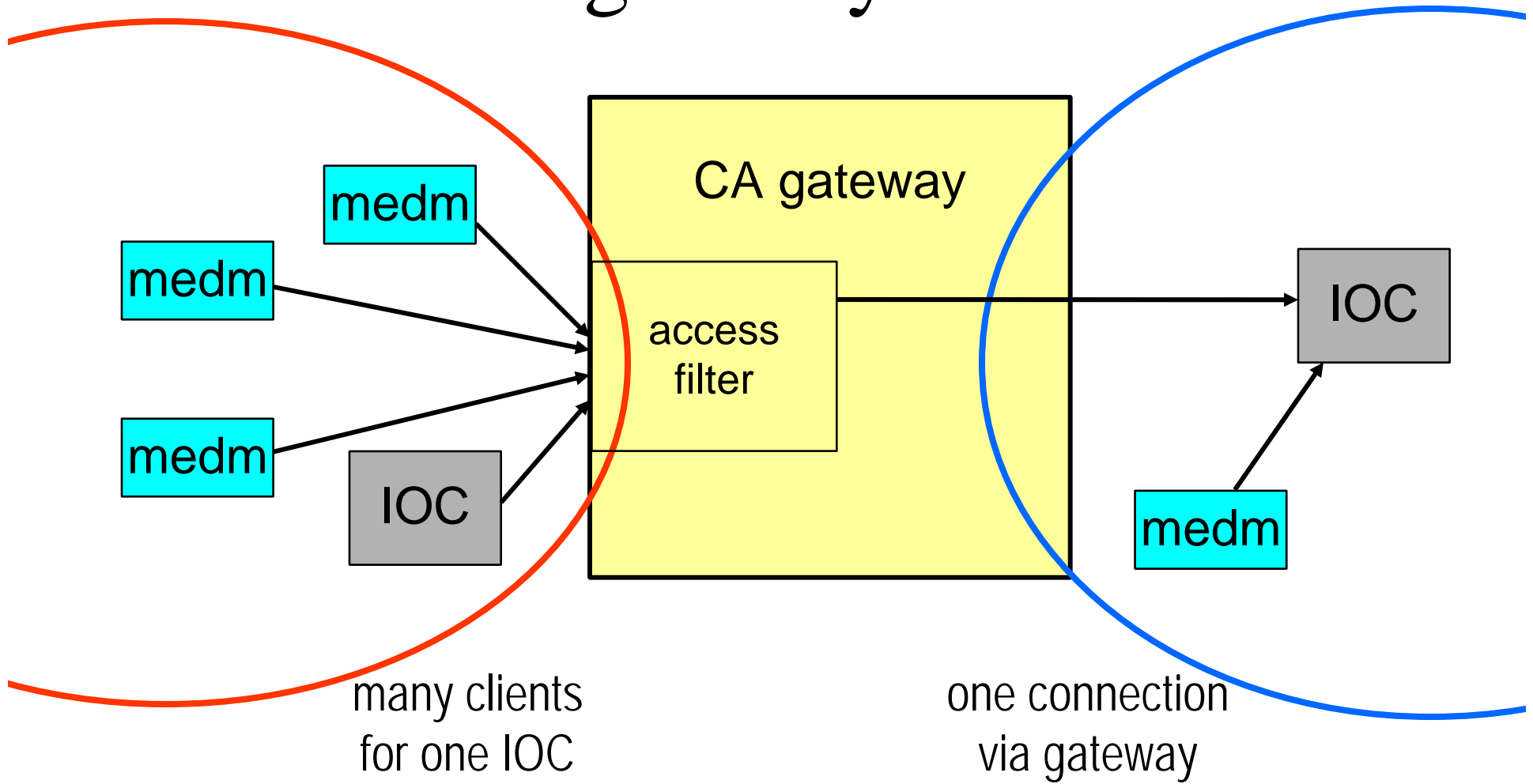


Channel Access Gateway Problems

SLS experiences

Tested Version: 2.0.0.0 (October 3, 2005)

What is a CA gateway?



Archiver related problems

- Archive monitors use MDEL instead of ADEL through gateway
 - ◆ Gateway can not distinguish log events from monitor events
- Workaround: separate gateway for archiver
 - ◆ Run gateway for log (and alarm) events: `-mask la`
 - ◆ Use different port on archive gateway: `-sport <port>`
 - ◆ Configure archiver to use archive gateway:
`EPICS_CA_ADDR_LIST=" <gateway_ip> : <port> ... "`
 - ◆ Disable archiver access to normal gateway:
`-signore <archiver_ip>`
- Or use archiver machine with multiple network cards

Alarm handler related problems

- ALH sees (and logs) value changes with no alarm changes
 - ◆ Gateway can not distinguish alarm events from monitor events
- ☠ Connecting ALH corrupts values for all clients
 - ☠ Enum values freeze
 - ☹ Double values are rounded to 6 significant digits
- Running separate gateway (`-mask a`) does not help much
 - ◆ Monitors in related panels don't work
 - ☠ Alarm acknowledge (global mode) screws up values
- Can not run ALH through gateway properly!

Huge array related problems (*not*

■ Huge arrays (> 26k Bytes) might block the gateway

- ◆ ~2000 double or ulong; ~4000 float, long, ushort; ~8000 short, uchar
- ◆ gateway uses 100% CPU time, all clients disconnect

■ EPICS_CA_MAX_ARRAY_BYTES does not help!

- ◆ If value is too small, gateway still blocks
- ◆ Necessary size is now known in advance

■ Need to exclude access to huge arrays

- ◆ Disable access to each huge array record separately
- ◆ High maintenance cost

Other problems

- If an IOC is off for 10 min, sometimes clients don't reconnect
 - ◆ Gateway does not forward beacon anomalies correctly
 - ◆ Need to start a dummy IOC (e.g. iocsh / "softioc") on client side
- If a value is monitored, caget gets old values
 - ◆ If any client connects a monitor, then all clients only get the latest monitor value, not the current value (might differ because of MDEL)
 - ◆ Gateway uses monitored value as a cache for caget

Conclusion

- ☺ Channel Access Gateway can be used with caution
- ☺ OK for standard access
- ☹ One has to live with some inconvenience
- ☹ One may not get the same behaviour as with direct access
- ☹ Don't connect Archivers or Alarm handlers
- ☹ Don't use to access huge arrays

END