

Implementing & Using libwbclient



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- History
- Introducing libwbclient
- API Overview
- Examples Uses
- Challenges when implementing a 3rd party provider

- Smbd communicates with winbindd over unix domain sockets
 - winbindd_request_response()
- Prior to 3.2.0, things like the socket path, structure sizes, etc... were compiled into smbd
- Result was strong coupling between winbindd and smbd binaries

- First wbclient API checkin 12-21-2007
- `source/nsswitch/libwbclient/`
 - `wbclient.h` – Public header file
 - `libwbclient.so.0` – Installed library
- Implements a shared library wrapper around `winbindd` requests
- Decouples static linking between and `winbindd`

- Provides a stable API for non-Samba applications
 - e.g. Bindings for scripting languages
- Allows winbindd to be upgraded without disturbing smbd
 - Supports an independent development path for winbindd

- `#include <wbclient.h>`
- All functions return type "wbcErr"
 - Very small set of error codes
 - Possible improvement is to add an NTSTATUS in all Winbind replies and add a new OUT param
- All allocated OUT params are released using `wbcFreeMemory()`

- Utility functions
 - WbcPing(), wbcInterfaceDetails(), wbcLibraryDetails()
 - wbcStringToSid(), wbcSidToString()
- Names & SIDs
 - wbcLookupName(), wbcLookupSid(), wbcLookupRids()
 - wbcListUsers(), wbcListGroups()
 - WbcLookupUserSids()
- Hostname Resolution
 - WbcResolveWinsByName(), wbcResolveWinsByIP()

- NSS related functions
 - wbcGetpwnam(), et. al.
- IDMap functions
 - wbcSidToUid(), et. al.
- Domain information
 - wbcDomainInfo(), wbcListTrusts()
- Authentication
 - wbcAuthenticateUser(),
wbcAuthenticateUserEx(),
wbcCheckTrustCredentials()

- Example Demo
 - smbld (v3.0.34) + winbindd (3.2.11)
 - smbld (v3.0.34) + lsassd (v5.2)
- smbld patches (*)
 - source/nsswitch/wb_client.c
 - source/auth/auth_winbind.c

(*) Patches still under development

- *Proposal* – Separate winbindd from both source3/ and source4/ and write to the wbclient API
 - Avoid maintaining a version of winbindd for each branch
 - Could be the unifying factor between 3.x and 4.0 development trees

- Likewise v5.1 included libwbclient support for Isassd
- Not a 1-to-1 mapping of the Isaclient API and the wbclient API
 - Wbclient calls are optimized for existing winbindd functionality
- Some out parameters may be specific to winbindd
 - e.g. Sequence number

- `wbcFreeMemory()` assumes a hierarchical memory manager
 - Influenced heavily by `talloc()`
 - Just free the top `void*`
- Implemented basic memory manager with destructors in Likewise Open

Questions?



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