

Unconventional EPICS with Cocoa

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What?



- EPICS is a control systems library and tools written in C and C++
- Cocoa is a core set of Mac OS X frameworks for building applications, tools, libraries, frameworks, etc.
 - Most APIs in both Objective-C and Java
 - Very mature (inherited from NextStep and extended)
 - Supports rapid development of full featured applications
 - Integrated with a powerful IDE and GUI builder
 - Provides Mac look and feel
- GNUStep is an open source project that ports much of Cocoa to other operating systems (e.g. Linux, Windows, ...) and includes an IDE and GUI builder

Goals



- Provide an EPICS framework in Objective-C
 - Simple, object oriented interface to EPICS
 - Integrate with Cocoa to facilitate rapid development of applications, tools, ...
 - Reduce EPICS learning curve
 - More robust applications of EPICS
- Provide an EPICS installer for easy installation of EPICS libraries and the EPICS framework in standard locations

Objective-C



- Mature - Developed by Brad Cox in 1980s
- 100% pure object oriented extension to C language
- Minimal language additions to C
- Easy to read
- Available as part of gcc distribution
- Unique bracket notation
- Large, mature foundation and GUI frameworks

Language Comparison



Feature	Objective-C	Java	C++
Inheritance	Single	Single	Multiple
Forwarding	Yes	No	No
Protocols	Yes	Yes	No
Typing	Weak	Strict	Strict
Java Morphing	Yes	N/A	No
C++ Morphing	Yes	No	N/A
Informal Protocols	Yes	No	No
Class Inheritance	Yes	No	No
Dynamic	Yes	Yes	No
Named Arguments	Yes	No	No
Memory Management	Assisted	Automatic	Manual
Complexity	Minimal	High	High