

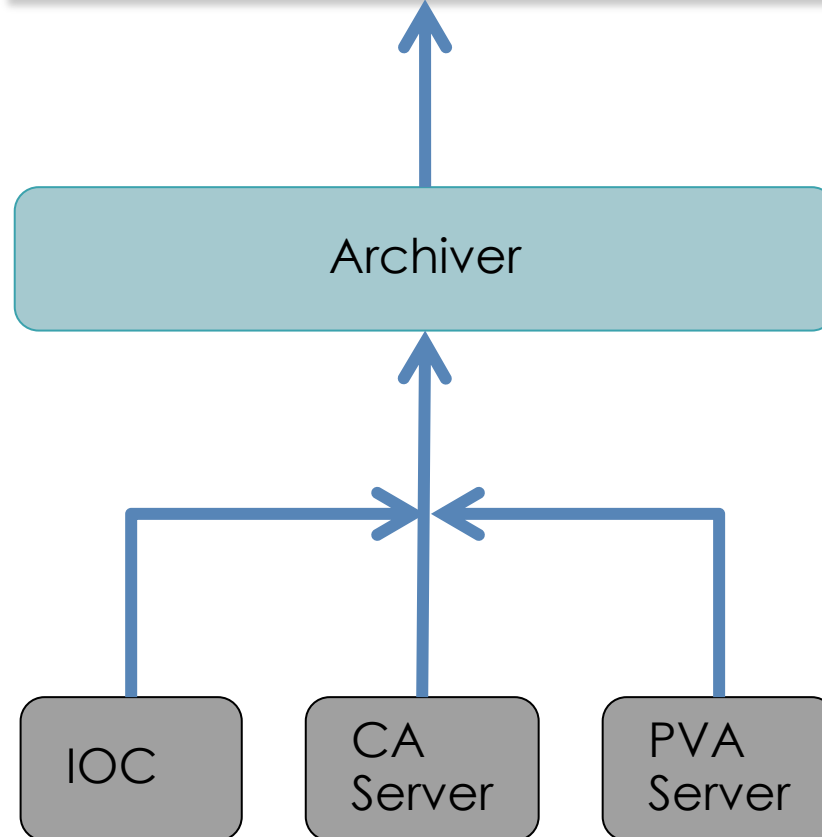
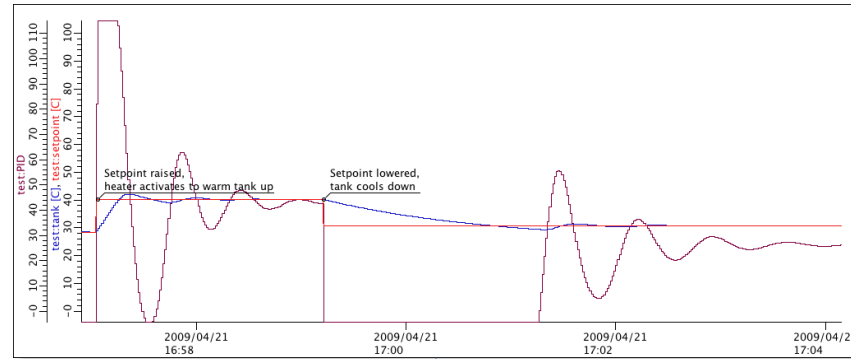
# Archive

Oct. 2018

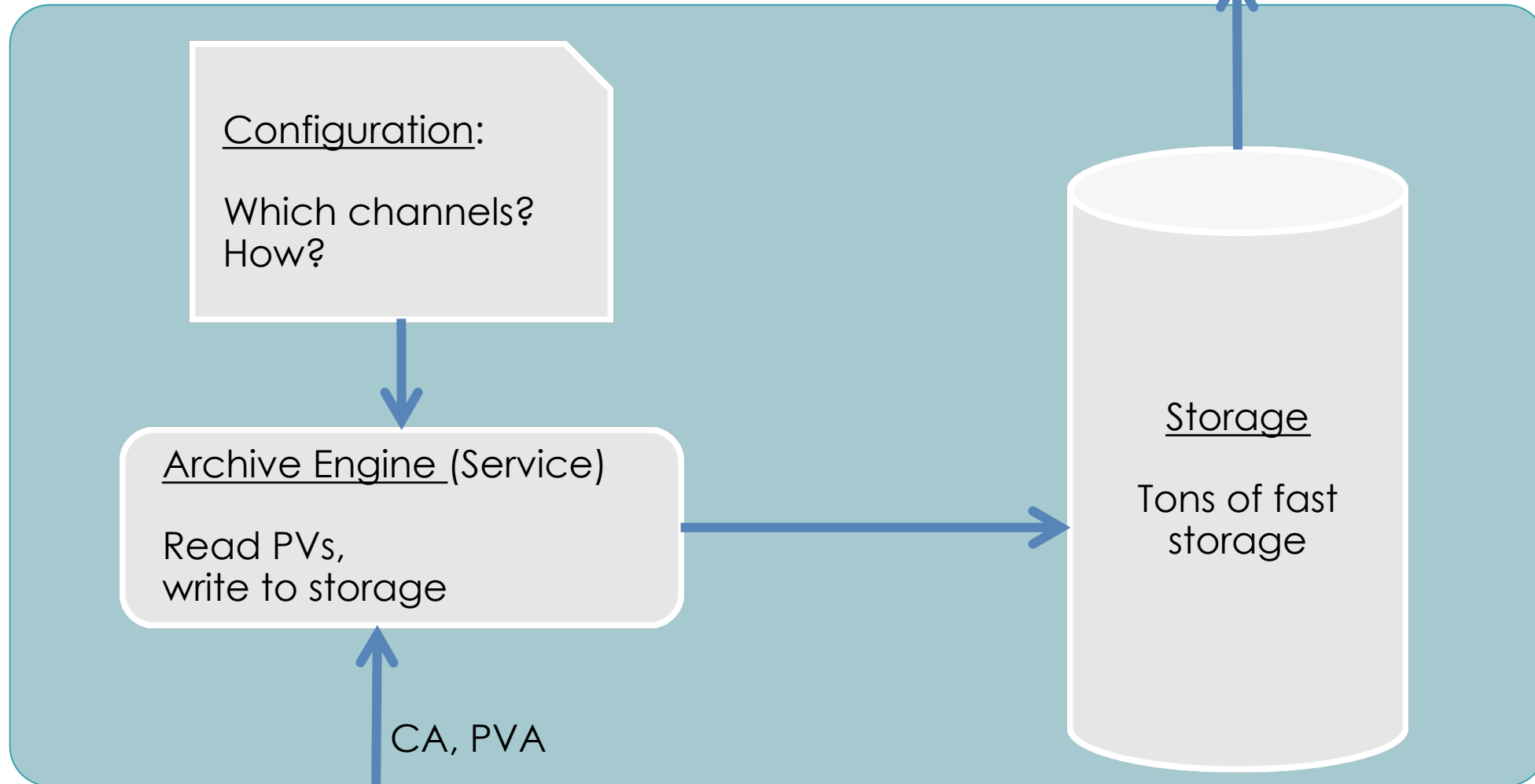
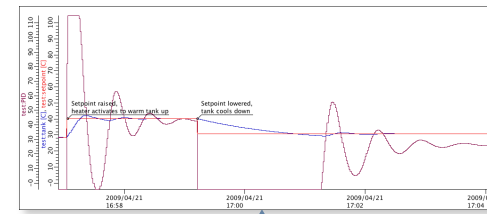
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ORNL is managed by UT-Battelle, LLC for the US Department of Energy

# Idea



# Practice



# Choices...

- Channel Archiver: XML config, custom file storage
  - Fast
  - Fragile
  - Data access via C++ library & web service
  - Can't be maintained as setup grows
- RDB: RDB for both config and storage
  - Slow
  - Robust
  - Access from any piece of code
  - Very maintainable for decades
- SLAC Archiver Appliance: RDB config, custom protobuf storage
  - Fast
  - Robust?
  - Web service
  - Maintainable over time?



# IOC Configuration

Archive engines subscribe to “archive” events (DBE\_ARCHIVE)

```
camonitor -m 1 the_pv_name
```

For analog records, configure the ADEL field

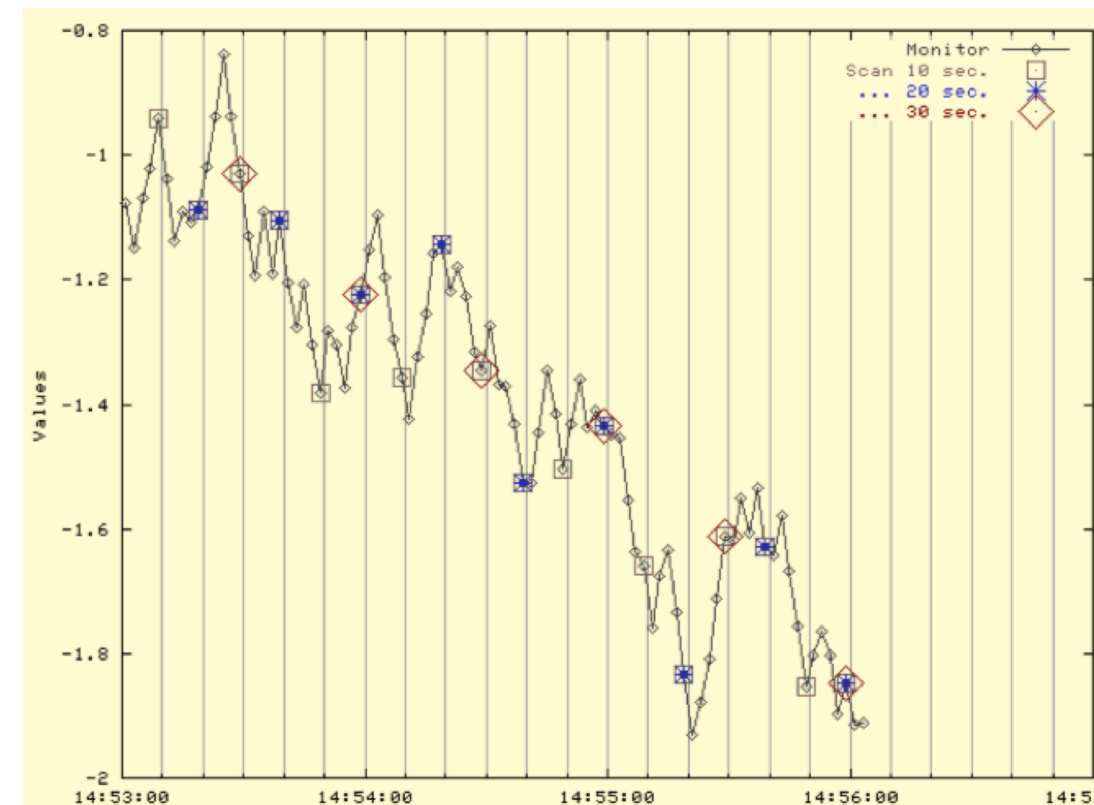
Unfortunately not perfect for ‘log’ type values like vacuum pressures

Assert that your IOC knows the time

Check time stamps reported by `camonitor`

# Archive Engine Options

- Monitor
  - Tries to save every received update
  - Based on ADEL
  - Might need an expected-update-rate to allocate buffers, skipping samples if there are too many
- Scan
  - Writes the most recent value every N seconds
  - Stores original time stamps



# Setup of RDB Archive

- See phoebus online help or <https://github.com/shroffk/phoebus/blob/master/services/archive-engine/doc/index.rst>
1. Install MySQL
  2. Setup archive tables



# Configure RDB Archive

```
cd ~/epics-train/examples/archive/
```

```
archive_engine -help
```

```
archive_engine -list
```

```
archive_engine -engine Demo -export `pwd`/Demo.xml
```

```
archive_engine -engine Fishtank -import `pwd`/Fishtank.xml
```

```
archive_engine -engine Fishtank -settings my_settings.ini
```

Check <http://localhost:4812> in web browser



# Viewing Archived Data

Open Data Browser, add PV

Data Browser Preferences:

```
org.csstudio.trends.databrowser3/urls=jdbc:mysql://localhost/archive|RDB  
org.csstudio.trends.databrowser3/archives=jdbc:mysql://localhost/archive|RDB  
org.csstudio.trends.databrowser3/use_default_archives=true
```

# Archive

- Fundamentally simple: Store values of PVs
- There is no perfect implementation
  - Can't store everything at high rate forever
- Looking at data in Data Browser is easy