



ALICE

ALICE Data Quality Monitoring

Introduction to shifter's operations

Part 2

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Introduction to DQM shifter's operations

- Using the DQM framework -

Preliminary instructions

Start the DQM session

The InfoBrowser

The amoreAgentsManager window

AmoreVisualization window (the GUI)

DQM histograms

Histograms by trigger classes

Quality flags

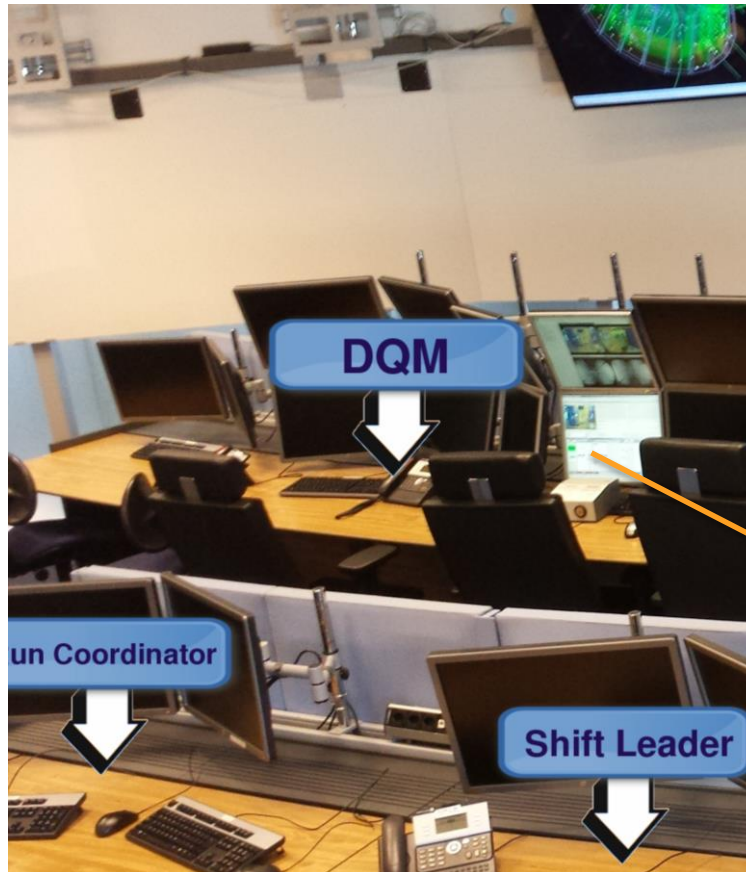
GUI layout

NOT TO DO

At the beginning of your shift...

- Get a report from the previous shifter about the current activity
- Check the blackboard in the TWiki for the pending and solved issues
- Inspect the previous End-Of-Shift (EOS) report and take note of the open issues for your own report (→ see “Reporting” session of this training)
- Open on the web browser the following pages :
 - Shifter’s guide:
<https://twiki.cern.ch/twiki/bin/viewauth/ALICE/AliceDQM>
 - Blackboard:
<https://twiki.cern.ch/twiki/bin/viewauth/ALICE/DQMBlackboard>
 - ALICE logbook (Runs view)
- Start the DQM framework if not already open

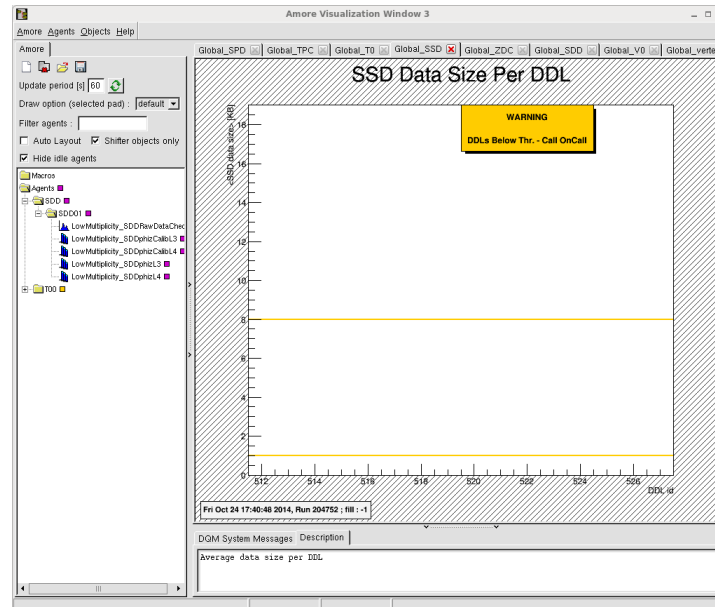
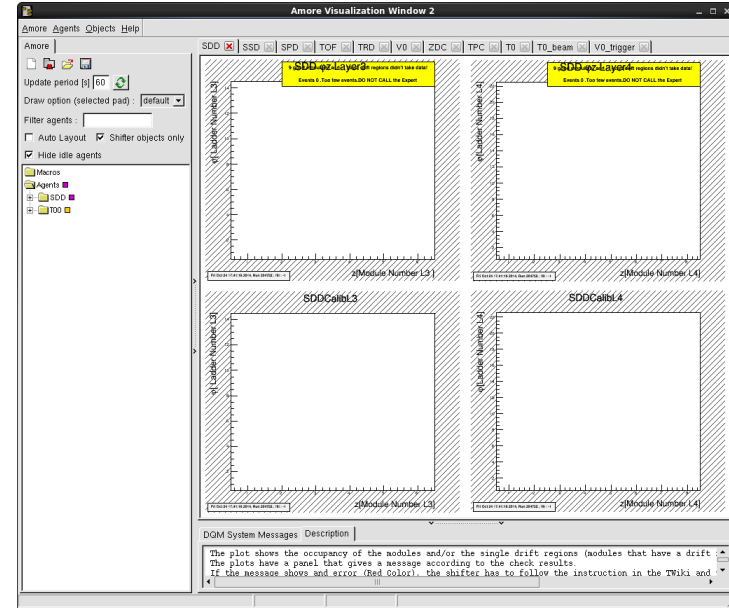
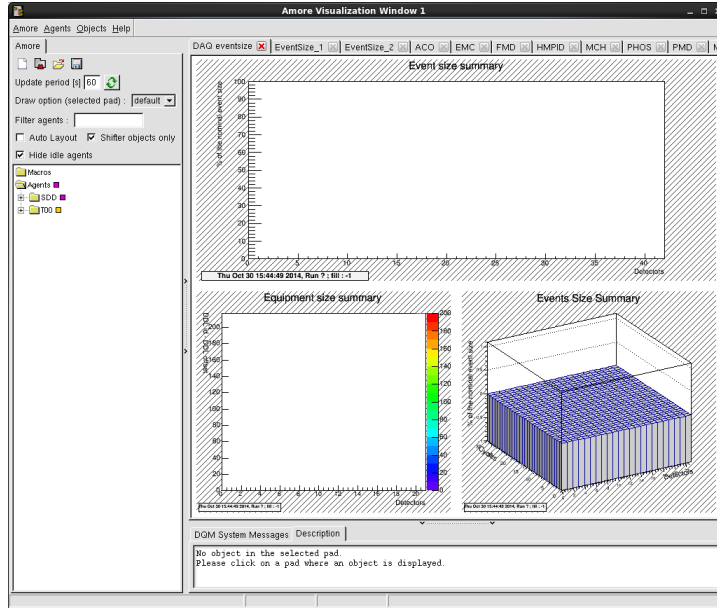
DQM station



first line on the left

- ✓ as DQM shifter you will use the DQM station ([arcdqm](#)) → autologin
- ✓ this means you *don't need a password* to login

AMORE Visualisation Windows



Start the DQM session

click on the button on the top left part of the tool bar



alternatively you can do the following:

Open an **xterm** by clicking on the xterm icon in the menu bar and type:

```
arcdqm> ./dqm-shifter-setup (in local/home/dqm/bin)
```

The following windows will open automatically:

- **Amore Visualization Window 1** (event size plots for partitions PHYSICS1 and 2)
- **Amore Visualization Window 8** (ACO EMC FMD HMPID MCH PHOS PMD MTR)
- **Amore Visualization Window 9** (SDD SSD SPD TOF TRD V0 ZDC TPC T0 AD_Charge AD_Time T0_beam V0_trigger)
- **Amore Visualization Window 10** (SPD vertex and Global plots)
- **TRIGGER GUI**

Please make sure that **only one instance** of every window is open at the time

- If the **run type changes** (e.g. from beam to cosmics or viceversa) during a session, nothing has to be done, **just wait the GUI(s) to refresh!**

If you need to open only one of the windows:

```
arcdqm> amoreGui #
```

```
arcdqm> amore -d TRI -m Shifter
```

The InfoBrowser



The screenshot shows the 'infoBrowser' application window. At the top, there are menu options: 'Quit', 'Archive', 'Filters', and 'Export'. Below the menu is a toolbar with various checkboxes for filtering: 'Level', 'Date', 'Time', 'decimals', 'Host', 'Role', 'Pid', 'Username', 'System', 'Facility', 'Stream', 'Run', and 'Message'. The main area is a table with the following columns: 'Level', 'Time', 'Host', 'Facility', and 'Message'. The table contains a list of messages, with several 'ERROR' messages highlighted in red. The messages are from the 'AMORE' facility and include error messages like 'Can't receive event. Please check the data source'. There are also 'Info' messages from various facilities like 'PCA_HI', 'runControlHI', 'DCA_HI', and 'DCA'. At the bottom of the window, there is a search bar with fields for 'Time', 'Level', 'Hostname', 'Rolename', 'Username', 'System', 'Facility', 'Stream', 'Run', and 'Message'. There are also buttons for 'Query', 'Online', and 'Find'. The status bar at the bottom shows 'Status : Connected' and 'Query : Online data - from 02/04/2010 16:52:39'. The bottom-most bar shows '3511 messages, 127 errors' and a 'Find' button.

Level	Time	Host	Facility	Message
ERROR	18:24:37	aldaqdm09	AMORE	Can't receive event. Please check the data source
ERROR	18:25:27	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:27:07	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:28:47	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:29:38	aldaqdm09	AMORE	Can't receive event. Please check the data source
ERROR	18:30:27	aldaqdm04	AMORE	Can't receive event. Please check the data source
Info	18:31:26	aldaqacr05	PCA_HI	DETECTOR: PMD is excluded from partition PHYSICS_1
Info	18:31:26	aldaqacr05	runControlHI	Current configuration loaded from : DATE_CONFIG
Info	18:31:26	aldaqecs02	runControl	New configuration loaded from : Database DATE_CONFIG
Info	18:31:27	aldaqacr05	runControlHI	Current Run parameters loaded from : DATE_CONFIG
Info	18:31:27	aldaqacr05	runControlHI	Current RC options loaded from : DATE_CONFIG
Info	18:31:33	aldaqacr05	DCA_HI	Sets GDC: NO Recording
Info	18:31:35	aldaqecs02	PCA	There are NOT READY readout detector(s)
Info	18:31:35	aldaqecs02	DCA PMD is NOT_READY(BEAM_TUNING)
Info	18:31:35	aldaqecs02	runControl	New configuration loaded from : Database DATE_CONFIG
Info	18:31:35	aldaqecs02	runControl	Run parameters loaded from : DEFAULT DATE_CONFIG
Info	18:31:35	aldaqecs02	runControl	Current Run parameters loaded from : Database DATE_CONFIG
Info	18:31:35	aldaqacr05	PCA_HI	DETECTOR: PMD is included in partition TEST_1
Info	18:31:36	aldaqacr05	runControlHI	Current configuration loaded from : DATE_CONFIG
Info	18:31:36	aldaqacr05	runControlHI	Current Run parameters loaded from : DATE_CONFIG
Info	18:31:36	aldaqacr05	runControlHI	Current RC options loaded from : DATE_CONFIG
Info	18:31:40	aldaqacr05	PCA_HI	Revokes HLT control for TEST_1
Info	18:31:59	aldaqacr05	PCA_HI	Grants HLT control for TEST_1
Info	18:32:03	aldaqacr05	PCA_HI	REQUEST_RESOURCES sent to PCA
Info	18:32:03	aldaqecs02	DCA	Releasing resources
Info	18:32:03	aldaqecs02	DCA	Unlocking DAQ parameters
Info	18:32:03	aldaqecs02	DCA	Disconnecting
Info	18:32:03	aldaqecs02	runControl	Disabling logbook update (DISCONNECTED)
Info	18:32:03	aldaqecs02	runControl	shutdown (DATEPMD_CONTROL)
Info	18:32:03	aldaqecs02	runControl	shutdown (DATEPMD_CONTROL_1)
Info	18:32:06	aldaqacr05	DCA_HI	Sets HLT mode A: no data to HLT, no data from HLT, no decisions
ERROR	18:32:07	aldaqdm04	AMORE	Can't receive event. Please check the data source
Info	18:32:09	aldaqacr05	PCA_HI	Revokes HLT control for TEST_1
ERROR	18:33:47	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:34:38	aldaqdm09	AMORE	Can't receive event. Please check the data source
ERROR	18:35:27	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:37:07	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:38:47	aldaqdm04	AMORE	Can't receive event. Please check the data source
ERROR	18:39:38	aldaqdm09	AMORE	Can't receive event. Please check the data source
ERROR	18:40:27	aldaqdm04	AMORE	Can't receive event. Please check the data source

It opens up automatically when the DQM session starts

The infoBrowser receives error messages from the Amore system.

It shows by default all messages from the current run, including SOR/EOR.

We filter only messages coming from AMORE

!!! Look at backup slides to see how the InfoBrowser works !!!

amoreAgentsManager



The AMORE agents:

- are monitoring processes
- analyze raw data samples and produce monitoring histograms
- each of them receive data from a specific source
- produce expert and shifter histograms that can be displayed on the AMORE GUI (Graphical User Interface)

Production agents:

- Are marked with the flag **Prod = 1** in the manager
- **They have to run all the time**

New amoreAgentsManager (web tools)



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<https://aldaqweb.cern.ch/amore/amoreAgentsManager/> access given to the shifter only during the shift

AMORE Agents Manager Modules Self-Service Configuration Files Database Editor Logout

Refresh Filter: (Current:)

Auto Refresh (1 min) Please use only if really needed
 Show only production agents

Running Agents (35)

Agent	Role	Det	Default Source	Module	Prod
ACOQA	DET_01	ACO	^ACORDE	PublisherQA	1
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAshifter	1
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA	1
DAQHltCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtpHlt	1
DAQHltCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtpHlt	1
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMonitor	1
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMonitor	1

Stop
Restart with default parameters
Restart
Show Logs

Available Agents (130)

Agent	Role	Det	Default Source	Module	Config Files	Prod	Flags
DAQshifterTime_PH_3	DAQ_02	DAQ	=PHYSICS_3	DATETimeMonitor	eventSizePP.config	0	-u -t 30 -p PHYSICS_3 -f S
DAQshifterTime_PH_4	DAQ_01	DAQ	=PHYSICS_4	DATETimeMonitor	eventSizePP.config	0	-u -t 30 -p PHYSICS_3 -f S
DAQshifter_PHYSICS_3	DAQ_01	DAQ	=PHYSICS_3	DATETimeMonitor	eventSizePP.config	0	-u -t 20 -p PHYSICS_3 -f S
DAQshifter_PHYSICS_4	DAQ_02	DAQ	=PHYSICS_4	DATETimeMonitor	eventSizePP.config	0	-u -t 30 -p PHYSICS_4 -f S
DAQTime_ACO	DET_01	ACO	^ACORDE	DATETimeMonitor	eventSizePP.config	0	-t 30 -p ACO -u
DAQTime_EMCC	DET_01	EMC	^EMCaL	DATETimeMonitor	eventSizePP.config	0	-t 30 -p EMC -u
DAQTime_FMD	DET_01	FMD	@gdc-DET-FMD-0:	DATETimeMonitor	eventSizePP.config	0	-t 30 -p FMD -u

Start with default parameters
Start
Start all production agents
Show Logs

Archiver

Archiver status (host is MISC_01 : aldaqdm05) : Running

Messages

same features and layout as the old one, but provided as web tool

amoreAgentsManager – Filter agent name



Refresh

Filter: (Current:)

Auto Refresh (1 min)
 Show only production agents

Filter field:

1. filter here agent name
2. press “Enter” to apply filter
3. Press “Refresh” to update the list of running agents

- You can filter also by detector or agent name
- This will allow you to act only filtered agents

Agent	Host Role	Det	Default Source	Module
ACOQA	DET_01	ACO	^ACORDE	PublisherQA
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAsh
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA
DAQHitCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtp
DAQHitCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtp
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMon
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMon
DAQshifter_PHYSICS_1	DAQ_01	DAQ	=PHYSICS_1	DATETimeMon

Start all production agents

Show Logs

Archiver

Archiver status (host is MISC_01 : aldaqdm05) : Running

Messages

Users Actions

amoreAgentsManager – not running agents



AMORE agents manager - Mozilla Firefox

ALICE Electronic Logbook | AMORE GUI user guide | A... | DQMBBlackboard < ALICE ... | Daniele De Gruttola - O... | AMORE agents manager

https://aldaqweb.cern.ch/amore/amoreAgentsManager/

AMORE Agents Manager Modules Self-Service Configuration Files Database Editor Logout

Refresh Auto Refresh (1 min)

Available agents table:

- see which agent are not running but available
- Verify agents options
- Start agents
- Inspect the logs of the agents

Agent	Host Role	Det	Default Source	Module
ACOQA	DET_01	ACO	^ACORDE	PublisherQA
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAshifter
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA
DAQHitCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtpHit
DAQHitCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtpHit
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMonitor
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMonitor

Available Agents (1)

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
AD0QAshifter	DET_02	AD0	^V0	PublisherQAshifter	amoreUIConfigAD0QA.txt	1	-u -t 45

Start with default parameters

Start

Start all production agents

Show Logs

Archiver

Archiver status (host is MISC_01 : aldaqdm05) : Running Start Stop Restart Logs

Messages

Users Actions

amoreAgentsManager – running agents



AMORE agents manager - Mozilla Firefox

ALICE Electronic Logbook | AMORE GUI user guide | A... | DQMBlackboard < ALICE ... | Daniele De Gruttola - O... | AMORE agents manager

https://aldaqweb.cern.ch/amore/amoreAgentsManager/

AMORE Agents Manager Modules Self-Service Configuration Files Database Editor Logout

Refresh

Filter: (Current:)

Auto Refresh (1 min)
 Show only production agents

Running Agents (44)

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
ACOQA	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAshifter	aco.configfile	1	-u -t 45 -p ACO
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
DAQHitCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_1
DAQHitCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_2
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMonitor	eventSizePP.config	1	-u -t 45 -p PHYSICS_1 -f S
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMonitor	eventSizePP.config	1	-u -t 30 -p PHYSICS_2 -f S

Stop
Restart with default parameters
Restart
Show Logs

Available Agents (1)

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
AD0QAshifter	DET_02	AD0	^V0	PublisherQAshifter	aco.configfile	1	-u -t 45 -p AD0

Archiver status (host is MISC_01 : aldaqdm05) : Running

Messages

Users Actions

Running agents table:

- see which agent are running
- Stop / restart agents
- Inspect the logs of the agents

How to inspect the logs for an agent?

1. Select it from the corresponding agent list
2. Click on the **“Show logs”** button and a window will pop-up.
3. You will send the log to the detector expert, by adding it to the EOS report

AMORE agents manager

Refresh Auto-refresh (2 min.) - Please use only if really needed

Filter : (current : NONE)

----- Running agents (23) -----

Agent	Host	Det	Default_Source	Module	Prod
ACOQAshifter	MTR_01	QA	^ACORDE	PublisherQAshifter	1
DAQshifterTime_PH_1	DAQ_16	DAQ	=PHYSICS_1	DATETimeMonitor	1
DAQshifterTime_PH_1_DUP	DAQ_16	DAQ	=PHYSICS_1 -m	DATETimeMonitor	1
DAQshifterTime_PH_2	DAQ_15	DAQ	=PHYSICS_2	DATETimeMonitor	1
DAQshifter_PHYSICS_1	DAQ_12	DAQ	=PHYSICS_1	DATEMonitor	1
DAQshifter_PHYSICS_2	DAQ_11	DAQ	=PHYSICS_2	DATEMonitor	1
DAVertexSPDshifter	MISC_1	DB	=PHYSICS_1	DBPublisher	1
EMCQAshifter	DAQ_12	QA	^EMCal	PublisherQAshifter	1
FMDQAshifter	FMD_01	QA	^FMD	PublisherQAshifter	1
HMPQAshifter	HMP_01	QA	^HMPID	PublisherQAshifter	1

1

Stop

Restart with default parameters

Restart

Show logs 2

How to inspect the logs for an agent?



*this should be done by experts
if needed see back up slides*

```
logs_dialog_TOFQAshifter

Logs for agent TOFQAshifter

I-AliTOFQADDataMakerRec::SetDefaultCutNmaxFiredMacropad: Setting cut on fired macropad to default values: NfiredMacropad = 5
<message repeated 1 time>
I-AliTOFQADDataMakerRec::ReadHistogramRangeFromFile: Config file with histograms ranges not found or invalid -> use default values.
I-AliTOFQADDataMakerRec::SetDefaultHistogramRange: Setting all histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: Setting Multiplicity histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: multMin = 0 - multMax = 200 - nMultBins = 200
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: Setting Time histogram ranges to default values:
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: timeMin = 0.00 ns - timeMax = 610.00 ns - nTimeBins = 250
I-AliTOFQADDataMakerRec::SetDefaultCutNmaxFiredMacropad: Setting cut on fired macropad to default values: NfiredMacropad = 5
<message repeated 1 time>
I-AliTOFQADDataMakerRec::ReadHistogramRangeFromFile: Config file with histograms ranges not found or invalid -> use default values.
I-AliTOFQADDataMakerRec::SetDefaultHistogramRange: Setting all histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: Setting Multiplicity histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: multMin = 0 - multMax = 200 - nMultBins = 200
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: Setting Time histogram ranges to default values:
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: timeMin = 0.00 ns - timeMax = 610.00 ns - nTimeBins = 250
I-AliTOFQADDataMakerRec::SetDefaultCutNmaxFiredMacropad: Setting cut on fired macropad to default values: NfiredMacropad = 5
<message repeated 1 time>
I-AliTOFQADDataMakerRec::ReadHistogramRangeFromFile: Config file with histograms ranges not found or invalid -> use default values.
I-AliTOFQADDataMakerRec::SetDefaultHistogramRange: Setting all histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: Setting Multiplicity histogram ranges to default values.
I-AliTOFQADDataMakerRec::SetDefaultMultiHistogramRange: multMin = 0 - multMax = 200 - nMultBins = 200
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: Setting Time histogram ranges to default values:
I-AliTOFQADDataMakerRec::SetDefaultTimeHistogramRange: timeMin = 0.00 ns - timeMax = 610.00 ns - nTimeBins = 250
I-AliTOFQADDataMakerRec::SetDefaultCutNmaxFiredMacropad: Setting cut on fired macropad to default values: NfiredMacropad = 5
<message repeated 1 time>
I-AliTOFQAchecker::PrintExternParam:
nbMaxFunctions = 100.000000

Start of session local:///local/cdb/
RunSequence following runControl "TOF" initiated
sor : 165960
eor : 165960
Waiting for a Start Of Run...|
```

How to check if an agent is running?



1. If the agent appears in the **“Running agents”** table, it is running.
2. If the “auto-refresh” option is not selected, check the status in the amoreAgentsManager by clicking on the **“Refresh”** button.
3. Note that it is good to refresh especially after stop/restart/start of the agents.

The screenshot shows the Amore Agents Manager interface. At the top, there is a "Refresh" button highlighted with a red box. Below it is a "Filter: (Current:)" input field. On the right side, there are two checked options: "Auto Refresh (1 min)" and "Show only production agents". The main part of the interface is a table titled "Running Agents (44)". The table has the following columns: Agent, Host Role, Det, Default Source, Module, Default Config Files, Prod, and Default Flags. The table contains several rows of agent information, with some rows highlighted in green. To the right of the table, there are four buttons: "Stop", "Restart with default parameters", "Restart", and "Show Logs".

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
ACOQA	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAshifter	aco.configfile	1	-u -t 45 -p ACO
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
DAQHitCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_1
DAQHitCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_2
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMonitor	eventSizePP.config	1	-u -t 45 -p PHYSICS_1 -f S
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMonitor	eventSizePP.config	1	-u -t 30 -p PHYSICS_2 -f S

Also the background color of the detector’s histograms in the GUI can provide this info

→ see next slide.

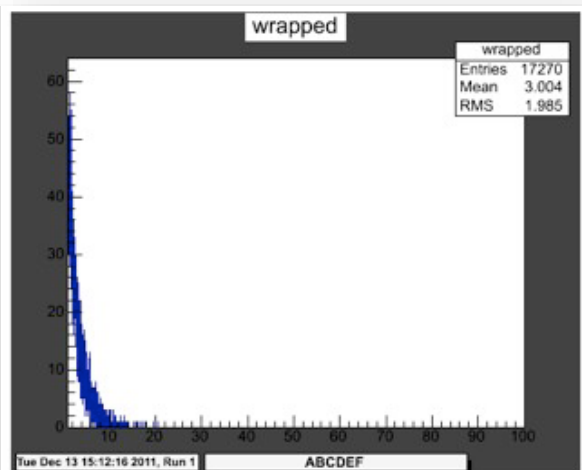
If it is **white or hatched** the agent is running.

However, the best is checking from the Amore Agents Manager.

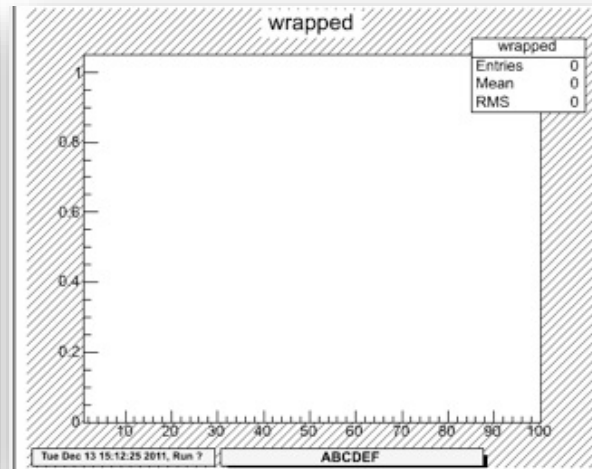
The GUI: histograms background color

The background color around the histograms is meaningful:

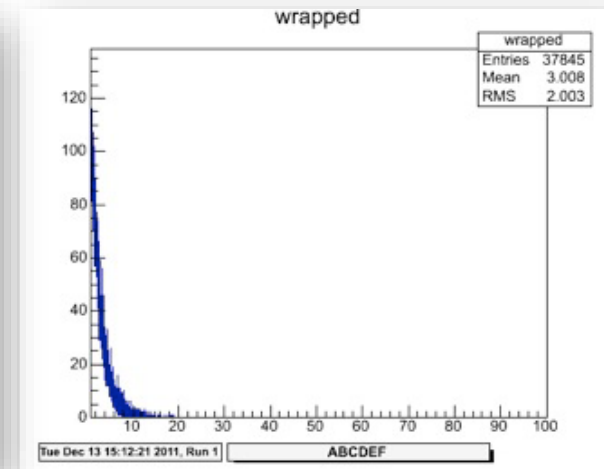
1. **Black:** agent is not running
2. **Hatched:** agent is “idle”, i.e. running but not processing data (i.e. detector not included in the running partition or low rate)
3. **White:** agent is running and processing data



1



2



3

So, if it is **white or hatched** the agent is running.

However, the best way to find out if an agent is running is checking from the Amore Agents Manager.

amoreAgentsManager – Default options



Auto-refresh:

- Will refresh automatically every 1 minute the lists of running and available agents
- **Keep it selected**, unless different instructions

Show only production agents

- Allow to display only agents marked as production
- **Keep it selected**, unless the experts ask for inspection of the other agents

Duration Files Database Editor Logout

Refresh

Filter: (Current:)

- Auto Refresh (1 min)
- Show only production agents

How to stop/restart an agent?

1. Select it from the running agents list
2. Click on the **“Stop”** or **“Restart with default parameters”** buttons.
3. Click on **“Refresh”** if the auto-refresh option is disabled
4. if the agent is still running, hold **the Ctrl key** down and click again on **“Force Stop”** or **“Force Restart”**

3

Refresh

Filter: (Current:)

Auto Refresh (1 min)
 Show only production agents

Running Agents (44)

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
ACOQA	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
ACOQAshifter	DET_01	ACO	^ACORDE	PublisherQAshifter	aco.configfile	1	-u -t 45 -p ACO
ACOQA_DUP	DET_01	ACO	^ACORDE	PublisherQA	aco.configfile	1	-u -t 45 -p ACO
DAQHitCtp_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_1
DAQHitCtp_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeCtpHit	eventSizePP.config	1	-u -t 45 -p PHYSICS_2
DAQshifterTime_PH_1	DAQ_02	DAQ	=PHYSICS_1	DATETimeMonitor	eventSizePP.config	1	-u -t 45 -p PHYSICS_1 -f S
DAQshifterTime_PH_2	DAQ_01	DAQ	=PHYSICS_2	DATETimeMonitor	eventSizePP.config	1	-u -t 30 -p PHYSICS_2 -f S
DAQshifter_PHYSICS_1	DAQ_01	DAQ	=PHYSICS_1	DATETimeMonitor	eventSizePP.config	1	-u -t 45 -p PHYSICS_1 -f S

1

Stop
Restart with default parameters
Restart
Show Logs

2

Available Agents (1)

Agent	Host Role	Det	Default Source	Module	Default Config Files	Prod	Default Flags
AD0QAshifter	DET_02	AD0	^V0	PublisherQAshifter	amoreUIConfigAD0QA.txt	1	-u -t 45

Start with default parameters
Start
Start all production agents
Show Logs

Archiver

amoreAgentsManager - details



Agent	Host	Det	Default_Source	Module	Config_file	Prod	Default_Flags
ACOQA	ACO_01	QA	^ACORDE	PublisherQA		0	-t 20
ACOQA_testSpecles	akdaqdm09	QA	^ACO	PublisherQA		0	-u -t 10
DAQ01	REC_03	DAQ	:	DATEMonitor	eventSizePPrare.conf	0	
DAQ01_DUP	REC_03	DAQ	:	DATEMonitor	eventSizePPrare.conf	0	
DAQ02	MISC_1	DAQ	=PHYSICS_1	DATEMonitor	eventSizePPrare.conf	0	-u -t 45 -p PHYSIC
DAQ03	TEST_1	DAQ	=PHYSICS_1	DATEMonitor	eventSizePPrare.conf	0	-u -t 30 -p PHYSIC
DAQ04	akdaqdm09	DAQ	=PHYSICS_1	DATEMonitor	eventSizePPrare.conf	0	-u -t 20 -p PHYSIC
DAQshifterTime_PH_3	DAQ_14	DAQ	=PHYSICS_3	DATETimeMonitor	eventSizePPrare.conf	0	-u -t 30 -p PHYSIC
DAQshifterTime_PH_4	DAQ_13	DAQ	=PHYSICS_4	DATETimeMonitor	eventSizePPrare.conf	0	-u -t 30 -p PHYSIC
DAQshifter_PHYSICS_1_DUP	REC_03	DAQ	=PHYSICS_1	DATEMonitor	eventSizePPrare.conf	0	-u -t 45 -p PHYSIC
DAQshifter_PHYSICS_3	DAQ_10	DAQ	=PHYSICS_3	DATEMonitor	eventSizePPrare.conf	0	-u -t 20 -p PHYSIC
DAQshifter_PHYSICS_4	DAQ_09	DAQ	=PHYSICS_4	DATEMonitor	eventSizePPrare.conf	0	-u -t 30 -p PHYSIC
DAQTime02	TEST_1	DAQ	:	DATETimeMonitor		0	
DAQTime_ACO	ACO_01	DAQ	@gdc-DET-ACORDE-0:	DATETimeMonitor	eventSizePPrare.conf	0	-t 30 -p ACO
DAQTime_EM	EMC_01	DAQ	@gdc-DET-EMCaL-0:	DATETimeMonitor	eventSizePPrare.conf	0	-t 30 -p EMC

Start with default parameters

Start...

Start all production agents

Show logs

Agent name:

- **<det>QAshifter/<det>QA**: common agents producing plots for the shifter/expert
- **<agentName>_DUP**: created time by time and used by DQM experts for testing

Host: name of the machine on which the agents run

Default source: data source

Config file: configuration file that can be edited by detector experts

Production flag: agents marked as **Prod="1"** must be running all the time

Default flag: options for running the agents (you cannot change them!)

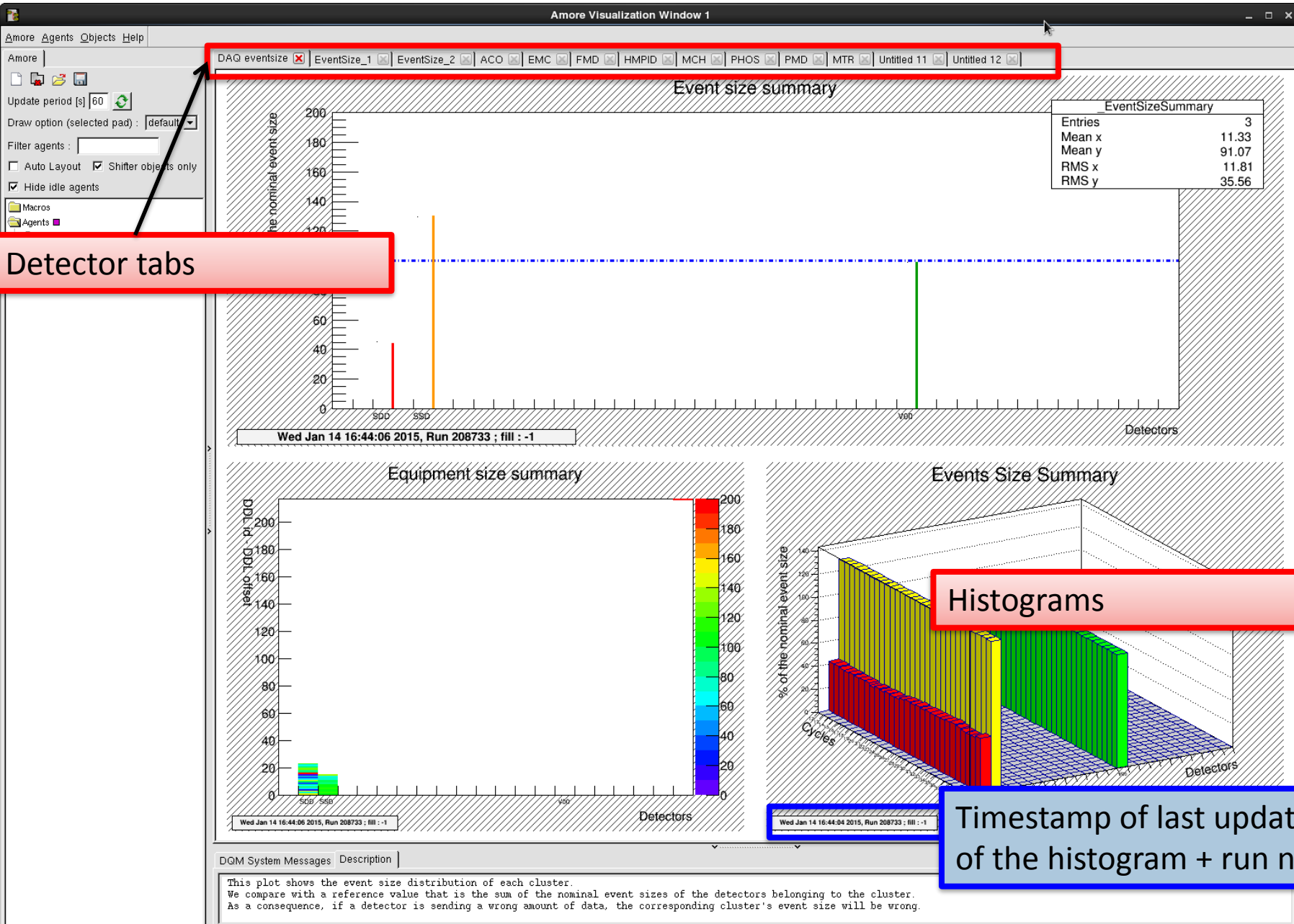


AMORE Visualization window: the GUI

The GUI: tabs & histograms



ALICE



Detector tabs

Histograms

Timestamp of last update of the histogram + run n.

The GUI: tools and agents tree



ALICE

Amore Visualization Window 1

Amore Agents Objects Help

Update period [s] 60

Draw option (selected pad): default

Filter agents:

Auto Layout Shifter objects only

Hide idle agents

Macros

Agents

- DAQ
- MCH
- PMD
- TRI

Menu bar

Tools panel

EventSizeSummary

Entries	3
Mean x	11.33
Mean y	91.07
RMS x	11.81
RMS y	35.56

% of the nominal

Detectors

Wed Jan 14 16:44:06 2015, Run 208733 ; fill : -1

Equipment size summary

DDL id - DDL offset

Detectors

Wed Jan 14 16:44:06 2015, Run 208733 ; fill : -1

Events Size Summary

% of the nominal event size

Cycles

Detectors

Wed Jan 14 16:44:04 2015, Run 208733 ; fill

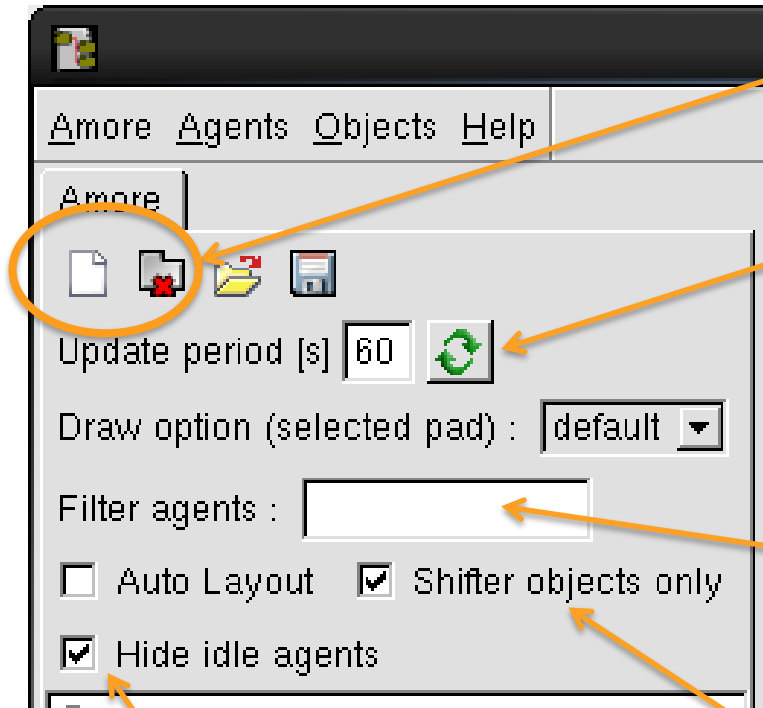
AMORE Agents Tree

Histograms description

DQM System Messages Description

This plot shows the event size distribution of each cluster.
 We compare with a reference value that is the sum of the nominal event sizes of the detectors belonging to the cluster.
 As a consequence, if a detector is sending a wrong amount of data, the corresponding cluster's event size will be wrong.

The GUI: the menu bar and tools panel



Open/close tab

Refresh agents tree

Filter field:

type "shifter" or the name of agents/detector that you want to display in the AMORE agents tree

Show only shifter's objects
(as default it is checked)

Hide idle agents
(as default it is checked)

Amore menu:

- open/close tabs
- Create new tab

Objects menu:

- Toggle statistics

DQM shifter histograms

3 categories of plots with different priorities:

1. global conditions plots
2. detector main histograms
3. detector “backup” histograms

- All plots are produced by production agents (Prod = 1)
- All plots have an automatic check
- **Depending on the result of the check, a quality flag/color box is set in the agent’s tree per event specie**
- All plots appear in the summary image in the logbook, under the corresponding detector’s agent tab

DQM shifter histograms



1. global conditions plots

- Monitor depend from beam and/or running conditions (beams, trigger configuration, ...)
- Have highest priority
- Have to be monitored continuously during each run by the DQM shifter and the Shift Leader (SL)
- if problem, the **SL is informed and run can be stopped** immediately if necessary

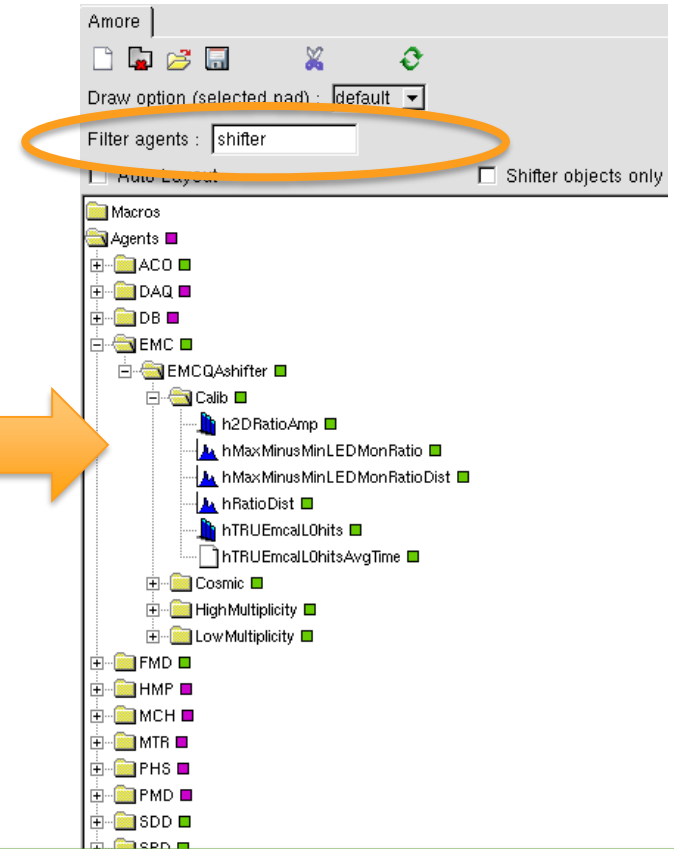
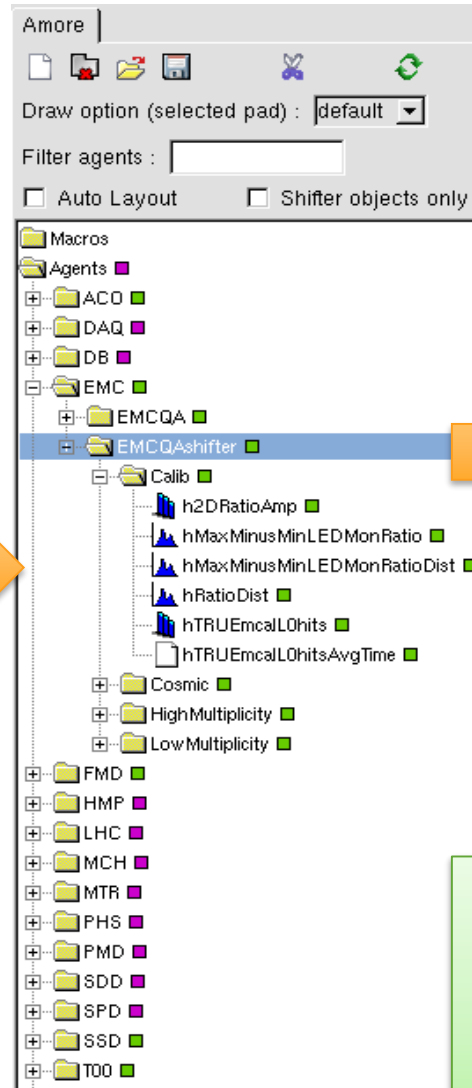
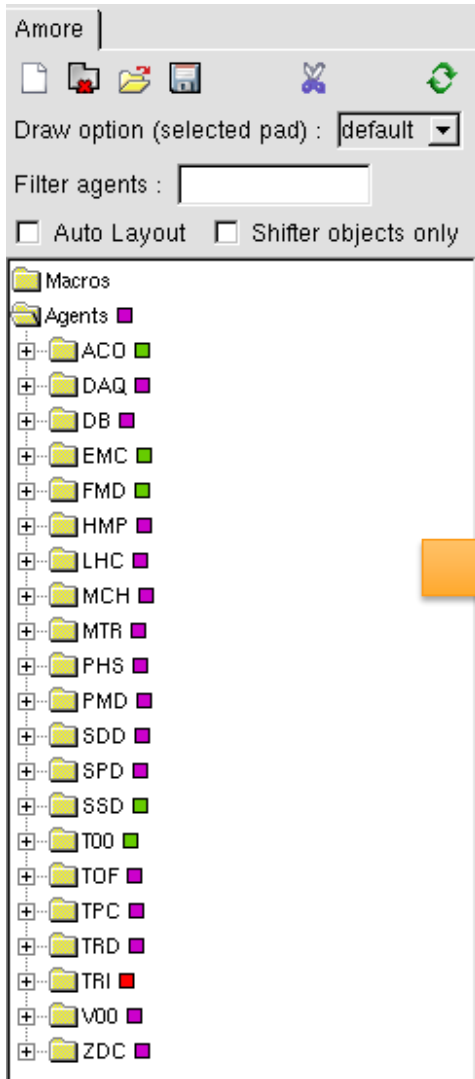
2. detector main histograms

- Monitor detector behavior and data
- Have high priority (help with quality flags)
- If problem, **the detector on-call is informed**
- Not mandatory to stop the run, but still quick action to be taken

3. detector “backup” histograms

- Available in the amore Agents tree but not in the GUI tabs
- **To be looked at only if requested by detector expert**

The GUI: the AMORE agents tree



Color boxes on the right of the name of the agents/ plots are **quality flags set automatically** by QChecker algorithms (next slides)

Quality flags

- **Quality flags are the small boxes that appear in the AMORE agents tree**
- They are set by automatic checks of the content of the plots
- If Yellow/Red/Purple it means that **at least one of the plots produced by that agent exhibits a problem**
- If green all plots are ok
- Always rely on alarms if present
- Always check the Twiki

Notice: if empty not necessarily a problem...see dedicated troubleshooting section of the Twiki!



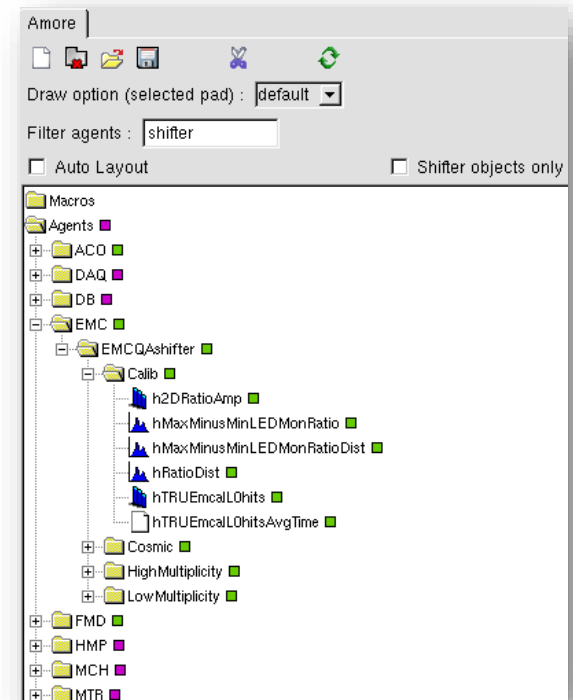
Meaning:

red = error -> look at these plots first

Yellow = warning

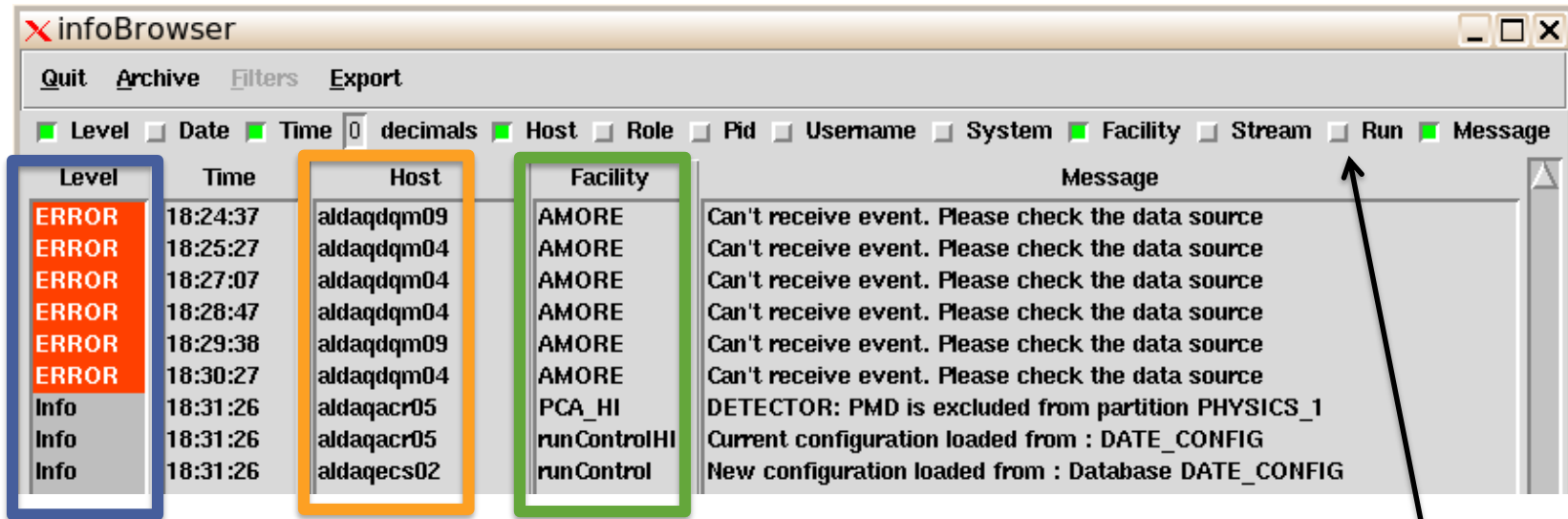
Green = ok

Purple = fatal or empty (then you have to understand why...)



backup

The InfoBrowser - details



<input checked="" type="checkbox"/> Level	<input type="checkbox"/> Date	<input checked="" type="checkbox"/> Time	<input type="checkbox"/> decimals	<input checked="" type="checkbox"/> Host	<input type="checkbox"/> Role	<input type="checkbox"/> Pid	<input type="checkbox"/> Username	<input type="checkbox"/> System	<input checked="" type="checkbox"/> Facility	<input type="checkbox"/> Stream	<input type="checkbox"/> Run	<input checked="" type="checkbox"/> Message
ERROR		18:24:37		aldaqmqm09					AMORE			Can't receive event. Please check the data source
ERROR		18:25:27		aldaqmqm04					AMORE			Can't receive event. Please check the data source
ERROR		18:27:07		aldaqmqm04					AMORE			Can't receive event. Please check the data source
ERROR		18:28:47		aldaqmqm04					AMORE			Can't receive event. Please check the data source
ERROR		18:29:38		aldaqmqm09					AMORE			Can't receive event. Please check the data source
ERROR		18:30:27		aldaqmqm04					AMORE			Can't receive event. Please check the data source
Info		18:31:26		aldaqacr05					PCA_HI			DETECTOR: PMD is excluded from partition PHYSICS_1
Info		18:31:26		aldaqacr05					runControlHI			Current configuration loaded from : DATE_CONFIG
Info		18:31:26		aldaqecs02					runControl			New configuration loaded from : Database DATE_CONFIG

Level: Debug/Info/Warning/Error/Fatal

Host: machines on which the agents run

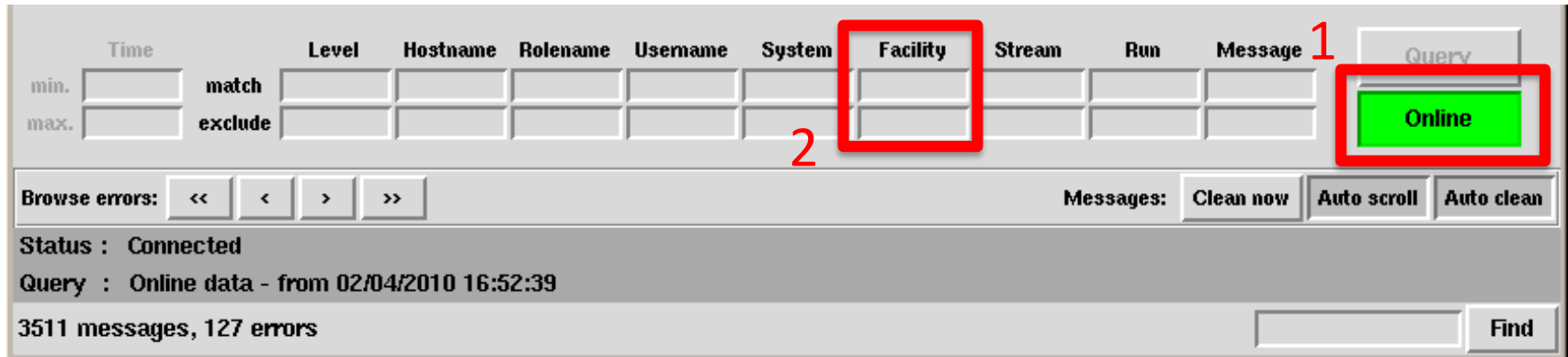
Facility: DQM shifter has to be concerned only about facility "AMORE"

More fields to be displayed in the table can be selected from the first row (e.g. run)

The InfoBrowser – Filter AMORE messages

To filter only messages coming from AMORE:

1. click the **Online** button (green -> gray)
2. type **AMORE** in the textbox marked **Facility**
3. click the **Online** button again (gray -> green).



Time	Level	Hostname	Rolename	Username	System	Facility	Stream	Run	Message	Query
min. <input type="text"/>	match <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Online"/>
max. <input type="text"/>	exclude <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Online"/>

Browse errors: << < > >> Messages: Clean now Auto scroll Auto clean

Status : Connected
Query : Online data - from 02/04/2010 16:52:39

3511 messages, 127 errors Find



Time	Level	Hostname	Rolename	Username	System	Facility	Stream	Run	Message	Query
min. <input type="text"/>	match <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	AMORE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Online"/>
max. <input type="text"/>	exclude <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Online"/>

Browse errors: << < > >> Messages: Clean now Auto scroll Auto clean

Status : Connected
Query : Online data - from 02/04/2010 16:52:39

3511 messages, 127 errors Find

The InfoBrowser – Retrieve previous messages

To retrieve previous messages coming from AMORE (eg. From the last 10 minutes):

1. click the **Online** button (green -> gray)
2. type **AMORE** in the textbox marked **Facility**
3. Write **-10 min** in the **Time min.** textbox
4. Click the **Query** button



The screenshot shows the InfoBrowser interface with the following elements highlighted by red boxes and numbers:

- 3**: A red box around the 'Time' section, specifically the 'min.' field containing '-10 min'.
- 2**: A red box around the 'Facility' field containing 'AMORE'.
- 1**: A red box around the 'Message' field.
- 4**: A red box around the 'Query' button, which is currently green and labeled 'Online'.

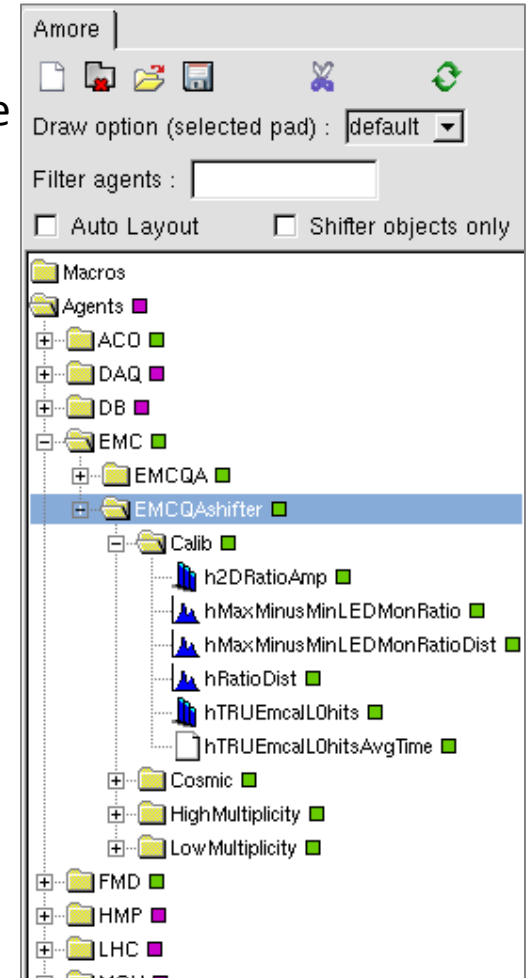
The interface also includes a table with columns: Level, Hostname, Rolename, Username, System, Facility, Stream, Run, Message. Below the table are buttons for 'Browse errors', 'Messages: Clean now', 'Auto scroll', and 'Auto clean'. The status bar shows 'Status : Connected', 'Query : Online data - from 02/04/2010 16:52:39', and '3511 messages, 127 errors'.

How to refresh histograms manually?

If the timestamp of the plot is not up-to-date (older than 5 minutes) or if the troubleshooting section suggests to refresh manually the histograms:

1. Go to the detector tab in the GUI
2. Expand the **Detector's folder** from the AMORE agents tree
3. Expand the **agent's folder**
4. Expand the **folder of the default or specific event specie**
5. Click on the plot to be updated from the tab
6. **Double-click on the histogram's name** from the tree

Please note that if the agent had just been restarted before trying the manual refresh, it might take up to a *couple of minutes* to load the histogram...



How to kill manually an agent?

If you cannot stop/start/restart an agent from the amoreAgentsManager, check the troubleshooting section of the Twiki.

Most likely you will have to kill the agent manually.

The agent <agentname> is running on a different machines and can be killed via terminal.

a. Open xterm and type:

```
$ sshdqm <agentname>  
$ ps aux | grep <agentname>  
$ kill processID
```

a. Alternatively this gives the same result:

```
$ sshdqm <agentname>  
$ ps -ef | grep amore  
$ kill processID
```

Where, in both cases, processID is referred to the process which contains "amoreAgent -a <agentname>"

How to inspect the logs for an agent?

The logs contain:

- ✓ Command used to launch the agent
- ✓ Info about SOR & Run number
- ✓ List of requests for duplication by trigger classes of the plots
- ✓ Info about monitoring cycle (MC)
- ✓ Logs from the detector's code
- ✓ Error messages and crash stack trace

Monitoring cycle = time interval during which data are collected and processed by the agents. Typically 1 MC = 60 s

Monitoring cycle must increase in order to update the histograms.

If it does not, see troubleshooting section in the Twiki.

Logs: Example 1

```
Start of session local:///local/cdb/  
RunSequence following runControl "EMC" initiated  
sor : 165037  
eor : 165034  
Start of run received : 165037  
created run 0x1edef9a0  
PublisherQA : Start of run : 165037  
Doing a reset in the PublisherQA : call ResetDetector of AliQADataMakerRec  
Get the beam type  
user: dateLogbook, pwd: 2PIY5guw, host: 10.161.36.8, dbname: LOGBOOK  
Beam type found : NULL  
Beam type transformed : -  
beamType : -  
runType : STANDALONE_BC  
retrieve the name of the classes active for this run  
Get the cosmic trigger list  
cosmic trigger list found !  
MonitorCycle 0 (Tue Oct 25 12:27:10 2011)  
W-AliQADataMaker::SetEventTrigClasses: The string for event triggers is empty  
<message repeated 3 times>  
W-AliCaloRawStreamV3::NextBunch: Too long bunch detected @ 0 in Address=0xb2a (DDL=005) ! Expected <= 12 10-bit words, found 14 !  
W-AliQADataMaker::SetEventTrigClasses: The string for event triggers is empty  
<message repeated 3 times>  
W-AliCaloRawStreamV3::NextBunch: Too long bunch detected @ 0 in Address=0xb2a (DDL=005) ! Expected <= 12 10-bit words, found 14 !  
W-AliQADataMaker::SetEventTrigClasses: The string for event triggers is empty  
<message repeated 3 times>
```

Logs: Example 2

```
>>>>> Tue Oct 25 05:21:52 CEST 2011 <<<<<<
```

```
Launched with : amoreAgent -a T00QAshifter
```

```
Warning in <TClassTable::Add>: class AliQATHresholds already in TClassTable
```

```
Default storage set to '0x2aaab0000f30'
```

```
I-AliQAv1::SetQARefStorage: AliQAv1::SetQARefDir: QA references are in local://$ALICE_ROOT/Qaref
```

```
Loading class AliT0QADataMakerRec
```

```
Aliroot det name : T0
```

```
I-AliQADataMaker::SetCloningRequest: Aliases for trigger classes:
```

```
I-AliQADataMaker::SetCloningRequest: 0VHN -> COVHN-B-NOPF-CENTNOTRD
```

```
I-AliQADataMaker::SetCloningRequest: 0VHO -> COVHO-B-NOPF-CENTNOTRD
```

```
I-AliQADataMaker::SetCloningRequest: 0VLN -> COVLN-B-NOPF-CENTNOTRD
```

```
I-AliQADataMaker::SetCloningRequest: Histograms to clone:
```

```
I-AliQADataMaker::SetCloningRequest: VZERO/Raws/H1D_Trigger_Type -> 0VHN 0VLN 0VHO *
```

```
I-AliQADataMaker::SetCloningRequest: VZERO/Raws/H2D_CentrChargeVOA_V0C -> 0VHN 0VLN 0VHO *
```

```
I-AliQADataMaker::SetCloningRequest: VZERO/Raws/H2D_TimeVOA_V0C -> 0VHN 0VLN 0VHO *
```

```
Downloading macro t0DQMMacroLoader.C
```

```
Downloading macro t0DQMMacro.C
```

```
Loading macro t0DQMMacro.C
```

```
*** Break *** segmentation violation
```

```
-----  
There was a crash (kSigSegmentationViolation).
```

```
This is the entire stack trace of all threads:
```

```
-----  
Thread 3 (Thread 0x40da2940 (LWP 18032)):
```

```
#0 0x00002b38cb99b372 in select () from /lib64/libc.so.6
```

```
#1 0x00002b38c45713f6 in dim_usleep (usecs=100000) at ./src/dtq.c:291
```

```
#2 0x00002b38c4571504 in dtq_task (dummy=0x2b38c47a1d80) at ./src/dtq.c:325
```

```
#3 0x00002b38c457279c in dim_dtq_thread (tag=0x0) at ./src/dim_thr.c:99
```

```
#4 0x00002b38ca8f173d in start_thread () from /lib64/libpthread.so.0
```

```
#5 0x00002b38cb9a20cd in clone () from /lib64/libc.so.6
```