

LDAP Directory on Yealink IP Phones

Introduction

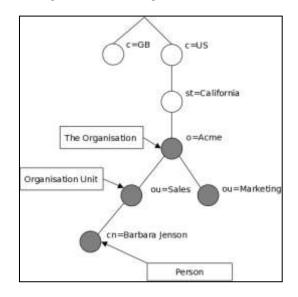
LDAP stands for Lightweight Directory Access Protocol, which is a client-server protocol for accessing a directory service. LDAP is a directory service protocol that runs over TCP/IP. The nitty-gritty details of LDAP are defined in RFC 1777 "Lightweight Directory Access Protocol". The following gives 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-T58V/A, SIP-T56A, SIP VP-T49G, SIP-T40P, SIP-T29G, SIP-T27P, SIP-T23P/G, SIP-T21(P)
 E2, CP960 and W56P IP phones running firmware version 80 or later
- SIP-T54S, SIP-T52S, SIP-T48S, SIP-T46S, SIP-T42S, SIP-T41S, SIP-T40G, SIP-T27G, SIP-T19(P) E2, CP920, W60 and W52P IP phones running firmware version 81 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".

The screenshot for reference is shown as below:

498d32a	config_build_entry: "cn=schema"	
	>>> dnNormalize: <cn=(0)core></cn=(0)core>	
	<<< dnNormalize: <cn=(0)core> config_build_entry: "cn=(0)core"</cn=(0)core>	
	<pre>>>> dnNormalize: (cn=(1)cosine)</pre>	
	(<< dnNormalize: <cn=<1)cosine></cn=<1)cosine>	
	config_build_entry: "cn=(1)cosine"	
498d32e	>>> dnNormalize: (cn=(2)nis)	
	(<< dnNormalize: <cn<(2)niz></cn<(2)niz>	
	config build entry: "cn-(2)nis"	
	>>> dnHormalize: (cn=(3)inetorgperson)	
	<<< dnNormalize: <cn=<3>instargerson></cn=<3>	
498d32e	config_build_entry: "cn-(3)inetorgperson"	
	config_build_entry; "olcDatabase~{-1)frontend"	
	config_build_entry: "olcDatabase={0}config"	
	config_build_entry: "olcDatabase=(1)bdb"	
	backend_startup_one: starting "dc=yealink,dc=con"	
498d32e	hdb_db_open: warning - no DB_CONFIG file found in directory ./data: ((2)
a second and a second	1	
	or performance for suffix "do-yealink,do-com".	
4984325	hdh_dh_open: database "dc=yealink,dc=con": dhenv_open(./data). bdb_monitor_dh_open: monitoring disabled; configure monitor database	
enable	nonicor an open - monicoring disasted, configure monicor database	- O
	=lapd_starting	

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:

	12 (D) 21
D:\OpenLDAP>slapadd -v -1 ./test.ldif 5498c388 bdb_db_open: warning - no DB_COMPIG file found in (lirectory ./data: (2)
Expect poor performance for suffix "dc-yealink.dc-com". 54986.308 bdb_nonitor_db_open: menitoring disabled; configure andded: "dc-yealink.dc-com" (00000003) added: "ourpoles.dc-yealink.dc-com" (00000005) added: "ourpoles.dc-yealink.dc-com" (00000005) added: "cn-Ess Users.ourroles.dc-yealink.dc-com" (0000000 added: "cn-Ess Users.ourroles.dc-yealink.dc-com" (0000000 added: "cn-Ess Users.ourroles.dc-yealink.dc-com" (00000000 added: "cn-Ess Users.ourroles.dc-yealink.dc-com" (00000000 added: "cn-Ess Users.ourroles.dc-yealink.dc-com" (00000000 added: "uid-jbloggs.ourpeople.dc-yealink.dc-com" (000000000) added: "uid-jbloggs.ourpeople.dc-yealink.dc-com" (000000000) added: "uid-jbloggs.ourpeople.dc-yealink.dc-com" (000000000) added: "uid-special.ourpeople.dc-yealink.dc-com" (000000000) added: "uid-special.ourpeople.dc-yealink.dc-com" (000000000) BUBLINNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN) 9875 33

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	-141
ile Tools	
Open last configuration	
Configurations	
Quit	

3. Click New to create a new configuration.

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

Configuration Server Conr	nection Option SSL/TLS
Configuration name	LDAP

 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.

onfiguration		
Configuration Serv	er Connection Op	ition SSL/TLS
Server name or IP	10.3.6.128	
Server port	389	🖓 Use default port
Server SSL port	636	🖓 Use default port
Version	63 ~ 2	
	Test connection	<u>n</u>
	Ok C	ancel

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

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

User DN	syealink,dc=com	T Anonymous login
Password	*****	Store password
Use SSL port	C Yes G No	
Use TLS	C Yes ^{(*} No	(TLS is only used on non SSL ports)
Base DN	dc=yealnk,dc=ci	Guess value

- 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:

 Click File->Configurations, select the configuration created above, and then click Open. The screenshot for reference is shown as below:

1. (EXPErience Text 3)

 Har Text
 In Antipedia, do note

 In antipedia, do note
 In Antipedia, do note

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

in the start	ealink,deweery	≚ outvoles,dctynalisk.dctcore	
	Britry.	B I	
- 68	Add		
- 49 - 49 - 49 - 49 - 49 - 49 - 49	Copy to		
- 48	Berame.		
- xik	Ante-		
- 536	Search.;	le la	

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.

Parent DN	Constanting day		
	ou=roles,dc=yea		
Entry RDN	cn=Hebe Tian		
Object class (from schema)	person		
Object class (manual)	-		
Tian on a objectCless person telephoneNum 5578	WINCH HODE	s that of cn conf DN field.	gured in the Entry
	MAY att		
81 C1	userPas	sword reflamber	
	userPas	sword mellumber	
81 [21	userPas seeAbo	sword mellumber	

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		
III Rock droppalist, dz-ocze je outrolien uni Tjert Usery uni Special Usery uni Special Usery uni Special Usery uni Special Usery uni Special Usery uni Special Usery uni Special uni Special	Im Hole Textury councils published using Integlement/unrober Washingtoneal/Unionation wood/Winneschereg transdorm/Name wood/Winneschereg object/Data object/Data woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON woog/ON	

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 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.

Choose a Deployment Configuration You can create a domain controller for an existing forest or for a new forest.	
-	
C Add a domain controller to an existing domain	
C 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**.

🖥 Active Directory Domain Services Installation Wizard	X
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	
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 > 0	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.

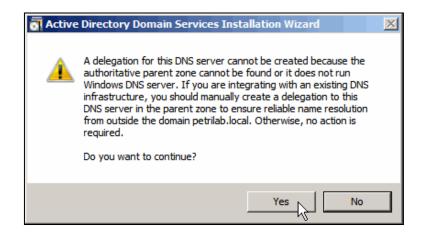
Active Directory Domain Services Installation Wizard Set Domain Functional Level Select the domain functional level.	×
Domain functional level: Windows Server 2003	
Details: The features av following addi - Cor adv mea - last upc More about <u>domain and forest functional levels</u>	e is s
< Back N	Next > 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 from Administrator account.	the domain
Assign a password for the Administrator account that will be used when this controller is started in Directory Services Restore Mode. We recommend that 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.

	in Services Installation Wizard Completing the Active Directory	
	Domain Services Installation Wizard	
	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.	
	To close this wizard, click Finish.	
	K Back Finish Cancel	1.

Installing Active Directory Lightweight Directory Services Role

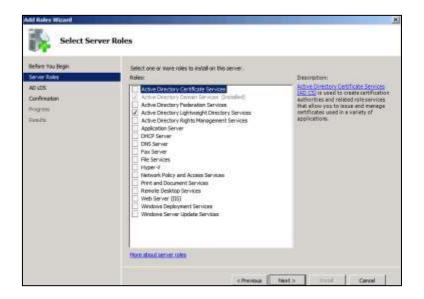
You should also install the Active Directory Lightweight Directory Services role on Windows Server 2008 system.

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.

dd Roles Waard		1
Before You Be	ngin	
lefen You Repr Jerver Aules Jervfrauten	This variant height you initial roles on this server. You determine which roles to notal based on the tools you each the server to perform, such as sharing documents or houting a Web site. Before you continue, verify that:	
Program Resulta	The Administrator eccount has a shoring parameter Network settings, such as static IP addresses, we configured The latest security updates from involven Lpdate are mitabel	
	If you have to complete any of the preceding steps, cancel the waterd, complete the steps, and then non the webrid agon.	
	To certinus, doi: least.	
	Step the page by default	
	interim Nexts rest Cense	

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



- 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 Active Directory Active Directory Active Directory Active Directory Active Directory Degnostics Diagnostics Configuration Storoge	Voman Services ny Users and Computers [yl0215.ldap Delegate Control Find Change Domain Change Domain Controller Raise domain functional level Operations Masters	Computers		Default cc Default cc Default cc Default cc Default cc Default cc	Idappyealink.com More Actions	
	New Image: Provide and Provide and Provide and Provide and Properties Properties Help	Computer Contact Group InetOrgPerson msImaging PSPs MSMQ Queue Alas Organizational Unit Printer Shared Folder				

4. Enter the desired name of the organizational unit.

New Object - Organizational Unit	X
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 Hanager							- D ×
File Action View Hel		-					
Server Manager (11.021)				bjecta (Filter Activa		Actions	
Roles			Name	Type	Descriptio	yeahik	
(⊂ ∰ Klap.ye (⊂) → Bul (⊂) → B	ectory Users and Computers [v0215.klap evalution orgouters seegroceuntryPrincipals anaged Service Accounts erem Delegate Control		There are no items to show in this view.			More Actions	
(e) gint Diagnostics (e) gint Configuration (e) gint Storage	New P Al Tasks P Cut Delete Rename Refresh Export List Properties	Computer Contact Group InetOrgRe msImaging MSMQ Que Organizati Printer User Shared Fol	rson 1459s eue Allas ional Unit				
4	Help		1.1		1 1		

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.

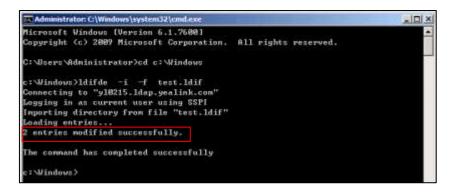
Execute the command cd to access the path of the test.ldif file. For example, execute cd c:\Windows to access the path of the test.ldif file at c:\Windows.



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:

1	test ear # X									
	4	R . 1	- C -	P.	E	- P	-C	in the Balan	1	2
1	DN	objectClass	ou	nme	cn	ain -	givenName	initial #	ipPhone	mobile
	OU=yealink, DC=1dap, DC=yealink, DC=com	organizationalUni t	ynnlink	ycalink						
	CM=san zhang, 60=yenlink, BC =1dap, BC=yenlink, BC =com	contact		uan zhang	san zhang	240	zhang	9 7	1111	123456789001
	CN=si 11,00=yealink,DC=1d ap,DC=yealink,DC=co			ni li	ei li	11	ei	al .	2222	123456789002
	CH=wu wang,OH=yealink,BC= ldsp,BC=yealink,BC= com	contect		wu wong	wu wang	wong	***		3333	123456789003

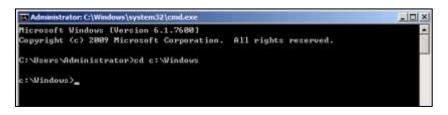
The first line lists the attributes of the entries.

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:

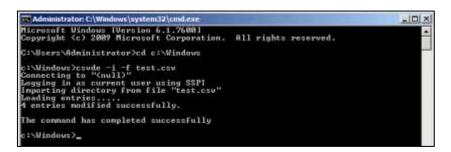
- 1. Click Start->Run.
- 2. Enter cmd in the pop-up dialogue box and click OK to enter the command line interface.
- Execute the command cd to access the path of the test.csv file. For example, execute cd c:\Windows to access the path of the test.csv file at c:\Windows.



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 (11.0215)	Users 16 object	s [Filter Activated]		Actions		
Roles G Active Direct	tory Domain Se	Name	Type	Description	Users	
	Delegate Co Find	88, Cert Publishers 89, Deneral ROD 84, Donan Com 84, Donan Com 84, Donan Com 84, Donan Com 95, Com 96, Com	Security Group Security Group	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		×
Create in:	Idap.yealink.com/Users	
First name:	san Initials: sz	
Last name:	zhang	
Full name:	san sz. zhang	
Userlogon name: Idapuser1	@ldap.yealink.com	
, User logon name (pre-	Windows 2000):	
LDAP\	Idapuser1	
	< 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	×
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	el

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

New Object - User	×
Create in: Idap.yealink.com/Users	
When you click Finish, the following object will be created:	
Full name: san sz. zhang	<u> </u>
User logon name: ldapuser1@ldap.yealink.com	
The user must change the password at next logon.	
	T
,	
< <u>B</u> ack [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>N</u> ext >] 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 💦
r p	Please read the following license agreement. To continue with setup, you must accept the agreement. MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS MICROSOFT ACTIVE DIRECTORY APPLICATION MODE SERVICE PACK 1 FOR MICROSOFT WINDOWS SERVER 2003
	Affiliates) licenses this supplement to you. If you are licensed to
	CI <u>D</u> o Not Agree <u>Print</u>
	< <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
Network service and service	m operations using the permissions associated with the following account.
Lhis 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 Sebig Witned	
4	You have selected a system server account for this 40/41 extance. Decaper the computer is not a member of an active Decatory downs, the indexes without to able to register data with allott indexes or attract angulates with used the server account.
	De you want to continue?
	20 8

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.	
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.	
© 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 Mode Setu	ıp Wizard 🔀
Importing LDIF Files You can import data from Lightweight Dire your ADAM application directory partition.	
To configure the ADAM service in a specific w below.	vay, import one or more of the LDIF files listed
O Do not import LDIF files for this instance of	ADAM
Import the selected LDIF files for this instar	nce of ADAM
A <u>v</u> ailable files:	Selected LDIF files:
	MS-AZMan.LDF MS-InetOrgPerson.LDF
[[MS-User.LDF
	MS-UserProxy.LDF
<- <u>F</u>	3emove
< <u>B</u> ack	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.			

The installing progress is shown as below:

🖶 Active Directory Application Mode Setup Wizard	×
Installing ADAM The ADAM Setup Wizard is installing ADAM.	\mathfrak{F}
Installing ADAM	
Please wait while the wizard completes the following steps.	
✓ Copied files	
Configuring the local computer to host Active Directory	
< <u>B</u> ack <u>N</u> ext > Cancel	Help

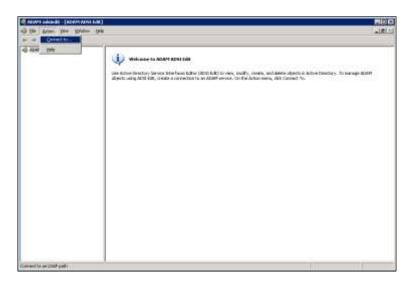
12. Click **Finish** to complete the installation and exit the wizard.

掃 Active Directory Applicati	ion Mode Setup Wizard	×
A	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.

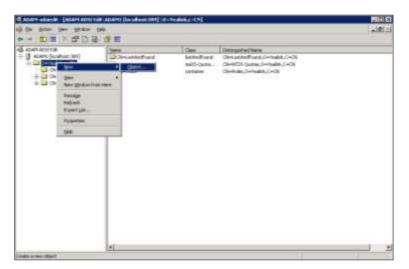
Connection Settings	X
⊆onnection name:	
ADAM1	
Server name:	Port
localhost	389
Connect to the following node:	
• Distinguished name (DN) or naming context:	
β=Yealink,c=CN	•
O Well-known naming context:	
Configuration	7
Connect using these credentials:	
Intersection of the currently logged on user	
O This account:	
User name:	v
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 ACTER OF	E Page 10	Class	Eistingusheid Name	
ADAM [bealweit:170] Constant, and M Constant, and M	46:491 [bu about: 101]	aðadegas		

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

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

			,181.
Construction Co	Arra Age Harr	i Den Notrastettere Han an istanctuiter in fre een	

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	
<u>P</u> ath: Class: user	
Select which properties to view	r: Optional 💌
Select a property to view:	telephoneNumber
Attribute Values	
Synta <u>x</u> : DirectoryString	
Edit Attribute:	
V <u>a</u> lue(s): 1003	
	Set <u>Clear</u>
	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 effect	off and then log on again for the t.	
	OK Cancel	

13. Click OK to accept the change.

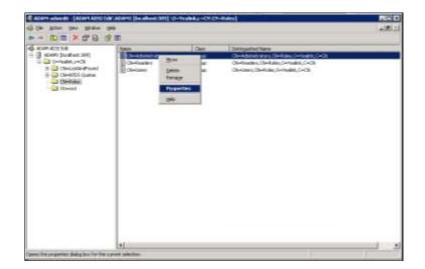
If you want to use the user created above to manage and search information of LDAP, you need to add the user to the administrator group in advance.

To add the user to the administrator group:

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

Che Arteri Der Minden D 	**	Profestar 111/11	() () () () () () () () () ()	
Control (Control (Contro) (Contro) (Contro) (Contro) (Contro) (Contro) (Contro) (Contro)	Peter Contractions Contraction Contraction Contraction	Own over over over over over	Distring gifted Poses Chevilsening of the Contract of Contract of Contract Chevilsening (Starting, Contract), Contra Chevilsening, Chevilsening, Contract of Contract Chevilsening, Chevilsening, Chevilsenin	
	el			

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



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**.

Jome Ministrators	Container //BBCE497C-9680-44AB-907	Distinguished Name 71-2030/00300 Chi-Administrators, Chi-Robit, Chi-Co	-
Carlo Carlo Millorg	ABB 4475 1999 1999 1997		and the
1			

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.

lame	Container	Distinguished Name
dministrators	(28022497C-9680-4448-9071-28380030 Add ADAM Account: Erter a dirstinguished name (DN) for	
1	CNimuser1001,0Umout,om/resilink,	(-Ol

- 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	_ D X
Microsoft Windows (Version 5.2.3790) (C) Capyright 1985-2003 Microsoft Carp.	
C:\WINDOWS\ADAM>dsacls \\lecalhest:389\s=Yealink,c=CM Owmer: CN=Administrators,CN=Roles,O=Yealink,C=CN Group: CN=Administrators,CN=Roles,O=Yealink,C=CN	
<pre>Rccess list: Allow CM-Instances.CN-Boles.CN-Configuration.CN-(B&CE497C-9688-4- 0BCPD)</pre>	4A8-9871-283BDØJ
SPECIAL ACCESS READ PERMISSONS LIST CONTENTS READ PROPERTY LIST ORJECT	
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=Reles,CN=Configuration,CN=CB8CE497C-9688-44 GBCFG)	4AB-9871-2833D83
Replicating Directory Chan Allow CN-Instances, CN-Reles, CN-Configuration, CN-(B8CE497C-968B-44 (B8CFW)	gés 488-9871-283DD03
Replication Synchronization Allow CN=Instances.CN=Reles.CN=Configuration.CN=CBSCE497C-9688-4 BBCF0>	
Hanage Heplication Topolog Allow CN-Instances,CN-Roles,CN-Configuration,CN-CBSCE497C-9688-4 (BBCFM)	4A8-9871-2831D83
Replicating Directory Chan	ges All
Permissions inherited to subobjects are: Inherited to all subobjects Allow CM-Readers,CM-Roles,O-Yealink,C-CM	

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

# Copyright (c) 1993-	1999 Microsoft Corp.	
# This is a sample HO	STS file used by Micro	soft TCP/IP for Windows.
	a para mana manga mana ang kata ang kat Ng kata ang k	
This file contains	the mappings of IP add	resses to host names. Each
# entry should be kep	t on an individual lin	e. The IP address should
# be placed in the fi	rst column followed by	the corresponding host name.
The IP address and	the host name should b	e separated by at least one
space.		
		y be inserted on individual
# lines or following	the machine name denot	ed by a '#' symbol.
l		
# For example:		
Constant Constant		
102.54.94.97	rhino.acme.com	source server
\$ 38.25.63.10	x.acme.com	<pre># x client host</pre>
127.0.0.1 local	nost	

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**.



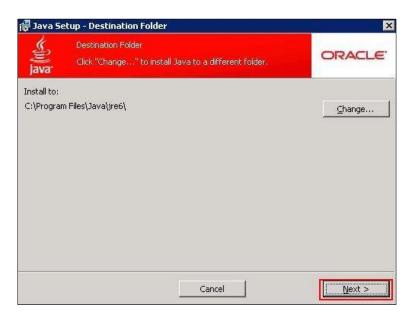
 Click Change to locate the installation path from local computer system and then click Next.

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:

SE Development Kit 6 Update 2	2 - Custom Setup	×
Custom Setup Select the program features you w	ant installed.	ORACLE
	ility in the Control Panel Feature Descrip Java(TM) SE De	ution welopment Kit 6 uding private JRE his will require
files\Java\jdk1.6.0_22\	: Back Next >	
	Custom Setup Select the program features you we al features to install from the list belo y using the Add/Remove Programs ut	Select the program features you want installed.

í₽ Java(TM	1) SE Development Kit 6 Update 22 - Progress	
(i)) Java	Installing The program features you selected are being installed.	ORACLE'
Status:	Extracting Installer	
-		





Java(TM) SE Devel	opment Kit 6 Update 22 - Complete	
ے۔ ava		ORACLE
Java(TM) SE Devel	opment Kit 6 Update 22 Successfully Inst	alled
* 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 and t presented. If you do not register, none of thi	
For more information of	n what data Registration collects and how it is i Registration Information Page.	managed and
	Product Registration Information	

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;).

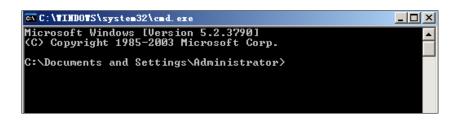
If the end of the existing path has no semicolon, you should add a semicolon to the end of the existing path and then append the Java bin directory.

ſ	Edit System Variab	le ? 🗙
	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.

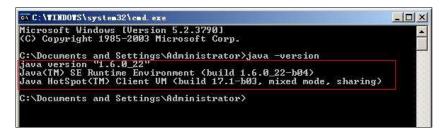
To verify the configuration of environment variables:

- 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.

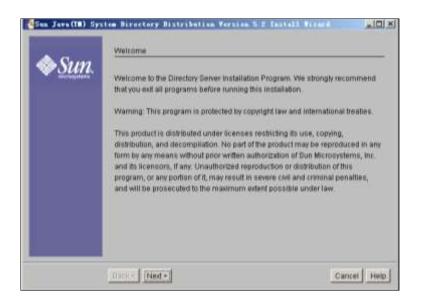
It prompts the following information.

crosoft Windows [Version] > Copyright 1985-2003 Mic:	
Documents and Settings A	
age: javac (options) (som	
-q	Generate all debugging info
ginone	Generate no debugging info
-g:(lines,vars,source)	Generate only some debugging info
-nowarn	Generate no warnings
-verhose	Output messages about what the compiler is doing
deprecation	Output source locations where deprecated APIs are
d -classpath <path></path>	Specify where to find user class files and annota
processors	specify where to this user class files and annucl
-cp (path)	Specify where to find user class files and annota
processors	
-sourcepath (path)	Specify where to find input source files
-bootclasspath (path)	Override location of bootstrap class files
-extdirs (dirs)	Override location of installed extensions
-endorseddirs (dirs> -proc:(none.only)	Override location of endorsed standards path Control whether annotation processing and/or com
ion is done.	control whether annotation processing and/or comp
	192). (class3) Wames of the annotation processor:
run; bypasses default disc	
-processorpath <path></path>	Specify where to Find annotation processors
-d (directory)	Specify where to place generated class files
-u (directory)	Specify where to place generated source files
-implicit:(none.class)	Specify whether or not to generate class files fo
plicitly referenced files	Sandfor characters secondly and the second filling
-encoding (encoding) -source (release)	Specify character encoding used by source files Provide source compatibility with specified relea
and the statements	travial source compactnicity with spectrical relet
-target (release)	Generate class files for specific UM version
-version	Version information
-help	Print a synopsis of standard options
-AkeyE-valuel -X	Options to pass to annotation processors
-X -J(flag)	Print a synopsis of nonstandard options Pass (flag) directly to the runtime system
-ovi lagy	rass vriago nipercity co the punctue system

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.



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



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

C.u.	Type of Insta	dation	
◆ <u>Sun</u> .	Choose the t	type of installation you prefer, then Click Next	
	C Express	Installation option choices are made automatically installation and recommended for evaluating the pro-	
	C Typical	Boftware will be installed with the most common op Recommended for most deployments.	Dons.
		You may choose the options you want to install. Rec for advanced users.	ommended

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

Directory to install Directory Server component	ente:
C 'Program Files\Sun\MPS	Browse
	Directory to install Directory Server compone C. Program Files\Sun\MPS

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	Directory Server components showing a checked box will be installed.
	E 🛱 Sun Java(TM) System Directory Suite 27.98 MB
	E 🖓 Sun Java(TM) System Administration Services 5:07 MB
	B 🛱 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 10.84 MB

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

€ <u>Sum</u> .	You may store Sun Java(TM) System server configuration intormation in anoth	her
	Sun Java(TM) System Directory Server. If you have already prepared a configuration server, you may configure the new server to use it.	
	The new instance will be the configuration Directory Server	
	C Use existing configuration Directory Server	
	Host	
	Port. 399	
	Bind As: admin	
	Password:	

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

� <u>Sun</u> .	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
	Bing As _ cm/Directory Manager
	Password:
	Buffic desyealiaktest, descon

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

Sun Java (18) Syx	Directory Server 8	stratestand Version 5.5 Justial Langet Settings server will use for basic operation	
	Server identifier Server Port	[1depsus. 2051] [de=yealinkteat, de=cem	
	Suffic	Designation of the second	
	Back + Next +		ancel Help

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

♦ <u>Sun</u> .	The Directory Admin Configuration Direct	nistrator ID is used to register the server with the tory Server
	Administrator ID:	adbin
	Password.	*****
	Password (again)	[******

14. Follow the default setting and click Next.

♦ <u>Sun</u>	Comparison of the contract	unique name for the administration domain, such as
	the name of the organiza	don responsible for managing the domain.
	Administration Domain	yealishtest.com

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

The password must be at least 8 characters long.

Cause	Directory Manager Settin	ngs
♦ <u>Sun</u> .	Enter a Distinguished N least 6 characters long	lame (DN) for the Directory Manager and a password at
	Directory Manager DN	comDirectory Manager
	Password.	*****
	Password (again).	*****

- Create Sample Entries

 Create Sample Entries

 Create Sample Entries

 Create Sample Entries

 Create Sample Organizational entries, creating a default directory tree structure

 Create Sample Organizational Structure

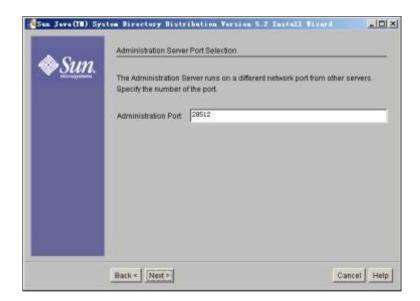
 Back * Net * Cancel Help
- 16. Check the Create Sample Organizational Structure check box and click Next.

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

<i></i> <u>♦Sun</u>	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
	Populate with sample data Populate with LDIF file
	File name

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





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



The installing progress is shown as below:

A 0.	Installing_	
<i></i> ♦ <u>Sun</u>		
	Installing Sun Java(TM) System Directory Server	

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.

<u>Sun</u>	The Directory Server Installa	dina atatise se ohmun hair	
	Product	Status	Information
	Directory Server	Installed	Details
	•		

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} Sun Jawa (T∎)	System Server Consol	e Login X
0.00	User ID:	cn=Directory Manager	
Ser	Password:	****	
	Administration URL:	http://idapsun.yealinktest.com	m:28512 💌
apyright 20		<u>OK</u> <u>C</u> ancel	Help

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: System Server Console Deven and Apploators User and Group Druck View I Console yearder console yearder console Department yearder console Department yeard	10
Veneralizet core Second Proof Control	
<u>by.</u>	

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

Stagens peakinktert con - Sun Java (12) System Directory Server - Lagens Cream Bill Your Hep	
Sun Java " System Directory Server v=================================	
Start Directory Server	4
Stop Directory Server	
Restart Directory Server	
Back up Directory Server	
Restore Directory Server	
Manage Certificates	
Log in to Directory Server as a new user	
	1

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

Aldapson yealishtest com oncole Em View Criect He	- San Jawa (28) System Bir	ettarp Server - Léopian	
Sun Java System		Versen 5 2	
Same in the states and the states	A Desctory Administrators	79	
dor-scoregie (dor-score (d) dor-score (d)	Service Color Caller End With Generic Enfor Speech View Ethnoliwe Rights		
+ _ orfetscaueRoot (3 acis	Ne-	(Jter.	
crivachenia (5 acis) crivachenia (5 acis)	269/100011800011	Group.	
- (a criscartig (4 ecis)	Set Access Pergeotors. Cu141	 Organizational Unit 	
	Set Boles. Set Eastward Policy.	Role	
	Create Browsky Index	Easeward Policy	
	n anala Tanan ata	Otter.	
	Cig Cig1+5		
	Capil CerleC		
	Patte Etv1+P		
do-vealinidest.ac-com	Dennis Ctrl+)		
	Rebein Cuita		

5. Enter the desired name of the organizational unit.

🎄Create New Or	ganization	1 Unit	×
Create You Or	* Name: Description: Phone: Fac: Allas:	0.2	×
	Address:	* Indicates a required field	
Access Permissio	ons Help	QK Qancel Help	

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

Contole Ettl	Edd With Custom Enfor City1+9 Edd With General Enfor	System Birectory Server - Längrum	
Sun Ja	Search	Ver Weson 5.2	
Tatka:		Un .	
E Manual yr	(EMPAGE)	San .	
D Cradowa	Set Access Pergissions Ctr1+L	Organizational Unit	
2 Cardonya	Set Rober	Role.	
- 22 0-	Set Excemple Policy	Cigos Of Service	
11 Pa 11 Pa	Create Browstrig Index	Pacawers's Policy	
- H.	Contraction of the local	Referral	
H- Contractor	- Second	Office	
- O 01+80	parries .		
+ Come	Cirl+I		
21- 🛄 OleCol	Cupy Curl+C		
	Pante Ctritt		
	Delata (tr2+)		
	Belesh Civita		
br	191		
ounau2,donymat	rvitest,do-core		2

8. Enter the desired values in the corresponding fields.

Crests New			Phone
4			Fa
Loer Languages	* First Name:	user1	
NT User Posix User	*Lest Name:	In	
Account	* Common Name(s):	user1 In	
	User ID	uin	
	Password		
	Confirm Password	Ferrerer	
	E-Mail	(e.g., une	en@company.com)
	Phone	1001	C. C
	Fax		
	1.22	* Indicates a required field	
0000000000000	Vesions Help	OK Carcel	Hole

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

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

Oldapsen perfisitions and Be Genode Edit Vere Glassi And	s Jars(18) System Directory Server - Lâspans	داهلم
Sun Java System	and the second se	
Mapsun vesilitizet con 2651 do-complete con (2 ecit) do-complete con (2 ecit) do-complete con (8 ecit)	A ser	
e e e e e e e e e e e e e e e e e e e		

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.

Soldspress, yealinktest, com - Son Java(ID) System Directory Server - Idapann Consde 58. yjew Heb	=OX
Sun Java System Directory Server Version 5.2	
Tecks Configuration Directory Stratus	_
Stop Directory Server	1
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.

SImport LBIF	NAMES OF TAXABLE PARTY.	X
LDIF file (on console machine)		Browse.
F Add only		
Continue on error		
File for rejects:		Browse.
	Qencel	<u>.</u>

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

Saport LHIF	×
LDF Tile (on console mechine):	est kir
Add only	
Continue on error	
Me for rejects.	Djowse
	QK Cencel 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 finished. 2 objects imported, 0 objects rejected Rejected objects:
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	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 Filter			
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		

F						
	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	•					
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 (1~32	000)						
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	Name						
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 I	For 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	 when placing a call. O-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 (Idap.name_filter)". If not, the phone will match the search criteria in the parameter "LDAP Number Filter (Idap.number_filter)" 					
LDAP Sorting R	lesults					
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 S	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 "Idap.call_in_lookup" is set to 1 (Enabled). You may need to set the value of the parameter "Idap.name_filter" to be ((cn=%)(sn=%)(telephoneNumber=%)(mobile=%)) for searching the telephone numbers starting with "+" symbol. It is only applicable to IP					

phones running firmware version 80 or later.

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.

	Status	Account	Network	Dsskey	Features	Settings	Directory Security		
Local Directory		Enable LDAP		Enabled	•	0	NOTE		
Remote Phone		LDAP Name Filter		(((c=96))(a)=96))		0	LDAP		
Book		LDAP Number Filter		()(telepho	()(telephoneNumber=%)(n		LDAP (Lightweight Directory Access Protocol) 6 an		
Phone Call Info	LDAP TLS Mode			LDAP	•1	0	application protocol for accessing and maintaining		
and the second second		Server Address		10.2.1.55		0	information services for the detributed directory over an IP		
LDAP		Port		309			network.		
Multicast IP		Ease .		dc=yeabs	k,dc=c=	0	Yealnk IP phone can interface with a corporate directory		
Setting	Usemanie			on=managet,dc=vealink,dc+		0	server that supports (DAP version 2 or 3, such as		
		Pasaword			(0)	0	OpenLDAP, Microsoft Active Directory, Microsoft Active		
		Max HEL (1~320)	10)	10		0	Directory Application Hode (ADAM) or Sun One Directory		
		LDAP Name Attributes LDAP Number Attributes		on en mable pithone		0	Server.		
						0	You can click here to get more cuides.		
		LDAP Display Name				0	100 M 100 M 100		
		Protocol		Version 3		0			
		LDAP Lookup Far	Incoming Call	Erabled	•	0			
		LDAP Lookus For	Callout	Enabled	•	0			
		LDAP Sorting Rea	uta	Enabled		0			

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/W56P/W60):

- **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	Status	Ac	ount	Netw	ork D	sskey	Feature	-)(Settings	Directory	Securit
Line Key1-9	Enible Page	Title Disab			Label	Length Dela	u).	•		NOTE	
	Key	Typ	e	. Q	ile.	Lubel	Une		Eitensen		
the Reysol 10	Line Keys	1014	•	Default	•	1028	Les 1	•	1	Line Keys Line keys allo	w you to quick!
Line Rey19-27	the Key2	LDAP		-		1.	16/A -	•		access features such as in and apace mail.	
Programable Kry	Line Key3	Lite		Default	•		Line 3	•			
Ext. Nex.	Lite Key4	Lite	•	Default			Line 4	•		Wou can o more guides	slick here to ge
	Une KeyS	Line		Default			Une 5				
	Line Key6	Lité.	•	Default	٠		Les é	•			
	Une Key?	Line	20	Default			Live 7	٠			
	Line Keyő	Lite	٠	Default	•		Line 8	•			
	Line Keyl	Line		Default			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.name_filter	These parameters	Directory->LDAP->LDAP Name Filter	
ldap.number_filter	specify the LDAP attributes. Refer to the	Directory->LDAP->LDAP Number Filter	
ldap.tls_mode	introduction above for more	Directory->LDAP->LDAP TLS Mode	
ldap.host	information.	Directory->LDAP->Server Address	
ldap.port		Directory->LDAP->Port	
ldap.base		Directory->LDAP->Base	
ldap.user		Directory->LDAP->Username	

Parameter	Descriptions	Web Setting Path
ldap.password		Directory->LDAP->Password
ldap.max_hits		Directory->LDAP->Max Hits (1~32000)
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_spec ial_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 corresponding auto provisioning guide:

For Yealink IP phones running old firmware version (old auto provisioning mechanism), refer to Yealink_SIP-T2 Series_T19(P) E2_T4_Series_CP860_W56P_IP_Phones_Auto_Provisioning_Guide.

For Yealink IP phones running new firmware version (new auto provisioning mechanism), refer to *Yealink SIP IP Phones Auto Provisioning Guide_V81*.

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.

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
ldap.numb_attr= mobile telephoneNumber ipPhone
ldap.display_name= %cn
ldap.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 memory key, a line key or a programable 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/W56P/W60 IP phones) (CP960: X ranges from 1 to 30; SIP VP-T49G/SIP-T48G/T48S: X ranges from 1 to 29; SIP-T58V/T58A/T56A/T54S/T46G/T46S/T29G: X ranges from 1 to 27;	Configures a line key as an LDAP key on the IP phone.	38

Parameter	Description	Value
SIP-T42G/T42S/T41P/T41S: X ranges from 1 to		
15;		
SIP-T52S/T27P/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 for CP960/W52P/W56P/W60 IP		
phones)		
(SIP-T58V/T58A/T56A: X=12-14;		
SIP VP-T49G: X=1-4, 12-14;	Configures a	
SIP-T54S/T48G/T48S/T46G/T46S: X=1-10, 12-14;	programable key as an LDAP key on the IP	38
SIP-T52S/T42G/T42S/T41P/T41S/T40P/T40G:	phone.	
X=1-10, 13;		
SIP-T29G/T27P/T27G: X=1-14;		
SIP-T23P/T23G/T21(P) E2: X=1-10, 14;		
CP860/CP920: X=1-6, 9, 13)		

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 corresponding auto provisioning guide: For Yealink IP phones running old firmware version (old auto provisioning mechanism), refer to *Yealink_SIP-T2 Series_T19(P) E2_T4_Series_CP860_W56P_IP_Phones_Auto_Provisioning_Guide.* For Yealink IP phones running new firmware version (new auto provisioning mechanism), refer to *Yealink SIP IP Phones Auto Provisioning Guide_V81.*

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 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 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:

Ninging	E .		
 2224 € 2900 	Hebe Tian 5578	2	
LDAP	C C C.	A.>.>.	
Answer	FWD	Silence	Reject

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.

40 2900			
@ 2224	55		
\$2900	Hebe Tian	5578	
LDAP			
_		_	<u>.</u>
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 W52P/W56/W60 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.

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

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