



LG 6812D-MGCP IP Phone Provisioning Guide Sylantro-hosted Service Release 3.2.1

July 2007

LG IP Phone Turn-up Summary for New Installs*

Covad offers several stream-lined ways to provision LG IP phones on our network, depending upon the type of circuit.

Phone Location	Configuration Document	Overview of Local Configuration Steps	Description of what happens to phone
<p>1. <u>Managed</u> For new/adds to sites <i>using DHCP</i> with broadband connection to Covad</p>	<p><i>LG IP Phone Configuration using DHCP</i> - see slides 3-8</p>	<ul style="list-style-type: none"> ✓ If phone is used, erase configuration ✓ Plug phone in to network. 5 minute auto load! ✓ At "0000" invoke *51 procedure to bind number to phone 	<ul style="list-style-type: none"> ➤ Gets IP address via DHCP from CPE router ➤ Gets VoIP settings, latest/current firmware from new TFTP server at: ➤ 64.2.21.251 (Sunnyvale) ➤ 64.2.21.45 (San Jose) ➤ 68.165.105.181 (Sunnyvale2) ➤ 72.245.184.75 (DC) ➤ Extension bound to <i>MAC address</i>
<p>2. <u>Manual Method</u>. For adds to existing <i>Managed</i> sites where DHCP <i>not</i> implemented</p>	<p><i>LG IP Phone Configuration – Manual Method</i> - see slides 9-14</p>	<ul style="list-style-type: none"> ✓ Configure phone IP settings via manual configuration ✓ Plug phone into network ✓ At 0000, invoke *51 procedure to bind number to phone 	<ul style="list-style-type: none"> ➤ Gets IP address as manually configured ➤ Gets basic VoIP settings, latest/current firmware from new TFTP server at: ➤ 64.2.21.251 (Sunnyvale) ➤ 64.2.21.45 (San Jose) ➤ 68.165.105.181 (Sunnyvale2) ➤ 72.245.184.75 (DC) ➤ Extension bound to <i>MAC address</i>
<p><u>Unmanaged Sites</u></p>	<p>Not a supported application with LG phones</p>		

*--Working phones must **not** have their TFTP server address changed (i.e., from 64.2.21.251 to 64.2.21.x) as this may impact phone operation.

Switch configuration options (phone+PC)

- If you are using VLANs other than the default VLANs that Covad configures (VLAN2 for voice, VLAN1 for data), please see the LG VLAN Guide on what you need to do to setup the LG phones.
- If you are using a dumb switch that does not support VLANs, please see the LG VLAN Guide on what you need to do to setup the phone. In this scenario, you would have separate switches for voice and data and multiple cable runs to each desktop
- The LG phones only support 802.3af-compatible POE switches (Cisco 3560, 3750). Any non-POE switch or Cisco Prestandard POE switches (3550-24PWR) will require the wall AC Power Supply/Adapter (LIP-6899) for the LG 6800 series phones.

Switch configuration options (phone+PC)

- The following are two configurations for the LG phones that support PC-behind-the-phone on the Ethernet switch (Catalyst 2950/2960/3550/3560/3750):
 - **Configuration 1**
 - For the port that has the LG phone connected:

```
interface <port on switch that has phone with PC connected>  
description < example:PC_behind_the_phone_1 >  
switchport access vlan 2  
switchport trunk encapsulation dot1q  
switchport trunk native vlan 2  
switchport mode trunk
```
 - **Configuration 2**
 - Globally for the switch:

```
spanning-tree mode pvst  
no spanning-tree optimize bpdu transmission  
spanning-tree extend system-id
```
 - For all the ports on the switch:

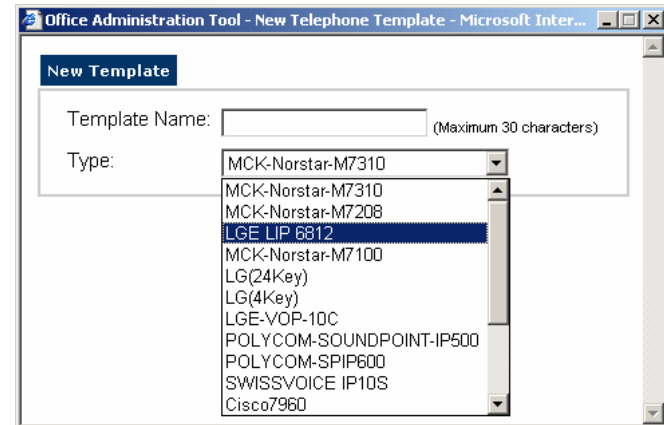
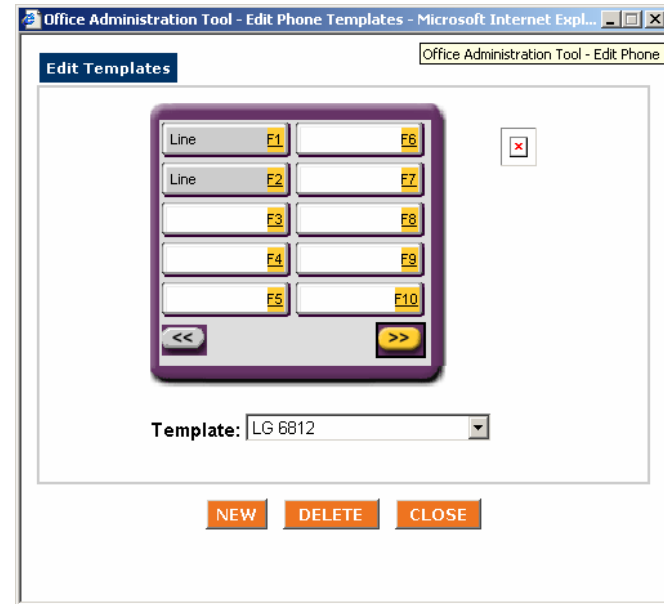
```
interface <port on switch>  
description < example:PC_behind_the_phone_1 >  
switchport access vlan 2  
switchport trunk encapsulation dot1q (note: command is not required on Cisco 2950s)  
switchport mode trunk  
switchport voice vlan 2  
switchport priority extend cos 3  
no ip address  
spanning-tree portfast
```

Switch troubleshooting guide with LG phones

- In some cases, a brand new LG phone out of the box will not receive IP settings, firmware, or its configuration. To fix this issue, follow the steps below:
 - On the switch configuration, change the switchport that the LG phone is plugged into to *access mode* only. To do this, remove the line **switchport mode trunk**.
 - The configuration should appear as below:
 - switchport access vlan 2
 - switchport trunk encapsulation dot1q
 - switchport voice vlan 2
 - switchport priority extend cos 3
 - no ip address
 - Reboot the phone and allow it to receive the IP settings, firmware, and configuration. Change the switchport that the LG phone is plugged into back into *trunk mode* by adding the line **switchport mode trunk**.
 - The configuration should appear as below:
 - switchport access vlan 2
 - switchport trunk encapsulation dot1q
 - switchport mode trunk
 - switchport voice vlan 2
 - switchport priority extend cos 3
 - no ip address
 - Note: this is a one-time process for each brand new phone. The LG phone will now communicate properly on every trunk or access mode switch port with VLAN2 enabled.

LG Phone templates

- In some cases, the LG phone templates have already been created for tenants:
 - LGE LIP-6812
 - Note – the LGE-VOP-10C is an older LG phone that has been replaced by the LG 6812 and 6830. This template should not be used.
- If the LG phone templates are missing, you can create new phone templates from the “Services” tab under the Admin portal
 - From the “Services” tab, select “Phone Templates”
 - Click on “New”
 - For the Phone Type, select LGE LIP 6812
 - The Template name can be anything you want (LG-6812D, LG6812)
 - Click “Save”
- You can then customize the LG templates and assign them to users





LG IP Phone Configuration using DHCP



For installations using:

Managed circuits

Public or Private WAN IP addresses

DHCP addressing on LAN

LG 6812D MGCP IP phone

Configuring the Router and Switch for DHCP

- The appropriate CPE router and switch configurations must be applied to support DHCP. These steps must be completed by Covad prior to configuring the phones.
 - As part of router turn-up, add in configuration for DHCP support
 - In addition to the standard configuration applied to the CPE router, the following items must be configured to support DHCP for the phones. No other DHCP options should be added.

service dhcp

no ip dhcp conflict logging

ip dhcp excluded-address x.x.x.a

← x.x.x.a is the phone default gateway or Ethernet interface address

ip dhcp pool phone

network x.x.x.x 255.255.255.y

← x.x.x.x 255.255.255.y is the phone network

default-router x.x.x.a

← x.x.x.a is the phone default gateway or Ethernet interface address

option 66 ascii "TFTP server"

← 64.2.21.251 (SNVL), 64.2.21.45 (SNJS), 68.165.105.181 (SNVL2) or 72.245.184.75 (DC) is the address of the TFTP server for this application

lease 7

If you do not know which TFTP server to use, please check with Covad Provisioning or Support.

- On Layer 3 switches, such as the Cisco Catalyst 3560, DHCP must be disabled
 - ***no service dhcp***

LG IP Phone Configuration using DHCP

Covad must configure your on-site router to support DHCP. We normally do this when the router is originally installed. Contact VoIP Support at voipprovisioning@covad.com or 800-278-7114 if you need confirmation your router is configured properly.

The following 7 steps are used to provision multiple LG IP phones in a batch mode.

- 1. At least three days prior to the activation, contact your Covad Provisioning Coordinator and provide/obtain the following information:**
 - The physical street address where the activation will take place.
 - The tenant (customer) name the phone will be provisioned within.
 - The date/time that the activation is scheduled to take place.

The Covad Provisioning Coordinator will then schedule an appointment with Covad Provisioning on the date/time you have specified.

- 2. In the ADMIN portal, create the employee and pre-build an LG phone template.**

LG IP Phone Configuration using DHCP

3. **If the phone has been configured before and you need to reset the phone to default settings, press the Settings button on the phone, then the 6 button and finally the # button**

4. **Prepare to configure the phone by following these steps. Upon completion of this step, the phone will begin to perform a software upgrade, reboot itself, and register with the Covad switch, all of which should take about 5 minutes to complete.**
 - Connect the phone to the local network by plugging the Ethernet cable into the port labeled LAN on the underside of the phone.
 - Connect the power cord to the phone
 - The initial boot process takes 2-3 minutes to complete. *Do not interrupt power to the unit during this time.*
 - The following items and messages should be observed on the phone's LCD:
 - DHCP Searching
 - Configuration Trying to Download
 - Software Trying to Download
 - Covad Communications Connecting
 - If these steps fail, you might have to remove the phone from a trunk switchport. See steps on slide 4.

5. **A newly installed phone properly configured will display the following on its screen:**
 - Time – upper right hand corner
 - 0000 – (null extension) – upper left hand corner
 - [ReDL] [MSG] [PICK] – lower half of screen

LG IP Phone Configuration using DHCP

6. **To bind an extension to a phone, go off hook and enter the following digit string.**
* 51 <Tenant Registration Code> * <Admin Registration Code> * <Admin Registration Password> *
<4-digit extension> #
Note: to unbind a number, enter 0000 as the 4-digit extension

Partners can find the Registration Codes and Password in the on-line Order Processing System. Registration codes and password may be 4 or 5 digits in length. Contact voipsupport@covad.com to get the Registration Code and Password.
7. **The LG phone LCD will now display the extension assigned to the phone. You can now go into the ADMIN portal and station dashboard to program the function keys.**

*For instructions on how to use the phone, download the [LG 6812 User Guide](#) found in the **HELP** tab of any dashboard.*



LG IP Phone Configuration using Static IPs



For installations where DHCP is not used:

Managed circuits

Public or Private WAN IP addresses

Statically assigned addressing on LAN

LG 6812D MGCP IP phones

LG IP Phone Configuration – Manual Method

The following 17 steps are used to provision multiple LG IP phones in a batch mode.

- 1. At least three days prior to the activation, contact your Covad Provisioning Coordinator and provide/obtain the following information:**
 - The physical street address where the activation will take place.
 - The tenant (customer) name the phone will be provisioned within.
 - The IP address reserved for the LG IP phone and the associated phone number.
 - The date/time that the activation is scheduled to take place.

The Covad Provisioning Coordinator will then schedule an appointment with Covad Provisioning on the date/time you have specified.

- 2. In the ADMIN portal, create the employee and pre-build an LG phone template.**
- 3. If the phone has been configured before and you need to reset the phone to default settings, press the Settings button on the phone, then the 6 button and finally the # button**

LG IP Phone Configuration – Manual Method

4. To configure the phone manually, the following information will be needed

- IP address for the LG phone
- Subnet Mask
- Default Gateway Address
- TFTP server IP address (64.2.21.251 SNVL, 64.2.21.45 SNJS, 68.165.105.181 SNVL2 or 72.245.184.75 DC)
- Call Server IP address (68.165.105.130 SNVL, 64.2.21.61 SNJS, 68.165.105.160 SNVL2 or 72.245.184.130 DC)
- NTP server IP address (64.2.21.49)
- If you don't know your TFTP or Call Server IP address, please contact VoIP Support or Provisioning

5. Prepare to configure the phone by following these steps.

Connect the phone to the local network by plugging the Ethernet cable into the port labeled LAN on the underside of the phone.

- Connect the power cord to the phone

6. Configure the Network Mode to Static IP address by using the following command sequence.

- Click the "Settings" button on the phone
- Press the (1) button, or move cursor to "1. Network Configuration" using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Press the (1) button, or move cursor to "1. Network Mode" using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Choose the Network Mode using [Next]/[Prev] soft keys, and press [OK] soft key to save your selection.

LG IP Phone Configuration – Manual Method

7. Configure the IP address for the phone by using the following command sequence.

- Click the “Settings” button on the phone
- Press the (1) button, or move cursor to “1. Network Configuration” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Press the (2) button, or move cursor to “2. IP Address” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Input the IP address using the keypad
 - - Press the asterisk (‘*’) button to input dot (‘.’).
 - - Press [Clr] soft key to delete all characters.
 - - Press [B] soft key to delete the character in front of cursor.
 - - The IP address can be changed only under the ‘Static’ mode, and not in the ‘DHCP’ mode.
- Press the [OK] softkey

8. Configure the Subnet Mask for the phone by using the following command sequence.

- Click the “Settings” button on the phone
- Press the (1) button, or move cursor to “1. Network Configuration” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Press the (3) button, or move cursor to “3. Subnet Mask” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Input the Subnet Mask using the keypad
 - - Press the asterisk (‘*’) button to input dot (‘.’).
 - - Press [Clr] soft key to delete all characters.
 - - Press [B] soft key to delete the character in front of cursor.
 - - The IP address can be changed only under the ‘Static’ mode, and not in the ‘DHCP’ mode.
- Press the [OK] softkey

LG IP Phone Configuration – Manual Method

- 9. Configure the Default Gateway address for the phone by using the following command sequence.**
- Click the “Settings” button on the phone
 - Press the (1) button, or move cursor to “1. Network Configuration” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Press the (4) button, or move cursor to “4. Default Gateway” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Input the Default Gateway address using the keypad
 - - Press the asterisk (*') button to input dot ('.').
 - - Press [Clr] soft key to delete all characters.
 - - Press [B] soft key to delete the character in front of cursor.
 - - The Default Gateway can be changed only under the ‘Static’ mode, and not in the ‘DHCP’ mode.
 - Press the [OK] softkey
- 10. Configure the Call Server Address for the phone by using the following command sequence.**
- Click the “Settings” button on the phone
 - Press the (2) button, or move cursor to “2. VoIP Configuration” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Press the (1) button, or move cursor to “1. Call Server Address” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Input the Call Server address using the keypad
 - - 68.165.105.130 (SNVL), 64.2.21.61 (SNJS) or 68.165.105.160 (SNVL2)
 - - Press the asterisk (*') button to input dot ('.').
 - - Press [Clr] soft key to delete all characters.
 - - Press [B] soft key to delete the character in front of cursor.
 - Press the [OK] softkey

LG IP Phone Configuration – Manual Method

11. **Configure the TFTP Server address for the phone by using the following command sequence.**
 - Click the “Settings” button on the phone
 - Press the (5) button, or move cursor to “5. S/W Update” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Press the (1) button, or move cursor to “1. TFTP Server Address” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Input the TFTP Server address using the keypad
 - 64.2.21.251 (SNVL), 64.2.21.45 (SNJS), 68.165.105.181 (SNVL2) or 72.245.184.75 (DC)
 - Press the asterisk ('*') button to input dot ('.').
 - Press [Clr] soft key to delete all characters.
 - Press [←] soft key to delete the character in front of cursor.
 - Press the # key when finished to save the configuration. If the new configuration is valid, the 6804 beeps once and exits from the configuration menu. If erroneous data is entered, the phone beeps twice and exits the configuration menu.

LG IP Phone Configuration – Manual Method

12. Configure the NTP Server Address for the phone by using the following command sequence.

- Click the “Settings” button on the phone
- Press the (4) button, or move cursor to “4. Time Configuration” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Press the (1) button, or move cursor to “1. NTP Server Address” using [Next]/[Prev] soft keys, and press the [OK] soft key.
- Input the NTP Server address using the keypad
 - - 64.2.21.49
 - - Press the asterisk (‘*’) button to input dot (‘.’).
 - - Press [Clr] soft key to delete all characters.
 - - Press [β] soft key to delete the character in front of cursor.
 - - The [Mode] soft key, switches the keypad entry mode: number ([1]), upper case ([A]), lower case ([a]) or special character ([S]) mode.
- Press the [OK] softkey

13. After entry of certain configuration settings, the LIP-6812 will require a reboot to move the settings to active memory. These settings include the following:

- Network Configuration settings
- Call Server Address settings
- DSS Registration settings
- Software Update settings
- Default settings

LG IP Phone Configuration – Manual Method

14. To reboot the phone, go through the following steps
 - Press the “Settings” button
 - Press the (0) button, or move cursor to “0. Reboot” using [Next]/[Prev] soft keys, and press the [OK] soft key.
 - Press the [Yes] soft key to reboot the IP phone or press [No] soft key to cancel this menu
15. Configured properly, you’ll see 4 zeros next to the top right function button.

To bind an extension to a phone, go off hook and enter the following digit string.

```
* 51 <Tenant Registration Code> * <Admin Registration Code> * <Admin Registration Password> *  
<4-digit extension> #
```

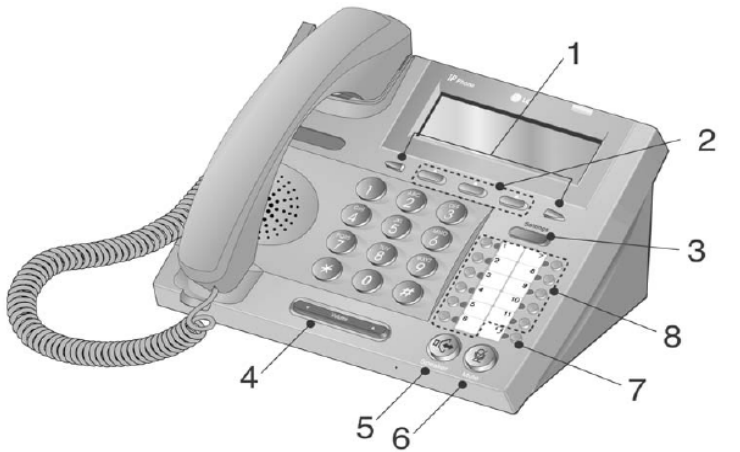
Note: to unbind a number, enter 0000 as the 4-digit extension













Partners can find the Registration Codes and Password in the on-line Order Processing System. Registration codes and password may be 4 or 5 digits in length. Contact voipsupport@covad.com to get the Registration Code and Password.

17. The LG phone LCD will now display the extension assigned to the phone. You can now go into the ADMIN portal and station dashboard to program the function keys.

For instructions on how to use the phone, download the LG 6812 User Guide found in the HELP tab of any dashboard.

LG 6812D Button overview



NUMBER	BUTTON	FUNCTION
1		Left direction button. This button has two functions; when  appears on the bottom-left corner of the LCD, the previous menu may be selected or when  appears the previous group of soft-keys may be selected.
		Right direction button. When  appears on the bottom-right corner of the LCD, the next group of soft-keys may be selected.
2		Soft keys. Soft keys are interactive, changing function based on the IP Phone status. When selected and verified, by pressing [OK] soft key, the IP phone performs the selected function.
3		Settings button. 'Settings' accesses and exits the main menu for display and changes to the IP phone configuration.
4		Volume control button. Use to adjust Ring, headset, handset, and speaker volume.
5	 Speaker	Speaker button. Toggle the LIP-6812 speakerphone on and off.
6	 Mute	Mute button. Toggle audio from the microphone to the connected party on and off.
7		Headset button. When using a headset, this button toggles the headset state. When the headset is active, this button LED is green.
8		Eleven flexible buttons with Red/Green LEDs. Assign feature or function in Call Server's User Portal. Default assignments for flexible buttons 1 and 2 are primary and secondary Line appearance for the extension.

1st Priority

- **Contact and ordering information**
 - Phone: 800-831-9960 or 952-472-6999
 - Fax : 952-472-6962
 - E-Mail: 1stpriority@mail.com

- **Business hours**
 - 1st Priority is staffed from 8 a.m. to 4 p.m. (Central Time) Monday through Friday.
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