Channel Watcher

Moves the "save" part of save/restore to Client Platform (UNIX on Solaris)

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Problems with "save" on IOC

- File writing via NFS from IOC. We've seen some failure modes during disk I/O which caused files to become corrupted.

- IOC power loss can cause incomplete files

- Loss of saved values when IOC booted with incomplete files

- Difficult to add or remove a channel during operation

- Difficult to add new features to tasks running on IOCs

- No support for waveforms

Benefits of moving "save" to UNIX

- More robust implementation of file I/O libraries than VxWorks

- Unlikely to lose channel values due to IOC power cycle

- Easier to add or remove channels during accelerator operation

- Easier to add new features during accelerator operation

- Reduces load on IOC

Benefits of using Channel Watcher

- Currently supports many popular file formats and logging facilities

- /LOG option for channel changes with message throttling

- /NOWRITE option for channels you want in your file, but whose change doesn't generate a new file

- Gets default values from last saved file

- Many configurable parameters including ca_pend_event time and minimum time between file generation
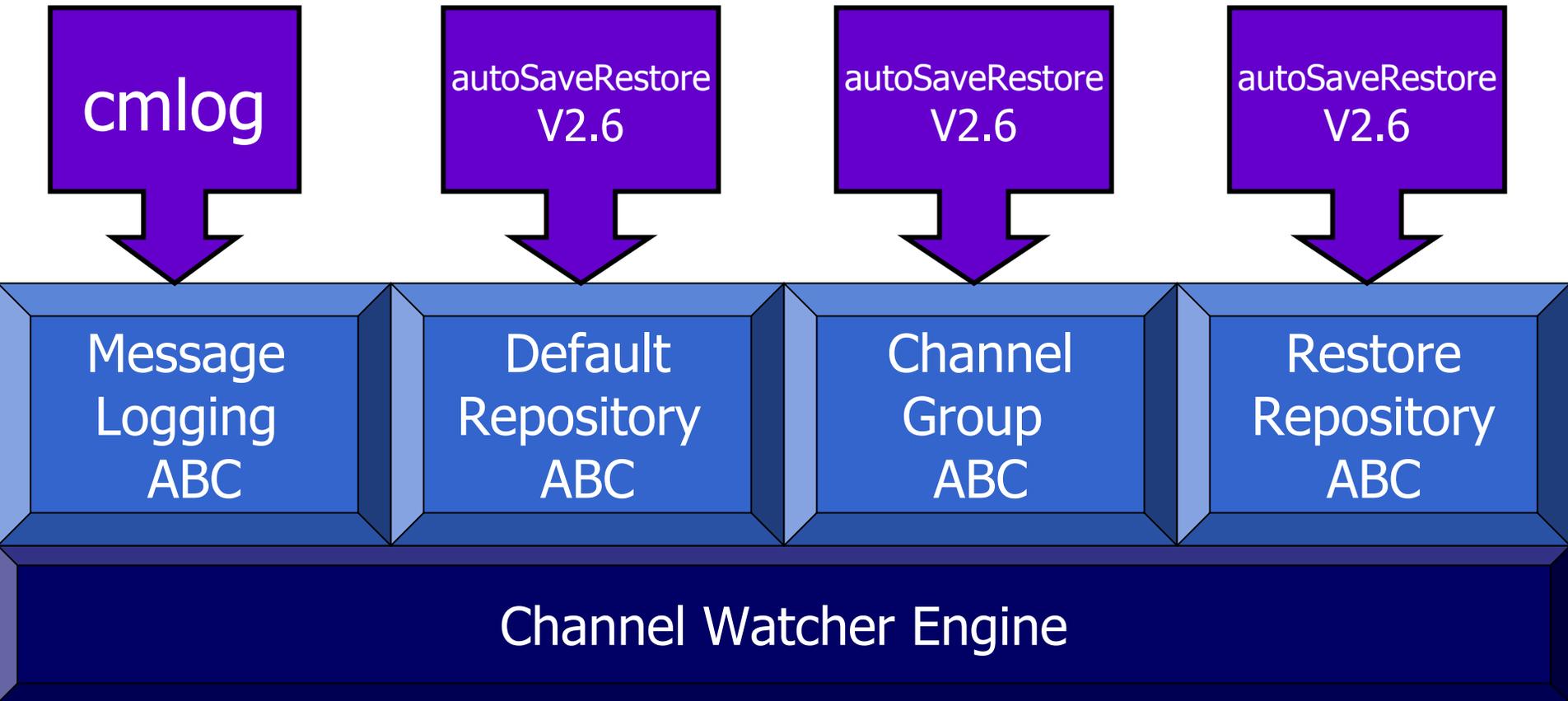
Benefits of using Channel Watcher

- Supports channel access native data types and waveforms

- Channel alias name available

- Macro substitution available

- Supports imbedded channel groups

- Easy to implement new file formats

Software Designed using Plug-ins

cmlog	autoSaveRestore V2.6	autoSaveRestore V2.6	autoSaveRestore V2.6

Message Logging ABC	Default Repository ABC	Channel Group ABC	Restore Repository ABC

Channel Watcher Engine

Supported Message Logging Facilities

1. Jefferson Lab's Common Message Logger (cmlog)

2. Log messages to cout

3. Log message to cerr

4. Log messages to NULL

5. *SLAC's new err facility*

Supported Channel Group Formats

Channel Group Formats	/log option	/nowrite option	Channel alias	Macro substution
SLAC's s/r V1.91	Yes	Yes	Yes	No
caGet	No	No	No	No
Tim Mooney's autoSaveRestore V2.6	No	No	No	Yes
SLAC's s/r V2.0	Yes	Yes	Yes	Yes
Oracle	*Yes*	*Yes*	*Yes*	*Yes*

Supported Restore Repository Formats

Repository Format	Native Data Type	Waveform	enums as both DBR_STRING and DBR_ENUM
SLAC's s/r V1.91	No	No	Yes
caPut	No	Yes	No
to Debug Log	Yes	Yes	Yes
Tim Mooney's autoSaveRestore V2.6	No	No	No
SLAC's s/r V2.0	Yes	Yes	Yes
Oracle	*Yes*	*Yes*	*Yes*

What you get with Distribution

1. Channel Watcher with supported Plug-ins
2. CWget – replaces caGet and works with chosen supported Channel Group and Repository Formats
3. CWput – replaces caPut…

Future Plans

1. Channel Groups and Repository in an Oracle Database

2. Plug-in for *err* Message Logging Facility

3. GUI to display statistics such as which channel causes repository generation most often; and to change various operating parameters such as marking a channel for logging, or disabling a noisy channel, etc.

4. Support more formats, such as BURT.

Web Pages

Software Distribution:

http://www.slac.stanford.edu/comp/unix/package/epics/extensions/ChannelWatcher

Documentation:

http://www.slac.stanford.edu/comp/unix/package/epics/extensions/ChannelWatcher/ChannelWatcher.html