A process manager for soft IOCS

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ProcServ Goals

- Allow soft IOCs and sequencers to run in the back ground on a unix/linux server without a controlling user session.

- Should not create a glaring security hole.

- Allow IOC engineers to connect, control, monitor and restart the soft IOC.

- Should be stand alone and not need a co-developed client program. Use telnet.

ProcServe implementation

- Task starts up and forks a daemon as a new process group leader.

- A pseudo tty master/slave pair is allocated and the soft IOC is started with stdin/stdout/stderr assigned to the slave PTY.

- A user can use telnet at the port specified on the command line to access the master side of the soft IOC's PTY.

- The server in procServ understands telnet protocols.

- The soft IOC is always restarted (after a delay) if it dies.

- A telnet user can force a reboot of the soft IOC with a ^X, this sends a kill signal to the soft IOC's process.

- All soft IOC threads are cleaned up when the IOC reboots or the procServ process is killed.

Startup

#!/bin/bash

Customize this file for your host.

This is a starting point!

cd /ade/epics/iocCommon/ics-tim-linux2

procServ 7103 /ade/epics/iocCommon/ics-tim-linux2/startup.cmd

Startup.cmd is an executable script that starts the iocCore binary with st.cmd as the command line parameter.

Connecting To a proServ Managed IOC

[thompson@ics-srv-softioc1 ics-tim-linux2]$ telnet localhost 7103

Trying 127.0.0.1...

Connected to ics-srv-softioc1 (127.0.0.1).

Escape character is '^]'.

procServ: my pid is: 12236

Startup directory: /ade/epics/iocCommon/ics-tim-linux2

Startup command: /ade/epics/iocCommon/ics-tim-linux2/startup.cmd

Welcome to the epics process server!

Use ^] to quit telnet, and ^X<CR> to reboot the IOC.

Connected users=1

epics>

epics>

epics> dbcar

ncalinks 1 not connected 0 no_read_access 0 no_write_access 0

 nDisconnect 0 nNoWrite 0

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Rebooting the soft IOC with ^X

```
epics> Closing the IOC, a new one will be restarted shortly
Restarting /ade/epics/iocCommon/ics-tim-linux2/startup.cmd
cd /ade/epics/iocTop/R3.14.4/timingSoftIocs/Development
dbLoadDatabase("dbd/scope.dbd")
scope_registerRecordDeviceDriver(pdbbase)
dbLoadRecords("db/ics-tim-linux2.db","")
dbLoadRecords("db/service.db","")
set_requestfile_path /ade/epics/iocTop/R3.14.4/timingSoftIocs/Development/db
set_savefile_path /ade/epics/iocCommon/ics-tim-linux2/var
set_pass0_restoreFile ics-tim-linux2.sav
cd /ade/epics/iocTop/R3.14.4/timingSoftIocs/Development/iocBoot/ics-tim-linux2
iocInit()
########################################################################################
###  EPICS IOC CORE built on Feb 12 2004
###  EPICS R3.14.4 $$Name:  $$ $$Date: 2003/10/18 17:42:28 $$
########################################################################################
Starting iocInit
```

Bugs

- When stepping through interactive commands in the sequencer you must explicitly type a line feed instead of a carriage return when the tty is in raw single character mode.

- Passwords are not implemented, access is allowed only from the loop back interface on the host.

- Only enough of the telnet protocol is implemented to get by, a framework is there to implement more as needed.

- Needs a log file option in the command line.

Availability

http://lcs-web1.sns.ornl.gov/share/procServer.tgz

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