



## NetVanta Unified Communications Technical Note

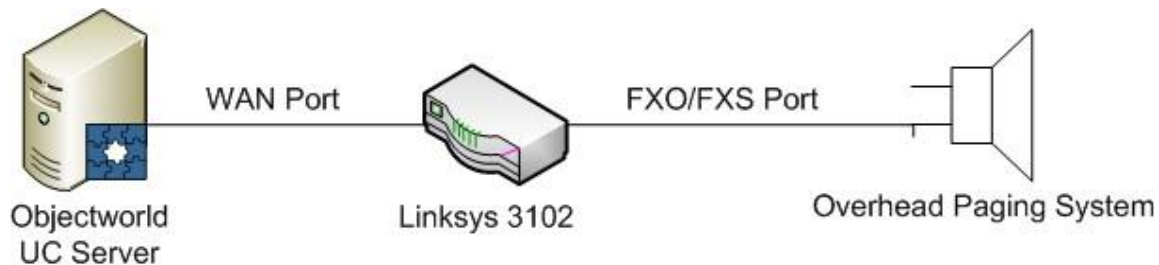
---

# Overhead Paging Support with Linksys 3102

## Introduction



This technical note outlines the initial configuration and call routing between the UC server and a legacy paging system using the Linksys 3102 as a gateway. The Linksys SPA-3102 is an FXO/FXS gateway with integrated firewall and router and provides an analog interface.



By accessing the FXO/FXS interface, it signals to the overhead paging system the intent to page through the overhead paging systems. Depending on the paging system, the gateway will either be configured to use FXO or FXS as the interface to the overhead paging system.

## Gateway Configuration

Instructions in this document describe how to configure the gateway using its management website.

**NOTE:** *There is a mechanism to download a configuration file to the gateway, but this is beyond the scope of the document.*

1. Follow the directions provided with the gateway to assign it a LAN IP address. The specific LAN IP address to use is not important since it will not be used after the gateway is configured.
2. Using a browser, go to the website for the gateway.

**NOTE:** *For consistency in the following instructions, please choose the **Admin Login** and **Advanced settings** from the menu.*

**LINKSYS**<sup>®</sup>  
A Division of Cisco Systems, Inc.

*Linksys Phone Adapter Configuration*

**Router** | Voice

Status | **Wan Setup** | [Admin Login](#) | basic | advanced

---

**Product Information**

Product Name:	SPA-3102	Serial Number:	FM600F219643
Software Version:	5.1.7(GW)	Hardware Version:	1.1.5
MAC Address:	000E08CB1633	Client Certificate:	Installed
Customization:	Open		

---

**System Status**

Current Time:	4/10/2007 14:02:02	Elapsed Time:	21:17:10
Wan Connection Type:	Static IP	Current IP:	192.168.8.80
Host Name:	SipuraSPA	Domain:	
Current Netmask:	255.255.255.0	Current Gateway:	192.168.8.1
Primary DNS:			
Secondary DNS:			
LAN IP Address:	192.168.0.1	Broadcast Pkts Sent:	0
Broadcast Bytes Sent:	0	Broadcast Pkts Recv:	19016
Broadcast Bytes Recv:	1481642	Broadcast Pkts Dropped:	0
Broadcast Bytes Dropped:	0		

---

**Internet Connection Settings**

Connection Type:  ▼

---

**Static IP Settings**

Static IP:	<input type="text" value="192.168.8.80"/>	NetMask:	<input type="text" value="255.255.255.0"/>
Gateway:	<input type="text" value="192.168.8.1"/>		

---

**PPPoE Settings**

PPPOE Login Name:	<input type="text"/>	PPPOE Login Password:	<input type="text"/>
-------------------	----------------------	-----------------------	----------------------

---

**Optional Settings**

HostName:	<input type="text"/>	Domain:	<input type="text"/>
Primary DNS:	<input type="text"/>	Secondary DNS:	<input type="text"/>

3. Navigate to **Router > WAN Setup** and assign a static WAN IP address.

**NOTE:** Remember that this will actually be the address of the gateway on your LAN. From the gateway's perspective, the LAN is its WAN.

**LINKSYS**<sup>®</sup>  
A Division of Cisco Systems, Inc.

*Linksys Phone Adapter Configuration*

Router | Voice

Status | **Wan Setup** | Lan Setup | Application

User Login | basic | advanced

**Internet Connection Settings**  
 Connection Type:

**Static IP Settings**  
 Static IP:  NetMask:   
 Gateway:

**PPPoE Settings**  
 PPPoE Login Name:  PPPoE Login Password:   
 PPPoE Service Name:

**Optional Settings**  
 HostName:  Domain:   
 Primary DNS:  Secondary DNS:   
 DNS Server Order:  DNS Query Mode:   
 Primary NTP Server:  Secondary NTP Server:   
 DHCP IP Revalidate Timer:  Minutes

**MAC Clone Settings**  
 Enable MAC Clone Service:  Cloned MAC Address:

**Remote Management**  
 Enable WAN Web Server:  WAN Web Server Port:

**QoS Settings**  
 QoS Policy:   
 QoS QDisc:  Maximum Uplink Speed:  (Kbps)

**VLAN Settings**  
 Enable VLAN:  VLAN ID:  [0x000-0xffff]

## SIP Configuration

There are two different ways to integrate this gateway with a paging system: using an FXO port or using an FXS port. Consult with the documentation for your paging system to determine which port you should be using for the integration.

**NOTE:** Only follow the steps in the section that applies to your configuration - either

*FXO* Configuration *on page 4* or *FXS Configuration on page 6*, depending on the type of gateway integration.

## FXO Configuration

1. Navigate to **Voice > PSTN Line**.

2. In **Proxy and Registration** ensure the following:

<b>Proxy</b>	IP address or FQDN of the UC server
<b>Outbound Proxy</b>	IP address or FQDN of the UC server
<b>Use Outbound Proxy</b>	no
<b>Use OB Proxy In Dialog</b>	no
<b>Register</b>	no
<b>Make Call Without Reg</b>	yes
<b>Ans Call Without Reg</b>	yes

3. In **Dial Plans** ensure the following:

<b>Dial Plan 1</b>	(xx.<:@gw0>) (calls matching this are routed to go to the FXO port)
<b>Dial Plan 2</b>	(S0<:10000>) (calls matching this are routed to SIP identity 10000)

See below for a screen shot of an example configuration for the steps outlined on page 4.

<b>Proxy and Registration</b>	
Proxy:	192.168.8.7
Outbound Proxy:	192.168.8.7
Use Outbound Proxy:	no
Register:	no
Register Expires:	3600
Use DNS SRV:	no
Proxy Fallback Intvl:	3600
Use OB Proxy In Dialog:	no
Make Call Without Reg:	yes
Ans Call Without Reg:	yes
DNS SRV Auto Prefix:	no
Proxy Redundancy Method:	Normal
<b>Subscriber Information</b>	
Display Name:	
Password:	
Auth ID:	
Mini Certificate:	
SRTP Private Key:	
User ID:	
Use Auth ID:	yes
<b>Audio Configuration</b>	
Preferred Codec:	G711u
Use Pref Codec Only:	no
G729a Enable:	yes
G723 Enable:	yes
G726-16 Enable:	yes
G726-24 Enable:	yes
G726-32 Enable:	yes
G726-40 Enable:	yes
DTMF Process INFO:	yes
DTMF Process AVT:	yes
DTMF Tx Mode:	Strict
FAX Process NSE:	yes
FAX Disable ECAN:	no
Silence Supp Enable:	no
Echo Canc Enable:	yes
Echo Canc Adapt Enable:	yes
Echo Supp Enable:	yes
FAX CED Detect Enable:	yes
FAX CNG Detect Enable:	yes
FAX Passthru Codec:	G711u
FAX Codec Symmetric:	yes
FAX Passthru Method:	NSE
DTMF Tx Method:	Auto
Release Unused Codec:	yes
Symmetric RTP:	yes
<b>Dial Plans</b>	
Dial Plan 1:	(xx.<:@gw0>)
Dial Plan 2:	(S0<:10000>)
Dial Plan 3:	(xx.)
Dial Plan 4:	(xx.)
Dial Plan 5:	(xx.)
Dial Plan 6:	(xx.)
Dial Plan 7:	(xx.)
Dial Plan 8:	(xx.)

4. Navigate to **PSTN-To-VoIP Gateway Setup** and ensure the following:

**PSTN-To-VoIP Gateway Setup**    yes

**PSTN Caller Default DP**    2                    (this matches Dial Plan 2)

The screenshot shows the 'PSTN-To-VoIP Gateway Setup' configuration page. The settings are as follows:

PSTN-To-VoIP Gateway Enable:	yes	PSTN Caller Auth Method:	none
PSTN Ring Thru Line 1:	yes	PSTN PIN Max Retry:	3
PSTN CID For VoIP CID:	no	PSTN CID Number Prefix:	
PSTN Caller Default DP:	2	Off Hook While Calling VoIP:	no
Line 1 Signal Hook Flash To PSTN:	Disabled	PSTN CID Name Prefix:	
PSTN Caller ID Pattern:			
PSTN Access List:			
PSTN Caller 1 PIN:		PSTN Caller 1 DP:	1
PSTN Caller 2 PIN:		PSTN Caller 2 DP:	1
PSTN Caller 3 PIN:		PSTN Caller 3 DP:	1
PSTN Caller 4 PIN:		PSTN Caller 4 DP:	1
PSTN Caller 5 PIN:		PSTN Caller 5 DP:	1
PSTN Caller 6 PIN:		PSTN Caller 6 DP:	1
PSTN Caller 7 PIN:		PSTN Caller 7 DP:	1
PSTN Caller 8 PIN:		PSTN Caller 8 DP:	1

## Notes on Voltage Regulation

You can adjust the voltage settings for the FXO port. The FXO gateway should support an interface voltage of -24 volts (DC). Some paging systems provide for a lower power supply voltage.

**NOTE:** *These settings may vary and are beyond the scope of this document. For more information, please refer to the documentation provided with your paging system or consult with ADTRAN Technical Support.*

The screenshot shows the 'International Control' configuration page. The settings are as follows:

FXO Port Impedance:	600	Ring Frequency Min:	10
SPA To PSTN Gain:	0	Ring Frequency Max:	100
PSTN To SPA Gain:	0	Ring Validation Time:	256 ms
Tip/Ring Voltage Adjust:	3.5 V	Ring Indication Delay:	512 ms
Operational Loop Current Min:	10 mA	Ring Timeout:	640 ms
On-Hook Speed:	Less than 0.5 ms	Ring Threshold:	13.5-16.5 Vrms
Current Limiting Enable:	no	Ringer Impedance:	High (Normal)
Line-In-Use Voltage:	30		

## FXS Configuration

### UC Server Configuration

If the connection to the gateway is via the FXS port, a UC server user is required for registration. This user is registered to the gateway so you can place calls to the paging system from the UC server.

1. Log into UC client as a user with administrative privileges.
2. Right-click in the users contents pane, and select **New user**.

- Depending on how the UC server is integrated into the domain, choose **Windows** or **Local** user.
- Name the user **Overhead Paging**, and provide an identity address suitable for your dial plan.

- Use the default values for the rest of the pages in the Wizard, and click **Finish**.

## FXS Gateway Configuration

- Navigate to **Voice > PSTN Line**.
- In **PSTN-To-VoIP Gateway Setup** ensure the following:

**PSTN-To-VoIP Gateway Setup**    yes

**PSTN Ring Thru Line 1**    yes

**PSTN Caller Default DP**    2 (matches Dial Plan 2)

::

PSTN-To-VoIP Gateway Setup			
PSTN-To-VoIP Gateway Enable:	yes	PSTN Caller Auth Method:	none
PSTN Ring Thru Line 1:	yes	PSTN PIN Max Retry:	3
PSTN CID For VoIP CID:	yes	PSTN CID Number Prefix:	
PSTN Caller Default DP:	2	Off Hook While Calling VoIP:	no
Line 1 Signal Hook Flash To PSTN:	Disabled	PSTN CID Name Prefix:	
PSTN Caller ID Pattern:			
PSTN Access List:			
PSTN Caller 1 PIN:		PSTN Caller 1 DP:	1
PSTN Caller 2 PIN:		PSTN Caller 2 DP:	1
PSTN Caller 3 PIN:		PSTN Caller 3 DP:	1
PSTN Caller 4 PIN:		PSTN Caller 4 DP:	1
PSTN Caller 5 PIN:		PSTN Caller 5 DP:	1
PSTN Caller 6 PIN:		PSTN Caller 6 DP:	1
PSTN Caller 7 PIN:		PSTN Caller 7 DP:	1
PSTN Caller 8 PIN:		PSTN Caller 8 DP:	1



3. Navigate to **Voice > Line 1**.

4. In **Proxy and Registration** ensure the following:

<b>Proxy</b>	<IP address or FQDN of the UC server>
<b>Outbound Proxy</b>	<IP address or FQDN of the UC server>
<b>Use Outbound Proxy</b>	no
<b>Register</b>	yes
<b>Make Call Without Reg</b>	no
<b>Ans Call Without Reg</b>	no

5. In **Subscriber Information** ensure the following:

<b>Display Name</b>	<User you created in <i>UC Server Configuration on page 6</i> >
<b>User ID</b>	<User ID associated with the user you created in <i>UC Server Configuration on page 6</i> >
<b>Password</b>	<User ID associated with the user you created in <i>UC Server Configuration on page 6</i> >
<b>Auth ID</b>	<Same as User ID>
<b>Use Auth ID</b>	yes

Proxy and Registration			
Proxy:	192.168.8.250		
Outbound Proxy:	192.168.8.250		
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
Voice Mail Server:		Mailbox Subscribe Expires:	2147483647
Subscriber Information			
Display Name:	Overhead Paging	User ID:	601
Password:	*****	Use Auth ID:	yes
Auth ID:	601		
Mini Certificate:			
S RTP Private Key:			