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The RICH readout system

Run control

Note that data taking is done using dynamically allocated resources (TFC, HLT etc.).

Standard PVSS recipes

System	Recipe	Notes
TFC	R2_2HLT	Send MEPs to two farm nodes
TFC	RICH2V3	Send MEPs to one farm node
L0	PHYSICS	ALICE mode
L1	PHYSICS	ALICE mode


Online monitoring

To start the presenter:

- Check that an X-server (eXceed) is running where you want to see the display (e.g. lb016w)
- Log in to the processor running the event builder (presently hlte0403).
- `export DISPLAY=lb016w:0`
- `source /group/rich/sw/scripts/Online_v3r3_Setup.sh`
- `HPDMonitor`

For more details see [here](#).

Data recording

 Please ensure that a unique run number is assigned to any data that is written to disk.

See [here](#) for information on where data is stored locally and how it is copied to CASTOR.

Special operating conditions for data-taking in ALICE mode:

- MEP packing factor (UKL1 control and ODIN control) must be set to 1
- L0 gap generator gap length (ODIN control) must be set to its maximum value (presently 15, for normal data taking the gap length should be 1).

Note that in ALICE mode, the throttle will be briefly asserted on *every* event. This is normal.

TFC

The ODIN crate, TFC switch crate and transmitter crate are required for clock and trigger distribution to the L0 and L1 electronics. The TFC resources are allocated dynamically by the global run control.

Basic, command-line control of the ODIN can be done by logging in and using the program `/home/richard/bin/ctrl` to read and write the ODIN registers.

For example, to set up periodic or single shot triggers:

- `ctrl -w1000 2020 # Set periodicity to 0x1000`
- `ctrl -w1000 2024 # Set number of triggers to 0x1 and offset to 0x000`
- `ctrl -w20 2004 # Enable periodic trigger generation`
- `ctrl -w0 1000 # Start run`

Alternatively do not enable periodic generation but do:

- `ctrl -w1 200c # Single shot trigger`

after starting the run.

A complete description of the ODIN registers [?](#) is available via the TFC web pages [?](#).

HLT

HLT nodes are assigned dynamically by the global run control.

'putty' configuration instructions for log in to event builder can be found here

The environment to run the event builder suite can be set up as follows:

- `./group/rich/sw/scripts/Online_v[n]r[m]_Setup.sh`

Some of this environment setup will be migrated into the common or group login scripts or other convenience scripts later.

To start the event builder:

- `source /group/rich/scripts/hltrx.sh`
- `diskwr &` if you want to write data to disk

`DIM_DNS_NODE` must be set first. If it is not set it to `hltexx`.

Notes when upgrading the online software

The RICH environment customises some event builder options files. These customisations need to be copied to to the new area. The following files should be copied:

- `$ONLINETASKSROOT/options/MEPRxSvc.opts`
- `$ONLINETASKSROOT/options/EBRich2_hlte0403.opts`
- `$ONLINETASKSROOT/options/EBRich2_hlte0404.opts`

Running your own rich algorithms on mdf data offline on LXPLUS

for info click [here](#)

-- StephenWotton - 22 Nov 2007

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