Using LDAP Phonebook on SIP-T46G IP Phones

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Introduction

LDAP stands for Lightweight Directory Access Protocol, which is a client-server protocol for accessing a directory service. LDAP is a directory service protocol that runs over TCP/IP. The nitty-gritty details of LDAP are defined in RFC 1777 "Lightweight Directory Access Protocol".

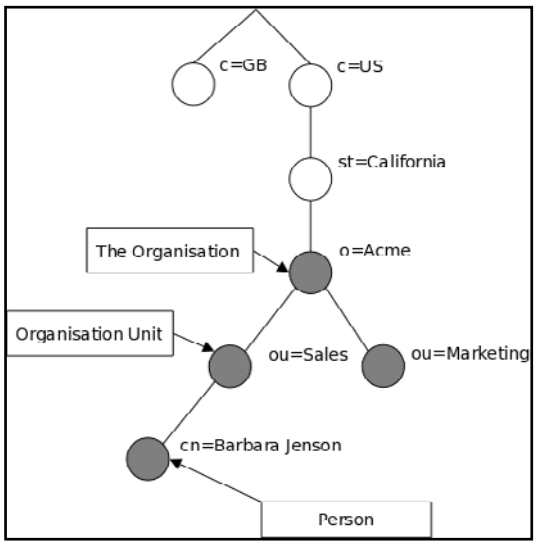
The following gives an overview of LDAP from a user's perspective.

What kind of information can be stored in the directory?

The LDAP information model is based on entries. An entry is a collection of attributes that has a globally-unique Distinguished Name (DN). The DN is used to refer to the entry unambiguously. Each of the entry's attributes has a type and one or more values. The types are typically mnemonic strings, like "cn" for common name, or "mail" for email address. The syntax of values depends on the attribute type. For example, a cn attribute might contain the value “Babs Jensen”. A mail attribute might contain the value "babs@example.com".

How is the information arranged?

In LDAP, directory entries are arranged in a hierarchical tree-like structure. Traditionally, this structure reflected the geographic and/or organizational boundaries. Entries representing countries appear at the top of the tree. Below them are entries representing states and national organizations. Below them might be entries representing organizational units, people, printers, documents, or just about anything else you can think of. The following shows an example of LDAP directory tree using traditional naming.



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

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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. LDAP is particularly useful for storing information that you wish to read from many locations, but update infrequently.

Yealink IP phones with the firmware version 61 or higher support the LDAP feature. This guide provides the configurations on the LDAP server and the SIP-T46G IP phones running the firmware version 71.

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Installing and Configuring the LDAP Server

An LDAP server is essentially a bit like an SQL server, which is mainly used for storing/retrieving information about people (such as contacts). The configuration settings on the phone will be altered depending on how the LDAP server is configured.

Before using the LDAP feature on IP phones, you must make sure the LDAP server is prepared properly, otherwise you need to install and configure an LDAP server. This chapter shows you how to install and configure an LDAP server. We recommend you to use the OpenLDAP or Microsoft Active Directory in windows system.

OpenLDAP

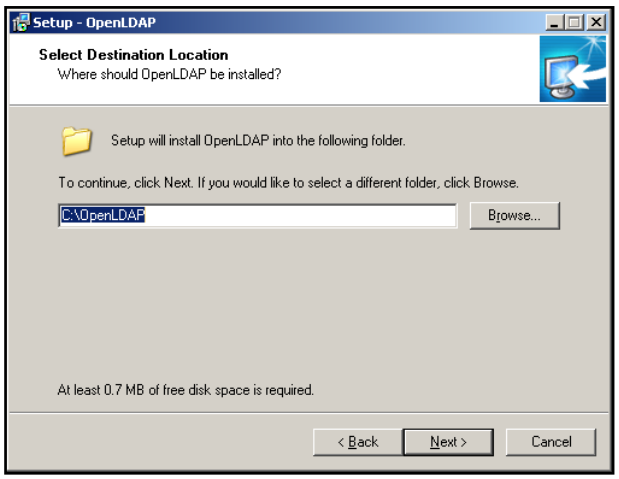
Installing the OpenLDAP Server

This section shows you how to install an OpenLDAP server. The OpenLDAP server software is available for free. You can download it from http://www.openldap.org/software/download/.

To install the OpenLDAP server:

1. Double click the OpenLDAP application to start the installation. Follow the default settings and click **Next**.
2. Click **Browse** to locate the installation path from local computer system and then click **Next**.

   You need to remember the installation path (e.g., C:\OpenLDAP) located here. The screenshot for reference is shown as below:



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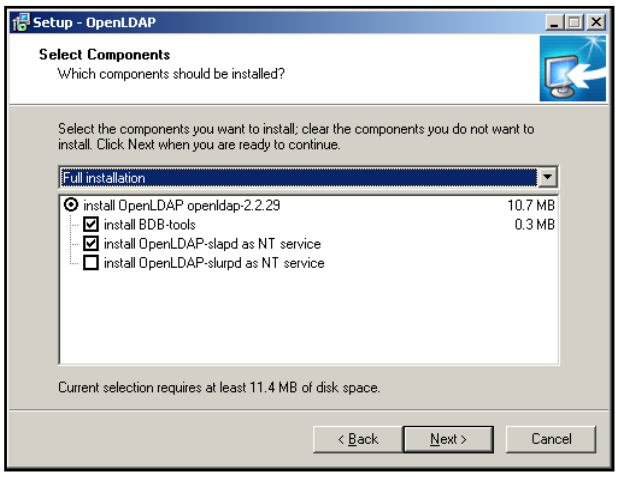
3. Select **Full installation**, the screenshot for reference is shown as below:



4. Follow the default settings and click **Next**.
5. Click **Finish** to finish the installation.

Configuring the OpenLDAP Server

Editing the slapd.conf File

Access the slapd.conf file at the OpenLDAP installation path. Open and edit the slapd.conf file using your favorite text editor.

1. Add the schema commands.

   Find the command **include ./schema/core.schema** and add the following commands below it.

   These two commands must be added:

   include ./schema/cosine.schema

   include ./schema/inetorgperson.schema

   These commands can be added optionally:

   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. Edit the manager information for LDAP phonebook.

   Find the commands

   Suffix "dc=my-domain, dc=com"

   Rootdn "cn=manager,dc=my-domain,dc=com"

   Rootpw secret

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Suffix defines the components of the domain name.

Rootdn defines the manager as a management user for accessing the LDAP server.

Rootpw defines the user password of the management user.

For example:

Suffix "dc=yealink,dc=cn"

Rootdn "cn=manager,dc=yealink,dc=cn"

Rootpw secret

The suffix line means that the domain name of the LDAP phonebook is yealink.cn. The Rootdn line defines a management user named as manager. The Rootpw line defines the password "secret" for the management user.

If the domain name contains additional components, for example, yealink.com.cn, the suffix line will be edited as below:

Suffix "dc=yealink,dc=com,dc=cn"

Rootdn "cn=manager,dc=yealink,dc=com,dc=cn"

Rootpw secret

Starting the Slapd Server

To start the slapd server:

1. Click **Start**->**Run**.
2. Enter **cmd** in the pop-up dialogue box and click **OK** to enter the command line interface.
3. Execute the **cd** command to locate the server installation path. For example, execute **cd c:\OpenLDAP** to locate the server installation path at **c:\OpenLDAP**

4. Execute the command **slapd –d 1** to start the slapd server.

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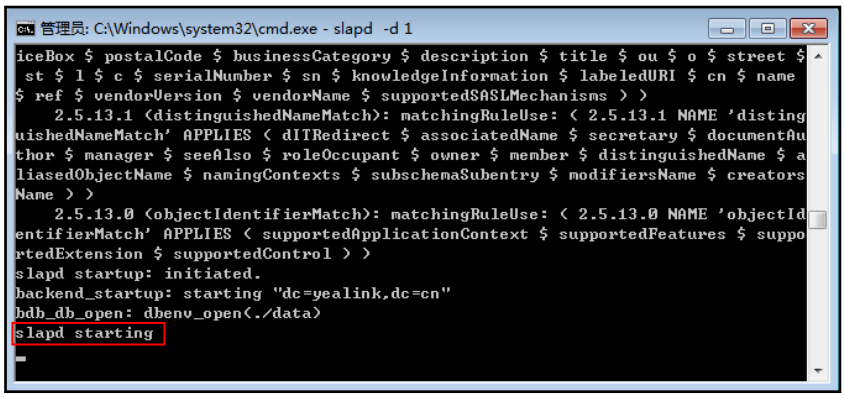
If the server runs successfully, you can find the prompt "**slapd starting**".

The screenshot for reference is shown as below:



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

Adding the Initial Entry to the LDAP Directory

You can add the initial entry to the LDAP directory by the ldif file. Create a new text document, then modify the filename extension as ldif and place the document to the OpenLDAP installation path. For example, create a text document named as test.txt, right click the test.txt document and then select to rename it, modify the filename extension as ldif. Open the ldif file with your favorite text editor and input the corresponding content. The following shows an example of the content of the LDIF file:

```
dn: dc=yealink,dc=cn
objectclass: dcobject
objectclass: organization
o: xmyealink
dc: yealink

dn: cn=manager,dc=yealink,dc=cn
dc=yealink
objectclass: dcobject
objectclass: organization
cn=manager
sn: sumer
```

To add the initial entry using the test.ldif file:

1. Click **Start->Run**.
2. Execute **cmd** in the pop-up dialogue box and click **OK** to enter the command line interface.

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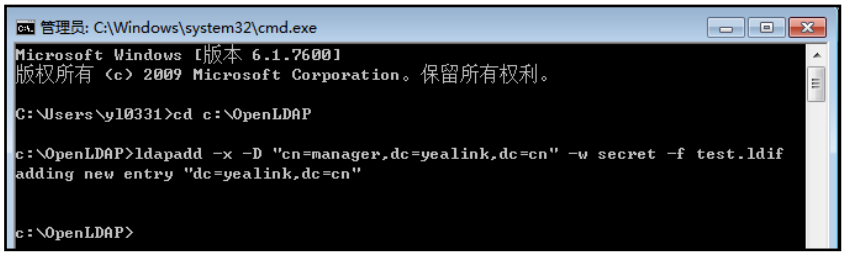
3. Execute the command **cd c:\OpenLDAP** to access the OpenLDAP installation path at **c:\OpenLDAP**.
4. Execute the command **ldapadd -x -D "cn=manager,dc=yealink,dc=cn" -w secret -f test.ldif** to add the initial entry.

   The screenshot for reference is shown as below:



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Configuring the LDAPExploreTool2

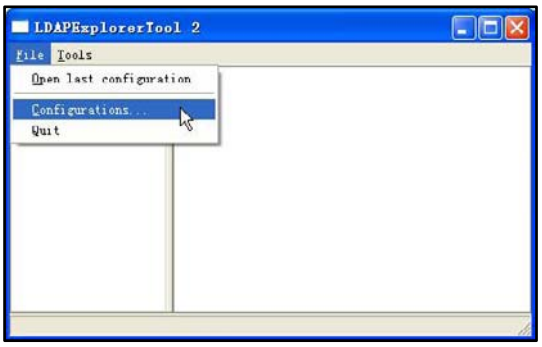
The LDAPExploreTool2 application supports to run in windows system. The application in windows is a graphical LDAP tool that enables you to browse, modify and manage contact entry on LDAP server.

If you have an LDAPExploreTool2 application installed on your computer, open it now, otherwise, download the application from http://ldaptool.sourceforge.net/. And then complete the installation following the wizard.

Creating a Configuration

To create a configuration:

1. Double click the LDAPExploreTool2.exe to start the application.
2. Click **File**->**Configurations**.



3. Click **New** to create a new configuration.
4. Enter a name in the **Configuration name** field under the **Configuration** tab.

5. Enter the domain name or IP address of the LDAP server in the **Server name or IP** field under the **Server** tab. Select to use the default port for the **Server port** and

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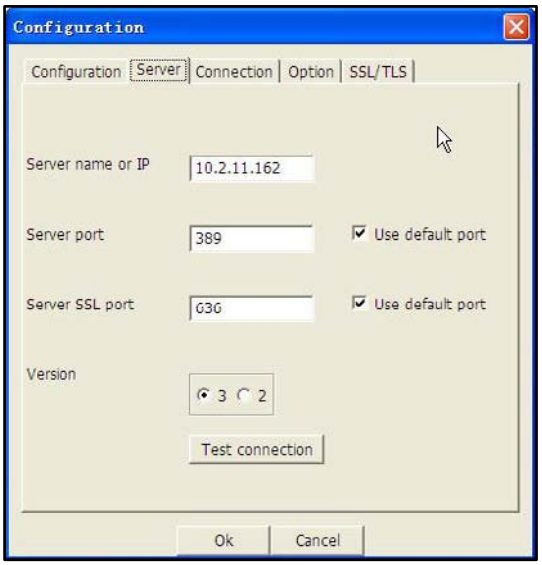
Server SSL port.



6. Enter the user DN and password in the **User DN** and **Password** field under the **Connection** tab.

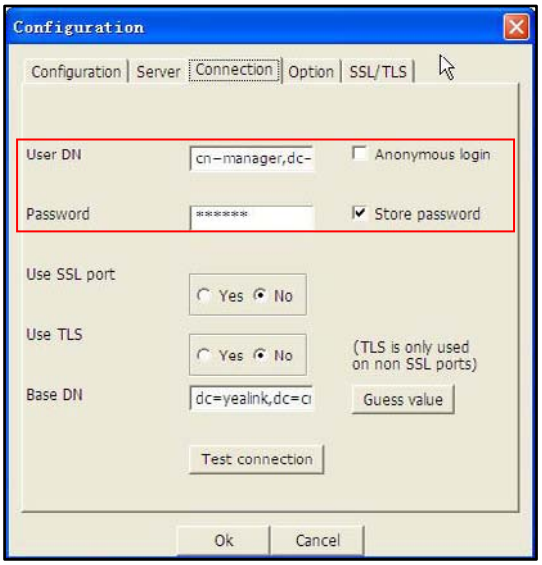
   The user DN and password correspond with the Rootdn and Rootpw defined in the slapd.conf file.

   For example, according to the manager information defined in the slapd.conf file:

   Rootdn "cn=manager,dc=yealink,dc=cn"

   Rootpw secret

   Enter **cn=manager,dc=yealink,dc=cn** in the **User DN** field and **secret** in the **Password** field under the **Connection** tab.



7. Click **Guess value** to fill the **Base DN** automatically.
8. Click **Test connection** to test the connection to the LDAP server. If you encounter an error or warning during the test, you need to resolve the error or warning first according to the prompt, and then retry to test the connection.

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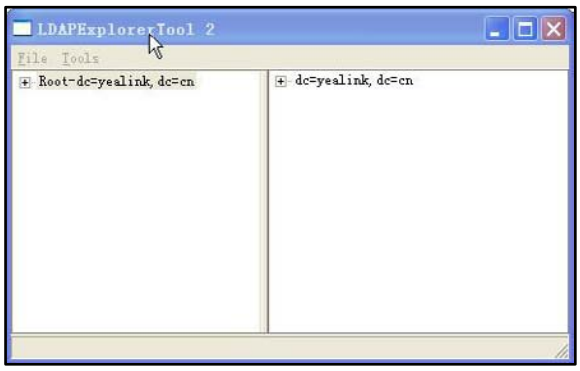
9. Click **OK** to accept the change.

Adding Entries

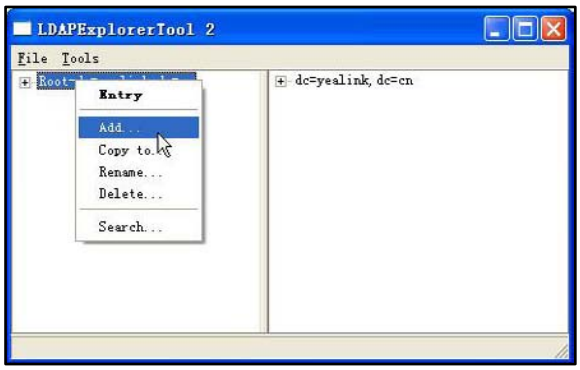
To add entries:

1. Click **File->Configurations**, select the configuration created above, and then click **Open**.

   The screenshot for reference is shown as below:



2. Right click the root entry, and then select **Add** to add a new entry.



3. Enter the desired values in the corresponding fields.

   Parent DN: It will be automatically generated according to the server configuration.

   Entry RDN: The format is cn=XXX. This is a unique identifier for each entry.

   Object Class (from schema): Select the structure class which the entry belongs to. Each structure class has its own must attributes and may attributes. We select **Person** from the pull-down list of **Object class (from schema)** for example.

4. Select the desired attributes for object class.

   Must attributes: Double click attributes to add them to the entry node. All attributes listed in the **Must attributes** field must be added and each value of the attribute must be set.

   May attributes: Double click the desired attributes to add them to the entry node. The attributes listed in the **May attributes** field is optional.

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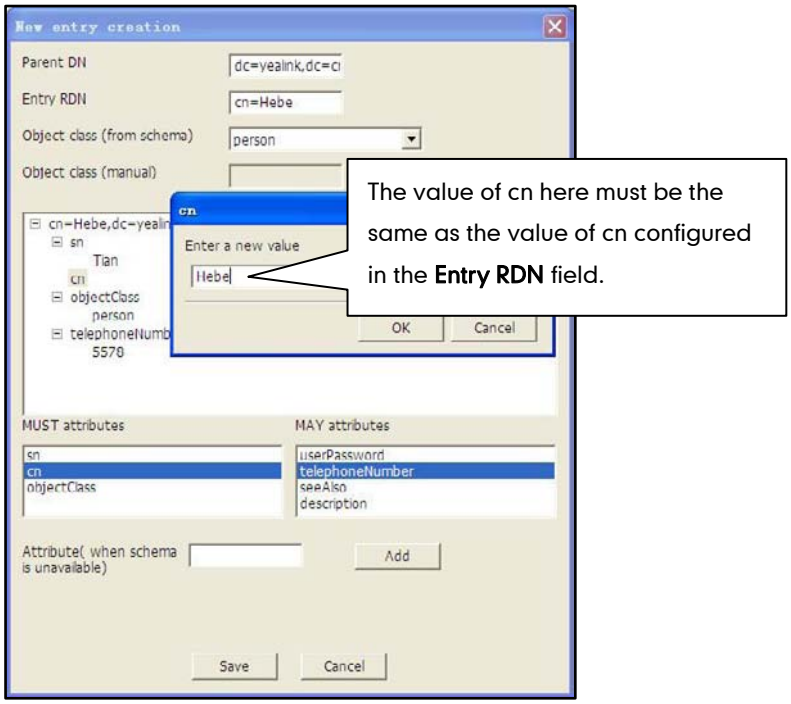
Common attributes are listed in the following table:

Attribute	Name	Description
cn	commonName	Full name of the entry.
gn	givenName	First name also called Christian name.
sn	surname	Surname, last name or family name.
telephoneNumber	telephoneNumber	Office phone number.
homePhone	homeTelephoneNumber	Home phone number.
mobile	mobileTelephoneNumber	Mobile or cellular phone number.
pager	pagerTelephoneNumber	Pager telephone number.
company	company	Company name.
o	organizationName	Organization name.
ou	organizationlUnitName	Usual department or any sub entity of larger entity.

5. Right click the selected attribute and then select **Add value**.

   The screenshot of adding a new entry is shown as below:



6. Click **Save** to confirm the configuration.
7. Repeat steps 2 to 6 to add more contact entries.

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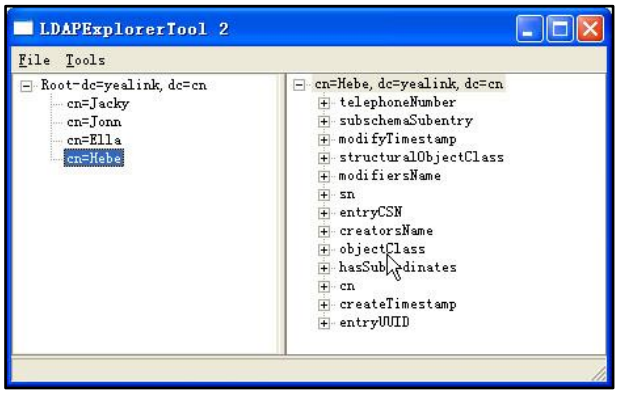
You can find the added entries at the left of the LDAP catalogue.



Microsoft Active Directory

Installing the Microsoft Active Directory Server

This section shows you how to install an active directory on Microsoft windows server 2008 R2 Enterprise 64-bit.

To install the Microsoft active directory server:

1. Click **Start->Run**.
2. Enter **dcpromo** in the pop-up dialogue box and click **OK**.
3. The Active Directory Domain Services Installation Wizard will appear after a short while, click **Next**.

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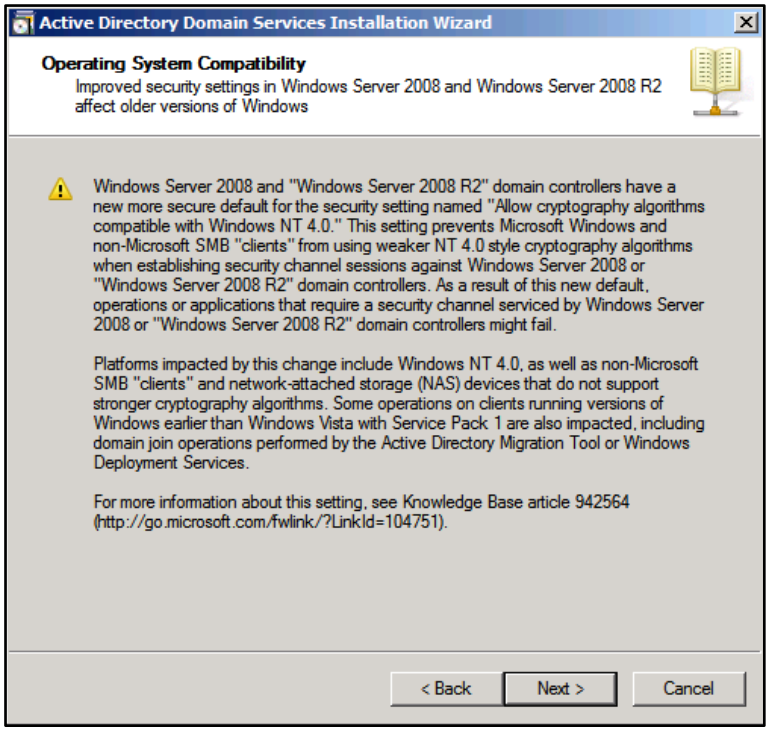
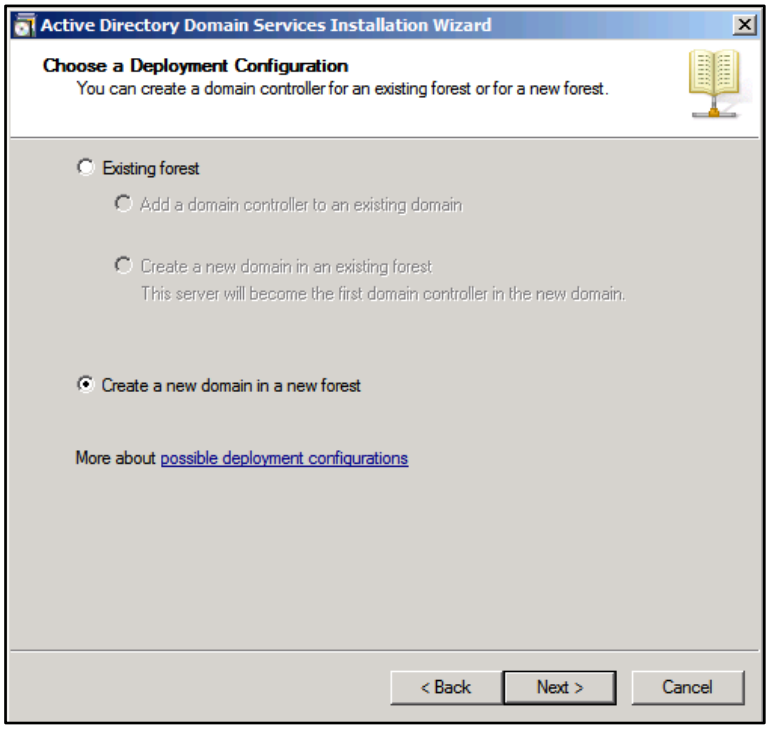
4. Read the provided information and click **Next**.



5. Mark the **Create a new domain in a new forest** radio box and click **Next**.



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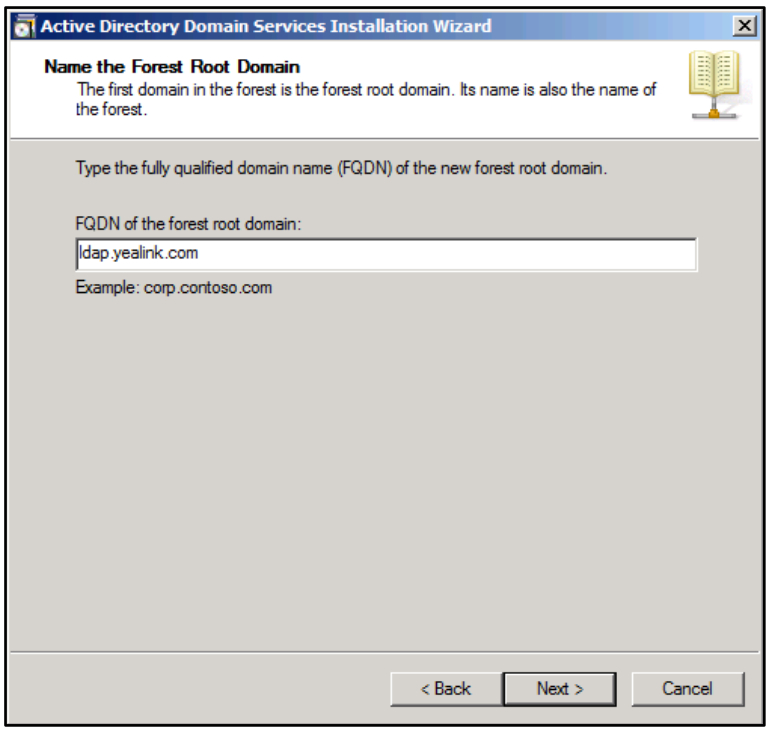
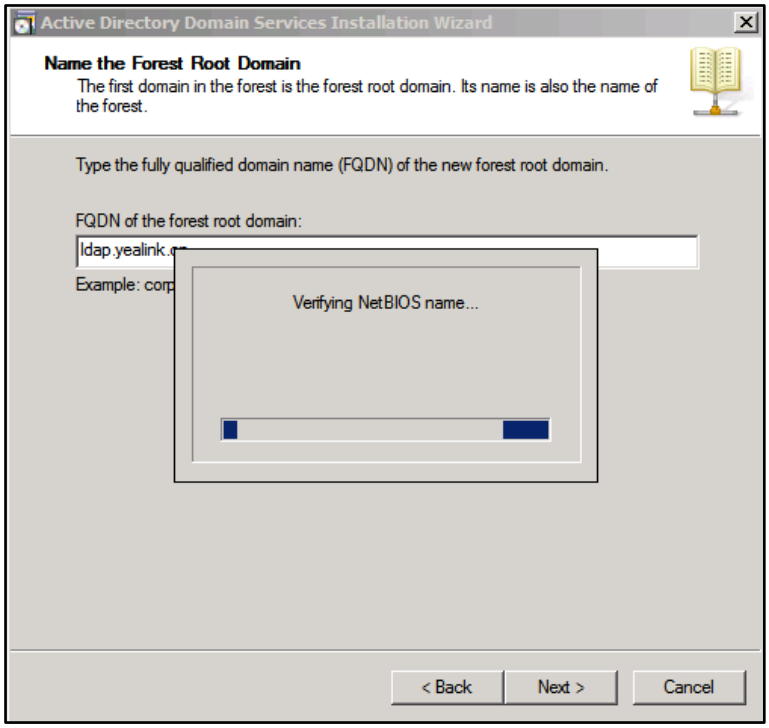
6. Enter an appropriate domain name for the forest root domain and click **Next**.



The wizard will check to see if the domain name is not already in use on the local network.



7. Select the desired forest functional level from the pull-down list of **Forest functional level**, and click **Next**.

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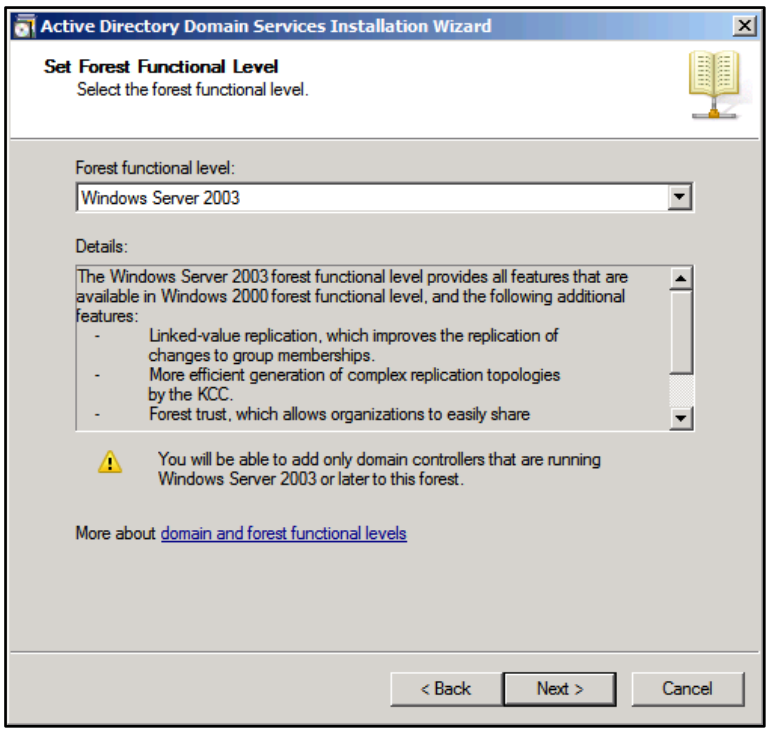
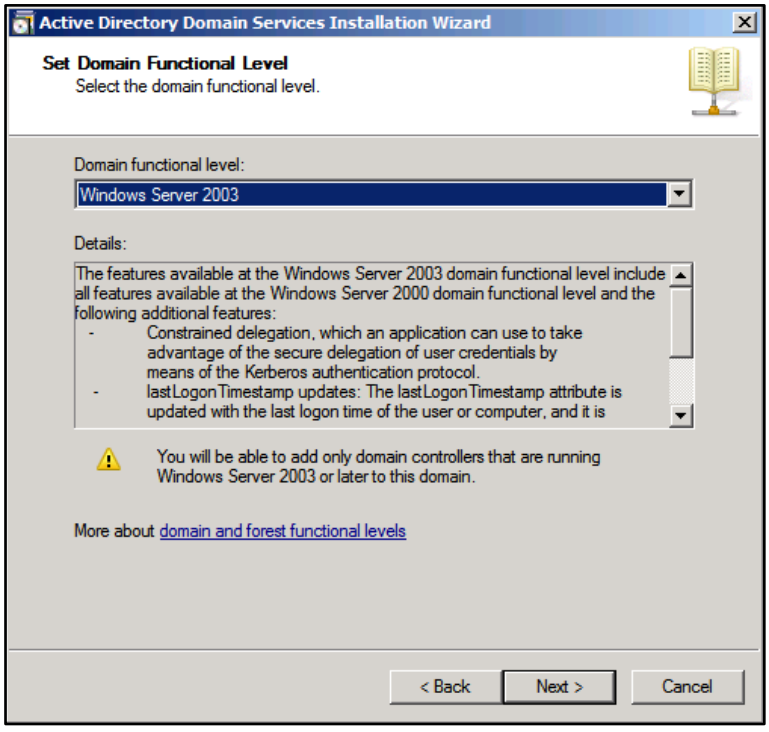
For more information, click **domain and forest functional levels**.



8. Select the desired domain functional level from the pull-down list of **Domain functional level**, and click **Next**.

   For more information, click **domain and forest functional levels**.



If you select **Windows Server 2008 R2** for the forest functional level, you will not be prompted to enter a domain functional level.

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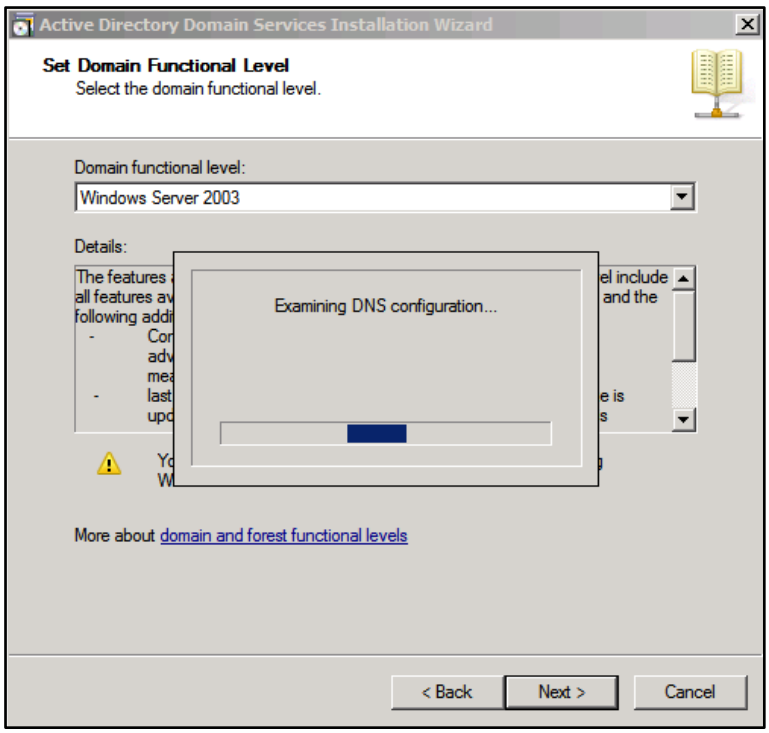
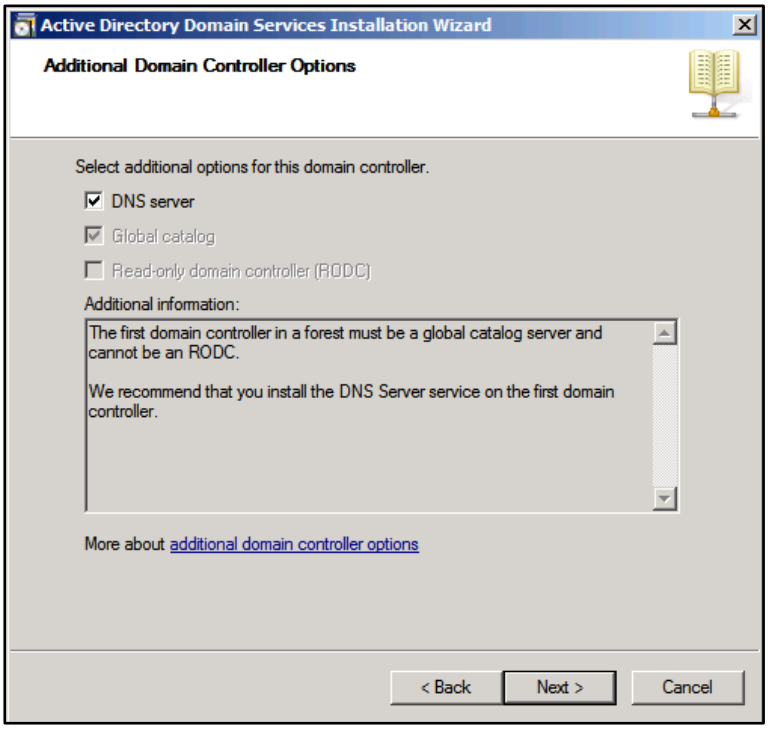
The wizard will check to see if the DNS is properly configured on the local network.



9. Select additional options for this domain controller if required, and click **Next**.



You may get a warning telling you that the server has one or more dynamic IP addresses. We recommend assigning the static IP addresses to the physical network adapters.

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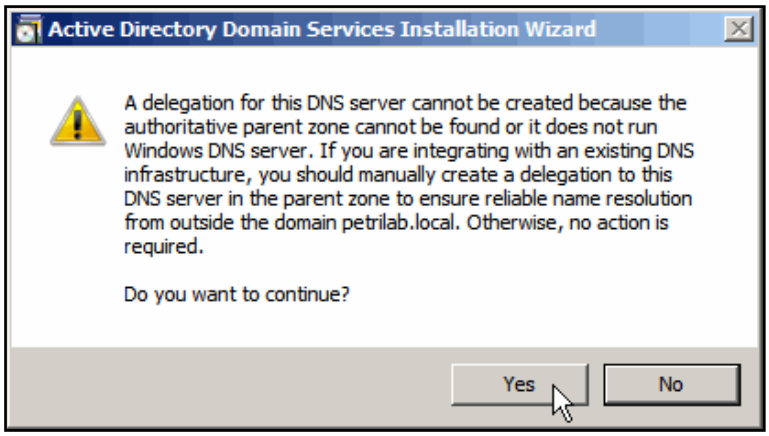
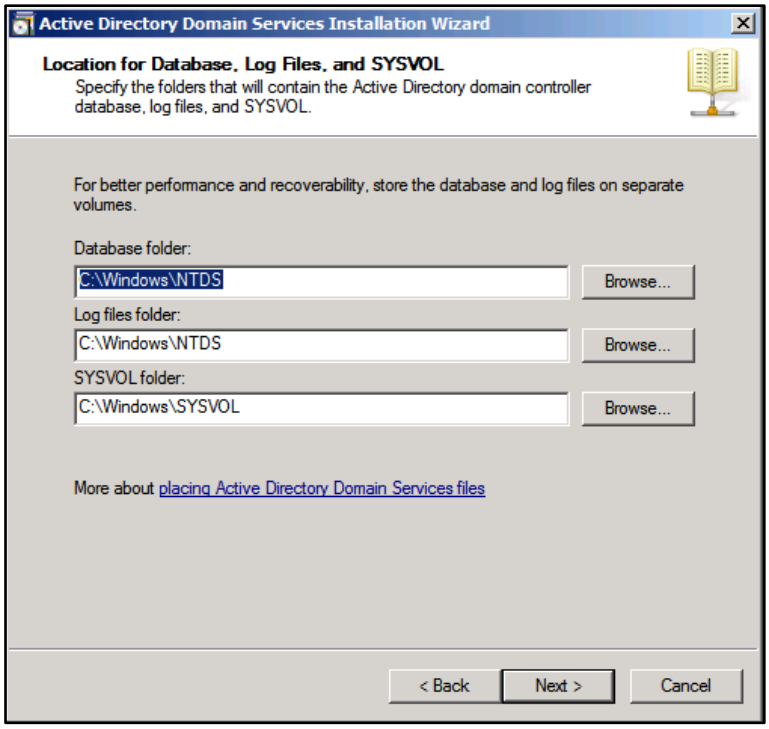
10. The wizard will prompt a warning about DNS delegation. Since no DNS has been configured yet, you can ignore the message and click **Yes**.



11. Specify the desired paths for the database, log files and SYSVOL folders, and click **Next**.

    For more information, click **placing Active Directory Domain Services files**.



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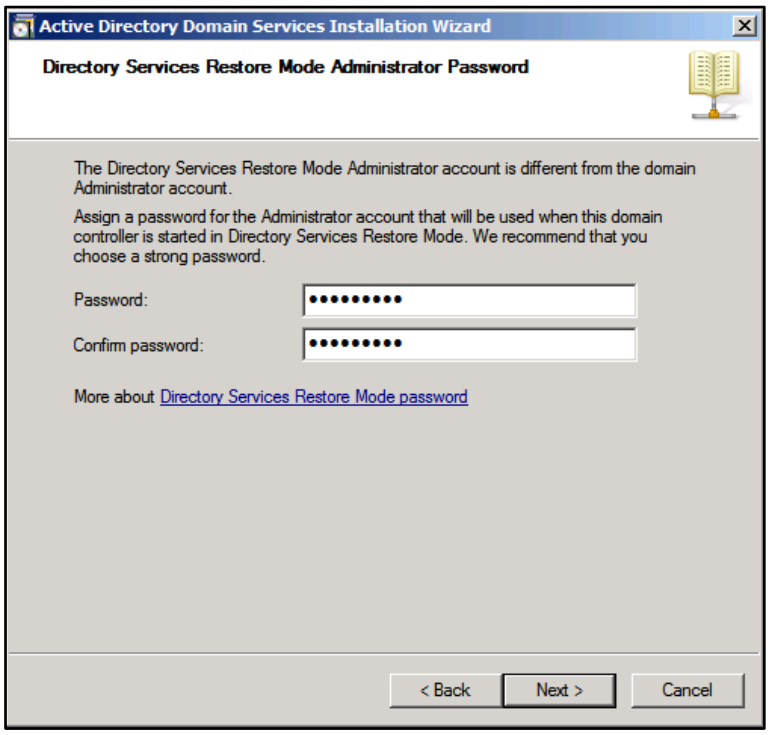
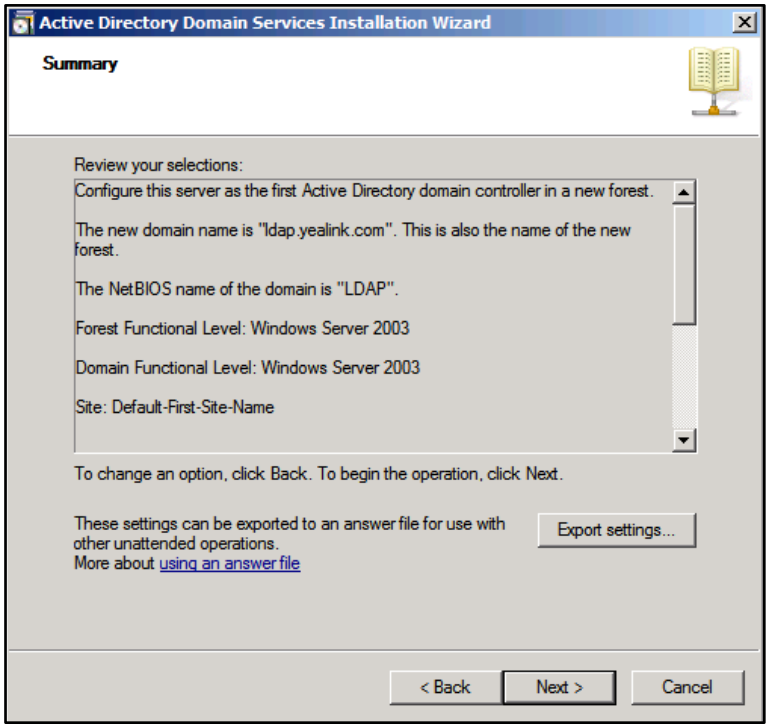
12. Configure the password for the active directory recovery mode, click **Directory Services Restore Mode password** for more information and click **Next**.

    The password should be complex and at least 7 characters long.



13. Review your selection and click **Next**.



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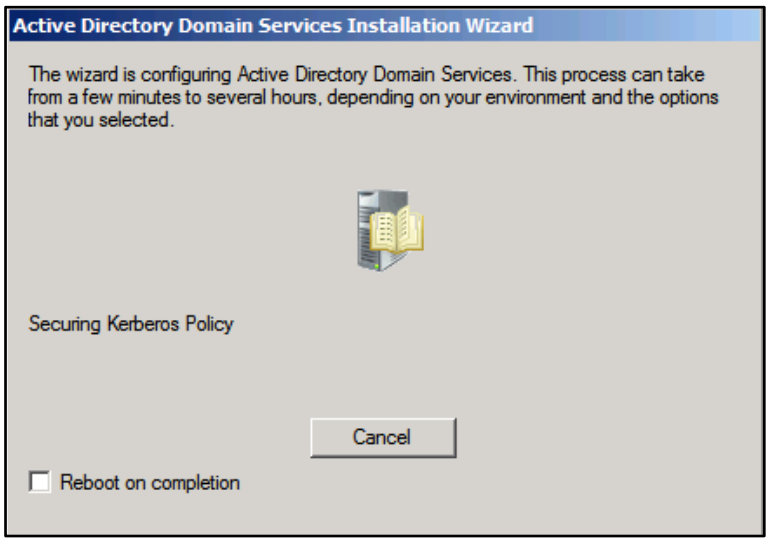
The wizard will begin creating the Active Directory domain, and when finished, you will need to click **Finish** and reboot your computer.



Installing Active Directory Lightweight Directory Services Role

You should also install the Active Directory Lightweight Directory Services role on windows server 2008.

To install the Active Directory Lightweight Directory Services role:

1. Click **Start->Administrative Tools->Server Manager**.
2. Right click **Roles**, and then select **Add Roles**.

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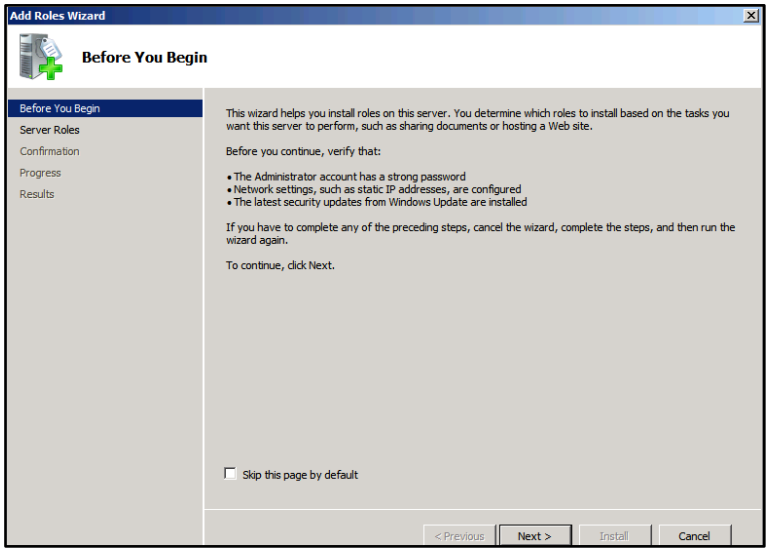
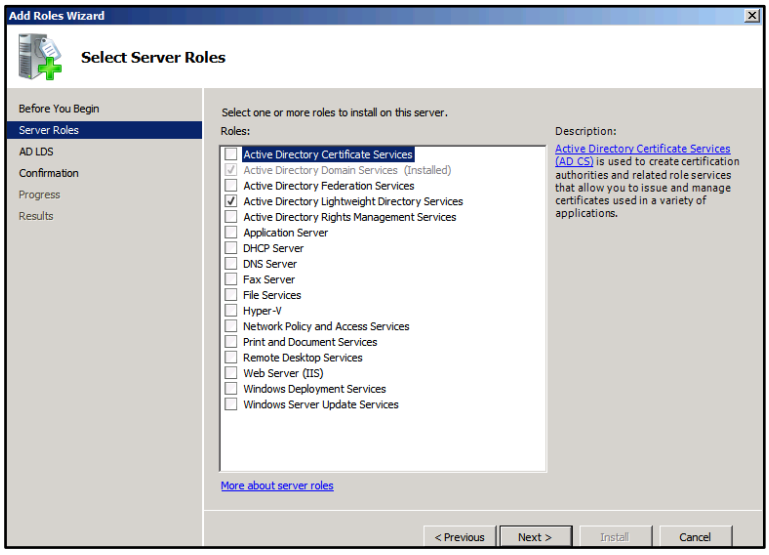
3. The Add Roles Wizard will appear, click **Next**.



4. Check the **Active Directory Lightweight Directory Services** checkbox and click **Next**.



5. Follow the default settings and click **Next**.
6. When the installation ends, click **Close**.

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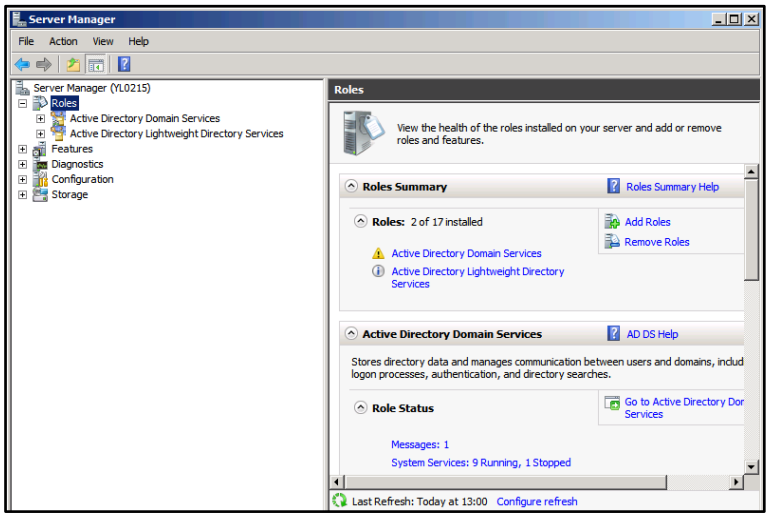
After the installation succeeds, you will find the **Active Directory Lightweight Directory Services** role below roles of the server manager.



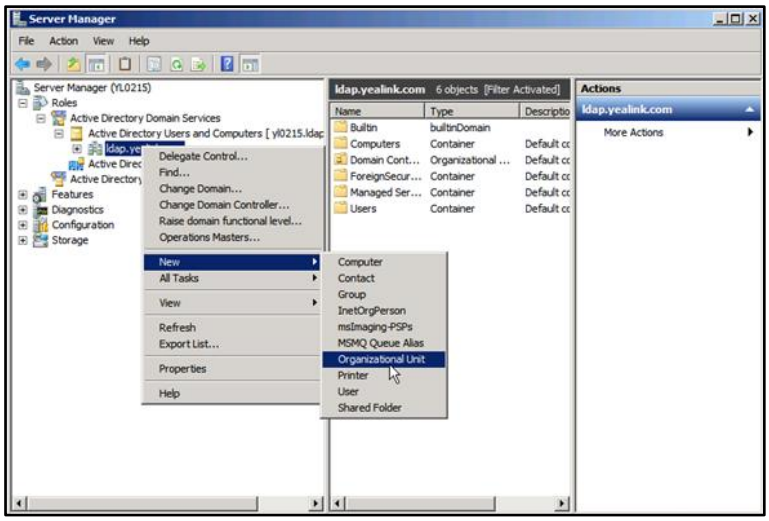
Configuring the Microsoft Active Directory Server

Adding a Entry to the Active Directory

You can add entries to the active directory one by one in this way.

To add an entry to the Active Directory:

1. Click **Start->Administrative Tools->Server Manager**.
2. Double click **Roles->Active Directory Domain Services->Active Directory Users and Computers**.
3. Right click the domain name created above (e.g., ldap.yealink.com), and then select **New->Organizational Unit**.



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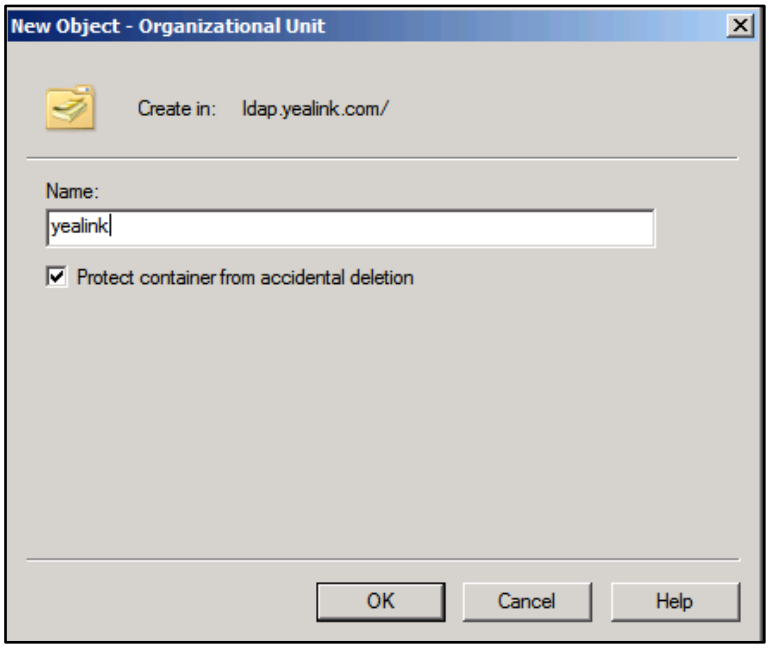
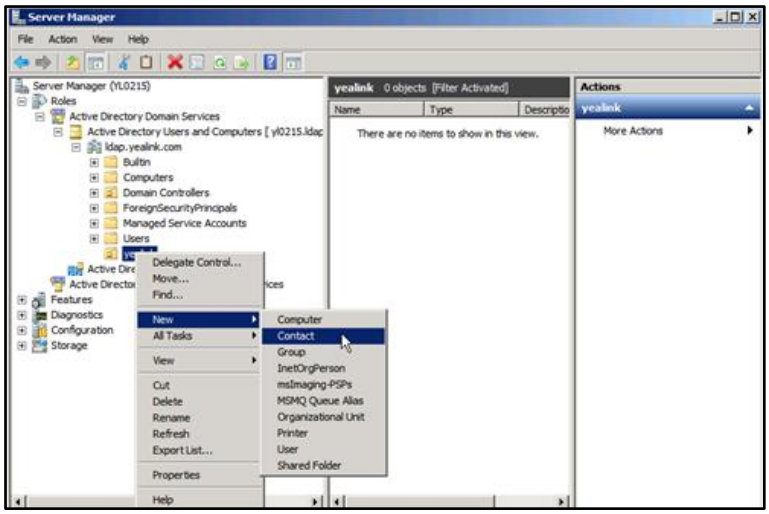
4. Enter the desired name of the organizational unit.



5. Click **OK** to accept the change.
6. Right click the organizational unit created above, and then select **New->Contact**.



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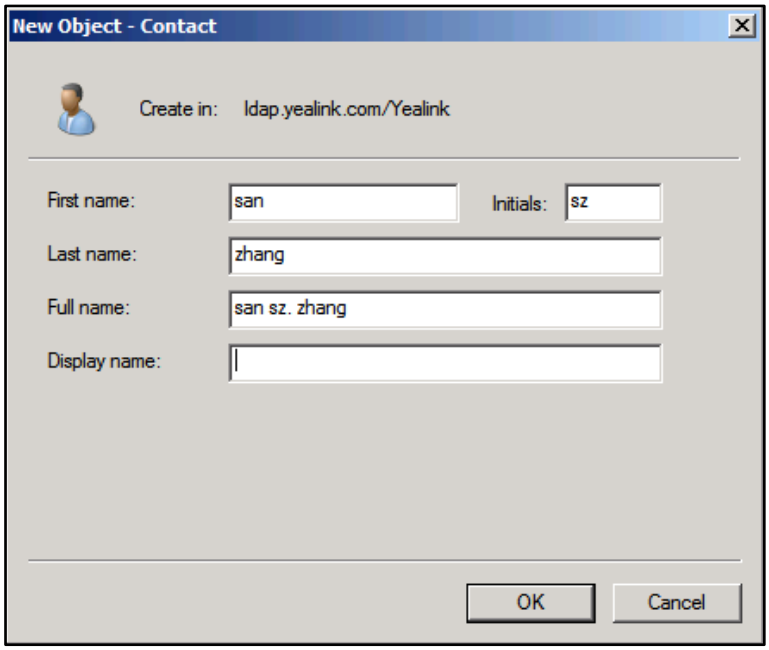
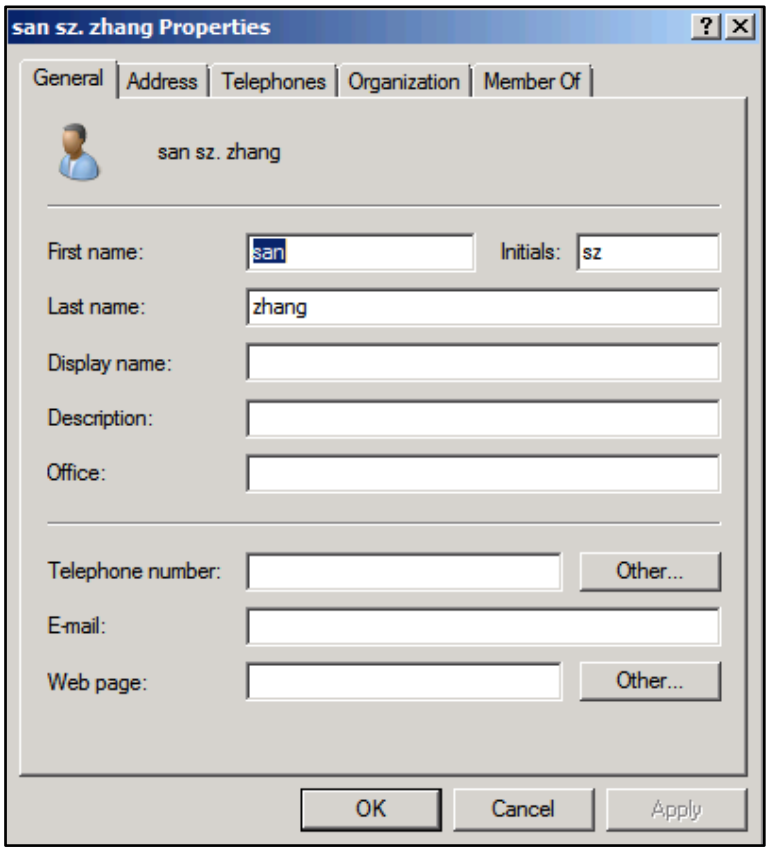
7. Enter the desired values in the corresponding fields.



8. Click **OK** to accept the change.
9. Double click the contact created above.
10. Configure more properties of the contact.



11. Click **OK** to accept the change.

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Adding Entries to the Active Directory Using the ldifde Tool

You can use the LDIF file to perform a batch import of all entries to the active directory. Create a new text document and then modify the filename extension as ldif. For example, create a text document named as test.txt, right click the test.txt document and then select to rename it, modify the filename extension as ldif. Open the LDIF file with your favorite text editor and input the corresponding content. The following shows an example of the content of the LDIF file:

```
##Create a new organizational unit##
dn: OU=yealink,DC=ldap,DC=yealink,DC=com
changetype: add
objectClass: top
objectClass: organizationalUnit
ou: yealink
name: yealink

##create a new contact##
dn: CN=san zhang,OU=yealink,DC=ldap,DC=yealink,DC=com
changetype: add
objectClass: top
objectClass: person
objectClass: organizationalPerson
objectClass: contact
cn: san zhang
sn: zhang
givenName: san
initials: zs
name: san zhang
ipPhone: 2336
mobile: 15557107369
```

To import the test.ldif file:

1. Click **Start**->**Run**.
2. Enter **cmd** in the pop-up dialogue box and click **OK** to enter the command line interface.

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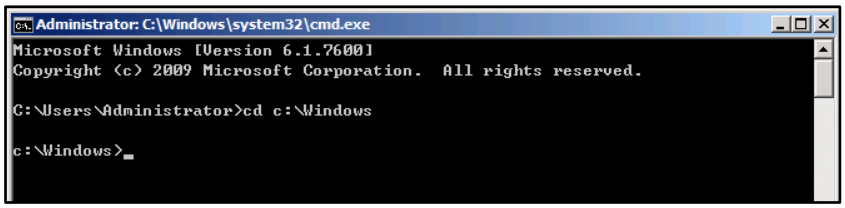
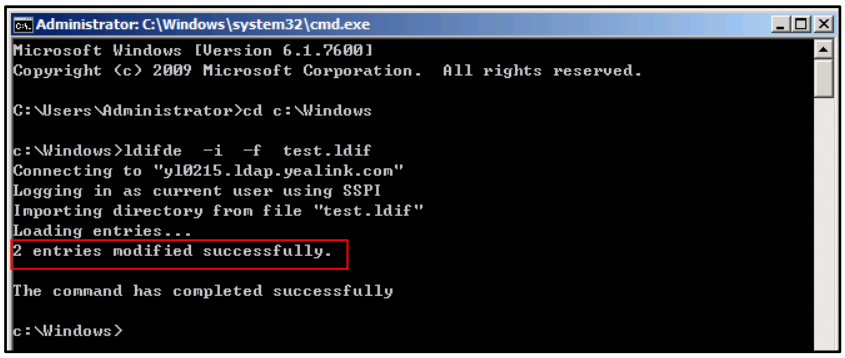
3. Execute the command **cd** to access the path of the test.ldif file. For example, execute **cd c:\Windows** to access the path of the test.ldif file at **c:\ Windows**.



4. Execute the command **ldifde -i -f test.ldif** to import the file.

   If the entries are added successfully, you can find the prompt "**n entries modified successfully**" ("n" indicates the number of the added entries).

   The screenshot for reference is shown as below:



You can also export the existing entries on the active directory into a *.ldif file first, modify the file, and then import the modified file into the active directory. For more information, refer to the network resource.

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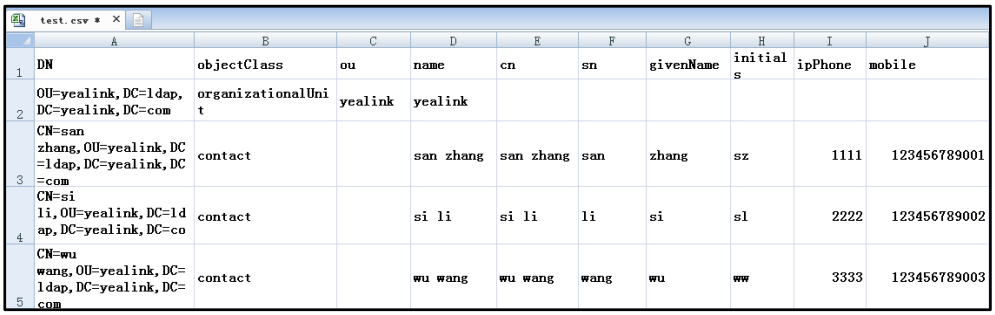
Adding Entries to the Active Directory Using the csvde Tool

You can also use the CSV file to perform a batch import of all entries to the active directory. Create a new document using a spreadsheet application (e.g., Microsoft Excel) and then save the document to your local computer using "Save as" in the format "*.csv". For example, create a document named as test.xls, click "Save as" to save the document as test.csv. Open the CSV file with the spreadsheet application and input the corresponding content. The following shows an example of the content of the CSV file:



	A	B	C	D	E	F	G	H	I	J
1	DN	objectClass	ou	name	cn	sn	givenName	initials	ipPhone	mobile
2	OU=yealink,DC=ldap,DC=yealink,DC=com	organizationalUnit	yealink	yealink						
3	CN=san zhang,OU=yealink,DC=ldap,DC=yealink,DC=com	contact		san zhang	san zhang	san	zhang	sz	1111	123456789001
4	CN=si li,OU=yealink,DC=ldap,DC=yealink,DC=co	contact		si li	si li	li	si	sl	2222	123456789002
5	CN=wu wang,OU=yealink,DC=ldap,DC=yealink,DC=com	contact		wu wang	wu wang	wang	wu	ww	3333	123456789003

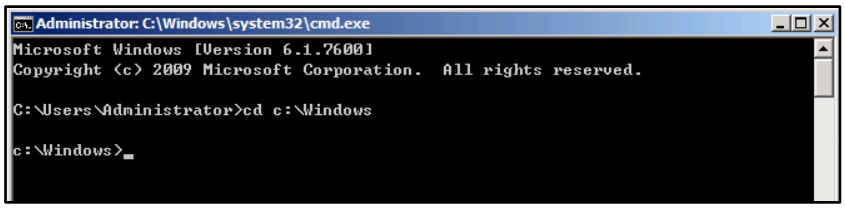
The first line lists the attributes of the entries.

The second line lists the values of an organizational unit in the corresponding attribute columns.

The other lines list the values of contacts in the corresponding attribute columns.

To import the test.csv file:

1. Click **Start->Run**.
2. Enter **cmd** in the pop-up dialogue box and click **OK** to enter the command line interface.
3. Execute the command **cd** to access the path of the user.csv file. For example, execute **cd c:\Windows** to access the path of the user.csv file at **c:\Windows**.



4. Execute the command **csvde -i -f test.csv** to import the file.

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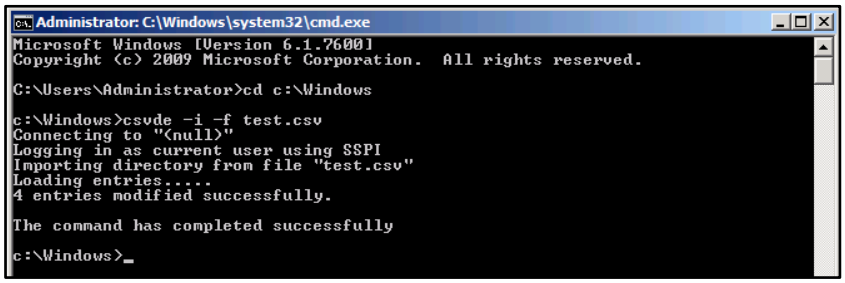
If the entries are added successfully, you can find the prompt "**n entries modified successfully**" ("n" indicates the number of the added entries).

The screenshot for reference is shown as below:



The idifde tool cannot edit or delete the existing entries on the active directory.

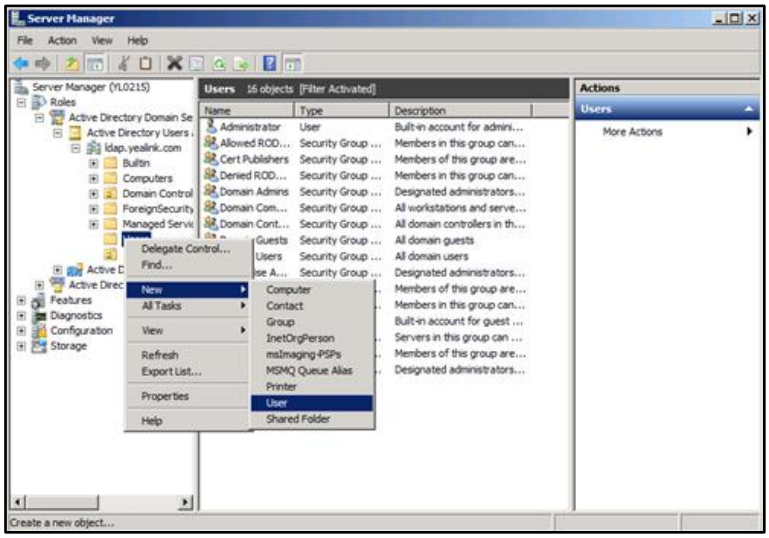
You can also export the existing entries on the active directory into a *.csv file first, modify the file, and then import the modified file into the active directory. For more information, refer to the network resource.

Creating User Accounts

You can create user accounts to allow or deny access to resources on the active directory. User accounts are very important and useful.

To create a user account:

1. Click **Start->Administrative Tools->Server Manager**.
2. Double click **Server Manager->Roles->Active Directory Domain Services->Active Directory Users and Computers**.
3. Select the domain name created above (e.g.,ldap.yealink.com).
4. Right click **Users**, and then select **New->User**.



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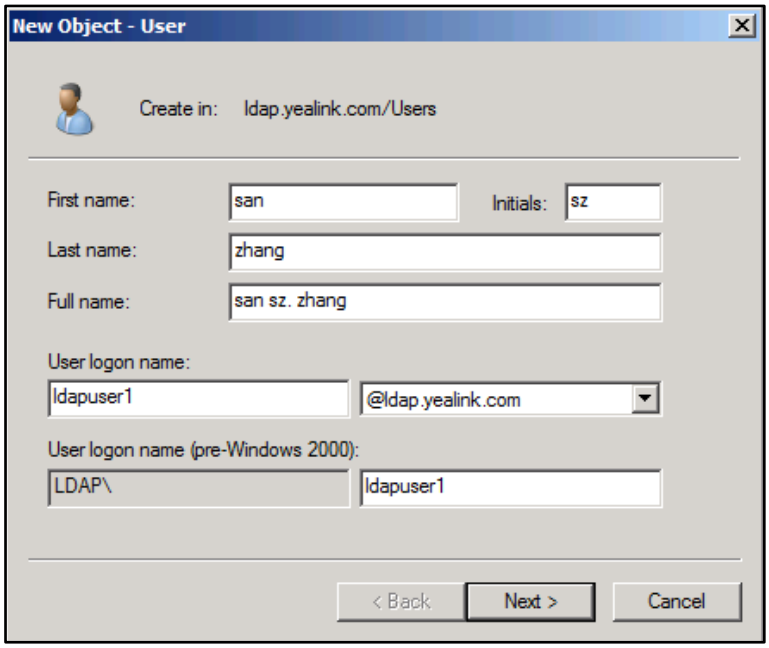
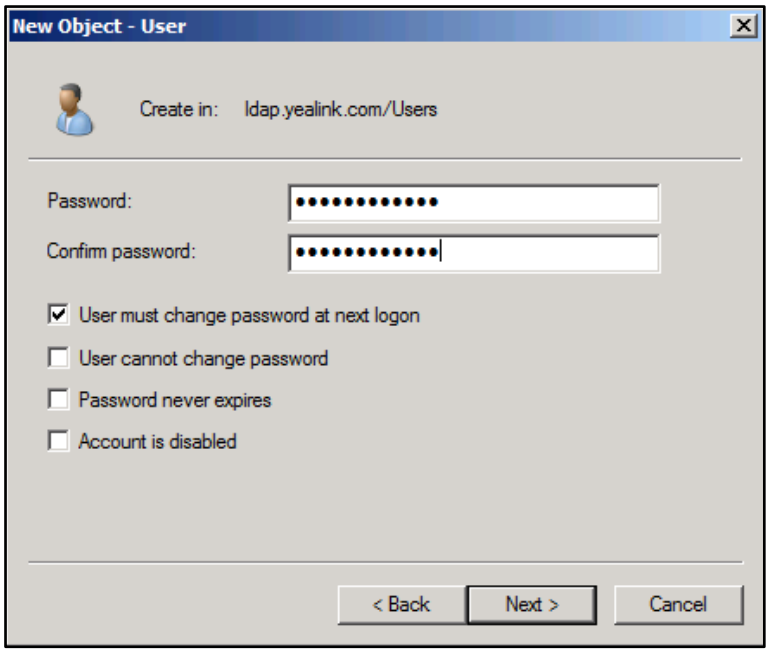
5. Enter desired values in the corresponding fields and click **Next**.



6. Enter the password for the user, select the appropriate options and click **Next**.

   The password should be a combination of upper case letters, lower case letters, numbers and special characters.



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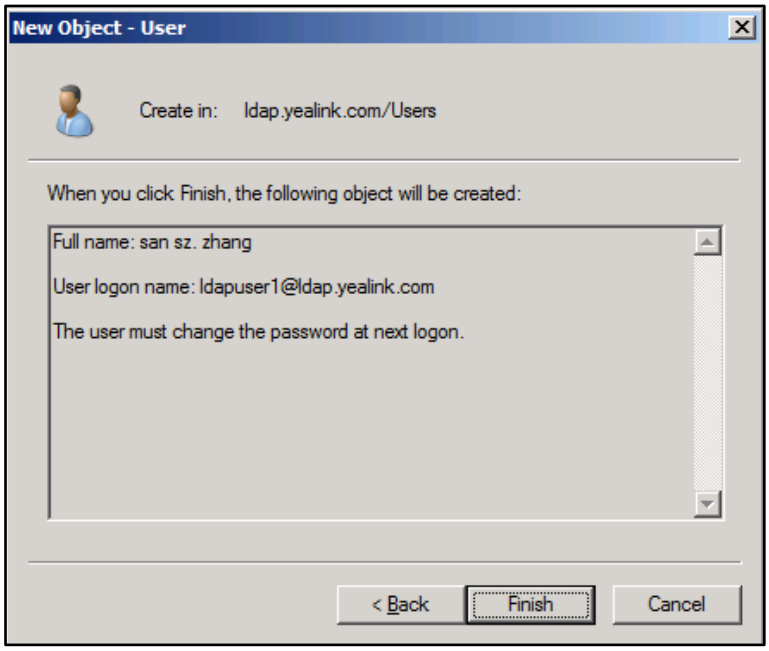
7. Click **Finish** to complete the creation of the user account.



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Configuring Yealink IP Phones

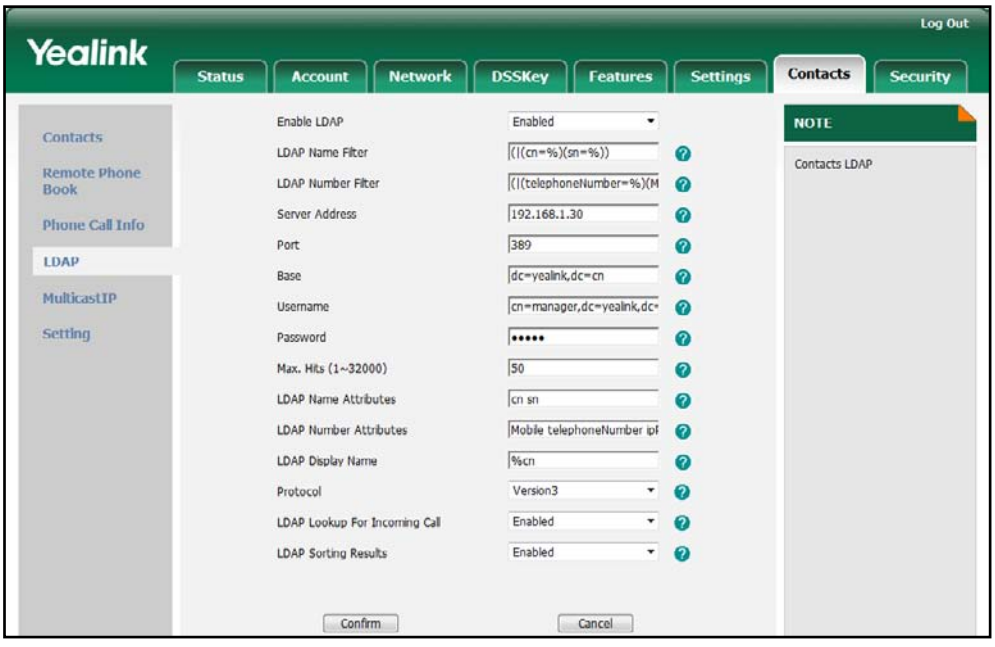
LDAP is disabled on the IP phone by default. You can configure LDAP via web user interface or using the configuration files.

To configure the LDAP feature via web user interface:

1. Press the **OK** key on the phone when it is idle to obtain the IP address.
2. Enter the IP address (e.g., http://192.168.0.10 or 192.168.0.10) in the address bar of web browser on your PC and then press **Enter**.
3. Enter the user name and password in the login page.

   The default login user name is admin (case-sensitive) and the password is admin (case-sensitive).
4. Click on **Contacts**->**LDAP**.
5. Select **Enabled** from the pull-down list of **Enable LDAP**.
6. Enter the desired values in the corresponding fields.

   The screenshot for reference is shown as below:



7. Click **Confirm** to accept the change.

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LDAP Attributes on Web User Interface

Enable LDAP	
Description	This parameter enables the LDAP feature on the IP phone.
Valid Value	<Enabled>, <Disabled>
Default Value	Disabled
LDAP Name Filter	
Description	This parameter specifies the name attributes for LDAP searching. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254). The "*" symbol in the filter stands for any character. The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.
Example	• (|(cn=%)(sn=%)) When the name prefix of the cn or sn of the contact record matches the search criteria, the record will be displayed on the phone LCD screen. • (&(cn=*)(sn=%)) When the name prefix of the sn of the contact record matches the search criteria, the record will be displayed on the phone LCD screen. • (!(cn=%)) When the name prefix of the cn of the contact record does not match the search criteria, the record will be displayed on the phone LCD screen.
LDAP Number Filter	
Description	This parameter specifies the number attributes for LDAP searching. The format of the search filter is compliant to the standard string representations of LDAP search filters (RFC 2254). The "*" symbol in the filter stands for any character. The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.
Examples	• (|(telephoneNumber=%)(Mobile=%)(ipPhone=%)) When the number prefix of the telephoneNumber, Mobile or ipPhone of the contact record matches the search criteria, the record will be displayed on the phone LCD screen. • (&(telephoneNumber=*)(Mobile=%)) When the number prefix of the Mobile of the contact record matches the search criteria, the record will be displayed on the phone LCD screen.

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Server Address	
Description	This parameter specifies the domain name or IP address of the LDAP server.
Default Value	Blank
Example	• 192.168.1.100 • ldap.company.com
Port	
Description	This parameter specifies the LDAP server port.
Default Value	389
Base	
Description	This parameter specifies the LDAP search base which corresponds to the location in the LDAP phonebook. The search base narrows the search scope and decreases directory search time.
Example	• o=UNIVERSITY OF NEW ORLEANS,c=US • o=SFU,c=CA • dc=yealink,dc=cn
UserName	
Description	This parameter specifies the user name to login the LDAP server. If the LDAP server allows anonymous to login, this parameter can be left blank. Otherwise you need to provide the username to access the LDAP server.
Password	
Description	This parameter specifies the password to login the LDAP server. If the LDAP server allows anonymous to login, this parameter can be left blank. Otherwise you need to provide the password to access the LDAP server.
Max.Hits(1~32000)	
Description	This parameter specifies the maximum number of the search results to be returned by the LDAP server. If the value of the "Max.Hits" is blank, the LDAP server will return all searched results. Please note that a very large value of the "Max. Hits" will slow down the LDAP search speed, therefore the parameter should be configured according to the available bandwidth.
Default Value	50
LDAP Name Attributes	

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Description	This parameter specifies the name attributes of each record to be returned by the LDAP server. This parameter compresses the search results. The user can configure multiple name attributes separated by space.
Example	• cn sn displayName This requires the "cn", "sn" and "displayName" attributes set for each contact record on the LDAP server. • givenName This requires the "givenName" attribute set for each contact record on the LDAP server.
LDAP Number Attributes	
Description	This parameter specifies the number attributes of each record to be returned by the LDAP server. This parameter compresses the search results. The user can configure multiple number attributes separated by space.
Example	• Mobile telephoneNumber ipPhone This requires the "Mobile", "telephoneNumber" and "ipPhone" attributes set for each contact record on the LDAP server.
LDAP Display Name	
Description	This parameter specifies the display name of the contact record displayed on the LCD screen. This parameter value must start with "%" symbol.
Example	• %cn The desired display name of the contact record is the cn attribute.
Protocol	
Description	This parameter specifies the LDAP protocol version supported on the phone. Make sure the protocol value corresponds with the version assigned on the LDAP server.
Valid Value	Version 2 or 3
Default Value	Version 3
LDAP Lookup For Incoming Call	
Description	This parameter enables the phone to perform an LDAP search when receiving an incoming call.
Valid Value	<Enabled>, <Disabled>
Default Value	Disabled

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LDAP Sorting Results	
Description	This parameter enables the phone to sort the search results in alphabetical order or numerical order.
Valid Value	<Enabled>, <Disabled>
Default Value	Disabled

Example for Configuration

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

Enable LDAP: Enabled
LDAP Name Filter: (|(cn=%)(sn=%))
LDAP Number Filter: (|(telephoneNumber=%)(Mobile=%)(ipPhone=%))
Server Address: 192.168.1.30
Port: 389
Base: dc=yealink,dc=cn
UserName: cn=manager,dc=yealink,dc=cn
Password: secret
Max.Hits(1~32000): 50
LDAP Name Attributes: cn sn
LDAP Number Attributes: Mobile telephoneNumber ipPhone
LDAP Display Name: %cn
Protocol: Version 3
LDAP Lookup For Incoming Call: Enabled
LDAP Sorting Results: Enabled

To use the LDAP feature, you need to configure a DSS key as an LDAP key.

To configure an LDAP key via web user interface:

1. Log into the web user interface of the phone.
2. Click on **DSSKey**->**Line Key**.

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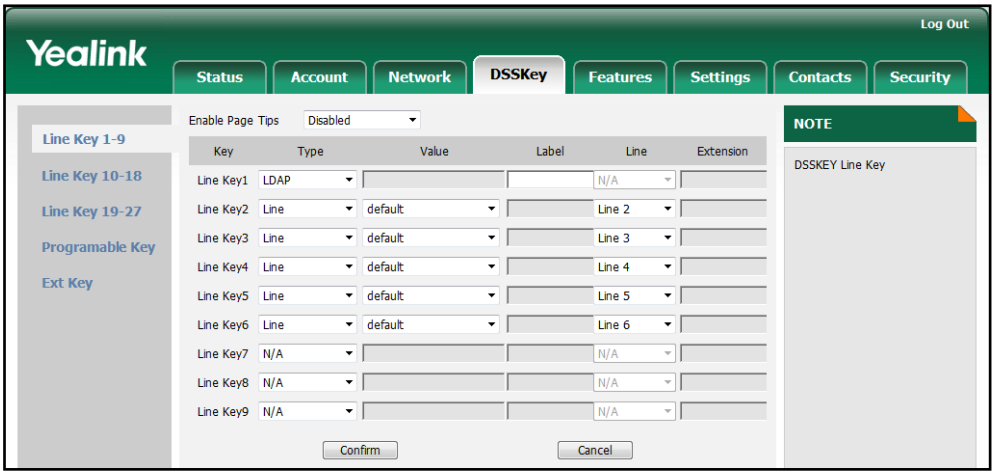
3. In the desired DSS key field, select **LDAP** from the pull-down list of **Type**.



4. Click **Confirm** to accept the change.

To configure the LDAP feature using the configuration file:

1. Add/Edit the LDAP parameters in the configuration file.

   The following table shows the parameter information:

Parameter	Descriptions	Web Setting Path
ldap.enable	These parameters specify the LDAP attributes. Refer to the introduction above for more information.	Contacts->LDAP->Enable LDAP
ldap.name_filter		Contacts->LDAP->LDAP Name Filter
ldap.number_filter		Contacts->LDAP->LDAP Number Filter
ldap.host		Contacts->LDAP->Server Address
ldap.port		Contacts->LDAP->Port
ldap.base		Contacts->LDAP->Base
ldap.user		Contacts->LDAP->Username
ldap.password		Contacts->LDAP->Password
ldap.max_hits		Contacts->LDAP->Max. Hits (1~32000)
ldap.name_attr		Contacts->LDAP->LDAP Name Attributes
ldap.numb_attr		Contacts->LDAP->LDAP

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Parameter	Descriptions	Web Setting Path
		Number Attributes
ldap.display_name		Contacts->LDAP->LDAP Display Name
ldap.version		Contacts->LDAP->Protocol
ldap.call_in_lookup		Contacts->LDAP->LDAP Lookup For Incoming Call
ldap.ldap_sort		Contacts->LDAP->LDAP Sorting Results

2. Upload the configuration file to the root directory of the provisioning server and perform auto provisioning to configure the Yealink IP phones.

   For more information on auto provisioning, refer to *Yealink SIP-T46G Auto Provisioning User Guide*.

To configure an LDAP key using the configuration file:

1. Add/Edit the LDAP key parameters in the configuration file.

   The following table shows the parameter information:

Parameter	Description	Value
linekey.x.type	Configures a line key to be LDAP key on the IP phone. X ranges from 1 to 27.	38

2. Upload the configuration file to the root directory of the provisioning server and perform auto provisioning to configure the Yealink IP phones.

   For more information on auto provisioning, refer to *Yealink SIP-T46G Auto Provisioning User Guide*.

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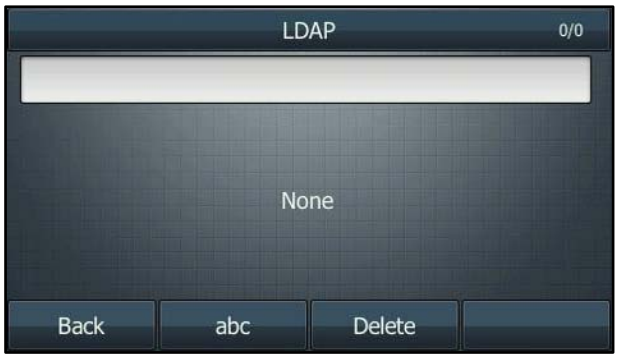
Using LDAP Phonebook

You can press the LDAP key to access the LDAP phonebook. Enter the search criteria to search a contact from LDAP phonebook, add local contacts from LDAP phonebook, and dial a contact from LDAP phonebook. You can also enable the phone to perform a LDAP search when dialing out or receiving an incoming call.

To search a contact form LDAP phonebook:

1. Press the **LDAP** key to access the LDAP phonebook.
   The LCD screen prompts "None".



2. Enter a few continuous characters of the contact name or continuous digits of the contact phone number using the keypad.

   The contacts whose name or phone number matches the characters entered will appear on the LCD screen.
3. Press the navigation key to select the desired contact.
4. Do one of the following:
   - Press the **Option** soft key and then select to check the detail information of the contact.
   - Press the **Option** soft key and then select to add the contact to the local contact.

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- Press the **dial** soft key to dial out.

If the **LDAP Lookup For Incoming Call** parameter is enabled for the phone:

The phone performs an LDAP search when receiving an incoming call. If there is a contact record which matches the caller ID, the contact name will be display on the phone LCD screen as the calling line identification.

The screenshot of the LCD screen for reference is shown as below:

The **Search Source List In Dialing** feature enables the phone to perform an LDAP search when you enter the digits using the keypad on the pre-dial interface. For more information on the configuration of the Search Source List In Dialing feature, refer to *Yealink SIP-T46G IP Phone User Guide*.

If there are contact records which match the search criteria, the contact records will be listed on the phone LCD screen. You can select the desired contact record to dial out. The contact name will be displayed on the phone LCD screen during the call.

The screenshot of the LCD screen for reference is shown as below:

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