[04B] START YOUR OWN IOC

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MAKEBASEAPP – IOC DEVELOPMENT

The command "makeBaseApp.pl" is an entry gate to go into deep world of EPICS IOC development. Here, instructions to start a dummy IOC are given.

LESSONS TO START IOC

Please try:

1. Start an ubuntu Terminal, and move to a work directory.
2. Execute **1st "makeBaseApp.pl"** command using "example" template. The "example" is one of pre-defined templates. In addition, you must specify an application name (for example "myEpics" in Fig.11). See the 1st line in Fig.11.
3. Then execute **2nd "makeBaseApp.pl" with "-i"**. The "-i" option will create ioc-boot-related sources of an IOC. See also Fig.11.
4. Two command executions created directories. The directories-structure must be as in Fig.13 (the application name is "lectureExample" in it).
5. Execute a "**make**" command (as the last line in Fig. 12). No error ? Now, it's ready to start a dummy IOC.
6. Move to the iocBoot area as in Fig.12. Do not forget a "chmod" command.
7. **Start "./st.cmd"** as in Fig.12. Check "epics>" prompt, and "dbl" to see running PVs.

> **CAUTION**: The PVs created are as in Fig.14. Be careful, IOCs of other participants would have same PV names: name collisions occur.
> To avoid this, you must modify files a.s.a.p.

LESSONS TO FIX PV NAMES

Please try:

8. Change the directory to the Db (see Fig.15). First, you have to modify "a file userHost.substitutions". Then, do not forget to execute "make".
9. Second, you also need to modify "st.cmd". Restart an IOC again, and check PV names. Are they different from Fig.14 ?
10. For confirmation, try to "caget" or "camonitor" new PVs.

REF. SCREENSHOTS

```
ubuntu@ubuntu:~/WORK_MyEPICS$ makeBaseApp.pl  -t example myEpics
ubuntu@ubuntu:~/WORK_MyEPICS$ ls
configure  Makefile  myEpicsApp
ubuntu@ubuntu:~/WORK_MyEPICS$
ubuntu@ubuntu:~/WORK_MyEPICS$ makeBaseApp.pl -i -t example myEpics
Using target architecture linux-x86_64 (only one available)
The following applications are available:
    myEpics
What application should the IOC(s) boot?
The default uses the IOC's name, even if not listed above.
Application name?
ubuntu@ubuntu:~/WORK_MyEPICS$ ls
configure  iocBoot  Makefile  myEpicsApp
ubuntu@ubuntu:~/WORK_MyEPICS$
ubuntu@ubuntu:~/WORK_MyEPICS$
ubuntu@ubuntu:~/WORK_MyEPICS$
ubuntu@ubuntu:~/WORK_MyEPICS$ make
```

Figure 11: execute "makeBaseApp.pl" twice

```
ubuntu@ubuntu:~/WORK_MyEPICS/iocBoot/iocmyEpics$ pwd
/home/ubuntu/WORK_MyEPICS/iocBoot/iocmyEpics
ubuntu@ubuntu:~/WORK_MyEPICS/iocBoot/iocmyEpics$ chmod a+x st.cmd
ubuntu@ubuntu:~/WORK_MyEPICS/iocBoot/iocmyEpics$
ubuntu@ubuntu:~/WORK_MyEPICS/iocBoot/iocmyEpics$ ./st.cmd
```

Figure 12: start an IOC with dummy PVs

Figure 13: created directory structure

```
epics> dbl
ubuntuHost:ai1
ubuntuHost:ai2
ubuntuHost:ai3
ubuntuHost:aiExample
ubuntuHost:aiExample1
ubuntuHost:aiExample2
ubuntuHost:aiExample3
ubuntuHost:aSubExample
ubuntuHost:calc1
ubuntuHost:calc2
ubuntuHost:calc
ubuntuHost:calcExample
ubuntuHost:calcExample1
ubuntuHost:calcExample2
ubuntuHost:calcExample3
ubuntuHost:compressExample
ubuntuHost:subExample
ubuntuHost:xxxExample
epics>
```

Figure 14: PVs running on the IOC

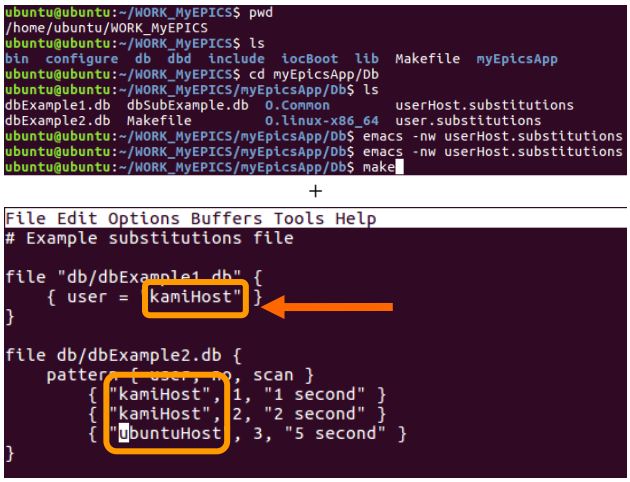

Figure 15: Modify “userHost.substitution”

REFERENCES

[1] http://www.aps.anl.gov/epics/docs/AES2011/11-IOC_Development.pdf

[2] http://www.aps.anl.gov/epics/base/R3-14/12-docs/AppDevGuide/

[3]