Developments in Base

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Outline

- What's in the CVS repository for R3.14.10
- What else is slated for R3.14.10
- EPICS Codeathon, April 2008
- Extended Developer Visits to APS
- Converting 3.13 IOCs to 3.14

What's in the CVS Repository for R3.14.10

- Bug fixes as reported on the R3.14.9 Known Problems page
- RTEMS IOC clock now synchronized using NTP
  - Earlier RTEMS versions only used NTP at startup
  - Now uses the same sync method as on vxWorks
  - Can also use an Event System for hardware time sync
- VAL keyword in CALC expressions
  - Gives whatever the result was last time processed
  - No need to point calc.INPA back to calc.VAL any more
- The IOC shell iocsh has moved into libCom
  - Split command registration routines into individual Base libraries
  - External tools that explicitly link to libiocsh.a shouldn't any more (seq)
- Better error message from dbLoadRecords()

What else is slated for R3.14.10

- Time Governor
  - General Time from SNS
  - Enhanced by Babak Kalantari at SLS/PSI

- Redundancy Hooks?

- Anything developed at the EPICS Codeathon

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EPICS Codeathon, 14-18 April 2008

- A meeting of EPICS Core developers to write code
  - Open to others who want to 'give back' to EPICS
  - We will have a To Do list, or bring your own projects
    - *Not just Base; work on Asyn, Extensions, CSS, etc.*
    - *Multi-site collaborative projects only please*
- Location: 5th floor and A5000 conference room at the APS
  - Nice environment, views of DuPage and Cook Counties
  - Space limited to about 20 people (apply now!)
- Bring your own laptop to work on
  - Discuss problems with other developers
  - Try new techniques — Pair Programming, TDD etc.
  - WiFi and snacks will be provided
- A few talks will be arranged on appropriate topics (offers welcome)

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Extended Developer Visits to the APS

- APS is happy to host developers/authors on sabbatical at Argonne
  - Participate in EPICS development and support activities
  - Durations between 2 and 6 months
  - Wide range of expertise can be utilized:
    - *Control engineers*
    - *Computer scientists/programmers*
    - *Technical writers*
- Argonne can provide compensation in lieu of per diem living expenses
  - The home institution would pay only for travel and regular salary

- If interested, talk to Ned Arnold

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Converting 3.13 IOCs to 3.14

- APS has many IOCs still running R3.13.10
- Manually converting IOC applications to R3.14 is tedious and error-prone
  - Just converting the Makefiles is hard enough
  - Janet Anderson's "Converting" document helps a lot

- No automatic conversion can be complete, but many of the tedious things can be done for you:
  - Create new directory structure, configure instead of config
  - Convert config/RELEASE entries for new configure/RELEASE
  - Convert & combine Makefile.Vx and Makefile.Host into Makefile
  - Identify and copy other files (.c, .st, .h, .db, .dbd)
  - Create sequencer registrar .dbd files
  - Modify and copy st.cmd files
  - Detect unused files (e.g. supporting long-removed hardware)

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Converting 3.13 IOCs to 3.14 ...

- I have been working on a Perl program to do conversions
- Not complete, currently does not:
  - Modify any C/SNL code at all
  - Create a munched executable for IOCs
  - Modify existing DB or DBD files
  - Handle template and substitution files very well
- However it can
  - Convert simple support modules almost completely
    - *e.g. drvIpac-2.4*
  - Convert support application commands in st.cmd files
  - List the files in the source tree that it has not handled at all
  - Handle large applications
    - *APS linac app has 909 files, after conversion there are 638*
    - *The converter listed 236 files & directories that it ignored*

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Converting 3.13 IOCs to 3.14 ...

- Converter status:
  - Not ready for release yet
  - No documentation, few comments
  - Only works with makeBaseApp applications
    - *Contains a Makefile parser that could be re-used though*

- Interested parties should talk to me
  - Especially if you'd like to help improve it

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