Cameron Harr
Supported Projects: ESGF, PCMDI (DTN and CSS File System)

Quarterly Report for Oct. 1, 2016 – Dec. 31, 2016

Quarterly Synopsis:

Mr. Harr spent most of his Q4 effort on the new CSS GPFS file system. He was able to get it set up and tested on the DTN nodes and started working with the AIMS team to get it presented to the ESGF nodes.

Quarterly Accomplishments:

- Worked with Comp facilities to site the new CSS file system (cssfs).
- Received the cssfs system from the vendor and worked with a vendor representative to get it configured and working.
- Worked through various hardware issues with cssfs system and rebuilt the GPFS file systems.
- Given possible security holes with GPFS configuration needs, Mr. Harr worked with LC ISSO to ensure adherence to security plans. Mr. Harr also came up with an acceptable plan to run GPFS natively on ESGF nodes when prior plan called for NFS mounts on ESGF nodes due to security policies.
- Tested single-stream and multi-stream I/O performance to the main cssfs file system from DTN nodes. During this process, Mr. Harr was able to find a misconfiguration of the network limiting the bandwidth. Once repaired, performance was still limited by the network, but at > 1.5 GB/s was satisfactory for the CMIP6 data requirements.
- Tested Synda performance to the cssfs system and determined bottlenecks appear to be at source sites.
- Worked with Globus engineer to get DTN nodes properly configured per ESGF standards.
- Worked with AIMS team members to set up DTN directory structure parallel to existing data ESGF data node, in preparation for using DTN nodes for Globus transfers instead of data node.

Next Quarter's Roadmap:

- Set up GPFS on relevant ESGF nodes. This process has started and Mr. Harr is awaiting further information from AIMS team members to complete the process.
- Work with Mr. Ames to migrate Globus transfer duties to DTN nodes from current data node.
- Further test and tune cssfs system.