ES

Sim@P1:
how to profit of the ATLAS HLT farm during the LS1 & after

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ES ATLAS infrastructure @ P1

- Hardware: mainly 3 bunches of pc
  - 340 Dell PE 1950: 4 cores, 16GB RAM, 80GB disk
  - 128 Dell PE 6100: 8 cores, 24GB RAM, 250GB disk
  - 990 Dell PE 6100: 12 cores, 24GB RAM, 250GB disk

- Networking infrastructure
  - P1 GPN "bypass" 2 Gbps
  - P1 SFO-Castor links 20 Gbps

Security considerations

! ATCN network is a more delicate and critical environment than even a Tier0 site

- Avoid any interference with internal traffic to DCS systems
- Avoid any risk, even remote, for security
- Avoid any risk of saturating the GPN link

- Isolate the network traffic to a VLAN on the Data Net

  - dedicated VLAN, over physical network dedicated to dataflow (DN), with separate subnets that will not be routable to the rest of the control network

- Isolate the workload on Virtual Machines

  - VMs will only see the VLAN interface, while the control network of the hosts (XPUs) will remain in the ACTN

- Route the VLAN through the SFO-Castor link

  - dedicated physical links from the DN edge switch to the SFO-Castor switch
  - dedicated fibers from the SFO-Castor switch to B513

- Decouple HLT and Grid production
  - Cloud as an overlay infrastructure
    - Provides necessary management of VM resources
    - Support & control of physical hosts can remain with TDAQ
    - Delegate Grid support to dedicated team
  - Easy to quickly switch from HLT <-> Grid
    - during LS1: monthly full-scale test of TDAQ sw upgrade
    - maybe in the future also during short LHC stop

- CERN IT, BNL and CMS on OpenStack:
  - Similar use cases:
    - support if needed,
    - sharing experiences
  - BNL has already part of its resources cloudified: ATLAS is successfully using them

- # Setup a testbed
  - Few machines of same kind of the one in HLT farm
  - Similar network and VM/host configuration
  - Ideally SLC6 netbooted using the same image needed by the HLT sw
- # Setup OpenStack
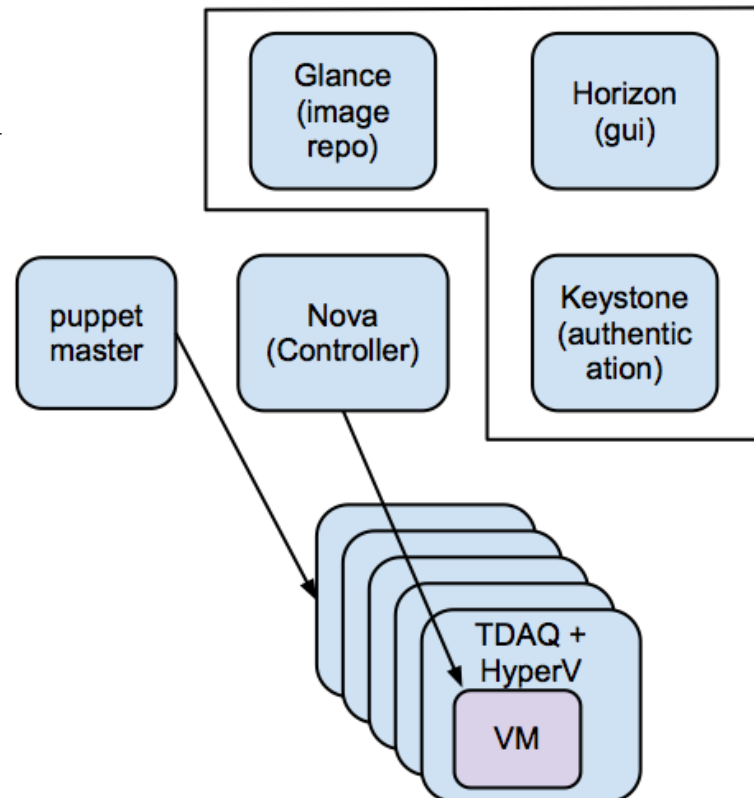
- Re-use the ADC experience on Cloud Resources:
  - E.g. VMs contextualization
- New Panda Resource within CERN site
  - Remote I/O with EOS
  - Different ResourceType in monitoring
    - New attribute to be added in Dashboard to cope with the possible need of monitoring only resources of type e.g. Cloud
- Pilots through condorg:
  - Condor master at CERN already for other Cloud resources
  - To be evaluated the benefits of having Condor master in the Cloud
- Setup a Squid for Frontier and CVMFS

✓ Sim@P1

  ✓ Plan has been agreed

  ✓ BNL has offered its help!

! Next 2 months to

  • setup the testbed

  • integrate it into Panda,

  ✓ … be ready to use the HLT Farm during LS1