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Open Science Grid (OSG) Tier3 Grid Supercomputer at Bellarmine University BRYAN FAGAN, TYLER MARTINEZ, AKHTAR MAHMOOD, Bellarmine University — Today's cutting-edge scientific projects are larger and more complex. Grid computing provides the resources that allow researchers to share knowledge, data, and computer processing power across boundaries. At Bellarmine University, we have built a state-of-the-art Tier3 Supercomputer that is linked to the Open Science Grid (OSG) cyberinfrastructure with funding from the NSF. The 51-node Supercomputer is equipped with 408 cores, 1300GB of RAM and 375TB of disk storage space. It is currently the only OSG grid site in the state of Kentucky. It is also the first OSG grid site to be located at an undergraduate institution. Condor provides a job queuing mechanism, scheduling policy, priority scheme, resource monitoring, and resource management. The Tier3 grid site is also part of the Worldwide LHC Computing Grid (WLCG). We have set up and implemented various web portals for monitoring the Tier3 supercomputer's performance (which is running Scientific Linux 5.4), using PCM (Platform Cluster Manager), Cacti (a web-based graphing tool) and Nagios (a network monitoring software application). The Supercomputer has already processed over 150,000 OSG grid jobs submitted from the D0 and the ATLAS experiments and has clocked in over 1,300,000 CPU hours since June 1, 2011.

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