

Samba's New Configuration System (libsmbconf)

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Breakout: Demonstration of configuring Samba with regedit.exe

Outline

1 Configuration in Samba 3.0 (and before)

- What We Have
- What We Need Beyond That

2 Configuration in Samba 3.2.0

- Ideas
- First Steps
- The `net conf` Utility
- Global Registry Configuration
- The `libsmbconf` Library

3 Current and Ongoing Work

- Rewrite of Loadparm
- Plans / TODOs

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Samba 3.0 configuration

- text based configuration in win.ini style: `smb.conf` file
- modularized by include directives
- default config file can be changed by "config file = ..."
- main module for processing configuration: `param/loadparm.c`,
text file parser in `param/params.c`

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example smb.conf

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[global]
    netbios name = NIRVANA
    workgroup = sambaXP
    security = user
    include = /etc/samba/smb.conf.%I

[share1]
    path = /data/shares/share1
    guest ok = yes
    read only = no
```

include file smb.conf.192.168.1.2

```
log file = /var/log/log.samba.%u
log level = 10
debug hires timestamp = yes
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- introduced **registry shares**
- located underneath registry key
`HKLM\Software\Samba\smbconf`
- loaded on demand by server (`smbd/service.c`)
- activated by "registry shares = yes" in `smb.conf`
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net conf

- `net conf`: subcommand `net` to locally read and write the registry based configuration.
(using `regedit` is inconvenient)
- preliminary work: untangle `samba3`'s registry from the server code
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the net conf commands

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net conf list          Dump the complete configuration in smb.conf format.
net conf listshares   List the share names.
net conf import        Import configuration from file in smb.conf format.
net conf drop          Delete the complete configuration.
net conf showshare    Show the definition of a share.
net conf addshare     Create a new share.
net conf delshare     Delete a share.
net conf setparm      Store a parameter.
net conf getparm      Retrieve the value of a parameter.
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net conf getincludes  Show the includes of a share definition.
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- stored in subkey `global` parallel to registry shares
- function `process_registry_globals()` in `loadparm.c`
- accessed with the same functions as other shares
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How to use it?

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smb.conf - registry only
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[global]
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smb.conf - mixed setup
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[global]
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[share1]
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Breakout: Demonstration of usage of net conf / registry config...

The libsmconf Library

- abstraction of the operations of `net_conf` to a set of modules under `lib/smbconf`
- provide complete and stable API (hopefully achieved now)
- one `libsmconf` "object" corresponds to one parsed config source
- delivers configuration as (lists of) strings
- allow different backends behind the API
- backends implemented:
 - registry backend
 - text backend (read-only, based on `params.c`)
- more backends can be implemented (tdb, LDAP, ...)



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The libsmbconf API

init / shutdown

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WERROR smbconf_init(TALLOC_CTX *mem_ctx,  
                    struct smbconf_ctx **conf_ctx,  
                    const char *source);
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```
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parameter functions

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                             const char *service, const char *param,  
                             char **valstr);
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The libsmbconf API

share functions

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                          TALLOC_CTX *mem_ctx,
                          const char *service, uint32_t *num_params,
                          char ***param_names, char ***param_values);

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SerNet

The libsmbconf API

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SerNet

The libsmbconf API

global functions

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WERROR smbconf_drop(struct smbconf_ctx *ctx);

WERROR smbconf_get_share_names(struct smbconf_ctx *ctx,
                               TALLOC_CTX *mem_ctx,
                               uint32_t *num_shares,
                               char ***share_names);

WERROR smbconf_get_config(struct smbconf_ctx *ctx,
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SerNet



The libsmbconf API

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                            TALLOCTX *mem_ctx,  
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                            uint32_t *num_includes,  
                            char ***includes);
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WERROR smbconf_set_includes(struct smbconf_ctx *ctx,  
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Outline

- 1 Configuration in Samba 3.0 (and before)
 - What We Have
 - What We Need Beyond That
- 2 Configuration in Samba 3.2.0
 - Ideas
 - First Steps
 - The `net_conf` Utility
 - Global Registry Configuration
 - The `libsmbconf` Library
- 3 Current and Ongoing Work
 - Rewrite of Loadparm
 - Plans / TODOs

changes to loadparm.c

- use libsmbconf throughout
- i.e. remove all references to param.c (parser)
- config file ⇒ **config source**
- change lp_load()
- change handle_include()
- drop process_registry_globals()

- CONFIGFILE ⇒ CONFIGSOURCE (dynconfig)
- --configfile ⇒ --configsource (popt)

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loadparm:lp_load()

- read config data via libsmbconf
- process raw parameters in a simple for loop

libsmbconf dispatcher

- delegate queries to backend
- returns resulting config in backend independent format

libsmbconf backends

- fetch data from text / registry / ...

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how lp_load() works *now* (simplified)

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source = add_to_source_list(sources_list, source_name, sub_name);

smbconf_get_config(source->ctx, mem_ctx, &num_shares,
                  &share_names, &num_params,
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for (scount = 0; scount < num_shares; scount++) {
    do_section(share_names[scount], NULL);
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Breakout: Demonstration of new features

Plans / TODOs

- finish and release rewrite of loadparm
- make libsmbconf and registry shared libraries
- Add write support to text backend (comment handling?)
- write more backends:
 - GPO backend (with Günther Deschner)
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