Refrences:

http://static.springsource.org/spring-ldap/docs/1.1.1/reference/

http://docs.oracle.com/cd/E12839\_01/oid.1111/e10035/schema\_overview.htm#OIMUR0601

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<http://www.openldap.org/doc/admin24/guide.html>

<http://docs.oracle.com/cd/E12839_01/oid.1111/e10035/ldif_appendix.htm> -- Ldif format

<https://iamfortress.org/overview>

https://iamfortress.org/projects

<http://symas.com/symas-openldap-faq.html>

<http://74.207.237.15/product/openldap>

<http://www.zytrax.com/books/ldap/ch5/>

<http://www.rfc-editor.org/rfc/rfc4519.txt> -- for attributes and object class

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<http://www.linuxjournal.com/files/linuxjournal.com/linuxjournal/articles/056/5689/5689l1.html>

<http://docs.oracle.com/cd/E22289_01/html/821-1273/extending-the-schema.html>

https://access.redhat.com/knowledge/docs/en-US/Red\_Hat\_Directory\_Server/8.1/html/Deployment\_Guide/Deployment\_Guide-Designing\_the\_Directory\_Schema-Customizing\_the\_Schema.html

<http://svn.apache.org/repos/asf/directory/apacheds/tags/1.5.1/schema-bootstrap/src/main/schema/system.schema>

<http://svn.apache.org/repos/asf/directory/apacheds/tags/1.5.5/schema-bootstrap/src/main/schema/system.schema> -- for attributes and object class

http://www.zytrax.com/books/ldap/ch4/

<http://www.rfc-editor.org/rfc/rfc4514.txt>

<https://help.ubuntu.com/12.04/serverguide/openldap-server.html#openldap-server-postinstall>

<http://www.rfc-editor.org/rfc/rfc2849.txt>

http://www.rfc-editor.org/rfc/rfc2252.txt

<http://www.rfc-editor.org/rfc/rfc2849.txt> -- ldif file format

<http://www.openldap.org/doc/admin24/appendix-common-errors.html> --- for common errors

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<http://www.coderanch.com/t/588579/Spring/Spring-LDAP>

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**Q. What is Symas OpenLDAP?**

A. Symas OpenLDAP Directory Services is a distribution of Open Source Directory Services software. The most complete and up-to-date versions of these distributions are available to subscribers under an annual subscription fee. Symas OpenLDAP provides pre-built binary packages tested and ready-to-run for installation on [popular platforms](http://www.symas.com/cds-matrix.html) using native software installer (package management) technology.

**Q: What contributions has Symas recently made to Open Source Projects that are reflected in the Symas OpenLDAP package?**

A: OpenLDAP and Cyrus SASL include significant contributions from Symas, especially in these areas:

Database Backend Architecture

The syncrepl sync replication architecture (now an Internet Standard)

MirrorMode and Multi-Master capabilities

Configuration Backend

Overlay interface and initial overlays

slapd performance optimization,

back-bdb and back-hdb architecture,

SASL authentication and authorization integration,

TLS/SSL support, and

GSSAPI/Kerberos V support

**Q: What sort of documentation do you include?**

**A**: Symas OpenLDAP includes basic "Install it and get it running" documentation that covers installation of Symas OpenLDAP in its basic configuration.

**Network Configuration**

For this example, we run the OpenLDAP server on the default port on the local machine.

LDAP host: 127.0.0.1  
LDAP port: 389

**Predefined LDAP attributes:**

String X.500 AttributeType

------ --------------------------------------------

CN commonName (2.5.4.3)

L localityName (2.5.4.7)

ST stateOrProvinceName (2.5.4.8)

O organizationName (2.5.4.10)

OU organizationalUnitName (2.5.4.11)

C countryName (2.5.4.6)

STREET streetAddress (2.5.4.9)

DC domainComponent (0.9.2342.19200300.100.1.25)

UID userId (0.9.2342.19200300.100.1.1)

**5.5.1 uid (User Identifier)**

*The Userid attribute type specifies a computer system login name.*

Length limit 256 characters. Note that this is not a UID in the Unix sense: it is a username. If

Unix account data is to be held in an LDAP format then *uidNumber* should be used for the

numeric UID. Note also that this is a case-insensitive attribute so the usernames *root* and *ROOT*

refer to the same object which is different from the traditional Unix behaviour.

**5.5.2 userPassword**

*Passwords are stored using an Octet String syntax and are not encrypted. Transfer*

*of cleartext passwords are strongly discouraged where the underlying transport*

*service cannot guarantee confidentiality and may result in disclosure of the password*

*to unauthorized parties.*

The definition quoted here comes from RFC2256. However, RFC2307 expands the definition to

permit a range of hashed passwords to be stored. Note that hashed passwords cannot be used

with all authentication mechanisms so the choice is not straightforward.

This attribute can hold multiple values, each of which is limited to 128 characters.

**Structure of objectClass**

ObjectClassDescription = "(" whsp

numericoid whsp ; ObjectClass identifier

[ "NAME" qdescrs ]

[ "DESC" qdstring ]

[ "OBSOLETE" whsp ]

[ "SUP" oids ] ; Superior ObjectClasses

[ ( "ABSTRACT" / "STRUCTURAL" / "AUXILIARY" ) whsp ]

; default structural

[ "MUST" oids ] ; AttributeTypes

[ "MAY" oids ] ; AttributeTypes

whsp ")"

eg. Of Object class

objectclass ( 2.5.6.2 NAME 'country' SUP top STRUCTURAL

DESC '2 character iso assigned country code'

MUST c

MAY ( searchGuide $ description ) )

**Installation Steps of Symas OpenLDAP:**

1. Install Symas OpenLdap Silver version by double clicking on “symas-openldap-silver-win.NT\_i686-2.4.33.20121128.exe”

e.g.

SymasOpenLdap can be installed at below location

“J:\OpenLdap\LDAP\_Server\symas-openldap”

1. Once the installation is finished, complete the steps outlined below.
   1. Copy the file “J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\slapd.conf.default” to “J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\slapd.conf”
   2. Copy the file “J:\OpenLdap\LDAP\_Server\symas-openldap\ etc\openldap\ldap.conf.default ” to “J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\ldap.conf”
   3. Edit the “slapd.conf” file to suit your needs.
   4. Edit the “ldap.conf” files to suit your needs.
2. Add “startSlapd.cmd” file under “J:\OpenLdap\LDAP\_Server\symas-openldap” with below contents.

echo 'Starting OpenLDAP...'

@rem cd J:\OpenLdap\LDAP\_Server\symas-openldap

slapd.exe -f J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\slapd.conf

1. Add “stopSlapd.cmd” file under “J:\OpenLdap\LDAP\_Server\symas-openldap” with below contentes.

echo 'Stopping OpenLDAP...'

#slapd.exe -f J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\slapd.conf

set prgId=type slapd.pid

set prgName=slapd.exe

taskkill -F /IM slapd.exe

@rem taskkill -F -pid %prgId%

1. Double click on “startSlapd.cmd” file to start the SymasOpenLdap Server.
2. Double click on “stopSlapd.cmd” file to stop the SymasOpenLdap Server
3. Use ApacheDirectoryStudio to check the connection and browse the SymasOpenLdap with below credentials:

Host 192.168.24.131 (localhost)

Port 389

Domain name dc=example, dc=com

Password secret

**Steps for creating the schema over Symas OpenLDAP:**

1. Create one “ xxxx.schema ” file with all your need and save at below location

J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\schema

e.g.

Created one user.schema file for a userEntry object whose attributes are name, userPassword and telephoneNumber.

and saved this file at “J:\OpenLdap\LDAP\_Server\symas-openldap\etc\openldap\schema\user.schema”

user.schema

objectclass ( 1.4.7.2.5.2.49199.3.3 NAME 'userEntry'

DESC 'a user'

SUP top STRUCTURAL

MUST ( sn )

MAY ( userPassword $ telephoneNumber ) )

1. Add one entry in the “slapd.conf” for this newly created “xxxx.schema” file as given below,

e.g.

include "etc/openldap/schema/user.schema"

----------------------------------------------\*-----------------------------------\*----------------------------------------

**Problem while inserting entry into the OpenLdap**

# J:\OpenLdap\LDAP\_Server\symas-openldap>ldapadd -x -D "cn=suraj,dc=example,dc=com

" -W -f 99user.ldif

Enter LDAP Password: secret

adding new entry "cn=user,dc=example,dc=com"

ldap\_add: No such object (32)

i.e.

#!RESULT ERROR

#!CONNECTION ldap://192.168.24.131:389

#!DATE 2013-01-18T10:53:16.001

#!ERROR [LDAP: error code 32 - No Such Object]

**dn: telephoneNumber=9999955555,userPassword=kumar,sn=suraj,dc=example,dc=com**

**changetype: add**

**objectClass:** userEntry

**userPassword:** kumar

**sn:** suraj

**telephoneNumber:** 9999955555

**this error resolved is by changing the suffix and rootdn both as cn=suraj,dc=example,dc=com**

**got success to enter the data into the LDAP Server**

J:\OpenLdap\LDAP\_Server\symas-openldap>ldapadd -x -D "cn=suraj,dc=example,dc=com

" -W -f 99user.ldif

Enter LDAP Password: secret

adding new entry "cn=suraj,dc=example,dc=com"

**LDIF file used**

dn: cn=suraj,dc=example,dc=com

changetype: add

objectClass: userEntry

cn: suraj

sn: kumar

**this add entry as the parent => for the cn=suraj,dc=example,dc=com**

**now we can add the entry as child with ldif as similar as below**

dn: cn=Test2,cn=suraj,dc=example,dc=com

changetype: add

objectClass: userEntry

cn: Test2

sn: Test2

userPassword: Test2

telephoneNumber: +91 999-995-5555

### C.1.12. ldap\_add: No such object

The "ldap\_add: No such object" error is commonly returned if parent of the entry being added does not exist. Add the parent entry first...

For example, if you are adding "cn=bob,dc=domain,dc=com" and you get:

ldap\_add: No such object

The entry "dc=domain,dc=com" likely doesn't exist. You can use ldapsearch to see if does exist:

ldapsearch -b 'dc=domain,dc=com' -s base '(objectclass=\*)'

If it doesn't, add it. See [A Quick-Start Guide](http://www.openldap.org/doc/admin24/quickstart.html) for assistance.

**Note:** if the entry being added is the same as database suffix, it's parent isn't required. i.e.: if your suffix is "dc=domain,dc=com", "dc=com" doesn't need to exist to add "dc=domain,dc=com".

This error will also occur if you try to add any entry that the server is not configured to hold.

For example, if your database suffix is "dc=domain,dc=com" and you attempt to add "dc=domain2,dc=com", "dc=com", "dc=domain,dc=org", "o=domain,c=us", or another DN in the "dc=domain,dc=com" subtree, the server will return a "No such object" (or referral) error.

slapd(8) will generally return "no global superior knowledge" as additional information indicating its return noSuchObject instead of a referral as the server is not configured with knowledge of a global superior server.

**Filter to add entry into the ldap server (add.ldif),**

dn: cn=Test3,cn=suraj,dc=example,dc=com

objectClass: userEntry

cn: Test3

sn: Test3

telephoneNumber: +91 999-995-5555

userPassword: Test3

Filter to modify entry into the ldap server(modify.ldif)

dn: cn=Test2,cn=suraj,dc=example,dc=com

changetype: modify

replace: telephoneNumber

telephoneNumber: +91 999-996-6666

dn: cn=Test1,cn=suraj,dc=example,dc=com

changetype: modify

delete: telephoneNumber

dn: cn=Test1,cn=suraj,dc=example,dc=com

changetype: modify

add: telephoneNumber

telephoneNumber: +91 999-996-6666

**how to execute this ldif file:**

J:\OpenLdap\LDAP\_Server\symas-openldap>ldapadd -x -D "cn=suraj,dc=example,dc=com

" -W -f 99user.ldif

Enter LDAP Password: secret

modifying entry "cn=Test2,cn=suraj,dc=example,dc=com"

modifying entry "cn=Test1,cn=suraj,dc=example,dc=com"

modifying entry "cn=Test1,cn=suraj,dc=example,dc=com"

**Delete entry from the ldap Server,**

dn: cn=Test3,cn=suraj,dc=example,dc=com

changetype: delete

**how to execute this ldif file:**

J:\OpenLdap\LDAP\_Server\symas-openldap>ldapadd -x -D "cn=suraj,dc=example,dc=com

" -W -f 99user.ldif

Enter LDAP Password: secret

deleting entry "cn=Test3,cn=suraj,dc=example,dc=com"

Distinguished Names

An entry's fully qualified name, known as its Distinguished Name (DN)

[X.501], is the concatenation of its RDN and its immediate superior's

DN. A Distinguished Name unambiguously refers to an entry in the

tree. The following are examples of string representations of DNs

[RFC4514]:

UID=nobody@example.com,DC=example,DC=com

CN=John Smith,OU=Sales,O=ACME Limited,L=Moab,ST=Utah,C=US

Object Class Definitions

Object Class definitions are written according to the ABNF:

ObjectClassDescription = LPAREN WSP

numericoid ; object identifier

[ SP "NAME" SP qdescrs ] ; short names (descriptors)

[ SP "DESC" SP qdstring ] ; description

[ SP "OBSOLETE" ] ; not active

[ SP "SUP" SP oids ] ; superior object classes

[ SP kind ] ; kind of class

[ SP "MUST" SP oids ] ; attribute types

[ SP "MAY" SP oids ] ; attribute types

extensions WSP RPAREN

kind = "ABSTRACT" / "STRUCTURAL" / "AUXILIARY"

where:

<numericoid> is object identifier assigned to this object class;

NAME <qdescrs> are short names (descriptors) identifying this

object class;

DESC <qdstring> is a short descriptive string;

OBSOLETE indicates this object class is not active;

SUP <oids> specifies the direct superclasses of this object class;

the kind of object class is indicated by one of ABSTRACT,

STRUCTURAL, or AUXILIARY (the default is STRUCTURAL);

MUST and MAY specify the sets of required and allowed attribute

types, respectively; and

<extensions> describe extensions.

ldaptemplate.sourceforge.net/quickstart.pdf