

Tier 3 Status

Doug Benjamin
(Duke University)

Types of Tier 3's

- Tier 3 gs (grid services)
 - Same services as Tier 2 - Tier 2 "Lite"
 - Requires significant labor to keep production quality (at least 0.5 FTE - talented system admin).
- Tier 3 w (workstation)
 - Interactive workstation with Atlas Software
 - Atlas code on machine or served from local NFS fileserver
 - No batch system
 - Can submit Pathena or Prun grid jobs
 - All Atlas data retrieved using client tools (dq2-get)

Tier3 AF (Analysis Facility)

- BNL and SLAC are in process setting them up
 - BNL - interactive nodes , Batch Cluster & Proof Cluster
 - SLAC – interactive nodes & Batch Cluster
- In Tier 3 AF – University Groups can contribute funds/hardware
 - Groups granted priority “access” to resources they purchased
 - Purchase batch slots or send approved worker nodes
 - Rest of Atlas can use the resources when not in use by owners
 - Model has worked well for the CDF experiment at FNAL
- Tier 3 AF open to all Atlas users with an account
- Document in preparation with further details
- Richard Mount and Michael Ernest will give more details in their talks

Tier 3 G

(expect to be most common Tier 3)

- Interactive nodes
- Can submit grid jobs.
- Batch system w/ worker nodes (Condor)
- Atlas Code available (at least kit releases)
- Client tools used for fetch data (dq2-ls, dq2-get)
 - Planning for more automated solution (see talk by K. De)
- Storage can be one of two types (sites can have both)
 - Located on the worker nodes
 - Bare disks on workers – ANL PC Farm
 - XROOTD
 - Located in dedicated file servers (NFS/XROOTD)
- Grid Storage Element Bestman –gateway with gridftp

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Tier 3g configuration instructions and getting help

- Tier 3g configuration details and instructions in Tier 3 wiki at ANL and BNL:
 - <https://atlaswww.hep.anl.gov/twiki/bin/view/Tier3Setup/WebHome>
 - <https://www.usatlas.bnl.gov/twiki/bin/view/Admins/Tier3Setup>
- US Atlas Hypernews - **HN-Tier3Support@bnl.gov**
- US Atlas Tier 3 trouble ticket at BNL USAtlasTier3
RT-RACF-USAtlasTier3@bnl.gov
- If all else fails contact us:
 - Doug Benjamin - US Atlas Tier 3 technical support lead
(benjamin@phy.duke.edu)
 - Rik Yoshida – US Atlas Tier 3 coordinator (Rik.Yoshida@anl.gov)

Tier 3 issues

- Monitoring of Data storage
 - Tier 3's will have finite amount of storage - Storage will be like a cache – Need to monitor data usage patterns to determine Data longevity at site. (clean up old data)
 - Storage system performance monitoring
- Data Access (how get the data to your site)
- Database Access at Tier 3's (see Fred's talk)

Tier 3 issues (cont)

- Networking
 - We often take networking for granted – yet it needs to be optimized for efficient transfers. - implies interaction with Campus Network admin.
 - Internet 2 has agreed to help us (Thanks!)
- Support
 - (goal – maintain a Tier 3 w/ < 0.25 FTE Postdoc/grad stud.)
 - (less than 1 week Full time to setup a Tier 3)
 - OSG would like to help
 - Atlas Canada - they support 1 configuration – have good tool kit.
 - Standardization should help here.

Future Tier 3 improvements

- Tier 3 Virtualization “Tier 3 in Box”
 - BNL has provided a test cluster for Virtualization studies and development (Xen based)
 - Using CERNVM and Xen build VM for worker node
 - Some Tier 3’s already using VM’s (OSG, Duke).
 - reduce support load globally and locally
 - Provide better security for Tier 3’s
 - See Sergey’s talk for more details
- What about HDFS?

Conclusions

- US Atlas Tier 3 configuration is coming together
- your feedback is needed to understand the issues
- Need solutions that we all can use with some standardization
- Tier 3's are important to Atlas. So let's all make them work.