Channel Access Enhancements

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R3.14 Enhancements

- Large array support in the portable server
  - nearly complete
  - a priority for SNS
- Port syntax for EPICS_CA_ADDR_LIST
  - coded and documented
- File descriptor manager based clients
  - Work correctly with multi-threaded CA client library
- Sequence number in the IOC's server beacons
  - eliminates false beacon anomaly positives when there is questionable routing configuration.
    - recently added also to portable server.
- Many bugs fixed

R3.14 Enhancements

- New epicsSingleton class
  - eliminates compiler and OS specific chicken an egg problems during startup when file scope C++ objects reference each other
  - The first class to use an object safely initializes it once only
- New epicsGuard class
  - locks in its constructor and unlocks in its destructor
  - Failures where an error path out of a function neglects to unlock are eliminated.
  - Low level functions that require a lock
    - epicsGuard reference in their arguments. This helps to eliminate deadlock problems by more clearly documenting the lock hierarchy.
- WIN32 mutex locking runs probably two to three times faster than before

3.14 Tasks Remaining

- Slay bug detected by change links test
- GDD issues occurring when testing large array modifications to the portable server

R3.15 Plans

- Data Access Interface replaces GDD in the portable server

- Data Access Interface in the emerging upgraded client API.

- Portable server is now select() scheduled with a structure allowing also thread scheduling
  - Support only thread scheduling in the future

R3.15 – R3.16

- New subscription dispatching mechanisms
  - Time based triggering
    - Maximum period
    - Minimum period
    - Fixed period
  - PV event triggered
    - Download simple expression into the server
      - Possibly follow the example of the CALC record

R3.15 – R3.16 Plans

- Protocol enhancements
  - Support for generalized containers specified at run time by data access
  - Support for new subscription triggering mechanisms
  - Improved density
  - Documentation
  - Directory service
    - Integrated LDAP?
    - Protocol versioning

R3.15 – R3.16 Plans

- Better source code commonality between client and server libraries

- Virtual circuits
  - Quality of service parameters