

PROTOR Installation

for

Redhat Linux v7.2 and above

Version 1.4 June 2003.

The PROTOR installation kit for Redhat 7.2 systems and above is distributed on CD-ROM. This distribution kit contains all scripts and files necessary to create a base PROTOR system onto a system which has Redhat Linux installed.

The installation process assumes that Redhat Linux has already been installed and configured on the target system and that facilities such as keyboard, mouse, video, CD-ROM and any network interfaces have been successfully configured and tested. The process also assumes that the system has been successfully booted prior to this installation and that a backup boot disk has been created. Since PROTOR utilises X11 graphics also ensure that the system works correctly when running in graphics mode and that the main console has a minimum resolution of 1024x768 and 8-bit colour depth.

1. Starting Installation Process

To run the installation process you will need to load and mount the distribution CD. You may mount the CD from an Xterm window or from a text console window (by typing CTRL/ALT and F1 or F2) when logged in as root (super-user).

```
mount /mnt/cdrom
```

You will now be able to start the installation script from the CD-ROM by the command

```
/mnt/cdrom/prosystem
```

Provided the CD-ROM has been mounted correctly and the PROTOR Installation distribution is readable then you will be presented with the Installation Welcome Screen.

```
Welcome to the PROTORG System installation for Redhat systems
(v7.2,v7.3 and v9). The script assumes that Redhat Linux has
already been installed and made bootable and that any graphics
and network interfaces have been setup, configured and tested.
This script will create a general PROTORG User account and install
executables, libraries and setup files into this account for use
by PROTORG. It will then install various Linux utilities such as
VNC and FVWM95 used by PROTORG. It will also setup system
configuration files necessary for PROTORG to be invoked on system
startup. When this installation is complete you will have a basic
PROTORG system. You will then need to further configure PROTORG for
correct operation such as Station details and channel details
etc.
```

< OK >

If you press <ENTER> or click on the OK button then the installation process will proceed. You will now be asked to confirm where the installation process is being run from.

```
This script assumes the distribution is held in the directory
where this script was run from ( usually /mnt/cdrom). If this is
not the case enter the root directory of the distribution below
```

< OK >

Location of PROTORG distribution ?

/mnt/cdrom

I

< OK >

<Cancel>

The script will now guide you through the installation process. At various points in the installation process the script will ask the user if they wish to proceed with a question similar to:

Create PROTORG User Account and directories (Y)es/(N)o/(Q)uit ? [Y] █

The user may answer, Y for yes to proceed with this section of the installation, N for no to skip this section or Q to quit the installation process. The following notes describe each facility. The script reports on its progress with a report to the screen similar showing something similar to

```
Create PROTOR User Account and directories      (Y)es/(N)o/(Q)uit ? [Y] y
... Creating PROTOR Group                      [  OK  ]
... Creating PROTOR User                      [  OK  ]
... Creating PROTOR Directories               [  OK  ]
```

If at any point, part of the installation fails then this may be because PROTOR or one of its packages has been already been installed. You will find further notes on PROTOR and the installation process on the CD in directory `doc/HTML`. Search these notes initially if you encounter a problem. Otherwise make a note of any errors and report them to Prosig who will advise on what action to be taken.

To access the online documentation point your web browser at the file

```
/mnt/cdrom/doc/HTML/index.html
```

For example

```
netscape /mnt/cdrom/doc/HTML/index.html
```

assuming that the CD has a mount point of `/mnt/cdrom`.

Where any system files are modified by the installation process then the script will create a backup of the file before modification. The backup file will be created in the same directory as the file being modified and with extension `.001`. For example

```
/etc/services.001
```

The following sections describe the different facilities which may installed and their implications.

2. **Create PROTOR User Account and directories** (Y)es/(N)o/(Q)uit ? [Y] █

For a new installation you must create a PROTOR User account. This account will contain all the PROTOR executables and own the main PROTOR data directories and database files. If you proceed with this section the script will

- Create a Group for PROTOR and its users (Group ID = 500).
- Create a PROTOR user account within the PROTOR Group with a directory of `/home/protor`
- Create sub-directories within PROTOR user account.
- Create PROTOR data directory

3. **Install PROTOR Executables and System Files** (Y)es/(N)o/(Q)uit ? [Y] █

The installation CD contains a compressed backup of the latest release of the PROTOR executables and user scripts. Selection of this option will perform the following:

- Unpack PROTOR executables into directory `/home/protor/exe`
- Unpack graphics files into directory `/home/protor/dat`
- Unpack graphics bitmaps into directory `/home/protor/bmp`
- Copy Prosig graphics libraries and setup files to `/home/protor/prosig`
- Create general PROTOR shell startup script `.cshrc`
- Create X11 desktop control file `.Xclients`
- Create FVWM95 control file `.fvwm95rc`
- Create PROTOR expert and token files.
- Create PROTOR create user files and scripts
- Set ownership of all PROTOR files to protor.

4. **Install RMDAS Tasks [for PROLITE Systems Only]** (Y)es/(N)o/(Q)uit ? [Y] █

Only select this option if you are installing PROTOR as a PROTOR Lite system. For PROTOR Lite a number of additional executables are required which provide the RMDAS facilities. This executables and startup scripts are copied to directory `/home/protor/exerscm`.

5. **Create System Startup Scripts for PROTOR** (Y)es/(N)o/(Q)uit ? [Y] █

The startup of PROTOR on system boot and at subsequent times is controlled by a single script `/etc/rc.d/init.d/protor`. If this option is selected then this startup script is created. Links are then made to the specific run-level startup and shutdown scripts

```
/etc/rc.d/rc5.d/S98protor
```

```
/etc/rc.d/rc5.d/K98protor
```

The script also adds some entries to the file `/etc/services` specifically for PROTOR.

6. **Install VNC Server and Setup Files** (Y)es/(N)o/(Q)uit ? [Y] █

Remote access to PROTOR is provided through VNC. In order for this to work the VNC server must be installed and configured on the system.

The VNC server (`/bin/Xvnc`) is usually installed by default as part of the standard Redhat installation. If it is not installed then a version will be installed from an RPM included on the PROTOR installation CD.

In addition to installing the VNC server the installation script will also add suitable entries into `/etc/services` and also into `/etc/xinetd.d/vnc`.

In order for VNC to work with PROTOR then the XDMCP (X11 Display Manager Control Protocol) will need to be enabled for any display managers installed. This may be either `xdm`, `gdm` (for gnome) or `kdm` (for KDE). By default XDMCP is usually disabled for each of these display managers. The script attempts to modify the control scripts for each of the display managers to enable XDMCP.

7. **Intall openmotif X11 development libraries** (Y)es/(N)o/(Q)uit ? [Y] █

The PROTOR graphics program require some special run-time libraries provided by the Open-motif package. The current PROTOR executables are built across version 2.1.30 of this package. The installation script will install this specific version of this package from the CD and then run the `ldconfig` utilities to bind the dynamic libraries.

8. **FVWM95 Window Manager** (Y)es/(N)o/(Q)uit ? [Y] █

Prosig recommend using the FVWM95 window manager for PROTOR rather than the more extensive and powerful Gnome or KDE. This is because FVWM95 is simple and easily configurable. PROTOR uses the configurability of FVWM95 in order to add and remove privileges from particular levels of users. Selection of this option will cause the script to install FVWM95 from an RPM package on the CD.

9. **Set default Display Manager to XDM** (Y)es/(N)o/(Q)uit ? [Y] █

Prosig recommend using the XDM display manager for PROTOR. The more powerful display managers such as gdm (for Gnome) and kdm (for KDE) provide additional facilities such as shutting down the system or rebooting which we do not wish normal PROTOR users to have access to.

Selection of the display manager is controlled by the file
`/etc/sysconfig/desktop`

10. **Do you wish to allow telnet access to system** (Y)es/(N)o/(Q)uit ? [Y] █

For security reason telnet access into a Redhat system is disabled. If you wish to allow telnet access then the telnet-server package is installed from the CD and telnet access enabled through the control file
`/etc/xinetd.d/telnet`.

11. **Do you wish to allow ftp access to system** (Y)es/(N)o/(Q)uit ? [Y] █

For security reason ftp access into a Redhat system is disabled. If you wish to allow telnet access then the wu-ftpd package is installed from the CD and ftp access enabled through the control file `/etc/xinetd.d/wu-ftpd`

12. **Enable support for SMT229 Ethernet Trams** (Y)es/(N)o/(Q)uit ? [Y] █

Any PROTOR system which uses the SMT229 Ethernet TRAMS MUST enable this support. In order to the SMT229 Trams to be seen on the network then the IP option MTU Discovery must be disabled. This is done by setting the IPV4 option `ip_no_pmtu_disc` to 1. This is done by adding an entry into the file `/etc/sysctl.conf`. The state of this bit can be found by the command

```
Cat /proc/sys/net/ipv4/ip_no_pmtu_disc
```

13.



You are now asked to identify the specific station installation supported. The stations listed are PROTOR sites where the specific PROTOR configuration data and databases have been included on the CD. If you are using this CD to update an existing installation then you can Quit at this point and manually copy existing PROTOR data trees to the new system.

14.

Install PROTOR System Setup File for HAZELWOOD (Y)es/(N)o/(Q)uit ? [Y]

The main PROTOR system setup and configuration file for Redhat systems is the file `/etc/sysconfig/protor`. This file contains some basic setup information for the system. If a copy of this file exists on CD for a selected station then it will be copied. If one does not exist then the file must be created manually in order for the PROTOR system to startup correctly. This file is accessed on system startup and on login to individual user accounts. The content of a typical file is as follows:

```
#
# General configuration file for PROTOR system
#
PROUSER=protor           # Username of owner of PROTOR installation
PR_ROOT=/home/protor     # Root directory for PROTOR installation
PB_EXE=/home/protor/exe  # Directory for main executables
DT_ROOT=/data/PROTOR     # Root directory for data storage
RM_STATION=PROTOR        # Station name
PROTOR_TYPE=PROTOR       # Installation type
[ PROTOR|PROLITE|PROBAL|PROMILL]
ACQ_TYPE=SKT             # Acquisition type [PR|PB|SKT]
ARCHIVE_DEVICE=/mnt/optical # Device name for archive or NULL
RSCM_EXE=""              # Executable directory for RSCM tasks
```

15. Install initial DT_ROOT directory tree (Y)es/(N)o/(Q)uit ? [Y] █

All the main PROTOR logged data and configuration database files are stored in a directory tree pointed to by the environment variable \$DT_ROOT. The setting for \$DT_ROOT is defined in the PROTOR control file shown above. If a backup of the initial data files is contained on the CD then you will be given the option of loading this initial dataset. If you are upgrading an existing system then you may choose to skip this section and manually copy current data and database files from other backup or archive disk.

16. Install initial Mimic diagram files (Y)es/(N)o/(Q)uit ? [Y] y

The mimic diagram files for a particular station are usually stored within a station specific directory below the \$PB_DAT directory. If the CD contains an initial set of mimic diagram files then you will be given the option of loading these files. If you are upgrading an existing system then you may choose to skip this section and manually copy current mimic control files.

17. Install initial SHARED layout files (Y)es/(N)o/(Q)uit ? [Y] █

PROTOR allows the facility to save a collection of graphs as a layout. These layouts may be specific to a user or shared across the system. If the CD contains an initial set of shared layouts then you will be given the option of loading them from CD.

This ends the main PROTOR installation script.

18. Completion of PROTOR Installation

Following completion of the PROTOR installation it is recommended that the system is rebooted. This ensures that all the system setup and configuration files are actioned.

Before the full PROTOR is fully operational the following will also be required.

- **Set password for PROTOR account**

Before you can login to the PROTOR user account you will need to set a password.

- **Login as PROTOR**

Login into the system as username protor. Supply the password setup above. Check that the system successfully enters the FVWM95 window manager and that the various PROTOR options are available as icons on the task bar.

- **Setup Mimic Diagrams**

If the mimic diagrams have been loaded manually or as part of the installation scripts then you will need to run the `link_mimics.rc` script from the station specific directory created below `$PB_DAT`. You will then need to run the PROTOR mimic manager `$PB_EXE/mimman`.

For example if the station created was PROTOR then do the following (replace PROTOR with the actual Station name).

```
cd $PB_DAT
PROTOR/link_mimics.rc
Mimman
```

- **Initialise PROTOR layout files**

Initialise new layout files by running the command `$PB_EXE/protor_layinit` or by clicking on the Layinit icon on the FVWM95 task bar.

- **Verify PROTOR data tree**

The main PROTOR logged data and database files exist within a directory tree pointed to by the environment variable `$DT_ROOT`. `$DT_ROOT` is initialised from the control file `/etc/sysconfig/protor`. Check that the environment variable and files exist by the commands:

```
cd $DT_ROOT  
ls -lR
```

A number of files will exist within this directory and also within a station specific directory below this. Below the station directory a directory should also exist for each item if plant for which PROTOR will collect data.

- **Check RMDAS units**

Check that any RMDAS units are alive and enabled on the network. Try a simple `ping` command to each unit by IP address and also by name.