Vorteks
make IT work, make IT free

LDAP2026
CON
TUEBINGEN

LDAP Tool Box, an Open Source project for OpenLDAP and Active Directory management

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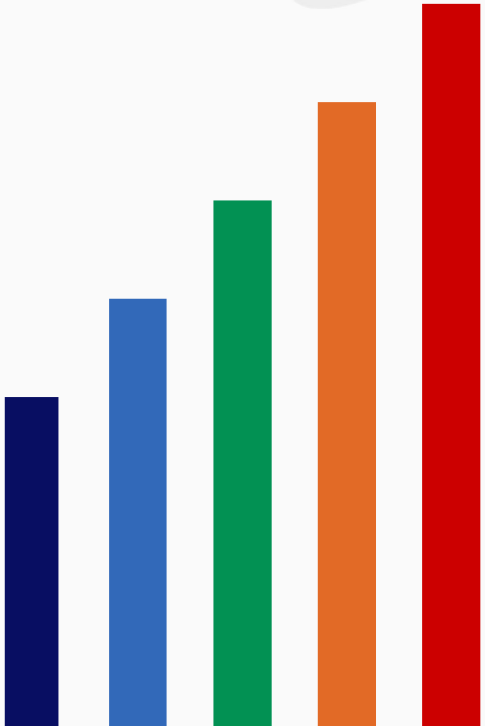

Packages and monitoring

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LDAP Tool Box

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Introduction

$ ldapwhoami

Clément OUDOT
Identity Solutions Manager
Worteks

@clementoudot

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LemonLDAP::NG
LDAP Tool Box
LDAP Synchronization Connector
FusionIAM

Creative Commons Music

Worteks

Open Source software experts and sovereign cloud providers
Training center

Actively contributing to numerous Open Source software like
LSC, LemonLDAP::NG, LDAP Tool Box, FusionIAM and OpenStack

Partners

Red Hat
BlueMind
ONLYOFFICE
Collabora Online
PROXMOX

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Comprehensive offer

Heterogeneous and complex infrastructures, troubleshooting, cloud, mail, identity, authentication, security...

Worteks addresses a wide range of issues associated with your information system.

Customized solutions

Worteks publishes packaged solutions, entirely composed of Open Source bricks.

These solutions are available On Premise, SaaS or PaaS with our W'aaS offer.

V'Sweet

Collaborative platform

V'IDaaS

Identity and access management solution

V'Opla

Complex infrastructure deployment solution

Ready to sing?

SCORPIONS
Password
WIND OF CHANGE

Scorpions – Password change

I follow the process
Down to login page
My account need a password change
It took me all the night
To be able to comply
To complexity rules of password change

Hackers brute force the login
Did you ever think
That they could be so close, in your browser
My password is in the air
I can see it everywhere
I know it really need to change

Take me to a simple application
Working day and night
That can connect to LDAP
Or AD, for a password change

You can breathe and relax
Here is LDAP Tool Box
An open source project, of course
OpenLDAP packages
Monitoring scripts
Web interfaces for password change

Packages and monitoring

OpenLDAP packages

- 2003: need to install OpenLDAP 2.1 on Red Hat server :
  - No recent packages available
  - Compilation required to set OPENLDAP_FD_SETSIZE=4096 and choose overlays
- 2007: Creation of OpenLDAP 2.3 RPM packages for Red Hat Entreprise Linux 5
- 2013: Creation of OpenLDAP 2.4 packages for Debian

Current packages

- OpenLDAP 2.5, 2.6 and 2.7
- Debian Buster (10), Bullseye (11), Bookworm (12), Trixie (13)
- Ubuntu Jammy (22.04 LTS)
- RHEL 7, 8, 9 and 10

Catch 'em all

- Packages on https://ltb-project.org/download.html
- APT and DNF/YUM repositories
- Recipes :
  - https://github.com/ltb-project/openldap-rpm
  - https://github.com/ltb-project/openldap-deb

Monitoring

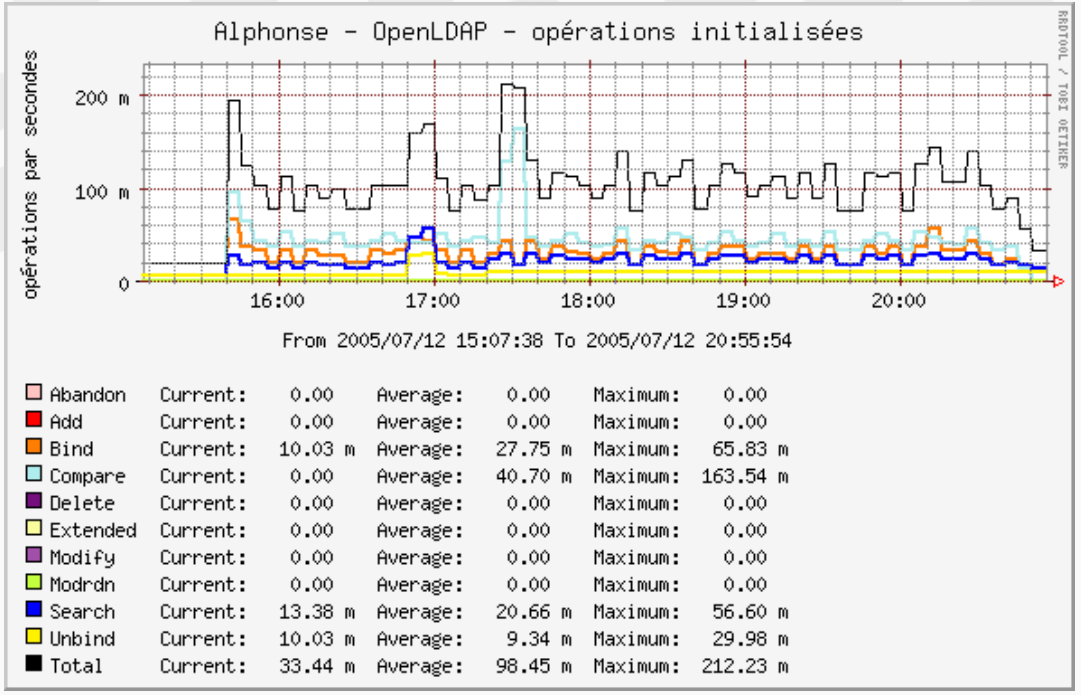
- 2003: Nagios defaut check_ldap was not suitable
  - Time precision in seconds
  - Request data suffix and not RootDSE, required to check LDAP proxies health
- Creation of several Nagios plugins:
  - check_ldap_time.pl
  - check_berkeleydb_locks.pl
  - check_ldap_slurpd_status.pl

More plugins

- Evolutions of plugins with OpenLDAP versions:
  - check_ldap_monitor.pl
  - check_ldap_query.pl
  - check_ldap_syncrepl_status.pl
  - check_lmdb_usage.pl

https://github.com/ltb-project/nagios-plugins

Cacti



https://github.com/ltb-project/cacti-plugins

Not maintained any more

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CLI for OpenLDAP

Stop, start and a lot more

- OpenLDAP does not provide any start/stop script
- First shell script for SySInit V: start, stop, restart, status
- Add actions to backup/restore data and config (slapd.conf and cn=config)
- Compatibilty to SystemD
- Actions to check synchronization, import sample data and configuration
- Rename “OpenLDAP init script” to “slapd CLI”

Commands

- slapd-cli start / slapd-cli stop / slapd-cli restart
- slapd-cli backup / slapd-cli restore
- slapd-cli backupconfig / slapd-cli restoreconfig
- slapd-cli debug
- slapd-cli status
- slapd-cli convertconfig /path/to/slapd.conf config.ldif
- slapd-cli configtest
- slapd-cli checksync

Check synchronization

```
root@ltb:~# slapd-cli checksync
slapd-cli: [INFO] Using /usr/local/openldap/etc/openldap/slapd-cli.conf for configuration
slapd-cli: [INFO] Checking synchronization...
Suffix: dc=example,dc=com
detected providers:
rid="001" provider="ldaps://ldap2.example.com" type="refreshAndPersist" retry="5 5 300 +"
bindmethod="simple" binddn="cn=syncrepl,ou=dsa,dc=example,dc=com" credentials="secret"
searchbase="dc=example,dc=com"

Checking contextCSN for suffix dc=example,dc=com on remote host ldaps://ldap2.example.com
  Checking SID #001#
    INFO: remote (20240614155432.671536Z#000000#001#000000) and local
(20240614155432.671536Z#000000#001#000000) contextCSN found and synchronized
  Checking SID #002#
    INFO: remote (20240614155433.416314Z#000000#002#000000) and local
(20240614155433.416314Z#000000#002#000000) contextCSN found and synchronized
slapd-cli: [OK] Local directory synchronized to every declared provider
```

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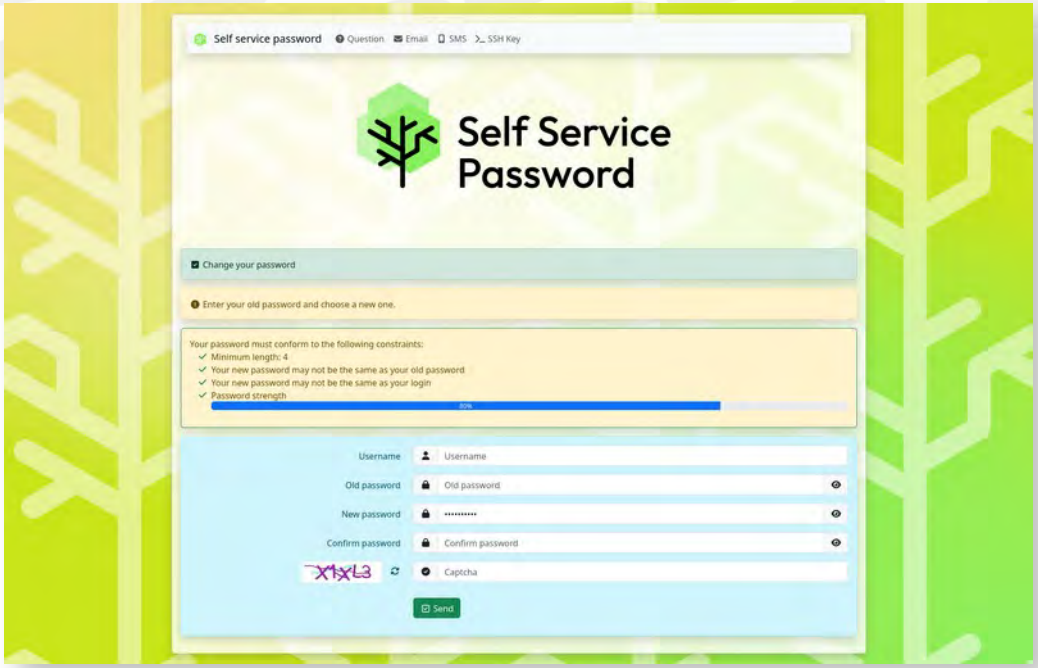
Self Service Password

Self Service Password

- **How it starts:** 2009, need a web form to change password on Active Directory, search on internet, nothing found…
- Creation of a PHP single page application with a configuration file and a design not too ugly
- Publication inside LDAP Tool Box project
- Password reset features and AD/OpenLDAP support
- **Now:** 1,3k stars on github, 29 languages

Features



- Change password
- Reset password by mail
- Reset password by questions
- Reset password by SMS
- Password policy
- Change SSH key
- Mail notifications
- REST API
- Audit file
- Hooks
- Mail/phone attributes update

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Advanced LDAP

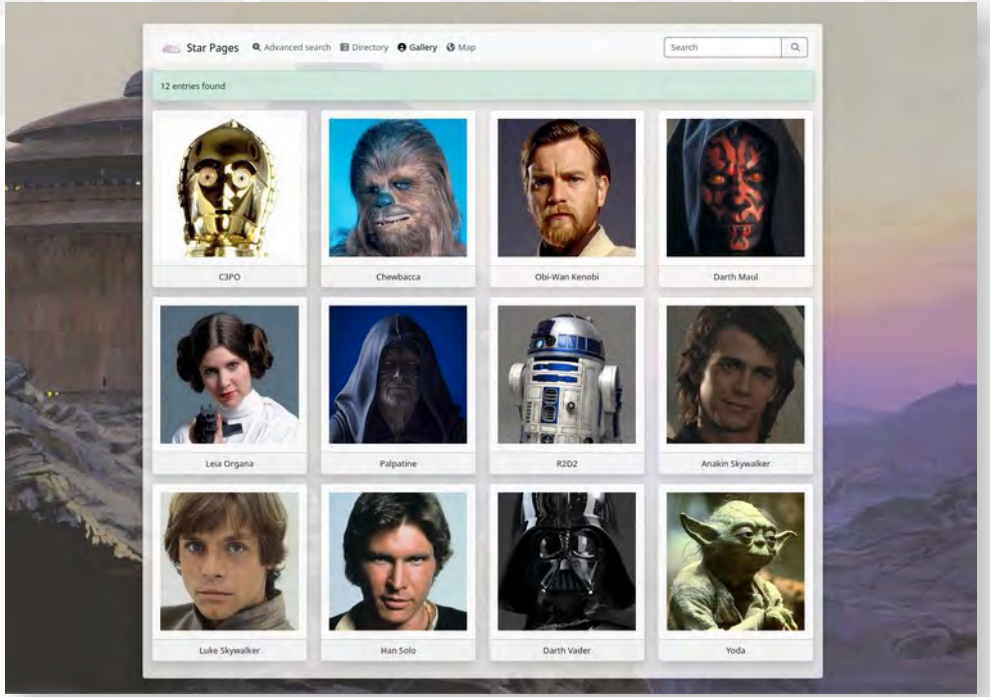
- LDAPS / StartTLS
- Pagination
- Password hash for OpenLDAP or AD
- Password policy control: know if account is locked or expired, get password complexity check result
- Password modify extended operation: because we can...

White Pages

White Pages

- OpenLDAP has no graphical interface (slapcat is not one...)
- Need a simple web application to search users and groups and display them, not an LDAP Browser (Apache Directory Studio is already here)
- Compatible with any LDAP directory, including AD
- First release in 2016

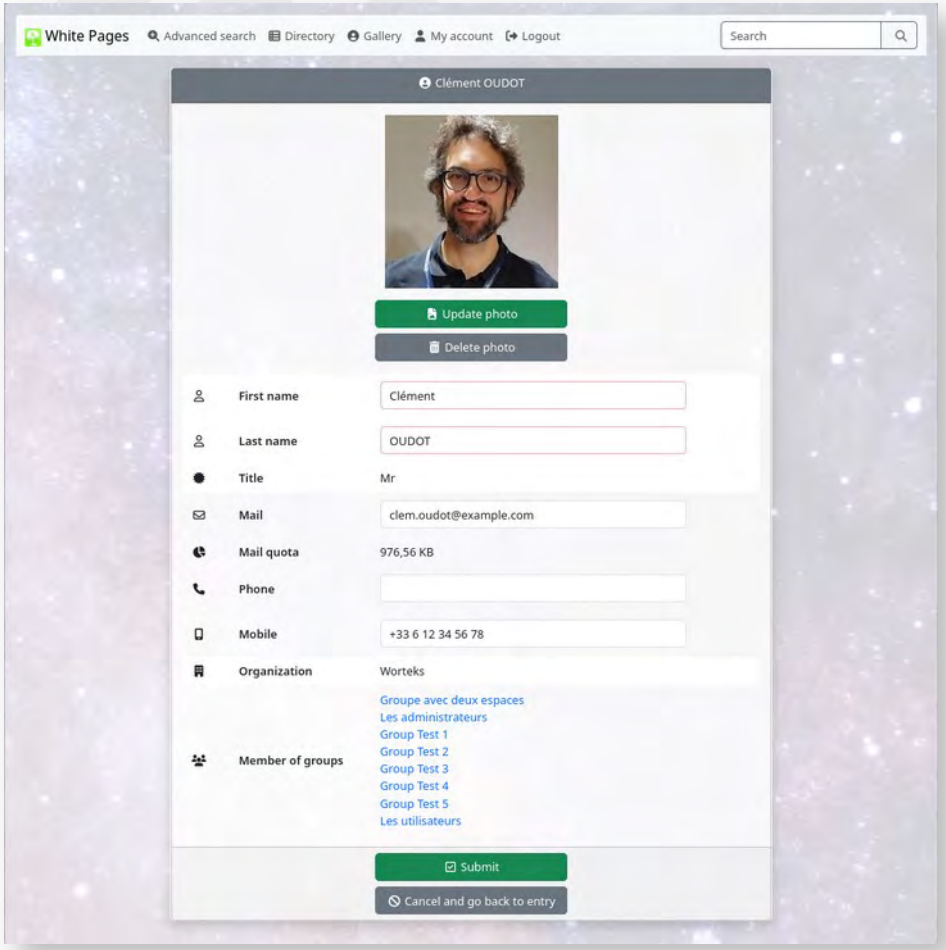
Features



- Quick and advanced search
- Directory
- Gallery
- Map (OpenStreetMap API)
- Export as vCard
- Export as CSV
- Anonymous/Authenticated access
- Edit own account

Edit own account

- Requires authentication (SSO or LDAP)
- Photo update in LDAP server (jpegPhoto) and/or on disk
- Configuration of allowed items for modification
- Direct link in menu to “your account”

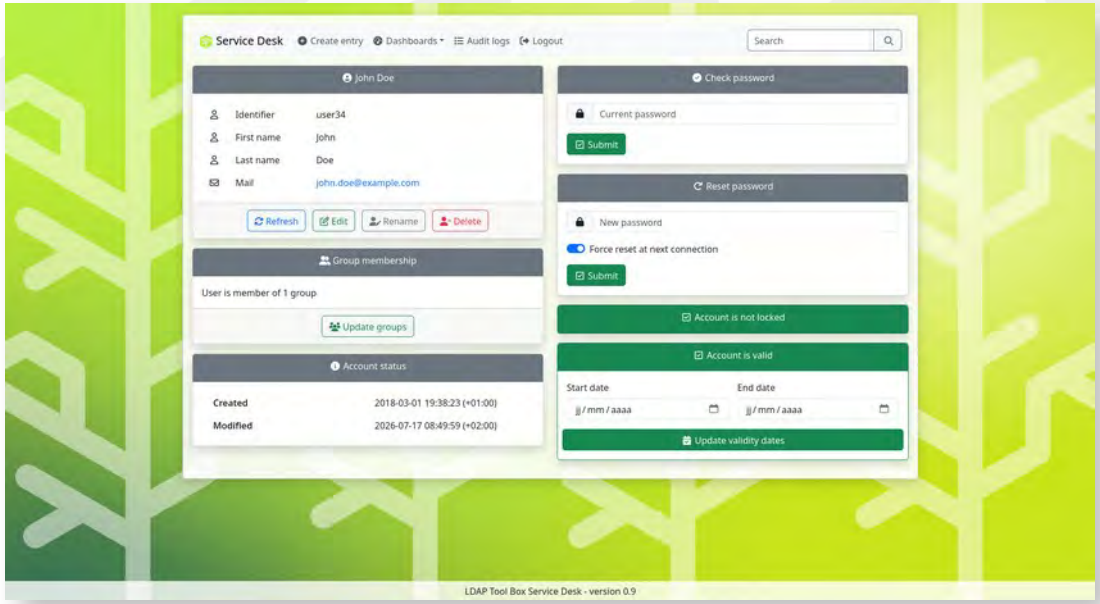


Service Desk

Service Desk

- We deployed a mail SaaS solution for a big customer:
  - OpenLDAP as user database and LemonLDAP::NG as Authentication Portal (SSO/IDP)
  - Users could change their password
  - Most of them call support, and support need to reset passwords in the LDAP directory
- We created a first “Service Desk” application in a few days: quick search of a user in LDAP, display main attributes and account status, check password, reset password
- First release in 2020

Features

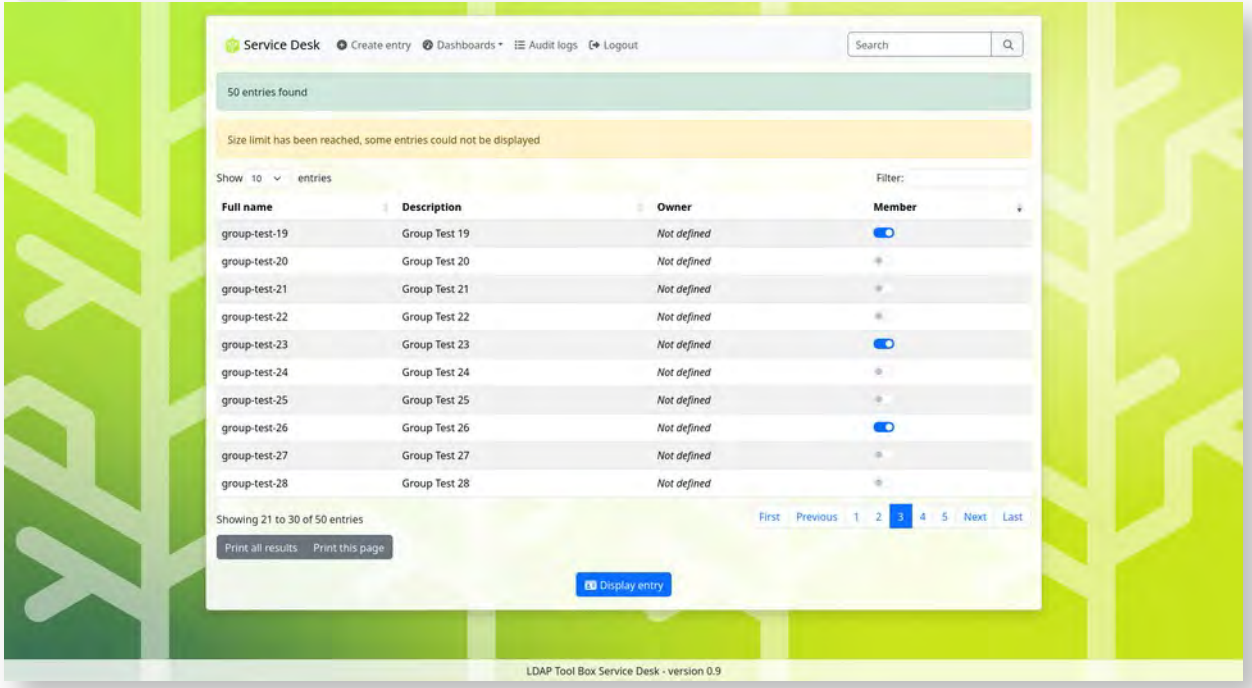


LDAP Tool Box Service Desk - version 0.9

- Check/reset password
- Lock/unlock account
- Enable/disable account
- Change validity dates
- Create/modify/rename/delete accounts
- Manage group membership
- Audit logs
- Comments
- Hooks
- Dashboards

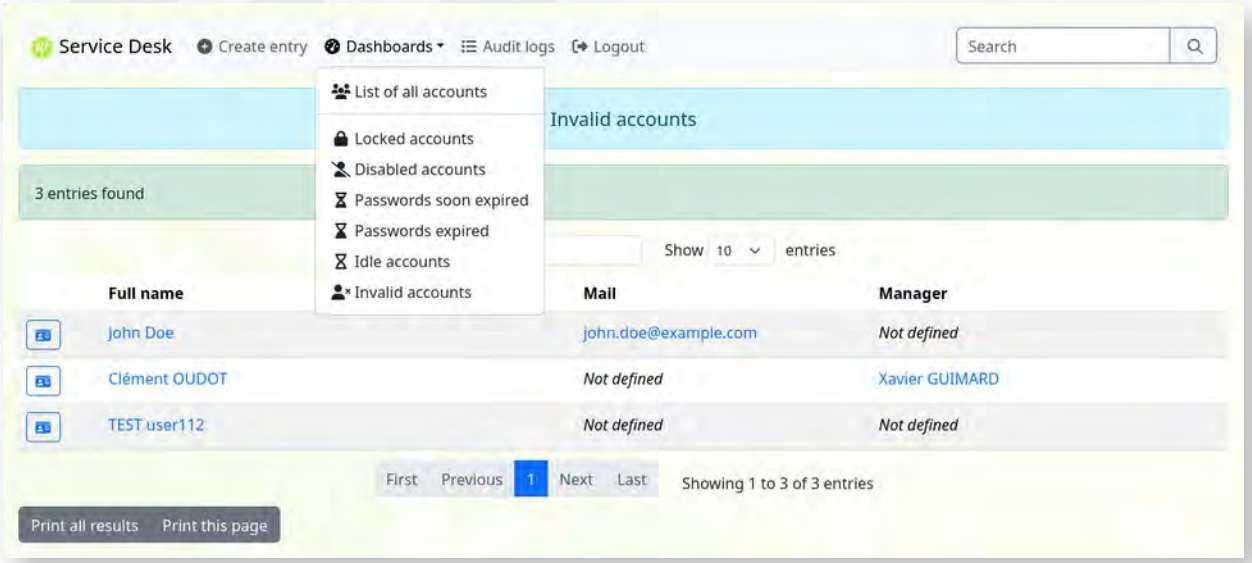
Group membership

Display a list of groups, starting by ones the user is member of, and allow to add/remove user from these groups



Dashboards

- All accounts
- Accounts locked
- Accounts disabled
- Accounts with a password that will soon expire
- Accounts with an expired password
- Accounts idle
- Accounts invalid



Compatibilty with AD

- OpenLDAP password management and AD password management are **totally different**
- On application side, we would like to avoid coding each function to adapt to OpenLDAP and AD
- Solution: creation of PHP ltb-common library and a “Directory” object interface (Ltb\Directory):
  - Ltb\Directory\OpenLDAP
  - Ltb\Directory\ActiveDirectory
- Easy to add another product, like 389DS

```php
<?php

namespace Ltb;
use \DateTime;

interface Directory
{

    /*
     * Get specific operational attributes
     */
    public function getOperationalAttributes() : array;

    /*
     * Is account locked?
     */
    public function isLocked($entry, $pwdPolicyConfiguration) : bool;

    /*
     * Date when account has been locked
     */
    public function getLockDate($entry, $pwdPolicyConfiguration) : ?DateTime;

    /*
     * Date when account will be automatically unlocked
     */
    public function getUnlockDate($entry, $pwdPolicyConfiguration) : ?DateTime;

    /*
     * Lock account
     */
    public function lockAccount($ldap, $dn) : bool;

    /*
     * Unlock account
     */
    public function unlockAccount($ldap, $dn) : bool;

    /*
     * Is password expired?
     */
    public function isPasswordExpired($entry, $pwdPolicyConfiguration) : bool;

    /*
     * Date when password will be expired
     */
    public function getPasswordExpirationDate($entry, $pwdPolicyConfiguration) : ?DateTime;

    /*
```

Roadmap

Roadmap / Backlog

- Rewrite slapd-cli in C, add new actions
- Self Service Password:
  - Notifications script (password expiration, answers initialization, …)
- White Pages:
  - Possibility to manage any object (user, group, organizations, ...)
  - Display organizational chart
  - Plugin system
- Service Desk:
  - Possibility to manage any object (user, group, organizations, …)
  - Bulk import via CSV

Don’t believe me...

Try it !

LDAP Tool Box

https://ltb-project.org

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