



Session and File Layouts
NFSv4 WG Meeting
IETF 69 – Prague
2007-07-23

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- ▶ **What changed between draft-11 and -10**
- ▶ **What changed between draft-12 and -11**
- ▶ **Open Issues**

What changed between draft-10 and -11

- ▶ **Session inspection resulted in Secret Session Verifier becoming a Secret State Verifier for protecting all state attached to a client ID.**
 - **When EXCHANGE_ID invoked, client requests state protection model**
 - **SP4_NONE: no protection**
 - **SP4_MACH_CRED: machine credential**
 - **Principal that creates client ID must create client ID's sessions, bind connections**
 - **SP4_SSV: SSV credential**
 - **pseudo GSS mechanism based a shared client/server key**
 - » **supports privacy as well as integrity**
 - **SSV credential required to create sessions, bind connections**
- ▶ **Client can use SP4_MACH or SP4_SSV protection to allow clients to issue CLOSE, LOCKU, etc. with machine or SSV credential.**

What changed between draft-10 and -11

- ▶ **Trunking section re-written to clarify and to be consistent with new SSV model**
- ▶ **headerpadsize now a channel attribute (was a session attribute)**
- ▶ **Via EXCHANGE_ID, client can bind principal to stateid**
- ▶ **Added SEQ4_STATUS_CB_PATH_DOWN_SESSION to allow server to tell client when a session's callback path is down (so that server can retry a CB_SEQUENCE)**
- ▶ **Added SEQ4_STATUS_BACKCHANNEL_FAULT to allow server to tell client it cannot use the backchannel**
- ▶ **Clarified how persistent sessions work with operations that don't have stateids (e.g. OPEN); how does the server indicate a server restart?**
- ▶ **RECLAIM_COMPLETE added to document**

What changed between draft-11 and -12

- ▶ **Initialization Vector added to seal tokens of SSV mechanism.**
- ▶ **Clarified the multiple roles an NFS server can have with respect to pNFS**
- ▶ **Eliminated SIMPLE and COMPLEX devices and replaced with single device type that out stripes index array in device address instead of layout**
- ▶ **Cleaned up EXCHANGE_ID cases**

- ▶ **When a server cull an idle session?**
 - Or should a server refuse to create a new session when it has no room for more?
- ▶ **Need justification for committing data to metadata server for WRITES previously sent to data server**