Packaging Samba for Debian

Presented by Andrew Bartlett of Catalyst // 2015-01

Please ask questions during the talk

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open source technologists

About me

- Andrew Bartlett

- Samba Team member since 2001

- Working on the AD DC since 2006

- Involved in Debian packaging list for a long time

    - But not very active till I took on the samba4 package merge

- These views are my own, but I do with to thank:

    - My employer: Catalyst

    - My fellow Samba Team and Debian packaging team members

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Questions

- Please ask questions or share related experiences during the talk!

Samba – What makes it complex?

- File server

- Print server

- Libraries

  - tdb

  - talloc

  - Ldb

  - Dcerpc client libraries

- Active Directory Domain controller

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Samba the centre of the universe

- Tdb

  - Reverse dep of 3000 other packages

- Talloc

  - Reverse dep of 2000 other packages

- Libsmbclient

  - Reverse dep of 1800 other packages

- Samba-libs

  - Reverse dep of another 140

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Semi-monolitic

- Samba libs stored and maintained in samba GIT

- Small libraries have independent version numbers

  – Shared build system

  – But can build just the library

- Samba can build against system libs

  – But Samba strictly requires the matching version by default

Forwards and backwards

- The one project is both

  - Progressive

  - Leading edge

  - Rapid development (historically)

  - Embracing new technologies

- And

  - Conservative

  - Stable, Reliable File server

Packaged twice

- Samba4 was going to be the new Samba

- Then Samba forked

  - Well we never split the Samba Team

  - But it was a fork for all practical purposes

- So we ended up with two packages

  - Samba4 in experimental

  - Samba in main

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Samba package

- Samba 3.6

  – Traditional Samba

- Including

  – smbd

  – nmbd

  – winbindd

  – client tools

  – libsmbclient

  – nss_winbind / pam_winbind

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Samba4 package

- Samba 4.0 pre-releases

  - The AD DC and support for OpenChange

- Including

  - Samba (the 'new' daemon)

  - Rewritten client tools

  - Rewritten client lib

  - Libdcerpc for OpenChange

  - nss_winbind / pam_winbind

Complementary and overlapping

- Samba4 included binaries that where not in samba

- But also binaries that overlapped

    – Alternatives used to handle some clashes

- These were not entirely like-for-like

- Even different pam_winbind/nss_winbind

    – Using a different (forked) protocol version to a different socket

Time passes

- Samba4 moves from experimental to unstable

    – In support of evolution-mapi and openchange

- Samba4 moves from unstable to testing

- … and from testing to stable

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Samba un-forks

- We couldn't stand the idea of actually forking

- Memories of Samba-TNG still sting, over a decade on

- Samba 4.0 released once merged with Samba3

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Meanwhile

- Updates to Samba4 package in unstable stop in June 2012

  - Due to the freeze

  - Further updates in experiemental

- Samba 4.0 is released in Dec 2012

  - And no package of Samba 4.0 appears

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Old Samba4 still in stable Wheezy

- We didn't strip down the Samba4 package prior to the freeze

- An old, unsupported and pre-release Samba4 ships!

  – Including the full AD DC

- After Samba 4.0 release, many users install samba4!

  – But they get samba4 beta2

  – with the ntvfs file server (only)

- Have to tell users that there is still no official package

  – EnterpriseSamba.com (SerNet) provides 3rd party packages

No simple update path

- Little desire to just update the Samba package to samba 4.0

    - That is, without the libraries or AD DC

- No desire to continue to split of samba/samba4

    - Particularly after upstream worked to hard to merge them

- Can't continue a samba/samba4 split due to s3fs

    - Merged Samba starts using smbd, not the rewritten SMB server

    - Debian continues using ntvfs so as not to have to ship an smbd in 'samba4'

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I finally take on the merge

- I didn't know debian packaging

- But figured it couldn't be too hard

  – And I had a great team to review my work

- Merged Samba 4.0

  – In experimental in June 2013

  – In unstable in October 2013

- Supported by NETGEAR

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Shared libraries

- Samba 4.0 Finally uses shared libraries internally

- **Lots** of shared libraries

- But more than one-per-package is manageable for

- Circular dependencies until we gave up and just did samba-libs

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Difficult to split up the packages

- Still largely a monolithic package

- Separate packages are really only for external-only libs, eg

  - pam_winbind

  - libsmbclient

  - ctc

Killing samba4

- Eventually the AD DC packages are emptied of binaries

- Difficult choices

  - Better to provide the old code than no code?

  - Updated packages were in experimental

  - Used the non-preferred and not supported SMB server!

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Further challenges: Heimdal

- Upstream samba bundles Heimdal

- Debian's freedom stance is great, Heimdal is shipped!

- Policy means we have to use it

- But this version differs from what is in Samba

  - Get patches upstream

  - Fix segfaults when private(ish) KDC structures change

- Still untested

  - Updating Samba to Current Heimdal doesn't pass make test

- Difficult challenges ahead for 4.2

  - Lockout support needs help from the KDC

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Make test in debian?

- We need to verify our KDC in particular

- But also the whole deb package

- New work done by Red Hat folks could make 'make test' runnable in a package build

  - Test wrappers moved from compile-time to LD_PRELOAD time

- 2 hour runtime if things go well

- 10% failure rate due to flapping tests

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Long term implications

- Samba 3.6 in wheezy

- No upstream support for functionality issues

  – Samba 3.6 went security-fix-only 2013-11

  – Only 6 month after wheezy release

- Even security support nominally ends soon

  – In reality, we always do more than we promise

- Many wheezy users need to use backports

  – That or 3rd party packages only way to get the AD DC

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General issues

- Hard to keep Samba up to date for users

- Even Samba 'bug fix only' releases can't be uploaded to stable

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How to do this next time?

- Hopefully Samba doesn't fork

- But how to support file server and AD users expectations?

- Will certainly use experimental again

- Don't let pre-release packages escape into stable

  – Or at least, keep it to the libraries other packages strictly need

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Catalyst's Open Source Technologies - Questions?

Want to join Catalyst? – talk to me in the hallway track!