

LDAP Directory on Yealink IP Phones

Introduction

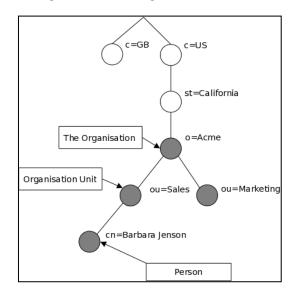
LDAP stands for Lightweight Directory Access Protocol, which is a client-server protocol for accessing a directory service. LDAP is a directory service protocol that runs over TCP/IP. The nitty-gritty details of LDAP are defined in RFC 1777 "Lightweight Directory Access Protocol". The following gives 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 enables you to 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. LDAP is particularly useful for storing information that you wish to read from many locations, but update infrequently.

This guide provides configurations on the LDAP server and IP phones, and applies to the following Yealink IP phones:

- CP860 IP phones running firmware version 71 or later
- SIP-T48G, SIP-T46G, SIP-T42G and SIP-T41P IP phones running firmware version 73 or later
- SIP-T58A, SIP VP-T49G, SIP-T40P, SIP-T29G, SIP-T23P/G, SIP-T21(P) E2, CP960 and W56P IP phones running firmware version 80 or later
- SIP-T48S, SIP-T46S, SIP-T42S, SIP-T41S, SIP-T40G, SIP-T27G, SIP-T19(P) E2, CP920, W60P and W52P IP phones running firmware version 81 or later
- VP59, W53P and CP930W-Base IP phones running firmware version 83 or later
- SIP-T57W, SIP-T54W, SIP-T53W and SIP-T53 IP phones running firmware version 84 or later

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 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, Microsoft Active Directory, Microsoft Active Directory Application Mode (ADAM) or Sun One Directory Server on Windows system.

OpenLDAP

Installing the OpenLDAP Server

This section shows you how to install an OpenLDAP server on Microsoft Windows 2007 system. The OpenLDAP server software is available for free. You can download it from http://www.userbooster.de/en/download/openIdap-for-windows.aspx?l=en.

To install the OpenLDAP server:

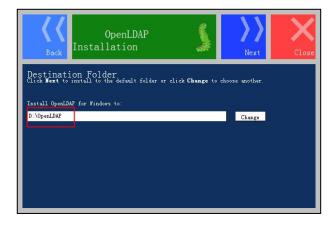
1. Double click the OpenLDAP application to start the installation. You will be prompted for the installation.



- 2. Click **Yes** to continue the installation.
- 3. Follow the default settings and click Next until the Destination Folder screen appears.

 Click Change to locate the installation path from local computer system and then click Next.

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



 Follow the default settings and click Next until the Ready to install OpenLDAP for Windows screen appears.



- 6. Click Install to start the installation.
- 7. Click **Close** to exit the Setup Wizard.

For more information on how to install the OpenLDAP server for windows, refer to the website online:

http://www.userbooster.de/en/support/feature-articles/openIdap-for-windows-installation.aspx

Configuring the OpenLDAP Server

Editing the slapd.conf File

Access the OpenLDAP installation path. Edit the manager information for LDAP.

1. Open and edit the slapd.conf file using your favorite text editor.

Find the commands

Suffix "dc=maxcrc, dc=com"

```
Rootdn "cn=Manager,dc=maxcrc,dc=com"
```

Suffix defines the components of the domain name.

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

For example:

Suffix "dc=yealink,dc=com"

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

The suffix line means that the domain name of the LDAP directory is yealink.com. The Rootdn line defines a management user named as Manager.

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"
```

2. Double click slappasswd.exe to modify the user password for the management user. Type the new password twice.



Starting the Slapd Service

To start the slapd service:

- 1. Click Start->Run.
- 2. Enter cmd in the pop-up dialogue box and click OK to enter the command line interface.
- 3. Access the server installation path. For example, execute the following commands to access

the server installation path at D:\OpenLDAP.



4. Execute the command slapd.exe -d 1 -f ./slapd.conf to start the slapd service.



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

C:Windows\system32\CMD.exe - slapd.exe -d 1 -f./slapd.conf
S498d32e config_build_entry: "cn=schema"
S498d32e config_build_entry: "cn=<@bcore>
S498d32e config_build_entry: "cn=<@bcore>
S498d32e config_build_entry: "cn=<@bcore"
S498d32e config_build_entry: "cn=<@bcore"
S498d32e config_build_entry: "cn=<@bcore"
S498d32e config_build_entry: "cn=<@bcore"
S498d32e config_build_entry: "cn=<?>Cosine>
S498d32e bdb_db_open: warning - no DB_CONFIG file found in directory ./data: (2)
Expect poor performance for suffix "dc=yealink,dc=com":
S498d32e bdb_db_open: database "dc=yealink,dc=com": dbenu_open
S498d32f bdb_monitor_db_open:

The screenshot for reference is shown as below:

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

Adding the Initial Entry to the LDAP Directory

You can add the initial entry to the LDAP directory by using 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=com objectClass: top objectClass: dcObject objectClass: domain dc: yealink

dn: ou=roles,dc=yealink,dc=com
objectClass: top
objectClass: organizationalUnit
ou: roles
dn: ou=people,dc=yealink,dc=com
objectClass: top
objectClass: organizationalUnit
ou: people
dn: cn=Test Users,ou=roles,dc=yealink,dc=com
objectClass: groupOfUniqueNames
cn: Test Users
uniqueMember:
uid=sspecial,ou=people,dc=yealink,dc=com
uniqueMember:
uid=jbloggs,ou=people,dc=yealink,dc=com
dn: cn=Special Users,ou=roles,dc=yealink,dc=com
objectClass: groupOfUniqueNames
cn: Special Users
uniqueMember:
uid=sspecial,ou=people,dc=yealink,dc=com
dn: cn=Admin Users,ou=roles,dc=yealink,dc=com
objectClass: groupOfUniqueNames
cn: Admin Users
uniqueMember:
uid=admin,ou=people,dc=yealink,dc=com
dn: uid=admin,ou=people,dc=yealink,dc=com
objectClass: person
objectClass: inetOrgPerson
cn: State App
displayName: App Admin
givenName: App
mail: admin@fake.org

sn: Admin
uid: admin
userPassword: adminpassword
dn: uid=jbloggs,ou=people,dc=yealink,dc=com
objectClass: person
objectClass: inetOrgPerson
cn: Joe Bloggs
displayName: Joe Bloggs
givenName: Joe
mail: jbloggs@fake.org
sn: Bloggs
uid: jbloggs
userPassword: password
dn: uid=sspecial,ou=people,dc=yealink,dc=com
objectClass: person
objectClass: inetOrgPerson
cn: Super Special
displayName: Super Special
givenName: Super
mail: sspecial@fake.org
sn: Special
uid: sspecial
userPassword: password

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.
- **3.** Access the server installation path. For example, execute the following commands to access the server installation path at **D:\OpenLDAP**.

4. Execute the command slapadd -v -l ./test.ldif to add the initial entry.

The screenshot for reference is shown as below:

C:\Windows\system32\cmd.exe	
:\OpenLDAP>slapadd -v -l ./test.ldif 498c308 bdb_db_open: warning - no DB_CONFIG file fou	nd in directory ./data: (2)
xpect poor performance for suffix "dc=yealink,dc=com 498c308 bdb_monitor_db_open: monitoring disabled; com enable dded: "dc=yealink,dc=com" (00000003) tded: "ou=roles,dc=yealink,dc=com" (0000004) tded: "ou=people,dc=yealink,dc=com" (0000005) dded: "cn=Test Users,ou=roles,dc=yealink,dc=com" (00 dded: "cn=Test Users,ou=roles,dc=yealink,dc=com" (00 dded: "cn=Admin Users,ou=roles,dc=yealink,dc=com" (00 dded: "ud=admin,ou=people,dc=yealink,dc=com" (00 dded: "ud=admin,ou=people,dc=yealink,dc=com" (000000 dded: "ud=admin,ou=people,dc=yealink,dc=com" (000000)	nfigure monitor database to 9000065 (00000007) 000000085 00000085 0095
dded: "uid=sspecial.ou=people,dc=yealink,dc=com" (000 ##################################	00000b) none fast!
<pre>>OpenLDAP>_</pre>	

Configuring the LDAPExploreTool2

The LDAPExploreTool2 application supports running on Windows system. The application 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 run the application.
- 2. Click File->Configurations.

LDAPExplorerTool 2	
File Tools	
Open last configuration	
Configurations	
Quit	
	11.

3. Click New to create a new configuration.

4. Enter a name in the **Configuration name** field under the **Configuration** tab.

onfiguration			
Configuration Servi	er Connecti	on Option SSL/TLS	
Configuration name		LDAP	
	Ok	Cancel	

 Enter the domain name or IP address of the LDAP server in the Server name or IP field under the Server tab. Check the checkbox of Use default port for the Server port and Server SSL port.

Configuration		
Configuration Server	Connection Opti	ion SSL/TLS
Server name or IP	10.3.6.128	
Server port	389	🔽 Use default port
Server SSL port	636	🔽 Use default port
Version	G 3 ⊂ 2Test connection	1
	Ok Car	ncel

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=com"

Rootpw secret

Configuration S	erver Connection Option	n SSL/TLS
User DN	=yealink,dc=com	Anonymous login
Password	*****	✓ Store password
Use SSL port	← Yes ⊙ No	
Use TLS Base DN	C Yes € No	(TLS is only used on non SSL ports)
	dc=yealink,dc=c	Guess value
	Ok Canc	el

Enter **cn=Manager,dc=yealink,dc=com** 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.
- 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:

LDAPExplorerT	pol 2	
	⊞ dc=yealink,dc=com	
		1.

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

	erTool 2		
File Tools			
□ Root-dc=ye	alink,dc=com	⊡ ou=roles,dc=yealink,dc=com	
e <mark>· ou=rc'-</mark>	Entry		
cn	Add		
⊡ - cn ⊡ - ou=p uic	Copy to Rename Delete		
uic	Search		

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. For example, we select **person** from the pull-down list of **Object class (from schema)**.

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 are optional.

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.	

Common attributes are listed in the following table:

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

dc=yealink.dc=c	 he same
dc=yealink.dc=c The value of cn here must be the	 he same
dc=vealink.dc=c The value of cn here must be the	he same
	he same
	he same
as that of cn configured in the	Entry
RDN field.	
MAY attributes	
telephoneNumber	
description	
Add	
	OK Cancel MAY attributes UserPassword telephoneNumber seeAlso description

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.

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

File Tools	
 Root-dc=yealink,dc=com cu=roles cn=Text Users cn=Admin Users cn=Hebe Tian cn=Ella Zhang ou=people uid=admin uid=jbloggs uid=special cn=Jonn Liu 	cntHeberTiancouzroles.dc.:yealinb.dc.:.com ctitelephoneNumber ctitel

Microsoft Active Directory

Installing the Microsoft Active Directory Domain Services

This section shows you how to install an active directory on Microsoft Windows Server 2008 R2 Enterprise 64-bit system.

To install the Microsoft Active Directory Domain Services:

- 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**.



4. Read the provided information and click Next.

Active Directory Domain Services Installation Wizard	×
Operating System Compatibility Improved security settings in Windows Server 2008 and Windows Server 2008 R2 affect older versions of Windows	
 Windows Server 2008 and "Windows Server 2008 R2" domain controllers have a new more secure default for the security setting named "Allow cryptography algorith compatible with Windows NT 4.0." This setting prevents Microsoft Windows and non-Microsoft SMB "clients" from using weaker NT 4.0 style cryptography algorith when establishing security channel sessions against Windows Server 2008 or "Windows Server 2008 R2" domain controllers. As a result of this new default, operations or applications that require a security channel serviced by Windows Server 2008 or "Windows Server 2008 R2" domain controllers. As a result of this new default, operations or applications that require a security channel serviced by Windows Server 2008 or "Windows Server 2008 R2" domain controllers might fail. Platforms impacted by this change include Windows NT 4.0, as well as non-Micros SMB "clients" and network-attached storage (NAS) devices that do not support stronger cryptography algorithms. Some operations on clients running versions of Windows earlier than Windows Vista with Service Pack 1 are also impacted, includ domain join operations performed by the Active Directory Migration Tool or Window Deployment Services. For more information about this setting, see Knowledge Base article 942564 (http://go.microsoft.com/fwlink/?Linkld=104751). 	hms ns rver soft ding
< Back Next > C	ancel

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

Active Directory Domain Services Installation Wizard	×
Choose a Deployment Configuration You can create a domain controller for an existing forest or for a new forest.	
C Existing forest	
C Add a domain controller to an existing domain	
Create a new domain in an existing forest This server will become the first domain controller in the new domain.	
Create a new domain in a new forest	
More about possible deployment configurations	
< Back Next >	Cancel

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

tive Directory Domain Services Installation Wizard	
me the Forest Root Domain The first domain in the forest is the forest root domain. Its name is also the name of the forest.	
Type the fully qualified domain name (FQDN) of the new forest root domain.	
FQDN of the forest root domain:	
ldap.yealink.com	
< Back Next > C	ance

Active Directory Domain Services Installation Wizard	×
Name the Forest Root Domain The first domain in the forest is the forest root domain. Its name is also the name of the forest.	
Type the fully qualified domain name (FQDN) of the new forest root domain.	
FQDN of the forest root domain:	
Idap yealink.q-	_
Example: corp Verifying NetBIOS name	
<back next=""> C</back>	ancel

The wizard will check if the domain name is 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**.

For more information, click domain and forest functional levels.

a Active Directory Domain Services Installation Wizard	×
Set Forest Functional Level Select the forest functional level.	
Forest functional level:	
Windows Server 2003	•
Details:	
 The Windows Server 2003 forest functional level provides all features that are available in Windows 2000 forest functional level, and the following additional features: Linked-value replication, which improves the replication of changes to group memberships. More efficient generation of complex replication topologies by the KCC. Forest trust, which allows organizations to easily share 	• •
You will be able to add only domain controllers that are running Windows Server 2003 or later to this forest.	
More about <u>domain and forest functional levels</u> Keylet State S	Cancel

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**.

a Active Directory Domain Services Installation Wizard	×
Set Domain Functional Level Select the domain functional level.	
Domain functional level: Windows Server 2003	•
Details: The features available at the Windows Server 2003 domain functional level include all features available at the Windows Server 2000 domain functional level and the following additional features: - Constrained delegation, which an application can use to take advantage of the secure delegation of user credentials by means of the Kerberos authentication protocol. - lastLogonTimestamp updates: The lastLogonTimestamp attribute is updated with the last logon time of the user or computer, and it is	4
You will be able to add only domain controllers that are running Windows Server 2003 or later to this domain. More about <u>domain and forest functional levels</u>	
< Back Next > (Cancel

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

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

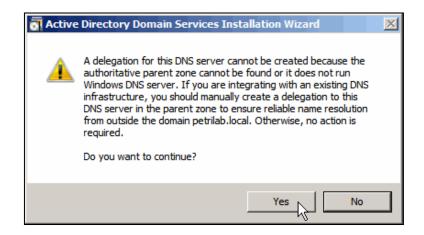
Active Directory Domain Services Installation Wizard Set Domain Functional Level Select the domain functional level.	×
Domain functional level: Windows Server 2003	
Details: The features av following addi - Cor adv mea - last upc More about <u>domain and forest functional levels</u>	e is s
< Back N	Next > Cancel

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

Active Directory Domain Services Installation Wizard	×
Additional Domain Controller Options	
Select additional options for this domain controller.	
DNS server	
🔽 Global catalog	
Read-only domain controller (RODC)	
Additional information:	
We recommend that you install the DNS Server service on the first domain controller.	¥
More about additional domain controller options	
< Back Next >	Cancel

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

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**.

a Active Directory Domain Services Installation Wizard	×
Location for Database, Log Files, and SYSVOL Specify the folders that will contain the Active Directory domain control database, log files, and SYSVOL.	ler
For better performance and recoverability, store the database and log f volumes. Database folder:	les on separate
C:\Windows\NTDS	Browse
Log files folder:	
C:\Windows\NTDS	Browse
SYSVOL folder:	
C:\Windows\SYSVOL	Browse
, More about <u>placing Active Directory Domain Services files</u>	
< Back Next	> Cancel

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

12. Configure the password for the active directory recovery mode, and click **Next**.

For more information, click **Directory Services Restore Mode password**.

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

Active Directory Domain Services Installation Wizard	×
Directory Services Restore Mode Administrator Password	
The Directory Services Restore Mode Administrator account is different Administrator account.	from the domain
Assign a password for the Administrator account that will be used when controller is started in Directory Services Restore Mode. We recommen- choose a strong password.	
Password:	
Confirm password:	
More about Directory Services Restore Mode password	
< Back Next :	> Cancel

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

Active Directory Domain Services Installation Wizard	×
Summary	
Review your selections: Configure this server as the first Active Directory domain controller in a new forest. The new domain name is "Idap.yealink.com". This is also the name of the new forest. The NetBIOS name of the domain is "LDAP". Forest Functional Level: Windows Server 2003 Domain Functional Level: Windows Server 2003 Site: Default-First-Site-Name	
To change an option, click Back. To begin the operation, click Next. These settings can be exported to an answer file for use with other unattended operations. More about <u>using an answer file</u>	
< Back Next > (Cancel

The wizard will prompt that the system begins to create the Active Directory Domain Services.

Active Directory Domain Services Installation Wizard
The wizard is configuring Active Directory Domain Services. This process can take from a few minutes to several hours, depending on your environment and the options that you selected.
Securing Kerberos Policy
Cancel
Reboot on completion

14. Click Finish to complete the installation and exit the wizard.

Active Directory Domain	Services Installation Wizard	X
	Completing the Active Directory by and the active directory domain Services is now installed on this computer for the domain "Idap yealink.com". This Active Directory domain controller is assigned to the site "Default-First-Site-Name". You can manage sites with the Active Directory Sites and Services administrative tool.	
	< Back Finish Cancel	

Installing Active Directory Lightweight Directory Services Role

You should also install the Active Directory Lightweight Directory Services role on Windows Server 2008 system.

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.
- 3. The Add Roles Wizard will pop up, click Next.

Add Roles Wizard		×
Before You Begin		
Before You Begin Server Roles Confirmation Progress Results	This wizard helps you install roles on this server. You determine which roles to install based on the tasks you want this server to perform, such as sharing documents or hosting a Web site. Before you continue, verify that: • The Administrator account has a strong password • The latest security updates from Windows Update are installed If you have to complete any of the preceding steps, cancel the wizard, complete the steps, and then run the wizard again. To continue, click Next.	•
-	Skip this page by default Previous Next > Instal Cancel	

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

Add Roles Wizard						×
Select Server Ro	es					
Before You Begin Server Roles AD LDS Confirmation Progress Results	Select one or more roles to install on this server. Roles: Active Directory Certificate Services Active Directory Potensia Services (Installed) Active Directory Lightweight Directory Servit Active Directory Lightweight Directory Servit Active Directory Rights Management Services DHCP Server DHCP Server HE Services Fits Services Remote Desktop Services Remote Desktop Services Windows Server Update Services Windows Server Update Services	es s	Ac (A au th ce ap	escription: tive Directory Cert DCS) is used to o thorities and relat allow you to is trificates used in : plications.	reate certificatio de role services ue and manage a variety of	
	< P	revious	Next >	Install	Cancel	

- 5. Follow the default settings and click Next.
- 6. When the installation is completed, click Close.

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



Configuring the Microsoft Active Directory Server

Adding an 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.

 Right click the domain name created above (e.g., Idap.yealink.com), and then select New->Organizational Unit.

Server Manager (YL0215)		Idap.yealink.com	6 objects [Filter /	Activated]	Actions	
Acles Acles Active Directory D Active Directory D Active Directory Configuration Active Directory Configuration Softwage	omain Services ry Ubers and Computers [yl0215.ldap: Pelegate Control Find Change Domain Change Domain Controller Raise domain functional level Operations Masters	Computers		Descriptio Default cc Default cc Default cc Default cc Default cc	Idap,yealink.com More Actions	1
	New All Tasks All Tasks View Refresh Export List Properties Help	Computer Contact Group InetOrgPerson mstmaging-PSPs MSMQ Queue Allas Organizational Uni Printer - 1/2 User Shared Folder				

4. Enter the desired name of the organizational unit.

New Object - Organizational Unit	×
Create in: Idap.yealink.com/	
Name:	
yealink	
✓ Protect container from accidental deletion	
OK Cancel	Help

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

6. Right click the organizational unit created above, and then select **New->Contact**.

Server Manager							_ D ×
File Action View Hel	• 1 🗙 🖸 a 🕞	E Int					
Server Manager (YL0215	and players and the second second		yealink 0o	bjects (Filter Activa	ted]	Actions	
Roles	Domain Services		Name	Type	Descriptio	yealink	
 □	in puters ain Controllers signSecurit/Principals soged Service Accounts is Delegate Control Move Pind	ces	inere an	r no items to show in	URB MENT.	More Actions	
🗉 🙀 Configuration	All Tasks	Computer Contact					
🕀 🚰 Storage	Vew +	Group	1901				
	Out Delete Rename Refirsh Export List Properties	msImaging MSMQ Que Organizati Printer User Shared Fol	I-PSPs sue Alias onal Unit				
	Help						

7. Enter the desired values in the corresponding fields.

New Object - Contact		X
Create in:	ldap.yealink.com/Yealink	
First name:	san	Initials: sz
Last name:	zhang	
Full name:	san sz. zhang	
Display name:		
		OK Cancel

- 8. Click **OK** to accept the change.
- **9.** Double click the contact created above.

10. Configure more properties of the contact.

san sz. zhang Prope	erties				<u>?</u> ×
General Address	Telephones	Organization	Member O	f	
👗 san sz	. zhang				
First name:	san		Initials:	sz	
Last name:	zhang				
Display name:					
Description:					
Office:					
Telephone number	:			Other	
E-mail:					
Web page:				Other	
		ОК	Cancel	Арр	ly l

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

Adding Entries to the Active Directory Using the Idifde Tool

You can use a LDIF file to perform a batch import of all entries to the active directory.

To create the LDIF file:

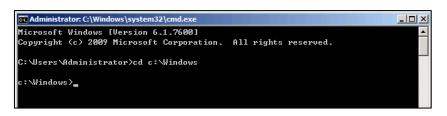
Create a new text document and then modify the filename extension as ldif. For example, create a text document named as test.txt, right click the test.txt document and then select to rename it, modify the filename extension as ldif. Open the LDIF file with your favorite text editor and input the corresponding 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=Idap,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.

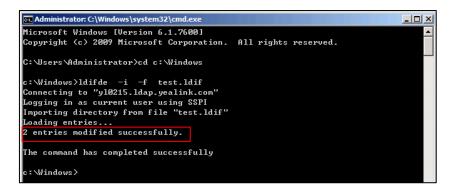
Execute the command cd to access the path of the test.ldif file. For example, execute cd c:\Windows to access the path of the test.ldif file at c:\Windows.



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.

Adding Entries to the Active Directory Using the Csvde Tool

You can also use a 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 CSV file content:

٩.	test. csv * X 📄									
-	A	В	С	D	E	F	G	H	I	J
1	DN	objectClass	ou	name	cn	sn	givenName	initial s	ipPhone	mobile
2	OU=yealink,DC=1dap, DC=yealink,DC=com	organizationalUni t	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=ycalink,DC=ld ap,DC=ycalink,DC=co	contact		si li	si li	1i	si	sl	2222	123456789002
5	CN=wu wang, OU=yealink, DC= ldap, DC=yealink, DC= com	contact		wu wang	wu wang	wang	₩U	ww	3333	123456789003

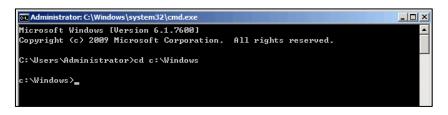
The first line lists the attributes of the entries.

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:

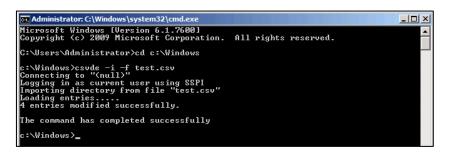
- 1. Click Start->Run.
- 2. Enter cmd in the pop-up dialogue box and click OK to enter the command line interface.
- Execute the command cd to access the path of the test.csv file. For example, execute cd c:\Windows to access the path of the test.csv file at c:\Windows.



4. Execute the command csvde -i -f test.csv 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:



The csvde 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 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., Idap.yealink.com).
- 4. Right click **Users**, and then select **New**->**User**.

Server Manager (YL0215)		Users 16 object	ts [Filter Activated]		Actions	
E Roles	tory Domain Se	Name	Type	Description	Users	1
□ m m m m m m m m m m m m m m m m m m m	Delegate Co Find	Gert Publisher Gert Publisher Genet RDD. Gonest Cont. Genets Gonest Cont. Genets Genets	Security Group Security Group Security Group Security Group Security Group Security Group Security Group Security Group puter atat DrgPerson anagng 45% IQ Queue Allas	Members of this group are Members in this group can Designated administrators All workstations and serve All domain controllers in th All domain guests	More Actions	

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

New Object - User	X
Create in:	Idap.yealink.com/Users
First name:	san Initials: Sz
Last name:	zhang
Full name:	san sz. zhang
User logon name: Idapuser1	@Idap.yealink.com
User logon name (pre-	Windows 2000):
J	
	< Back Next > Cancel

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.

New Object - User	X
Create in: Idap.yealink.com/Users	
Password:	
Confirm password:	
✓ User must change password at next logon	
User cannot change password	
Password never expires	
Account is disabled	
< Back Next > Cano	xel

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

New Object - User		×
🧏 Create in	n: Idap.yealink.com/Users	
When you click Fin	ish, the following object will be created:	
Full name: san sz. :	zhang	<u>^</u>
User logon name: I	dapuser1@ldap.yealink.com	
The user must cha	nge the password at next logon.	
		-
,		
	< Back Finish	Cancel

Microsoft Active Directory Application Mode

Microsoft Active Directory Application Mode (ADAM) is a new mode of Active Directory that is designed specifically for directory-enabled applications. ADAM is a Lightweight Directory Access Protocol (LDAP) directory service that runs as a user service, rather than as a system service. You can run ADAM on servers and domain controllers running operating systems in the Windows

Server 2003 family. This section shows you how to install Active Directory Application Mode (ADAM) on Microsoft Windows Server 2003 SP2 Enterprise 32-bit system. You can download Active Directory Application Mode (ADAM) online:

http://www.microsoft.com/en-us/download/confirmation.aspx?id=4201.

Installing the Active Directory Application Mode

To install the Active Directory Application Mode:

- **1.** Double click ADAMSP1_x86_English.exe to run the application.
- 2. The Active Directory Application Mode Service Park 1 Installation Wizard will appear after a short while, click **Next**.

Software Update Installation	Wizard 🗙
Ð	Use this wizard to install the following software update: Active Directory Application Mode Service Pack 1
	Before you install this update, we recommend that you: - Back up your system - Close all open programs You might need to restart your computer after you complete this update. To continue, click Next.
	< <u>B</u> ack <u>Next></u> Cancel

3. Read the software license agreement and mark I Agree radio box. And then click Next.

Software Updat	e Installation Wizard 🛛 🗙
License Agr	eement 🕴
- 1	Please read the following license agreement. To continue with setup, you must accept the agreement.
Jøg ^e	MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE
	MICROSOFT ACTIVE DIRECTORY APPLICATION MODE SERVICE PACK 1 FOR MICROSOFT WINDOWS SERVER 2003
	Microsoft Corporation (or based on where you live, one of its affiliates) licenses this supplement to you. If you are licensed to
	C I Do Not Agree C Agree Print
	< <u>B</u> ack <u>N</u> ext > Cancel

Software Update	Installation Wizard	
Updating You	ır System	
17	Please wait while setup inspects your current configuration, archives your current files and updates your files.	
	Finishing installation	
_ Detail	8	7
Perf	orming cleanup	
	< <u>B</u> ack Finish	Cancel

The installation progress screen will be shown as below:

4. Click **Finish** to complete the installation and exit the wizard.

5oftware Update Installatior) Wizard
Ð	Completing the Active Directory Application Mode Service Pack 1 Installation Wizard
	You have successfully completed the ADAM SP1 Setup Wizard.
	To close this wizard, click Finish.
	< Back Finish Cancel

To create an ADAM instance:

1. Click Start->Programs->ADAM->Create an ADAM instance.

It will prompt the following interface and click **Next**.

掃 Active Directory Applicati	on Mode Setup Wizard	X
Æ	Welcome to the Active Directory Application Mode Setup Wizard	
	This wizard helps you install Microsoft Active Directory Application Mode (ADAM).	
	ADAM is a powerful directory service that is easy to install and deploy. It provides a dedicated data store for applications, and can be configured and managed independently.	
	To continue, click Next.	
	< Back Next > Cancel Help	

2. Mark the A unique instance radio box and click Next.

🖶 Active Directory Application Mode Setup Wizard	×
Setup Options An ADAM instance is created each time ADAM is installed.	Ð
You can create a unique instance, or you can install a replica of an existing instance.	
Select the type of instance you want to install.	
• A unique instance	
This option automatically creates a new instance of ADAM that uses the default configuration and schema partitions. The new instance will not be able to replicate with existing instances.	
O A replica of an existing instance	
This option creates a new instance of ADAM that uses the configuration and schema partitions replicated from another instance of ADAM. You can also select the application partitions to replicate.	
< <u>B</u> ack <u>N</u> ext> Cancel Hel	р

3. Enter the desired name in the **Instance name** field and click **Next**.

掃 Active Directory Application Mode Setup Wizard	×
Instance Name The instance name is used to differentiate this instance of ADAM from other ADAM instances on this computer.	Ð
Type a name for this instance. The name should reflect the use for which this instanc of ADAM is intended.	e
Instance name:	
instance1	_
Example: Addressbook1 The ADAM service name is created when the instance name is combined with the product name. It will be displayed in the list of Windows services. ADAM service name: ADAM_instance1	
< <u>B</u> ack <u>N</u> ext > Cancel	Help

4. Keep the default ports and click **Next**.

🖶 Active Directory Application Mode Setup Wizard	×
Ports Computers will connect to this instance of ADAM using specific ports on all of the IP addresses associated with this computer.	Ð
The ports displayed below are the first available for this computer. To change these ports, type the new port numbers in the text boxes below. If you plan to install Active Directory on this computer, do not use 389 for the LDAP po or 636 for the SSL port because Active Directory uses these port numbers. Instead, us available port numbers from the following range: 1025-65535.	
LDAP port number:	
636	elp

5. Mark the Yes, create an application directory partition radio box and enter the desired name (e.g., o=Yealink,c=CN) in the Partition name field, and then click Next.

🛃 Active Directory Application Mode Setup Wizard 🛛 🛛 🗙
Application Directory Partition An application directory partition stores application-specific data.
Do you want to create an application directory partition for this instance of ADAM?
O No, do not create an application directory partition
Select this option if the application that you plan to install creates an application directory upon installation, or if you plan to create one later.
Yes, create an application directory partition
Select this option if the application that you plan to install does not create an application directory partition upon installation. A valid partition name is any distinguished name that does not already exist in this instance. Example distinguished name: CN=Partition1,DC=Woodgrove,DC=COM
Partition name:
o=Yealink,c=CN
,
< <u>B</u> ack <u>N</u> ext > Cancel Help

6. Specify the desired paths for the data and data recovery files, and click Next.

You can specify a locat	ion for each type of	file associated wi	h this insta	ance of
ADAM.				
Specify the locations to	store files associate	d with ADAM.		
Data files:				
C:\Program Files\Micro	soft ADAM\instance	:1\data	_	Browse
				DI <u>O</u> M36
D <u>a</u> ta recovery files:		.11		_
C:\Program Files\Micro	SUIT ADAM VINSTANCE	an Nuala		Bro <u>w</u> se

7. Mark the **Network service account** radio box and click **Next**.

Service Account S	plication Mode Setup Wizard Image: Comparison of the permission of the p			
Set up ADAM to perform operations using the permissions associated with the following account. Image: Network service account ADAM has the permissions of the default Windows service account.				
Ihis account: ADAM has the perrup to run as a servir	nissions of the selected account. Ensure that the account you select is set ce.			
∐ser name: Eassword:	Image: Biowse			
	< <u>B</u> ack <u>N</u> ext > Cancel Help			

It will pop up the following prompt box. Read the provided information and click Yes.

🚽 Active	: Directory Application Mode Setup Wizard 🛛 🔀		
⚠	You have selected a system service account for this ADAM instance. Because this computer is not a member of an Active Directory domain, this instance will no be able to replicate data with ADAM instances on other computers while using this service account.		
	Do you want to continue?		
	<u>V</u> es <u>M</u> o		

8. Mark the first radio box to assign the administrative permissions for ADAM to the currently logged on user (e.g., USER-E5F3EA4782) and click **Next**.

🚽 Active Directory Application Mode Setup Wizard 🛛 🛛 🗙				
ADAM Administrators You can specify the user or group that will have administrative privileges for this instance of ADAM.	9			
Assign the following user or group of users administrative permissions for ADAM.				
Currently logged on user: USER-E5F3EA4782\Administrator				
The user that is installing ADAM will have administrative permissions for this instance of ADAM.				
C Ihis account				
The selected user or group will have administrative permissions for this instance of ADAM. You can choose any user or group from this computer, this computer's domain, or any domain that is trusted by this computer's domain.				
Account name:				
Browse				
< <u>B</u> ack <u>N</u> ext> Cancel Help				

- 9. Mark the Import the selected LDIF files for this instance of ADAM radio box.
- In the Available files box, select the desired LDF files and then click Add->, and then click Next.

Active Directory Application N	Mode Setup Wizard	×				
Importing LDIF Files You can import data from Lightweight Directory Interchange Format (LDIF) files into your ADAM application directory partition.						
To configure the ADAM service in below.	a specific way, import o	ne or more of the LDIF files listed				
O Do not import LDIF files for this	instance of ADAM					
Import the selected LDIF files for a selected LDIF files for a selected LDIF files for a selected LDIF files.	or this instance of ADAM	4				
A <u>v</u> ailable files:		Selected LDIF files:				
		MS-AZMan.LDF				
	[]	MS-InetOrgPerson.LDF MS-User.LDF				
	<u>Add -></u>	MS-UserProxy.LDF				
	<- <u>R</u> emove					
	< Back Next >	Cancel Help				

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

🖶 Active Directory Application Mode Setup Wizard	X
Ready to Install The ADAM Setup Wizard is ready to install ADAM with the following configuration.	$\widehat{\mathbf{A}}$
Before continuing, review and confirm your selections.	
Selections:	
Install a unique instance of ADAM. Instance name: instance1 Computers will connect to this instance of ADAM using the following ports: LDAP port: 389 SSL port: 636 ADAM replication will use Negotiate authentication. Store ADAM program files in the following location:	
To change your selections, click Back. To install ADAM, click Next. < Back	

The installing progress is shown as below:

🖶 Active Directory Application Mode Setup Wizard	×
Installing ADAM The ADAM Setup Wizard is installing ADAM.	\mathfrak{S}
Installing ADAM	
Please wait while the wizard completes the following steps. \checkmark Copied files	
Configuring the local computer to host Active Directory	
< Back Next > Cancel	Help

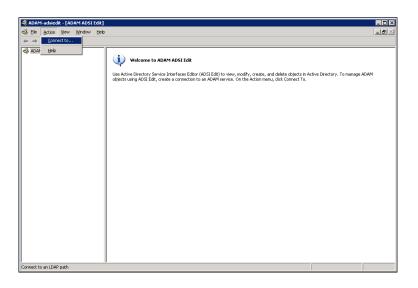
12. Click **Finish** to complete the installation and exit the wizard.

掃 Active Directory Applicati	ion Mode Setup Wizard	×
()	Completing the Active Directory Application Mode Setup Wizard	
	You have successfully completed the Active Directory Application Mode Setup Wizard.	
	< Back Finish Cancel Help	

Configuring the ADAM ADSI Edit

To configure the ADAM ADSI Edit:

- 1. Click Start->Programs->ADAM->ADAM ADSI Edit.
- 2. Click Action->Connect to.



- 3. Enter the desired name (e.g., ADAM1) in the Connection name field.
- **4.** Mark the **Distinguished name (DN) or naming context** radio box and enter the desired value (e.g., o=Yealink,c=CN) in the following field.
- 5. Click OK.

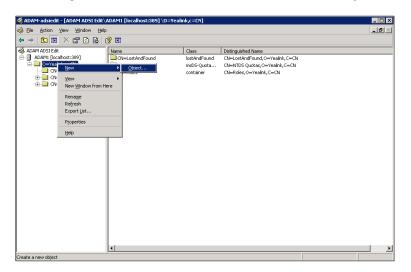
Connection Settings	×
⊆onnection name:	
ADAM1	
Server name:	Port
localhost	389
Connect to the following node:	
Distinguished name (DN) or naming context:	
5=Yealink,c=CN	-
C Well-known naming context:	_
Configuration	~
Connect using these credentials:	
• The account of the currently logged on user	
This account:	
User name:	Ψ.
Password:	
ОК	Cancel

When the ADAM ADSI Edit connects an application directory partition (e.g., o=Yealink,c=CN) successfully, it will show as below:

ADAM-adsiedit - [ADAM ADSI Edit] Sele Action View Window Help ← → III 20 28 12 10				
ADAMA Docahost Ed. ADAMA [Docahost: 399] ADAMA Docahost: 399] Over-exempting:-e-O	Name	Class organization	Distinguished Name	
	1			2

To create the object for ADAM:

1. Select and right click **O=Yealink,c=CN**, and then select **New->Object**.



2. Select organizationalUnit and click Next.

Create Object	×
Select a class: con cou don gro	ainer htry ainDNS upOFNames OrgPerson
org org use	anizationalPerson anizationalUnit
	< Back Next > Cancel

3. Enter the desired value (e.g., ou1) in the Value field and click Next.

Create Object				×
<u>A</u> ttribute:	ou			
<u>S</u> yntax:	DirectoryString			
<u>V</u> alue:	ou1			
		< <u>B</u> ack	<u>N</u> ext >	Cancel

4. Click **Finish** to complete the creation of this object.

You can also click **More Attributes** to set more attributes for this object.

Create Object	X
To complete the creation of this object, click Finish.	
To set more attributes, click More Attributes.	More Attributes
< <u>B</u> ack	Finish Cancel

5. Select and right click **OU=ou1**, and then select **New->Object**.

🐗 ADAM-adsiedit - [ADAM ADSI Edit	ADAM1 [local	lhost:389] \0=Yeal	link,c=CN\OU=ou	11]	_ 🗆 ×
🍕 Eile Action Yier	w <u>W</u> indow <u>H</u> el	p				_ 8 ×
← → 🗈 💽 🕽	× 🖻 🖻 🗟	🔮 💷				
ADAM ADSI Edit		Name		Class	Distinguished Name	
	c=CN stAndFound DS Quotas les	from Here	Object		, complementations	
		•				
Create a new object						

6. Select user and click Next.

Create Object	X
<u>S</u> elect a c	
	container group of Names inet OrgPerson
	locality msDS-AzAdminManager organizationalPerson organizationalUnit person
	user userProxy
	< Back Next > Cancel

7. Enter the desired value (e.g., user1001) in the Value field and click Next.

Create Object				×
<u>A</u> ttribute	: cn			
	DirectoryString			
<u>V</u> alue:	user1001			
		< <u>B</u> ack	Next >	Cancel

8. Click More Attributes to set more attributes for this user.

Create Object			×
To complete the creation of this obj	ect, click Finish.		
To set more attributes, click More A	ttributes.	More Attr	ributes
	< <u>B</u> ack	Finish	Cancel

 In the popup dialog of Attributes, select the telephoneNumber from the pull-down list of Select a property to view. Enter the desired telephone number (e.g., 1003) in the Edit Attribute field and click Set. The entered telephone number will be shown in the Value(s) field.

cn=user1001	×
Attributes	
Path:	
– Class: user	
Select which properties to view:	Optional 💌
Select a property to view:	telephoneNumber
Attribute Values	
Synta <u>x</u> : DirectoryString	
Edit Attribute:	
V <u>a</u> lue(s): 1003	
	Set Clear
	OK Cancel

- **10.** Click **OK** to close the Attributes dialog, and click **Finish** to complete the creation of this user.
- 11. Select and right click the user created above, and then select **Reset Password**.
- **12.** Enter the password for the user created above in the **New password** field and **Confirm password** field respectively.

Reset Password	x
<u>N</u> ew password:	*****
<u>C</u> onfirm password:	*****
The account must log change to take effec	off and then log on again for the t.
	OK Cancel

13. Click OK to accept the change.

If you want to use the user created above to manage and search information of LDAP, you need to add the user to the administrator group in advance.

To add the user to the administrator group:

1. Click ADAM1->O=Yealink, c=CN->CN=Roles.

🐗 ADAM-adsiedit - [ADAM ADSI Edit\;	ADAM1 [localhost:389] \0=Yeali	nk,c=CN\CN=Ro	les]		
Sile Action View Window Help					_ 8 ×
ADAM ADSI Edit	Name	Class	Distinguished Name		
🖆 🗍 ADAM1 [localhost:389]	CN=Administrators	group	CN=Administrators,CN=Roles,O=Yeali	nk,C=CN	
- CN O=Yealnk,c=CN	CN=Readers	group	CN=Readers,CN=Roles,O=Yealink,C=	CN	
CN=LostAndFound GN=NTDS Quotas	E CN=Users	group	CN=Users,CN=Roles,O=Yealink,C=CN	1	
CN=NIDS Quotas					
OU=ou1					
	•				<u> </u>

2. Select and right click **CN=Administrators**, and then select **Properties**.

🛛 ADAM-adsiedit - [ADAM ADSI Edit\ADAM1 [localhost:389] \0=Yealink,c=CN\CN=Roles]					
Sele Action View Window Help)				_ 8 ×
⇔ → 🗈 🗷 🗙 🗗 🗟 🔮 1	14				
ADAM ADSI Edit		-	(
ADAM ADSI Edit E- ADAM1 [localhost:389]	Name CN=Administrat	Class	Distinguished Name	1.0.00	
O=Yealink,c=CN	CN=Administrat	up up	CN=Administrators,CN=Roles,O=Yeali CN=Readers,CN=Roles,O=Yealink,C=		
CN=LostAndFound	CN=Readers CN=Users Delete	up	CN=Users, CN=Roles, O=Yealink, C=CN		
🗄 🛄 CN=NTDS Quotas	Rename	0.0			
CN=Roles		_			
OU=ou1	Properties				
	Help				
	L				
]					<u> </u>
pens the properties dialog box for the current selection.					

3. Select the **member** attribute in the **Attributes** box and click **Edit**.

CN=Administrators Prope	erties		? ×
Attribute Editor			
✓ Show <u>m</u> andatory attrib ✓ Show <u>o</u> ptional attribut ✓ Show only attributes th Attri <u>b</u> utes:	es		
Attribute fSMORoleOwner groupType instanceType isCriticalSystemObject isDeleted lastKnownParent managedBy managedObjects masteredBy member memberOf modifyTimeStamp msDS-Approx-Immed ◀	Syntax Distinguished Integer Boolean Boolean Distinguished Distinguished Distinguished Distinguished Distinguished UTC Coded Ti Integer	<not set=""></not>	
	OK	Cancel	Apply

4. In the popup dialog of the member attribute, click **Add ADAM Account**.

ttribute:	member			
alues: Name	Container	Distin	iguished Name	
Administrators	/{B8CE497C-9680-44A8-907	71-283BD030 CN=#	Administrators,CN=Roles,CN	l=Configurati
(-
	A			
	Account			<u>R</u> emove
Add <u>W</u> indows				

5. In the popup dialog of adding ADAM account, enter the desired dinstinguished name (e.g., CN=user1001,OU=ou1,o=Yealink,c=CN) in the field.

Μ	ulti-valued Disting	guished Name With Security Principal Edi	itor 🔀
	<u>A</u> ttribute: m Val <u>u</u> es:	nember	
	Name	Container	Distinguished Name
	Administrators	/{B8CE497C-9680-44A8-9071-283BD030	CN=Administrators,CN=Roles,CN=Configurati
		Add ADAM Account	X
		Enter a dinstinguished name (DN) fo	or an object.
		CN=user1001,OU=ou1,o=Yealink	,c=CN
		ОК	Cancel
	•		
	Add <u>W</u> indows Acco	unt	Remove
	Add ADAM Accour	nt	
			OK Cancel

- 6. Click **OK** to accept the change and close the dialog of adding ADAM account.
- 7. Click **OK** to accept the change and close the dialog of the member attribute.
- 8. Click **OK** to accept the change and close the Administrators Properties interface.

You can also view permissions of ADAM using the command.

To view permissions using the command:

- 1. Click Start->Programs->ADAM->ADAM Tools Command Prompt.
- Execute the command dsacls \\localhost:389\o=Yealink,c=CN view permissions of o=Yealink,c=CN.

🔤 ADAM Tools Command Prompt 📃 🗆 🗙
Microsoft Windows [Version 5.2.3790] <c> Copyright 1985-2003 Microsoft Corp.</c>
C:\VINDOWS\ADAM>dsacls \\localhost:389\o=Yealink,c=CN Owner: CN=Administrators,CN=Roles,0=Yealink,C=CN Group: CN=Administrators,CN=Roles,0=Yealink,C=CN
Access list: Allow CM=Instances,CN=Roles,CN=Configuration,CN={B8CE497C-9680-44A8-9071-283BD03 0BCF0>
SPECIAL ACCESS READ PERMISSONS LIST CONTENTS READ PROPERTY LIST OBJECT
Allow CN=Readers,CN=Roles,O=Yealink,C=CN SPECIAL ACCESS READ PERMISSONS LIST CONTENTS READ PROPERTY LIST OBJECT
Allow CN=Administrators,CN=Roles,O=Yealink,C=CN FULL CONTROL
Allow CN=Instances,CN=Roles,CN=Configuration,CN={B8CE497C-9680-44A8-9071-283BD03 0BCF0}
Replicating Directory Changes Allow CN=Instances,CN=Roles,CN=Configuration,CN={B8CE497C-9680-44A8-9071-283BD03 (BBCP0)
Replication Synchronization Allow CN=Instances,CN=Roles,CN=Configuration,CN={B8CE497C-9680-44A8-9071-283BD03 (BBCF0)
Manage Replication Topology Allow CN=Instances,CN=Roles,CN=Configuration,CN={B8CE497C-9680-44A8-9071-283BD03 (BBCP0)
Replicating Directory Changes All
Permissions inherited to subobjects are: Inherited to all subobjects Allow CN=Readers,CN=Roles,O=Yealink,C=CN ▼

Sun One Directory Server

Sun One Directory Server, also known as Sun Java System Directory Server, is a component of the Java Enterprise System. Sun One Directory Server can be installed on multiple platforms, such as Windows, Linux, Solaris and so on. This section shows you how to install Sun One Directory Server version 5.2 on Microsoft Windows Server 2003 SP2 Enterprise 32-bit system. You can download it online: http://download.csdn.net/download/wbsoso/6439291.

Before the installation, you should prepare as follows:

- Modify the hosts file of your computer.
- Install the Java Development Kit (JDK) 5 or later.

To modify the hosts file of your computer:

- 1. Locate the hosts file in the path "C:\WINDOWS\system32\drivers\etc\hosts".
- 2. Open and edit the hosts.dz file using your favorite text editor.
- **3.** Add FQCN (Fully Qualified Computer Name) of your computer to the file. For example, the FQCN of your computer is Idapsun.yealinktest.com. Add the following mapping:

127.0.0.1 Idapsun.yealinktest.com

	-1999 Microsoft Corp.	
: 	Nete cile used by Misus	Ch TOD/ID Can Hiadana
S recurrence reare all relation control that	usis file used by Micro	soft TCP/IP for Windows.
*		anazarta an arrana brenda arran
		resses to host names. Each
		e. The IP address should
# be placed in the fi	irst column followed by	the corresponding host name.
# The IP address and	the host name should b	e separated by at least one
‡ space.		
t		
# Additionallu. comme	ents (such as these) ma	y be inserted on individual
	the machine name denot	
#	in here active	
‡ For example:		
TION CAGMPIC.		
+	rhino acmo com	
		# source server
# 102.54.94.97		
# 102.54.94.97		# source server # x client host
	x.acme.com	

4. Save the hosts file.

The following shows you how to install Java Development Kit (JDK) 6 on your computer. You can download it online: http://www.oracle.com/technetwork/java/javase/downloads/index.html.

To install the Java Development Kit (JDK) 6:

1. Double click jdk-6u22-windows-i586.exe to run the application.

2. The Java (TM) SE Development Kit 6 Update 22 Installation Wizard will appear after a short while, click **Next**.



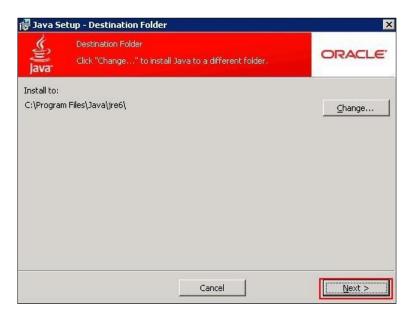
 Click Change to locate the installation path from local computer system and then click Next.

You need to remember the installation path (e.g., C:\Program Files\Java\jdk1.6.0_22) located here.

The screenshot for reference is shown as below:

🙀 Java(Tl	M) SE Development Kit 6 Update 2	2 - Custom Setup	×
Javar	Custom Setup Select the program features you w	ant installed.	ORACLE
	onal features to install from the list belo by using the Add/Remove Programs ut Development Tools Demos and Samples Source Code Public JRE Java DB	ility in the Control Panel Feature Desc Java(TM) SE I Update 22, in	ription Development Kit 6 cluding private JRE This will require
l Install to: C:\Progran	n Files\Java\jdk1.6.0_22\		
		: <u>B</u> ack <u>N</u> ext >	Cancel

🙀 Java(TM	I) SE Development Kit 6 Update 22 - Progress	
(jij) Java	Installing The program features you selected are being installed.	ORACLE'
Status:	Extracting Installer	





<u>S</u>		ORACLE
Java Java(TM) SE Develo	opment Kit 6 Update 22 Successfully	Installed
* Notification of new v * Special offers on Sur * Access to early relea When you click Finish,	FREE and includes many benefits: ersions, patches, and updates products, services and training ses and documentation product and system data will be collected a presented. If you do not register, none of	
For more information of	n what data Registration collects and how Registration Information Page.	it is managed and
	Product Registration Information	Ê.

4. Click **Finish** to finish the installation.

After the installation, you need to configure environment variables.

To configure environment variables:

- 1. Right-click the My Computer icon and select Properties.
- 2. Click the **Advanced** tab.
- 3. Click the Environment Variables button.
- 4. Add the following variables, click New under System Variables.
- 5. Enter the variable name as JAVA_HOME.
- **6.** Enter the variable value as the installation path (e.g., C:\Program Files\Java\jdk1.6.0_22) for the Java Development Kit.

New System Varia	able ? 🗙
Variable <u>n</u> ame:	JAVA_HOME
Variable <u>v</u> alue:	C:\Program Files\Java\jdk1.6.0_22
	OK Cancel

- 7. Click OK.
- 8. Repeat the steps 4-7 to create a new system variable.

Variable name: classpath

Variable value: .;%JAVA_HOME%\lib\dt.jar;%JAVA_HOME%\lib\tools.jar The dot "." stands for the current path and it can't be deleted. %JAVA_HOME% references the value of the specified JAVA_HOME variable created before.

Edit System Varia	able ? 🗙
Variable <u>n</u> ame:	classpath
Variable <u>v</u> alue:	;%JAVA_HOME%\lib\dt.jar;%JAVA_HOME
	OK Cancel

- 9. Under System Variables, select the Path variable and click Edit.
- In the Variable value field, append the Java bin directory (e.g., C:\Program Files\Java\jdk1.6.0_22\bin) to the end of the existing path (e.g., %SystemRoot%\system32;%SystemRoot%;%SystemRoot%\System32\Wbem;).

If the end of the existing path has no semicolon, you should add a semicolon to the end of the existing path and then append the Java bin directory.

Edit System Variat	ole ? 🗙
Variable <u>n</u> ame:	Path
Variable <u>v</u> alue:	em;C¦\Program Files\Java\jdk1.6.0_22\bin
	OK Cancel

- **11.** Click **OK**.
- 12. Click Apply Changes.

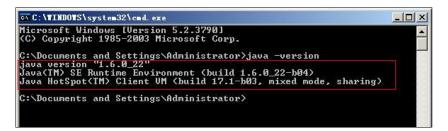
To verify the configuration of environment variables:

- 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 java -version to check the java version.

It prompts the following information.



4. Execute the command **java** to run the application.

It prompts the following information.



5. Execute the command javac to compile java files into class files.

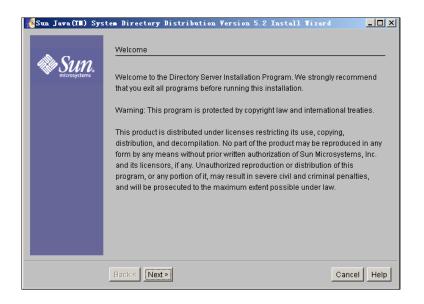
It prompts the following information.

Copyright 1985-2003 Mic	crosoft Corp.
\Documents and Settings\A	Administrator/iauac
age: javac (options) (sou	
ere possible options inc.	
-g	Generate all debugging info
-g:none	Generate no debugging info
-g:{lines,vars,source}	Generate only some debugging info
-nowarn	Generate no warnings
-verbose	Output messages about what the compiler is doing
-deprecation	Output source locations where deprecated APIs ar
ed 🏅	
-classpath <path></path>	Specify where to find user class files and annot
n processors	
-cp <path></path>	Specify where to find user class files and annot
n processors	
-sourcepath <path></path>	Specify where to find input source files
-bootclasspath <path></path>	Override location of bootstrap class files
-extdirs (dirs)	Override location of installed extensions
-endorseddirs <dirs></dirs>	Override location of endorsed standards path
-proc:{none,only}	Control whether annotation processing and/or com
tion is done.	
	ass2>, <class3>]Names of the annotation processor</class3>
run; bypasses default dis	scovery process
-processorpath <path></path>	Specify where to find annotation processors
-d <directory></directory>	Specify where to place generated class files
-s (directory)	Specify where to place generated source files
-implicit:{none,class}	Specify whether or not to generate class files f
nplicitly referenced files	
-encoding <encoding></encoding>	Specify character encoding used by source files
-source <release></release>	Provide source compatibility with specified rele
-target <release></release>	Generate class files for specific VM version
-version	Version information
-help	Print a synopsis of standard options
-Akey[=value]	Options to pass to annotation processors
-X	Print a synopsis of nonstandard options
-J <flag></flag>	Pass <flag> directly to the runtime system</flag>

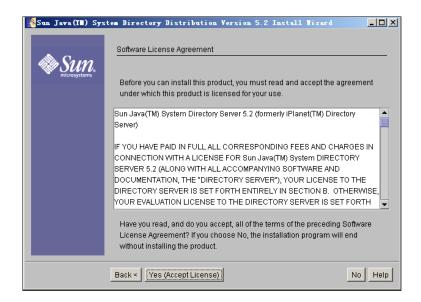
Installing the Sun One Directory

To install the Sun One Directory:

- **1.** Unpack the compressed files named Sun Java System Directory Server.5.2.P4.Windows.full.rar.
- 2. Double click setup.exe to run the application.
- **3.** The Sun Java(TM) System Directory Distribution Version 5.2 Install Wizard will appear after a short while, click **Next**.



4. Read the software license agreement and click Yes (Accept License).

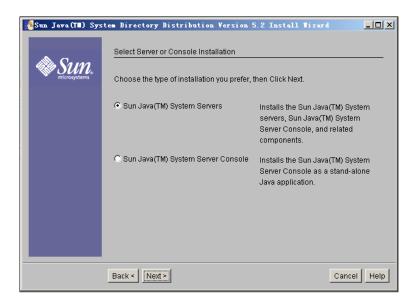


 Enter the fully qualified name of the computer (e.g., ldapsun.yealinktest.com) in the Fully Qualified Computer Name field and click Next.

The fully qualified name of the computer was planned before. For more information, refer to modify the hosts file of your computer.

Sun Java(III) Syst	tem Directory Distribution Version 5.2 Install Vizard		
	Fully Qualified Computer Name		
Enter the fully qualified name of the computer			
	Fully Qualified Computer Name: ldapsun.yealinktest.com		
	Back < Next > Cance	el Help	

6. Mark the Sun Java (TM) System Servers radio box and click Next.



7. Mark the **Custom** radio box and click **Next**.

Sun Java(I∎) Sys	tem Directory	7 Distribution Version 5.2 Install Wizard	
A Sama	Type of Insta	llation	
microsystems	Choose the t	ype of installation you prefer, then Click Next.	
	C Express	Installation option choices are made automatically. The installation and recommended for evaluating the production and recommended for evaluating the production of the produc	
	C Typical	Software will be installed with the most common option Recommended for most deployments.	18.
	 €Custom 	You may choose the options you want to install. Recon for advanced users.	nmended
	Back < Ne	xt>Ca	incel Help

8. Specify the desired installation directory and click **Next**.

Sun Jawa(I∎) Sys	tem Directory Distribution Version 5.2 Install 1	izard	<u>- 0 ×</u>
	Select installation directory		
	Directory to install Directory Server components:		
	C:\Program Files\Sun\MPS	Browse	
	Back < Next >	Cance	l Help

It prompts the following window. And you can click **Create Directory** to create the directory or click **Choose New** to select another path.



9. Select the desired installation components and click Next.

Sun Java(III) Syst	tem Directory Distribution Version 5.2 Install Wizard	<u>_ ×</u>
	Select Components	
SUN . microsystems	Directory Server components showing a checked box will be installed.	
	B 🔽 Sun Java(TM) System Directory Suite 27.98 MB	
	🖽 🔽 Sun Java(TM) System Administration Services 5.07 MB	
	🖽 🗹 Sun Java(TM) System Server Console 🛛 67.93 MB	
	☑ Sun Java(TM) System Server Basic Libraries 1020.83 KB	
	Sun Java(TM) System Server Basic System Libraries 10.64 MB	
	Back < Next > Cancel	Help

10. Mark **The new instance will be the configuration Directory Server** radio box and click **Next**.

Sun Jawa (II) Sys	em Directory Distribution Version 5.2 Install Tizard	
	Configuration Directory Server	
Microsystems	You may store Sun Java(TM) System server configuration information in another Sun Java(TM) System Directory Server. If you have already prepared a configuration server, you may configure the new server to use it.	r
	The new instance will be the configuration Directory Server	
	C Use existing configuration Directory Server	
	Host:	-
	Port: 389	-
	Bind As: admin	_
	Password:	
	Back < Next > Cancel He	elp

11. Mark the Store data in the new Directory Server radio box and click Next.

Sun Java(I∎) Sys	stem Directory Distribution Version 5.2 Install Vizard	<u> </u>
	Data Storage Location	
W SUN.	You may already have a Directory Server where you store user and group information.	
	Store data in the new Directory Server	
	C Store data in an existing Directory Server	
	Host:	
	Port: 389	
	Bind As: cn=Directory Manager	
	Password:	
	Suffix: dc=yealinktest, dc=com	
	Back < Next > Cancel	Help

12. Enter the value "Idapsun" in the **Server Identifier** field and keep the default values in other two fields. And then click **Next**.

Sun Jawa (II) Sys	stem Directory Di	stribution Version 5.2 Install Wizard	
All Care	Directory Server S	Settings	
M SUIL. microsystems	Settings the new	server will use for basic operation	
	Server Identifier:	ldapsun	
	Server Port:	28511	
	Suffix:	dc=yealinktest, dc=com	
	Back < Next >	l E	Cancel Help

13. Configure the password for the Directory Server Administrator and click Next.

Sun Jawa(T∎) Sys	tem Directory Dist	ribution Version 5.2 Install Tizard	
	Configuration Direct	ory Server Administrator	
W Suns microsystems	The Directory Administrator ID is used to register the server with the Configuration Directory Server.		
	Administrator ID:	admin	
	Password:	kolokok	
	Password (again):	жжжж	
	Back < Next >	Ca	ancel Help

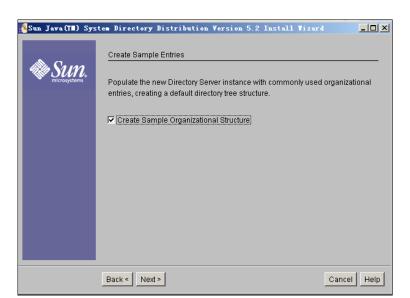
14. Follow the default setting and click Next.

Sun Java(T∎) Sys	tem Directory Distribution Version 5.2 Install Vizard
	Administration Domain
Microsystems	Enter some descriptive, unique name for the administration domain, such as the name of the organization responsible for managing the domain.
	Administration Domain: yealinktest.com
	Back < Next > Cancel Help

15. Configure the password for the Directory Manager and click **Next**.

The password must be at least 8 characters long.

Sun Jawa (T∎) Sys	tem Directory Distribution Version 5.2 Install Vizard	
	Directory Manager Settings	_
Microsystems	Enter a Distinguished Name (DN) for the Directory Manager and a password at least 8 characters long.	
	Directory Manager DN: cn=Directory Manager	
	Password: *******	
	Password (again): *******	
	Back < Next > Cancel H	elp

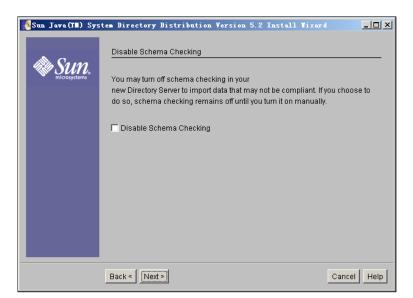


16. Check the Create Sample Organizational Structure check box and click Next.

17. Mark the Populate with sample date radio box and click Next.

Sun Jawa (TB) Sys	tem Directory Distribution Version 5.2 Install Wizard
	Populate Suffix
Microsystems	You may populate the suffix of the new Directory Server instance from an LDIF file, or create sample data in your suffix.
	C Don't populate
	C Populate with sample data
	C Populate with LDIF file
	File name Browse
	Back < Next > Cancel Help

18. Follow the default settings and click **Next** for the following two steps.



Sun Jawa (TE) Sys	tem Directory Distribution Version 5.2 Install Wizard
	Administration Server Port Selection
Microsystems	The Administration Server runs on a different network port from other servers. Specify the number of the port.
	Administration Port 28512
	Back < Next > Cancel Help

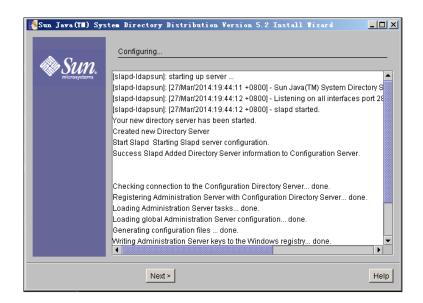
19. View the items to be installed and click **Install Now**.



The installing progress is shown as below:

Sun Jawa (TB) Sys	tem Directory Distribution Version 5.2 Install Wizard	
	Installing	
Sun.		
	Installing Sun Java(TM) System Directory Server	
	13%	
	停止	Help

After the installation, it will enter the configuring screen.



20. After the configuration, click Next to enter the installation summary screen. You can view the directory sever installation status and click Details for more information. You can also click Close to close the Sun Java(TM) System Directory Distribution Version 5.2 Install Wizard.

Sun Java(I∎) Sys	tem Directory Distribut	ion Version 5.2 Instal	l Vizard 💷 🗙
	Installation Summary		
Sun.	The Directory Server installa	ition status is shown below:	
	Product	Status	Information
	Directory Server	Installed	Details
	•		
	Click "Details" next to proc	luct status for more informati	on.
			Close Help

Configuring the Sun Java(TM) System Server Console

Adding an Entry to the Directory Server

You can add entries to the Directory Server one by one in this way.

To add an entry to the Directory Server:

1. Click Start->Program->Sun Java(TM) System Server Products->Sun Java(TM) System Server Console 5.2.

It will enter the login screen. You should enter the administrator user name and its password in the **User ID** field and **Password** field respectively.

S	Sun Java(TE) System Server Console Login X
Ser	User ID: cn=Directory Manager
Sei	Password: ******
	Administration URL: http://dapsun.yealinktest.com:28512 💌
Copyright 20	<u>OK</u> <u>Cancel</u> <u>H</u> elp rved.
Sun, Sun	Microsystems, Sun Java(TM) System, and all Sun and Sun Java(TM) System based trademarks and logos are trademarks of Sun Microsystems, Inc.
	Please log in

The system default administrator is cn=Directory Manager and its password which must be at least 8 characters long has already been set during the installation process.

Then click **OK** to enter the home page.

Sun Java(TE) System Server C	onsole	
<u>Console Edit View Object H</u> elp Sun Java™ System S		
		E <u>d</u> t <u>H</u> elp

Double click Idapsun.yealinktest.com->Server Group->Directory Server(Idapsun). It will enter the Directory Tasks interface.

🕸ldapsun. yealinktest. com – Sun Java(III) System Directory Server – ldapsun	_ 🗆 ×
Console Edit View Help	
Sun Java™ System Directory Server Version 5.2	
Tasks Configuration Directory Status	
Start Directory Server	
Stop Directory Server	
Restart Directory Server	- 11
Back up Directory Server	
Restore Directory Server	
Manage Certificates	
Log in to Directory Server as a new user	
Rs1	

- 3. Click the **Directory** tab.
- Select and right click the dc=yealinktest,dc=com (6 acis), and then select New->Organizational Unit.

^{onsole} Edit <u>V</u> iew <u>O</u> bject <u>H</u> e Sun Java™ Syster			Version 5.2	
Tasks Configuration	Directory Status			
ldapsun.yealinktest.com:28511	A Directory Admini	strators		_
e dc=example,dc=com (2	Edit With Custom Editor	Ctrl+P		
dc=yealinktest.dc=con	Edit With Generic Editor			
People (5 acis)	Search			
Special Users	View Effective Rights			
≝ ··· o=NetscapeRoot (3 acis	New	•	User	
③ cn=schema (5 acis) ⊕ (== cn=monitor (5 acis)	New Root Object	Þ	<u>G</u> roup	
B. Chemonitor (Sacis)	Set Access Permissions	. Ctrl+L	Organi <u>z</u> ational Unit	
	Set Roles		Role	
	Set Password Policy		Class Of Service	
	Create Browsing Index		Password Policy	
	Delete Browsing Index		Referral	
	Activate		Other	
	Inactivate			
	Cut	Ctrl+X		
	Сору	Ctrl+C		
•	Paste	Ctrl+V		
dc=yealinktest,dc=com	Delete	Ctrl+D		_

5. Enter the desired name of the organizational unit.

豢 Create New Or	ganizations	l Unit	x
Unit Languages	* Name: Description: Phone: Fax: Alias: Address:	ou2	
Access Permissio	ons Help	<u>OK</u> <u>Cancel</u> <u>H</u> elp	

- 6. Click **OK** to accept the change.
- 7. Select and right click the organizational unit created above, and then select **New**->**User**.

<u>C</u> onsole <u>E</u> dit	Edit With Generic Editor Search				
	Cooroh				
	Search		Sharan an a		
Sun Ja	View Effective Rights		°ver ∨	ersion 5.2	
Tasks	New	•	<u>U</u> ser		
klapsun.ye	Ne <u>w</u> Root Object	►	Group		
B- Calc=ex:	Set Access Permissions	Ctrl+L	Organizational Unit		
⊒ 👝 dc=ye:	Set <u>R</u> oles		Role		
🕂 👬 Gr	Set Password Policy		Class Of Service		
Pe	Create Browsing Index		Password Policy		
	Delete Browsing Index		Referral		
B- C O=Nets	Activate		Other		
🗿 cn=scl	Inactivate	-			
a⊷ 👝 cn=mo	Cut	Ctrl+X			
⊞ Cu=coi	Сору	Ctrl+C			
	Paste	Ctrl+V			
	Delete	Ctrl+D			
	<u>R</u> efresh	Ctrl+R			
ou=ou2,dc=yealin	l ▶				

8. Enter the desired values in the corresponding fields.

🎄Create New Us	er	X
		Phone:
*		Fax:
User Languages NT User Posix User Account	* First Name: * Last Name: * Common Name(s): User iD: Password: Confirm Password: Confirm Password: E-Mail: Phone: Fax:	user1 lin user1 lin ulin ************************************
Access Permissio	ons Help	QK Cancel Help

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

You can view the user (User ID is ulin) created above under the organizational unit named ou2.

🕸ldapsun. yealinktest. com – Sun Java(III) System Directory Server – 1dapsun	_ 🗆 ×
Console Edit View Object Help	
Sun Java™ System Directory Server Version 5.2	
Tasks Configuration Directory Status	
🕸 ldapsun.yealinktest.com:28511 🔺 ulin	
dc=example,dc=com (2 acis)	
i → mathematical control (6 acis)	
Groups	
- A People (5 acis)	
Special Users	
⊕ o=NetscapeRoot (3 acis)	
Cn=schema (5 acis)	
🗁 🦳 cn=monitor (5 acis)	
ia cn=config (4 acis)	
ou=ou2,dc=yealinktest,dc=com	

Adding Entries to the Directory Server Using the Idifde Tool

You can use a LDIF file to perform a batch import of all entries to the Directory Server. For more information, refer to create the LDIF file. The following shows an example of the content of the LDIF file for the Directory Server:

##Create a new organizational unit##
dn: ou=ou3,dc=yealinktest,dc=com
ou: ou3
objectClass: top
objectClass: organizationalunit
creatorsname: cn=directory manager
modifiersname: cn=directory manager
parentid: 1
entryid: 15
entrydn: ou=ou3,dc=yealinktest,dc=com
##create a new user##
dn: uid=utest,ou=ou3,dc=yealinktest,dc=com
uid: utest
facsimileTelephoneNumber: 11002
givenName: user4
objectClass: top
objectClass: person
objectClass: organizationalPerson
objectClass: inetorgperson
sn: test
cn: user4 test

To import the test.ldif file:

- In the home page of Sun Java(TM) System Server Console, double click Idapsun.yealinktest.com->Server Group->Directory Server(Idapsun).
 - It will enter the Directory Tasks interface.

🕸ldapsun. yealinktest. com – Sun Java(IB) System Directory Server – ldapsun	<u>- 0 ×</u>
Console Edit View Help	
Sun Java TM System Directory Server Version 5.2	
Tasks Configuration Directory Status	
Stop Directory Server	*
Restart Directory Server	
Back up Directory Server	
Restore Directory Server	
Manage Certificates	
Log in to Directory Server as a new user	
Import from LDIF	
Export to LDIF	

2. Click Import from LDIF.

It prompts the following dialog box.

∲Import LDIF		×
LDIF file (on console machine):		<u>B</u> rowse
🔲 Add only		
🔽 Continue on error		
File for rejects:		Browse
	<u>OK</u> <u>Cancel</u>	Help

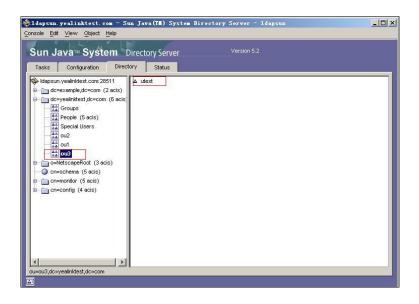
3. Click **Browse** to locate the test.ldif file from your local system, and then click **OK**.

∲Import LDIF		×
LDIF file (on console machine): C:test.ldif		Browse
Add only		
Continue on error		
File for rejects:		Browse
	<u>O</u> K <u>C</u> ancel	Help

After importing the test.ldif file, it will show the status of importing. If the entries are added successfully, you can view the information "n objects imported, 0 objects rejected". You can click **Close** to close it.

🕸 Import LDIF	×
Import finished.	
2 objects imported, 0 objects rejected	
Rejected objects:	
	Close

You can view the imported the organizational unit (e.g., ou3) and user (e.g., uid=utest) under the path: **Directory**-> **dc=yealinktest,dc=com (6 acis).**



Configuring Yealink IP Phones

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

LDAP Attributes on the Phone

Enable LDAP			
Parameter	ldap.enable		
Description	This parameter enables or disables LDAP feature on the IP phone. 0 -Disabled (Default) 1 -Enabled		
LDAP Search			
Parameter	ldap.search_type		
Description	This parameter configures the search type for LDAP contact look up. 0 -Prefix matching 1 -Approximate string matching If it is set to 0 (Perfect matching), the IP phone will search the LDAP contacts that the phone number or name starts with the entered		
	character(s). If it is set to 1 (Approximate string matching), the IP phone will search the LDAP contacts that the phone number or name contains the entered character(s).		
LDAP Name Filt	ter		
Parameter	ldap.name_filter		
Description	This parameter specifies the search criteria for names look up. The format of the search criteria 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 name entered by the user.		
Example	 ((cn=%)(sn=%)(telephoneNumber=%)) When the cn or sn or telephoneNumber of the LDAP contact matches the entered name, the record will be displayed on the phone LCD screen. (&(cn=*)(sn=%)) When the cn of the LDAP contact is set and the sn of the LDAP contact matches the entered name, the records will be displayed on 		

	the share LCD server						
	the phone LCD screen.						
	• (!(cn=%))						
	When the cn of the LDAP contact does not matches the entered name, the records will be displayed on the phone LCD screen.						
LDAP Number Filter							
Parameter	ldap.number_filter						
Description	This parameter specifies the search criteria for numbers look up. The format of the search criteria is compliant to the standard string representations of LDAP search filters (RFC 2254). The "*" symbol in the filter stands for any number. The "%" symbol in the filter stands for the number entered by the user.						
Examples	 ((telephoneNumber=%)(mobile=%)(ipPhone=%)) 						
	When the telephoneNumber or mobile or ipPhone of the LDAP contact matches the search criteria, the record will be displayed on the phone LCD screen.						
	 (&(telephoneNumber=*)(mobile=%)) 						
	When the telephoneNumber of the LDAP contact is set and the mobile of the LDAP contact matches the entered number, the record will be displayed on the phone LCD screen.						
LDAP TLS Mode	e						
Parameter	ldap.tls_mode						
Description	This parameter specifies the connection mode between the LDAP server and the IP phone.						
	0 -LDAP (Default)–Unencrypted connection between LDAP server and the IP phone. (port 389 is used by default).						
	1 -LDAP TLS Start–TLS/SSL connection between LDAP server and the IP phone (port 389 is used by default).						
	2 -LDAPs-TLS/SSL connection between LDAP server and the IP phone (port 636 is used by default).						
	Note: It is only applicable to IP phones running firmware version 73 or later.						
Server Address							
Parameter	ldap.host						
Description	This parameter specifies the domain name or IP address of the LDAP server.						
Default Value	Blank						
Example	• 10.3.6.128						

	• Idap.company.com
Port	
Parameter	ldap.port
Description	This parameter specifies the LDAP server port.
Default Value	389
Base	
Parameter	ldap.base
Description	This parameter specifies the LDAP search base which corresponds to the location in the LDAP directory. The search base narrows the search scope and decreases directory search time.
Example	• dc=yealink,dc=com
Username	
Parameter	ldap.user
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 user name to access the LDAP server. Note: If you use Microsoft Active Directory Application Mode (ADAM) as the LDAP server, the user to login the LDAP server must be added to the administrator group in advance.
Password	
Parameter	ldap.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 (1~320	000)
For T48S/T46S/T	T42S/T41S/T40P/T40G/T27G/T23P/T23G/T21(P) E2/T19(P) E2/CP920:
Max Hits (1~100	00)
Parameter	ldap.max_hits
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 Att	ributes

Parameter	ldap.name_attr
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
Parameter	ldap.numb_attr
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 N	lame
Parameter	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	
Parameter	ldap.version
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. 2 -Version 2 3 -Version 3 (Default)
LDAP Lookup F	or Incoming Call
Parameter	ldap.call_in_lookup
Description	This parameter enables or disables the phone to perform an LDAP search when receiving an incoming call.

	0-Disabled (Default)					
	1-Enabled					
	Note : If the caller number contains the special characters (e.g., "+", "." or					
	the space), the phone will match the search criteria in the parameter					
	"LDAP Name Filter (Idap.name_filter)". If not, the phone will match the search criteria in the parameter "LDAP Number Filter (Idap.number_filter)".					
	· · ·					
LDAP Lookup F	or Callout					
Parameter	ldap.call_out_lookup					
Description	This parameter enables or disables the phone to perform an LDAP search					
	when placing a call.					
	0-Disabled (Default)					
	1-Enabled					
	Note : If the called number contains the special characters (e.g., "+", "." or					
	the space), the phone will match the search criteria in the parameter					
	"LDAP Name Filter (ldap.name_filter)". If not, the phone will match the					
	search criteria in the parameter "LDAP Number Filter (ldap.number_filter)".					
LDAP Sorting R	esults					
Parameter	ldap.ldap_sort					
Description	This parameter enables or disables the phone to sort the search results in					
	alphabetical order or numerical order.					
	0-Disabled (Default)					
	1-Enabled					
LDAP Special Se	earch					
Parameter	ldap.incoming_call_special_search.enable					
Description	This parameter enables or disables the phone to search the telephone					
	numbers starting with "+" symbol and "00" from the LDAP server if the					
	incoming phone number starts with"+" or "00". When completing the					
	LDAP search, the all search results will be displayed on the LCD screen.					
	0-Disabled (Default)					
	1-Enabled					
	For example,					
	If the phone receives an incoming call from the phone number					
	0044123456789, it will search 0044123456789 from the LDAP sever first, if					
	no result found, it will search +44123456789 from the server again. The					
	phone will display all the search results.					
	Note: It works only if the value of the parameter "ldap.call_in_lookup" is					
	set to 1 (Enabled). You may need to set the value of the parameter					
	"ldap.name_filter" to be					

	((cn=%)(sn=%)(telephoneNumber=%)(mobile=%)) for searching the telephone numbers starting with "+" symbol.
LDAP Label	
Parameter	ldap.customize_label
Description It configures the display name of the LDAP phone book.	
	Example:
	ldap.customize_label = Friends
	Note: It works only if "Idap.enable" is set to 1 (Enabled).

Configuring LDAP via Web User Interface

The followings take configurations of a SIP-T29G IP phone running firmware version 81 as examples.

To configure 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 **Directory**->LDAP.
- 5. Select Enabled from the pull-down list of Enable LDAP.
- 6. Enter the desired values in the corresponding fields.

Yealink 1296 Image: Second se						Log Out glish(English) 🔻		
	Status	Account	Network	Dsskey	Features	Settings	Directory	Security
Local Directory Remote Phone Book Phone Call Info LDAP Multicast IP Setting		Enable LDAP LDAP Name Filter LDAP Number Filt LDAP TLS Mode Server Address Port Base Username Password Max Hits (1~3200 LDAP Name Attrit LDAP Number Att LDAP Number Att LDAP Display Nam Protocol LDAP Lookup For LDAP Lookup For LDAP Sorting Res	er 10) vutes vrbutes ve Incoming Call Callout Callout	LDAP 10.2.1.55 389 dc=yealint	neNumber=%)(n ,,dc=cn ,,dc=yealink,dc=		Access Protoc application pri accessing and informations est distributed dir network. Yealink IP pho with a corpor server that su version 2 or 3 OpenLDAP, M Directory, App (ADAM) or Su Server.	stocol for maintaining rvices for the ectory over an IP one can interface ate directory pports LDAP , such as icrosoft Active lication Mode n One Directory lick here to get

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

Example for Web User Interface Configuration

You can use the following settings as a starting point and adjust the filter and display attributes according to your requirements. The following shows example of OpenLDAP phone configurations.

Enable LDAP: Enabled
LDAP Name Filter: ((cn=%)(sn=%))
LDAP Number Filter: ((telephoneNumber=%)(mobile=%)(ipPhone=%))
LDAP TLS Mode: LDAP
Server Address: 10.3.6.128
Port: 389
Base: dc=yealink,dc=com
Username: cn=Manager,dc=yealink,dc=com
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 Lookup For Callout: Enabled
LDAP Sorting Results: Enabled

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

To configure an LDAP key via web user interface (not applicable to W52P/W53P/W56P/W60P/CP930W-Base):

- **1.** Log into the web user interface of the phone.
- 2. Click on Dsskey->Line Key (or Programable Key).

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

alink 1296	Status	Account	Network	Dsskey	Features	Settings	Directory Securit
Line Key1-9	Enable Page	Tips Disabled	•	Label Length Defa	ult 🔻		NOTE
	Кеу	Туре	Value	Label	Line	Extension	
Line Key10-18	Line Key1	Line	Default	▼ 1028	Line 1 🔻		Line Keys Line keys allow you to quickl
Line Key19-27	Line Key2	LDAP			N/A 🔻		access features such as reca and voice mail.
Programable Key	Line Key3	Line	Default	•	Line 3 🔻		
Ext Key	Line Key4	Line	Default	•	Line 4 🔻		You can click here to ge more guides.
Litt ittey	Line Key5	Line	Default	•	Line 5 🔻		-
	Line Key6	Line	Default	•	Line 6 🔻		
	Line Key7	Line	Default	•	Line 7 🔻		
	Line Key8	Line 🔻	Default	•	Line 8 🔻		
	Line Kev9	Line T	Default	T	Line 9 🔻		

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

Configuring LDAP Using Configuration Files

To configure LDAP feature using configuration files:

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

The following table shows the information of parameters:

Parameter	Descriptions	Web Setting Path
ldap.enable		Directory->LDAP->Enable LDAP
ldap.search_type (not applicable to CP860/CP920 IP phones)		/
ldap.customize_label		Directory->LDAP->LDAP Label
ldap.name_filter	These parameters specify the LDAP attributes.	Directory->LDAP->LDAP Name Filter
ldap.number_filter	Refer to the introduction above	Directory->LDAP->LDAP Number Filter
ldap.tls_mode	for more information.	Directory->LDAP->LDAP TLS Mode
ldap.host		Directory->LDAP->Server Address
ldap.port		Directory->LDAP->Port
ldap.base		Directory->LDAP->Base

Parameter	Descriptions	Web Setting Path
ldap.user		Directory->LDAP->User Name
ldap.password		Directory->LDAP->Password
ldap.max_hits		Directory->LDAP->Max Hits
ldap.name_attr		Directory->LDAP->LDAP Name Attributes
ldap.numb_attr		Directory->LDAP->LDAP Number Attributes
ldap.display_name		Directory->LDAP->LDAP Display Name
ldap.version		Directory->LDAP->Protocol
ldap.call_in_lookup		Directory->LDAP->LDAP Lookup For Incoming Call
ldap.call_out_lookup		Directory->LDAP->LDAP Lookup For Callout
ldap.ldap_sort		Directory->LDAP->LDAP Sorting Results
ldap.incoming_call_special_ search.enable		/

2. Upload configuration files to the root directory of the provisioning server and trigger IP phones to perform an auto provisioning for configuration update.

For more information on auto provisioning, refer to the latest Auto Provisioning Guide on Yealink Technical Support.

Example for Configuration Parameters

You can use the following settings as a starting point and adjust the filter and display attributes according to your requirements. The following shows example of OpenLDAP phone configurations.

1	
	ldap.enable=1
	ldap.search_type = 1
	ldap.name_filter= ((cn=%)(sn=%))
	ldap.number_filter= ((telephoneNumber=%)(mobile=%)(ipPhone=%))
	ldap.tls_mode=0
	ldap.host= 10.3.6.128
	ldap.port= 389
	ldap.base= dc=yealink,dc=com
	ldap.user= cn=Manager,dc=yealink,dc=com
	ldap.password= secret
	ldap.max_hits= 50
	ldap.name_attr= cn sn
	Idap.numb_attr= mobile telephoneNumber ipPhone
	ldap.display_name= %cn
	Idap.version= 3
	ldap.call_in_lookup= 1
	ldap.call_out_lookup= 1
	ldap.ldap_sort= 1

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

To configure an LDAP key using configuration files:

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

You can configure a line key, a programable key or an ext key as an LDAP key. The following table shows the information of parameters:

Parameter	Description	Value
linekey.X.type		
(not applicable to SIP-T19(P) E2/CP860/		
CP920/W52P/W53P/W56P/W60P/CP930W-Base IP	Configures a line key as	
phones)	an LDAP key on the IP	38
(CP960: X ranges from 1 to 30;	phone.	
SIP VP-T49G/SIP-T57W/T48G/T48S: X ranges from 1 to		
29;		
VP59/SIP-T58A/T54W/T46G/T46S/T29G: X ranges from		

Parameter	Description	Value
1 to 27;		
SIP-T42G/T42S/T41P/T41S: X ranges from 1 to 15;		
SIP-T53W/T53/T27G: X ranges from 1 to 21;		
SIP-T40P/T40G/ T23P/T23G: X ranges from 1 to 3;		
T21(P) E2: X ranges from 1 to 2)		
programablekey.X.type		
(not applicable to		
CP960/W52P/W53P/W56P/W60P/CP930W-Base IP		
phones)		
(SIP-T58A/T57W/VP59: X=1-4, 12-14, 17;	Configures a	38
SIP VP-T49G: X=1-4, 12-14;	programable key as an	
SIP-T54W/T48G/T48S/T46G/T46S: X=1-10, 12-14;	LDAP key on the IP	
SIP- T53W/T53/T42G/T42S/T41P/T41S/T40P/T40G:	phone.	
X=1-10, 13;		
SIP-T29G/T27G: X=1-14;		
SIP-T23P/T23G/T21(P) E2: X=1-10, 14;		
CP860/CP920: X=1-6, 9, 13)		
expansion_module.X.key.Y.type		
(only applicable to		
SIP-T58A/T57W/T54W/T53W/T48S/T48G/T46S/T46G/T2	Configures an ext key as	38
9G/T27G IP phones)	an LDAP key on the IP	
(SIP-T58A/T57W/T54W/T53W/T53, X=1-3, Y=1-60;	phone.	
SIP-T48S/T48G/T46S/T46G, X=1-6, Y=1-40;		
SIP-T29G/T27G, X=1-6, Y=1-20, 22-40)		

2. Upload configuration files to the root directory of the provisioning server and trigger IP phones to perform an auto provisioning for configuration update.

For more information on auto provisioning, refer to the latest Auto Provisioning Guide on Yealink Technical Support.

Using LDAP Directory on Yealink IP Phones

For SIP-T2 Series, T19(P) E2, T4 Series, T5 Series and CP Series IP Phones

You can press the LDAP key to access the LDAP directory. Enter the desired numbers to match the search criteria for searching a contact from LDAP directory, add local contacts from LDAP directory, and dial a contact from LDAP directory. You can also enable the phone to perform an LDAP search when receiving an incoming call or dialing an outgoing call.

To search a contact from the LDAP directory:

 Press the LDAP key to access the LDAP search screen. The LCD screen prompts "None".



2. Enter the search criteria.



The contacts which match the search criteria will appear on the LCD screen.

- **3.** Press (\bullet) or (\bullet) to select the desired contact.
- 4. Do one of the following:
 - Press the **Option** soft key and then select **Detail** to view the detail information of the contact.

- Press the **Option** soft key and then select **Add to Contact** to add the contact to local.
- Press the **Send** soft key to dial out.

If the **LDAP Lookup For Incoming Call** parameter is enabled on the phone, the phone will perform an LDAP search when receiving an incoming call. If there is a contact record which matches the caller ID, the contact name will be displayed 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 in the dialing interface. For more information on the configuration of the Search Source List In Dialing feature, refer to *Yealink phone-specific user guide*.

If there are contact records matching 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.

4) 2900			
2224	55		
S 2900	Hebe Tian	5578	1
LDAP			
Send	123	Delete	EndCall

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

If the **LDAP Lookup For Callout** parameter is enabled on the phone, the phone will perform an LDAP search when dialing an outgoing call. If there is a contact record which matches the called ID, the contact name will be displayed on the phone LCD screen as the called line identification. The screenshot of the LCD screen for reference is shown as below:



For DECT IP Phones

You can access to the LDAP directory and enter the desired numbers to match the search criteria for searching a contact, add local contacts from LDAP directory, and dial a contact from LDAP directory. You can also enable the DECT phone to perform an LDAP search when receiving an incoming call or dialing an outgoing call.

The following takes the W53P running firmware version 83 as an example.

To search a contact from the LDAP directory:

1. Press OK->Directory->LDAP.

The LCD screen of handset displays the contact list.

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

The contacts which match the search criteria will display on the LCD screen.

- **3.** Press \blacktriangle or \blacktriangledown to select the desired contact.
- 4. Do one of the following:
 - Press the **Options** soft key and then select **Detail** to view the detail information of the contact.
 - Press the **Options** soft key and then select **Add to Local** to add the contact to local.
 - Press 🌈 or 🔳 to dial out.

If the **LDAP Lookup For Incoming Call** parameter is enabled on the DECT phone, the DECT phone will perform an LDAP search when receiving an incoming call. If there is a contact record which matches the caller ID, the contact name will be displayed on the handset LCD screen as the calling line identification.

The **Search Source List In Dialing** feature enables the phone to perform an LDAP search when you enter the digits using the keypad in the dialing interface. For more information on the

configuration of the Search Source List In Dialing feature, refer to Yealink phone-specific user guide.

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

If the **LDAP Lookup For Callout** parameter is enabled on the DECT phone, the DECT phone will perform an LDAP search when dialing an outgoing call. If there is a contact record which matches the called ID, the contact name will be displayed on the handset LCD screen as the called line identification.

Customer Feedback

We are striving to improve our documentation quality and we appreciate your feedback. Email your opinions and comments to DocsFeedback@yealink.com.