

Introduction

This guide assists users to configure the Allworx VoIP Phone System and Ironton Global SIP Trunking.

Prerequisites

- Completed the Allworx Technical training, and the main technician is either an *Allworx Certified Administrator (ACA)* or *Allworx Certified Professional (ACP)*.
- Setup all other functions within the Allworx system prior to connecting Ironton Global SIP services (e.g., DHCP settings and installed the latest software version).
- Ordered Ironton Global SIP Trunking and received the associated configuration information.

Important Notes

This configuration was tested with Allworx server software 8.0.11.5.

The latest software is available at:

https://allworxportal.com/support_training/software.aspx.

Setting up the Allworx System

1. Complete and test the following configurations before connecting to the SIP proxy.
 - a.) Local Area Network has connectivity. Access to the Admin Web GUI. Register at least two local Allworx IP phones on the LAN with the Allworx server and can place station to station calls with each and the server (access voicemail, auto attendants, etc.)
 - b.) Wide Area Network has connectivity. Log in to the Allworx server admin page, and navigate to **Maintenance > Tools**. Locate the Network Diagnostics section and enter an IP Address or Domain Name in the field on line 1. Click **Ping**. Verify the Allworx server successfully pings the gateway IP and an external IP address

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such as a public DNS server. If either of these fails, contact the Network Administrator to correct any configuration issues before continuing with the SIP Proxy configuration.

The Allworx server was tested with Ironton Global SIP Trunking with the following Network Layout (Figure 1) and Network Configuration (Figure 2).

Figure 1

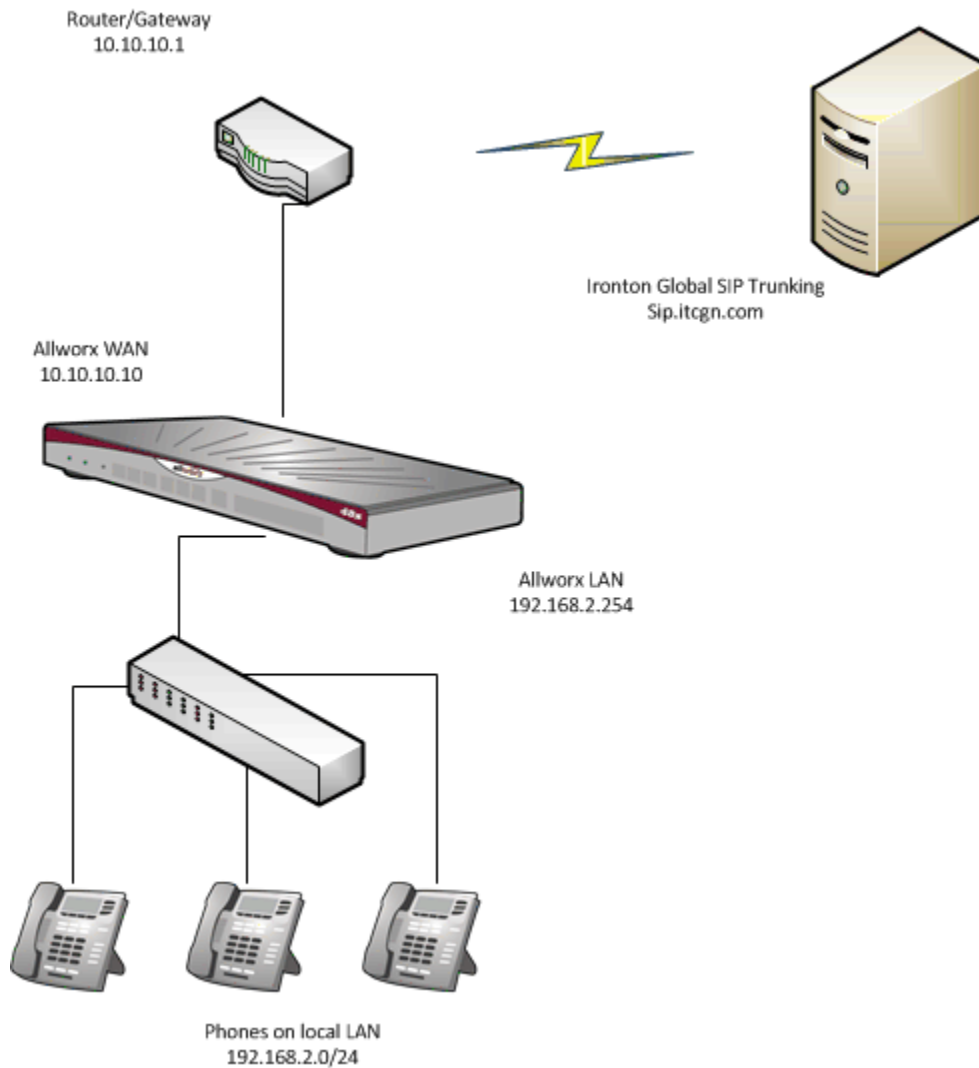


Figure 2

Phone System >

Network >

Servers >

Reports >

Maintenance >

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Allworx Network Mode

<input type="checkbox"/> LAN Host Mode	Another device on the Local Phones interface of the Allworx server is the primary router to the Internet. NAT and Firewall functionalities are not available on the Allworx server.
<input checked="" type="checkbox"/> Enable NAT	Network Address Translation (NAT) enables devices attached to the non-public interfaces of the Allworx server with private (non-globally routeable) IP addresses to communicate on a wider network using the IP address of the Public Interface. In addition to conserving IPv4 Addresses, this protects devices on such private networks from unsolicited Internet traffic.
<input checked="" type="checkbox"/> Enable Firewall	The SPI Firewall protects the Allworx server itself and all services running on it from unsolicited Internet access, allowing access only to ports that the administrator deems necessary.
<input type="checkbox"/> Enable Stealth Mode	In Stealth Mode the Allworx server will not respond to unsolicited connection attempts at all, as if the server did not exist, instead of responding with the standard ICMP Port Unreachable message.

VLAN Configuration [add VLAN](#) (up to 16 VLANs may be defined)

Enabled	Port	Tagged	ID	Description / IP Address	Services	Action
<input checked="" type="checkbox"/>	ETH0 ▾	<input type="checkbox"/>	[]	Local Phones <input type="radio"/> DHCP <input checked="" type="radio"/> Static 192.168.2.254 255.255.255.0 /24 ▾	<input checked="" type="checkbox"/> BLF	
<input checked="" type="checkbox"/>	ETH1 ▾	<input type="checkbox"/>	[]	Description Public <input type="radio"/> DHCP <input checked="" type="radio"/> Static 10.10.10.10 255.255.255.240 /28 ▾	<input type="checkbox"/> BLF	delete

Public Interface

VLAN ETH1/untagged | Public ▾

T1 Port

Default Route

Gateway 10.10.10.1 []

External IP Address []


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Firewall
Allworx Services (ports) exposed through firewall:

- Allworx View (TCP 54441)
- DNS Client (UDP 4069)
- DNS Server (UDP 53)
- HTTP (TCP 80)
- HTTPS: Secure Allworx Administration (TCP 8443)
- HTTPS: Secure My Allworx Manager (TCP 443)
- IMAP4 (TCP 143)
- Multisite Voicemail (TCP 26)
- POP3 (TCP 110)
- PPTP (TCP 1723)
- Remote Allworx Handsets (UDP 2088, TCP 8081)
- SIP (UDP 5060, TCP 5060)
- SNMP (UDP 161)
- SNTP Client (UDP 4068)

- (Optional) Setup the DID Block and DID Routing Plan to use with the SIP Proxy. The cut-sheet received from Ironton Global provides the available numbers.
 - DID block:** Log in to the Allworx server admin page, and navigate to **Phone System > Outside Lines**. Locate the Direct Inward Dial Blocks section and click **add new DID block**.

WARNING
The emergency number dialing rules have not been set. Please [set](#) them now.

DID Block
Starting Phone Number (include Area Code and Exchange)
Total number of phone numbers in the DID Block
DID Routing Plan 

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- b. Build the routing plan and map each DID to the appropriate extensions or destinations such as Call Queues, Auto Attendants, Conference Center, etc. Navigate to **Phone System > Outside Lines > DID Routing Plan**. Locate the Phone Number to Extension Mapping section, and click the appropriate **Modify** link. Using the Extension drop-down arrow, select the extension.

allworx Home > Phone System > Outside Lines > DID Routing Plan logged in as System Administrator (admin) ▼

About

Phone System

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WARNING
The emergency number dialing rules have not been set. Please [set](#) them now.

Routing Plan Information [modify](#)

Description	Routing Plan 1
Default Extension	0 - Operator
Default DNIS Name	{none}
Default Language	Use Source of call
DID Blocks using this plan	(555) 555-5555 / 10 numbers

Phone Number to Extension Mapping

Search match Phone Number, Extension, DNIS Name, or Default Language

⊞ Bulk Edit

▲ Phone Number	Extension	DNIS Name	Default Language	Action
(555) 555-5555	100 - Bruce Batman Wayne	{plan default}	{plan default}	Modify
(555) 555-5556	103 - Clark Superman Kent	{plan default}	{plan default}	Modify
(555) 555-5557	101 - Peter Spiderman Parker	{plan default}	{plan default}	Modify
(555) 555-5558	408 - Conference Center	{plan default}	{plan default}	Modify
(555) 555-5559	431 - Auto Attendant 1	{plan default}	{plan default}	Modify
(555) 555-5560	200 - Queue 0	{plan default}	{plan default}	Modify
(555) 555-5561	102 - Steve Captain America Rogers	{plan default}	{plan default}	Modify
(555) 555-5562	{plan default}	{plan default}	{plan default}	Modify
(555) 555-5563	{plan default}	{plan default}	{plan default}	Modify
(555) 555-5564	{plan default}	{plan default}	{plan default}	Modify

3. Configure the SIP Proxy.
 - a. Navigate to **Phone System > Outside Lines > SIP Proxies > add new SIP Proxy**. Have the main telephone number available, which is usually referred to as the BTN, Billing Telephone Number and the IP address of the SIP server. In the example the BTN is 1-555-555-5555 and the SIP server is sip.itcgn.com.

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Field	Recommend Setting
SIP PROXY	
Description	User assigned label such as, Ironton Global SIP Trunking.
User ID	Provided by Ironton Global should be the main telephone number and/or BTN.
SIP Server	Provided by Ironton Global, tested with sip.itcgn.com
SIP Server Port	Default value is 5060.
Outbound Proxy	Leave Blank.
Outbound Proxy Port	Leave Blank.
SIP Registration Required	Checked.
Login ID	Provided by Ironton Global.
Password	Provided by Ironton Global.
Registrar	Leave Blank.
Registrar Port	Leave Blank.
Caller ID Name	User/Ironton Global Supplied.
Caller ID Number	User/Ironton Global Supplied.
Maximum Active Calls	Provided by Ironton Global
Number of Line Appearances	Default value of 0.
Append Enterprise prefix...	Leave Blank
Send Digits as dialed	Unchecked if using ARS, checked if always dialing 11 digits.
Digits Sent	Select all digits.
Default Language	User specified
Default Auto Attendant	This is a customer specific setting and defines which automated attendant plays for each incoming call that ends up at the AA.

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SIP Proxy 

Description Ironton Global SIP Trunking

User ID 1555555555

SIP Server sip.itcgn.com **Port** 5060
(customer domain/realm) (enter IP Address or Domain Name)

Outbound Proxy **Port**
(if different from SIP Server) (enter IP Address or Domain Name)

SIP Registration required

Login ID 1555555555

Password ●●●●●●●● (6 to 40 characters)

Registrar **Port**
(if different from Outbound Proxy) (enter IP Address or Domain Name)

Caller ID Name Allworx up to 47 characters: letters digits . , \ _ ' -

Use External Caller ID Name from handset (if specified)

Use Caller ID Name from external sources (if received)

Caller ID Number 1555555555 (up to 24 digits)

Use External Caller ID Number from handset (if specified)

Use Caller ID Number from external sources (if received)

Maximum Active Calls 10 (1 to 99, should not exceed proxy capabilities or available bandwidth)

Number of Line Appearances 0 (0 to Maximum Active Calls)

Append Enterprise Prefix to Dialback number for incoming calls

Send digits as dialed (without deleting, inserting, or appending per External Dialing Rules)

Digits Sent all digits (digits from the full number, 1-XXX-XXX-XXXX, to send to the proxy)

Default Auto Attendant

Select the attendant used to answer when calls received from this source are routed to an Auto Attendant.

Auto Attendant - Main (x431) ▼

Advanced Settings

Pad DTMF RTP Packets	Unchecked
Enable Early Media	Checked
Supports SIP REFER	Unchecked
Supports SIP Redirect	Unchecked
Use E.164 format...	Unchecked
Offer '100rel' support	Unchecked
Supports Symmetric...	Unchecked
Allow SIP P-Asserted...	Unchecked
Send Diversion Header	Select 'on redirect'

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Obtain DID/DNIS number... Select 'SIP TO: header field'

Use < > in Request URI of outbound calls Select 'dialed number'

Advanced Settings

- Pad DTMF RTP Packets
- Enable Early Media (allow audio from 183 Session Progress responses)
- Supports SIP REFER (when calls from this proxy are transferred back to this proxy)
- Supports SIP Redirect (when call requests from this proxy are routed back to the proxy)
- Use E.164 format for phone numbers
- Offer '100rel' support (RFC 3262 - PRACK)
- Supports Symmetric Response Routing (RFC 3581 - include "rport" in requests)
- Allow SIP P-Asserted-Identity (RFC 3325 - Adds device to the Trust Domain)

Use Proxy Caller ID Name

- Caller ID Name
- User ID
- Domain

Send SIP Diversion header (RFC 5806 - Diversion Indication in SIP)

Obtain DID/DNIS number from

Use in Request URI of outbound calls

Features

Prefix String (digits/characters sent by the Allworx to proxy before sending number dialed)

Call Route

Proxy is an "Enterprise Server" (calls received from this proxy follow the Internal Dial Plan)

Calls received from this SIP Proxy go to:

- Extension
- Auto Attendant
- Voicemail for user
- Routed using DID Block:
 - 1555555555 / 10 Numbers / Routing Plan 1

- b. (Optional) Route DID to specific locations. Navigate to **Phone System > Outside Lines > New SIP Proxy**. Locate the Call Route section. Select the **Routed using DID Block:** option, and then select the DID block created earlier.

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4. Setup the Allworx VoIP Server parameters. Navigate to **Servers > VoIP**. Click **modify** to change any of the settings.

Field	Recommend Setting
BLF Port	Leave as default 2088
Secure BLF	Unchecked
Force Remote Phone audio through server	Checked.
Plug and Play Secret Key	6 to 20 characters use 0-9, and #
Phone Administration Password	0 to 6 characters, use alphanumeric and #
Global SIP Connection Limit	Set to maximum number of concurrent calls allowed plus the number of remote handsets
Paging Base IP address	Use the default setting of 239.255.10.0.
Paging Port	Use the default setting of 56586.
Paging Maximum Hop Count	Typically us the default setting of 1.
Paging Maximum Duration	Set between 1 and 30 minutes
RTP Base Port	User/Ironton Global specified. By default 15000, some providers require a specific starting port such as 16384.
RTP DTMF Payload	Set to 101
RTP DSCP Tag	Select 'Expedited Forwarding (EF)'
SIP DSCP Tag	Select 'Assured Forwarding 41 (AF41)'
Disable Phone Creates via LAN Plug and Play	Typically Unchecked but once all phones have been added to the system for security purposes can be Checked.
Disable Phone Creates via WAN Plug and Play	Typically Unchecked but once all remote phones have been added to the system for security purposes can be Checked.
Disable Assign User at Phone	Typically Unchecked but once all remote phones have been added to the system for security purposes can be Checked.

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Enable PCP Proxy

Typically enabled, allows PCP between PC and Phones on different VLANs. Refer to Admin Guide.

VoIP Server  [modify](#)

	Current Value
BLF Port	2088
BLF Secure	disabled
Force Remote Phone audio through server	enabled
Plug and Play Secret Key	***** show
Phone Administration Password	***** show
Global SIP Connection Limit	2
Paging Base IP Addr	239.255.10.0
Paging Port	56586
Paging Max Hop Count	1
Paging Maximum Duration (minutes)	1
RTP Base Port	15000
RTP DTMF Payload	101
RTP DSCP Tag	Expedited Forwarding (EF)
SIP DSCP Tag	Assured Forwarding 41 (AF41)
Phone Creates via LAN Plug and Play	disabled
Phone Creates via WAN (Remote Phone) Plug and Play	disabled
Assign User at Phone	disabled
PCP Proxy	enabled

5. Configure the Dial Plan. Navigate to **Phone System > Dial Plan**.
 - a. Create a service group for the SIP trunk. Locate the Service Groups section and click **add new Service Group**. Select the Ironton Global SIP trunk and click **Add**.

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Service Group

A **Service Group** is an ordered list of services (CO Lines, Digital Lines, SIP Gateways, SIP Proxies) the system will use when attempting to make an outside call. Services in a group are tried in order until the outside call can be placed.

Select a service from the list of Services and move it to the Service Group. You can also move services in a group up or down to change the order the system will use.

Description

Services		Service Group	
<div style="border: 1px solid gray; height: 100px;"></div>	<input type="button" value="move ->"/>	Ironton Global SIP Trunking (SII)	<input type="button" value="move up"/>
	<input type="button" value="<- move"/>		<input type="button" value="move down"/>

- b. Modify the existing rules and set the Service Group to the newly created custom service group.

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North American Numbering Plan Administration (NANPA)	enabled	Modify
Home Area Code		Modify

Automatic Route Selection [add new rule](#)

Number Dialed	Output Dial String	Service Group	Action
9+1nnnnnnnnnn	1nnnnnnnnnn	Ironton Global	Modify

n - number (0-9)

Emergency

Type	Number Dialed	Service Group	Action
Emergency	9+911 911	see Dialing Privileges Group for source of call	Modify

Emergency Call Email Notifications are not enabled. [Modify](#)

Services

Type	Number Dialed	Service Group	Action
Phone Services (211,311,411,511,611,711,811)	9+n11	Ironton Global	Modify
Operator	9+0	Ironton Global	
Long Distance Services	9+1010...	Ironton Global	
International Calls	9+011...	Ironton Global	
Public SIP Directory	8+nnnnnnnnnn (11 digits)	No Devices	
PIN Code	78+nnnnn (5 digits)	No Devices	
Outside Line Seizure	9#	No Devices	

Support

Allworx

Allworx Technical Support:
1-866-Allworx (255-9679)
Monday - Friday 8:00 am to 8:00 pm EST
support@allworx.com

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www.allworx.com

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Ironton Global

Ironton Global customers may obtain support for the Ironton Global SIP Trunking service by calling 1-855-226-0531

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