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Awesome LDAP

Useful resources for learning more about and using LDAP whether you are a developer, pentester, network defender or something else cool!

pipeline

passed

- View: <https://brie.gitlab.io/awesome-ldap/>
- Contribute: <https://gitlab.com/brie/awesome-ldap>

My objective is to make this a useful resource for people with varying levels of experience with LDAP. Do not hesitate to suggest good quality introductory material.

ldapsearch

The best write-ups and references for our friend: **ldapsearch!**

- ldapsearch reference

LDAP Implementations

- OpenDJ
- OpenLDAP
- 389 Directory
- ReOpenLDAP - A production-ready replacement for OpenLDAP

Suites

- FreeIPA - An integrated security information management solution that includes 389 Directory Server
- Gluu
- Keycloak - Open Source Identity and Access Management

Containers

- osixia/openldap - One of the most recommended OpenLDAP containers
- osixia/phpldapadmin - A great companion to the container above! This guide walks you through configuring them together. It uses Ubuntu 16.04 so use for legacy purposes.
- LDAP in containers blog post from <https://therubyist.org>.

Kubernetes

- OpenLDAP Helm Chart - using the osixia/docker-openldap container
- Create An OpenLDAP server with Bitnami Containers on Kubernetes
- Installing OpenLDAP on Kubernetes with Helm -

Hosted LDAP/LDAP in the Cloud

- Azure Active Directory
 - Read LDAP authentication with Azure Active Directory.
- JumpCloud
- Google Cloud supports LDAP with Cloud Identity and G Suite
 - Secure LDAP Service
- LogonBox

LDAP Clients, Tools and Utilities

- Apache Directory Studio
- Client APIs - List of LDAP libraries for languages from Ada to Swift on ldap.com
- lb - LDAP benchmarking tool
- ldapfs - LDAP browsing via FUSE filesystem mount
- LDAP Tool Box project
- OpenLDAP Helper Scripts
- phpLDAPadmin - Web-based LDAP browser to manage your LDAP server

- PHPLdapTools
- Lex - The LDAP Explorer - Windows only

LDAP + Pentesting

- Dump LAPS passwords with ldapsearch
- Fun with LDAP, Kerberos (and MSRPC) in AD Environments
- LDAP Injection Prevention Cheat Sheet
- LDAP Injection & Blind LDAP Injection in Web Applications
- Testing for LDAP Injection (OTG-INPVAL-006)
- Understanding and Exploiting Web-based LDAP
- windapsearch - A tool that aims to automate some of the most useful LDAP queries a pentester would want to perform in an AD environment.

NSE Scripts

- ldap-search
- ldap-rootdse

Using NSE Scripts

- Searching LDAP using Nmap's ldap-search.nse script - Several practical applications

LDIF

LDIF is the LDAP Data Interchange Format. LDIF files are flat text files.

- dbgen.pl - Perl
- LDIF Parser and Generator - Python
- LDIFDE - Export / Import data from Active Directory - LDIFDE commands
- schema2ldif: Tool for converting OpenLDAP-style schemas to the LDIF format - Perl

RFCs

- RFC 2849 - The LDAP Data Interchange Format (LDIF) - Technical Specification
- RFC 4510 - Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map
- RFC 4515 - Lightweight Directory Access Protocol (LDAP): String Representation of Search Filters

Terminology

These are some of the best available glossaries and other resources for learning more about LDAP terminology.

- Glossary of LDAP and Directory Terminology
- LDAP - Object Classes and Attributes
- LDAP attributes and associated fields

Other Awesome Lists

- LDAP section of awesome-sysadmin
- LDAP section of awesome security hardening

Books

- Understanding LDAP Design and Implementation - Free PDF from IBM

Conferences and Education

- LDAPCon
- Videos from LDAPCon 2019

Community Support Channels

- OpenLDAP Issue Tracking System
- openldap.org mailing lists - If you are reading this, you may wish to subscribe to [openldap-technical](#).
- /r/ldap - The LDAP subreddit

Troubleshooting

- JumpCloud has some LDAP Authentication Examples in a variety of languages

LDAP Servers

LDAP servers available for testing...

- Online LDAP Test Server - Creds for a read-only bind DN.
- Public LDAP Servers

Guides, Articles, Papers Walkthroughs

- The LDAP Scripting Tutorial
- Use LDAP search rules to synchronize data
- Build an OpenLDAP Docker Image That's Populated With Users
- Creating Active Directory Accounts: Using LDIF files and OpenLDAP tools
- Hacking into an LDAP or Active Directory service - "note: this isn't pentesting but just gentle digging"
- 2020 LDAP channel binding and LDAP signing requirements for Windows

- Interacting with an LDAP server using Ruby - This is a little dated but would be great in conjunction with the containers noted above.
- Full Ruby LDAP docs

Courses

- JumpCloud University

Notes from the Field

- Querying AD with ldapsearch: Linux Authenticating against Active Directory

Vendor Documentation

- LDAP Server Connections in JAMF Pro