MTCC sw

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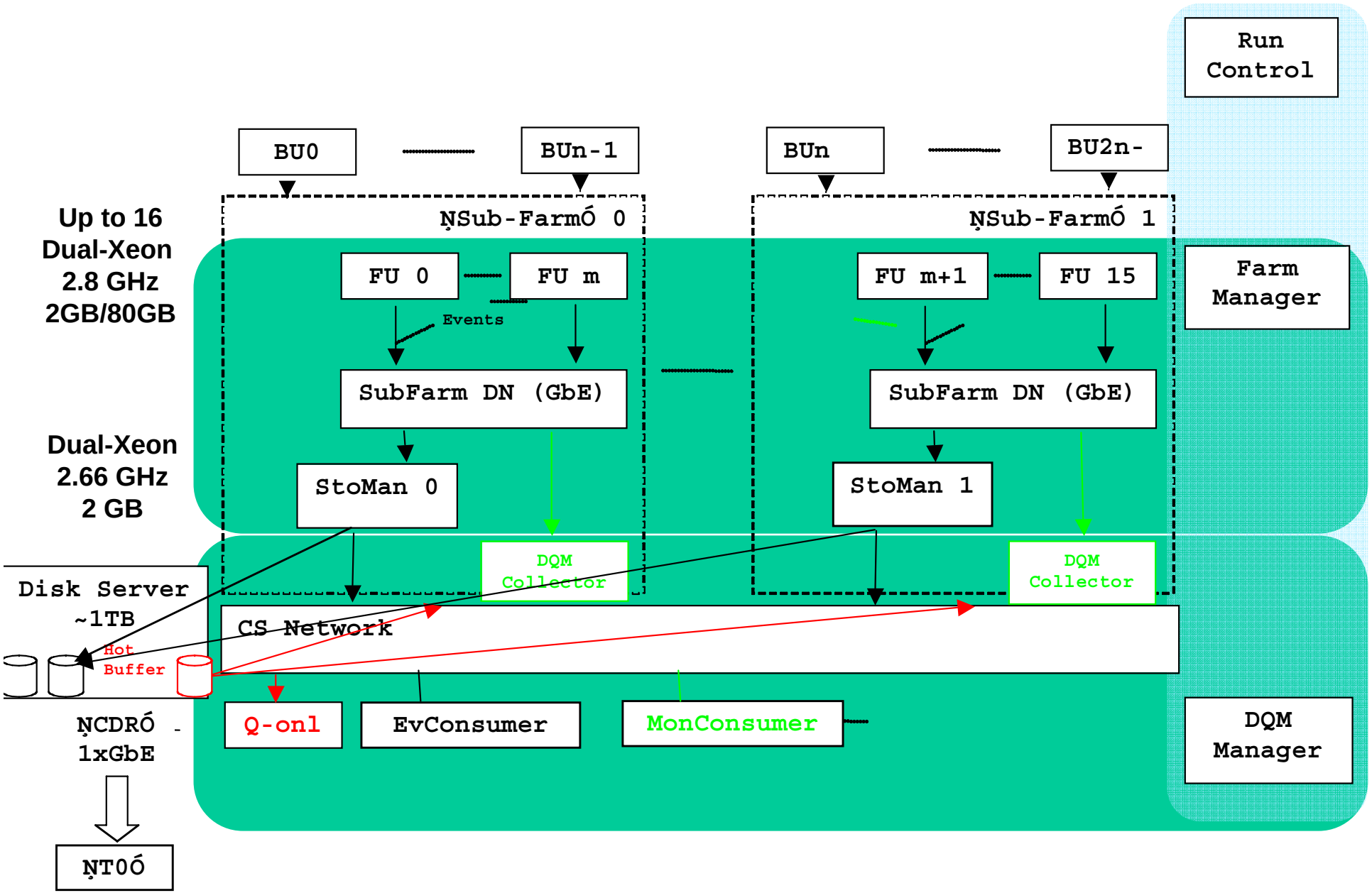

Run Control
BU0
BUn-1
BUn
BU2n-
Up to 16 Dual-Xeon 2.8 GHz 2GB/80GB
SubFarm-0
SubFarm-1
FU 0
FU m
FU m+1
FU 15
Events
Farm Manager
SubFarm DN (GbE)
SubFarm DN (GbE)
Dual-Xeon 2.66 GHz 2 GB
StoMan 0
StoMan 1
DQM Collector
DQM Collector
Disk Server ~1TB
CS Network
Hot Buffer
Q-onl
EvConsumer
MonConsumer
DQM Manager
NCDRO - 1xGbE
NT00

EvF

- Filter Unit has all necessary features for MTCC
  - Added global output switch, dynamic input and output prescales
  - Numerous bug fixes, mainly from integration with CSC, LTC,…
    - Probably some more to come
- Filter Unit DAQ component and EventProcessor in separate applications
  - Separation of processes for robustness to be addressed
- Fully integrated with DAQ / Run Control
  - DAQ error handler in the works
- Can run arbitrary set of modules in EventProcessor
  - ParameterSet passed in single multiline string
    - Simple HLT “Supervisor” XDAQ application: fetch (from DB) and distribute ParameterSet

Raw2Digi

- One sub-detector (CSC) fully integrated in the complete chain
- All other sub-detectors in the works (at different stages)
  - Code in cvs (mostly tested on real data from test setups)
  - Remaining issues
    - Log messages - planned complete move to MessageLogger for 0_6_0
- More integration planned in the next two months
  - As detectors are integrated with global DAQ
  - In some cases final electronics not yet available…
- LTC and GTP formats also in the works

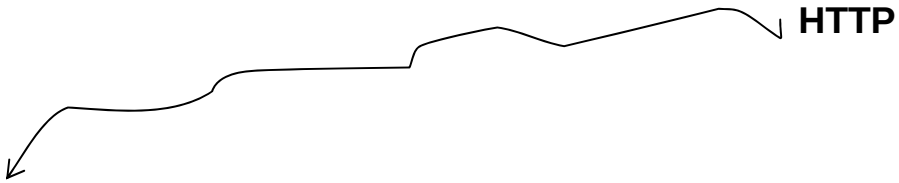
“HLT”

- The “HLT configuration”
  - Raw2digi for all participating detectors
  - Dqm-based data consistency checks
  - Level-1 rate monitoring and simple cross-checks
  - Simple selection (e.g. based on Tk hit counting)
  - More DQM as long as CPU available
  - …
- Extensive tests and CPU measurement for all the above components must be carried out beforehand
  - Part of the “integration with global DAQ” phase
- The “trigger table”
  - Is a responsibility of the EvF group
  - Is agreed within some sort of “run coordination” (TBD)

Output

- Local Output service using pool @5MB/s
  - Streaming to binary possible, limit unclear (~20MB/s measured)
- Storage Manager
  - First prototype available: n to 1 using root streaming, needs FU configuration for product definitions
    - Binary streaming possible
    - PoolOutputModule functional but performance limited
      - Root problems with multiple threads
  - Prototype 2: multistream, event server (will be ready for MTCC)
    - Pending root release with better thread-safeness
    - Event server over http (mainly for event display): event copies served by StoMan web page (at low rate)
      - Can be made accessible to selected remote sites
      - Will not be for the “casual user” (use “dynamic picture collections” already provided by Iguana instead)
- Plan: move on from standalone tests to integration

Event Consumers for MTCC



QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Event Display(s)

- Online, will run off live events from event server
  - http connection as “proof of principle”
- Possibility of relaying same events from additional event server for the “outside world”
  - In addition to ED web pages

DQM Structure I

- Three categories of components
  - Analysis modules running on events and updating "MonitorElements"
  - Data transfer components
  - Information consumers (event and non-event data)
- One interface
  - Publish/subscribe access to full content of application at any level
- Two ways to access high-level information
  - Web (images)
  - GUI with embedded root

DQM Structure II

- Components can be mixed in different ways to fit different purposes
  - DQM running in the FU
    - Analysis modules included in “HLT configuration”. FU does DQM publishing/transfer by default (needed for basic functionality monitoring beyond data flow)
  - Collector(s) (XDAQ applications)
    - Data moving applications handling fan-in of DQM data from many sources (e.g. FUs)
  - Event consumers
    - Standard FW applications running DQM modules and receiving events from
      - StorageManager (EventServer) -> online
      - Hot disk buffer -> “quasi online”
  - DQM clients
    - Specialized XDAQ applications receiving DQM data from collectors and carrying out post processing (collation…) and analysis (rule checking)
    - Provide user interface for fine-grained control and quick graphical access, based on Web components
  - GUI
    - Iguana-based full access to DQM plots from virtually all clients at once
    - Through a global collector if necessary

DQM status

- Infrastructure adopted by all sub-detectors
  - Modularity as dictated by new reconstruction framework
- DQM clients being specialized (functionality and presentation)
  - Basic GUI over web
- Recent developments:
  - Automatic statistical tests
    - Results attached to monitor elements
  - Qt GUI with layout objects
    - To define specialized “views” at the client
  - Standardized state machine (to be integrated with generic client code)
- In the works:
  - Client access to EventSetup (geometry, calibration/alignment)
  - DB access
    - Currently collecting DB requirements (read and write access)
- More in Christos’ talk

Control

- Online DQM processes (clients and event consumers) are to be managed via RunControl
  - Receive “HLT” configuration
  - Get access to EventSetup
- A standardized state machine to handle high-level RCMS commands is provided
- Fine-grained interaction with individual clients via customized control page(s)
  - Security issues to be addressed by EvF/DQM group
- Remote access to online applications running in the CMS private network to be provided on a need basis (e.g. ROC)

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