Instruction to LDAP Phonebook

Catalogue

1. Overview

LDAP stands for Lightweight Directory Access Protocol which is a client-server protocol for accessing a directory service. LDAP lets you locate organizations, individuals, and other resources such as files and devices in a network, whether on the Internet or on a corporate intranet, and whether or not you know the domain name, IP address, or geographic whereabouts. An LDAP directory can be distributed among many servers on a network, then replicated and synchronized regularly.

2. Configuration

Please note that LDAP Phonebook support on T28\T26\T22\T12, the version must be V51 (x.51.x.x) and higher, then access to the web UI→Contacts→LDAP page, you can find the configured option is like following picture.

We introduce each parameter attributes in following section.

3. Attributes

3.1 Common Attributes

Abbrevation	Name	Description
cn	commonName	Full name of the user.
company	company	Company or organisation name
gn	givenName	Firstname also called Christian name
homePhone	homeTelephoneNumber	Home Phone number
mobile	mobileTelephoneNumber	Mobile or cellular phone number
o	organizationName	Organization name or even organizational name
ou	organizationalUnitName	Usually department or any sub entity of larger entity
pager	pagerTelephoneNumber	pager telephone number
sn	surname	Surname, last name or family name
-	telephoneNumber	Office phone number

3.2 Attributes on Yealink Configured Page

3.2.1 LDAP Name Filter

Description: LDAP name filter is the search criteria for name look ups. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254). The name prefix for search entered by the user is represented by the "%" symbol in the filter.

Valid Values: Standard LDAP filters e.g. (&(sn=%)(telephoneNumber=*))

Default Value: <blank>

Examples:

➔(&(telephoneNumber=*)(sn=%))

Returns all LDAP records which have the "telephoneNumber" field set and the "sn" field starts with the entered prefix.

➔(|(cn=%)(sn=%))

Returns all LDAP records which have the "cn" or "sn" field starting with the entered prefix.

➔(!(cn=%))

Returns all LDAP records which "do not" have the "cn" field starting with the entered prefix.

3.2.2 LDAP Number Filter

Description: LDAP number filter is the search criteria for number look ups. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254). The number prefix for search entered by the user is represented by the "%" symbol in the filter.

- ☐ **Valid Values:** Standard LDAP filters e.g. (|(telephoneNumber=%)(Mobile=%)(ipPhone=%))
- ☐ **Default Value:** <blank>
  - ☐ **Examples:**
    - →(|(telephoneNumber=%)(Mobile=%)(ipPhone=%))

      Returns all LDAP records which have the "telephoneNumber" or "Mobile" or "ipPhone"field starting with the entered prefix.
    - →(&(telephoneNumber=%)(sn=*))

      Returns all LDAP records which have the "sn" field set and the "telephoneNumber" field starts with the entered prefix.

3.2.3 Server Address

Description: This setting refers to the DNS name or IP address of the LDAP server.

- ☐ **Default Value:** 0.0.0.0
- ☐ **Example:**
  - →192.168.1.100
  - →ldap.company.com

3.2.4 Port

- ☐ **Description:** This setting specifies the LDAP server port.
  - ☐ **Default Value:** 389

3.2.5 Base

- ☐ **Description:** This setting specifies the LDAP search base (the distinguished name of the search base object) which corresponds to the location in the directory from which the LDAP search is requested to begin. The search base narrows the search scope and decreases directory lookup time. If you have multiple organizational units in your directory (for example, OU=Sales in O=COMPANY and OU=Development in O=COMPANY), but the "OU=Sales" organization never uses AOL AIM, you can restrict the lookup to the OU=Development subtree only by entering providing the following search base: OU=Development, O=COMPANY. Other examples see below.
- ☐ **Default Value:** <blank>
  - ☐ **Examples:**
    - →o=UNIVERSITY OF NEW ORLEANS,c=US
    - →o=SFU,c=CA
    - →dc=yealink,dc=de

3.2.6 User Name

- ☐ **Description:** This setting specifies the bind "Username" for LDAP servers. Most LDAP servers allow anonymous binds in which case the setting can be left blank. However if the LDAP server does not allow anonymous binds, you will need to provide the Username and Password allowed to query the LDAP server.
- ☐ **Default Value:** <blank>

3.2.7 Password

- ☐ **Description:** This setting specifies the bind "Password" for LDAP servers. Yealink phones use "simple" authentication scheme for bind requests. This setting can be left blank in case the server allows anonymous binds. Otherwise you will need to provide the Password along with the Username in order to access the LDAP server.
- ☐ **Default Value:** <blank>

3.2.8 Max.Hits(1~32000)

☐ **Description:** This setting specifies the maximum number of search results to be returned by the LDAP server. If Max.hits is 0 or blank the LDAP server will return all search results. Please note that a very large value of the "Max. Hits" will slow down the LDAP lookup, therefore the setting should be configured according to the available bandwidth. The default value for this setting is blank.

☐ **Default Value:** 50

3.2.9 LDAP Name Attributes

☐ **Description:** This setting can be used to specify the "name" attributes of each record which are to be returned in the LDAP search results. This setting compresses the search results, as the server only returns the attributes which are requested by the Yealink phone. The setting allows the user to configure multiple space separated name attributes. Please consult your system administrator regarding which name attributes are to be configured.

☐ **Valid Values:** Space separated name attributes, see examples below.

☐ **Default Value:** <blank>

☐ **Examples:**

→cn sn displayName

Requires "cn", "sn" and "displayName" fields for each LDAP record.

→givenName

Requires "givenName" field for each LDAP record.

→vorName nachName

Requires "vorName" and "nachName" fields for each LDAP record.

3.2.10 LDAP Number Attributes

Description: This setting can be used to specify the "number" attributes of each record which are to be returned in the LDAP search results by the LDAP server. This setting compresses the search results, as the server only returns the attributes which are requested. The user can configure multiple space separated number attributes by using this setting. Please consult your system administrator regarding which number attributes are to be configured.

Valid Values: space separated number attributes e.g. telephoneNumber Mobile ipPhone Home

Default Value: <blank>

Examples:

→Mobile telephoneNumber ipPhone：

Requires "Mobile", "telephoneNumber" and "ipPhone" fields for each LDAP record.

→Home Private Office：

Requires "Home", "Private" and "Office" fields for each LDAP record.

3.2.11 LDAP Display Name

Description: This setting is for showing the entry information on the screen.

Valid Values: %cn %sn

Default Value: <blank>

3.2.12 Protocol

Description: Protocol is the protocol version for the phone when send the bind request to the server. Please make sure your LDAP server support version 3/2 bind request.

Valid Values: version 3/version 2

Default Value: version 3

3.2.13 Search Delay(ms)(0~2000)

Description: This setting is for configuring the delay display time after search.

Valid Values: 0~2000

Default Value: 0

3.2.14 LDAP Lookup for Incoming Call

☐ **Description:** This setting can be used to enable calling line identification using LDAP. When the setting is turned "Enable", the phone performs an LDAP number search for the incoming number and displays the name of the calling party accordingly.

☐ **Valid Values:** <Enabled>, <Disabled>

☐ **Default Value:** Disabled

3.2.15 LDAP Sorting Results

Description: This setting is for sorting the search results, if make this option "Enabled", it will arrange in the first alphabetical of the name order if return the name display; if only has the number return, it will list in numerical order.

Valid Values: <Enabled>, <Disabled>

Default Value: Disabled

3.2.16 LDAP Lookup for PreDial/Dial

Description: This setting can be used to enable call out line identification using LDAP. When the setting is turned "Enabled", the phone performs an LDAP number search for PreDial or Dial status.

Valid Values: <Enabled>, <Disabled>

Default Value: Disabled

3.3 Example for Configuration

You can use the below settings as a starting point and adjust the filter and display attributes according to your needs.

LDAP Name Filter: (&(telephoneNumber=*)(sn=%))

LDAP Number Filter: (&(telephoneNumber=%)(sn=*))

Server Address: 10.1.4.40   #####this setting is relate with the server configuration.

Port: 389   #####this setting is relate with the server configuration.

Base: dc=yealink,dc=cn   #####this setting is relate with the server configuration.

User Name: cn=manager,dc=yealink,dc=cn   #####this setting is relate with the server configuration.

Password: ******   #####this setting is relate with the server configuration.

Max.Hits: 50

LDAP Name Attributes: cn sn displayName

LDAP Number Attributes: Mobile telephoneNumber ipPhone

LDAP Display Name: %cn

Protocol: Version 3   #####this setting is relate with the server configuration.

Search Delay(ms)(0~2000): 0

LDAP Lookup for Incoming Call: Enabled

LDAP Sorting Results: Enabled

LDAP Lookup for PreDial/Dial: Enabled

4. Configuration on Yealink Phone

1. Configure the LDAP setting via Web UI→Contacts→LDAP page.

2. Configure DSS Key for linking to the LDAP setting.

3. If you enable the "LDAP Lookup for PreDial/Dial", you can use LDAP feature either in PreDial/Dial page or by pressing DSS Key.
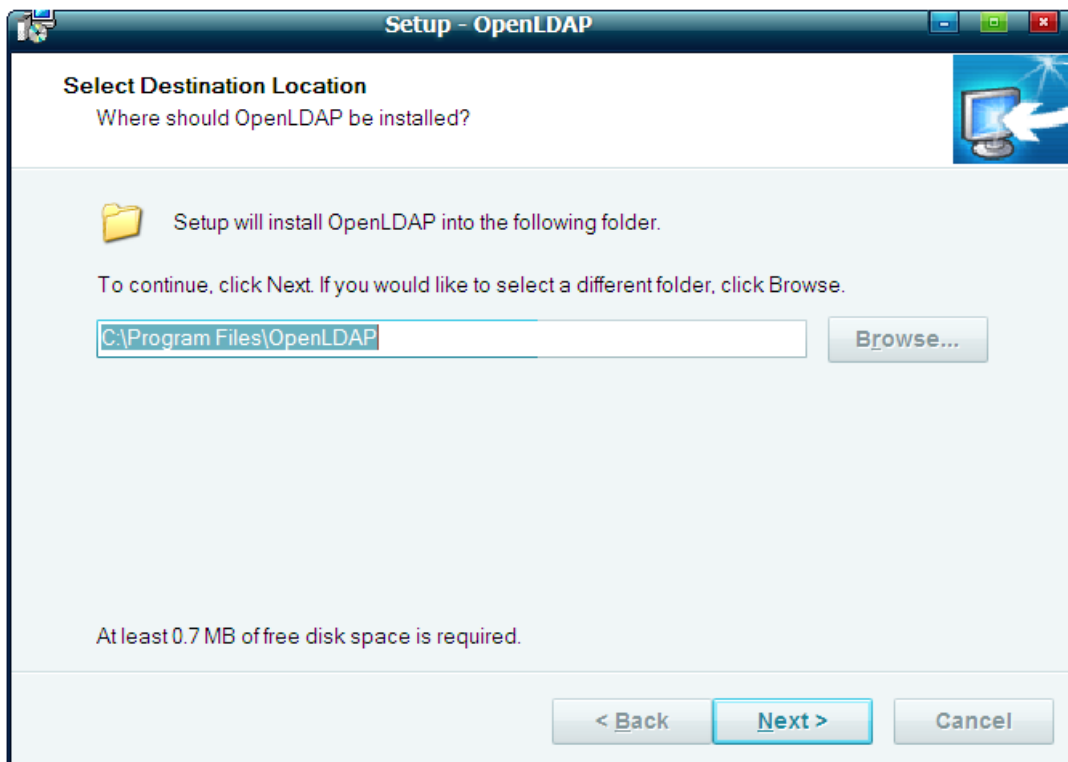
5. LDAP Server Installation

5.1 Install OpenLDAP Server on Windows System

Install "**openldap-2.2.29-db-4.3.29-openssl-0.9.8a-win32_Setup.exe**" according to default prompt, please remember the install path for next steps.
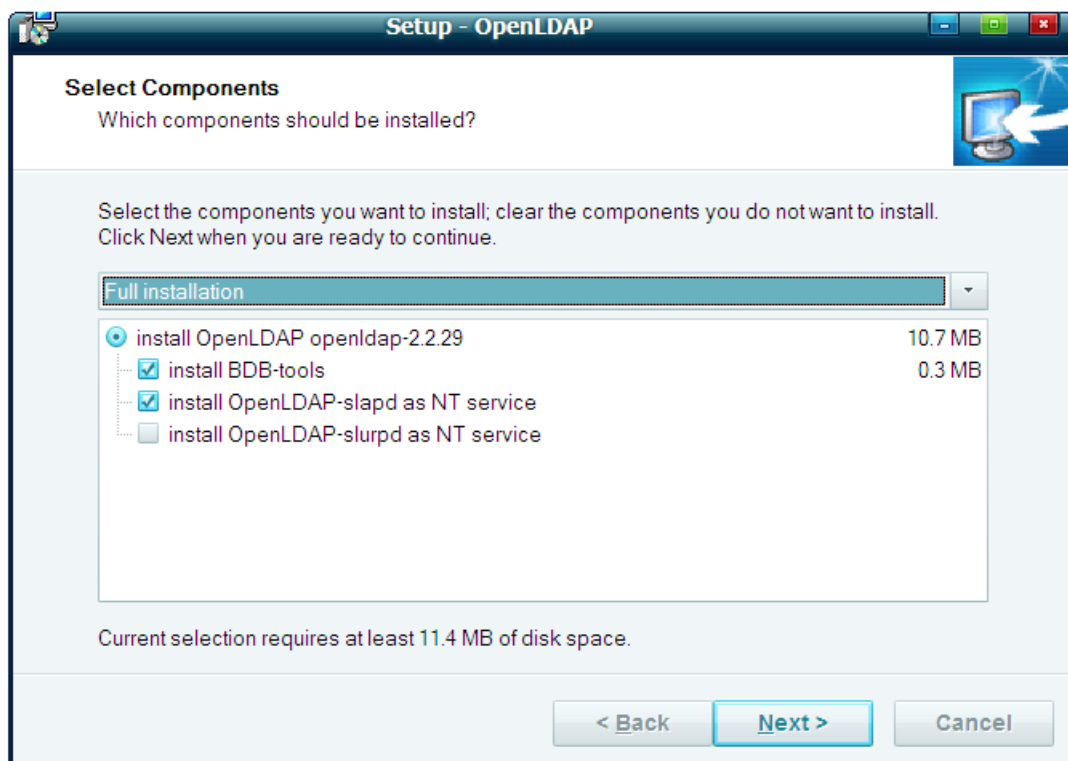
1. Double click the install program to run the installation.
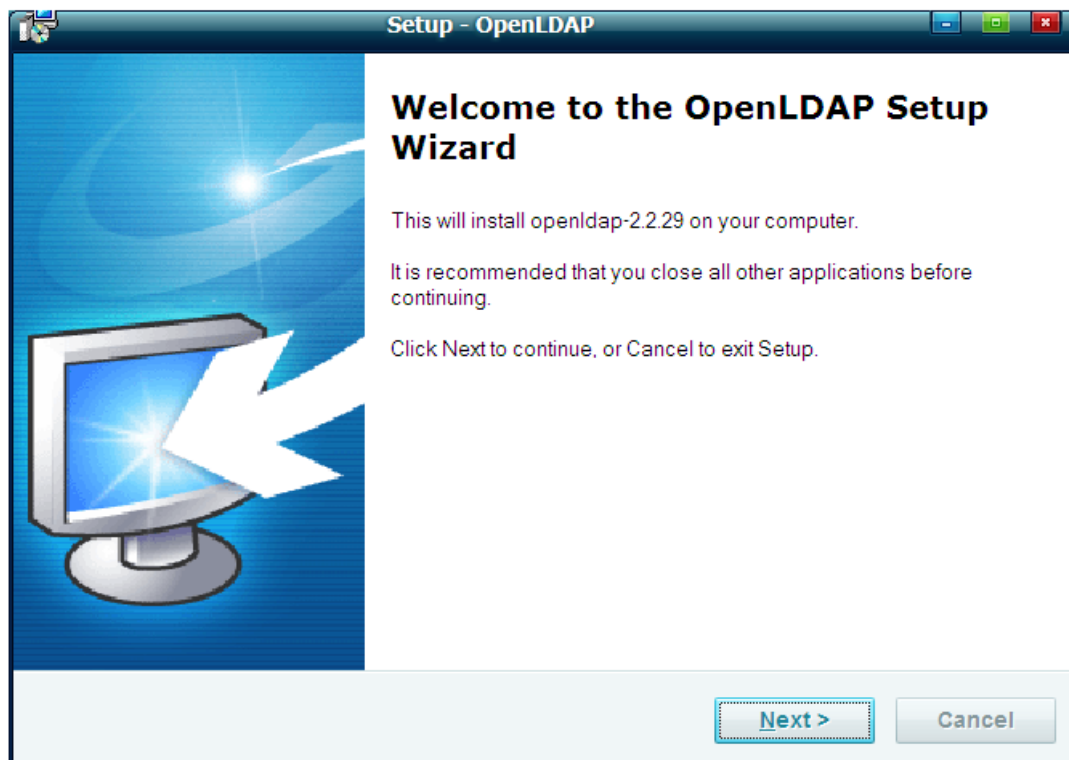
2. Please remember the install path. E.g. C:\Program Files\OpenLDAP.

3. Choose the [Full installation] mode as picture.

5.2 Configure OpenLDAP Server

5.2.1 Configure slapd.conf file

1. Add "schema" in slapd.conf file

Access to the install path (for example, C:\Program Files\OpenLDAP), open the file names slapd.conf, find the command

include   ./schema/core.schema

Add the other commands like:

    include   ./schema/cosine.schema
    include   ./schema/inetorgperson.schema
    include   ./schema/corba.schema
    include   ./schema/dyngroup.schema
    include   ./schema/java.schema
    include   ./schema/misc.schema
    include   ./schema/nis.schema
    include   ./schema/openldap.schema

2.   Modify the LDAP directory node

Access to the install path, open the file names slapd.conf, find the command

    suffix   "dc=my-domain, dc=com"
    rootdn   "cn=Manager, dc=my-domain, dc=com"

Please modify these two commands to following commands (please do not have any space during the quotation marks ""):
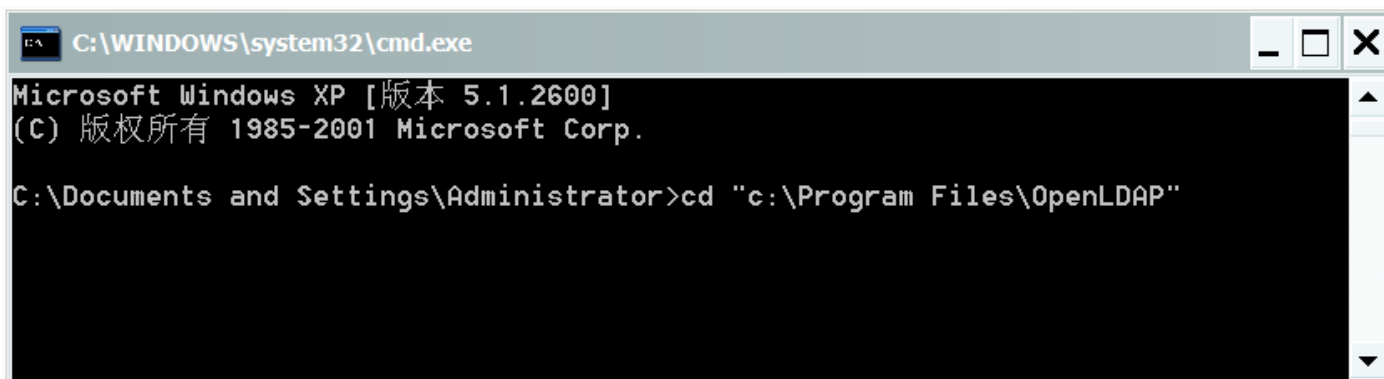
    suffix   "dc=yealink,dc=cn"
    rootdn   "cn=manager,dc=yealink,dc=cn"

NOTE:

The attribute on the left of the equal sign cannot be changed, but you can modify the parameter on the right of the equal sign, please pay attention to the correspondence with the followed setting.
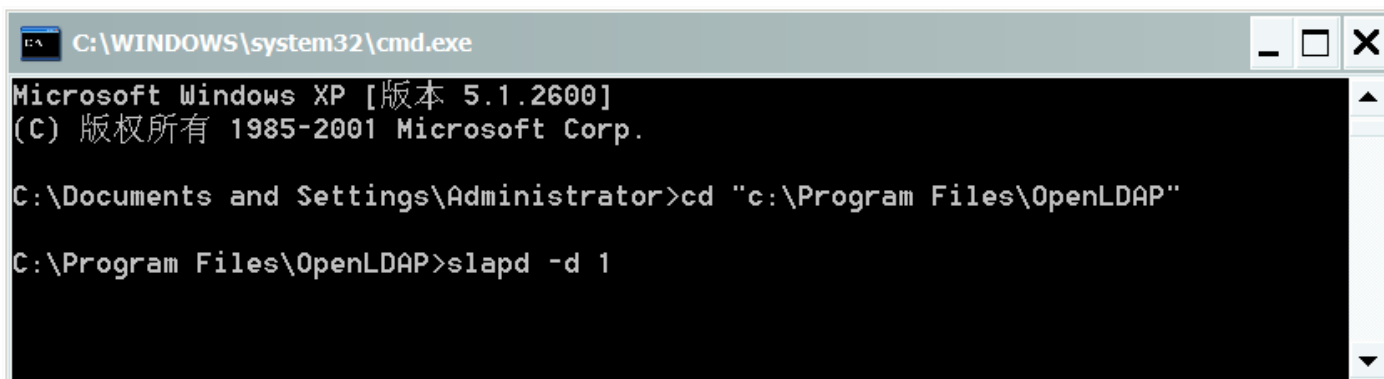
5.2.2 Run slapd server

cmd to OpenLDAP's install path, for example, "cd c:\Program Files\OpenLDAP"
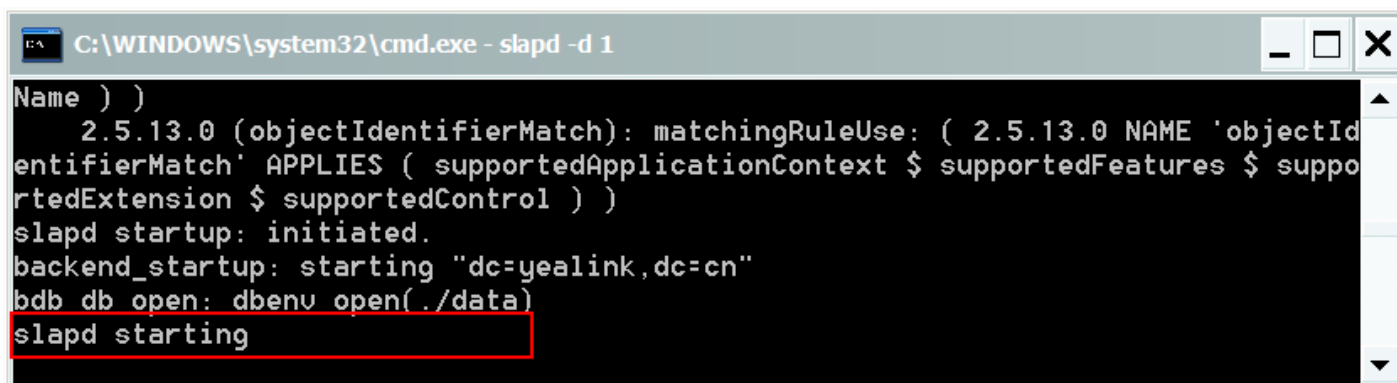
```
C:\WINDOWS\system32\cmd.exe

Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>cd "c:\Program Files\OpenLDAP"
```

Then run the command "slapd -d 1"

```
C:\WINDOWS\system32\cmd.exe

Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>cd "c:\Program Files\OpenLDAP"

C:\Program Files\OpenLDAP>slapd -d 1
```

If run the server successfully, you can find the command of "slapd starting"

```
C:\WINDOWS\system32\cmd.exe - slapd -d 1                    _ □ ✕

Name ) )
    2.5.13.0 (objectIdentifierMatch): matchingRuleUse: ( 2.5.13.0 NAME 'objectId
entifierMatch' APPLIES ( supportedApplicationContext $ supportedFeatures $ suppo
rtedExtension $ supportedControl ) )
slapd startup: initiated.
backend_startup: starting "dc=yealink,dc=cn"
bdb db open: dbenv open( ./data)
slapd starting
```

NOTE:

Please do not close this window to make sure the LDAP Server keep running.

5.2.3 Add contact

Create a plain text named "test. ldif" in install path.

Then put the content like following:

dn: dc=yealink,dc=cn   #####correspond to "suffix" setting above

objectclass: dcobject

objectclass: organization

o: xmyealink

dc: yealink

dn: cn=manager,dc=yealink,dc=cn   #####correspond to "rootdn" setting above

dc=yealink

objectclass: dcobject

objectclass: organization

cn=manager

sn: sumer

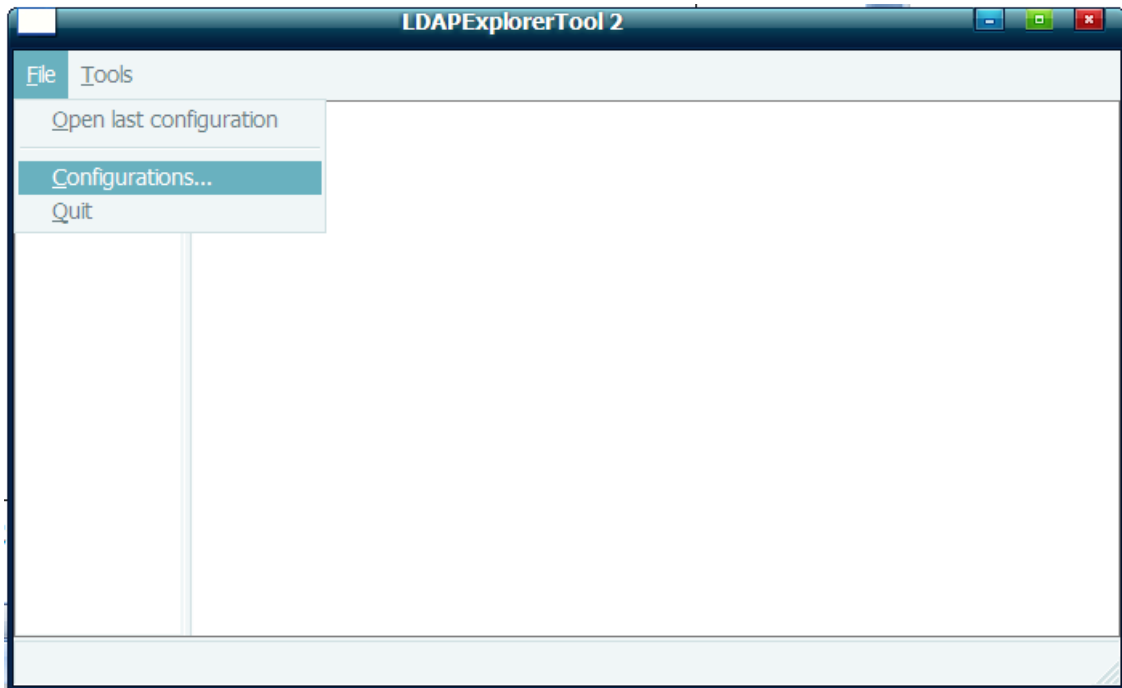cmd to execute command "ldapadd -x -D "cn=manager,dc=yealink,dc=cn" -w secret -f test.ldif".

6. Install LDAP Client tool in Windows System
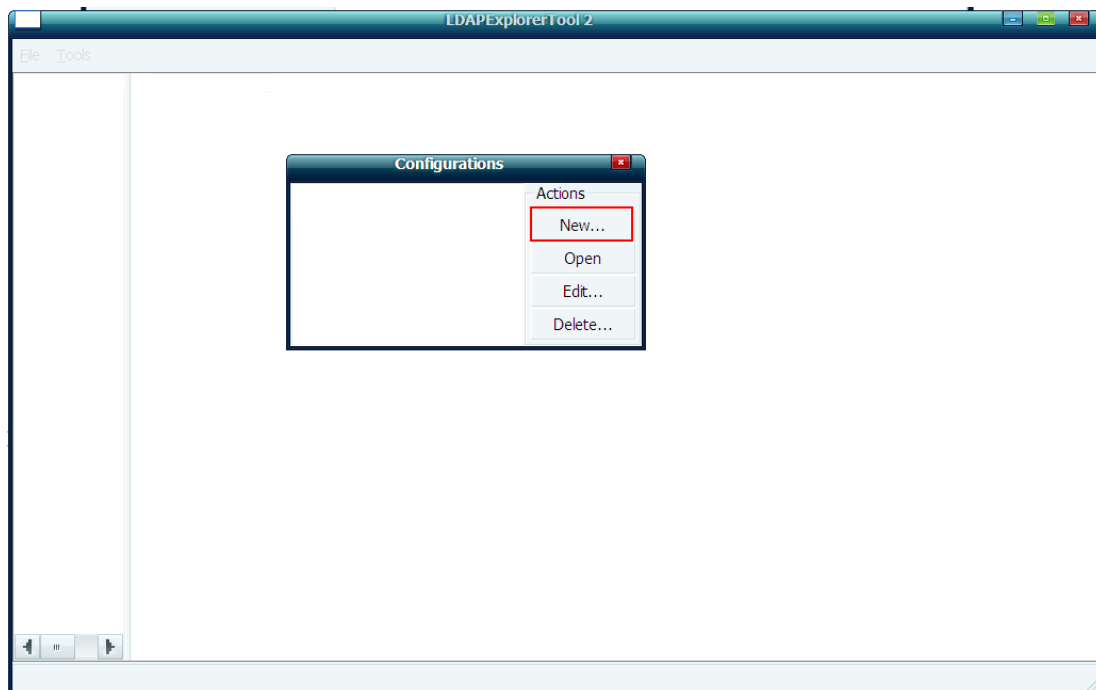
6.1 Install LDAPExploreTool2

Install the LDAPExploreTool2 according to the prompt.

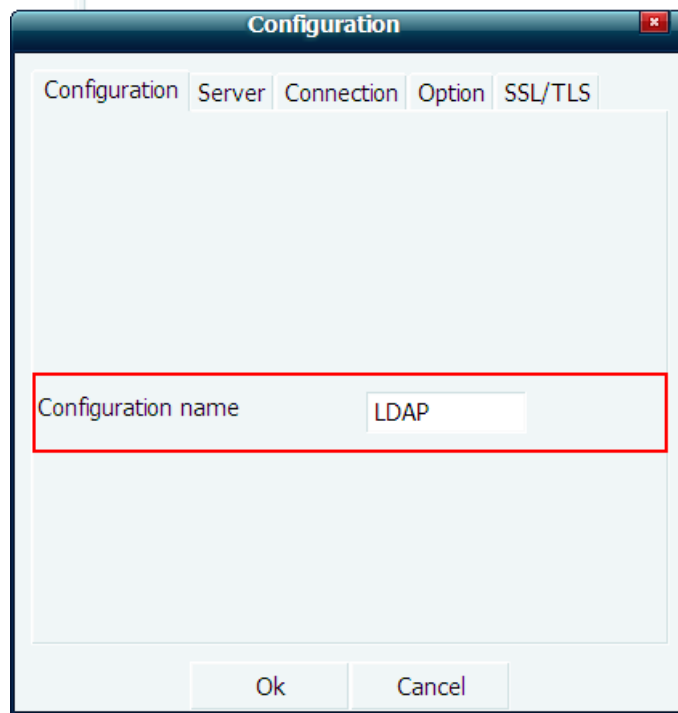### 6.2 Create the Configurations in LDAPExploreTool2

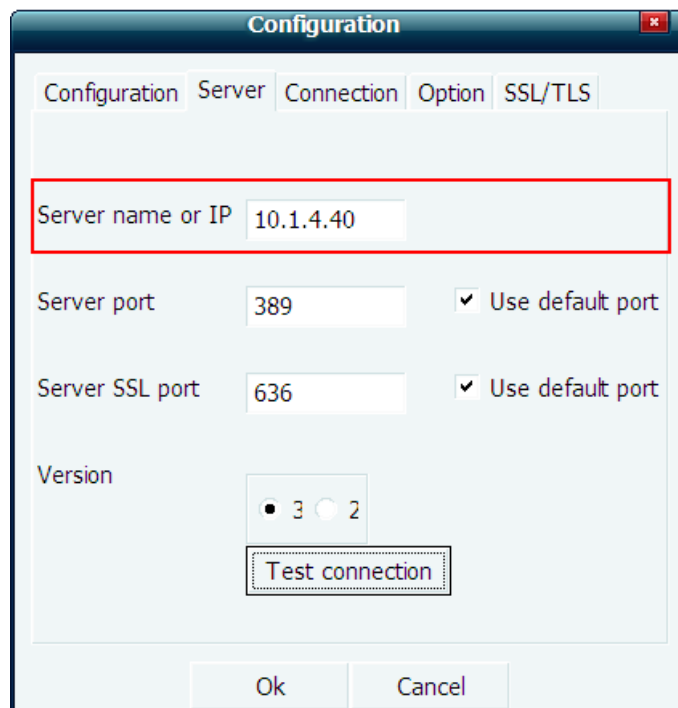1. Run the LDAPExploreTool2, access to File→Configurations.

2. Create the New Configuration.


a. Fill in a name in Configuration option.

b. Input the server address on Server option.

NOTE:

Server name or IP\Server port\Version settings are relate with the settings on the Yealink phone.

c. Configure the "cn=manager,dc=yealink,dc=cn" on User DN, and tick the Store password for protect your settings, enter the password which you configure on the server.
The Base DN will auto-configure if you press the [Guess value]
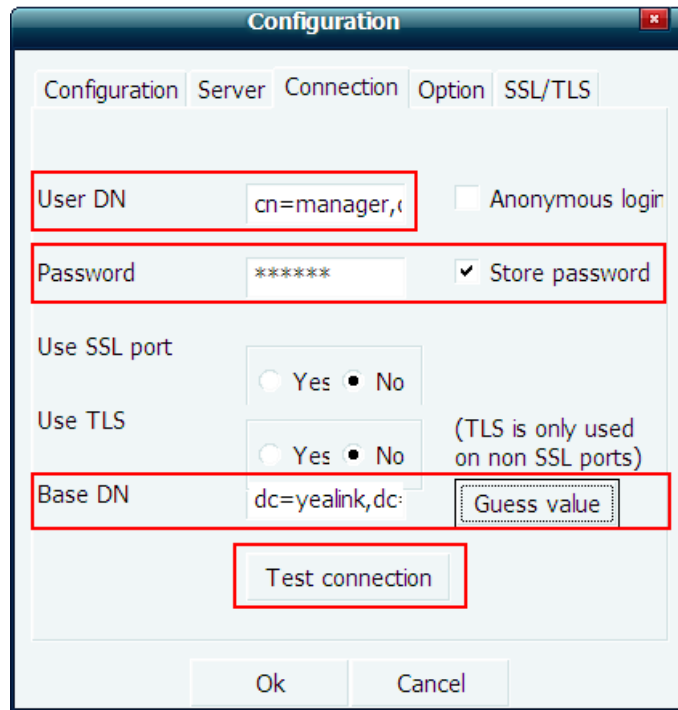
After the settings above, you can press [Test connection] to test your settings, if it prompt warning message, please re-try the steps above again, we can continue the next steps if the test is passed.
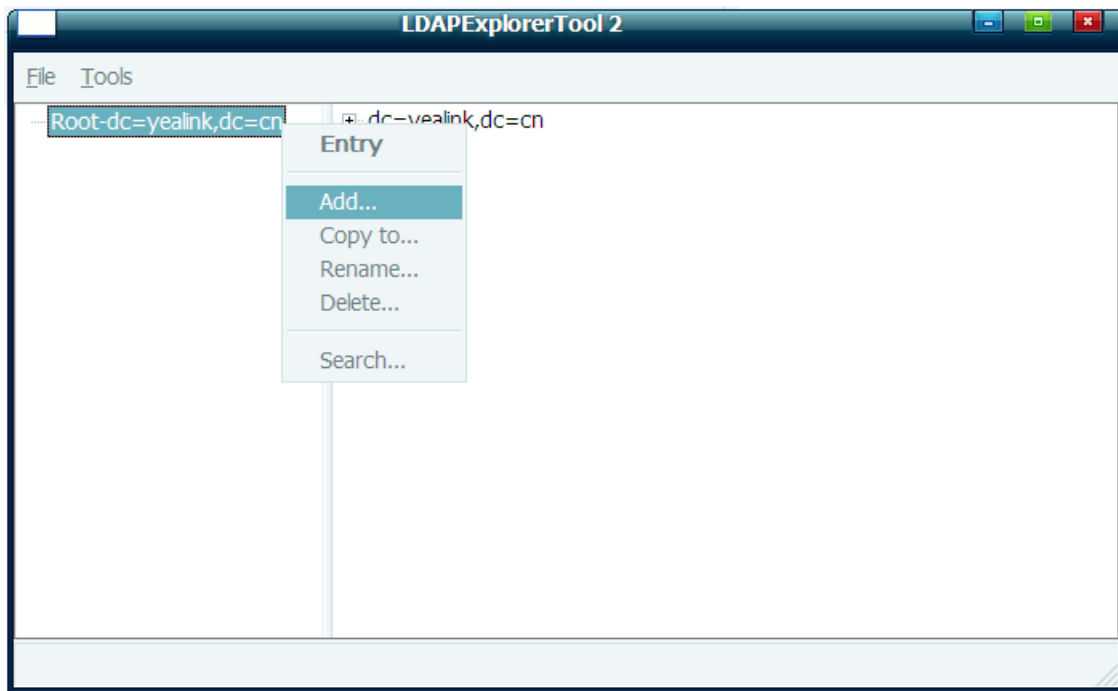
3. Choose the Action[LDAP], then press [Open] achieve the settings.
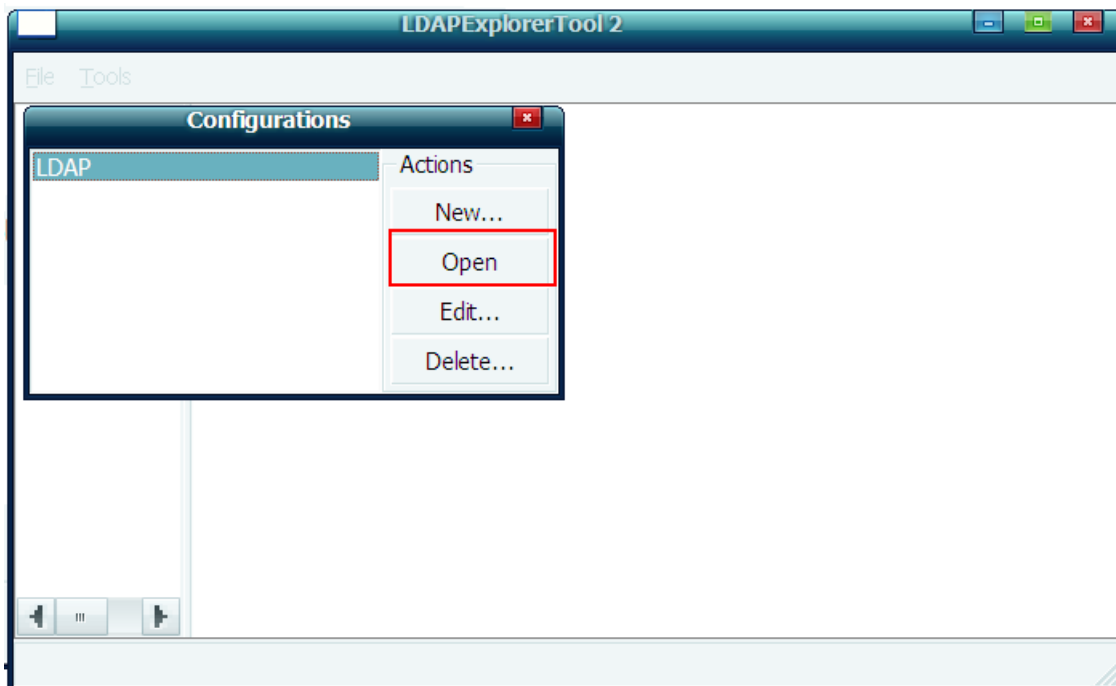
Then you can get the page like following picture. Please right click the action to add the contacts.

6.3 Add the Entry

1. Please right click the action to add the contacts.

2. Create new entry.

Parent DN: This setting will automatic generation according the Configuration setting.

Entry RDN: The format is cn=XXX

Object Class(from schema): Select the structure class which entry belongs to, each structure class has its own must attributes and may attributes. We select [Person] for example here.

Must attributes: Double click attribute to add them to the entry node. If need multi-cn, can be allow to repeat added.

May attributes: Double click attribute to add them to the entry node. If need multi-Telphonenumber, can be allow to repeat added.
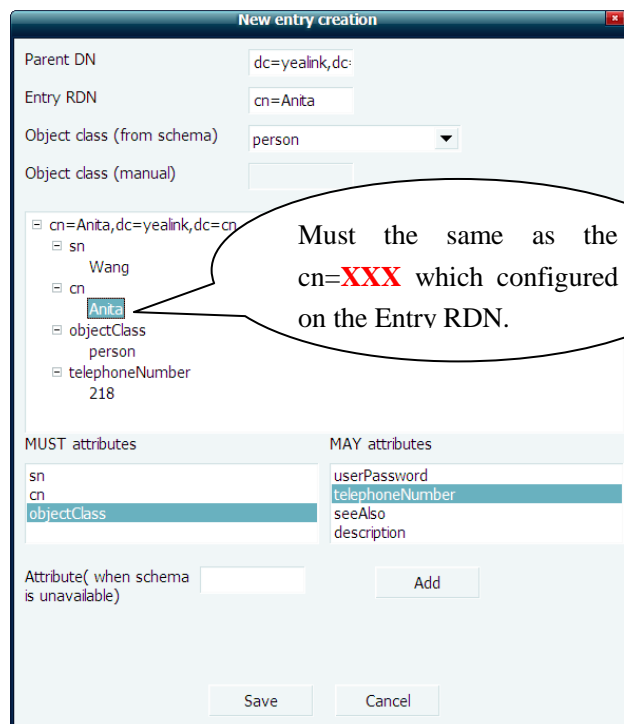
Please notice the note label on the picture above.

After save the settings, you can find the new added entry at the left of the LDAP catalogue.
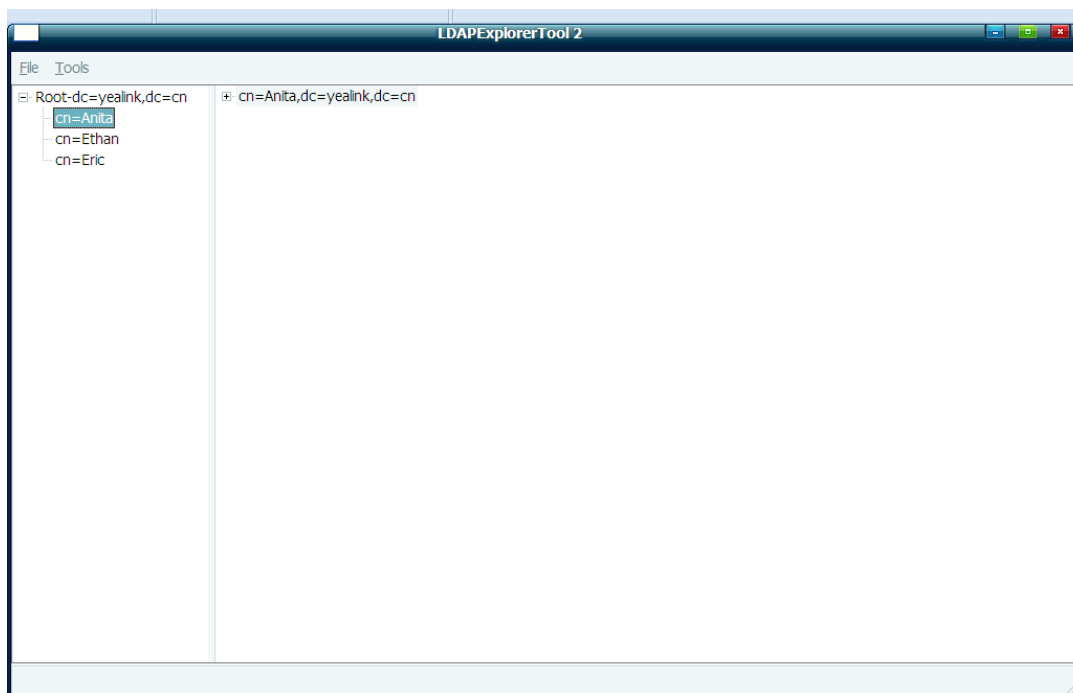
3. You can add more contact entries by these steps.

Here ends the configuration.