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NFS Testing Standards: A Call to Arms

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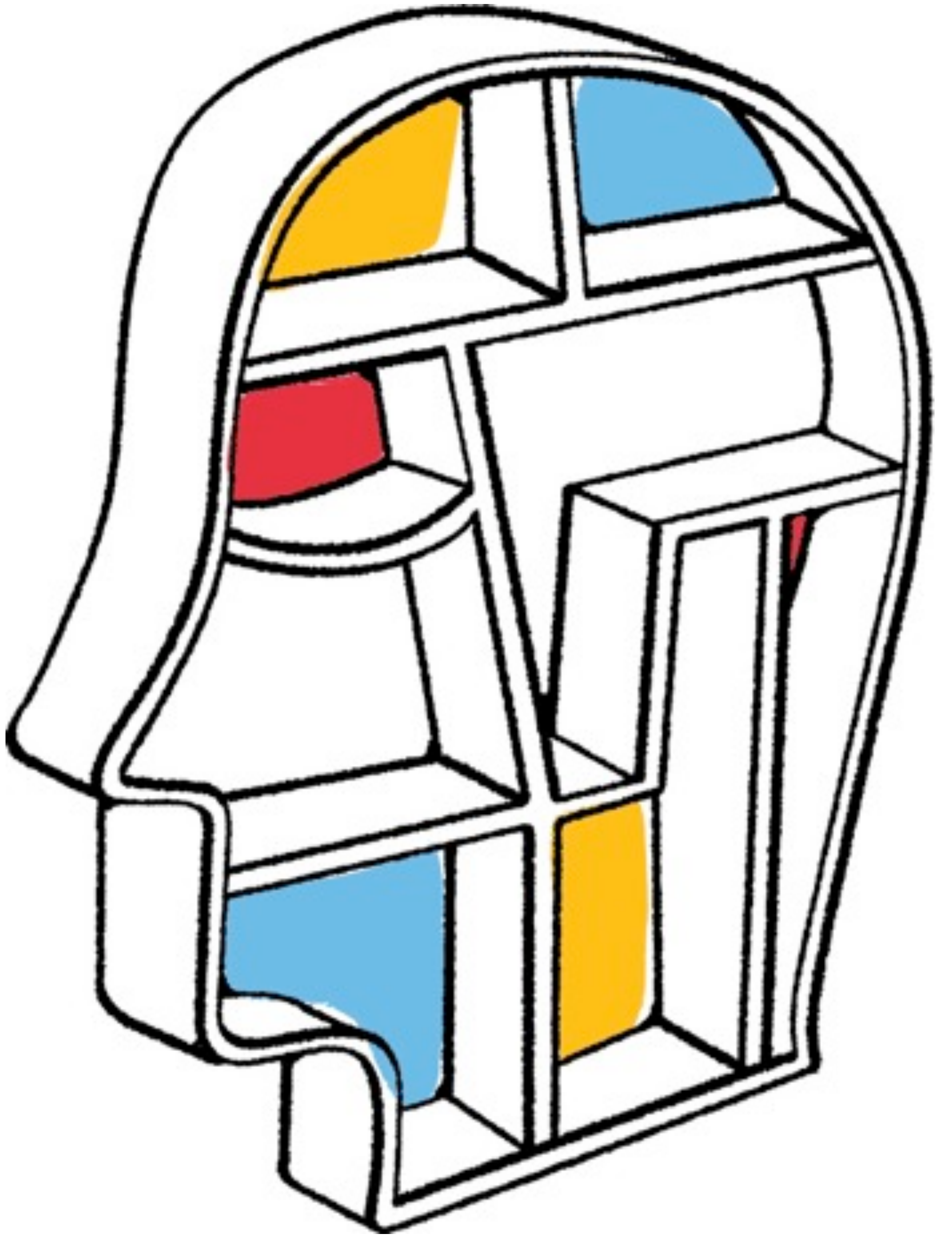

Outline

- Why a ConnectAThon?
- Why is the ConnectAThon test suite no longer suitable?
- How do we go forward?
- Do we really mean it this time?

Why a ConnectAThon?

- *Not there at the start*
- ConnectAThon
- BakeAThon
- NAS Conference

ConnectAThon

- Target Audience: Developers
- Regression testing
- Multiple protocols
- Run by one vendor
  - Fee paid

BakeAThon

- Target Audience: Developers
- Kick the protocol’s tires
- Single protocol
- Community run
  - Host pays “costs”

NAS Conference

- Target Audience: Marketing
- Sell the protocol
- Advertise products
- Run by one vendor
  - Probably a cost
  - Shh! *BakeAThons run in the background*

Status check

- NAS Conference
  - Dead: subsumed by SNIA’s SDC
- BakeAThon
  - 3 times a year
- ConnectAThon
  - Dead

But wait, we paid $750 to attend!

- You are at a BakeAThon
- No regression testing is taking place
  - How many people are testing NFSv3?
  - How much of your product's NFS revenue is with NFSv3?
  - How many QA Engineers are on the testing floor?
  - How many are in the audience today?

- Then where is our money going?

We'll get there, but why did it die?

- Big iron is dead for interoperability testing
- NetApp can either bring
  - Data ONTAP™ in a rack
  - Simulate ONTAP™ on a laptop
- What are we testing?
  - Performance
  - Correctness

Well?

- Performance is for sales
- Correctness is to discover interoperability issues before our mutual customers
- And that is the spirit of ConnectAThon.

Big iron is noisy

- Can hide that in a Data Center
- Cannot hide that on a testing floor

- It requires a lot of:
  - Power
  - Floor space
  - Cooling

Small iron is cost effective

- I can run 5 NFSv4 clients on my laptop
  - Run as many NFSv3 clients as ISO images allow
- I can run 5 NFSv4 servers on my laptop
  - Get a NOW account and you can too!
- Don’t forget distro variants and versions
- But my QA organization can run all of these
  - Automated regression testing
  - Per check-in
  - One offs
  - Etc.
- Don’t forget synthetic clients

There is your answer

- We don’t do regression testing at ConnectAThon because we can do 90% of it on our own.
  - Yes, I made that figure up; the point stands.

Where does that testing come from?

- Proprietary tests
  - Might invoke hooks to invoke fault injection
- Cthon04
- Synthetic clients

cthon04 test suite

- 2012 - 2004 = 8 years
  - Legal issues on ownership
  - Or at least not clear to the community
- Very low bar
- Which means it is a very demanding bar
  - “It passed everything but this one minor test in cthon.”
    - Which means you don’t have a good implementation
    - I.e., nothing in there is minor

Synthetic clients

- cthon04 drives the client to interact with the server via a mount point
- Can set mount options for protocol versions

- pynfs
  - Original intent was to verify the protocol
  - Bypasses the client stack
- Other synthetic shells out there

Where did my money go, again?

- Can either view it as
  - Tax on cthon04
    - No return
    - Throw your money in the hole
  - Investment on nfstestXX
    - Huge return
    - Compound interest

How do I view it?

- 401k
  - Compound interest
- We've made a huge investment over the years
- NetApp's quality has improved because of this event
  - Find a bug?
    - Yeah, before our customers
  - Didn't find a bug?
    - Yeah, can ship code confidently

This event is stressful and yet serene

- A lot of different platforms interacting with yours
- But a lot of
  - I’ve got chocolate
  - You’ve got peanut butter
  - Together, we are better
- I.e., developers isolate the problem systems
  - Work together to solve
  - No blame
    - Might actually be both systems
    - Anyway, another issue soon. :->

Other test kickoffs

- 2011 NFS Automated Testing - Bryan Schumaker
- 2011/2010 pynfs proxy - Fred Isaman, Andy Adamson, Jorge Mora
- 2010 Testing BOF at Cthon - Brian Wong
- 2009 cthon04 BOF at Cthon - Jeff Layton (?)

What do we need?

- Way to add Open Source tests
  - Not specifying language
  - Synthetic okay
  - Real client versus real server
- Means to identify success versus failure
  - Expected output versus actual output
- Way to tie them altogether
- Energy going forward