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 rcf3010bis-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