

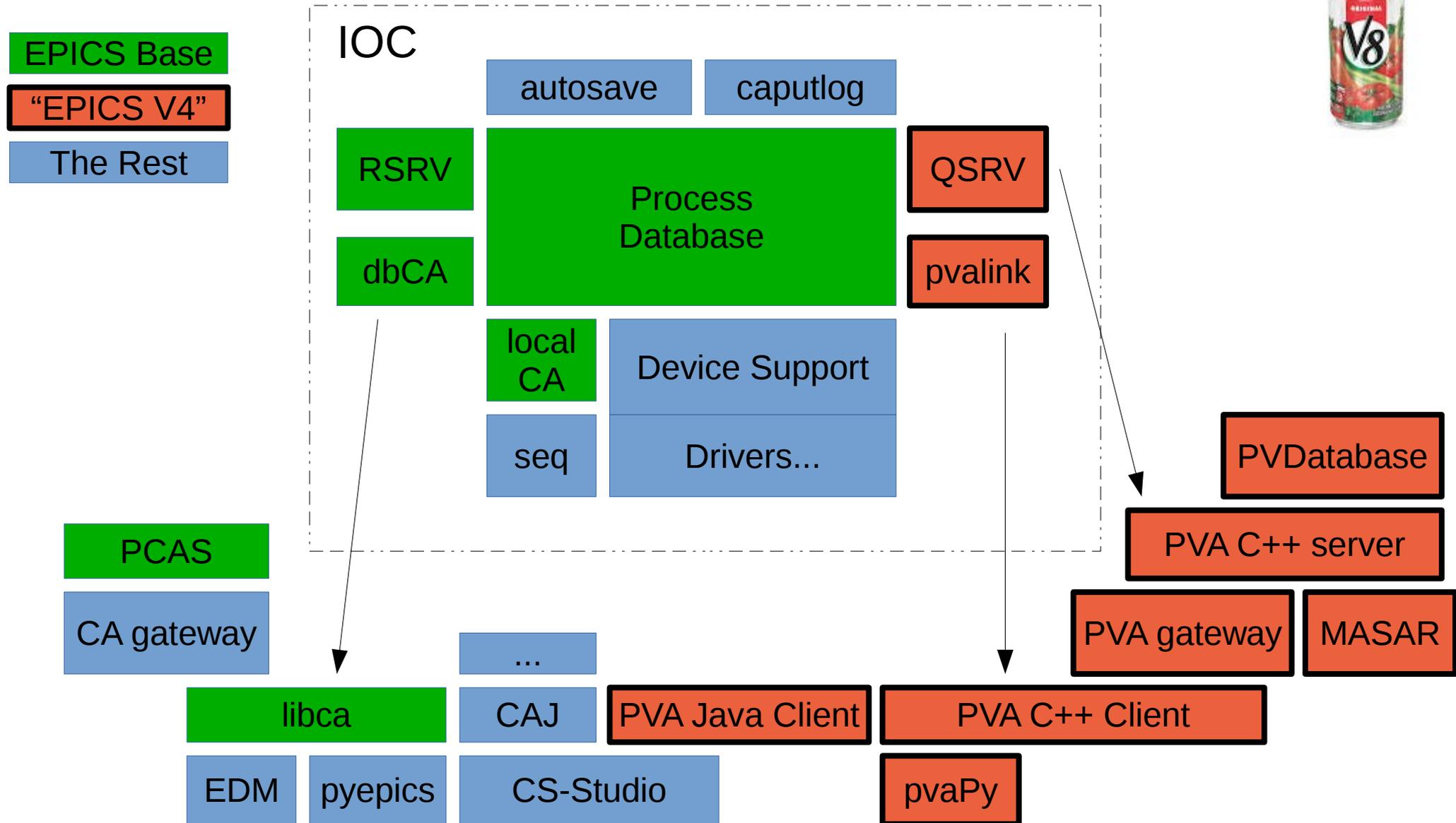
PVAccess Gateway and IOC Integration

Michael Davidsaver
Osprey DCS

Work sponsored by RAON project

<https://github.com/mdavidsaver/v4workspace/tree/pva2pva>

What is EPICS v3 or v4



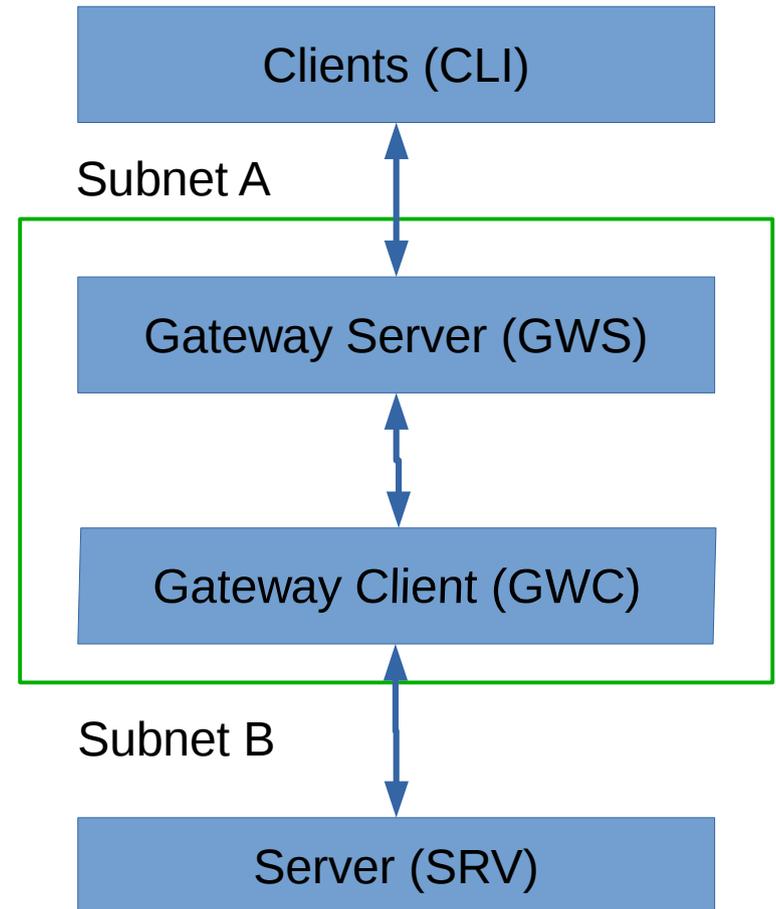
What is in a name?

- “EPICS v4”
 - Software written under the aegis of the v4 Group
- “EPICS v3”
 - Everything else
- “V4” is overloaded (like IOC)
 - V4 \sim PVAccess

We now return to your regularly scheduled programming

PVA Gateway

- pva2pva
- gateway \approx proxy
 - Server to A
 - Client to B
- Analogous to cagateway
 - aka. “pv gateway”
 - Names are hard...



pva2pva Status

- Prototype
 - Robust
 - Not feature complete
 - Base 3.15
- Handles all operations
- De-duplicate monitor subscriptions
- Unidirectional
- Placeholder access control (global R/O flag)
- No name mangling

pva2pva Future Work

- Configuration infrastructure
- Access control policy
 - a la. ACF
- Name mangling
- Multiple network interfaces
- Cache gets

QSRV

- Analogous to RSRV
 - PVA server providing access to PDB fields
 - \$ pvget my:record.VAL
- Planned to superseded pvaSrv
- Mapping PDB fields into PVD structures
 - “Groups”
 - Semi-configurable
 - Optional atomic access (w/ Base 3.16)

QSRV (2)

- Status
 - get/put/monitor for single PV
 - No configuration required
 - get/monitor for group PV
 - Configure w/ info()
 - Base 3.16 (pvalink needs unmerged)
- Future work
 - Put w/ *callback on completion*
 - Access control (ACF)
 - Group put
 - Operations Process/PutGet/...

“Group” definitions

- Alias several record fields as a PVData structure
- Operations may be atomic using multi-lock
- Defined using info()

```
record(calc, “circle:y”) {
```

```
  ...
```

```
    “circle.y” <-> “circle.y.VAL”
```

```
  info(pdbGroup, “circle|y=VAL”)
```

```
  info(pdbTrigger, “circle|y>*”)
```

```
}
```

Update of “circle.y.VAL” triggers
send of subscription update of
“circle” including “.x” and “.y”.

PVA Link processing

- New monitor update for PVA Link
 - Trigger scan with “CP” link modifier
 - Snapshot PVA values before processing
 - Link access from scanner thread uses snapshot
 - Allows multiple links to have a consistent view of a single update
 - field(INPA, “pva://groupname.flda CP”)
 - field(INPB, “pva://groupname.fldb”)
 - field(CALC, “A+B”)
 - Values of “.flda” and “.fldb” used in calc expression are both from the same monitor update.