Globus Connect Deployment for the H3ABioNet consortium

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Abstract

A technical solution is needed for the nodes of the H3ABioNet network that will enable a fast, secure and reliable transfer of large datasets between nodes, independently of the bandwidth and quality of their Internet connections. Globus Online (https://www.globus.org/) offers such a solution, and with some optimization dedicated for the H3ABioNet nodes it can address most of the issues encountered using more traditional protocols such as FTP or HTTP.

We developed Standard Operating Procedures for the configuration of hosts supporting Globus and for the installation of the software, and outlined best practices for using it, either for individual users or at the institutional level. Our hope is that this will enable the installation of Globus Connect at all H3ABioNet nodes, and therefore the transparent sharing of biological research data.

This solution has been approved very useful for biological research usage. Many biological data transfer has been occurred between some nodes (IGB-USA, CBIO-South Africa), form those tests we have gathered useful data about future transfer between those nodes.

As a further benefit of using Globus at all nodes, we have the capacity to gather data about the effective bandwidth of links between the nodes. This can be used to justify future upgrades when nodes are participating in research projects where bandwidth may be limiting.

Keywords — Globus, H3AbioNet, Data transfer