

Some Problems about Current DAQ Status

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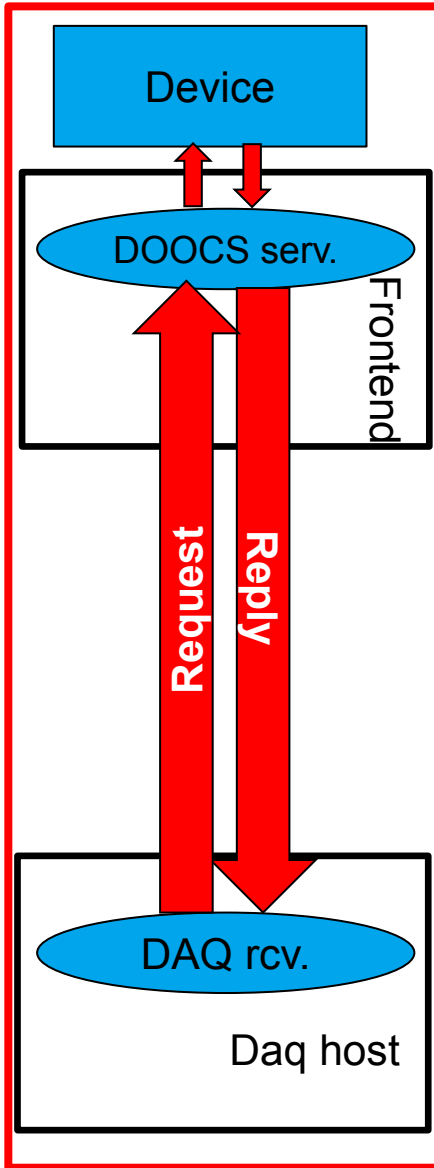
Content

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- Outlook

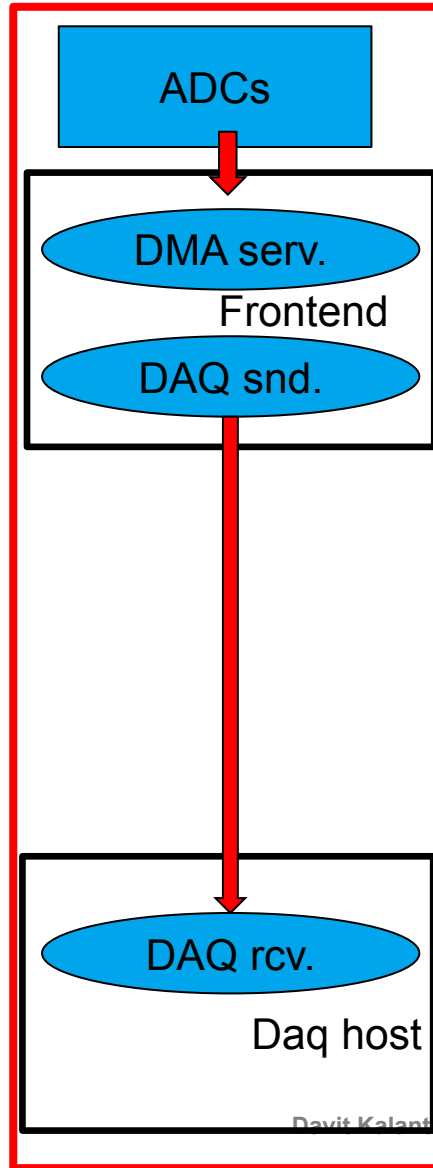


PITZ DAQ scheme

Req. Rep. based DAQ (RR)



Event Based DAQ (EB)



PITZ DAQ servers types

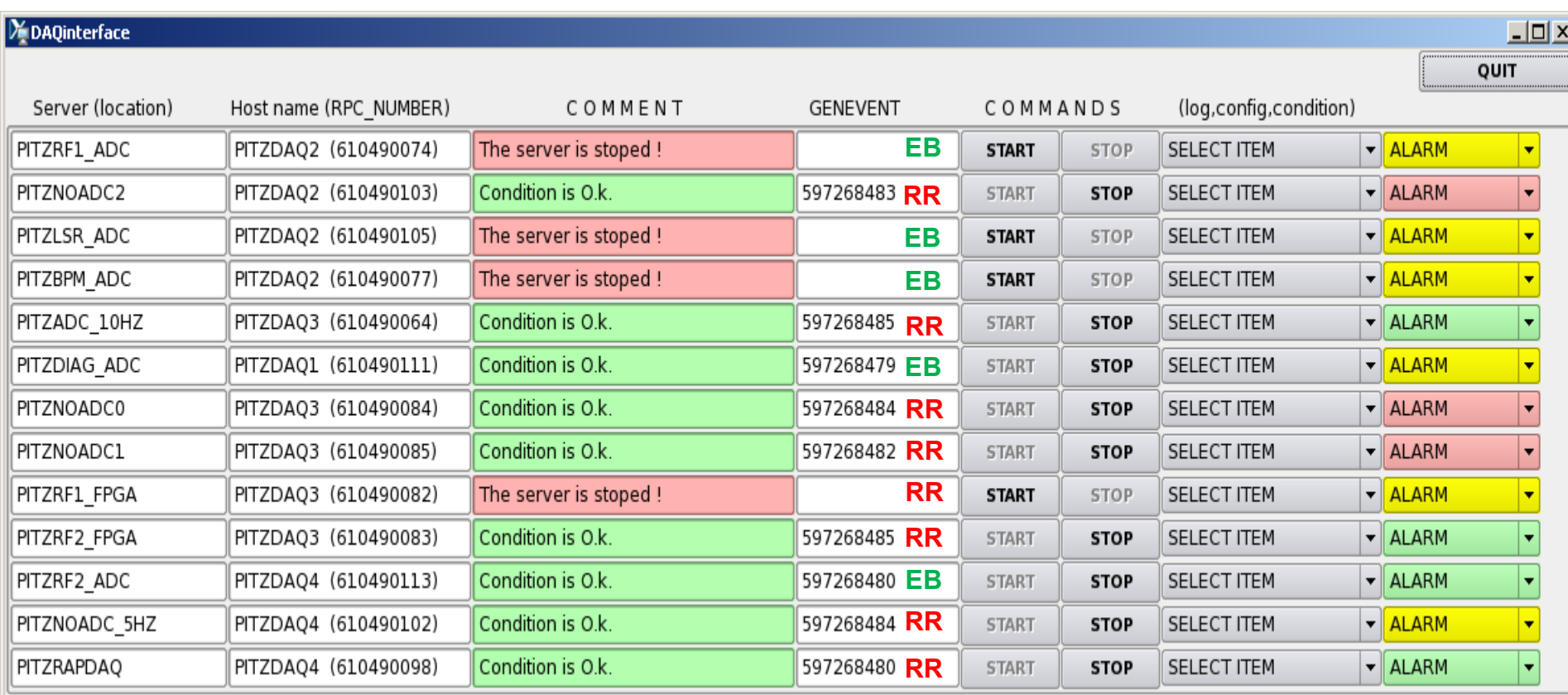
EB -> Event Based

RR -> Request Reply based

RF2_ADC: ~800 kB/s CPU load ~10%

ADC.10Hz: ~300 kB/s CPU load ~50%

NOADC.5Hz: ~1.18 kB/s CPU load ~10%



Server (location)	Host name (RPC_NUMBER)	COMMENT	GENEVENT	COMMANDS	(log,config,condition)
PITZRF1_ADC	PITZDAQ2 (610490074)	The server is stoped !	EB	START STOP	SELECT ITEM ALARM
PITZNOADC2	PITZDAQ2 (610490103)	Condition is O.k.	597268483 RR	START STOP	SELECT ITEM ALARM
PITZLSR_ADC	PITZDAQ2 (610490105)	The server is stoped !	EB	START STOP	SELECT ITEM ALARM
PITZBPM_ADC	PITZDAQ2 (610490077)	The server is stoped !	EB	START STOP	SELECT ITEM ALARM
PITZADC_10HZ	PITZDAQ3 (610490064)	Condition is O.k.	597268485 RR	START STOP	SELECT ITEM ALARM
PITZDIAG_ADC	PITZDAQ1 (610490111)	Condition is O.k.	597268479 EB	START STOP	SELECT ITEM ALARM
PITZNOADC0	PITZDAQ3 (610490084)	Condition is O.k.	597268484 RR	START STOP	SELECT ITEM ALARM
PITZNOADC1	PITZDAQ3 (610490085)	Condition is O.k.	597268482 RR	START STOP	SELECT ITEM ALARM
PITZRF1_FPGA	PITZDAQ3 (610490082)	The server is stoped !	RR	START STOP	SELECT ITEM ALARM
PITZRF2_FPGA	PITZDAQ3 (610490083)	Condition is O.k.	597268485 RR	START STOP	SELECT ITEM ALARM
PITZRF2_ADC	PITZDAQ4 (610490113)	Condition is O.k.	597268480 EB	START STOP	SELECT ITEM ALARM
PITZNOADC_5HZ	PITZDAQ4 (610490102)	Condition is O.k.	597268484 RR	START STOP	SELECT ITEM ALARM
PITZRAPDAQ	PITZDAQ4 (610490098)	Condition is O.k.	597268480 RR	START STOP	SELECT ITEM ALARM



Introduction to problem 1

VII Controls

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1) ...

2) ...

3) ...

4) ...

5) ...

6) DAQ: Single configuration point will be created by Davit. Concept to be discussed in the PPS: synchronization of 'slow' data with general events.

7) ...

8) ...

9) ...

10) ...

11) ...

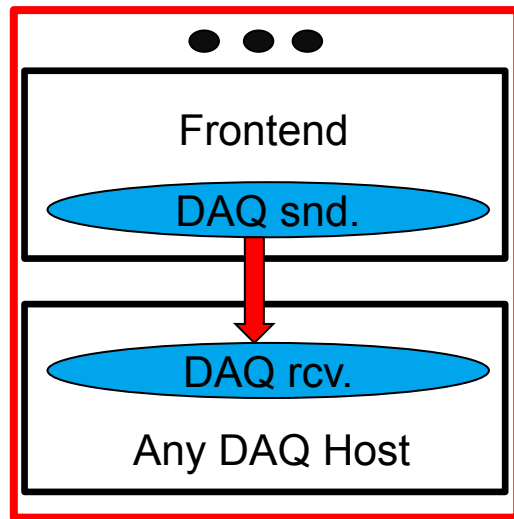
12) ...

There is a point from Monday meeting protocol in Controls section.
Concepts and status of this will be discussed in this seminar



Introduction to problem 2

Following problem has been observed by physicists: DAQ server worked, but there were no data under some properties



The reason was following: New properties were configured only in DAQ receiver side and not in the other necessary places.

Currently for adding new ADC channel to **EB** DAQ one should configure following

1. Config file for DAQ sender.
2. Runtime DOOCS property (`../.././CHn_DAQ_START`)
3. Config file for DAQ receiver with correct branch names for each spectrum
4. Config file that used with DAQ GUIs (`daqpr`, `daqpr_Spectr`)

Configuring same thing in several places is not good and there was request to make single and simple configuration mechanism

Possible solutions!

1. Create a tool (program or script) that will do this configuration automatically.
- or
2. To do this in DAQ programs level.



Overview of configuration points

doocsadm@mtcallrfcpu2: /etc/rc6.d - picus4 - Konsole

Session Edit View Bookmarks Settings Help

Config file with poliparams for DAQ sender, last field

0	PITZ.RF/FASTADC/RF2.ADC0/CH00	1	1.60400e+00	-2.81200e-04	0.00000e+00	0
1	PITZ.RF/FASTADC/RF2.ADC0/CH01	1	6.60000e+00	-6.83877e-04	0.00000e+00	1
2	PITZ.RF/FASTADC/RF2.ADC0/CH02	1	1.26578e+02	-1.43890e-02	9.30000e-09	1
3	PITZ.RF/FASTADC/RF2.ADC0/CH03	1	1.28148e+02	-1.40110e-02	-1.60000e-08	1
4	PITZ.RF/FASTADC/RF2.ADC0/CH04	1	1.29180e+02	-1.40630e-02	-7.80000e-09	1

1, 2 Top

mtcapitzcpu3_klog picus4 mtcallrfcpu5 blade83 pitzdaq1 Shell No. 3

DOOCS Communication and Plot Utility (Vers. API 18.9.4, DDD 18.9.4) kalantar@pi4-vm1.ifh.de

PITZ.RF SCOPEDAQRF2 RF2.ADC CH00_DAO_START

DOOCS property to be set

Property	Description
CH00.POLYPARA	IFFF
CH00_DAO_START	INT

pitzrf2.adc.config.new - /afs/ifh.de/group/pitz/doocs/data/DAQdata/config/

File Edit Search Preferences Shell Macro Windows Help

Config file for DAQ receiver

6						
7	# Board number 0					
8	RF2Strobe	PITZ.RF/FASTADC/RF2.ADC0/CH01.TD	0	2048	1	1
9	RF2WG1CavityRE	PITZ.RF/FASTADC/RF2.ADC0/CH02.TD	0	2048	1	2
10	RF2WG1CavityFW	PITZ.RF/FASTADC/RF2.ADC0/CH03.TD	0	2048	1	3
11	RF2WG1CircRE	PITZ.RF/FASTADC/RF2.ADC0/CH04.TD	0	2048	1	4
12	RF2WG1CircFW	PITZ.RF/FASTADC/RF2.ADC0/CH05.TD	0	2048	1	5

pitzrf2.adc.config - /afs/ifh.de/group/pitz/doocs/data/DAQdata/config/

File Edit Search Preferences Shell Macro Windows Help

Config file used by DAQ GUIs (daqpr,daqpr_Spectr)

6						
7	RF2 ADC0_CH00	PITZ.RF/FASTADC/RF2.ADC0/CH00.TD	0	2048	1	19
8	RF2Strobe	PITZ.RF/FASTADC/RF2.ADC0/CH01.TD	0	2048	1	19
9	RF2WG1CavityRE	PITZ.RF/FASTADC/RF2.ADC0/CH02.TD	0	2048	1	19
10	RF2WG1CavityFW	PITZ.RF/FASTADC/RF2.ADC0/CH03.TD	0	2048	1	19

Outlook

- For solving Problem1 socket should be changed to non-blocking one (select then receive) or blocking with timeout
- For Problem2: memory limitation is set now, later AFS cleaner will be implemented.
- Program for doing these configurations automatically is under development (temporary and fast solution).
- Later this will be done in DAQ programs level. Soon DAQ software should be reworked significantly because of MTCA crates will be used for some ADCs. This reworking can be used for implementing correct configuration algorithm and fixing other problems of DAQ observed so far.

