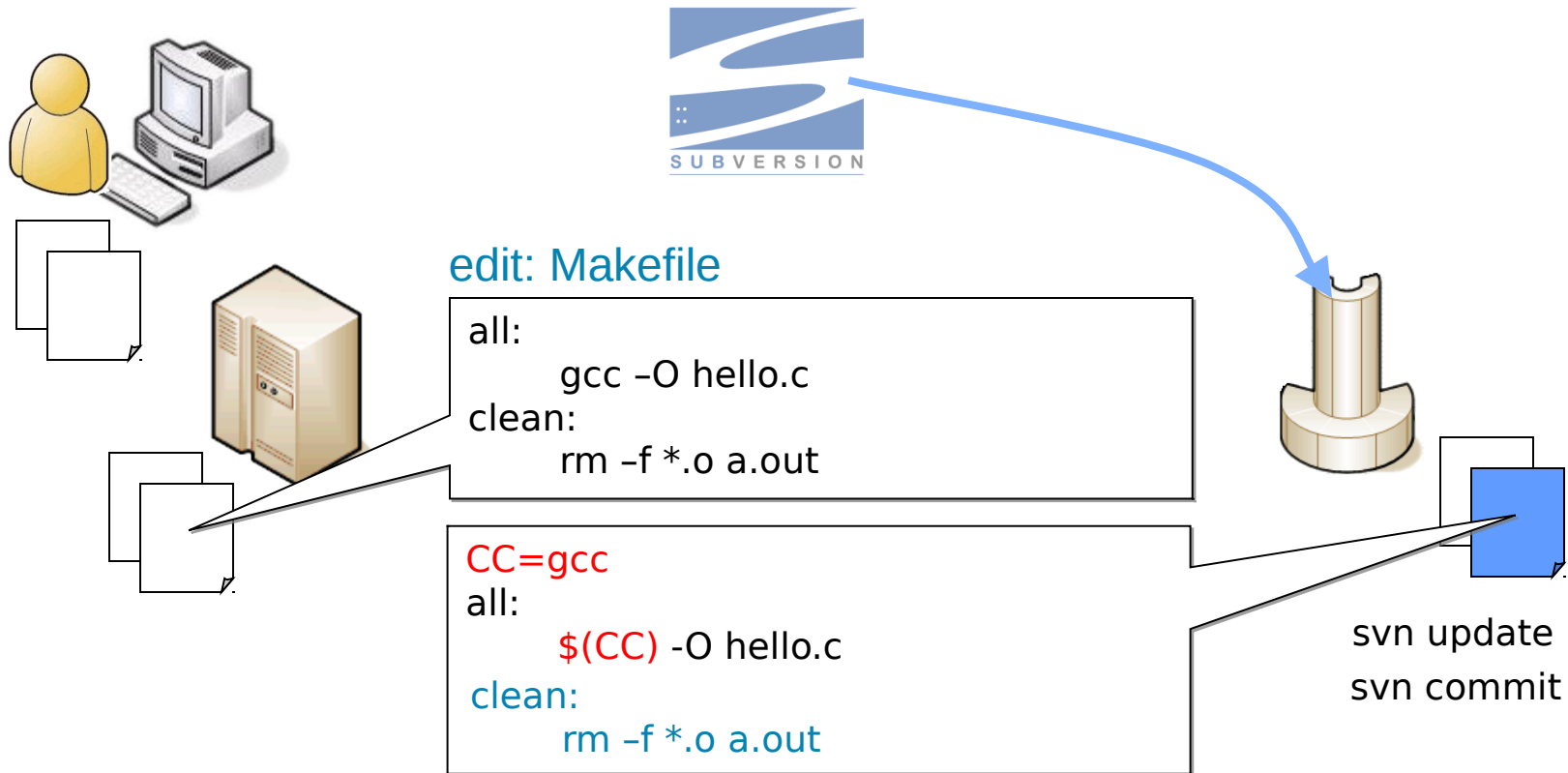
Can also revert
directory changes
(adding/deleting files)

Merging changes



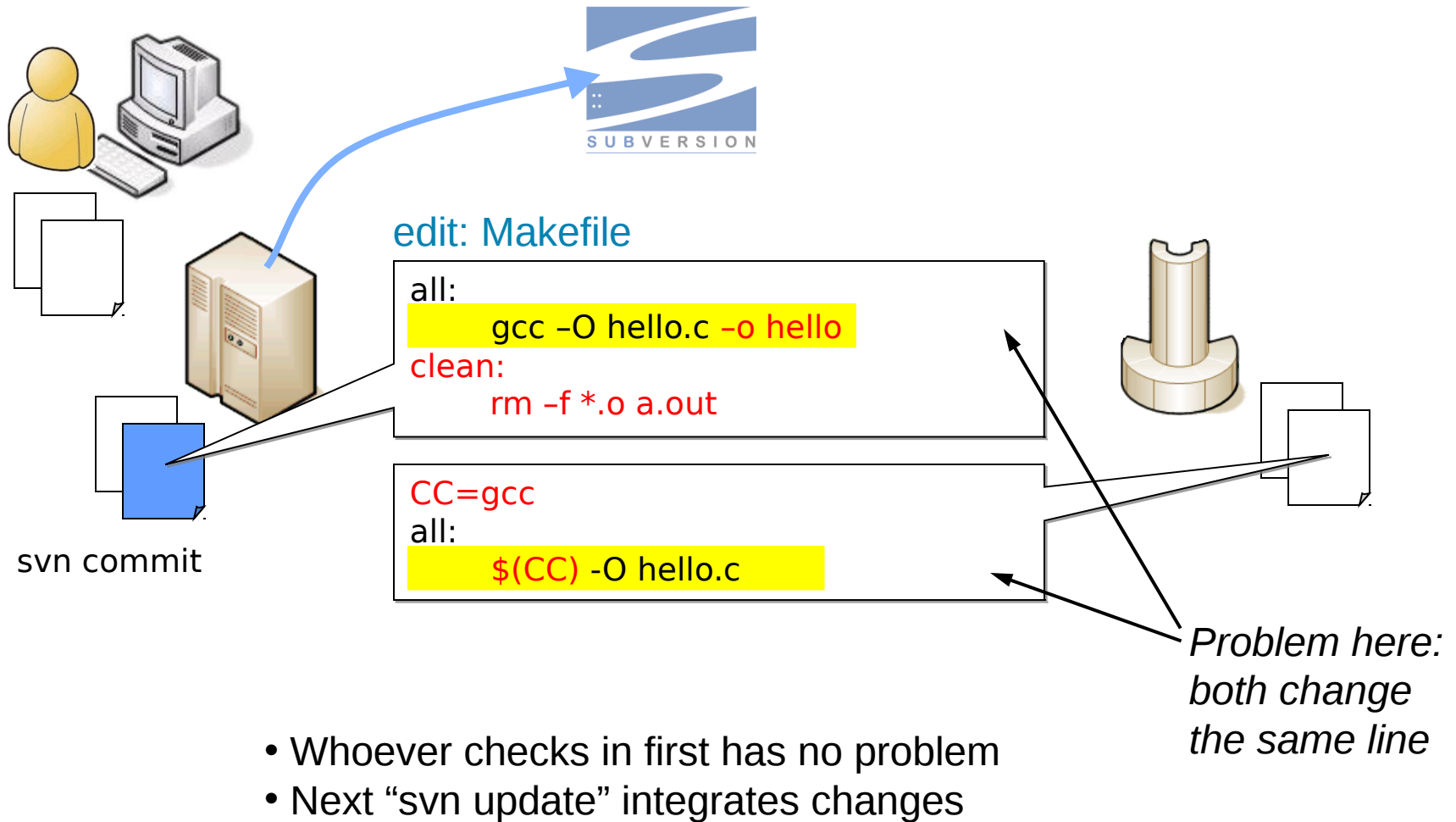
- Whoever checks in first has no problem
- Next “svn update” integrates compatible changes

Merging changes

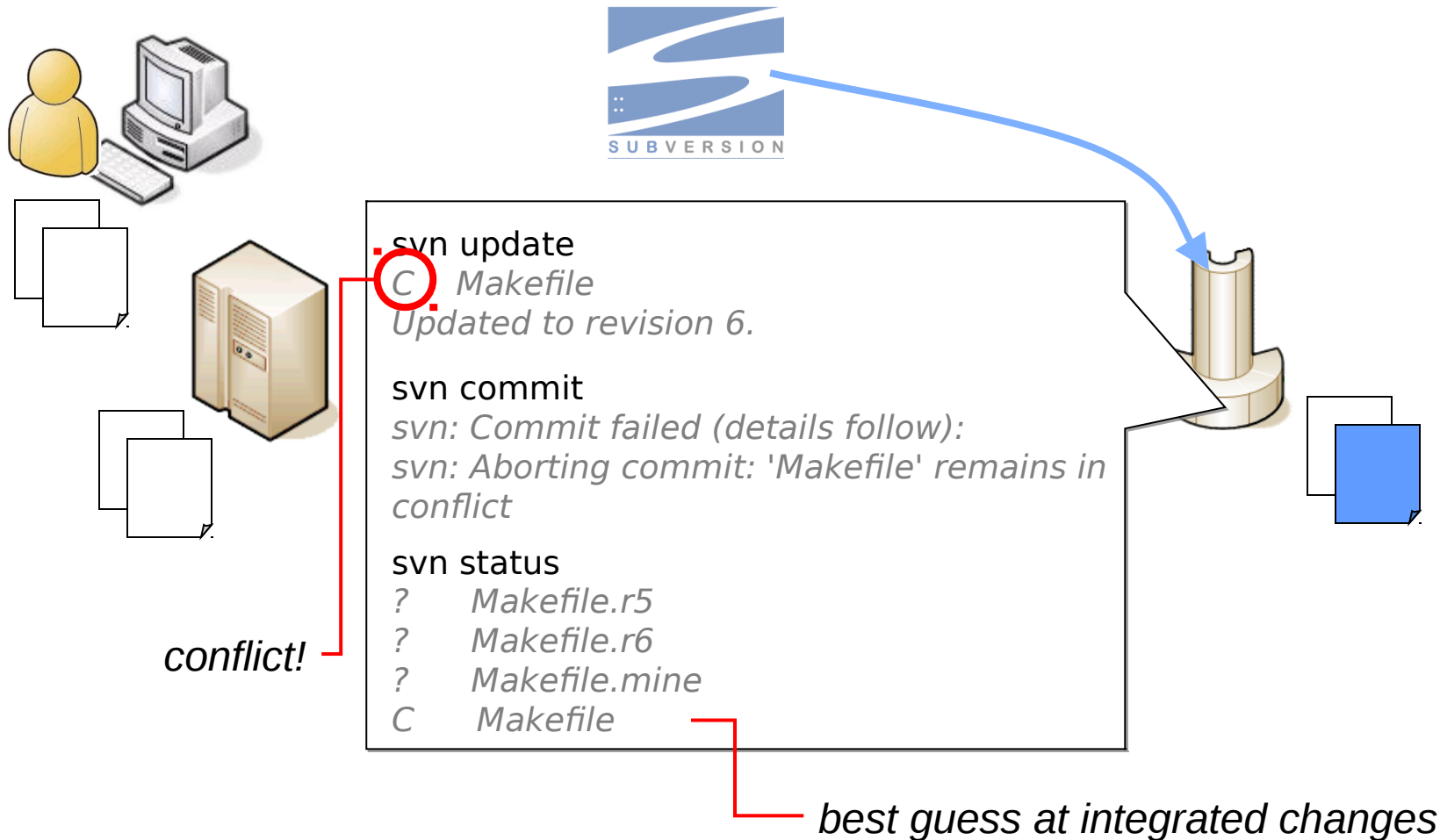


- Whoever checks in first has no problem
- Next “svn update” integrates compatible changes
- Use “svn commit” to commit the merged changes

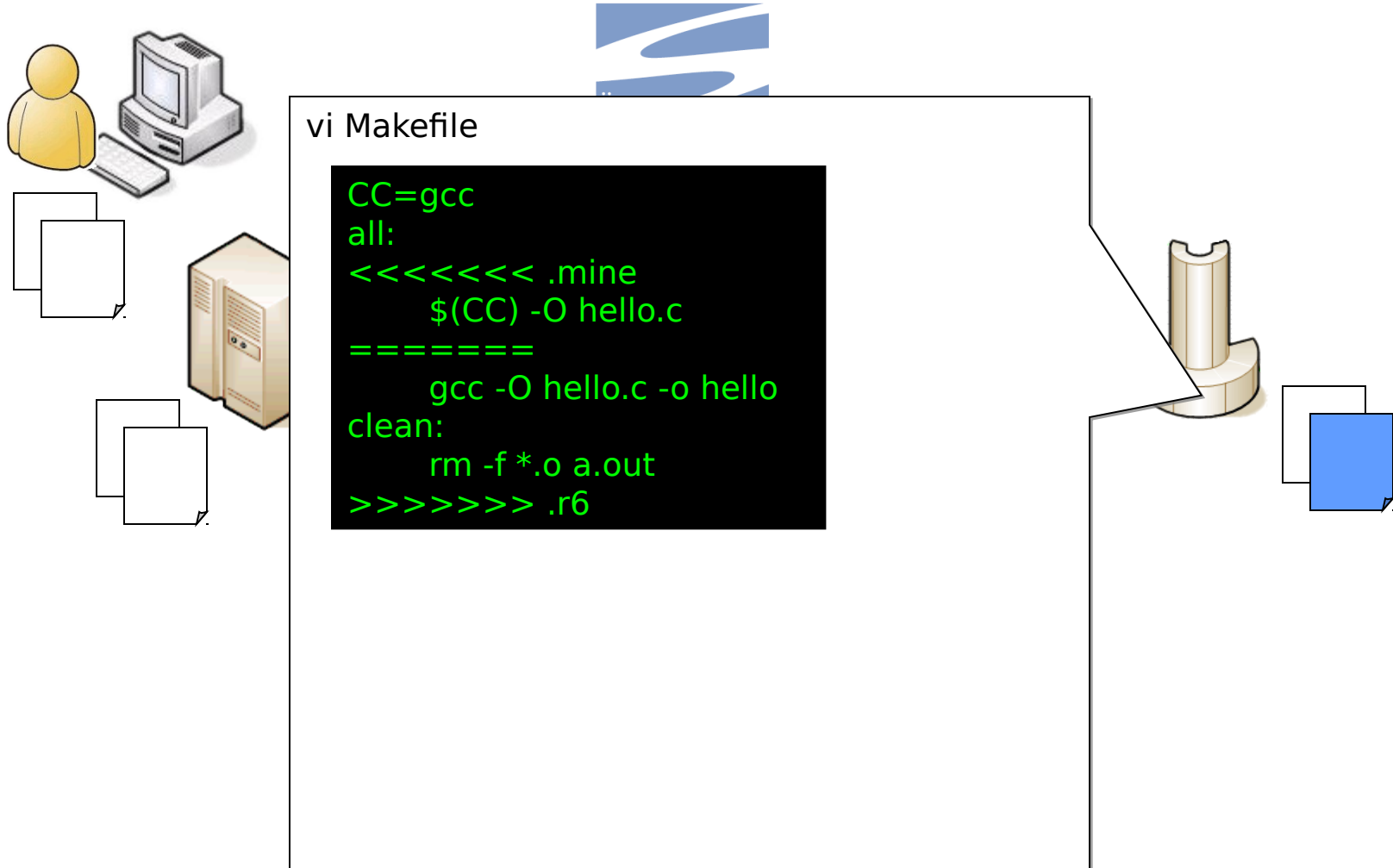
Resolving merge conflicts



Resolving merge conflicts



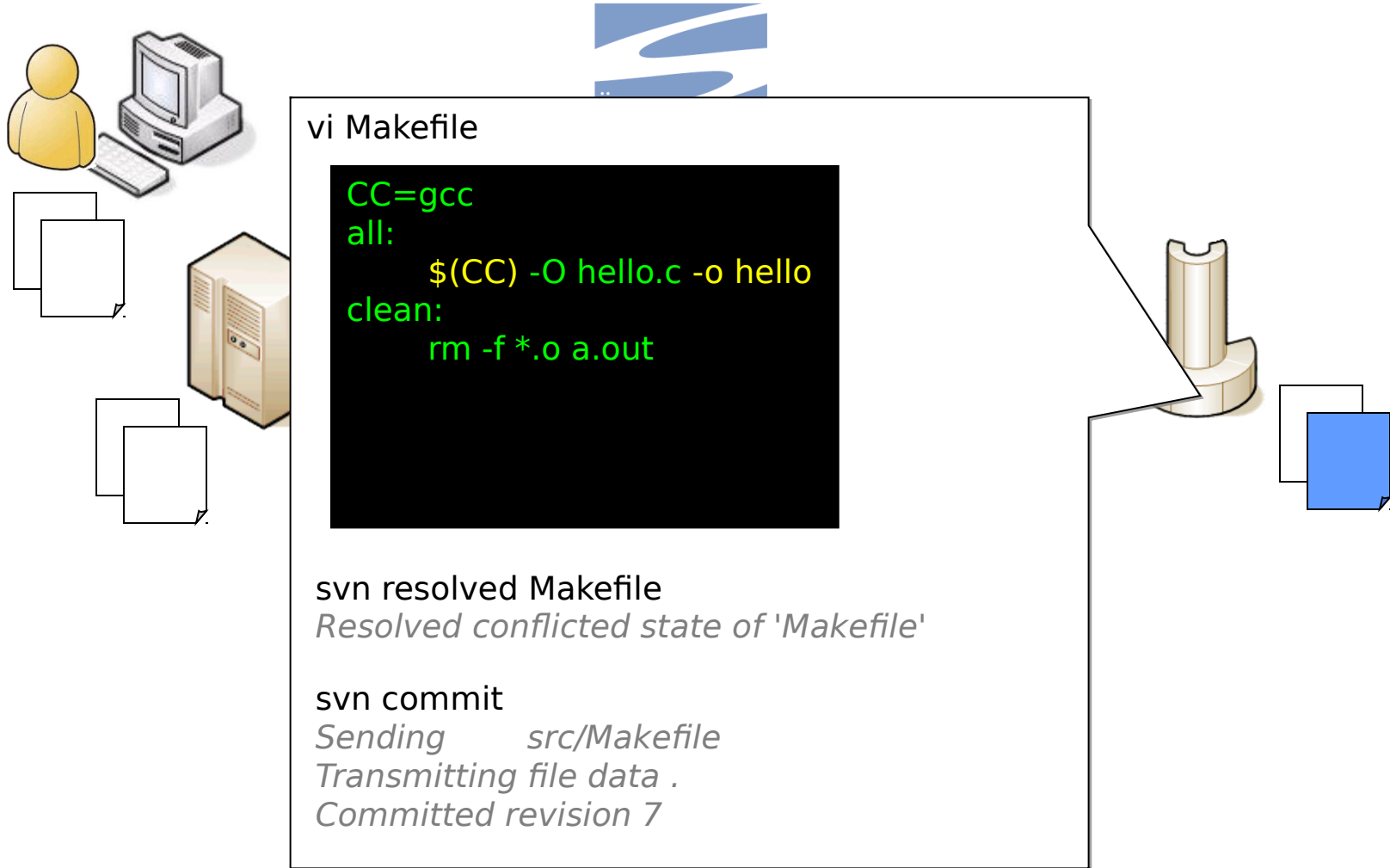
Resolving merge conflicts



Resolving merge conflicts



Resolving merge conflicts



Retrieving an old version

- Get the whole distribution

```
svn checkout -r 3 https://nanohub.org/tools/yourtool/svn/trunk yourtool
```

get revision 3

- Get a particular file

```
svn cat -r 5 Makefile _____ show me revision 5
```

```
svn cat -r 5 Makefile > Makefile — replace current file with revision 5
```

- Which revision?

```
svn log Makefile _____ show me revisions for this file
```

```
svn log _____ show me revisions for current directory
```

Binary files



Good defaults. Subversion usually does the right thing:

```
cp diagram.jpg examples
```

```
svn add examples/diagram.jpg
```

```
A (bin) examples/diagram.jpg
```

```
svn commit
```

```
Adding (bin) examples/diagram.jpg
```

```
Transmitting file data .
```

```
Committed revision 8.
```

Recognized as a binary file:

- no CR/LF translation
- no merges, only replacements

When it fails, set properties yourself:

```
cp demo.dat examples
```

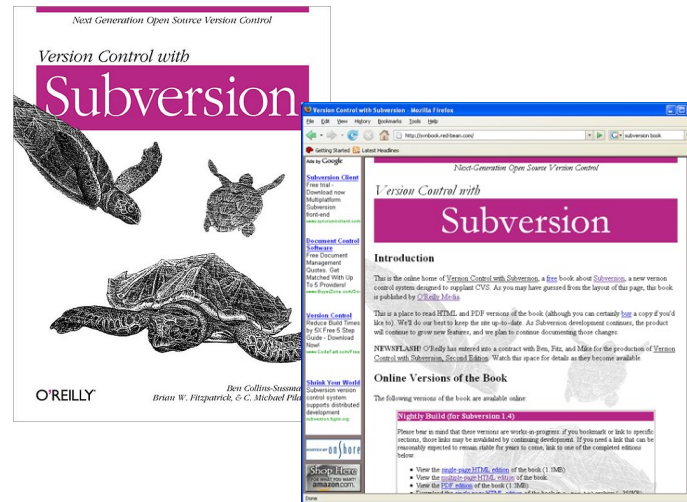
```
svn add examples/demo.dat
```

```
A      examples/demo.dat
```

```
svn propset svn:mime-type application/octet-stream examples/demo.dat
```

```
svn propdel svn:eol-style examples/demo.dat
```


More Information



- Web site: <http://subversion.apache.org/>
- Subversion Book
From O'Reilly & Associates, and also online
- Quick-start guide for your project:
<https://ccehub.org/tools/bdw/wiki/GettingStarted>