EPICS Base 3.14 and 3.15 Status

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Fixes on stable branch (3.14)

- **3.14.12.3 released on 2012-12-17**
  - Many small changes
    - □ Fix bugs (minor issues)
    - □ Add new architectures
  - Read the Release Notes for details

- **Since 3.14.12.3**
  - High-resolution time provider for MacOS
    - □ Gives the current time with nanosecond resolution
  - Periodic scan threads no longer drift over time (Eric Norum/LBL)
  - Adding support for vxWorks 6.9
    - □ Changes to munch script, wrappers for gmtime_r() and localtime_r()
    - □ Time providers are not working yet

- **Base 3.14.x will continue to be used at Argonne for many years**
  - We still have many IOCs running on 3.13

Developments for 3.15

- 3.15.0.1 released on 2012-08-01

- Since then:
  - Multi-core real-time enhancements for Linux SMP systems (Ralph Lange/ITER)
  - Spin-locks API added, epicsSpin.h (Ralph Lange/ITER)
  - Many enhancements to record types
    - ☐ fanout & sequence records now have 16 links
    - ☐ New printf, long string input & long string output record types
    - ☐ aSub record gets a cleanup subroutine field CADR
    - ☐ mbbiDirect & mbboDirect records update the Bn fields when OMSL = closed_loop
    - ☐ aai, aao & waveform device support can be double-buffered (Michael Davidsaver/BNL)
  - Windows DLLs are built slightly differently
    - ☐ Static and shared/DLL builds use different object file-names and can coexist
  - New 'tapfiles' target for Continuous Integration testing

Developments for 3.15

- Currently in development:
  - Parallel callback threads (Ralph Lange/ITER)
    - ☐ Improve real-time performance on SMP systems
  - Importing record reference documentation into Base
    - ☐ Updating/rewriting record descriptions
    - ☐ Adding new pages on server-side filters, etc.
  - Redesign of internal record locking subsystem (Michael Davidsaver/BNL)
    - ☐ Enhancements are needed for V4 multi-value operations

Future Possibilities

- These core projects are being considered for Base 3.15 or beyond:
  - VxWorks SMP port
    - ☐ A separate OS port for VxWorks 6.8+ on SMP CPUs
  - Extensible link types
    - ☐ Will be needed to add PVA Client link support
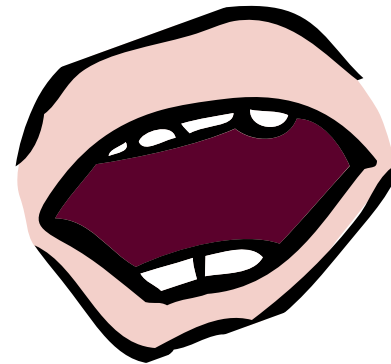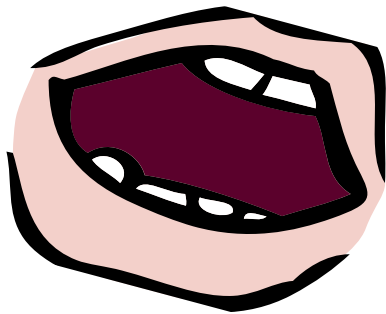   - ☐ Should use JSON for encoding link addresses

- A release numbered Base 4.0 is conceivable
  - Adding proven C++ versions of pvData, pvAccess and pvaSrv
  - New pvAccess features should be optional in 4.0 IOCs

- ~~Help Wanted:~~ Thanks Murali!
  - Bring the PV Gateway up to 3.14.12 standards
    - ☐ Support for variable length arrays (not in CAS yet either)
    - ☐ Pass through DBE_PROPERTY events from IOC

Discussion

- The C and C++ compilers for VxWorks 5.5.2 are really old now
  - They make implementing some new features harder (especially v4 development)

- Questions
  - How soon can we drop support for VxWorks 5.5?
  - Who is using VxWorks 5.5 but doesn't have a license for 6.x?
  - What problems would requiring a VxWorks 6.x upgrade cause?

Diamond: Thank-you!