



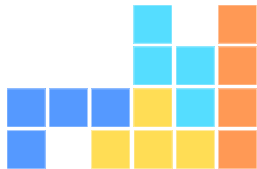
# THE SELFTEST SUITE

## Testing Samba

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Andreas Schneider

Red Hat Inc.  
Samba Team



Who am I?

## ABOUT ME

I'm a Free and Open Source Software developer working on:

- Samba - The domain controller and file server
- cmocka - a unit testing framework for C
- cwrap - Full network server/client testing made easy
- libssh - The SSH Library
- FreeIPA - An integrated security information management solution for Linux

Twitter: @cryptomilk

Blog: <http://blog.cryptomilk.org/>

Git: <http://git.cryptomilk.org/>

Are you Pastafarian?

# YOU NEED TO BELIEVE!

If you work on this code you need to believe ...

# FLYING SPAGETTHI MONSTER

in the Flying Spaghetti Monster!

## WE SUCCESSFULLY MIX ...

C, Perl, Python and Bash!

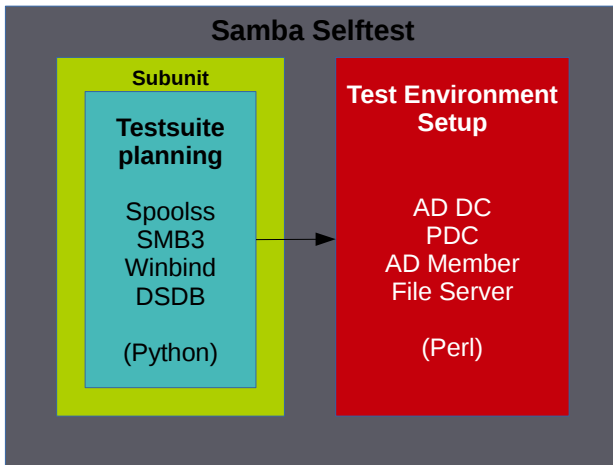
## YOU WILL LEARN ABOUT

- torture test planning
- setting up Samba environments
- running tests
- how to use testenv.
- something about pirates



# THE SELFTEST SUITE

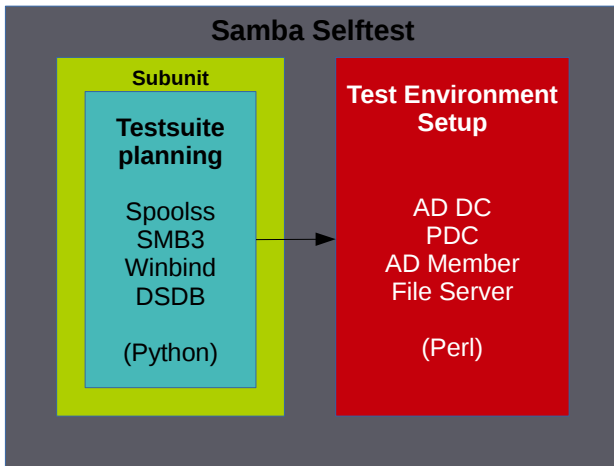
## SELFTEST SUITE



## SUBUNIT

- the subunit protocol is a report format for unit tests
- provides tools to parse unit test output
- Samba has special non-comptabile extensions
- <https://github.com/testing-cabal/subunit>

# SELFTEST SUITE



# SELFTEST TARGETS

## Target environment setup

- Creates a harness for Samba with artificial users and groups, and complete local fake network (using [cwrap.org](http://cwrap.org) project).
- Setup an AD DC, PDC, File Server, etc.
- Join members servers to DCs or setup several DCs
- Create different configurations

# CWRAP

- `socket_wrapper` - Network address emulation (IPv4 and IPv6)
- `nss_wrapper` - Artificial users, groups and hostnames resolving
- `uid_wrapper` - Fakes privilege separation (user switching)
- `resolv_wrapper` - Fakes DNS resolving (SRV records)

Visit <https://cwrap.org>

# SELFTEST TEST EXECUTION

## Test planning

- A test (smbtorture, bash script, vfstest) is planned
- A test specifies a target
- The target is set up if it isn't already running
- The test is executed, output parsed with subunit and reported

# INTEGRATION TESTS

## SMBTORTURE

- Huge test application for integration tests
- Tests for all SMB flavors (SMB3, SMB2, ...)
- Tests for all RPC services
- Some other strange tests ;)



# RUNNING TESTS

# SELFTEST SUITE

## Running tests

- make test
- make test TESTS="spoolss"
- make test TESTS="spoolss" SMBD\_OPTIONS=-d10
- make test TESTS="spoolss" SUBUNIT\_FORMATTER=cat
- make test TESTS="spoolss" VALGRIND="1"
- Test specification is a regex, tests are separated by spaces

Speedup tests: `source selftest/devel_env.sh`

I TYPE FUNNY COMMANDS AND YOU WATCH  
COMMANDLINE OUTPUT (aka DEMO)

# SELFTEST SUITE

## Entering a testenv

- make testenv
- make testenv SELFTEST\_TESTENV=nt4\_dc
- Test environments: ad\_dc, nt4\_dc, ad\_member, nt4\_member, ...

Speedup tests: `source selftest/devel_env.sh`

# SELFTEST SUITE

## Packet capturing

```
→ export SOCKET_WRAPPER_PCAP_FILE=debug.pcap
```

Note that for each test, data will be appended to that file!

# WRITING TESTS

## WRITING A NEW TEST

- Check if there is a target which suites your need or create one.
- Write a smb torture test or add a new bash script for testing a tool.
- Plan the test at e.g. `source3/selftest/tests.py`

<https://git.samba.org/?p=asn/samba.git;a=shortlog;h=refs/heads/master-selftest>

## LINKS

- Writing and running tests:  
[https://wiki.samba.org/index.php/Writing\\_Torture\\_Tests](https://wiki.samba.org/index.php/Writing_Torture_Tests)



## Questions & Answers

Take a look at my testing related projects!

<http://cwrap.org/>

<http://cmocka.org/>