

SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

DISTRIBUTED INTERACTIVE COMPUTING NOTE 756

PERQ UNIX IMPLEMENTATION NOTE # 51
Accent/Unix: Special Files, Mountable File Systems

Issued by
J.C.Malone

26 January 1983

DISTRIBUTION: R W Witty
K Robinson
C Prosser
A S Williams
L O Ford
T Watson
E V C Fielding
J C Malone
P J Smith
A J Kinroy
J M Loveluck
C P Wadsworth
Martin Ritchie (ICL Dalkeith)
P Palmer (ICL Dalkeith)
RL Support/PERQ/Unix Implementation Notes file

1. SPECIAL FILES

A device driver provides the services supported on a particular device, particularly the accessing of special files.

When a user opens a special file, OBOE does not know what type of file it is, so it is sent to SwitchBoard, which reroutes it to the driver [1], this means that SwitchBoard must hold a table mapping filenames onto the port to which requests are redirected.

On initialisation, the driver sends SwitchBoard its filename (e.g. /dev/tty) and receive port. If the file does not already exist, SwitchBoard creates it as a special file. On all future open (or creat) requests, SwitchBoard looks the file up, sees it is a special file and sends the request to the relevant port.

When it receives an open request, the driver returns the port which the user will use for all further file accesses, so that these will be sent directly to the device driver.

Note that only character special files are currently supported.

The device drivers available are the terminal driver [2], and null device driver.

2. MOUNTED FILESYSTEMS

A block special file may be the root of a mountable file system, which is referred to via the file name given with it in the mount system call [3].

In the current implementation the only permissible block special files are partition names. Thus a mount operation is performed on a POS-style partition name and Unix-style existing directory.

When the Unix directory name appears at the beginning of a filename, it is replaced with the corresponding partition name prefix. This enables POS partitions to be handled while still maintaining Unix file names.

REFERENCES

1. J.C. MALONE, "Perq Unix Implementation Note # 41 - Accent/Unix: Switchboard", DIC Note # 744, Rutherford Appleton Laboratory (January 83).
2. J.C. MALONE, "Perq Unix Implementation Note # 44 - Accent/Unix: TermDriver", DIC Note # 747, Rutherford Appleton Laboratory (January 83).
3. A.S. WILLIAMS, "Perq Unix Implementation Note # 31 - UNIX System Call Specification", DCS Note # 727, Rutherford Appleton Laboratory (November 1982). [In Preparation].