Update on Offline Databases

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Overview

Brief updates on two topics:

- Slow Controls

  - Now have access to DCS-DB of NP02 (previously only NP04)

  - List of needed sensors is growing

  - Questions about data transfer from DCS-DB to Master Metastore

- HSF Inspired Conditions DB

  - Integration of client-side libraries into SciSoft is underway

DCS-DB – NP02

- Had another chat with Roland

  - Provided authentication for NP02 DCS-DB

- Existing REST-API for NP04 used hard-coded queries

  - Extracted all NP04/02-specific stuff to environment variables

- Now, same REST API can serve either NP02 or NP04 (different setup scripts)

  - Deployed one instance each on CERN VM

    - They serve different ports

    - Ping me if you need access

Slow Controls - Collecting Use Cases

- Presented in ProtoDUNE-VD meeting

    - Call for action: fill out requirements for Slow Controls DB (esp. NP02)

- Already gathered metadata use cases HD here (slow controls is just a subset of this):

    https://docs.google.com/document/d/1DhIziY1VKIdOu0eACHBxA36Ru9rj4P6Tdm_OmZpbNXo/edit

- Gather metadata uses cases for VD here (still empty, probably very similar):

    https://docs.google.com/document/d/1V9TRNr6tYANk74Hi2ivhR0ZFn2pdZyAaLHU8lEvjuRI/edit

- Gather Slow Controls specific data for HD & VD (including technical details like sensor ID):

    https://docs.google.com/document/d/1uJAJA09neah6hNmw--yIgbfpBrDquMfwdveuVsewh6w/edit

- All google docs can be edited, feel free to contribute!

Apparently, something for NP02 already exists, people will point me to it

Data from DCS-DB - Example

- Had a chat with Elisabetta. Started gathering necessary information (NP02):

  - LAr purity, temperature, level

  - Cathode HV

  - Thermodynamic conditions of cryostat (temp, pressure)

Description	Sensor id:name(s) in DCS-DB	Needed granularity	Needed precision
LAr purity	"47928748016410" : "NP04_DCS_01:PrM0.PrM_corrected_e_lifetime", "47928764793626" : "NP04_DCS_01:PrM1.PrM_corrected_e_lifetime", "47928781570842" : "NP04_DCS_01:PrM2.PrM_corrected_e_lifetime"		
LAr temperature	Mean(s): "47931130380570" : "NP04_DCS_01:top_temp_mean.", "47931147157786" : "NP04_DCS_01:bottom_temp_mean." 48 individual sensors: "47890261082394" : "NP04_DCS_01:TE0001.", ... "47891049611546" : "NP04_DCS_01:TE0048.",		
High Voltage	drift-inducing: "47894774153498" : "NP04_DCS_01:Heinz_V." to find unstable periods "47894757376282" : "NP04_DCS_01:Heinz_I.", "48005101125914" : "NP04_DCS_01:Heinz_I_Filtered.", "48002299330842" : "NP04_DCS_01:Heinz_V_Cathode.", "48001913454874" : "NP04_DCS_01:Heinz_V_Raw.",		

This is a good start, but there is probably more

- We need input from analyzers to complete this list
- Adding additional data later is of course possible

Example table for NP04

Copying data from DCS-DB to Masterstore

- Plan: transfer all necessary data from DCS-DB to Metastore

- Some analysis might need full raw data from a sensor:

  - E.g. search for unstable HV periods

- Naïve approach: copy raw data from all interesting sensors to Metastore

  - E.g. cron job once per day / end of each run

- What are UconDB constraints on data volume?

- Sensors can write at strongly varying rates

  - Have seen rates from 5 / sec to 1 / min

- Typical sensor (e.g. cathode HV) records ~50 kB per day

  - How many sensors will we consider? Currently < 100

HSF Inspired Conditions DB

Reminder: plan is to use HSF-design as alternative to existing solution for performance comparison

- Backend instances already hosted at CERN & BNL

  - Both only accessible from within resp. network so far

- Client-side library integration ongoing

- Created ticket on cdcvs: https://cdcvs.fnal.gov/redmine/issues/28198

  - Status changed from 'request' to 'accepted'

  - Still some open questions to address before first build