

NFSv4 Internationalization Status

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Nfsv4 Working Group meeting at IETF88

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Overview

- History of NFSv4 internationalization
 - RFC3010 and RFC3010bis drafts
 - RFC3050 and stringprep
 - Initial (failed) attempt to de-stringprep-ize in RFC3530bis
- NFSv4 internationalization's current status
 - Current I18N in RFC3530bis
 - Process going forward
- Handling NFSv4 Internationalization in future
 - With précision 😊, it is hoped

How did we get here?

(before rfc3530bis-04)

- Were supposed to do I18N
 - Didn't think we could really do that
 - Wrote a lot of MUST's and then ignored them
 - That "worked" during RFC3010 and thru rfc3010bis-03
- With rfc3010bis-04 and RFC3530:
 - Spec was stringprep-ed (IESG insisted)
 - Had lots more MUST's to ignore
 - Many were in normatively referenced documents that people didn't read.
 - We had implementations that worked
 - But the spec had only the most tenuous connection with the reality of the implementation environment
 - Things left as-is through rfc3530bis-03 (March 2010)

How did we get here?

(from rfc3530bis-04 onward)

- Rewrote chapter in -04 (July 2010)
 - Tried to eliminate all cases in which spec told implementers to do something impossible
 - While staying as close to stringprep as possible
 - Continued that approach until -26 (August 2013)
 - Working group continued to refine text
 - Then IESG said “**No Way**”
- Brief summary of IESG issues
 - Too complex
 - Too much freedom for different client/server behaviors
 - No workable way for parties to find out about each others i18n characteristics

Current i18N in rfc3530bis

- Goal is to describe what is actually implemented
- Based on pre-stringprep text
 - from rfc3010bis-03
- Adjusted, as necessary, to reflect actual implementations
- In current drafts:
 - draft-ietf-nfsv4-rfc3530bis-28 (chapter 12)
 - draft-ietf-nfsv4-rfc3530bis-dot-x-19 (string-related typedefs)

Need Your (and Others') Input!

- Please read docs and comment
 - **SCREAM**, if implementations conflict with a MUST
 - Would help to know about how implementations deal with SHOULDs and MAYs
- Also need input from implementers not here
 - And from those that don't read the nfsv4 list
- Of particular interest:
 - Are there things here that IESG will have trouble with?
 - File systems that do normalization-related processing
 - We have info about ZFS, but not HFS+
 - Are there others ?

Going forward with rfc3530bis

- It seems Sisyphean
 - I'm pretty sure Tom thinks so
 - Started in 2009 and i18n now seems to be the only remaining issue
 - If the working group and Martin is OK with i18n as it is now, should present to the IESG
- Job for Martin and a player to be named later
 - David Black has volunteered
 - Spencer is current designee
 - Please give them help if they ask for it.

I18N issues beyond NFSv4.0

- Minor versions beyond v4.0
 - V4.1: i18n in RFC5661 same as RFC3530
 - Doesn't match implementations
 - V4.2: i18n inherited from v4.1
- Also may be an issue for related protocols
 - e.g. FEDFS Admin protocol inherits pathname description from RFC5661

NFSv4 I18N issues and Précis

- Need to adapt to précis
 - IESG wants it (and may insist)
 - Seems more rational/limited than stringprep
- Issues to resolve with précis
 - Limitations on what we can standardize
 - Our normalization-related requirements
 - May have to teach people about normalization-insensitive LOOKUPs

New i18n Document for NFSv4

- We need a new I18n document for NFSv4
 - Should address all minor versions
 - May need some additional/preparatory documents
 - Should be as compatible with précis as we can make it and still be implementable.
- Troublesome issues:
 - Files in existing FS's with non-UTF8 names
 - Clients unaware of encoding