Introduction to Administration of a CVS Server

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Agenda

- Account setup for CVS
- Structure of CVS repository
- File Permissions on UNIX server
- Types of CVS Connection

User account on CVS

- For rsh connection, each CVS user must have a valid user id in Linux.
- For pserver connection
  - A Linux user id may be shared between a group of CVS users.
  - Each CVS user has its own Linux user id.
- Setup accounts:
  - adduser command
  - passwd command
  - Edit /etc/group

Structure of CVS Repository

- Environment variable CVSROOT tells cvs program where your repository is.
- CVS repository contains
  - Administrative files
  - Directories in which are history files (with ,v suffix) for each file under version control.

Example

```
/usr
 |
 +--local
 |    |
 |    +--cvsroot
 |    |    |
 |    |    +--CVSROOT
 |    |         (administrative files)
 |    |
 |    +--gnu
 |    |    |
 |    |    +--diff
 |    |    |    (source code to GNU diff)
 |    |    |
 |    |    +--rcs
 |    |    |    (source code to RCS)
 |    |    |
 |    |    +--cvs
 |    |         (source code to cvs)
 |    |
 |    +--yoyodyne
 |         |
 |         +--tc
 |         |    |
 |         |    +--man
 |         |    |
 |         |    +--testing
 |         |
 |         +--(other Yoyodyne software)
```

```
$CVSROOT
    |
    +--yoyodyne
    |    |
    |    +--tc
    |    |    |
    |         +--Makefile,v
    |         +--backend.c,v
    |         +--driver.c,v
    |         +--frontend.c,v
    |         +--parser.c,v
    |         +--man
    |         |    |
    |         |    +--tc.1,v
    |         |
    |         +--testing
    |              |
    |              +--testpgm.t,v
    |              +--test2.t,v
```

File Permissions

- All ',v' files are read-only.
- Directories inside repository should be writable by the persons that have permission to checkout or commit.
  - Enable group read and group write.
  - All files in directories are own by some group.
    - Directories set-group-id on.
- User must have write access to 'CVSROOT/val-tags'.

Example

```
[josephl@cvs cvsroot]$ ls -l
total 12
drwsrws---     9 root      BG3_deve     4096 Feb 11 14:08 BG3
drwxrwxr-x     3 root      root         4096 Aug 23 15:47 CVSROOT
drwxrwx---     5 root      root         4096 Aug 23 15:58 MS_Project
[josephl@cvs cvsroot]$ ls -l CVSROOT/
[josephl@cvs cvsroot]$ ls -l BG3
total 32
drwsrws---     3 root      BG3_deve     4096 Feb 11 14:08 bin
drwsrws---     3 root      BG3_deve     4096 Feb 11 16:53 Boot
drwsrws---     3 root      BG3_deve     4096 Feb 11 14:08 flashwrite
drwsrws---     2 root      BG3_deve     4096 Feb 11 14:08 ICE
drwxrwsr-x     2 josephl   BG3_deve     4096 Feb 11 14:08 images
-r--r-----     1 denis     BG3_deve     1397 Jan 27 17:16 Makefile,v
drwsrws---    12 root      BG3_deve     4096 Feb 11 14:08 Runtime
drwsrws---     2 root      BG3_deve     4096 Feb 11 14:08 SysImage
[josephl@cvs cvsroot]$ ls -l CVSROOT/val-tags
-rw-rw-rw-     1 root      root            0 Aug 23 14:19 CVSROOT/val-tags
[josephl@cvs cvsroot]$
```

CVS connection with rsh

- in.rshd daemon is enabled at inetd config.
- Each user must place a .rhosts file in his home directory, which is consulted by rshd to grant remote access.
- Example
  - .rhosts
    "192.168.34.33 josephl"
  - CVSROOT
    - :ext:josephl@cvs.quantatw.com:/home/cvsroot

CVS connection with pserver

- CVS is enabled at inetd config
  - inetd.conf example
    - 2401 stream tcp nowait root /usr/bin/cvs cvs –f –allow-root=/home/cvsroot pserver
- pserver mode enables extra level of user grouping.
  - cvs user << linux user << linux group

pserver mode password setup

- pserver mode allows separation of CVS password and Linux system password.
- CVS authenticate user password by:
  - CVSROOT/passwd or
  - /etc/passwd if above file is not exists.

CVSROOT/passwd Example

- CVSROOT/passwd example:

    ```
    anonymous: : pubcvs
    fish: rKa5jzULzmhOo: kfogel
    sussman: 1sOp854gDF3DY
    ```

    - anonymous
        - Login with no password
        - Act as pubcvs under Linux
    - fish
        - Need password
        - Act as kfogel, thus, he can only read or write what kfogel can from the viewpoint of Linux permission rule.
    - Sussman
        - He has separate passwords for CVS and Linux.