NFSv4 Sessions Implementation Update

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Network Appliance

Sessions Proposal

- Part of v4.1
- Adds a session to v4, 6 new ops
- Provides transport diversity, trunking, multipathing, etc
- Enhances protocol reliability through accurate duplicate request caching, bounded resources
- http://www.ietf.org/internet-drafts/draft-ietf-nfsv4-sess-00.txt

Prototype Implementation

- UMich/CITI project
  - http://www.citi.umich.edu/projects/rdma/
- Implementing v4.1 session support
  - Both client and server
  - Linux 2.6 code base
  - TCP transport
- Soon exploring RDMA

Implementation Experience

- Client:
  - Protocol changes complete
  - Passes Connectathon
- Issues
  - Slotid / Linux RPC slot interaction
    - Sleep on congestion / slot limit reached
  - Reconnect / clientid / sessionid reuse
  - RPC transport switch
    - Callback channel support

Implementation Experience

- Server
  - Protocol, Duplicate Request Cache (DRC) complete
  - Passes Connectathon
  - PyNFS tests under development
- Issues
  - Callback channels
  - Support alternative transports

Next Steps

- Complete client and server testing
- Server transport switch design
- Performance / recovery testing
- Report at Connectathon 05