

Epics2Tine

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Some History ...

- Initial Release: 1.0
 - ICALEPCS 2001, PCaPAC 2002
 - Read-only
 - EPICS iocs were VxWorks only (hard ioc)
- 2nd Release: 2.0
 - PCaPAC 2005
 - Read/Write
 - Other Platforms (**soft ioc**)
 - Alarm re-issue
- 3rd Release: 3.0.1
 - Integration of native EPICS Alarms
 - Based on EPICS 3.14.7.2 and TINE 3.31.



Advantages of Soft ioc

- More flexible structure of main DESY EPICS subsystem
 - (We are using particular softIOC process for MKK, PowerStation, North, South, etc.)
- Easier to manage this process
 - standard UNIX ps screen
 - crone table
 - Etc.



Epics2Tine : How it works (1)

- is a process/task which is started on the EPICS ioc after EPICS is running.
- scans the EPICS database for the io records
 - “AB:CD:xyz” becomes device “AB:CD” with property “xyz”, etc.
- READs reconstruct the record name, append “.VAL” and call dbget() (NOT caget(!)).
- WRITES do the same and call dbput().



Epics2Tine : How it works (2)

- EPICS “fields” are mapped into TINE property meta information
- EPICS ALARMS are mapped to TINE alarms (EPICS 3.14 or higher)
- Allow “Composite Properties and Devices”.
 - Map and/or group EPICS records into a (semi-) atomic group call as a multi-channel array
- Get all of the benefits of TINE : multicast, payload size, local histories, multi-channel arrays, hierarchical naming scheme, naming services

How Composites Work

- Configuration file (composite.csv)
 - Composite Property, Device + structure:

The image shows a Windows Explorer window displaying a CSV file named 'composites.csv'. The file is open in a table view with columns A through E. The data includes device names, property names, formats, descriptions, and structure files. A red circle highlights the 'STRUCTUREFILE' column, and a red arrow points from it to a sub-window titled 'Hera_WestFB_DW21.csv'. This sub-window shows a detailed view of the structure file, with columns A through D. The data in the sub-window includes device names, aliases, and descriptions.

	A	B	C	D	E
1	DEVICENAME	PROPERTYNAME	FORMAT	DESCRIPTION	STRUCTUREFILE
2	WestFB_DW21	WFBDW21	INTEGER	HERA West FB DW-21 to 53	Hera_WestFB_DW21.csv
3	WestFB_DW55	WFBDW55	INTEGER	HERA West FB DW-55	Hera_WestFB_DW55.csv
4	WestFB_DW56	WFBDW56	INTEGER	HERA West FB DW-56	Hera_WestFB_DW56.csv
5	WestFB_DW57	WFBDW57	INTEGER	HERA West FB DW-57	Hera_WestFB_DW57.csv
6	WestFB_DW58	WFBDW58	INTEGER	HERA West FB DW-58	Hera_WestFB_DW58.csv
7	WestFB_DW59	WFBDW59	INTEGER	HERA West FB DW-59	Hera_WestFB_DW59.csv
8	WestFB_DW60	WFBDW60	INTE		
9	WestFB_DW61	WFBDW61	INTE		
10	WestFB_DW62	WFBDW62	INTE		
11	WestFB_DW64	WFBDW64	INTE		
12	WestCont_Reg100	WContR100	INTE		
13	WestCont_Reg101	WContR101	INTE		
14	WestCont_Reg102	WContR102	INTE		
15	WestCont_Reg104	WContR104	INTE		
16	WestCont_Z4ai	WContZ4	FLO		
17	WestCont_StSG	WContStSG	INTE		
18	WestFBTest2651	WFBDW2651	INTE		
19	HSTA_V	HSTA_V	FLO		
20	HSTB_V	HSTB_V	FLO		
21	HSTC_TF1A_V	HSTC_TF1A_V	FLO		
22	HSTC_TF1B_V	HSTC_TF1B_V	FLO		

	A	B	C	D
1	Device	Alias	Description	
2	HE:K:ST:S1:DW21_R2_bi	"DW21_R2"	"Freigabe Steller Bed-Fuehr."	
3	HE:K:ST:S1:DW35_L5_bi	"DW35_L5"	"Fuehrung Schaltan. MEL. HERA"	
4	HE:K:ST:S1:DW52_L3_bi	"DW52_L3"	"Anwahl Reglerfreigabe"	
5	HE:K:ST:S1:DW53_L0_bi	"DW53_L0"	"Anwahl Bedienung Steller/Hera"	
6	HE:K:ST:S1:DW53_L1_bi	"DW53_L1"	"Bedienung Steller"	
7	HE:K:ST:S1:DW53_L2_bi	"DW53_L2"	"Bedienung Hera"	
8	HE:K:ST:S1:DW53_L7_bi	"DW53_L7"	"Hilfsbetriebe Ein/Aus"	
9				
10				

Composites (a practical example)

The screenshot shows the 'Instant Client' window with the following configuration:

- Device Context: MKK
- Device Subsystem: ALL
- Device Server: INFRASTRUCT
- Device Name: Power:Station
- Device Property: L1L2_ai
- Data Size: 1
- Data Type: DOUBLE
- Description: Power St Group L1L2

The output window displays: `(0) 0`

Epics Channel Names

The screenshot shows the 'Instant Client' window with the following configuration:

- Device Context: MKK
- Device Subsystem: ALL
- Device Server: INFRASTRUCT
- Device Name: L1L2
- Device Property: Mains
- Data Size: 3
- Data Type: FLOAT
- Description: Main station A Voltages
- Timeout: 1000

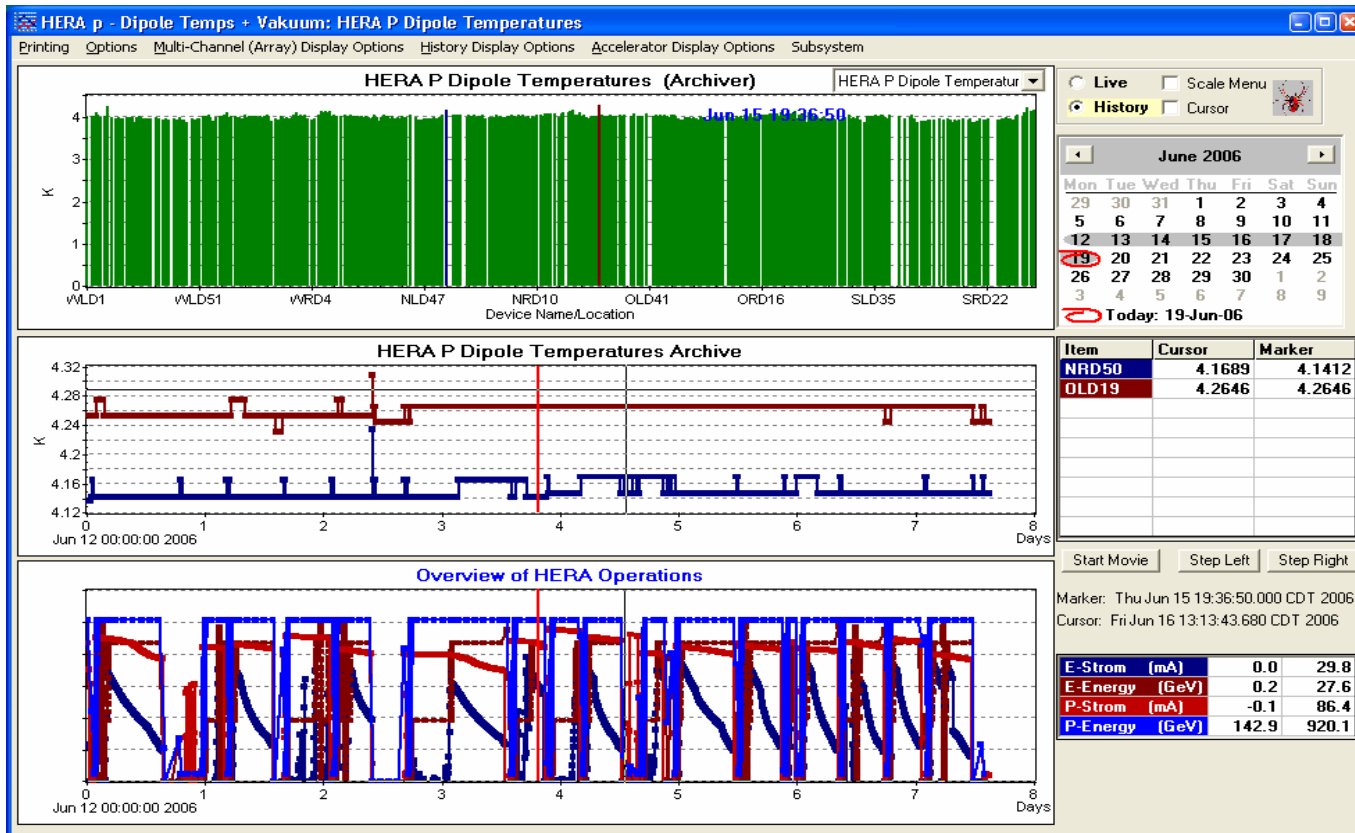
The output window displays: `/MKK/INFRASTRUCT/L1L2 Mains @ Sep 21 09:33:58.450`

```
( 0 ) L1L2 : 0
( 1 ) L2L3 : 77
( 2 ) L3L1 : 0
```

Control buttons on the right include READ, POLL, Draw Mode (Text dun), Autoscale, and Log Scale.

Composite Names

EPICS to TINE @ HERA





Getting Epics2Tine

- <http://www-mks2.desy.de>
- <http://tine.desy.de>