

CS 580 Client-Server Programming
Fall Semester, 2002
Doc 4 CVS
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References

<http://www.cvshome.org/>

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CVS

Concurrent Versions System

Allows multiple users to work on code

Allows access from multiple machines

Rohan doesn't currently allow remote cvs access from off campus

Manual <http://www.cvshome.org/docs/manual/>

Windows Version

<http://www.wincvs.org/> client

<http://www.cvsnt.org/> server

Rohan

On rohan need /usr/local/bin in your path

This seems to be in the default path

Example of Using CVS

All examples assume you are using Unix

One Time Only

To store your own files you need a cvs root (repository)

This is created once

Command

```
cvs -d cvsLocation init
```

Example

```
cvs -d /home/ma/whitney/cvsRoot init
```

Where is the Repository?

cvs command need to know the location of the repository

You can

- Add this path to each command or
- Set the CVSROOT environment variable

Example of setting Environment variable

For tcsh or csh in .cshrc or .login file add a line

```
setenv CVSROOT /home/ma/whitney/cvsRoot
```

For other shells you may need to use:

```
set CVSROOT='/home/ma/whitney/cvsRoot'
```

Starting a New Project

Create the directory structure for the project

Example

```
rohan-> mkdir xmlrpcClient
```

```
rohan-> cd xmlrpcClient/
```

```
rohan-> cvs import -m "start assn1" cs580/xmlrpcClient yoyo start
```

No conflicts created by this import

Import Command

- -m
Initial message for the project
- cs580/xmlrpcClient
where the files are stored in the repository
- yoyo
means nothing, can be anything but must be here
- start
this is the start of the project

After this command the directory is stored in the repository

Creating a shortcut or Module

Remembering cs580/xmlrpcClient is going to be hard so create a short cut or module

Example

```
rohan-> cd ..
```

```
rohan-> cvs checkout CVSROOT/modules
```

```
rohan-> cd CVSROOT/
```

```
rohan-> ls
```

```
~/CVSROOT
```

```
CVS/  modules
```

```
rohan 40-> vi modules
```

Add the following line at the end the file

```
  assn1 cs580/xmlrpcClient
```

Now to commit the changes

```
rohan-> cvs commit -m "Added assn1 module" modules
```

```
Checking in modules;
```

```
/home/ma/whitney/cvsRoot/CVSROOT/modules,v <-- modules
```

```
new revision: 1.6; previous revision: 1.5
```

```
done
```

```
cvs commit: Rebuilding administrative file database
```

cvs commit updates the repository with all changes in the current project

Now to remove the module files

```
rohan-> cd ..
```

```
rohan-> cvs release -d CVSROOT/
```

You have [0] altered files in this repository.

Are you sure you want to release (and delete) directory

```
`CVSROOT/': y
```

`cvs release -d directoryName`

- Tells cvs we are done with the local copy of this project
- Deletes the local files
- Directory and files are still in cvs main repository
- You can check them out again

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Using our assn1 Project Getting the Files

```
rohan-> cvs checkout assn1
```

```
rohan-> cd assn1
```

```
rohan-> ls
```

```
CVS/
```

```
cvs checkout moduleName
```

Makes a local copy of the files in the give module

Adding a new File

Create a file called client.java using an editor

```
rohan-> cvs add -m "main client file" client.java
```

```
rohan-> cvs commit -m "added main"
```

```
cvs commit: Examining .
```

```
RCS file:
```

```
/home/ma/whitney/cvsRoot/cs580/xmlrpcClient/client.java,v
```

```
done
```

```
Checking in client.java;
```

```
/home/ma/whitney/cvsRoot/cs580/xmlrpcClient/client.java,v <--
```

```
client.java
```

```
initial revision: 1.1
```

```
done
```

cvs add

Tells cvs about the file

cvs commit

Commits all changes in the current project to repository

Can add file name to commit only a single file

Making Changes

We can now make more changes to the file

At anytime we can commit the files

```
rohan-> cvs commit -m "added foobar method"
```

```
cvs commit: Examining .
```

```
Checking in client.java;
```

```
/home/ma/whitney/cvsRoot/cs580/xmlrpcClient/client.java,v <--
```

```
client.java
```

```
new revision: 1.2; previous revision: 1.1
```

```
done
```

Getting the log of Changes

We can view the log of changes made to the project

```
rohan-> cvs log  
cvs log: Logging .
```

RCS file:

/home/ma/whitney/cvsRoot/cs580/xmlrpcClient/client.java,v

Working file: client.java

head: 1.2

branch:

locks: strict

access list:

symbolic names:

keyword substitution: kv

total revisions: 2; selected revisions: 2

description:

main client file

revision 1.2

date: 2002/09/12 22:45:17; author: whitney; state: Exp; lines: +2
-0

added foobar method

revision 1.1

date: 2002/09/12 22:44:16; author: whitney; state: Exp;
added main

Comparing Files

```
rohan-> cvs diff -r 1.1 -r 1.2 client.java
```

```
Index: client.java
```

```
=====
```

```
RCS file:
```

```
/home/ma/whitney/cvsRoot/cs580/xmlrpcClient/client.java,v
```

```
retrieving revision 1.1
```

```
retrieving revision 1.2
```

```
diff -r1.1 -r1.2
```

```
1a2,3
```

```
> // main
```

```
> // more code
```

The diff command shows the difference between versions a file

Deleting the local Copy

We can even delete the local copy of the files

This tends to make novices nervous

```
rohan-> cd ..
```

```
rohan-> cvs release -d assn1/
```

```
You have [0] altered files in this repository.
```

```
Are you sure you want to release (and delete) directory `assn1/': y
```

What is the Point?

So far we have done a lot of work without any benefit

We can get back previous versions!

The -D flag for checkout

We can tell cvs to give us the lasted version of a project before a given time

```
rohan-> cvs checkout -D yesterday assn1
rohan-> cvs checkout -D "2002-9-11 20:00" assn1
rohan-> cvs checkout -D "2002-9-11" assn1
rohan-> cvs checkout -d "1 hour ago" assn1
```

The -r flag

We can checkout by version number

```
rohan-> cvs checkout -r 1.1 assn1
```

More Features

cvs has more features

Read the manual to find out about

- Abbreviations for commands
- Branching
- Merging

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The Carrot

The source code in lectures is available via cvs

On rohan

```
cvs -d ~whitney/cs580/cvsroot checkout xmlRpcBasic
```

gives you the code in Doc 2

```
cvs -d ~whitney/cs580/cvsroot checkout screeningTestCode
```

gives you exam questions and code you can run to test the answers