The RISC-Linz User Guide for the Sequent Symmetry

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RISC-Linz

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1 General

The RISC-Linz Sequent Symmetry is now available for public use under the name `melmac.risc.uni-linz.ac.at` (internet address 140.78.140.60). Currently, the administration of this machine is organized by two superusers:

1. **Karoly Erdei** (account `kerdei`) is in charge of maintaining user accounts and of several public services (mailing, printing, backups, ...).
2. **Wolfgang Schreiner** (account `schreine`) is in charge of the general setup of the machine and of supervising the installation of new software packages.

The machine is equipped with 20 Intel 80386/80387 processor units, with 128 MB of main memory and with 4.3 GB disk space. It is operated under the Dynix/ptx V1.3.1 operating system which is a parallel version of Unix System V Release 3. Furthermore, the system runs the usual networking software (TCP/IP, NFS) and the X-windows environment X11R4 with the OSF/Motif windowing manager.

2 User Accounts

The installation of user accounts is managed by Karoly Erdei. All user directories are located in `/usr/users`, e.g. `/usr/users/kerdei`. Actually, these entries are symbolic links to the physical location of the directories in some partition of the file system, e.g. `kerdei -> ../fsys/zd1s1/kerdei`. However, no user is allowed to assume anything about the physical location of his home directory, since the system management may at any time decide to change the physical structure of the file system.

The default command line interpreter for all users is the C Shell `csh`, but also the Bourne Shell `sh`, the Korn Shell `ksh` and the Gnu Shell `bash` (not yet installed) may be used. Among the available editors are the Unix editor `vi`, the Gnu editor `emacs` and the X-based editor `axe`. TeX and LaTeX are installed; printing is possible by the `lp` command (e.g. `lp -dalw file`).

Each user account belongs to one of the following main groups:

- `risc` (for regular users),
- `guest` (for short time visitors),
- `student` (for programming projects),
- `external` (for people not working at RISC),
- `software` (for software maintenance).

For a better management of file access restrictions, each member of `risc` additionally belongs to at least one of the following subgroups:

- `parlab` (the parallel computation lab),
- `salab` (the soft automation lab),
- `calab` (the computer algebra lab),
- `nnlab` (the neuronal network group),
- `gralab` (the graphics group),
- `medlar` (the participants of the Medlar project),
- ...

If the access to certain files or programs shall be restricted to a selected set of persons, the restrictions will be enforced only by the setup of new groups and not by the installation of artificial user accounts that are used by many persons simultaneously.

Important: *No user is allowed to install public domain software packages in his private home directory. The system administration will enforce this rule to prevent that the same piece of software is installed more than once, while most persons do not know that it exists at all. The procedure for installing new software is described in the following section.*

3 Software Packages

The installation of new software packages is supervised (but not necessarily carried through) by Wolfgang Schreiner. For each package, there exists a home directory in `/usr/local` and a maintenance accout of the same name and of group `software`. As for ordinary user accounts, these directory entries are only symbolic links to the actual location of the packages. The system administration may at any time decide to move a package to another location. The general procedure for the installation of new software packages is as follows:

1. Some user is interested in the installation of a new package `newpack` for which he has received the sources (usually from some public domain file server).

2. The user asks Wolfgang Schreiner (by email) for a maintenance account `newpack`. This account is created with group `software` and with the home directory `/usr/local/newpack`.

3. The user logs in as `newpack` and copies the source code into directory `/usr/local/newpack`. Afterwards, the user removes the sources from his personal home directory.

4. User `newpack` compiles the program, creates the binaries, the auxiliary files and the manual pages. These files are copied into the following directories for which all members of group `software` have write permission:

   - `/usr/local/bin` contains the executable program.
   - `/usr/local/lib` contains the program's auxilary files (maybe in some subdirectory).
   - `/usr/local/man` contains subdirectories `man1` to `man7` for the program's manual pages. A man page for section i of the manual must be located in the directory `/usr/local/man/man`i and have extension i`.z` (e.g. `netpack.1.z`). The file must be in a `cat`able form (i.e. execute `nroff -man` on nroff files) and be compressed by `pack` (which yields the extension `.z`).

5. Finally, `netpack` adds a line to the file `/usr/local/PACKAGES` that gives a short description of the package and the actual name of the program maintener. If any environment variables must be set to run the package, a file `/usr/local/netpack/netpack.setenv` is created that contains these settings and may be read by all interested users.

Generally, the installation of new software packages not requires superuser privileges and can therefore be carried through by the package maintener alone. All requests and complaints are to be addressed to this person (not to the central system management). The file `/usr/local/PACKAGES` gives at any time a complete list of the available software and the persons in charge of their maintenence.

4 Networking

The Sequent machine may be used from any terminal or workstation by the following commands:

- `telnet` for login from machines not running Unix (e.g. the VAX).
- `rlogin` or `rsh` for login from Unix machines (Apollos, Ultrix stations, ...).
- `ftp` or `rcp` for file transfer from and to other machines.

Furthermore, the ususal X-Windows networking services are available (e.g. you can start `xterm` on the Sequent and display it on your local host).

Large amounts of data may be transmitted by copying files on remotely mounted file systems: The Apollo file system is mounted via NFS under the Sequent directory `/apollo`; the Ultrix file system is mounted under `/ultrix`. Vice versa, the Sequent file system `/usr` is exported into the Apollo and Ultrix environment.

Important: The Sequent machine will be used not only by one or two persons but by many people simultaneously. In order to make work comfortable, be certain not to occupy more resources than necessary:

- Purge files that are not required any more.
- Log out if you do not work on the machine any more.
- Run batch jobs during the night hours only (use the `at` command).
- Run X clients only if and as long as really you need them.

Have fun!