

EPICS Core Status

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EPICS Core

- EPICS Base
 - libCom, db, ca, database
 - 164k LoC
- PVA Modules
 - PVD, PVA, pvaClient, pvDatabase, pva2pva
 - 94k LoC
- Andrew, Marty, Michael, Ralph

Milestones since Oct. 2017

- <https://epics.anl.gov/>
- Releases
 - 3.14.12.7
 - 7.0.1

R3.14.12.6 → .7

- Bug fixes
 - caget et al. Fix DNS related crash on exit
 - Server bind issue on Windows
 - Checking Periodic Scan Rates
- Features
 - make test-results

R7.0.1

- Base + PVA modules
 - Second source tree re-organization
- Features
 - ...
 - ...
 - ...

Future Core Releases

- Series

- 3.14 → 3.14.12.8 (last last)

Bas
e

- 3.15 → 3.15.6

Bas
e

- 3.16 → 3.16.2 (last)

Bas
e

- 4.x → 4.7 (last?)

PV
A

- 7.0 → 7.0.2

Bas + PV
e A

Coming Attractions (2)

- Features

- RTEMS 5 port
- mbbo/mbbi VAL → 32 bit
- PVA links

```
virtualenv p4ptest  
. p4ptest/bin/activate  
pip install --upgrade pip  
pip install p4p  
python -m nose p4p
```

- Incompatible changes

- JSON parser 64-bit integers

- Fixes

- Lots of PVA work...

Retrospective

- MD joins NSLS2 in March 2009
 - <http://mdavidsaver.github.io/epics-doc/epics-starting.html>
- First Base contribution in April 2009
 - Email to ANJ
 - 39eaa0e335ae6d84db02e1e0d8e26d4a19758893
- First EPICS meeting in June 2010
- Only person to gain Base commit privileges in a decade

How to start contributing?

- Start small
- Start simple

Mar 16,
2010

```
@ @ -236,6 +236,12 @ @ void epicsShareAPI dbScanLock(dbCommon  
*precord)
```

```
    epicsMutexLockStatus status;  
    epicsThreadId idSelf = epicsThreadGetIdSelf();
```

```
+ /*  
+  * If this assertion is failing it is likely because ioclnit  
+  * has not completed. It must complete before normal record  
+  * processing is possible. Consider using an initHook to  
+  * detect when this occurs.  
+  */
```

```
    assert(dbLockIsInitialized);  
    while(1) {  
        epicsMutexMustLock(lockSetModifyLock);
```

First Steps

- **Ansification** (bye bye K&R)
- **remove STATIC**
- **softloc: extra dep for generated header**
- **remove unused iocRegister stub**
- **Added CONTAINER() and STATIC_ASSERT()**
- <https://bugs.launchpad.net/epics-base/+bug/693534>
 - **errlog causes crash on IOC exit**

• Help yourself, help others

- If you trigger an error, so will others

- Miss-matched .dbd

3e6597be90848ccfd4f9449ada2d12aeac9b347

5

```
@@ -228,12 +228,14 @@ int main(int argc,char **argv)
    fprintf(outFile,"#ifdef __cplusplus\n");
    fprintf(outFile,"extern \"C\" {\n");
    fprintf(outFile,"#endif\n");
+   fprintf(outFile,"#include <epicsAssert.h>\n");
    fprintf(outFile,"#include <epicsExport.h>\n");
    pdbRecordType = (dbRecordType *)ellFirst(&pdbbase->recordTypeList);
    while(pdbRecordType) {
        fprintf(outFile,"static int %sRecordSizeOffset(dbRecordType *pdbRecordType)\n{\n",
            pdbRecordType->name);
        fprintf(outFile,"    %sRecord *prec = 0;\n",pdbRecordType->name);
+       fprintf(outFile,"    assert(pdbRecordType->no_fields==%u);\n", pdbRecordType->no_fields);
        for(i=0; i<pdbRecordType->no_fields; i++) {
            char    name[256];
            int     j;
```

How to start contributing? (2)

- Incremental cleanup
- Writing unit-tests
 - Record support!
- Create/Update Documentation
 - RRM!
- Climb the learning curve
 - Needs Mgmt support!
- Build relationships

What does a Maintainer do?

- Answer questions
- Triage bug reports
- Mentor new contributors
- Review code
 - Our big bottleneck!

Bootstrapping Base Development?

- High quality threshold + small review bandwidth
 - → few new contributors
- Few contributors
 - → Little incentive to review
- How to break the loop?