

Notes on the Use of IBM RS/6000 SP computers  
Mark Roberts  
February 21, 2000

There are two computers available for economics students and faculty: f06s11.cac.psu.edu and f06s12.cac.psu.edu. Both run the AIX operating system. Each has two processors and can access up to 1GB of memory.

To use them you first need to sign up for a Unix account at the Center for Academic Computing (CAC). The web page to apply for one is: <http://cac.psu.edu/accounts/unixresearch.html> This is not the same as the economics department account you need to use the sun workstations.

Once your account is set up you will use the same user id and password as your access account to log into the sp computers. There are two ways to connect to these computers.

1. SSH is a secure shell program that functions like telnet but with a higher level of security. SSH logins are available with the program teraterm which is installed on all lab pcs, and can be installed on any faculty pc. If you are going to be using these computers from other sites, like home or a laptop computer, teraterm should be installed on the computer you login with. (Teraterm is available from the psu web site: <https://www.work.psu.edu/access/teraterm/> . Download the file tt23ssh.exe and run it to install teraterm on your computer.) To get an ssh login you run the program tssh.exe (the other executable in the teraterm directory is ttermpro.exe which will only give telnet logins). After "host" type the name of the computer you want to connect to and select ssh as the "service." You will be prompted for your unix account login.

SSH is also installed on the department's sun workstations and to log into the f06s12 computer, for example, from one of our workstations type: `ssh f06s12.cac.psu.edu` This will automatically use your econ department user id to login to the sp computer. If your econ department user id is not the same as your access id (and it probably is not) then type: `ssh f06s12.cac.psu.edu -l accessid` where accessid is your access account id.

Logging in with ssh will give you a command prompt that looks just like telnet and you will need to know basic unix commands to get much farther. See the notes at: <http://econ.la.psu.edu/~mroberts/sunnotes.pdf> for some suggestions on how to proceed.

2. X-Windowing Software. EXCEED 6 for Windows is PC software that allows you to use the windowing capabilities of the unix workstations on your PC. EXCEED is installed on all pc's in the student lab and can be installed on the office machines of anyone else who wants to use it. To run it open the EXCEED program group, double click the X-Start icon. The settings you need to specify are the "Host" which is the sp computer you want to log into, user ID, password, and command. In the "command" box type: `usr/bin/X11/xterm -display client:0 -fg navy -bg lightgrey` where *client* is the name of the pc you are logging in from. This will open an X-window

connection to the sp computer.

#### Home Directory:

Your home directory is on the dfs file system. If your access account id is abc111 then your home directory will be `/.../dce.psu.edu/fs/users/a/b/abc111`.

You can also link to the afs file system where user abc111's home directory is `/afs/psu.edu/users/a/b/abc111`. Your afs directory is also available from the econ department workstations and so it provides a simple way to transfer files between the sun workstations in the department and the sp machines. You will need to log into the afs file system before you can access your afs directory. To do this type `/usr/afsws/bin/klog userid` and you will be prompted for your access account password. To check that you have access to the afs file system type `/usr/afsws/bin/tokens` and you will get a response that basically says you have access to [afs@psu.edu](mailto:afs@psu.edu) for a certain time period ( up to about 25 hours, this will be reset every time you log in). If you get a response that does not indicate you have any tokens then you have not logged into properly to the afs system and will not be able to access your home directory there.

#### Login files:

In your home directory will be default `.cshrc` and `.login` files. These can be modified with your own aliases and environment variables in the section marked. If there is no `.cshrc` file you can copy the system default version from `/afs/psu.edu/common/lib/config/Cshrc.default`

#### Software available:

**Gauss with OPTMUM and MAXLIK modules.** The gauss configuration file is stored in `:/rs_aix/usr/local/ gauss/ gauss.cfg`. If you want to customize gauss you can copy the `gauss.cfg` file to your home directory, create your own modified version, and then call your modified config file by including an environment variable for `GAUSS_CFG` in your `.cshrc` file. The workspace for gauss is the directory `/gausstmp`. If you kill gauss runs or they err out before reaching the end statement it will not free up the requested space in `/tmp`. You need to go to the `/gausstmp` directory and delete all your leftovers. In particular, the files with names like `wksp_AAAA#####`. If there are too many of these files in `/gausstmp` it will prevent you from starting other gauss runs and you will get the error message "can't allocate space".

**Fortran with IMSL libraries:** You need to be logged into the afs file system as described above.

To set up the links to the IMSL libraries type:

```
source /usr/local/setup/vni2.1.setup.csh
```

To compile a fortran program called `program.f` type:

```
$FC -o a.out $FFLAGS program.f ${LINK_FNL}
```

Alternatively, you can use the optimized compiler by typing:

```
$FC -o a.out $FFLAGS program.f -O ${LINK_FNL}
```

To run the executable, type

```
./a.out
```

Some additional comments about fortran programs are available on the Numerically Intensive Computing (NIC) group web page (<http://cac.psu.edu/beatnic/nicfaq/faq-4.01.cgi>).

**Matlab:** Type matlab53. The optimization module should be available but it is waiting for someone to test this out.