

# Samba 4 Status Report

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SambaXP

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# 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

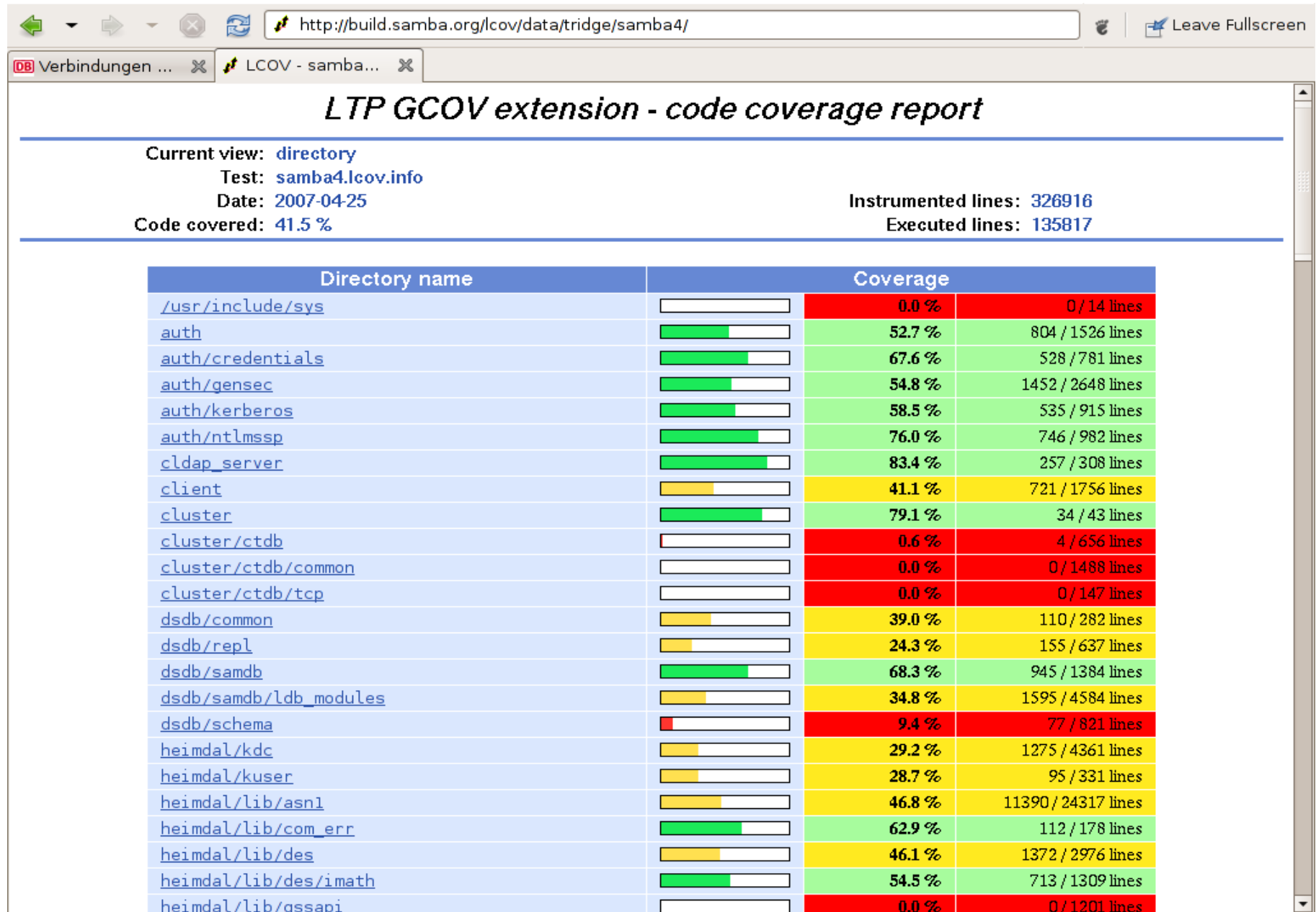
- 'make testenv' (development environment improvements)
- lcov test coverage driven testing
- new perl-based test infrastructure
  - progress indication
  - test environments: can now test domain member code
  - can run individual testsuites



# 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](mailto:samba-technical@samba.org)
- Wiki: <http://wiki.samba.org/>

