

SIP Trunking using Optimum Business® SIP Trunk Adaptor and the Allworx 6x IP PBX 7.1.6.1

Goal

The purpose of this configuration guide is to describe the steps needed to configure the Allworx 6x IP PBX 7.1.6.1 for proper operation with Optimum Business SIP Trunking.

Prerequisites

Please follow the instructions in the Optimum Business SIP Trunk Set-up Guide. The Set-up Guide was left by the Optimum Business technician at installation. If you do not have the Set-up Guide, go to www.optimumbusiness.com/SIP to download a copy.

Allworx 6x IP PBX Configuration

The steps on the next page describe the minimum configuration required to enable the Allworx 6x IP PBX to use Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the Allworx System Administration screen for more information on advanced PBX features.

The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on Allworx 6x IP PBX 7.1.6.1.

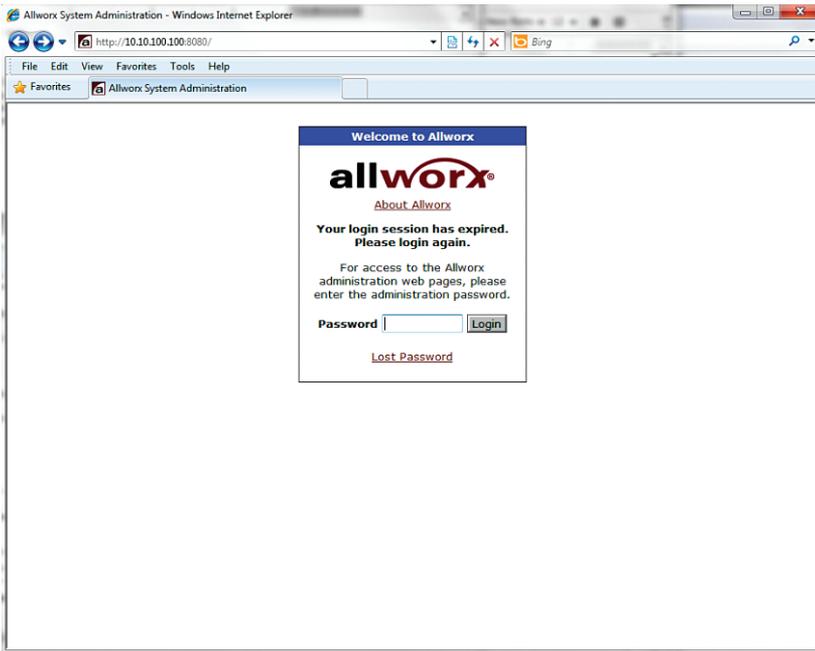
Set up the Allworx 6x IP PBX for SIP Trunk provisioning.

The IP PBX may be configured to communicate with the Optimum Business SIP Trunk Adaptor by using static IP address or SIP registration.

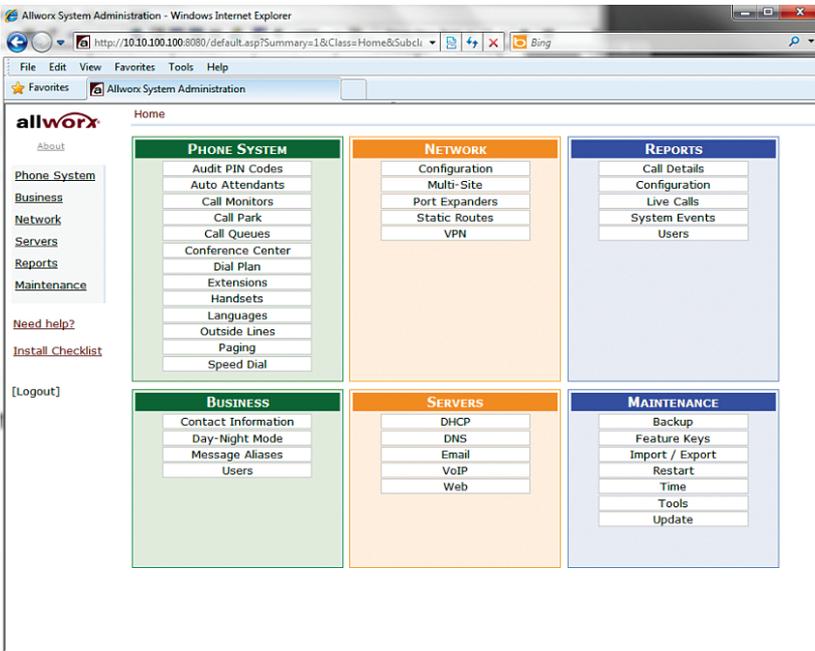
The Allworx 6x works well with the Allworx 9112 or 9212 phones.

The PBX, the phones and the Optimum Business SIP Trunk Adaptor must be in the same LAN segment. The PBX is shipped with a default IP address for the LAN port of 192.168.2.254/24. The DHCP server must be enabled to provide IP addresses for the phones. To work with the Optimum Business SIP Trunk service, the LAN port should be in the same subnet as the Optimum SIP Trunk Adaptor's LAN port 1 and use the Optimum SIP Trunk Adaptor's port 1 IP address as its SIP server or gateway. This is step 2 in the Optimum Business SIP Trunk Set-up Guide. The IP phones communicate with the PBX via this IP address as well, using the SIP VoIP protocol. The IP phones by default will need IP address assignments.

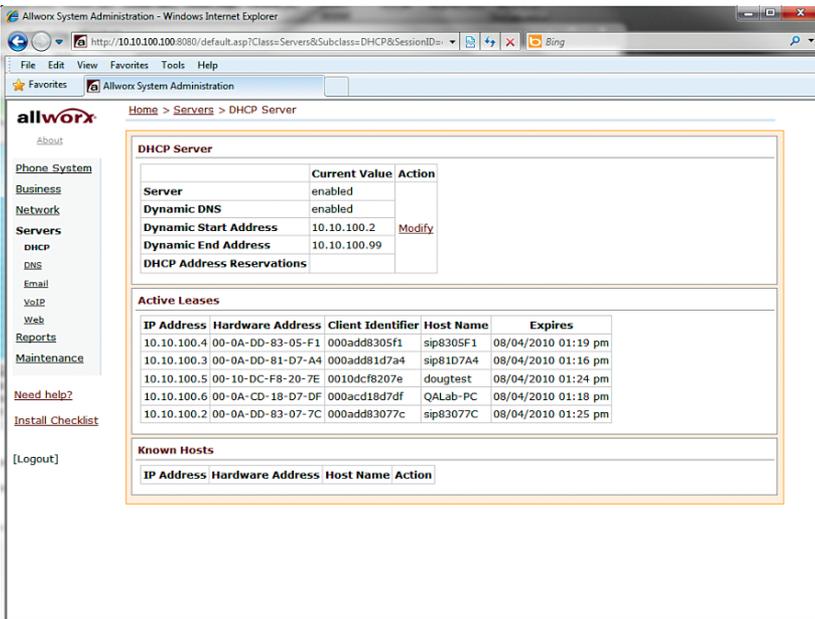
The IP PBX can be set up with the following procedures:



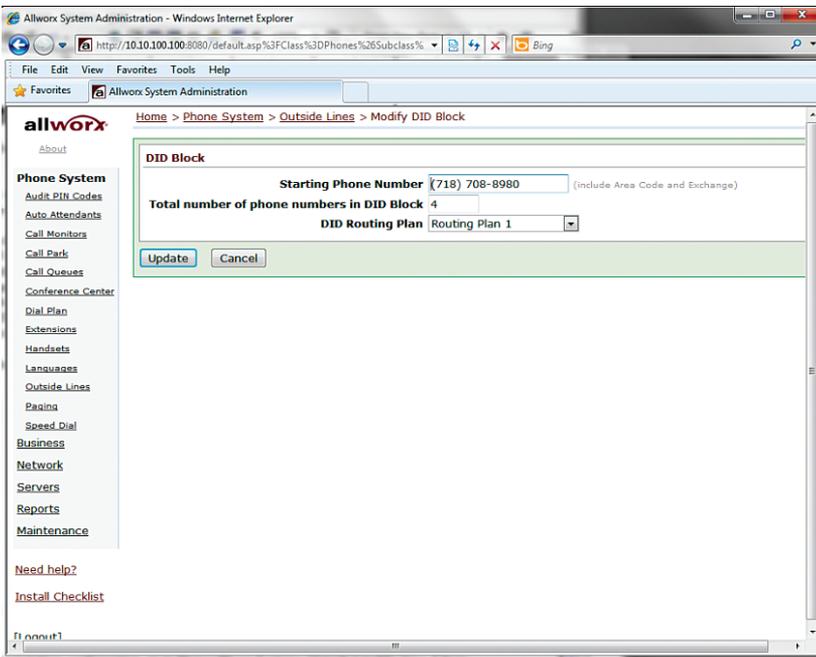
1. To configure the IP PBX, run `http://192.168.2.254:8080` on your PC, and you will see the Allworx System Administration screen for login.



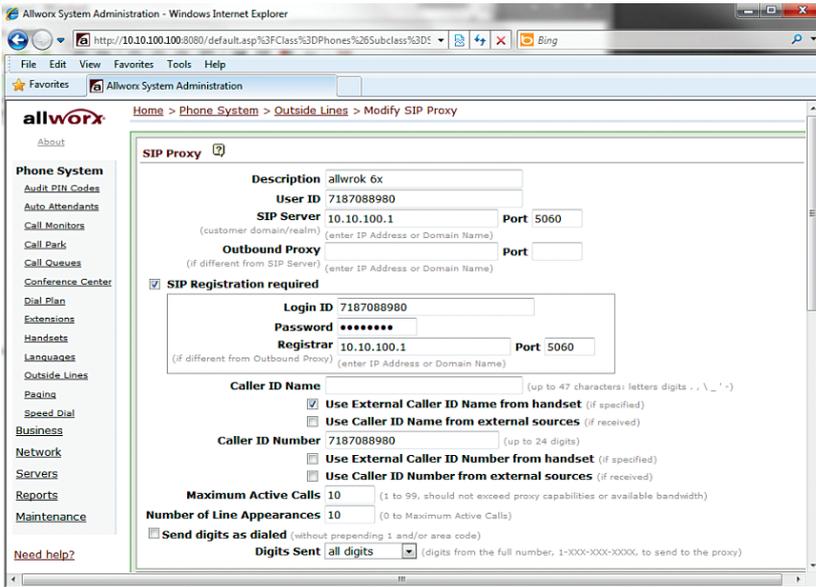
2. Log in with "admin" as Password, and you will see the Home screen.



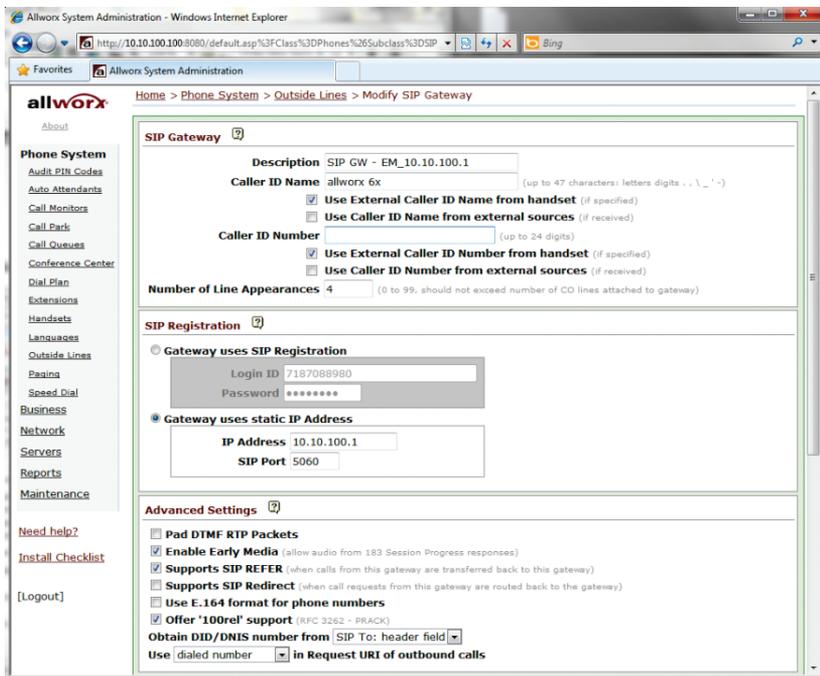
3. Go to **Home>Server>DHCP Server** and make sure DHCP is enabled for the phones.



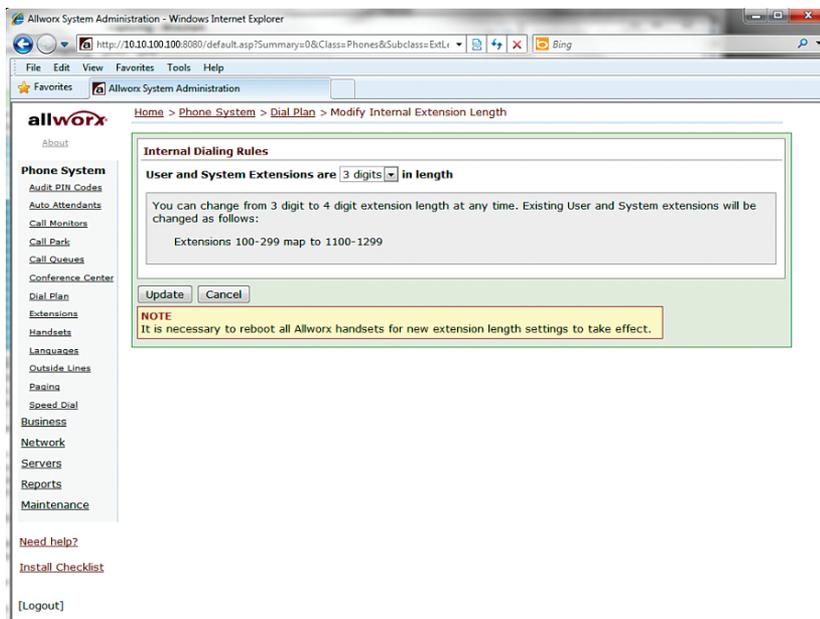
4. Go to **Home>Phone System>Outside Lines** and create DID blocks for this SIP trunk.



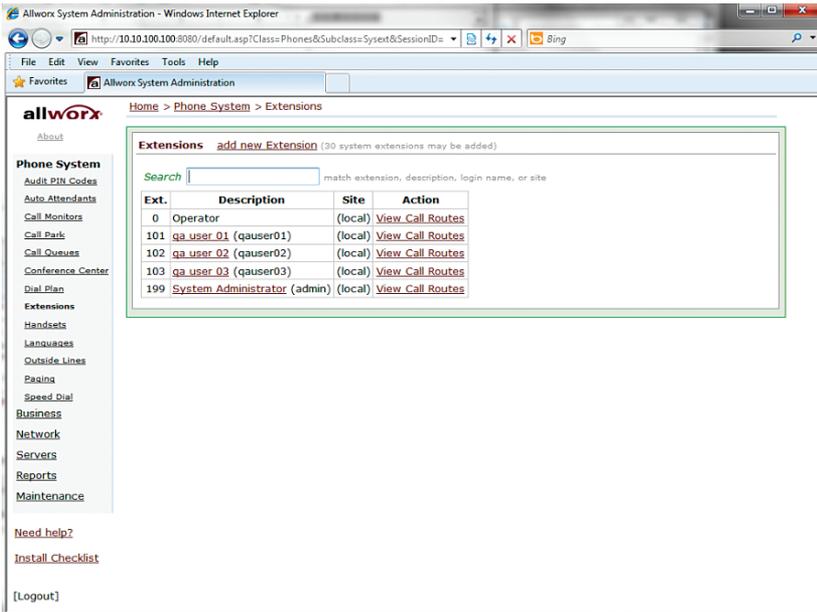
For Registration Mode, go to **Home>Phone System>Outside Lines>Modify SIP Proxy** and check the **SIP Registration Required** check box. Fill in the field with the Pilot DID, your password, the IP address of the Optimum Business SIP Trunk Adaptor as the registrar and 5060 for the Port. Fill in the **Caller ID Number** with the Pilot DID and **uncheck** the item **Use External Caller ID Number from handset**.



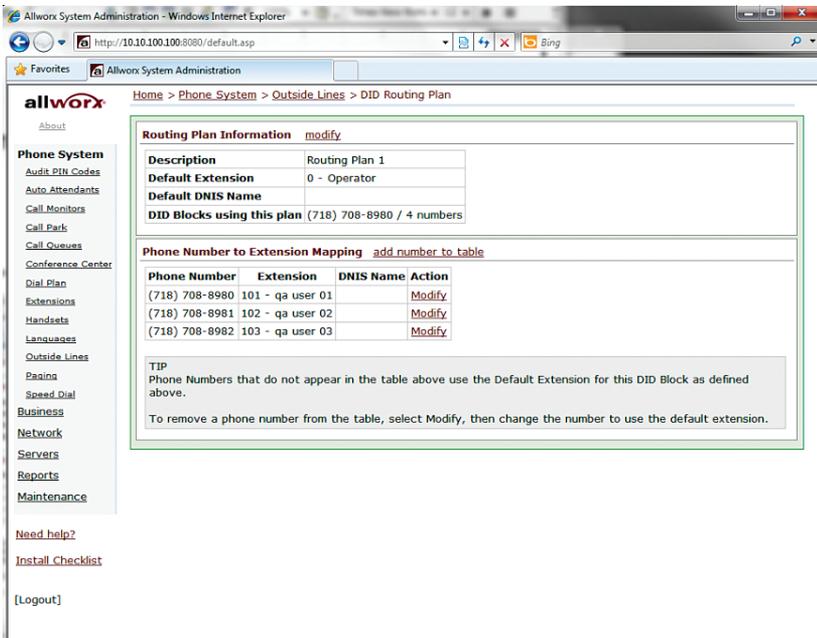
- For non-registration mode, go to **Home>Phone System>Outside Lines>Modify SIP Gateway** and select **Gateway uses static IP address**. Check the box under **Caller ID Number** marked **Use External Caller ID Name from handset**.



6. Go to **Home>Phone System >Dial Plan** and set the internal extension length.



7. Go to **Home>Phone System >Extensions** and create new extensions.



8. Go to **Home>Phone System >Outside Lines>DID Routing Plan** and map the phone numbers to the extensions.

The screenshot shows the Allworx System Administration interface. The breadcrumb trail is **Home > Phone System > Dial Plan**. The page title is **Internal Extension Length**. Below the title, it states: "User and System Extensions are 3 digits in length." The main section is titled **Internal Dial Plan** and contains a table with the following content:

Plan	
1xx	User and System Extensions
2xx	Operator
0	Operator
9 + external number	External Call access (follows External Dialing Rules below)
8 + enterprise number	Enterprise calling
5nnn	Internal station access (reserved for system)
350-399	Speed dial numbers
34nnn	Speed dial numbers
6 + user extension	Message Center
700 call park	Call Functions (park/pickup/audit pin code)
701-709 call retrieve	
7xxx call pickup	
78 + pin code	
3 + user extension	Leave a voicemail for extension
403 door relay	PBX Functions
408 conference center	
42n do not disturb	
43n auto attendants	
44nn call queues	
45xxx call forwarding	
46n paging	

Below the table, there is a section for **External Dialing Rules** with the text: "North American Numbering Plan Administration (NANPA) enabled [Modify](#)".

The screenshot shows the Allworx System Administration interface for **External Dialing Rules**. The breadcrumb trail is **Home > Phone System > Outside Lines > DID Routing Plan**. The page title is **External Dialing Rules**. Below the title, it states: "North American Numbering Plan Administration (NANPA) enabled [Modify](#)".

Area Code	Exchange	Number Dialed	Service Group	Action
Home	408	9+408-xxx-nnnn 9+1+408-xxx-nnnn	All CO Lines & SIP Gateways	Modify
	all others	9+1+aaa-xxx-nnnn	All CO Lines & SIP Gateways	

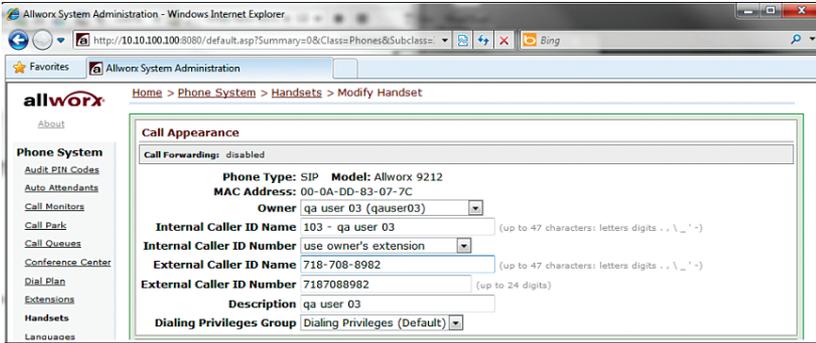
aaa - area code xxx - exchange nnnn - number

Type	Number Dialed	Service Group	Action
Emergency	9+911	see Dialing Privileges Group for source of call	
Phone Services (211,311,411,511,611,711,811)	9+n11	All Trunk Devices	
Operator	9+0	All Trunk Devices	
Long Distance Services	9+1010...	All Trunk Devices	Modify
International Calls	9+011...	All Trunk Devices	
Public SIP Directory	8+nnnnnnnnn (10 digits)	All SIP Proxies	
PIN Code	78+nnnnn	All CO Lines	
Outside Line Seizure	9#	All Trunk Devices	

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

9. Go to **Home>Phone System >Dial Plan** and add the external dialing rules if needed.

Note: Allworx 6x PBX does not have a default external dialing rule for “9+ 10-digit number” dialing, and such dialing rule can only be created for the home area code. In this example, “9+ 10-digit number” dialing can only work for the “408” area code.



10. Go to **Home>Phone System>Handsets** and configure Caller ID for each handset.

In non-registration mode, each handset can be set to use its assigned DID. In registration mode, each handset **must** be set to use the Pilot DID in order to make outgoing calls.

11. The Cablevision network only supports inband DTMF tones. The Allworx PBX only supports sending out-of-band DTMF tones. In order for the Allworx PBX to operate correctly with the Cablevision network, the Optimum SIP Trunk Adaptor must be enabled to convert out-of-band DTMF tones sent by the Allworx PBX to inband DTMF tones. To enable this conversion, log into the Optimum SIP Trunk Adaptor using the login and password specified in the Optimum SIP Trunk Adaptor Set-up Guide. On the **SIP Trunk Configuration** page, you **must** check the **Convert Inband DTMF** checkbox, and click the **Submit** button to update this setting.

