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# Channel Access Push Proposal for a New Connection Method

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## Current (simplified) work flow to set up a monitor

| IOC                           |   | CA Client                        |
|-------------------------------|---|----------------------------------|
| Looks up PVs                  | ← | Searches for PVs (UDP broadcast) |
| Search response (UDP unicast) | → | Gets host/port from response     |
| Accepts connection            | ← | Connects (TCP) to host/port      |
| Installs subscriptions        | ← | Set up monitors                  |
| Sends PV events               | → | Processes data                   |
| Goes offline                  |   | Searches again                   |

What's wrong?

- Some “clients” (e.g. **archiver**) flood the network with broadcasts.  
Reasons: wrong configuration, IOCs offline, ...
- Archiver not a client at all, it's a **service**!

# Clients vs Services

| CA Client  | CA Service  |
|--|---|
| PVs live on IOC  |   |
| IOC sends updates  |   |
| Runs on arbitrary hosts  | Runs on <b>well known host:port</b>                                     |
| Can start and stop at any time   | Usually runs permanently  |
| Client wants something from IOC  | IOC wants something from service  |
| IOC cannot know PVs needed by client:<br>Configuration must be in the client | IOC knows PVs to send to service:<br>Configuration should be in the IOC |

Let the IOC **push** its PVs to the service!

- Use info fields in records for configuration
- IOC does connection management

## Proposed work flow to send data to services

| IOC                                    |   | CA Service         |
|--|---|--------------------|
| Connects (TCP) to well known host:port | → | Accepts connection |
| Sends list of PVs (necessary?)         | → | Sets up monitors   |
| Sends PV events                        | → | Processes data     |
| Goes offline                           |   | Stops monitoring   |

## A Channel Access service would be passive

- Service needs no PV list configuration
- PV list cannot be outdated
- Service does not send search broadcasts
- IOC **pushes** PVs to service
- Event/subscription concept and code probably does not change much
- “Only” connection setup needs to be developed

# What do you think?

- Does this look useful?
- Channel Access or PV Access or both?
- Anyone volunteering to implement it?

