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Experience in Porting BLAST to Open Science Grid using a Galaxy interface

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To assist the bioinformatic community in leveraging the national cyber-infrastructure, the National Center for Genomic Analysis Support (NCGAS) along with Indiana University's High Throughput Computing (HTC) group have engineered a method to use the Galaxy to submit BLAST jobs to the Open Science Grid (OSG). OSG is a collaboration of resource providers that utilize opportunistic cycles at more than 100 universities and research centers in the US. BLAST jobs make a significant portion of the research conducted on NCGAS resources. Moving such jobs that are conducive to an HTC environment to the national cyberinfrastructure alleviates load on resources at NCGAS and provide a cost effective solution for getting more cycles to reduce the unmet needs of bioinformatic researchers. To this point researchers have tackled this issue by purchasing additional resources or enlisting collaborators doing the same type of research, while HTC experts have focused on expanding the number of resources available to historically HTC friendly science workflows. We bring together expertise from both areas to address how a bioinformatics researcher using their standard Galaxy interface can seamlessly access the OSG which routinely supplies researchers with millions of compute hours daily. Efficient use of these results will supply additional compute time to researcher and help provide a yet unmet need for BLAST computing cycles.

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