

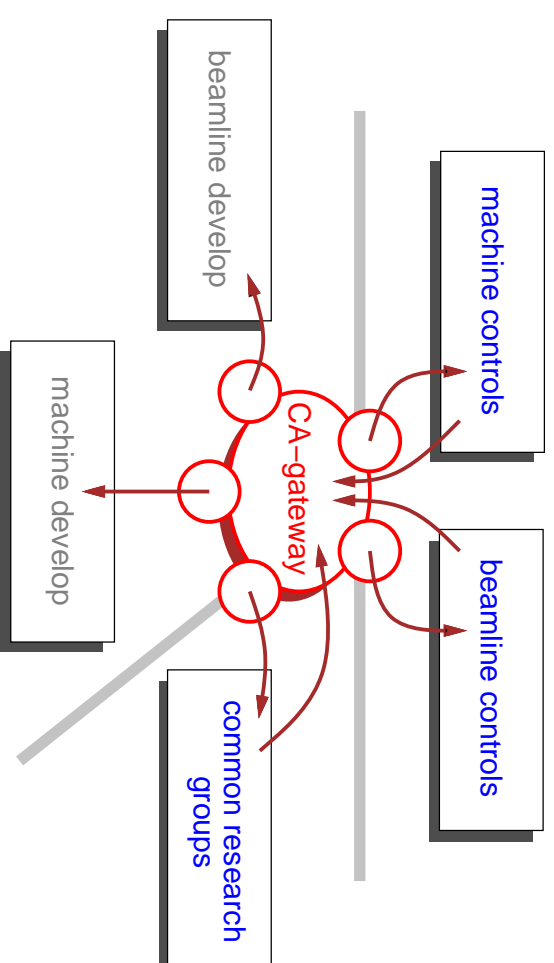
Channel Access Gateway Use and Experiences



- Network Structure
- Features of CA-gw
- Observed Behaviour and Problems
- Reasons for Problems
- Conclusion

Network Structure

- Different networks with different requirements
control system - *research groups* - *development/staff*



- Currently at BESSY: 2 Machines with 8 network interfaces each

Features of CA-gw

- Cross-network connections via CA-gw (proxy)
 - + bundling of requests → minimized traffic
 - + additional Access Security
 - + connection management
 - keeps separation of networks
- CA-gw has Internal PVs
 - existTestRate** how many name-resolution-requests (`ca_search`) per second
 - loopRate** how many idle-loop-passes per second

Observed Behaviour and Problems

High existTestRate and loopRate almost zero

- We observed up to 350 ca_search per second!
- More than 100 → CA-gw is pretty busy checking names!
- Existing connections to clients closed
- New connections and reconnects failed
- Even crosstalk between CA-gw processes!
- All IOCs have to do the same checks!!
- ? Where do so many unresolved PV-names come from?
- Queried PVs and querying hosts identified using gateway-debug

Observed Behaviour and Problems

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Reasons for Problems

- Most of the requests came from IOCS!
 - LINKs to records that don't exist (anymore)
e.g. SDIS points to non-ex record
 - LINK-fields or records that changed behaviour meanwhile
e.g. stringin used to be initialized by setting DOL to the string-value
 - Simply misconfigured LINK-fields that contain garbage or comments or garbled links
- **ca_search** called every time the record is processed!
e.g. 10 records at “.1 second” scanrate → 100 ca_search / second

After elimination of Problems

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Conclusion

- CA-gw is as a very reliable communication tool to control CA cross-talk between different networks.
- Separating networks eases security and maintenance tasks
- *The optimum* configuration (hardware and software) to keep influences at a minimum not yet found
- In use at BESSY for more than 1½ years
- Has become absolutely indispensable