

Meeting Report: GGF Grid File System Working Group (GFS-WG), GGF 11, Berlin.

GFS-WG had two sessions at GGF 10 at Berlin.

First session: Introduction and survey document

Agenda:

- Introduction (Osamu Tatebe and Jane Xu)
- Similar Technologies
 - Metadata in SDSC Storage Request Broker (Reagan Moore)
 - Avaki/Legion Grid filesystem & OGSA-Naming (Andrew Grimshaw)
 - AIST Grid Datafarm (Osamu Tatebe)

Discussions:

- The scope and charter was explained
- Grid Storage BoF was mentioned by Arie Shoshani
- Management of virtual directory and the logical name space management was highlighted
- The current survey paper scope was too narrow, pointed by some attendees.
- Support existing applications without modifications was suggested
- File Access and GFS-WG
 - It was mentioned that this group does not deal with File Access (direct access) as of the current charter. It was added that either DAIS or a new WG or a re-charted GFS-WG would be doing it.
- OGSA Naming:
 - It was mentioned that this group could create a human readable logical namespace of grid handles that could be used to represent other things like services apart from just files. It is essentially same as file system directory services that will be specified in GFS-WG.
 - Arun: We will discuss offline on the mailing list if/how we could incorporate OGSA naming (human-readable logical namespace) for each grid along with the GFS-Namespace.

Second session: File system directory services

Agenda:

- Introduction
- Presentation & discussion
 - Global namespace for files (Leo Luan)
 - Design of file system directory services (Osamu Tatebe)

Presentation: Leo Luan from IBM gave a talk on global namespace for files

- Arie: Is top level in the hierarchy as mentioned in the slides a requirement or suggestion: (ibm.com, ggf.org, etc)
 - Leo: It's a suggestion for a convention.
 - Arie: Namespace conflict (using servers) Is it suggested to use namespace servers?

- Leo: Top-level organization by using DNS txt record (what DCE/DFS uses) Other possibilities include using a configuration file for the top-level namespace organization.
- Jane: virtual directory can be used logically name any thing in the directory
- Arie: What is CIFS?
 - Leo: Windows Network File System protocol, the primary protocol used for Windows File Sharing
- Don: protocols used to access file keep changing
 - Service tells what protocol to be used
 - Disassociate protocol to access data from the physical location
 - Arie: Server tells the client what protocol to use in SRM
 - Don: Binding late on protocol is useful
 - Leo: Rendering party may use a call back or time-to-live mechanism for namespace changes
- Rendering
 - Includes auto-mounter as one possible namespace rendering technique for back-level NFS clients.
- Referrals
 - Arie: redirect?
 - Leo: CIFS and NFS server can do translation from namespace mount points to referrals.
- Proxy Cache
 - Arie: Is proxy cache client or server
 - Leo: Separate machine running as a caching/replication server and namespace service client
 - All the clients need not understand or directly contact the global namespace server
 - Junction points can be cached/embedded in the physical file system
 - Referral in X to Y (?)
 - Automounter can be used to enforce the global namespace on the back-level NFSv2/v3 clients
- Leo: Spirit: Global Namespace for even existing protocols – interoperability is the key
- Can NFSv4 have access controls associated with GSI/ X509 certificates?
 - Does anyone have it?
 - Leo: Not familiar
 - Jan: A group in IBM is looking into it and has relations with IETF
- Leo: We may extend to thjs namespace service to support other types of data also.
 - Currently it has a file-system application focus
 - Non-file system data also possible (like ODBC or JDBC like query could be mapped to a file) – but more understanding of this requirements has to be studied

Presentation: Osamu Tatebe File System Directory Services

- Arie: What is to open and lock a virtual file?
 - Is it a logical lock

- Don: Insiders know its not real POSIX
 - Files have immutable locks
 - Don: most physics based systems assume read-only
- Don: Locking of files: do we need to do it?
 - Leo: It needs to be supported
 - May be we look into read-only (immutable)
- Arie: Mutable files
 - Multiple clients trying to update
 - Osamu: replica management
 - Leo: Assumption – Single entry point
- CERN CASTOR: ACLs at top level
 - Locks can not be done at top level
- May be we rename “open and close”
 - LEO: “reserve”
- Veritas (Hans): current working directory
 - Many from the group: It must be at client

All those who were interested in participating in the evolution of these documents were requested to contact the co-chairs.

Notations:

Arie: Arie Shoshani, LBNL

Arun: Arun swaran Jagatheesan, SDSC

Don: Don Fredrick, FNAL

Jane: Jane Xu, IBM San Jose

Leo: Leo Luan, IBM Almaden