# Transport Working Group - 2.4.10
Phoebus Application Scenarios

GridFTP

Members of the working group have experimented with Phoebus enabled Grid FTP over 10G networks. The graph at the right shows four transport performance cases over a simulated connection having a 100ms WAN latency and .01% loss. Not only does Phoebus provide substantial improvement in performance for the single stream case but a single TCP stream with Phoebus outperforms eight parallel streams without Phoebus.

Since this is a commonly used bulk data transport application, a Phoebus enabled GridFTP would immediately benefit a substantial community of users.
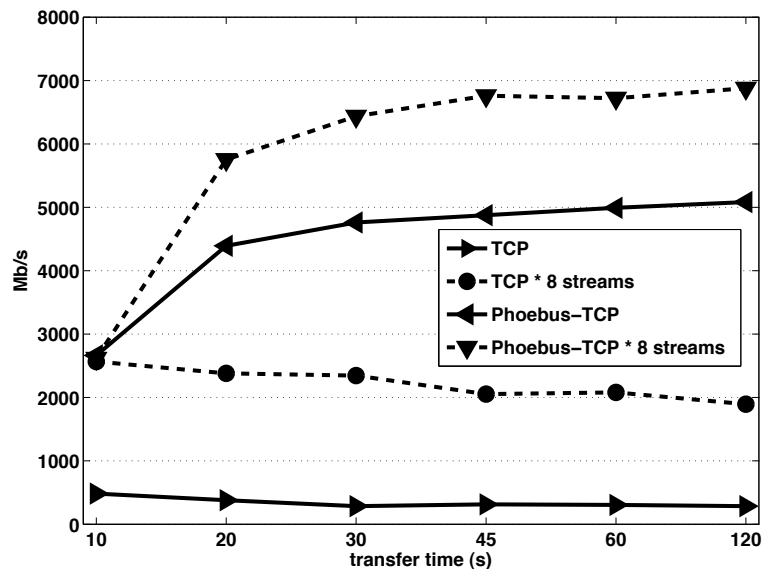
REDDnet

REDDnet provides distributed storage for data intensive applications. Members of the working group have conducted tests of REDDnet transfers using Phoebus.

The graph at the right shows the case for single thread read/write transfers between CERN and the University of Michigan. Phoebus significantly improves read performance for all transfer sizes and write transfers for sizes above 256 MB.
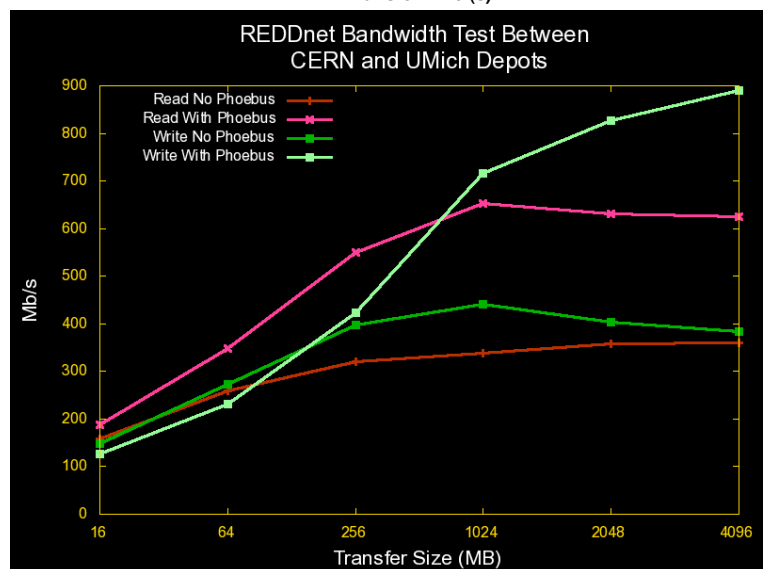
Interactive Applications

One of the members of the working group has been testing Phoebus with an interactive application for dissecting anatomical data sets. While this is a low bandwidth application in comparison to bulk data transport, it also benefits from the use of Phoebus.

In this test the client (running on OS X) was located in Wisconsin, the server in California and transport occurred over WiscNet, Internet2 and CENIC with WiscNet having the greatest congestion. In response to user actions the server transports image frames to the client. The histogram of transports versus rate shows that Phoebus increases the transport rate by a factor of three. This increase can determine whether the application is useable over a path.

REDDnet Bandwidth Test Between CERN and UMich Depots

Histogram of Image Transport Rates in the VolSeg Application (OS X)