FTPC controls - developer manual

Gaspare Lo Curto
Max Planck Institut fuer Physik,
Munich, Germany

September 12, 2001

1 Software structure

The FTPC slow control software is located in the slow control state machine: `sc.star.bnl.gov`, in the sysuser account, password: `dv4hwco8`. All FTPC directories are based in:

`/star/sc/users/sysuser/epics/R3.12.2-LBL.4/`

This directory hosts all the STAR subsystems slow control subdirectories. This is a list of FTPC directories:

`FTPCtopApp`	top level
`FTPClvApp`	low voltages
`FTPChvwApp`	anode voltegaes
`FTPCcathApp`	cathode voltages
`FTPCggridApp`	gating grid voltages
`FTPChdlcApp`	hdlc link
`FTPCgasApp`	gas system monitor
`BACKUP_FTPC`	backup directory

All directories have an analogous set of subdirectories. The noteworthy ones are:

`src/`	source directory
`op/adl/`	GUI files
`op/alh/`	alarm handler
`*Db/`	database

The code is compiled in the source directories. If a state notaion language file is created/modified it has to be interpreted at first:

```
snc filename.st
```

and finally compiled:

```
gmake
```

For information about state notation language consult the manual on the web:

`http://lansce.lanl.gov/lansce8/Epics/sequencer/snl_1.9_man.html`

The start up script for the FTPC slow control CPU (`ftpc.star.bnl.gov`) is in:

`/star/sc/users/sysuser/epics/R3.12.2-LBL.4/ioc/ftpc/`

The script which runs the complete FTPC software is `st.null` . Other scripts were used during software development to run one subcomponent at a time (the script names however may not be obvious).

Boot parameters such as IP address of the machine from which to read the executable code and start up file have to be set in the FTPC slow control CPU. In order to do this a reboot is necessary.

1. Make sure the detector is completely OFF.

2. From a BNL machine: `telnet` scserv 9033 (terminal session to FTPC slow control CPU)
3. `^x` : start the reboot process
4. as soon as the message:"`Press` any key to stop auto-boot... " appears press any key
5. press the letter c (as change)
6. switch field by pressing "Enter".

After pressing `^x` the session should look like:

```
Press any key to stop auto-boot...
 5
[VxWorks Boot]: c

'.' = clear field;  '-' = go to previous field;  ^D = quit

boot device          : ei
processor number     : 0
host name            : sc.star.bnl.gov
file name            : /star/sc/packages/vxWorks/prod/vxWorks/vxw_5.2/config/
mv167/vxWorks
inet on ethernet (e) : 130.199.89.83:fffffe00
inet on backplane (b):
host inet (h)        : 130.199.88.64
gateway inet (g)     :
user (u)             : sysuser
ftp password (pw) (blank = use rsh):
flags (f)            : 0x0
target name (tn)     : ftpc.star.bnl.gov
startup script (s)   : /star/sc/users/sysuser/epics/R3.12.2-LBL.4/ioc/ftpc/st.null
other (o)            :

[VxWorks Boot]:
```

By pressing `@` and then "Enter" the reboot process will restart and go to completion unless a key is pressed at the beginning of the reboot.

2 Scripts

Several scripts are used in conjunction with aliases to easily and safely run the system. Scripts are stored in:

`/star/sc/users/sysuser/epics/R3.12.2-LBL.4/FTPCtopApp/scripts/`

They can be run from every directory from the `sysuser` account using the proper alias.

Alias	script name	action
`ftpc`	`ftpc1.script`	start FTPC slow control, for operator
`ftpc_dev`	`ftpc2.script`	start FTPC slow control, for experts
`ftpc_backup`	`ftpc_save`	start periodic FTPC backup
`ftpc_set`	`ftpc_set_parameters`	set FTPC parameters (see det. expert manual)
-	`ftpc_msg`	messaging between det. operators and det. experts.

3 Backups

Backups of all the FTPC control and monitor codes are generated every 24 hours. Backups are located in the machine `sc.star.bnl.gov`(SC) in the directory `/star/sc/users/sysuser/epics/R3.12.2-LBL.4/BACKUP_FTPC/` and in the machine `sc2.star.bnl.gov`(SC2) in the directory
`/export/home/users/sysuser/epics/R3.12.2-LBL.4/BACKUP_FTPC/`

The filenames are:

`ftpc_backup1.tar.gz`	last daily backup
`ftpc_backup2.tar.gz`	old daily backup
`ftpc_backup_week.tar.gz`	last weekly backup
`ftpc_backup_month.tar.gz`	last monthly backup

The script that produces the backups is:
`/star/sc/users/sysuser/epics/R3.12.2-LBL.4/FTPCtopApp/scripts/ftpc_save`
The script is not active after a reboot of the SC computer. To restart it type the command `ftpc_backup` from any directory. To verify that the script is running issue the command

```
ps -e | grep ftpc_bac
```

If the script is running this command session will look like:

```
[sc.star.bnl.gov]:~>ps -e | grep ftpc_bac
 22195 pts/30   0:00 ftpc_bac
```

To unpack the backup files go in the appropriate directory:

```
cd /star/sc/users/sysuser/epics/R3.12.2-LBL.4/
```

create a temporary directory:

```
mkdir ftpc_temp
```

copy the backup file you want to unpack (for example `ftpc_backup1.tar.gz`) in this directory:

```
cp  BACKUP_FTPC/ftpc_backup1.tar.gz ftpc_temp/.
```

Go in the temporary directory that was just created:

```
cd ftpc_temp
```

“Unzip” the file:

```
gunzip ftpc_backup1.tar.gz
```

and “untar” it

```
tar -xvf ftpc_backup1.tar
```

Now all the FTPC monitor and control directory structure is reproduced in the `ftpc_temp`directory.

In addition in SC2 there is a complete copy of all the SC FTPC directory structure.