

Samba 4 Status Report

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SambaXP
April 2007



Samba 4 - Where are we now?

- Originally started in 2003, as an effort to improve the SMB server
- Later became the effort to get an AD DC working
- Strong focus on the right infrastructure
- 12000 commits since april 2004, 4000 in the last year



On our way to an alpha

- Improvements in the last year
 - Protocol knowledge
 - Protocol Coverage
 - Usability Improvements
 - Development Tool Improvements



Protocol knowledge

- We now know the format of all AD attributes
 - previously, we didn't know the internal format of encrypted attributes
- Knowing this means we know the LDB data format won't change drastically
- Give administrators confidence to try an alpha



Protocol coverage



SMB2 server

- Implementation of Microsoft's new SMB protocol
 - As seen in windows Vista
 - passes most of our SMB2 client testsuite



Kerberos

- PKINIT
 - Basis for smart-card login to Samba4
- Heimdal merge
 - Collaboration with Heimdal developers
 - No longer running a drastically custom version of Heimdal



DRSUAPI

- The Windows way of doing LDAP replication
- Decryption
 - Some attributes are doubly encrypted
- Replication
 - We now understand and implement AD replication!
 - Allows us to be a peer DC to a Windows DC [see Metze's talk]



LDAP

- Backends
 - run samba4 backend onto OpenLDAP or Fedora DS
- Start-TLS in LDAP server
- Better SASL support



File change notification

- Missing part of our file-server implementation
- new implementation backed by Linux inotify()
- Ported to Samba 3.0.25



Asynchronous

- IO
 - Based on new Linux Kernel Async IO functionality
- DCE/RPC
 - This layer is now fully non-blocking/async
- LDB
 - No longer blocks waiting for LDAP replies.



Usability



SWAT

- Browser-based LDB Editor
 - qooxdoo
- libnet getting more mature



GTK+ tools

- Now a separate project
- Applications managing for registry, SAM, services, crontab



Clustering

- Samba4 has hosted a big effort to create a clustered Samba.
 - Uses 'ctdb', clustered version of TDB



Development Tool Improvements



lib/replace

- provides standard functions/macros/defines not provided by the system
- Not required on recent POSIX-compatible systems
- Similar in purpose to libroken or GNUlib



PIDL improvements

- Pidl-generated code now used by Wireshark
- Use of standard IDL constructions
 - Compatible with Wine, MIDL, jCIFS IDL
- Now also used in Samba 3
- tests!



Build system

- all functionality now exported as shared libraries
- used happily by openchange and (now a separate project) samba-gtk



Test improvements

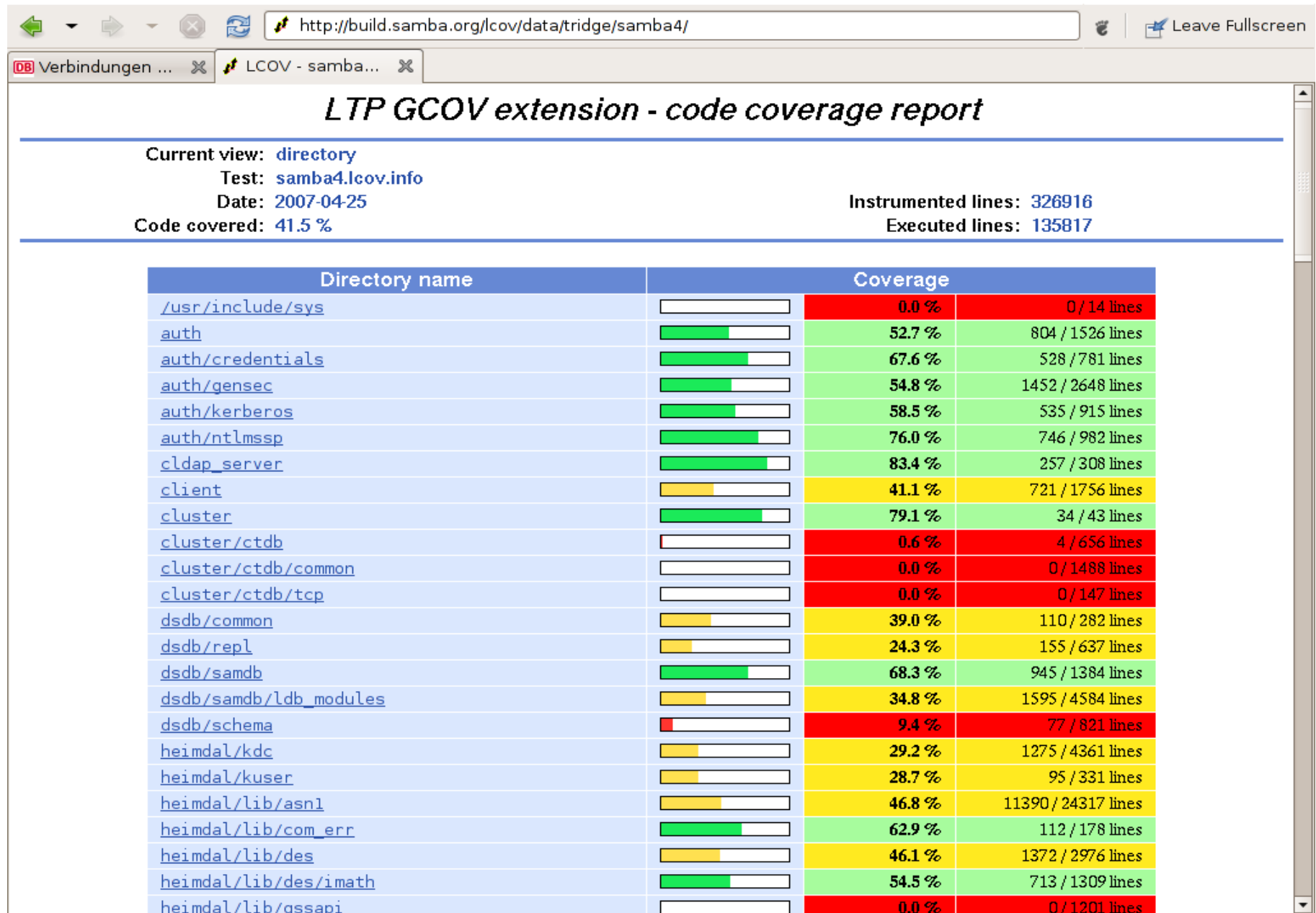
- 'make testenv' (development environment improvements)
- lcov test coverage driven testing
- new perl-based test infrastructure
 - progress indication
 - test environments: can now test domain member code
 - can run individual testsuites



Code Coverage

- Percentage of the code that is run during the testsuite
- 41.6% now!
- Main untested code:
 - Heimdal
 - SWAT
 - Winbind
 - Registry





Static Analysis (checker)

- Developed by IBM
- Run regularly on the build farm



Build Farm

<http://build.samba.org/>

- Now shows test coverage
- One of the hosts runs against Windows
- List with most often broken tests



Already in use



Merged into Samba3 - 1

- TDB transactions
- LDB
- File notification using inotify()
- pidl
 - First interface used in 3.0.25
 - Some more interfaces ported over for 3.0.26
 - plans to port over DCE/RPC library



Merged into Samba3 – 2

- Talloc improvements
- Socket Wrapper
- lib/replace
- Samba 4's test suite is used for Samba 3 testing
- events - maybe soon?



OpenChange

- Built around Samba4
 - Uses the DCE/RPC library and pidl
 - Hooks into smbtoriture



Domain Controller Status

- Basic DC works
- Some core functionality still missing
 - Group Policies
 - Schema not enforced yet
 - Access control still limited
 - Browsing



Member Server Status

- Winbind still missing
 - Idmap needs to be ported across
- Improving winbind is Kai's SoC project



Releases

- TP4 was released in january
- TP5 due out this week
- Alpha up next
- Already in Debians' experimental



Development Coordination

- IRC: #samba-technical on irc.freenode.net
- Mailing list: samba-technical@samba.org
- Wiki: <http://wiki.samba.org/>

