LDAP Server Guide

Version 2.0

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Yeastar Information Technology Co. Ltd.

Contents

Introduction

LDAP stands for Lightweight Directory Access Protocol which is a client-server protocol for accessing a directory service. Yeastar S-Series PBX has an integrated LDAP server, to provide a centralized phonebook management. With the LDAP phone book, you can quickly launch calls without wasting time finding a contact's number and subsequently entering it on your phone.

This guide explains how to configure S-Series LDAP server and how to use LDAP phonebook on IP phones.

## What kind of information can be stored in the LDAP 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 depend 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".

Common LDAP Attributes

| Yeastar LDAP Server Option	Attribute	Alias
Nickname	cn	commonName
Department	N/A	departmentNumber
First Name	gn	givenName
Home Number	homePhone	homeTelephoneNumber
Email	mail	rfc822Mailbox
Mobile Number	mobile	mobileTelephoneNumber
Phonebook Name	ou	organisationalUnitName
Last Name	sn	surname
Office Number	N/A	telephoneNumber

How is the information arranged?

In LDAP, directory entries are arranged in a hierarchical tree-like structure. The following figure shows an example of S-Series LDAP directory tree.
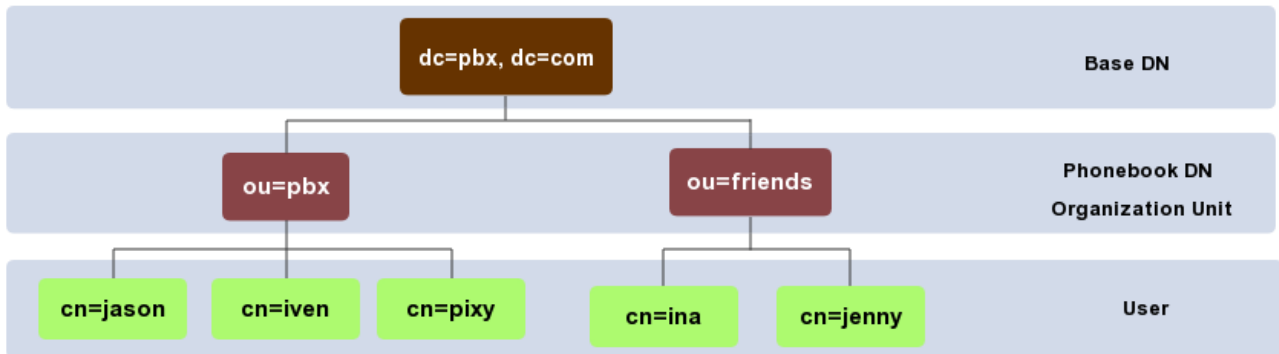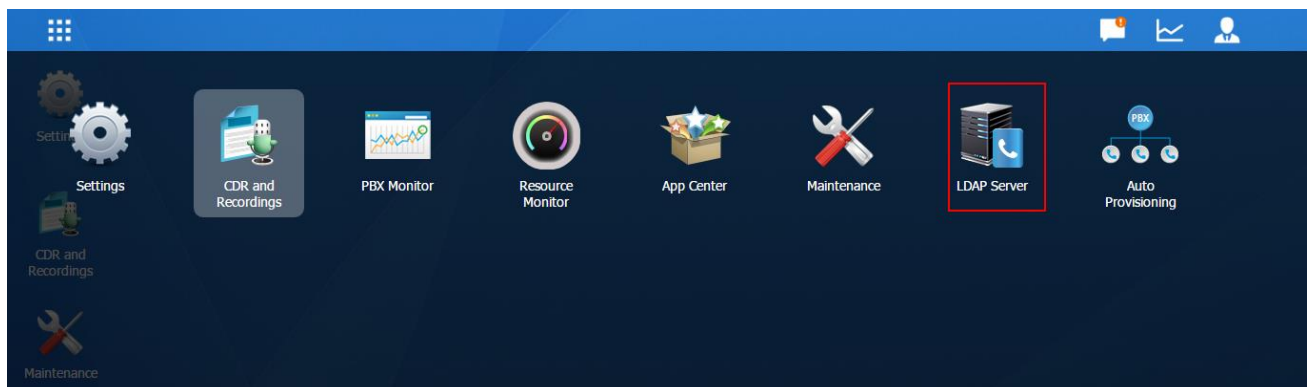
Installing and Configuring the LDAP Server

Installing LDAP Server

1. Log in S-Series Web interface, go to **App Center**, find LDAP server and install the App.
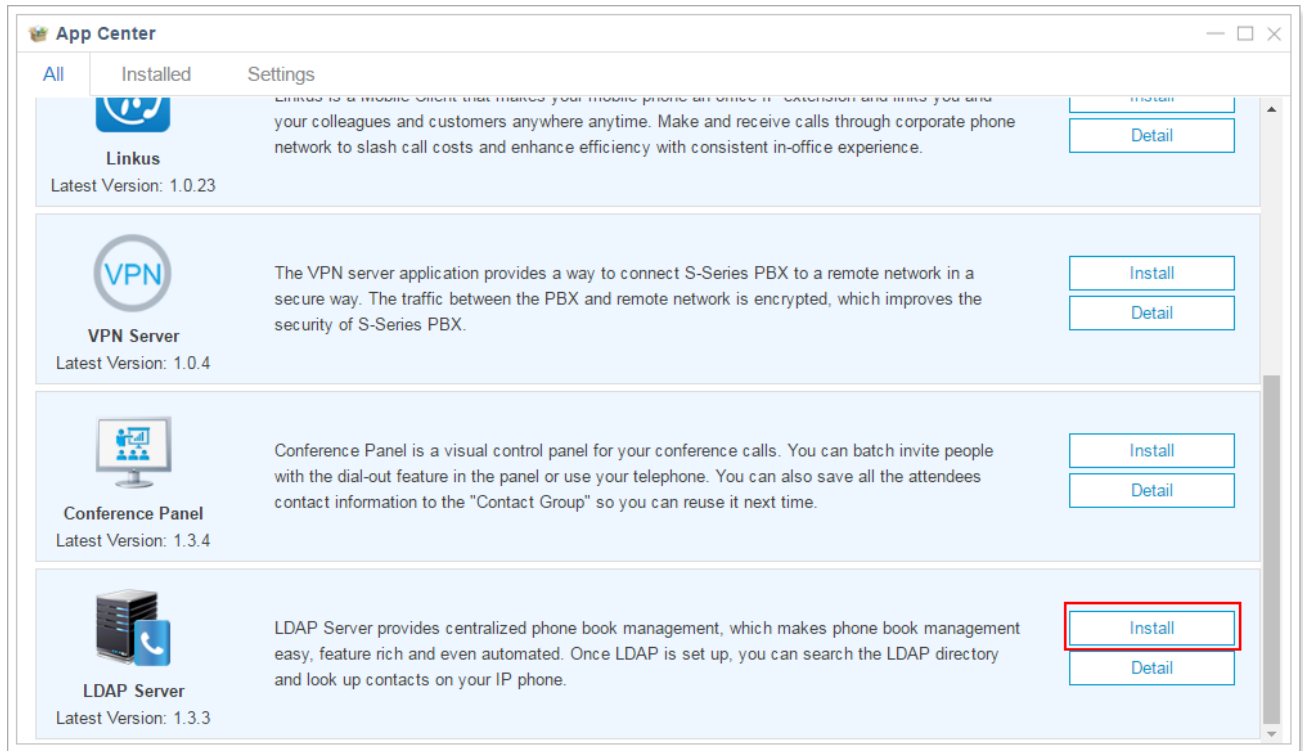
2. Once installed, you can find LDAP server on **Main Menu**.

Configuring LDAP Server

To start with, check the option "**Enable LDAP Server**" and click "**Save**", the page will show "LDAP is running".

The LDAP server is preconfigured already. Please check the description for LDAP server attributes.

Option	Description	Examples
Base DN	Specify the LDAP search base which corresponds to the location in the LDAP phonebook. The search base narrows the search scope and decreases directory search time.	dc=pbx,dc=com
PBX DN	The default phonebook DN.	ou=pbx,dc=pbx,dc=com
Username	Specify the username to login the LDAP server.	cn=admin,dc=pbx,dc=com
Password	Specify the password to login the LDAP server.	password

LDAP Phonebook

Default Phonebook

The LDAP server has a default LDAP phonebook with **PBX DN** "ou=pbx,dc=pbx,dc=com", which is synchronized with the extensions on the S-Series PBX.

Click ✎ to view the phonebook "pbx".

Note:

- You cannot add or delete the contacts in the default phonebook directly. Go to "Settings > PBX> Extensions" to configure extensions, the phonebook will be automatically updated.
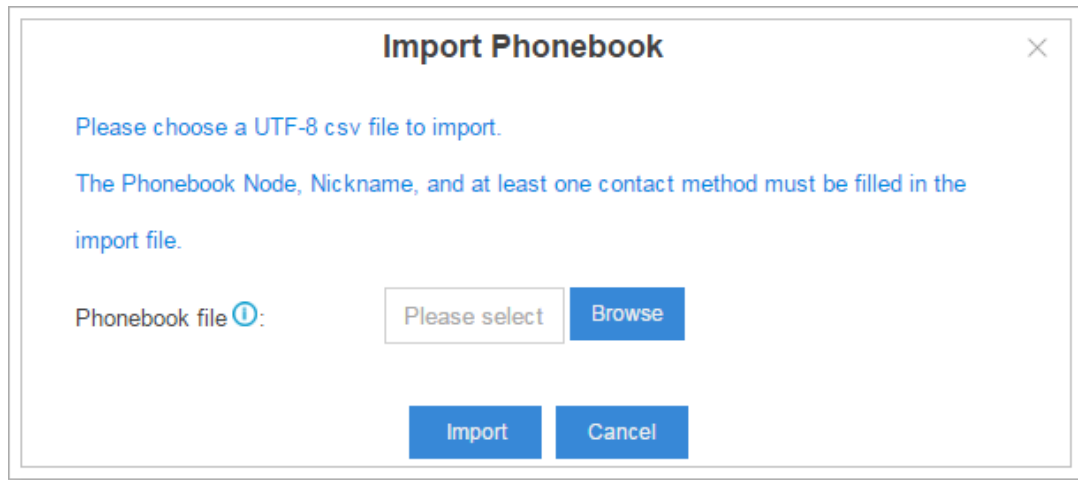
Adding a New Phonebook

1. Click "**Add**" to add a new phonebook.
2. Enter the phonebook name, the phonebook node will be automatically filled in.
3. Click "**Save**".

Once added, you can click ✎ to add and edit contacts in the phonebook, or click 🗑 to delete the phonebook.

Importing a Phonebook

1. Click "**Import**", you will see a dialog window shown as below.

2. Click "**Browse**" and select the file to start uploading. Check the sample file below. You can export a speed dial file from S-Series and use it as a sample to start with.

    In the CSV file, you can specify different phonebook Node fields for different contacts. The contacts in the CSV file will be added into the existing phonebooks.

    Note:
    - The file to be imported must be a CSV file with UTF-8 encoding. You can open the file with Notepad and save it with UTF-8 encoding.
    - Phonebook Node, Nickname and at least one contact information (Email, Mobile Number, Office Number or Home Number) are required in the CSV file.
    - Phonebook Node cannot be set to "pbx", which is the same with the default phonebook node.

	A	B	C	D	E	F	G	H	I	J
1	Phonebook	Extension	Nickname	First Name	Last Name	Email	Mobile Number	Office Number	Home Number	Department
2	yeastar		iven	iven	tang	iven@yeastar.com	4545241545	5925503301	5651322223	Marketing
3	yeastar		catherine	catherine	huang	catherine@yeastar.com	1654655555	5925503301	1565561655	Marketing
4	yeastar		Jenny	Jenny	Chan	jenny@yeastar.com	16841231515	5925503301	13431531522	Marketing
5	yeastar		Sharon	Sharon	Chan	sharon@yeastar.com	1565465535	5925503301	12313215613	Support

3. The sample csv file will result in the following speed dial in Yeastar S-Series.

Exporting a Phonebook

Select the checkbox of the phonebook, click "Export", the selected LDAP phonebook will be exported to your local PC.

Using LDAP on Yealink Phones

In this example we will demonstrate how to configure and use LDAP phonebook using a Yealink T41 (version 36.80.0.95).

1. Log in the Yealink phone web interface, go to "**Directory > LDAP**", Select Enabled from the pull-down list of Enable LDAP.
2. Enter the desired values in the corresponding fields.
3. Enable "**LDAP Lookup For Incoming Call**".
4. Enable "**LDAP Lookup For Callout**".
5. Enable **"LDAP Sorting Result"**.
6. Click "**Confirm**" to accept the change.

LDAP Attribute on Web User Interface

Attribute	Description
LDAP Name Filter	Specify the name attributes for LDAP searching. • The "*" symbol in the filter stands for any character. • The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.
LDAP Number Filter	Specify the number attributes for LDAP searching. • The "*" symbol in the filter stands for any character. • The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.

Server Address	Enter the LDAP server address.
Port	Enter the LDAP server port.
Base	Enter the LDAP server Base DN.
Username	Enter the user name to login the LDAP server.
Password	Enter the password to login the LDAP server.
LDAP Name Attributes	Specify the name attributes of each record to be returned by the LDAP server. The user can configure multiple name attributes separated by space.
LDAP Number Attributes	Specify the number attributes of each record to be returned by the LDAP server. The user can configure multiple number attributes separated by space.
LDAP Display Name	Specify the display name of the contact record displayed on the LCD screen. This parameter value must start with "%" symbol.
Protocol	S-Series LDAP server uses Version 3.

LDAP Configuration Example

The example configurations are set according to S-Series LDAP server default settings. You can use the following settings as a starting point and adjust the filter and display attributes according to your needs.

Enable LDAP: Enabled

LDAP Name Filter: (|(cn=%)(sn=%))

LDAP Number Filter: (|(telephoneNumber=%)(homePhone=%)(mobile=%))

Server Address: 192.168.6.216   /* Enter S-Series PBX's IP address.*/

Port: 389

Base: dc=pbx,dc=com

UserName: cn=admin,dc=pbx,dc=com

Password: password

Max.Hits(1~32000): 50

LDAP Name Attributes: cn sn displayName

LDAP Number Attributes: telephoneNumber homePhone mobile mail departmentNumber

LDAP Display Name: %cn

Protocol: Version 3

LDAP Lookup For Incoming Call: Enabled

LDAP Lookup For Callout: Enabled

LDAP Sorting Results: Enabled

Configuring an LDAP Key

1. Log in the Yealink phone web interface, go to "**DSSKey > LineKey**".
2. Choose a DSS key, select key type to "**LDAP**".
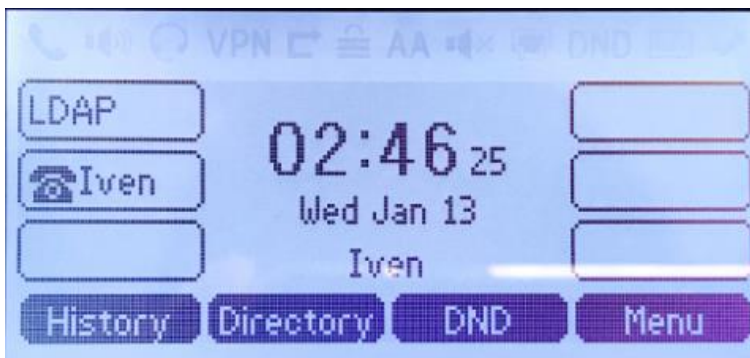3. Click "**Confirm**" to accept the change.

Using LDAP Phonebook

You can press the LDAP key to access the LDAP phonebook. Enter the search criteria to search a contact from LDAP phonebook and call the contact.

1. Press the LDAP key to access the LDAP phonebook.

2. Search the contact name or number using the keypad. The contacts whose name or phone number matches the characters entered will appear on the LCD screen.
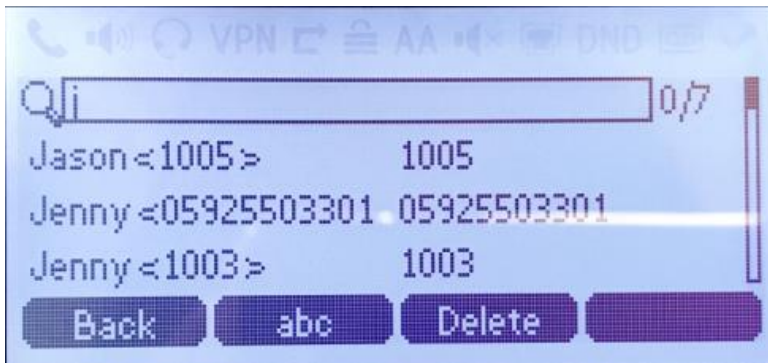
3. Press the navigation key to select the desired contact.

4. Press "**Send**" to call the contact.

Using LDAP on Htek Phones

In this example we will demonstrate how to configure and use LDAP phonebook using an Htek UC862 (version 1.0.3.35).

1. Log in the Htek phone web interface, and go to "**Directory > LDAP**".
2. Fill in the LDAP server address, attributes and filter information.
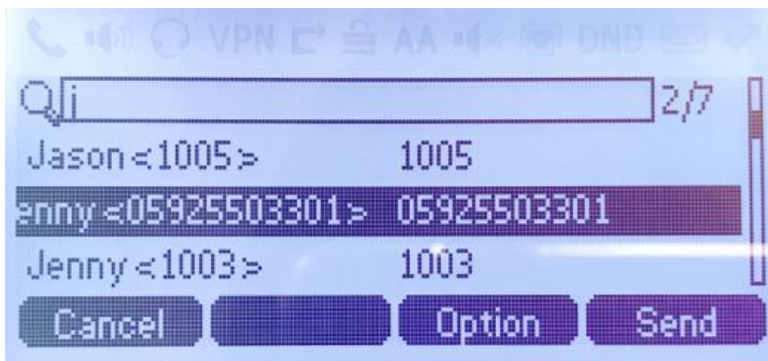3. Click "**SaveSet**" to accept the change.

LDAP Attribute on Web User Interface

Attribute	Description
LDAP Name Filter	Specify the name attributes for LDAP searching. • The "*" symbol in the filter stands for any character. • The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.
LDAP Number Filter	Specify the number attributes for LDAP searching. • The "*" symbol in the filter stands for any character. • The "%" symbol in the filter stands for the entering string used as the prefix of the filter condition.
Server Address	Enter the LDAP server address.
Port	Enter the LDAP server port.
Base	Enter the LDAP server Base DN.

Username	Enter the user name to login the LDAP server.
Password	Enter the password to login the LDAP server.
LDAP Name Attributes	Specify the name attributes of each record to be returned by the LDAP server. The user can configure multiple name attributes separated by space.
LDAP Number Attributes	Specify the number attributes of each record to be returned by the LDAP server. The user can configure multiple number attributes separated by space.
LDAP Display Name	Specify the display name of the contact record displayed on the LCD screen. This parameter value must start with "%" symbol.
Protocol	S-Series LDAP server uses Version 3.

LDAP Configuration Example

The example configurations are set according to S-Series LDAP server default settings. You can use the following settings as a starting point and adjust the filter and display attributes according to your needs.

LDAP Name Filter: (|(cn=%)(sn=%))

LDAP Number Filter: (|(telephoneNumber=%)(homePhone=%)(mobile=%))

Server Address: 192.168.6.216   /* Enter S-Series PBX's IP address.*/

Port: 389

Base: dc=pbx,dc=com

UserName: cn=admin,dc=pbx,dc=com

Password: password

Max.Hits(1~32000): 50

LDAP Name Attributes: cn sn displayName

LDAP Number Attributes: telephoneNumber homePhone mobile mail departmentNumber

LDAP Display Name: cn

Protocol: Version 3

LDAP Lookup For Call: On

LDAP Sorting Results: On

Configuring an LDAP Key

1. Log in the Htek phone web interface, and go to "**Function Keys > Line Key**".
2. Choose a key, select key type to "**LDAP**".
3. Click "**SaveSet**" to accept the change.

Using LDAP Phonebook

1. Press the LDAP key to access the LDAP phonebook.
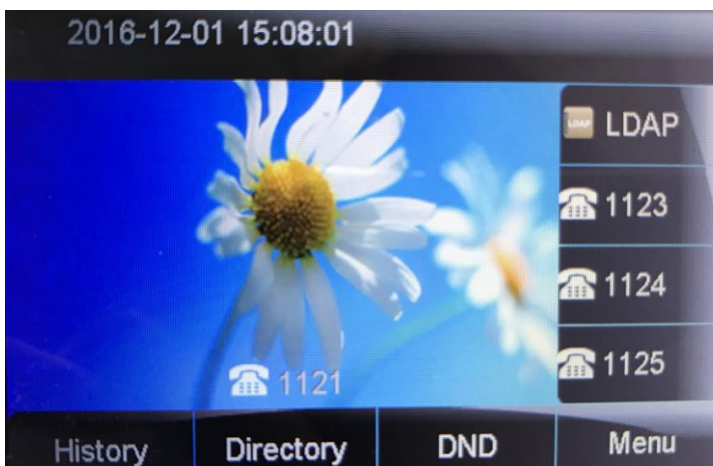
2. Search the contact name or number using the keypad. The contacts whose name or phone number matches the characters entered will appear on the LCD screen.

3. Press the navigation key to select the desired contact.

4. Press "**Dial**" to call the contact.

Using LDAP on Cisco SPA Phones

In this example we will demonstrate how to configure and use LDAP phonebook using a Cisco SPA 303 (version 7.4.9c).

Configuring LDAP

1. Navigate to the phone's admin web user interface as an administrator.
2. Go to "**Voice > Phone > LDAP Corporate Directory Search**" to configure LDAP.

LDAP Corporate Directory Search			
LDAP Dir Enable:	yes ▼	LDAP Corp Dir Name:	yeastar
LDAP Server:	192.168.6.216	LDAP Auth Method:	None ▼
LDAP Client DN:	dc=pbx,dc=com		
LDAP Username:	cn=admin,dc=pbx,dc=com	LDAP Password:	************
LDAP Search Base:	dc=pbx,dc=com		
LDAP Last Name Filter:	sn:(sn=*$VALUE*)	LDAP First Name Filter:	
LDAP Search Item 3:	cn:(cn=*$VALUE*)	LDAP Item 3 Filter:	
LDAP Search Item 4:		LDAP Item 4 Filter:	
LDAP Display Attrs:	a=sn;a=cn;a=telephoneNumber,n=Phone,t=p;		
LDAP Number Mapping:			

- **LDAP Dir Enable:** select "yes"
- **LDAP Corp Dir Name:** specify an LDAP directory name.
- **LDAP Server:** enter "S-Series PBX's IP:port".
- **LDAP Auth Method:** None
- **LDAP Client DN:** enter the LDAP server's base DN.
- **LDAP Username:** enter the LDAP server's username.
- **LDAP Password:** enter the LDAP server's password.
- **LDAP Search Base:** enter the LDAP server's base DN.
- **LDAP Last Name Filter:** this defines the search for surnames [sn], known as last name.
- **LDAP First Name Filter:** this defines the search for the common name [cn].
- **LDAP Search Item3:** Additional customized search item. Can be blank if not needed.
- **LDAP Item 3 Filter:** Customized filter for the searched item. Can be blank if not needed.
- **LDAP Search Item 4:** Additional customized search item. Can be blank if not needed.
- **LDAP Item 4 Filter:** Customized filter for the searched item. Can be blank if not needed.
- **LDAP Display Attrs:** format of LDAP results display on phone.

3. Click "**Submit All Changes**".

LDAP Configuration Example

The example configurations are set according to S-Series LDAP server default settings. You can use the following settings as a starting point and adjust the filter and display attributes according to your needs.

LDAP Dir Enable: yes
LDAP Corp Dir Name: yeastar
LDAP Server: 192.168.6.216:389   (IP of S-Series PBX:389)
LDAP Auth Method: None
LDAP Client DN: dc=pbx,dc=com
LDAP Username: cn=admin,dc=pbx,dc=com
LDAP Password: password
LDAP Search Base: dc=pbx,dc=com
LDAP Last Name Filter: sn:(sn=*$VALUE*)
LDAP First Name Filter: cn:(cn=*$VALUE*)
LDAP Search Item 3:
LDAP Item 3 Filter:
LDAP Search Item 4:
LDAP item 4 Filter:
LDAP Display Attrs: a=sn;a=cn;a=telephoneNumber,n=Phone,t=p;
LDAP Number Mapping:

LDAP Display Attrs:

Parameter	Value	Description
a	Attribute name	N/A
cn	Common name	N/A
sn	Surname (last name)	N/A
telephoneNumber	phone number	N/A
n	Display name	Example: n=Phone will cause "Phone:" to be displayed in front of the phone number of an LDAP query result when the detail soft button is pressed.
t	type	When t=p, that is, t is of type phone number, then the retrieved number can be dialed. Only one number can be made dialable. If two numbers are defined as dialable, only the first number is used. Example: a=ipPhone, t=p; a=mobile, t=p; This example results in only the IP Phone number being dialable and the mobile

		number will be ignored.
p	phone number	When p is assigned to a type attribute, example t=p, then the retrieved number will be dialable by the phone

Using LDAP Phonebook

1. Press the **Directory** soft key on the SPA phone.
2. Select the LDAP Corporate Directory from the list. The name will vary depending on the entry in "Phone tab > LDAP Corporate Directory Search > LDAP Corp Dir Name".
3. Enter the search parameters for Last Name and First name, as needed.
4. Press the **Submit** soft key.
5. Press **Dial, EditDial, Detail,** or **Cancel** to use the LDAP results.

Using LDAP on Grandstream Phones

In this example we will demonstrate how to configure and use LDAP phonebook using a Grandstream GXP1628 (version 1.0.3.28).

Configuring LDAP

1. Log in the GXP1628 web interface, navigate to "**Phonebook > LDAP**" page.
2. Fill in the LDAP server address, attributes and filter information. See the *Table 1* below for detailed information.
3. Once the configuration is done, click "**Save and Apply**".

Table 1 Description of Grandstream IP Phone LDAP Options

| Option	Description
Server Address	Enter S-Series LDAP server's IP address.
Port	Enter the LDAP server port. The default port is 389.
Base	Enter LDAP server's Base DN.
User Name	Enter LDAP server's user name.
Password	Enter LDAP server's password.
LDAP Number Filter	This is the filter used for number lookups. Special characters: ● * - Any characters ● % - The entered string is used as prefix
LDAP Name Filter	This is the filter used for name lookups. Special characters: ● * - Any characters ● % - The entered string is used as prefix
LDAP Version	Yeastar S-Series LDAP server uses version 3.
LDAP Name Attributes	Specify the "name" attributes of each record which are returned in the LDAP search result. Enter multiple name attributes separated by space.
LDAP Number Attributes	Specify the "number" attributes of each record which are returned in the LDAP search result. Enter multiple name attributes separated by space.
LDAP Display Name	This is the display name of the entry to be shown on the phone's LCD.
LDAP Lookup	Enable LDAP number searching when dialing and receiving calls.
Lookup Display Name	Configure the display name when LDAP looks up the name for incoming calls or outgoing calls. It must be a subnet of the LDAP Name Attributes.

LDAP Configuration Example

The example configurations are set according to S-Series LDAP server default settings. You can use the following settings as a starting point and adjust the filter and display attributes according to your needs.

Server Address: 192.168.6.216   (IP address of Yeastar S-Series IPPBX)

Port: 389

Base: dc=pbx,dc=com

User Name: cn=admin,dc=pbx,dc=com

Password: password

LDAP Number Filter: (|(telephoneNumber=%)(homePhone=%)(mobile=%))

LDAP Name Filter: (|(cn=%)(sn=%))

LDAP Version: Version 3

LDAP Name Attributes: cn sn

LDAP Number Attributes: telephoneNumber homePhone mobile mail departmentNumber

LDAP Display Name: %cn

Max. Hits: 50

Search Timeout: 30

Sort Results: Yes

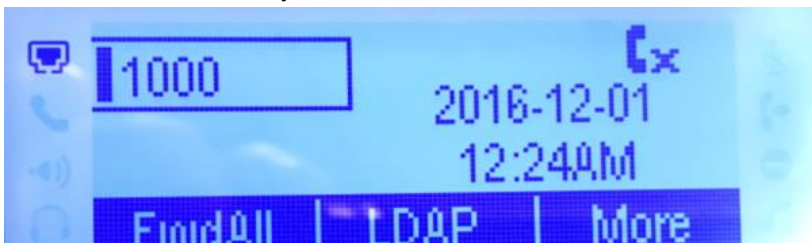LDAP Lookup: √ Incoming Calls   √ Outgoing Calls

LDAP Display Name: cn

Using LDAP Phonebook

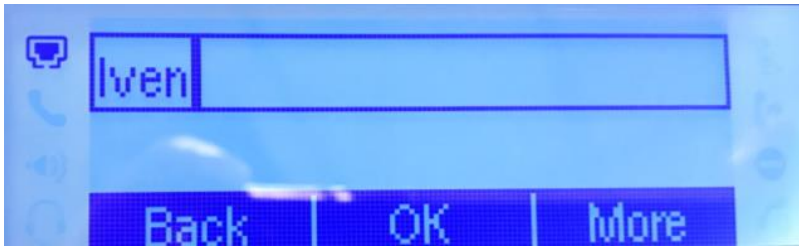Note: for different Grandstream IP phones, the operation may be different.

1. On the GXP1628 idle screen, press "**More**" soft key.
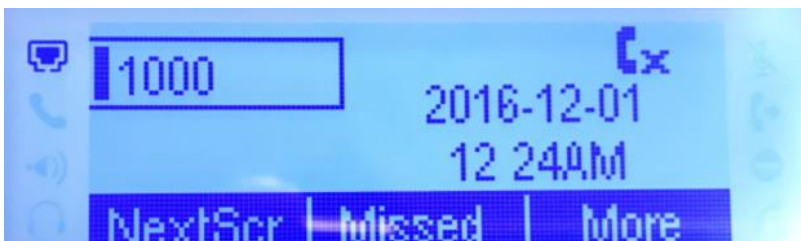
2. Press "**LDAP**" soft key.

3. Enter the search parameters for name or number as needed.

4. Press "**OK**".
5. Press the navigation key to select the desired contact.
6. Press "**Dial**" to call the person.

Using LDAP on Zoiper Softphone

LDAP feature is only available in Zoiper Biz version.

Configuring LDAP

1. Launch Zoiper Biz softphone.
2. Navigate to "**Settings > Preferences > Contacts > LDAP options**" page.
3. Check the option "**Use this server to search for contacts**".
4. Fill in the LDAP server address, attributes and filters.
5. Once the configuration is done, click "**OK**".

LDAP Configuration Example

The example configurations are set according to S-Series LDAP server default settings. You can use the following settings as a starting point and adjust the filter and display attributes according to your needs.

LDAP server: 83.247.70.23   (IP address of Yeastar S-Series IPPBX)

Password: password

CN: cn=admin,dc=pbx,dc=com

DN: dc=pbx,dc=com

Result limit: 0

Min Chars to Search: 1

Fields to Search: sn,gn

XMPP presence:

Using LDAP Phonebook

1. Enter the search parameters for name or number as needed in the search box.
2. The matched records will display on the screen.