Field System & RedHat

Installation Notes

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Introduction

The official Linux distribution to run the Field System is, from 1997, Debian.

I tryed to install and run the FS under RedHat because when i discovered Linux, some years ago, it was a RedHat distribution: nowaday i work with this distribution because i know better than Debian.

The new MK5 system, that was distributed in the EVN and geodetic VLBI network last year, is running under RedHat and there was a little discussion in the evntech mailing-list on why there is this difference.

My opinion is that one must use the best environment that prefers, the important thing is to have a high level of security in the system.

This notes are related only from a software point of view, in sense that in Sardinia we haven't yet the new 64 meter antenna (SRT) and the FS-Mark5 environment and for this that this work is only a useful exercise for the future.

The Field System version is the 9.6.9 (september 2003).

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Chapter 1

RedHat Installation

At the moment of writing the last version of RedHat is 9.0 but i'm working with 7.3 version with kernel 2.4.20 and gcc 2.9.6 compiler.

I tried to install under 9.0 but in this distribution there is the gcc 3.2.2 compiler that is incompatible with the FS: the problem, in particular, is related to the glibc library that in the last version (2.3.2-27.9) is no longer exporting the ctype functions.

RedHat is more easy to install and to configure than Debian and for this that i remind to the official installation guide at the url:

`http://www.redhat.com/docs/manuals/linux/RHL-7.3-Manual/install-guide/.`

Furthermore RedHat have, as a useful characteristic, hardware detection: if the hardware (gpib, serial) is not so recent, RedHat is able to autodetect and configure automatically, like in my machine.

I have made a standard installation (automatic partition with 3 partitions: system+users, boot and swap),

I have chosen Gnome as desktop environment.

Chapter 2

FS Environment and Compilation

2.1 As Root

2.1.1 Old /usr2

Tar all the /usr2 directory in Debian Field System;

cd /

tar cvzf usr2.tgz /usr2

2.1.2 Packages

Install some packages useful for compilers and libraries:

flex, bison, patch, make, g77, f2c, fort77, gcc, tcl8.3, tk8.3, ntp;

f2c isn't present in the 7.3 release but is possible to find it easily in the web: i used the f2c-19991109-2.i386.rpm pachage;

the same for fort77, a perl script that FS uses for f2c: i installed fort77-1.14a-4.i386.rpm.

2.1.3 New /usr2

Copy the usr2.tzg tar file in /tmp directory;

Build the /usr2 directory:

cd /

tar xzvf /tmp/usr2.tgz

rm -rf /tmp/usr2.tzg

2.1.4 Oper and Prog users

In oper and prog directory delete all

```
.<filename>
```

:

cd /usr2/oper
rm .*
cd /usr2/prog
rm .*
Create the rtx group and the "oper" and "prog" accounts:
for this, i used the User Manager utility (Main Menu-Programs-System).
I like to use bash shell insted of tcsh shell.
Change the old ownerships in the /usr2 direcory:
cd /usr2
chown -R oper:rtx oper control proc sched log
chown -R prog:rtx prog st fs st-* fs-*
Set this permissions:
chmod -R a+rw control proc sched log
Set the "fs" and "st" links:
cd /usr2
ln -sfn /fs-* fs
ln -sfn /st-* st
Then, reboot.

2.2 As Prog

2.2.1 Compilation

In .bashrc file set the FC variable that uses the for77 perl script:

cd /usr2/prog

and with your preferred editor add this two lines under the

`"# User specific aliases and functions" comment:`

FC=/usr/bin/fort77

export FC

In .bash_profile file insert in PATH variable this string:

/usr2/fs/bin:/usr2/st/bin:/usr2/oper/bin:/usr2/prog/bin

In fs directory:

cd /usr2/fs

make clean

make rmdoto

make rmexe

make all

make

In st directory:

cd /usr2/st

make clean

make rmdoto

make rmexe

make all

make

2.3 As Root

2.3.1 rc.fs script

Copy the body of the /usr2/fs/misc/rc.fs script, that is executed at boot time to allocate shared memory, in /etc/rc.local script; for example, my /etc/rc.local script becames:

```
#!/bin/sh
#
# This script will be executed *after* all the other init scripts.
# You can put your own initialization stuff in here if you don't
# want to do the full Sys V style init stuff.
#
touch /var/lock/subsys/local
#
file=/usr2/fs/bin/fsalloc
if [ -f ${file} ]
then
${file}
fi
#
file=/usr2/st/bin/stalloc
if [ -f ${file} ]
then
${file}
fi
#
```

2.4 As Oper

2.4.1 Start FS

In .bash_profile file insert in PATH variable this string:

/usr2/fs/bin:/usr2/st/bin:/usr2/oper/bin:/usr2/prog/bin

Reboot and start the Field System.

This is an image of the SRT-FS environment

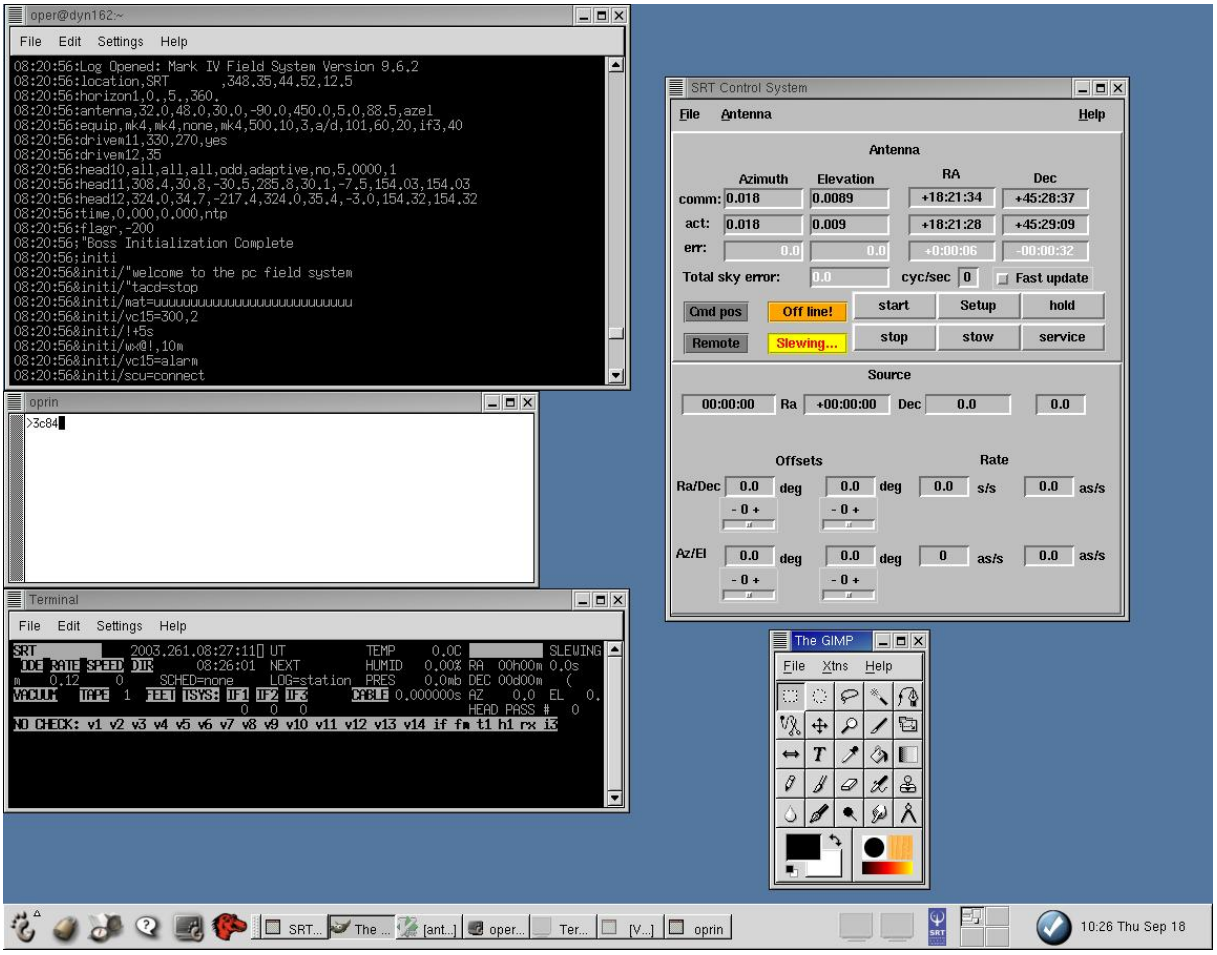

Figure 2.1: SRT-FS

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[3] Gonzalez R., Himwich E., Quick J. F. H.: *http://lupus.gsfc.nasa.gov/fs*