NFSv4.1 Bis Document

Why, What, How, Whether

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Overview

- General desire for one document describing a minor version.
  - Makes it simpler for readers if there are not multiple documents on the same subject potentially contradicting one another.
  - IESG has made it clear that they see the profusion of documents updating other documents as a problem
- RFC 5661 is building up a set of updates
  - Plus, it has deferred some needed ones for quite a while.
- The Working Group needs to address this situation for v4.1.
  - I have a proposal about how we might do so.
  - Working group needs to decide what approach to take.

Motivation
Updates Pending or Needed

- NFSv4.1 updates already done or underway:
  - Updates to Section 12 specified by RFC 8434
  - Changes to multi-server namespace (in draft-ietf-nfsv4-rfc5661sesqui-msns)
- Other sections of RFC 5661 that are incorrect or otherwise troubling:
  - Internationalization section flat-out wrong (derived from one in RFC3530; Needs to match RFC7530).
  - Needs a new Security Considerations section. Details start on [Next Slide](#).

Motivation
Security Considerations Section (Current)

- No threat analysis
  - It should have been (lc) REQUIRED (uc), but it wasn't.
  - Beyond that, its absence made it too easy to handwave away serious issues.
- Poor security at best
  - AUTH_SYS use OPTIONAL, in the clear, even without client authentication ꓳ┼
  - Privacy/integrity issues.
    - No way to force application to initial exchanges.
    - Difficulty offloading because different keys are used on different requests.
    - Actual use extremely limited.

Motivation
Security Considerations Section (Going Forward)

- Most current implementations have very limited security.
  - Pervasive support of (unauthenticated) clients using AUTH_SYS
  - RPCSEC_GSS privacy implemented but almost never used
    - Too expensive for most uses given that work is not offloadable.
- Needs to reflect security improvements now under development
  - Encryption support which applies even on initial exchanges.
  - Client Authentication to make use of AUTH_SYS acceptable.
  - Gives us the opportunity to write an honest Security Considerations Section which doesn't say "Nfsv4.1 is too insecure to use on internet, and in lots of other places"

Document Preparation
Preparatory Phase

- Will start with RFC resulting from draft-ietf-nfsv4-rfc5661sesqui-msns (assuming that all works out OK ⁀)

- Fairly easy to add some needed updates:
  - New internationalization section.
  - Revise to defer to RFC 8178 regarding versioning rules.

- Can produce an individual I-D at this point.

- After working group review and discussion, expect to propose adoption as WG document

Document Preparation
Completion of Document

- Need to provide a revised Section 12 in line with RFC 8434.
  - Will need Tom's help on this.

- Security-related updates:
  - Rewrite treatment of security to incorporate use of RPC encryption, client authentication.
  - Will need normative reference to rpc-tls and possible nfs-specific document based on it.
  - New Security Considerations section.

- Apply Errata, other issues the WG decides to address.

Working Group Decisions to be Made
Need to Think about Forms of Update Documents

- Forms of update documents we've used.
    1. Just contradict the base and let the reader figure it out.
        - E.g. RFCs 8434, 8178
    2. Explicitly tell user what has changed
        - E.g. RFC 8587
    3. Provide an updated document
        - E.g. RFC 7530

- Have to consider the IESG environment.
    - Tolerance for style-2 updates is becoming more limited.
    - Review of style-3 updates will probably be getting easier

Working Group Decisions to be Made
Deciding about Specific issue of an RFC5661bis

- Will need to consider the issue when there is bis document ready to be made a working group document.

- Could defer decision until the new security work is done.

- With the new security work, WG will have to address the document update issues for NFSv4.1.
  - New treatment of security at variance with that in RFC5661.
  - Security Considerations section would have to be rewritten.
  - Might be impossible to deal with without an RFC5661bis. See Next Slide for details.

Working Group Decisions to be Made
Trying to Deal with Security Revisions without an RFC5661bis

- Updates to security discussion in body of document.

- Have to consider IESG's reluctance to approve extensive updates to existing document.
  - Applies to both security discussion in body of document and the Security Considerations section as well.

- Special problems with a Security Considerations section
  - Sec Dir not likely to accept a new or fully updated Security Considerations section that does not contain a threat analysis.

- Probably no way to deal with issues without an RFC5661bis

Working Group Decisions to be Made
Dealing with Security for Other Protocols.

- Updates to security discussion in body of document.
  - Have to consider IESG's reluctance to approve extensive updates to existing document.

- Special problems with a Security Considerations section for NFSv4.0.
  - Would need an editor for rfc7530bis == rfc3530tris
  - Might just temporize and put the effort into v4.1, since substantive the security improvements in rpc-tls are still available to v4.0.

- Will leave NFSv3 and ancillary protocols just as they are.