

Cisco SPA5xx IP Phone PBX setup

November 4, 2021

1. Find the IP address of your phone by looking for your phone in the list under your AREDN node's Port Forwarding, DHCP, And Services tab. It will be listed under the "Current DHCP Leases" list

AREDN
AMATEUR RADIO EMERGENCY DATA NETWORK

[Node Status](#) [Basic Setup](#) **[Port Forwarding, DHCP, and Services](#)** [Tunnel Server](#) [Tunnel Client](#) [Administration](#) [Advanced Configuration](#)

[Help](#)

DHCP Address Reservations **Advertised Services**

Hostname	IP Address	MAC Address	Do Not Propagate	Name	Link	URL
<input type="text"/>	- IP Address -	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	://VE7LSE-WOODELY-LINK : <input type="text"/> / <input type="text"/>

Current DHCP Leases
there are no active leases

Port Forwarding **DNS Aliases**

Interface	Type	Outside Port	LAN IP	LAN Port	Alias Name	IP Address
WAN	TCP	<input type="text"/>	- IP Address -	<input type="text"/>	<input type="text"/>	- IP Address -

Part of the AREDN™ Project. For more details please [see here](#)

VE7LSE-PHONE	10.46.174.181	4c:00:82:91:32:cc	<input type="button" value="Add"/>
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2. Open a web browser and enter you phone's IP address.

The screenshot shows a web browser window with the address bar displaying "10.46.174.181". The page title is "IP Phone SPA525G2" by Cisco Systems, Inc. The interface includes a navigation menu with tabs for Voice, Wi-Fi, Bluetooth, Personal Address Book, Call History, Speed Dials, and Firmware Upgrade. Below this is an "Info" section with sub-tabs for System, Phone, Ext 1-5, and User. The "System" sub-tab is active, displaying "System Information" and "Reboot History".

System Information	
Connection Type:	DHCP
IP Status:	OK
Domain:	local.mesh
Current Gateway:	10.46.174.161
Secondary DNS:	
Primary NTP Server:	ca.pool.ntp.org
Bluetooth Enabled:	No
Bluetooth Connected:	No
Connected Device ID:	
Wireless Connected:	No
SSID:	
Security Mode:	

Reboot History	
Reboot Reason 1:	Provisioning(10/31/2021 23:40:12)
Reboot Reason 2:	Provisioning(10/31/2021 23:39:42)
Reboot Reason 3:	Provisioning(08/10/2021 16:31:03)
Reboot Reason 4:	Provisioning(08/10/2021 16:19:14)
Reboot Reason 5:	Provisioning(08/10/2021 16:16:02)

3. Click on Admin login then the advanced tab

This screenshot is identical to the previous one, but with the "Admin Login" link in the bottom right navigation area highlighted in yellow, and the "advanced" sub-tab in the "Info" section also highlighted in yellow.

- Click on "System" Tab and enter a host name you want for your phone and change the NTP server as shown. You can also setup an admin password if you like.

Info	System	SIP	Provisioning	Regional	Phone	Ext 1	Ext 2	Ext 3	Ext 4	Ext 5	User	Att Console	TR-069
Attendant Console Status User Login basic advanced													
System Configuration													
Restricted Access Domains: <input type="text"/>													
Enable Web Server:		yes ▼			Web Server Port:		80						
Enable Web Admin Access:		yes ▼			Admin Password:		*****						
User Password:		<input type="text"/>			User Web Password:		<input type="text"/>						
SPA525-protocol:		SIP ▼			SPA525-auto-detect-sccp:		yes ▼						
SPA525-readonly:		no ▼			Phone-UI-user-mode:		no ▼						
WiFi User Access Mode:		yes ▼											
Power Settings													
PoE Power Required:		Normal ▼											
Internet Connection Type													
Connection Type:		DHCP ▼											
Static IP Settings													
Static IP:		<input type="text"/>			NetMask:		<input type="text"/>						
Gateway:		<input type="text"/>			Lan MTU:		1500						
Duplex Mode:		Auto ▼											
PPPoE Settings													
PPPoE Login Name:		<input type="text"/>			PPPoE Login Password:		<input type="text"/>						
PPPoE Service Name:		<input type="text"/>											
Optional Network Configuration													
HostName:		VE7LSE-PHONE			Domain:		<input type="text"/>						
Primary DNS:		<input type="text"/>			Secondary DNS:		<input type="text"/>						
DNS Server Order:		Manual,DHCP ▼			Syslog Server:		<input type="text"/>						
Debug Server:		<input type="text"/>			Debug Level:		3 ▼						
Layer 2 Logging:		no ▼			NTP Enable:		yes ▼						
Primary NTP Server:		ca.pool.ntp.org			Secondary NTP Server:		<input type="text"/>						
Enable Bonjour:		no ▼			SSL Key Negotiation:		RSA ▼						
Enable SSLv2:		no ▼											

5. Click on Regional tab next. Match the setting that are highlighted. If we are in daylight savings time say yes, if not say no.

Feature Dial Services Codes:			
Vertical Service Announcement Codes			
Service Annc Base Number:	<input type="text"/>		
Service Annc Extension Codes:	<input type="text"/>		
Outbound Call Codec Selection Codes			
Prefer G711u Code:	<input type="text" value="*017110"/>	Force G711u Code:	<input type="text" value="*027110"/>
Prefer G711a Code:	<input type="text" value="*017111"/>	Force G711a Code:	<input type="text" value="*027111"/>
Prefer G722 Code:	<input type="text" value="*01722"/>	Force G722 Code:	<input type="text" value="*02722"/>
Prefer G726r32 Code:	<input type="text" value="*0172632"/>	Force G726r32 Code:	<input type="text" value="*0272632"/>
Prefer G729a Code:	<input type="text" value="*01729"/>	Force G729a Code:	<input type="text" value="*02729"/>
Time			
Time Zone:	<input type="text" value="GMT-08:00"/>	Time Offset (HH/mm):	<input type="text"/>
Ignore DHCP Time Offset:	<input type="text" value="yes"/>		
Daylight Saving Time Rule:	<input type="text" value="start=3/-1/7/2;end=10/-1/7/2;save=1"/>		
Daylight Saving Time Enable:	<input type="text" value="yes"/>		
Language			
Dictionary Server Script:	<input type="text"/>		
Language Selection:	<input type="text" value="English-US"/>	Locale:	<input type="text" value="en-US"/>
Miscellaneous			
DTMF Playback Level:	<input type="text" value="-16"/>	DTMF Playback Length:	<input type="text" value=".1"/>
Inband DTMF Boost:	<input type="text" value="12dB"/>	Show DTMF Digits When Connected:	<input type="text" value="No"/>

Undo All Changes

Submit All Changes

6. At this point, save your settings.

Click on the “Phone” Tab. Choose what you want your station name and display name to be. *97 is voicemail. Your line key 1 will be 1 and short name can be what you want your line 1 key to be called. This can be your call sign and the extension number you were assigned. You can also setup multiple phone lines attached to other PBX systems like Ham Shack Hotline etc. If you have that info for your other lines, you would add it into your “line key 2/ 3/ 4” settings.

The screenshot displays the configuration interface for a Cisco IP Phone SPA525G2. The top navigation bar includes tabs for Voice, Wi-Fi, Bluetooth, Personal Address Book, Call History, Speed Dials, and Firmware Upgrade. The 'Phone' tab is selected, showing sub-tabs for Info, System, SIP, Provisioning, Regional, and Phone. The 'Phone' sub-tab is active, displaying settings for three line keys. The 'General' section includes Station Name (VE7LSE), Station Display Name (VE7LSE), and Voice Mail Number (*97). The 'BluePhone' section includes Bluetooth Mode (Phone), Line (5), Short Name, and User Friendly ID. The 'Line Key 1' section includes Extension (1), Short Name (VE7LSE 2202), and Share Call Appearance (private). The 'Line Key 2' section includes Extension (2), Short Name (VE7LSE 3302), and Share Call Appearance (private). The 'Line Key 3' section includes Extension (Disabled), Short Name (VE7ODG 2201), and Share Call Appearance (private). The Extended Function for Line Key 3 is fnc=sd+cp+blf;sub=2201@\$PROXY.

Section	Field	Value
General	Station Name	VE7LSE
	Station Display Name	VE7LSE
	Voice Mail Number	*97
BluePhone	Bluetooth Mode	Phone
	Line	5
	Short Name	
	PIN Code	*****
Line Key 1	Extension	1
	Short Name	VE7LSE 2202
	Share Call Appearance	private
Line Key 2	Extension	2
	Short Name	VE7LSE 3302
	Share Call Appearance	private
Line Key 3	Extension	Disabled
	Short Name	VE7ODG 2201
	Share Call Appearance	private
Extended Function		fnc=sd+cp+blf;sub=2201@\$PROXY

7. To program your spare line keys to act as speed dial buttons follow the highlighted settings as a template for your extra line keys. Note the extension numbers for the contacts you want to add by finding them in the local phone directory. <https://scarcs.ca/howto/aredn/voip> These numbers correspond with the entry you would make. The conference call number is 2400 as in the example. Save your settings.

Line Key 3			
Extension:	Disabled ▾	Short Name:	VE7ODG 2201
Share Call Appearance:	private ▾		
Extended Function:	fnc=sd+cp+blf;sub=2201@\$PROXY		
Line Key 4			
Extension:	Disabled ▾	Short Name:	VA7DXX 2203
Share Call Appearance:	private ▾		
Extended Function:	fnc=blf+sd+cp;sub=2203@\$PROXY		
Line Key 5			
Extension:	Disabled ▾	Short Name:	CONF 2400
Share Call Appearance:	private ▾		
Extended Function:	fnc=blf+sd+cp;sub=2400@\$PROXY		

8. Click on the “EXT 1” Tab. Enter the Proxy seen here. Enter your Display name you want. Enter your extension number and password assigned to you. Save your settings. The phone will reboot. You should then see your line 1 key light up green and any of the speed dial keys light up green. If not check your settings again for any typos. If you need help troubleshooting, send an email over the <https://groups.io/g/Mid-Island-AREDN-Mesh-Network> and someone will help you out.

Proxy and Registration			
Proxy:	10.246.225.227		
Outbound Proxy:			
Alternate Proxy:			
Alternate Outbound Proxy:	0		
Use Outbound Proxy:	no ▼	Use OB Proxy In Dialog:	yes ▼
Register:	yes ▼	Make Call Without Reg:	no ▼
Register Expires:	3600	Ans Call Without Reg:	no ▼
Use DNS SRV:	no ▼	DNS SRV Auto Prefix:	no ▼
Proxy Fallback Intvl:	3600	Proxy Redundancy Method:	Normal ▼
Dual Registration:	no ▼	Auto Register When Failover:	no ▼
Subscriber Information			
Display Name:	VE7LSE	User ID:	2202
Password:	*****	Use Auth ID:	no ▼
Auth ID:		Reversed Auth Realm:	0
Mini Certificate:			
SRTP Private Key:			
Resident Online Number:		SIP URI:	
Audio Configuration			

9. Click "ATT Console" and match the highlighted setting.

The screenshot shows the configuration interface for a Cisco IP Phone SPA525G2. The top navigation bar includes tabs for Voice, Wi-Fi, Bluetooth, Personal Address Book, Call History, Speed Dials, and Firmware Upgrade. The 'Att Console' tab is selected, and the 'Server Type' dropdown menu is highlighted in yellow, showing 'Asterisk' as the selected option. Other settings include 'Subscribe Expires: 1800', 'Unit 1 Enable: yes', 'Unit 2 Enable: yes', 'Test Mode Enable: no', 'Attendant Console Call Park Code: *68', 'BLF List URI:', 'Use Line Keys For BLF List: no', 'Attendant Console Font Size: 10', 'BXfer To Starcode Enable: no', and 'BLF Label Display Mode: Name'.

Cisco		IP Phone SPA525G2											Cisco Systems, Inc.				
Voice		Wi-Fi		Bluetooth		Personal Address Book			Call History			Speed Dials		Firmware Upgrade			
Info	System	SIP	Provisioning	Regional	Phone	Ext 1	Ext 2	Ext 3	Ext 4	Ext 5	User	Att Console	TR-069				
														Attendant Console Status	User Login	basic	advanced
General																	
Subscribe Expires:			1800			Subscribe Retry Interval:			30								
Unit 1 Enable:			yes ▼			Subscribe Delay:			1								
Unit 2 Enable:			yes ▼			Server Type:			Asterisk ▼								
Test Mode Enable:			no ▼			Attendant Console Call Pickup Code:			*8								
Attendant Console Call Park Code:			*68			Attendant Console Call unPark Code:			*88								
BLF List URI:																	
Use Line Keys For BLF List:			no ▼			Call Pickup Audio Notification:			no ▼								
Attendant Console Font Size:			10 ▼			Attendant Console LCD Contrast:			12								
BXfer To Starcode Enable:			no ▼			BXfer On Speed Dial Enable:			yes ▼								
BLF Label Display Mode:			Name ▼														

10. If you have an Attendance Console (sidecar) and would like to program the speed dial buttons, follow the example here. Make sure you change the extension number and the name for the contact you want to add. The printout for the SPA500S Sidecar can be found here:

<https://scarcs.ca/howto/aredn/voip>

Unit 1	
Unit 1 Key 1:	fnc=sd+cp+blf;sub=2222@\$PROXY;nme=VE7GEC-GAB-ECC-2222
Unit 1 Key 2:	fnc=sd+cp+blf;sub=2228@\$PROXY;nme=VE7UY-2228
Unit 1 Key 3:	fnc=sd+cp+blf;sub=2204@\$PROXY;nme=VE7TOP-2204
Unit 1 Key 4:	fnc=sd+cp+blf;sub=2205@\$PROXY;nme=VE7FAA-2205
Unit 1 Key 5:	fnc=sd+cp+blf;sub=2215@\$PROXY;nme=VE7GDE-2215
Unit 1 Key 6:	fnc=sd+cp+blf;sub=2207@\$PROXY;nme=VA7WPM-2207
Unit 1 Key 7:	fnc=sd+cp+blf;sub=2220@\$PROXY;nme=VE7KGV-2220
Unit 1 Key 8:	fnc=sd+cp+blf;sub=2218@\$PROXY;nme=VE7PMD-2218
Unit 1 Key 9:	fnc=sd+cp+blf;sub=2225@\$PROXY;nme=VA7FI-2225
Unit 1 Key 10:	fnc=sd+cp+blf;sub=2236@\$PROXY;nme=VE7KOD-2236
Unit 1 Key 11:	fnc=sd+cp+blf;sub=2235@\$PROXY;nme=VA7ILO-2235
Unit 1 Key 12:	fnc=sd+cp+blf;sub=2219@\$PROXY;nme=VA7MLZ-2219
Unit 1 Key 13:	fnc=sd+cp+blf;sub=2206@\$PROXY;nme=VA7MPG-2206
Unit 1 Key 14:	fnc=sd+cp+blf;sub=2211@\$PROXY;nme=VE7BEF-2211