



New Development Efforts in GridFTP

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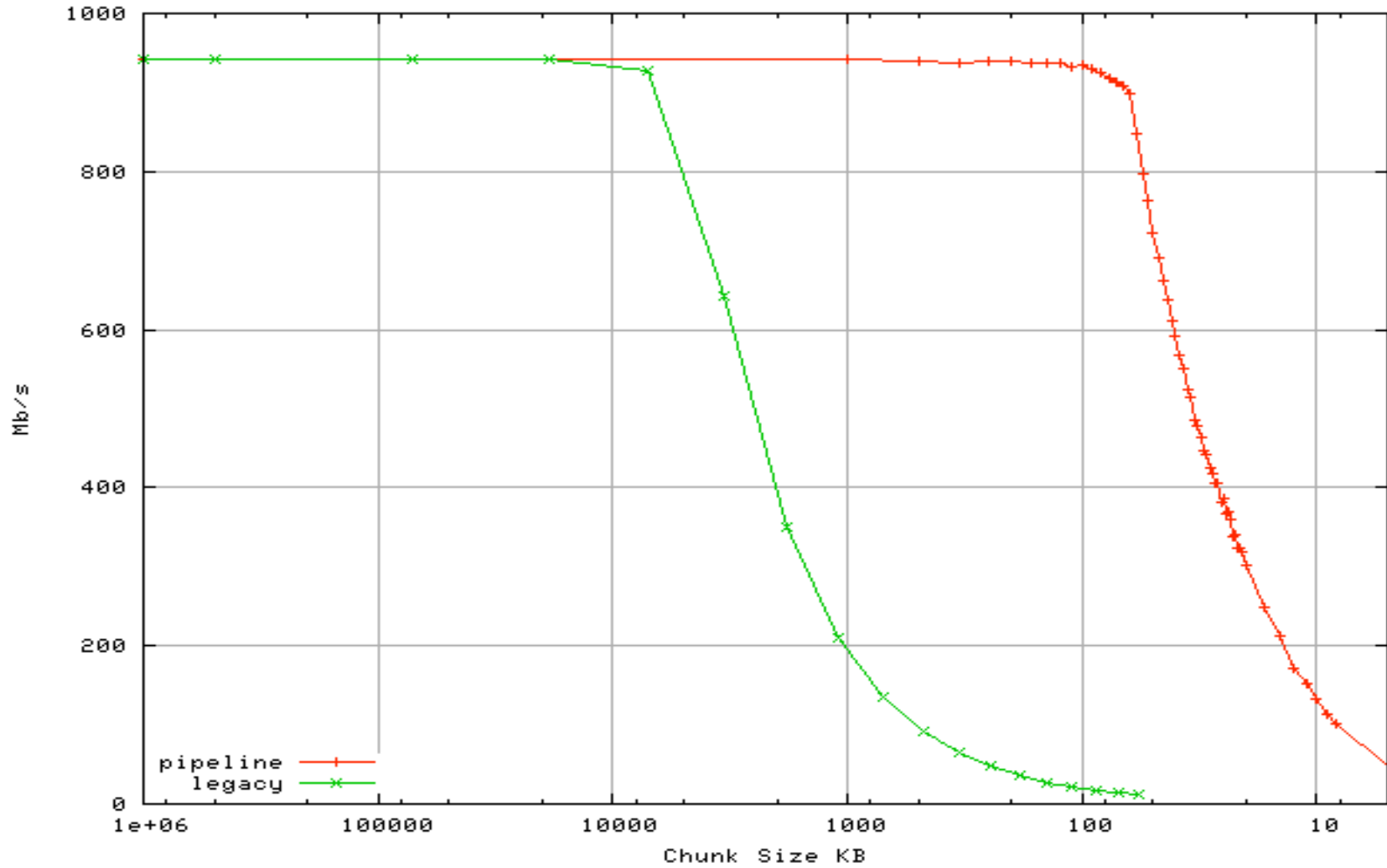


New Features

- **Pipelining the file transfer**
 - ◆ Better throughput for lots of small files transfer
- **Alternate security mechanisms**
 - ◆ GridFTP over SSH
 - ◆ Add functionality to globus-url-copy and globus-gridftp-server allowing the control channel connection to be formed with an ssh session.
 - ◆ No proxies, certs, or CAs are needed for a secure control channel.
 - ◆ If you can ssh to the host, you can establish a secure GridFTP session.

Pipelining

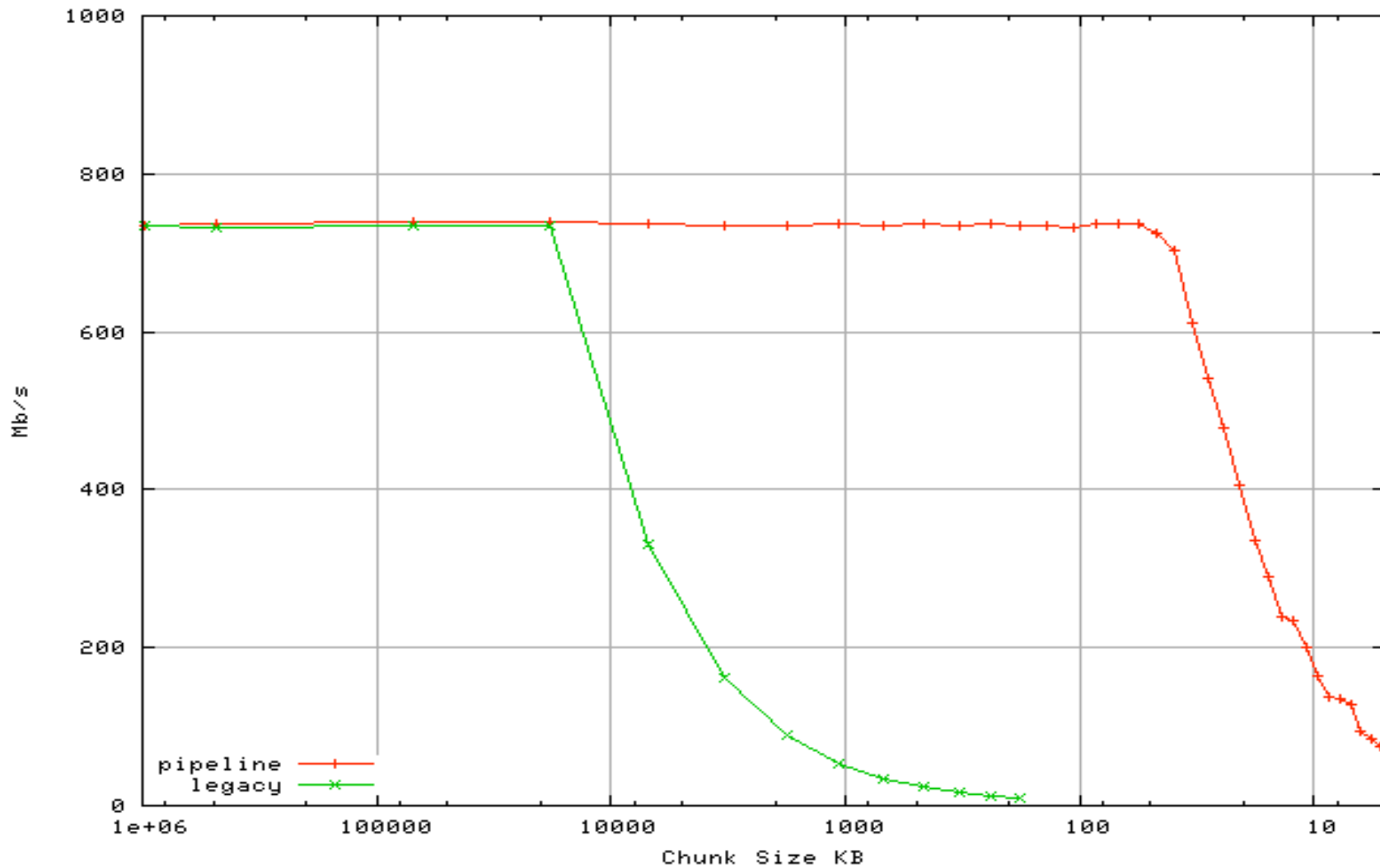
LAN (0.297ms RTT, 128K TCP Buffer)





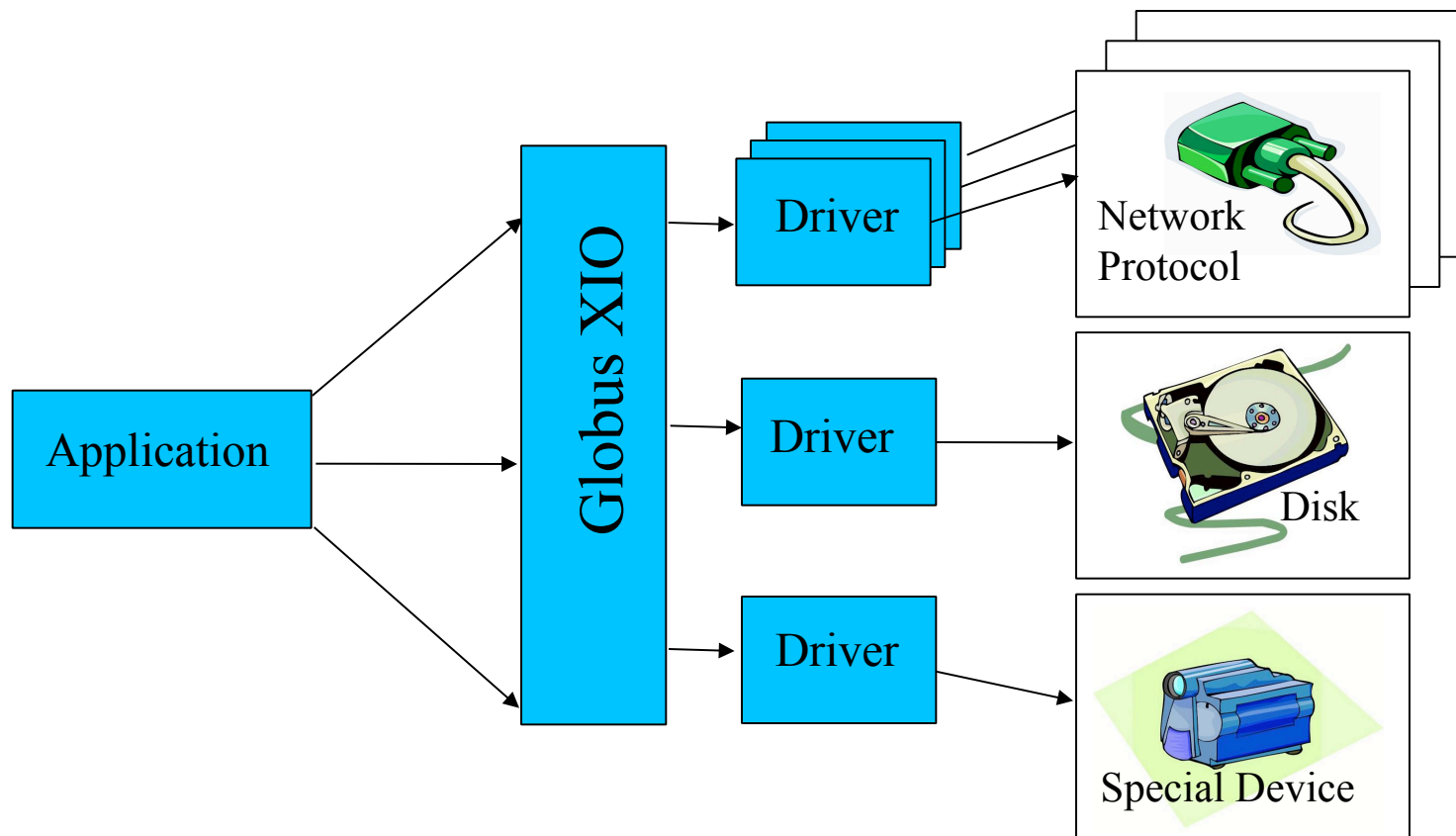
Pipelining

WAN (58.492ms RTT, 16M TCP Buffer)





Configurable Protocol Stack





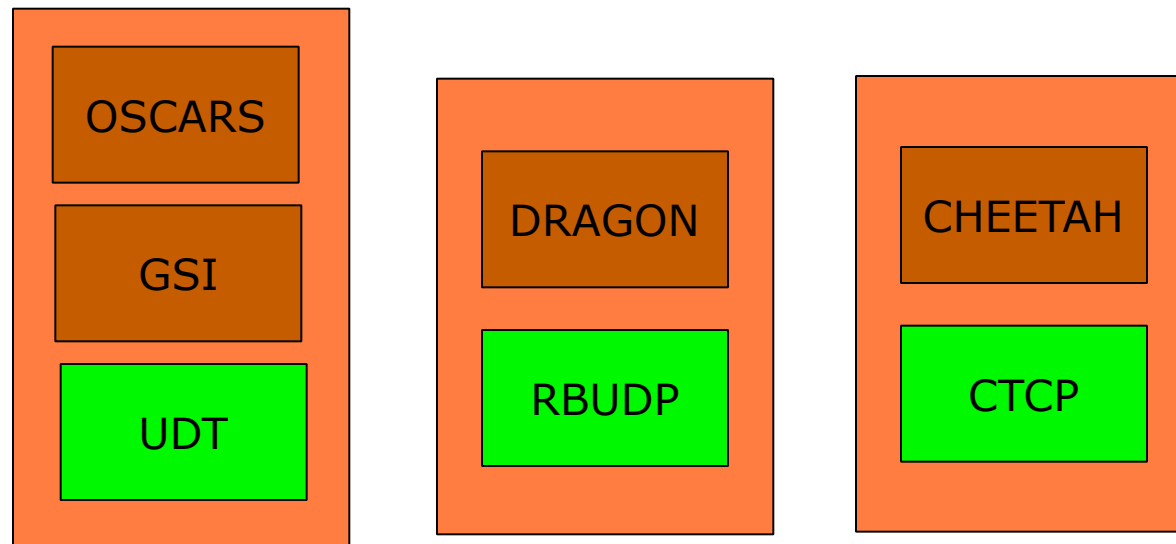
GridFTP over UDT

- Easy way to write XIO Drivers
 - ◆ Create from third party libraries.
- Blocking API
 - ◆ Thread pooling/event call-backs to morph async to sync
 - ◆ Recommend threaded builds
- Created an UDT driver



GridFTP over Lightpaths

- To minimize changes to the application, this can be implemented as an XIO driver
- Users might want to use more aggressive transport protocols like RBUDP, UDT etc
- XIO stack used by GridFTP is configurable





Other New Features

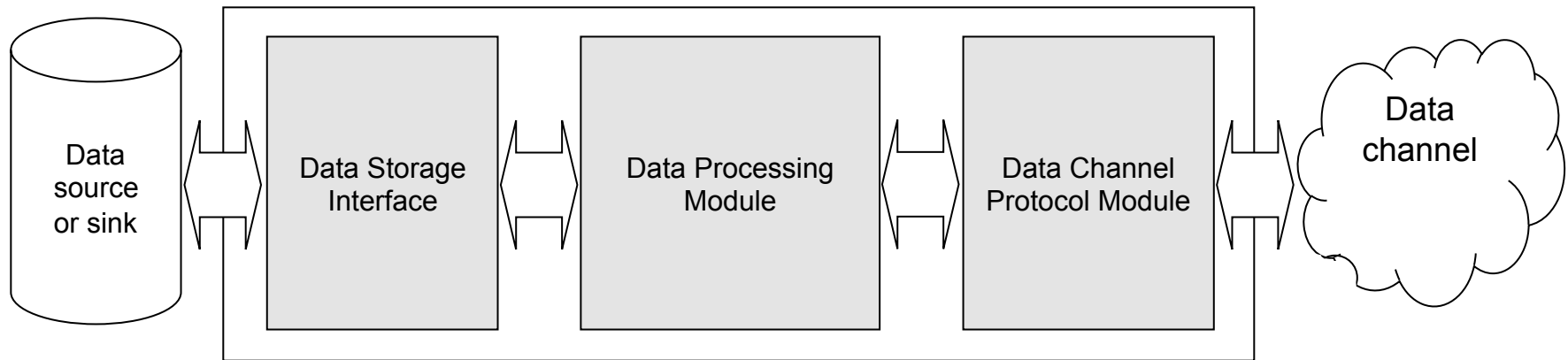
- Working with the DRAGON group to create an XIO driver
- Data Storage Interface
- Several can be available and loaded dynamically via the ERET/ESTO commands
- Anything that can implement the interface can be accessed via the GridFTP protocol
- We have implemented
 - ◆ POSIX file (used for performance testing)
 - ◆ HPSS (tape system; IBM)
 - ◆ Storage Resource Broker (SRB; SDSC)
 - ◆ NeST (disk space reservation; UWis/Condor)



the globus alliance

www.globus.org

Data Transfer Process





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Data Storage Interface

- This is a very powerful abstraction
- Several can be available and loaded dynamically via the ERET/ESTO commands
- Anything that can implement the interface can be accessed via the GridFTP protocol
- We have implemented
 - ◆ POSIX file (used for performance testing)
 - ◆ HPSS (tape system; IBM)
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