

# **Rfc5661bis Effort**

## **Overview and *Doc Status***

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# Proposed Presentation Outline

## Subject to Bashing

- Overview Slides (**Slides 3-10**)
- rfc5661bis:
  - Current Draft: -04 (**Slides 12-15**)
  - Pending Draft : 05 (**Slides 27-29**)
- Acls:
  - Current Draft: -01 (**Slides 18-20**)
  - Pending Draft: -02 (**Slides 30-31**)
- Addl. Pending Drafts
  - Rfc5662bis-03 (**Slide 32**)
  - Internationalization-09 (**Slide 33**)

# Overview Slides

- **Effort Overview**
- **Document Summary**
- **Proposed Presentation**

# Effort Overview

## Recent Changes

- Now realize this is a rescue effort
  - Results of decades of leaving issues unaddressed
  - We now have an opportunity to fix them
  - Unfortunately, there is no FEMA money ☐
- Victims identified and being treated
  - Only ACLs still in the ICU
- Section 9 of RFC8178 gives us options for timely fixes.
  - Have kept protocol extensions as limited as possible
  - See 61bis-May19-S1dot3 .txt for details

# Effort Overview

## Expected Steps Going Forward

- Look at newer documents (**Slides 5-6**)
- Also pending documents that become available (**Slide 7**)
  - Rfc5661bis-05 (**Slides 27-29**) with target date 5/30.
  - Acl-02 (**Slides 30-31**) with target date 6/20.
- **Read The Fabulous Drafts** and then:
  - Discuss the pending issues
  - Try to resolve listed Consensus Items
  - Discuss the areas identified for discussion in Appendices for that purpose

# Effort Overview

## Needed by IETF120

- Adoption of Documents including the following laggards:
  - Security should have happened long ago. In any case , it ***must not*** be delayed any longer.
  - Requesting adoption of rfc5662bis-02 today.
  - Will request adoption of acis-02, after it is out.
- Need to get Internationalization in shape for WGLC/submission
  - Should be part of internationalization-09
- Target submission dates for all documents:
  - Need to confirm by the first post-IETF120 Interim

# Document Status

## Docs with New Drafts Last month

Doc	Type	Draft	Slides
<b>rfc5661bis</b>	<b>WG</b>	<b>04</b>	<b><u>Slides 12-15</u></b>
<b>security</b>	<b>PD (as of now)</b>	<b>09</b>	<b><u>Slides 16-17</u></b>

# Document Status

## Docs with New Drafts Now

Doc	Type	Draft	Slides
<b>Acls</b>	<b>PD</b>	<b>01</b>	<b><u>Slides 18-20</u></b>
<b>Internat...</b>	<b>WG:</b> <b>PD:</b>	<b>08</b> <b>ER_try-01</b>	<b><u>Slides 21-23</u></b>
<b>rfc5662bis</b>	<b>PD</b>	<b>02</b>	<b><u>Slides 14-25</u></b>

# Document Status

## Docs with Pending New Drafts

Doc	Type	Draft	Target	Slides
rfc5661bis	WG	05	5/30	<u>Slides 27-28</u>
Acls	PD->WG	02	6/20	<u>Slides 30-31</u>
rfc5662bis	PD->WG	03	7/1	<u>Slide 32</u>
Internat...	WG	09	7/1	<u>Slide 33</u>

# Anticipated Protocol Extensions

- Explained in Section 1.3 of rfc5661bis-05
  - Pre-draft version of that section available now
- In rfc5661bis-05:
  - Additional notifications and associated flags for a more implantable and usable version of directory delegations
- In Acls-02:
  - New **OPTIONAL** attribute: aclchoices.
- Those will need to be incorporated in rfc5662bis-03

# Existing Drafts

- **Rfc5661bis**
- **Security**
- **Acls**
- **Internationalization**
- **rfc5662bis**

# rfc5661bis

## Changes in -04 (Slide One of Three)

- Address Persistence Issues (Cited in C.2.5)
  - Current Unimplementability
    - Clarify Atomicity needs.
    - Do not force request to be continued across server restart.
  - Clarify relationship between persistence of reply cache and persistence.
  - Clarify relationship between persistence of session and clientid.
  - Address client discovery of level of persistence and possible need for grace period.

# rfc5661bis

## Changes in -04 (Slide Two of Three)

- Address Directory Delegation Issues (cited in C.2.2)
  - Stability guarantees re directory cookies and entry order.
  - Clarity regarding batching and delay of notifications — that they only apply to attribute changes.
- Completed handling of pending errata reports.
- Clarification of semantics/timing of DELEG\_PREV claim types.

# rfc5661bis

## Changes in -04 (Slide Three of Three)

- Address important issues related to security that relate to text in 61bis (resolution mainly in security document)
  - Absence of attributes for named attribute directories
  - Use of “**SHOULD**” regarding client support for data privacy for RPCSEC\_GSS

# rfc5661bis

## Milestones achieved

- Drafting concluded to address all of the issues cited in Appendices C.2.2 through C.2.6
  - Need to review and discuss results.
  - Is further work needed /doable for C.2.2 and C.2.6?
- All remaining errata reports dealt with
  - Two *REJECTED* reports were incorporated
  - Will need WG consensus on those

# Security

## Changes in -09

- Completed the split-out of ACL stuff by moving one additional section.
- Cleaned up cross-document references.
- Addressed issues related to lack of attributes for named attribute directories.
- Added a new recommendation to deal with the fact that client implementation of data privacy for RPCSEC\_GSS had been a “**SHOULD**”.

# Security

## Next Steps

- Need to complete adoption mechanics, **ASAP.**
- Need to begin document review effort
- No existing plans for -10
  - Will do updates resulting from review
  - Need to draft additional material for Security Considerations but will focus on other document for a while.

# Acls

## Inherited from -00

- Initial Split-out of ACL-related material
- Reorganization of relationship of two ACL models
  - UNIX ACLs are the core functionality, with NFSv4 ACLs presented as a series of **OPTIONAL** extensions
  - Previously, NFSv4 ACLs were presented as primary with UNIX ACLs accommodated by being *extremely* lax about semantics.
- Reorganize description of ACE mask bits :
  - Two subsections for bits in accord with model in which extra bits are finer-grained variants of the three permission bits
  - Two subsections for bits that don't fit that model □

# Acls

## New Content in -01 (Slide One of Two)

- Complete Split-out of ACL-related material
  - Begun with -00
- Reorganization of ACE mask bit definition: Separate sections for:
  - **REQUIRED** Mask bits
  - Finer-grained versions of WRITE
  - Masks that don't fit the more/less granular model
  - Masks we can't figure out (no implementations found yet)
- Revised ACE4\_{READ,WRITE}\_NAMED\_ATTRIBUTES
  - To better interact with the new POSIX-based approach to named attribute directories.

# Acls

## New Content in -01 (Slide Two of Two)

- Completed description of Aclfeature extension
  - Intended as an NFSv4.2 extension.
  - Provides support information about mask bits, flags, who values.
- When Aclfeature not available /implemented:
  - Will rely on inference based on the set of supported ACE types.
  - Unfortunately, that leaves a lot of information gaps within each of the two ACL models □

# Internationalization

## Current status

- Drafting all done
- Has multiple external reviews.
  - Now have to deal with the fact that they are different
- Have focused on other documents for a while
- Now time to shift back to this one and decide how to move toward completion.
  - After all, this one of the *easiest* pieces of this effort

# Internationalization

## External Reviews

- Three external reviews:
  - a) Early review by N. Williams:
    - Had important suggestions about client-caching and normalization and case-insensitivity (adopted those)
    - Also proposed I write an entirely different document (***Nobody*** liked that)
  - b) Unofficial review by J Klensin
    - Much worry about complexity of these two equivalence relations, particularly case-insensitivity
    - (implicit ) suggestion that these not be dealt with.
  - c) Official review:
    - Generally positive. No major issues.

# Internationalization

## Next steps

- Decision to be made on path forward:
  - 1) Use -07 as a base for an eventual submission
  - 2) Cut back to a document with internationalization like that of RFC7530
  - 3) Something in the middle.
- I18n-extrevtry is an attempt to explore 3)
  - -01 (PD) Expected by 5/21.
  - Will put most stuff about dealing with string equivalence into Appendices
  - Dealing with canonical equivalence (i.e. normalization) will stay as it is in RFC 7530.
  - Dealing with internationalized case-insensitivity would require a v4.2 extension, to be done in a separate document.

# Rfc5662bis

## Status of -01

- Personal draft
- Small set of changes relative to RFC5662
- I think it is in pretty good shape
- Had not had much working group discussion
  - Needed more focused discussion on the limits of acceptable XDR changes before considering WG adoption.

# Rfc5662bis

## Work beyond -01.

- Have sent message regarding XDR change limits in the bis context.
  - Did not include issues raised by Section 9 of RFC8178.
  - Need to discuss on WG list.

# Pending Drafts

- **rfc5661bis**
- **Acls**
- **rfc5662bis**
- **Internationalization**

# Rfc5661bis

## Changes in -05 (Slide One of Three)

- First draft to include a protocol extension
  - So Directory Delegation do not have to wait until 4v.2 to be implemented ☐
  - Fit in pretty well. Just had to extend an enum
- Feature was fairly far along:
  - Was not like the persistence stuff, which was an unrealizable aspiration.
  - A few things were missing and were hard to address due to clarity and organizational issues in existing text.
- Major work to get it in a form implementers were OK with

# Rfc5661bis

## Changes in -05 (Slide Two of Three)

- Addressed one major issue in -04, but two more had to be dealt with:
  - That work addressed clients that wanted to store directories just as they were on server.
  - Turns out the rae is a set of clients who don't care and servers who need a simpler approach
  - Also, authorization had been ignored and was made much worse by ACLs
- Also had tons of clarity issues to deal with because of the way multiple types of notification had been jammed together
  - Looks like the attributes stuff had been put in at the last minute

# Rfc5661bis

## Changes in -05 (Slide Three of Three)

- Wound up having to do major restructuring on:
  - Directory Delegations Section (now Section 15.9)
  - CB\_NOTIFY (Section 24.4)
    - Added subsections for each notification type
    - Added a summary table to Section 5.4.3
- Other helpful things to look at:
  - Section 1.3 has a useful defect summary covering all the documents in the effort
  - More explanation of the delegation work in Appendix C.2.2

# Acls

## New Plans for -02

- Create new **OPTIONAL** attribute: aclchoices
  - Simplified version of Aclfeature, which turned out to be too complex for general client use
  - Goal for v4.1 is to provide interoperability for as many features as we can, definitely including all users of UNIX ACL model.
- Aclfeature will be deferred until v4.2
  - *Might* be sketched out in appendix in -02

# Acls

## Plans for -After 02

- Review of aclchoices to:
  - Make sure it provides interoperability for users of the UNIX ACLs model.
  - See which additional features of the NFSV4 ACL model it provides interoperability for.
  - See if any of those need changes in further acl drafts.
- Resolve the Consensus Items in further drafts.

# Rfc5662bis

## Plans for -03 and Completion

- Incorporate any protocol extensions necessary for v4.1:
  - Propagate notification extensions.
  - Propagate aclchoices flag definitions.
- Consider further cleanup of string typedefs:
  - Should strings that are not required to be Unicode still be called “utf8str”
  - Obviously not but it might be too much work to change..
- Consider WGLC after -03 is out ☐

# Internationalization

## Plans for -09 and Beyond

- Decide what to use as base –for 09
  - -08?
  - Extrev\_try-01?
- My current choice is the latter but,
  - Would appreciate working group /chair/AD advice
- Once -09 is out:
  - Consider another external review cycle or WGLC.

# “Historic” Slides

- What things looked like a month ago
- With possibilities opened up by Section 9 of RFC8178:
  - Can provide limited interoperability with simpler attributes
  - The full Aclfeature attribute can be deleted or purged in an Appendix
  - Can focus on a fuller interoperability profile for v4.2.

# Acls

## Followup Work (Slide One of Two)

- Needs WG to read and review
- Needs information about implementations. In particular,
  - How do clients deal with multiple methods of computing mode?
  - What variants of computing mode exist and are there differences in how mode change are reflected ACLs?
  - Which of the NFSv4 ACL extensions are actually implemented?
  - Which of those extensions are used/needed/desired?

# Acls

## Followup Work (Slide Two of Two)

- Need to focus on potential changes to Aclfeature
  - Should it be expanded to represent more potential behaviors?
  - Can anything be taken out?
  - Can we use it to delimit a set of ***RECOMMENDED*** behaviors?
    - If so, can that set be made small enough to be workable in v4.2?
    - Could it be converted to **REQUIRED** in v4.3?

# Planning for Completing Effort

## Original Goals and Current Status

- Goals
  - Multiple documents serving as collective bis for v4.1
- Current Status
  - Documents where we have a clear path to completion
    - 61bis, security, internationalization, 62bis
  - For the ACL document, we are just starting and have a long learning process, so completion of the bis might be years away.
- Need to look at bis plans that do not require all that work, as we do in [Next Slide](#).

# Planning for completing effort

## Looking at Alternatives (Slide One of Two)

- What could we say about ACL attributes in v4.0 and v4.1?
  - “They are a total mess” is probably not acceptable.
  - “They are Experimental” is at least the truth.
  - If we agree that the truth is necessary, could wordsmith something that conveys the reality
  - How would this modify existing documents:

# Planning for completing effort

## Looking at Alternatives (Slide Two of Two)

- How would we follow up for v4.2?
  - Depends on results of investigation (See Slides 14-15)
  - Will need a bis of the acl document
    - That could include the extension, or that might be separate
- What do we do when we have true interoperability (v4.3 or later)?
  - V4.3 RFC would point to security
    - Would make AcIFeature **REQUIRED**
    - Also make it clear that **RECOMMENDATIONS** in security/acls were obligatory.
  - Security document would point o aclbis

# Planning for Completing Effort

## Suggested Approach Going Forward

- Continue work on getting ACL implementation knowledge, as described in Slides 14-15, but not forever.
  - Make a decision at IETF120
  - Or at an interim one month later.
- Based on progress at that time, either
  - Continue as originally planned with a 5-doc bis effort
    - Switch to 4-doc effort and defer the job of de-experimentalizing ACLs.
    - Could be done in v4.2 or v4.3 given further consideration.