

EX.NO: 4

DATE:

Compiling from source

Aim:

To learn about the various build systems used like the auto* family, cmake, ant etc. instead of just running the commands. This could involve the full process like fetching from a cvs and also include autoconf, automake etc.,

Procedure:

To install a software, you'd be probably using yum [in fedora/RHEL] or apt-get [in ubuntu/debian]. But, in some cases, we'll have to install these by hand, by compiling from the source. Generally, as a rule of thumb, you'll have to carry out three steps.

Step #1. configure : This step will check whether you are having all the dependencies required to install that particular software. If not, it will tell you that so-and-so thing is missing, and you need to install these dependencies separately.

Step # 2. make [or gmake] : This step will do the actual compiling. It invokes the appropriate compiler [gcc/g++/python etc] to compile the source, and creates binaries, which are stored in the current working directory. If any errors are reported, it means there's something wrong with the source, or configure parameters.

Step# 3. make install [or gmake install] : This step will copy the binaries compiled to locations like /bin or /sbin or /usr/bin etc. so that this can be called directly as a command.

```
[fossilab@fossilab ~]$ uname -r  
2.6.35.6-45.fc14.i686
```

Download any stable kernel from kernel.org

Store that kernel in **/usr/src** .

Then copy the configuration file from the existing os to that stable kernel.

```
[root@fossilab 0]# ls /boot  
config-2.6.35.6-45.fc14.i686
```

```
extlinux initramfs-2.6.35.6-45.fc14.i686.PAE.img
System.map-2.6.35.6-45.fc14.i686.PAE xen-4.0.1.gz
config-2.6.35.6-45.fc14.i686.PAE
grub
initrd-plymouth.img
vmlinuz-2.6.35.6-45.fc14.i686 xen.gz efi
initramfs-2.6.35.6-45.fc14.i686.img System.map-2.6.35.6-45.fc14.i686
vmlinuz-2.6.35.6-45.fc14.i686.PAE xen-syms-4.0.1
```

```
[root@fossilab boot]# cp config-2.6.35.6-45.fc14.i686 /usr/src/linux/config
```

Then make changes to the config file.

```
[root@fossilab linux]#make menuconfig
```

```
[root@fossilab linux]#make
```

```
[root@fossilab linux]#make install && make modules-install
```

After executing this will update in the grub folder.

```
[root@fossilab boot]# cd grub
```

```
[root@fossilab grub]# ls
```

```
device.map fat_stage1_5 grub.conf iso9660_stage1_5 menu.lst
reiserfs_stage1_5 stage1 ufs2_stage1_5 xfs_stage1_5
e2fs_stage1_5 ffs_stage1_5 grub.conf.backup jfs_stage1_5 minix_stage1_5
splash.xpm.gz stage2 vstafs_stage1_5
[root@fossilab grub]# vi grub.conf
```

Result:

Thus the source was compiled using automake tool.