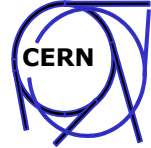




GridFTP issues for SC3



- standard GT2 gridftpd has problems under high load
- code is no longer supported
- should use new GT4 gridftpd instead:
 - new, complete reimplementaion of the server
 - support for striping (using multiple hosts to move a single file)
 - to come: automatic buffer size determination
 - ease new feature additions and modifications of the server:
 - new commands
 - new data sources/sinks such as MSS
 - transport protocols other than TCP
 - automatic data processing (e.g. tar)
 - resolves a commercial licensing issue with the WU-ftpd



Remote data-nodes and striped operation



- hostB> globus-gridftp-server -p 6000 -dn
- hostC> globus-gridftp-server -p 7000 -dn
- hostA> globus-gridftp-server -p 5000 -r hostB:6000,hostC:7000
- Client:

```
globus-url-copy -stripe gsiftp://hostA:5000/file file:///dest
```

```
globus-url-copy -stripe gsiftp://hostA:5000/file gsiftp://hostX/dest
```

– Why “-stripe” option needed?



Known problems



- e-block mode: connect in data flow direction vs. firewalls
 - will be fixed in mode X
- host and port must be given before file is known
 - also for mode X
- data port range vs. firewalls
 - no plans yet
- need for group-writable files and directories
 - no plans yet
- others...?



Tests



- performance tests at Argonne:
 - 27/30 Gb/s for 32 nodes mem-mem, 2 GB/s disk-disk
- U. of Chicago + PlanetLab scalability tests, 1 server at ISI:
 - 10 MB file/request from disk to /dev/null on server:
 - 363 GB/3h (37,200 files), 500 clients/100 nodes
 - 131 GB/1h (13,425 files), 1100 clients/130 nodes
 - 917 GB/6h (93,858 files), 1100 clients/100 nodes
 - 151 GB/1h (15,428 files), 1800 clients/130 nodes
 - limitations from server 1 Gbit network link



Practical issues



- new gridftp uses new Globus XIO, OpenSSL 0.9.7, ...
 - not yet available through VDT
 - DNs with "email=" in OpenSSL 0.9.7 vs. 0.9.6
 - put hacks in grid-mapfile
- new features can only be used when both ends implement them
 - does feature negotiation always work?
 - Globus gridftp vs. dCache vs. Castor vs. ...
 - dCache vs. DCAU
- Plan: evaluate and package new gridftp well before SC3