July 3rd 2013

SIP Trunking using the EdgeMarc Network Services Gateway and the Allworx 6x IP-PBX 7.6.7.3

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Table of Contents

1 Overview 3
2 Prerequisites 3
3 Network Topology 4
4 Description of Basic Operation and Call Flows 5
5 Allworx 7x PBX Configuration 5
5.1 Default IP Address 5
5.2 Web GUI Access 6
5.3 Username and Password 7
5.4 Network Settings 8
5.5 PBX access 10
5.6 Configuring EdgeMarc as SIP server in PBX Registration mode 12
5.7 Configuring EdgeMarc as SIP server in Static IP mode 15
5.8 Creating Extension length & configuring DHCP server 16
5.9 Creating user & extension for IP phones 21
5.10 Configuring Caller ID for IP phones 22
5.11 Creating user & extension for analog phones 23
5.12 Configuring Caller ID for Analog phones 25
5.13 Mapping DIDs to appropriate extensions 26
5.14 Viewing External Dialing Rules configured for SIP trunk 28
5.15 Enabling NANPA 29
5.16 Setting Area code for 7-digit dialing 30
5.17 PBX Call features 31
5.18 Sequential Ring 41
5.19 Simultaneous Hunting Policy 44
5.20 Backing up the PBX configurations 58
5.21 Restoring the PBX configurations 60

1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Allworx 6x IP-PBX for proper operation in a SIP Trunking application with the e-SBC EdgeMarc. Please note that this guide documents the basic configuration needed in the Allworx 6x IP-PBX and that the requirements of specific SIP Trunking environments may require modifications to the configuration steps provided in this document.

2 Prerequisites

SIP Trunking information provided by the VoIP service provider:

- SIP proxy server IP address or DNS name.
- Trunking Direct Inward Dial (DID) phone numbers
    - Calls to the Trunking DID(s) are forwarded from the service provider to the wide area network (WAN) IP address of the EdgeMarc. There may be a single Pilot phone number used for all inbound calls and/or multiple DIDs depending on the service provider settings.
- SIP authentication credentials (optional)
    - Some SIP Trunking service providers require a unique username and password to be supplied for IP PBX registrations and/or SIP signaling using P-Asserted-Identity (RFC 3325). This configuration guide provides the configuration steps for both PBX registration and static or non-registration modes of PBX operation.

3 Network Topology

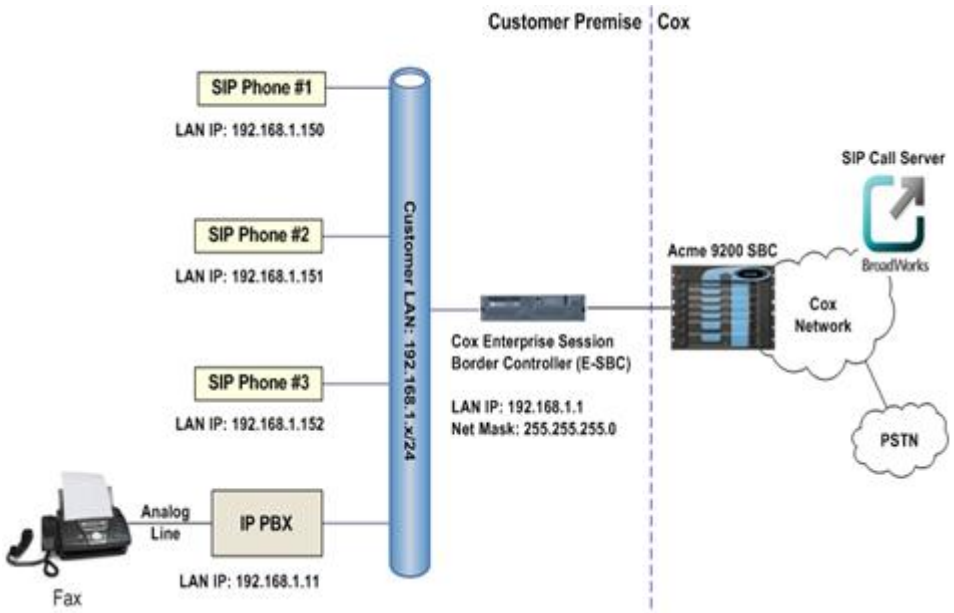


Figure 1 Test Set up

The PBX in the above network topology represents the PBX that is connected via its LAN port to the LAN port of the EdgeMarc Network Services gateway.

Table 1 – PBX Information

Manufacturer:	Allworx
Model:	Allworx 6x
Software Version:	7.6.7.3
Does the PBX send SIP Registration messages (Yes/No)?	Yes
Vendor Contact:	585-421-3850 support@allworx.com

Table 2 – E-SBC Information

Manufacturer:	Edgewater Network, Inc.
Model:	4552
Software Version:	11.6.14

4 Description of Basic Operation and Call Flows

Basic Call Flow:
All phones connect to the ALLWORX 6X IP-PBX. The ALLWORX 6X IP-PBX will interface with the service provider using SIP trunks.

Internal calls:
- Calls between phones on the LAN
- LAN phone -> ALLWORX 6X IP-PBX -> LAN phone

Outbound calls:
- Call is initiated by a LAN phone to a WAN phone.
- LAN phone -> ALLWORX 6X IP-PBX <SIP trunk> -> EdgeMarc -> SIP trunk service provider -> WAN phone

Inbound call:
- Call is initiated by a WAN phone to a LAN phone.
- WAN phone -> SIP trunk service provider EdgeMarc -> <SIP trunk> ALLWORX 6X IP-PBX -> LAN phone

5 Allworx 7x PBX Configuration

The steps below describe the minimum configuration required to enable the PBX to use a SIP trunk for inbound and outbound calling. Please refer to the Allworx 6x product documentation for more information on SIP trunking or other advanced PBX features.

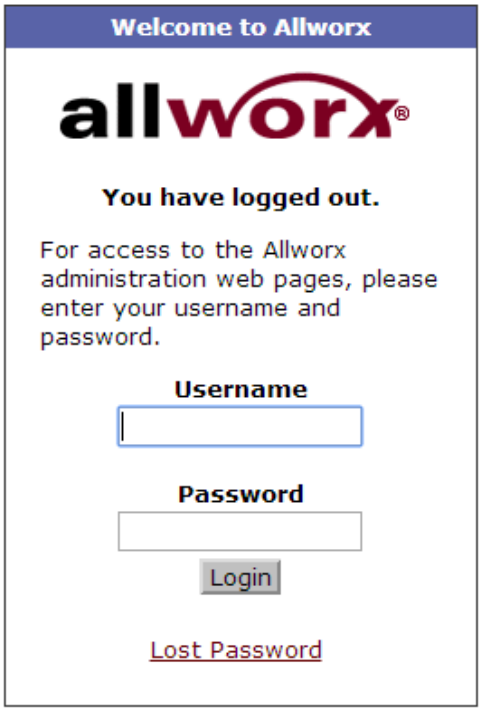
The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on Allworx 6x.

5.1 Default IP Address

The Allworx PBX, the Allworx IP phones and EdgeMarc's LAN port should be in the same LAN segment. The PBX is shipped with a default IP address of 192.168.2.254/24 for the LAN port. To work with the EdgeMarc's SIP trunking service, the PBX should use EdgeMarc's LAN IP address as its SIP server and gateway. In the lab, the PBX's LAN port and EdgeMarc's LAN port have been assigned with IP addresses of 10.10.107.11/24 and 10.10.107.1/24 respectively. The PBX may be configured to communicate with EdgeMarc using SIP Registration mode or Static IP mode. The PBX's DHCP server should be enabled to provide IP addresses for the Allworx IP phones as these IP phones by default have the DHCP parameter set to Enabled. The IP phones communicate with the PBX using the SIP VoIP protocol.

5.2 Web GUI Access

To access the PBX for the first time, run http://192.168.2.254:8080 on your PC and you should see the Allworx System Administration screen for login.

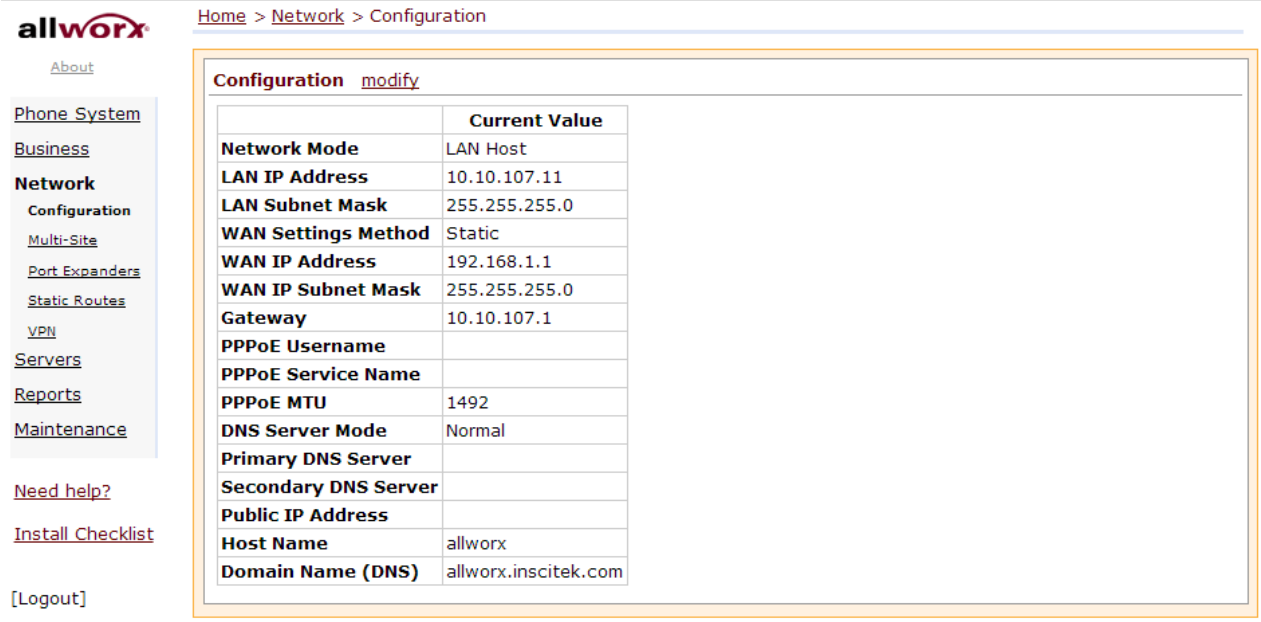


5.3 Username and Password

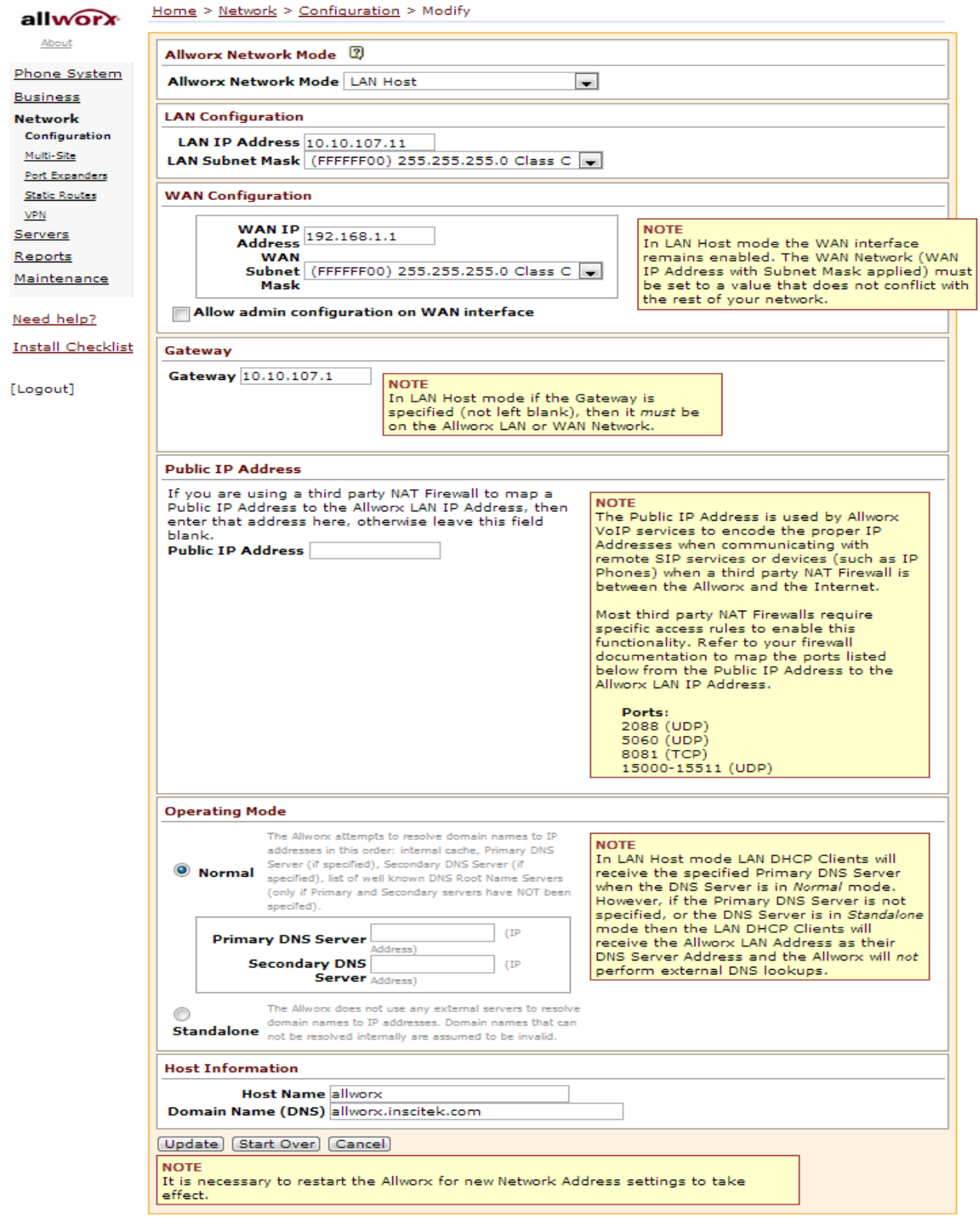
Enter the default password, **admin**, in the **Password** field, click the **Login** button and you should see the Home screen of the PBX.

5.4 Network Settings

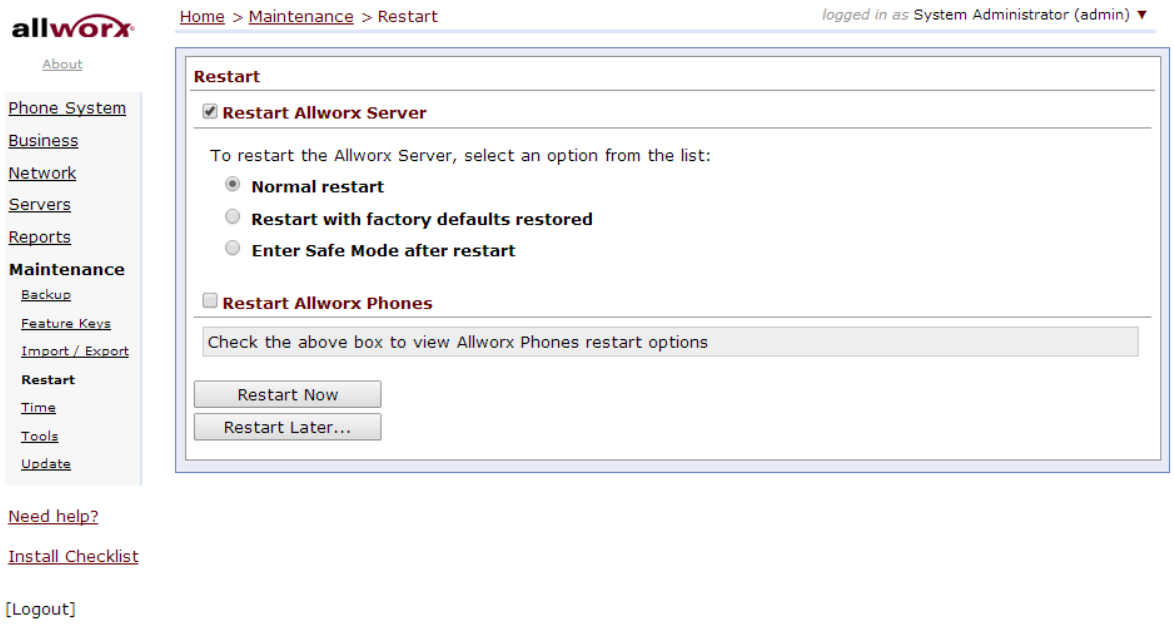
In order to configure SIP Trunk services navigate to **Network** > **Configuration** to change the PBX's default LAN network to the one you intend to use in your network.



Click the **Modify** link.
Select LAN Host in the Allworx Network Mode field.
Enter PBX's LAN IP address in the **LAN IP Address** field.
Select (FFFFFF00) 255.255.255.0 Class C in the LAN Subnet Mask field.
Enter EdgeMarc's LAN IP address in the **Gateway** field.
Leave other fields as defaults and then click the **Update** button at the bottom of the screen.


allworx
About
Phone System
Business
Network
Configuration
Multi-Site
Port Expanders
Static Routes
VPN
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Network > Configuration > Modify
Allworx Network Mode
Allworx Network Mode LAN Host
LAN Configuration
LAN IP Address 10.10.107.11
LAN Subnet Mask (FFFFFF00) 255.255.255.0 Class C
WAN Configuration
WAN IP Address 192.168.1.1
WAN Subnet Mask (FFFFFF00) 255.255.255.0 Class C
Allow admin configuration on WAN interface
NOTE
In LAN Host mode the WAN interface remains enabled. The WAN Network (WAN IP Address with Subnet Mask applied) must be set to a value that does not conflict with the rest of your network.
Gateway
Gateway 10.10.107.1
NOTE
In LAN Host mode if the Gateway is specified (not left blank), then it must be on the Allworx LAN or WAN Network.
Public IP Address
If you are using a third party NAT Firewall to map a Public IP Address to the Allworx LAN IP Address, then enter that address here, otherwise leave this field blank.
Public IP Address
NOTE
The Public IP Address is used by Allworx VoIP services to encode the proper IP Addresses when communicating with remote SIP services or devices (such as IP Phones) when a third party NAT Firewall is between the Allworx and the Internet.
Most third party NAT Firewalls require specific access rules to enable this functionality. Refer to your firewall documentation to map the ports listed below from the Public IP Address to the Allworx LAN IP Address.
Ports:
2088 (UDP)
5060 (UDP)
8081 (TCP)
15000-15511 (UDP)
Operating Mode
Normal
The Allworx attempts to resolve domain names to IP addresses in this order: internal cache, Primary DNS Server (if specified), Secondary DNS Server (if specified), list of well known DNS Root Name Servers (only if Primary and Secondary servers have NOT been specified).
Primary DNS Server (IP Address)
Secondary DNS Server (IP Address)
Standalone
The Allworx does not use any external servers to resolve domain names to IP addresses. Domain names that can not be resolved internally are assumed to be invalid.
NOTE
In LAN Host mode LAN DHCP Clients will receive the specified Primary DNS Server when the DNS Server is in Normal mode. However, if the Primary DNS Server is not specified, or the DNS Server is in Standalone mode then the LAN DHCP Clients will receive the Allworx LAN Address as their DNS Server Address and the Allworx will not perform external DNS lookups.
Host Information
Host Name allworx
Domain Name (DNS) allworx.inscitek.com
Update
Start Over
Cancel
NOTE
It is necessary to restart the Allworx for new Network Address settings to take effect.

Now restart the PBX for the new LAN network settings to take effect. Navigate to **Home** > **Maintenance** > **Restart**, select the **Restart Allworx Server** and then select **Normal restart** radio button and click the **Restart Now** button.



5.5 PBX access

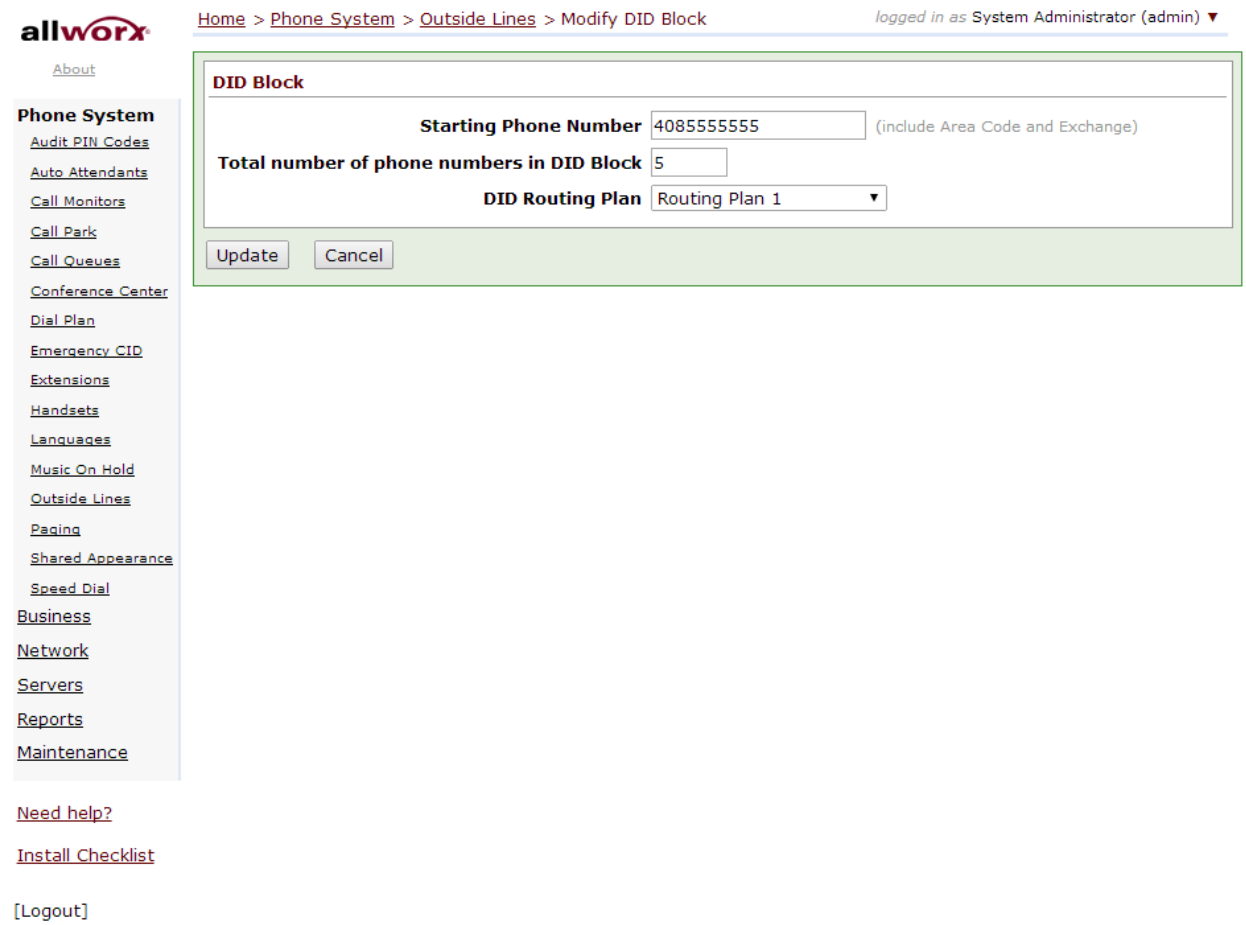
To access the PBX after the LAN IP address has been changed, run http://10.10.107.11:8080 (according to this example) on your PC and login again to start configuring the PBX for SIP Trunk services. Navigate to **Home** > **Phone System** > **Outside Lines** > **Direct Inward Dial Blocks** and click the **Add new DID Block** link to configure the SIP Trunk DIDs. In this example, a set of DIDs (408-555-5555...5559) has been assigned for this SIP Trunk, with 408-555-5555 being the Pilot DID. Note: We are not assigning the Pilot DID to the phone that is in this example.

Enter the starting DID (**408-555-5555** in this example) in the **Starting Phone Number** field.

Enter the number of DIDs (24 in this example) intended for assigning to the phones in the **Total number of phone numbers in the DID Block** field.

Select Routing Plan 1 from the DID Routing Plan field.

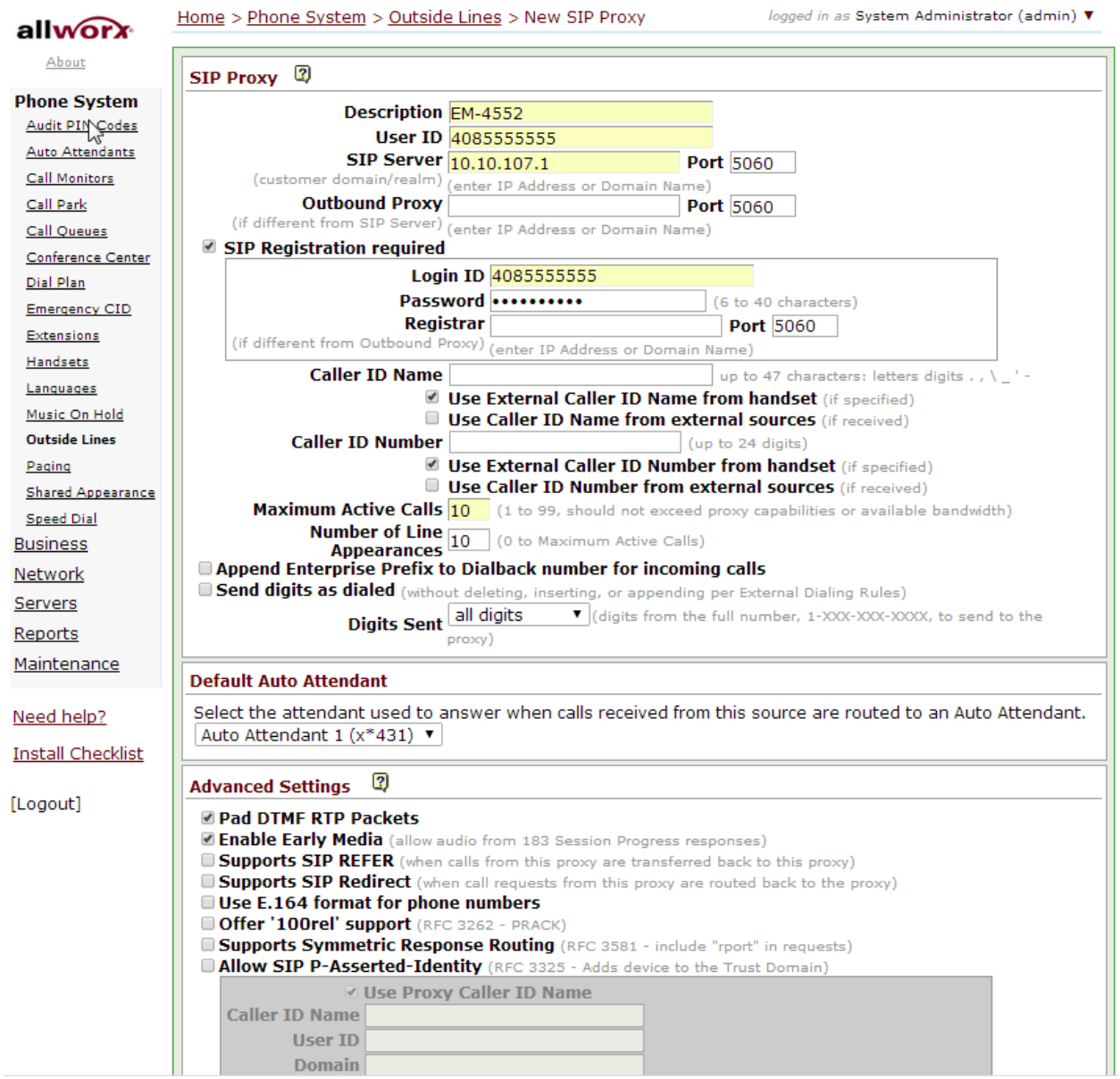
Click the **Add** button.

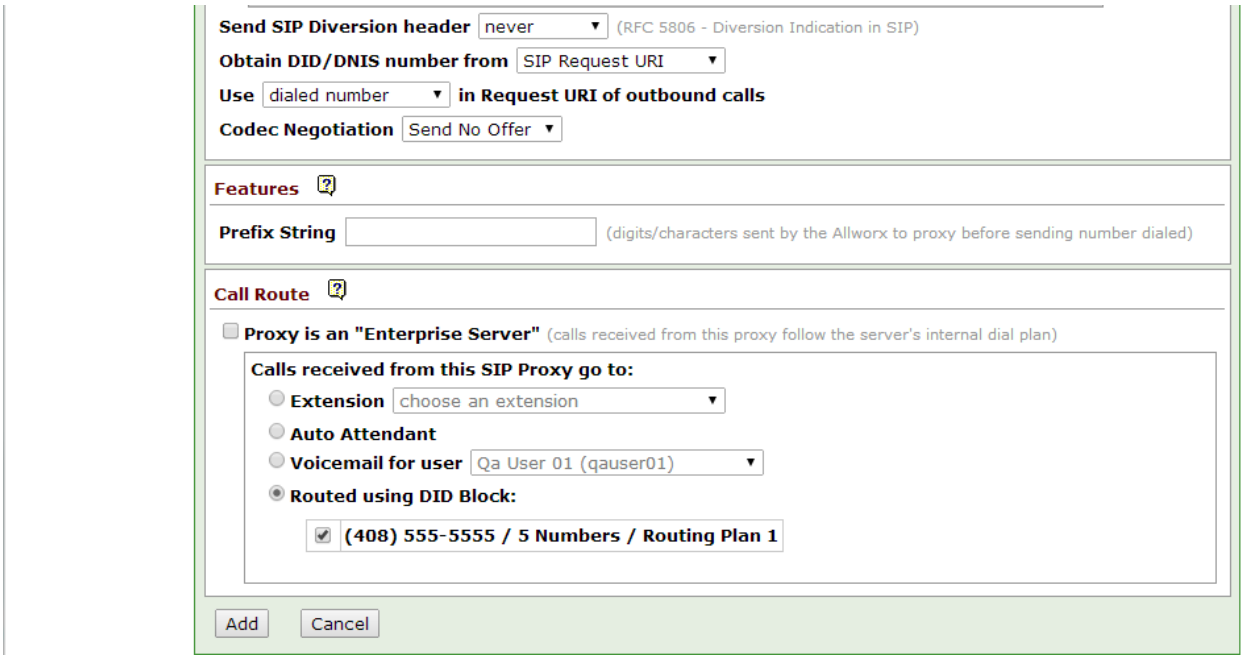

allworx
About
Phone System
Audit PIN Codes
Auto Attendants
Call Monitors
Call Park
Call Queues
Conference Center
Dial Plan
Emergency CID
Extensions
Handsets
Languages
Music On Hold
Outside Lines
Paging
Shared Appearance
Speed Dial
Business
Network
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Phone System > Outside Lines > Modify DID Block
logged in as System Administrator (admin)
DID Block
Starting Phone Number
4085555555
(include Area Code and Exchange)
Total number of phone numbers in DID Block
5
DID Routing Plan
Routing Plan 1
Update
Cancel

5.6 Configuring EdgeMarc as SIP server in PBX Registration mode

To configure EdgeMarc as the SIP server in PBX Registration mode, navigate to **Home** > **Phone System** > **Outside Lines** > **SIP Proxies** and click the **Add new SIP Proxy** link.
Skip this step if you are to configure EdgeMarc as the SIP server for Static IP mode.
Enter a description in the **Description** field.
Enter the User ID of **4085555555** (the SIP Trunk pilot DID in this example) in the **User ID** field. Note that, for SIP Registration mode, the PBX's User ID and password must match the username and password configured for the PBX on EdgeMarc.
Enter EdgeMarc's LAN IP address in the **SIP Serve**r field.
Check the SIP Registration required checkbox.
Enter the same User ID in the **Login ID** field.
Enter the password in the **Password** field.
Enter a number (**10** in this example) in the **Maximum Active Calls** field.
Enter a number (**10** in this example) in the **Number of Line Appearances** field.
Check the Send digits as dialed checkbox.
Select **all digits** in the **Digits Sent** field.
Select **Auto attendant 1 (x431)** as the Default Auto Attendant.
In the Call Route section, select the **Routed using DID Block(s):** radio button and click the **check all** link.
Leave other fields as defaults and then click the **Add** button.

The PBX may have enabled more options than we need; navigate to **Home** > **Phone System** > **Outside Lines** > **SIP Proxies** and click the **Modify** link.
In the Advanced Settings section, make sure only the checkboxes for **Pad DTMF RTP Packets** and **Enable Early Media** are checked.
In the Call Route section, make sure the **Routed using DID Block(s):** radio button is selected and the checkbox for the DIDs is checked.
Leave other fields as defaults and then click the **Update** button.

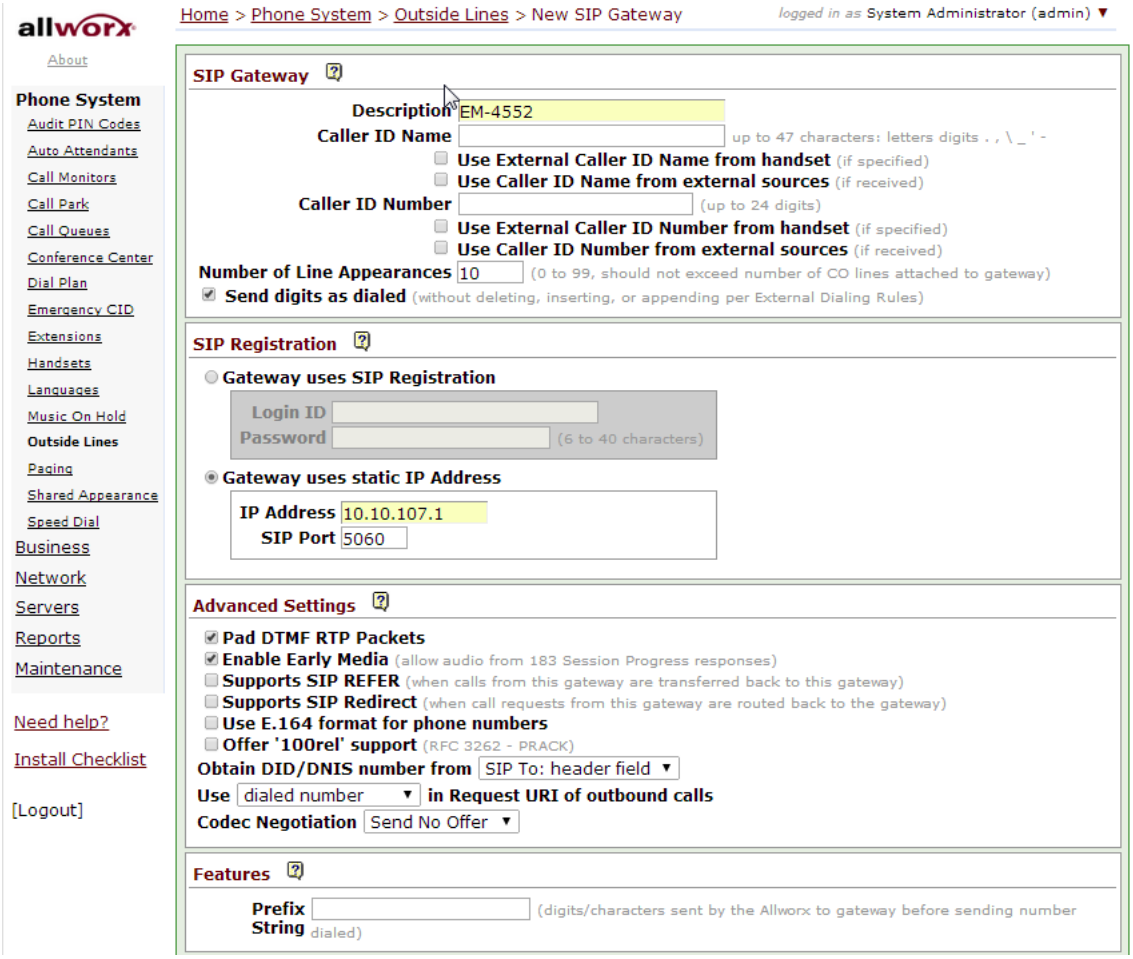

allworx
About
Phone System
Audit PIN Codes
Auto Attendants
Call Monitors
Call Park
Call Queues
Conference Center
Dial Plan
Emergency CID
Extensions
Handsets
Languages
Music On Hold
Outside Lines
Paging
Shared Appearance
Speed Dial
Business
Network
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Phone System > Outside Lines > New SIP Proxy
logged in as System Administrator (admin)
SIP Proxy
Description EM-4552
User ID 4085555555
SIP Server 10.10.107.1 Port 5060
(customer domain/realm) (enter IP Address or Domain Name)
Outbound Proxy Port 5060
(if different from SIP Server) (enter IP Address or Domain Name)
SIP Registration required
Login ID 4085555555
Password •••••••••• (6 to 40 characters)
Registrar Port 5060
(if different from Outbound Proxy) (enter IP Address or Domain Name)
Caller ID Name 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 (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 10 (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 1 (x*431)
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

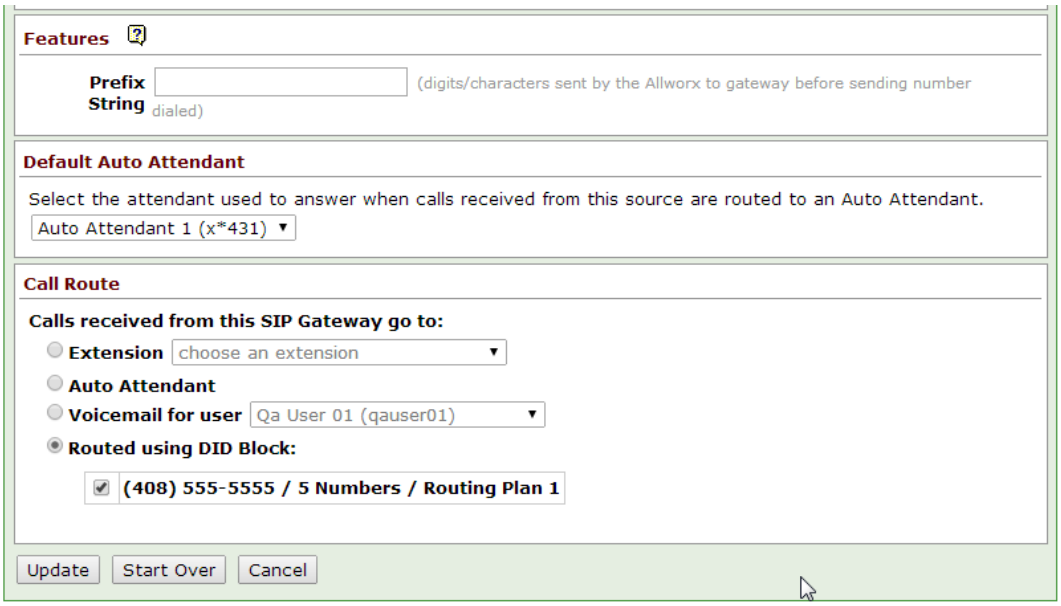

Send SIP Diversion header never (RFC 5806 - Diversion Indication in SIP)
Obtain DID/DNIS number from SIP Request URI
Use dialed number in Request URI of outbound calls
Codec Negotiation Send No Offer
Features
Prefix String (digits/characters sent by the Allworx to proxy before sending number dialed)
Call Route
Proxy is an "Enterprise Server" (calls received from this proxy follow the server's internal dial plan)
Calls received from this SIP Proxy go to:
Extension choose an extension
Auto Attendant
Voicemail for user Qa User 01 (qauser01)
Routed using DID Block:
(408) 555-5555 / 5 Numbers / Routing Plan 1
Add
Cancel

5.7 Configuring EdgeMarc as SIP server in Static IP mode

Configuring EdgeMarc as SIP server in Static IP mode

To configure EdgeMarc as the SIP server in Static IP mode, navigate to **Home** > **Phone System** > **Outside Lines** > **SIP Gateways** and then click the **Add new SIP Gateway** link. Skip this step if you have already configured EdgeMarc as the SIP server for SIP Registration mode.
Enter a description in the **Description** field.
Enter a number (**10** in this example) in the **Number of Line Appearances** field.
Select the Gateway uses static IP Address radio button.
Enter EdgeMarc's LAN IP address in the **IP Address** field.
Enter **5060** in the **SIP Port** field.
Click the **Add** button.

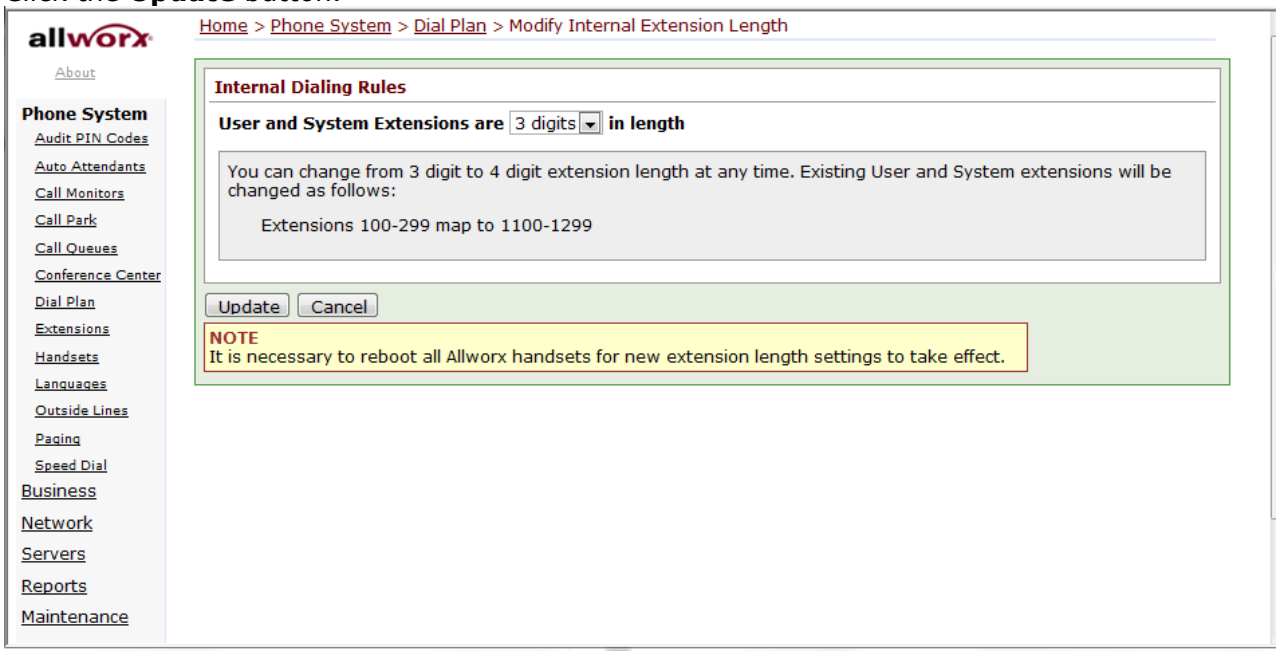




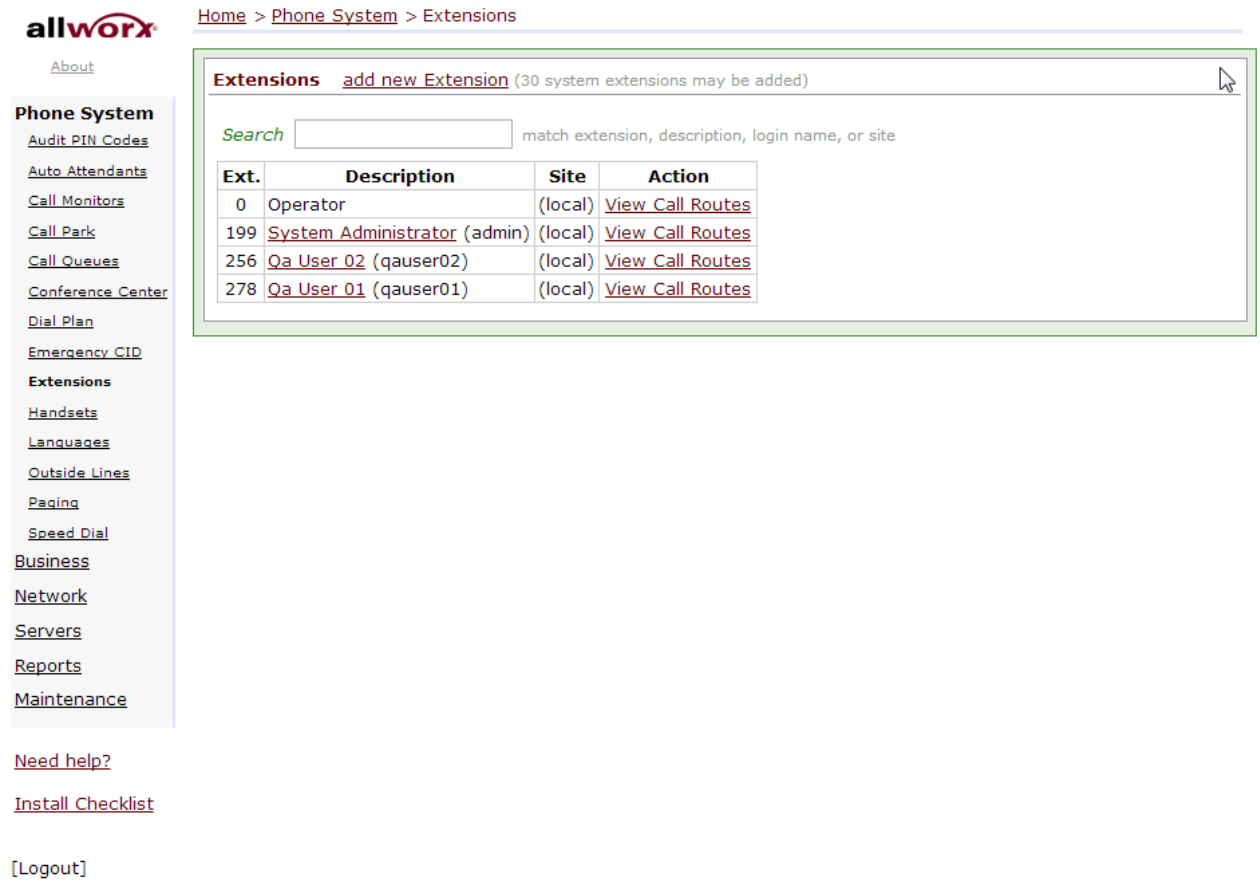
In Advanced Settings, only check **Pad DTMF RTP Packets** and **Enable Early Media**
In Call Route, select **Routed using DID Block** and select correct block.
Hit **Add** at the bottom of the page.

5.8 Creating Extension length & configuring DHCP server

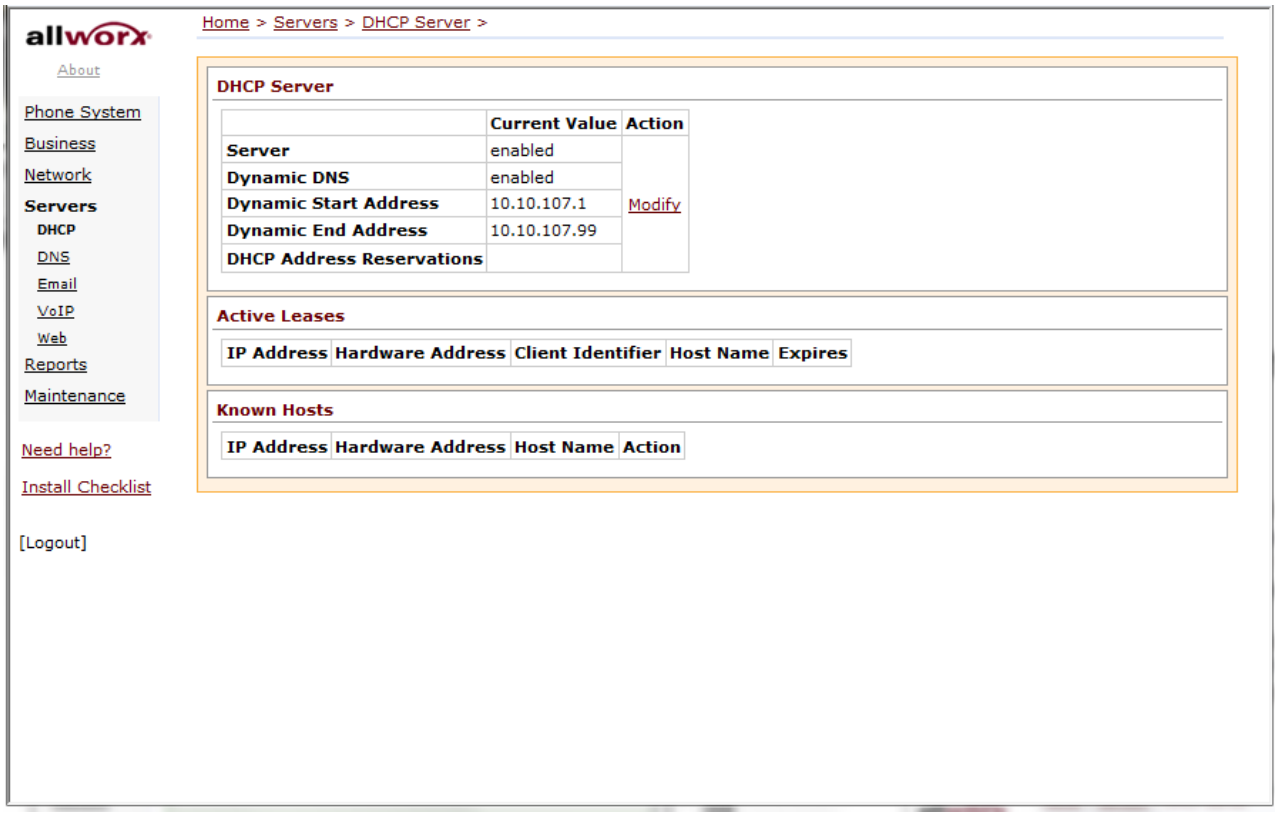
We are about ready to create extensions. First we need to decide on the extension length. In this example, we will configure the extensions to 3 digits in length. Navigate to **Home** > **Phone System** > **Dial Plan** > **Internal Extension Length** and then click the **Modify** link.
Select 3 digits in the User and System Extensions are field.
Click the **Update** button.



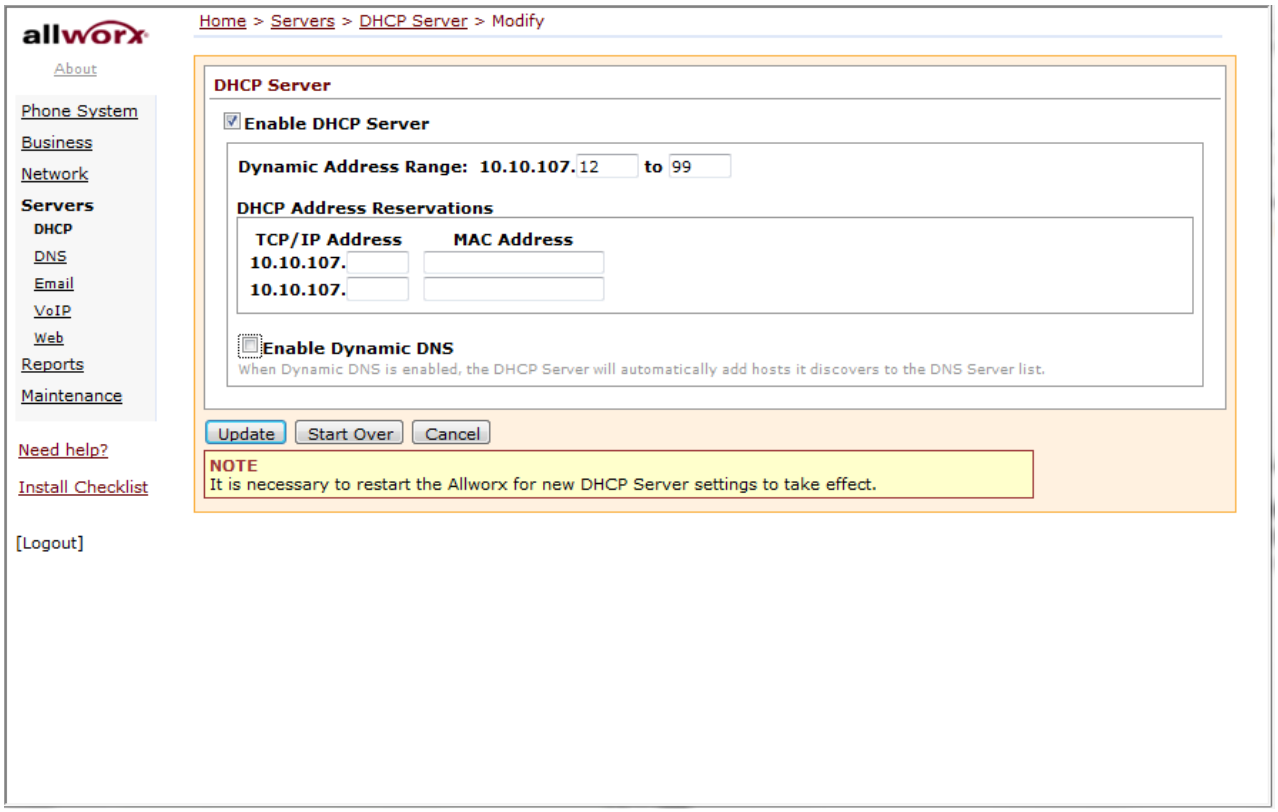
To see what extensions are in use, navigate to **Home** > **Phone System** > **Extensions**. Note that the **add new Extension** link is not used for assigning extensions to Allworx IP phones and analog phones.



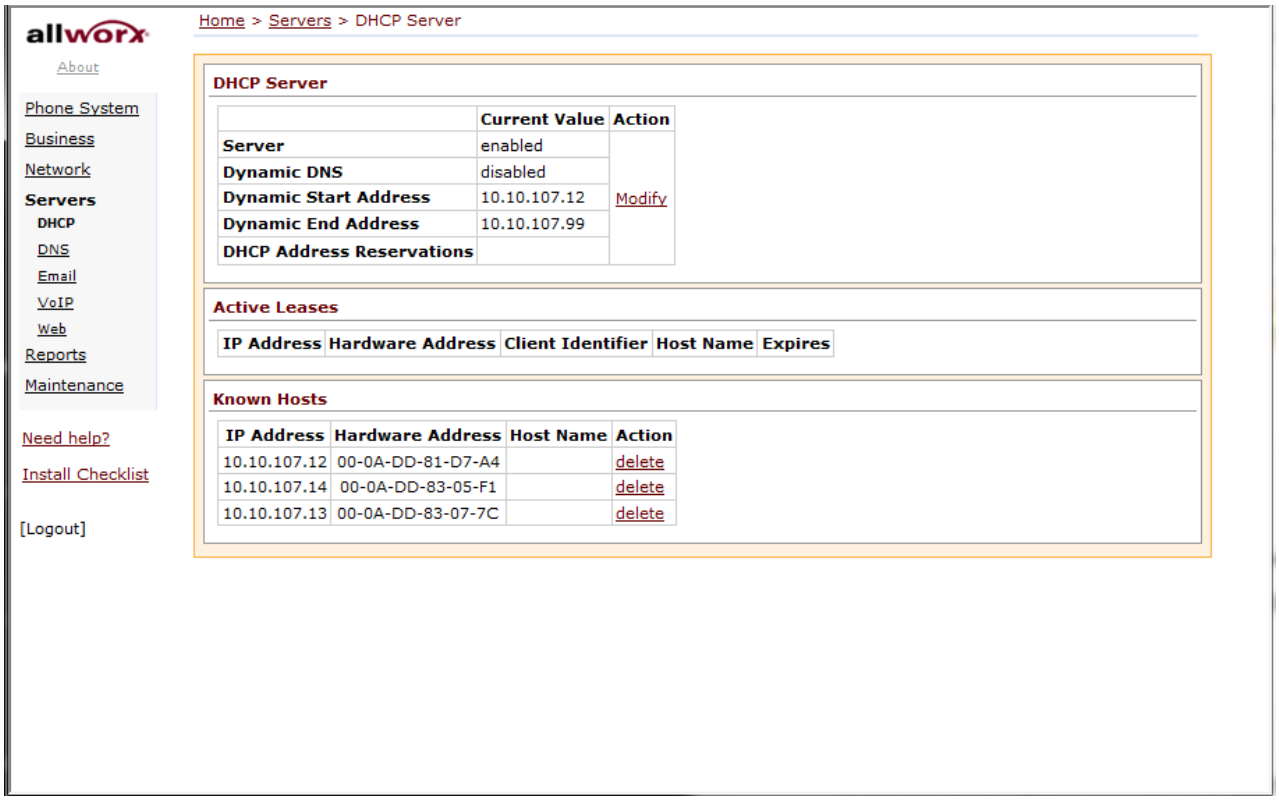
Before we create the extensions for Allworx IP phone users, navigate to **Home**>**Server** > **DHCP** to enable the PBX's DHCP server and configure the unused IP address range for the Allworx IP phones.



Click the **Modify** link to configure the DHCP server.
Check the **Enable DHCP Server** checkbox.
Enter the starting and ending IP addresses in the **Dynamic Address Range** field.
Uncheck the **Enable Dynamic DNS** checkbox.
Check the **Update** button and then restart the PBX for the DHCP server changes to take effect.



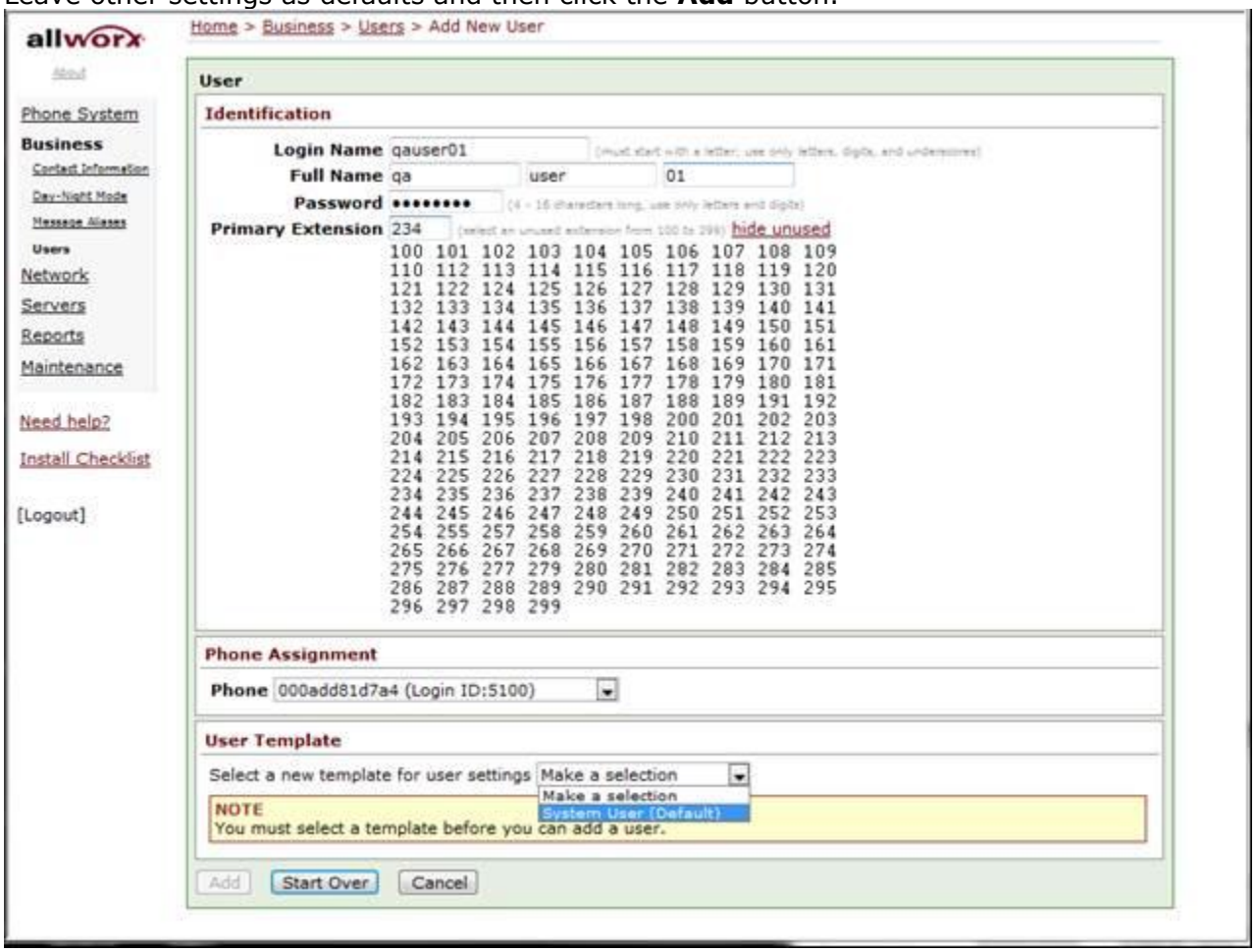
Now restart the Allworx IP phones and each IP phone should be able to get an assigned IP address, as indicated in the Known Hosts section of the DHCP server.



After the Allworx IP phone gets its assigned IP address and other info from the PBX, it will attempt to TFTP the configuration information from the PBX when rebooted. In case you are configuring the Allworx IP phones manually, make sure the **Boot Server IP** parameter is set to point to the PBX as the phone will use this IP address to TFTP the PBX.

5.9 Creating user & extension for IP phones

We are now going to create user and extension for the Allworx IP phone so that the Allworx IP phone can TFTP its configuration information. Navigate to **Home** > **Business** > **Users** and then click the **Add new user** link.
Enter a login name in the **Login Name** field.
Enter first name, middle name and last name of the user in the **Full Name** field.
Enter a password in the **Password** field.
Enter an unused extension in the **Primary Extension**.
Select the Allworx IP phone for this user by selecting its MAC address in **Phone** field.
Select **System User (Default)** in the Se**lect a new template for user settings** field (the screen will then show more settings and the **Add** button will be high-lighted).
Leave other settings as defaults and then click the **Add** button.



Now restart the Allworx IP phone and you should see the user's full name and the extension on the phone's display.

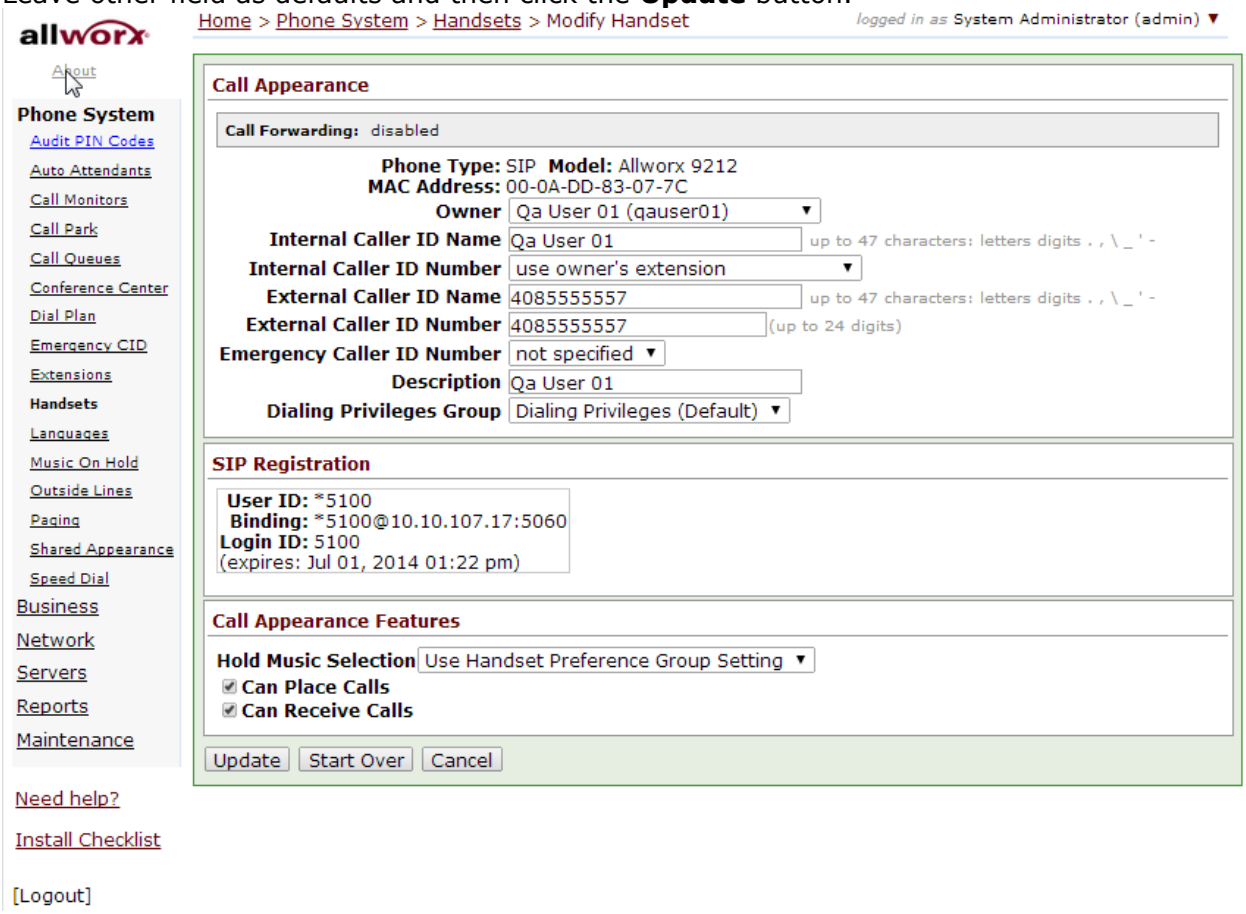
5.10 Configuring Caller ID for IP phones

To configure Caller ID for the user, navigate to **Home** > **Phone System** > **Handsets** > **SIP Handsets** and click the **Modify** link of the user we just assigned an extension and an IP phone.

Enter an external Caller ID Name in the **external Caller ID Name** field. This field will be used as the Display part of the **From** header when the phone sends the Invite message for the outbound call.

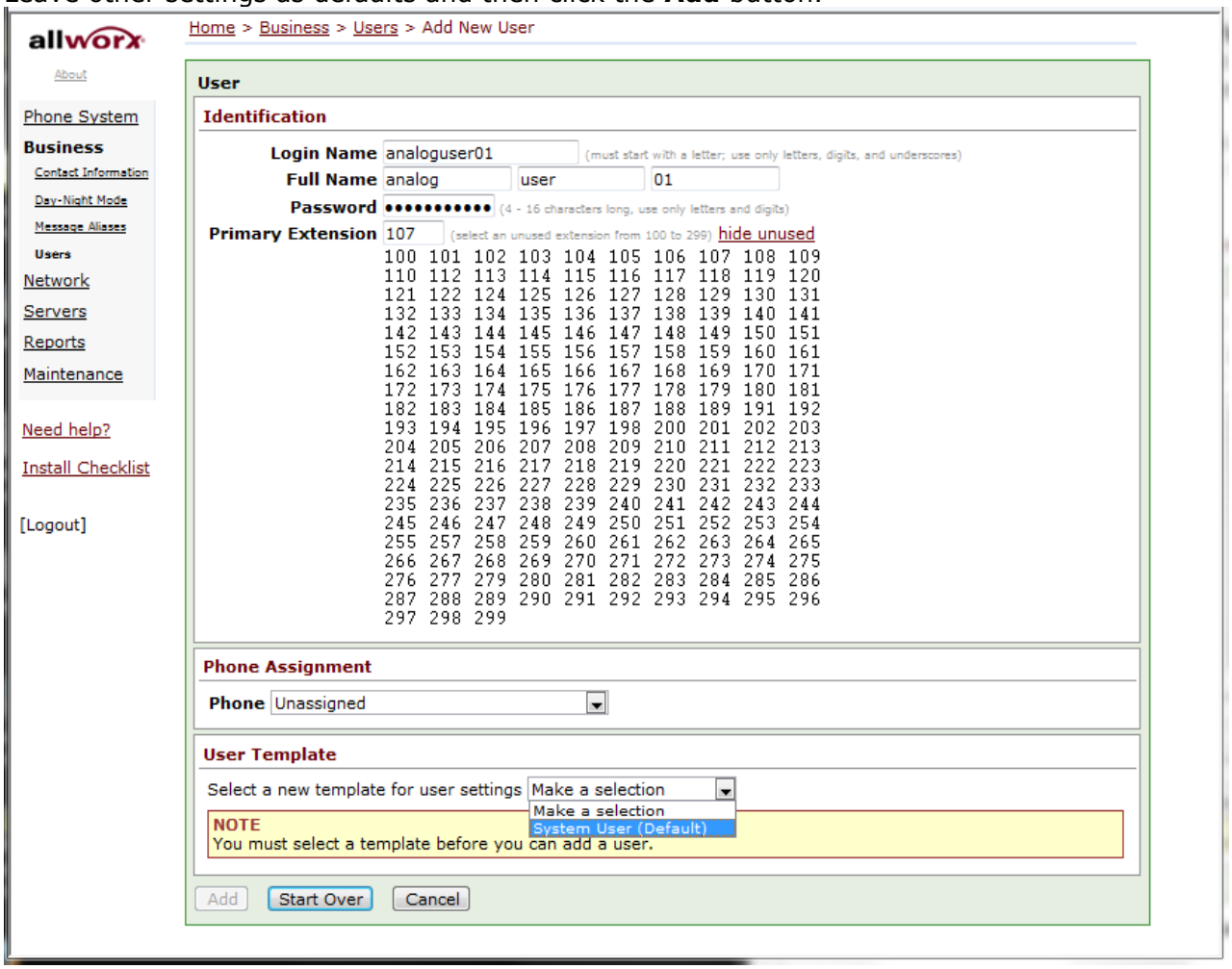
Enter an external Caller ID Name in the **external Caller ID Number** field. This field will be used as the user part of the **From** header when the phone sends the Invite message for the outbound call.

Leave other field as defaults and then click the **Update** button.



5.11 Creating user & extension for analog phones

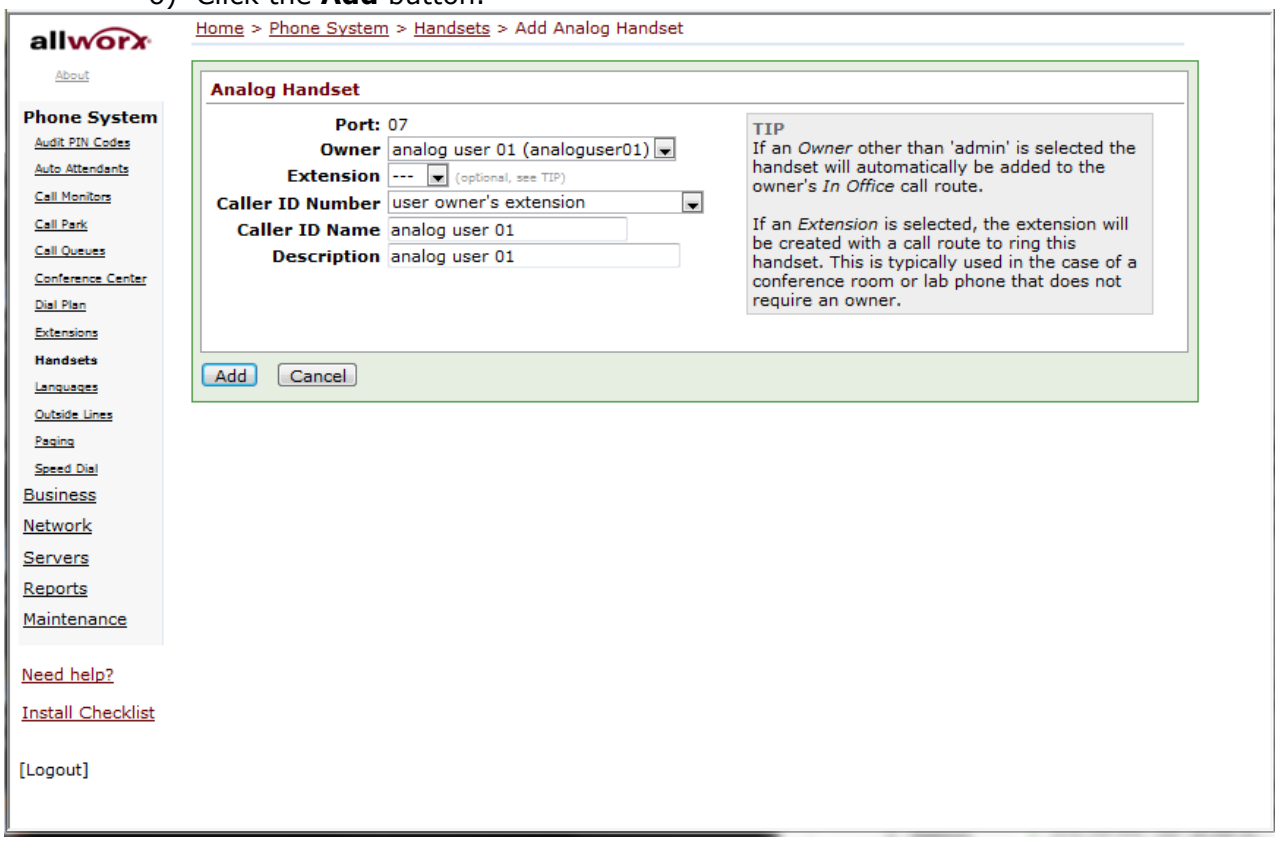
We are now going to create user and extension for the analog phone. Navigate to **Home** > **Business** > **Users** and then click the **Add new user** link.
Enter a login name in the **Login Name** field.
Enter first name, middle name and last name of the user in the Full Name field.
Enter a password in the **Password** field.
Enter an unused extension in the **Primary Extension**.
Select **Unassigned** in **Phone** field.
Select **System User (Default)** in the **Select a new template for user settings** field (the screen will then show more settings and the **Add** button will be high-lighted).
Leave other settings as defaults and then click the **Add** button.



Navigate to **Home** > **Phone System** > **Handsets** > **Analog Handsets** and click one of the **New Analog handset** link. Note that there are 6 FXO ports and 2 FXS ports next the WAN port of the PBX. Port 7 is the first FXS port and Port 8 is the second FXS port. When you make use the FXS port, an analog phone or a FAX machine should be connected to that port.

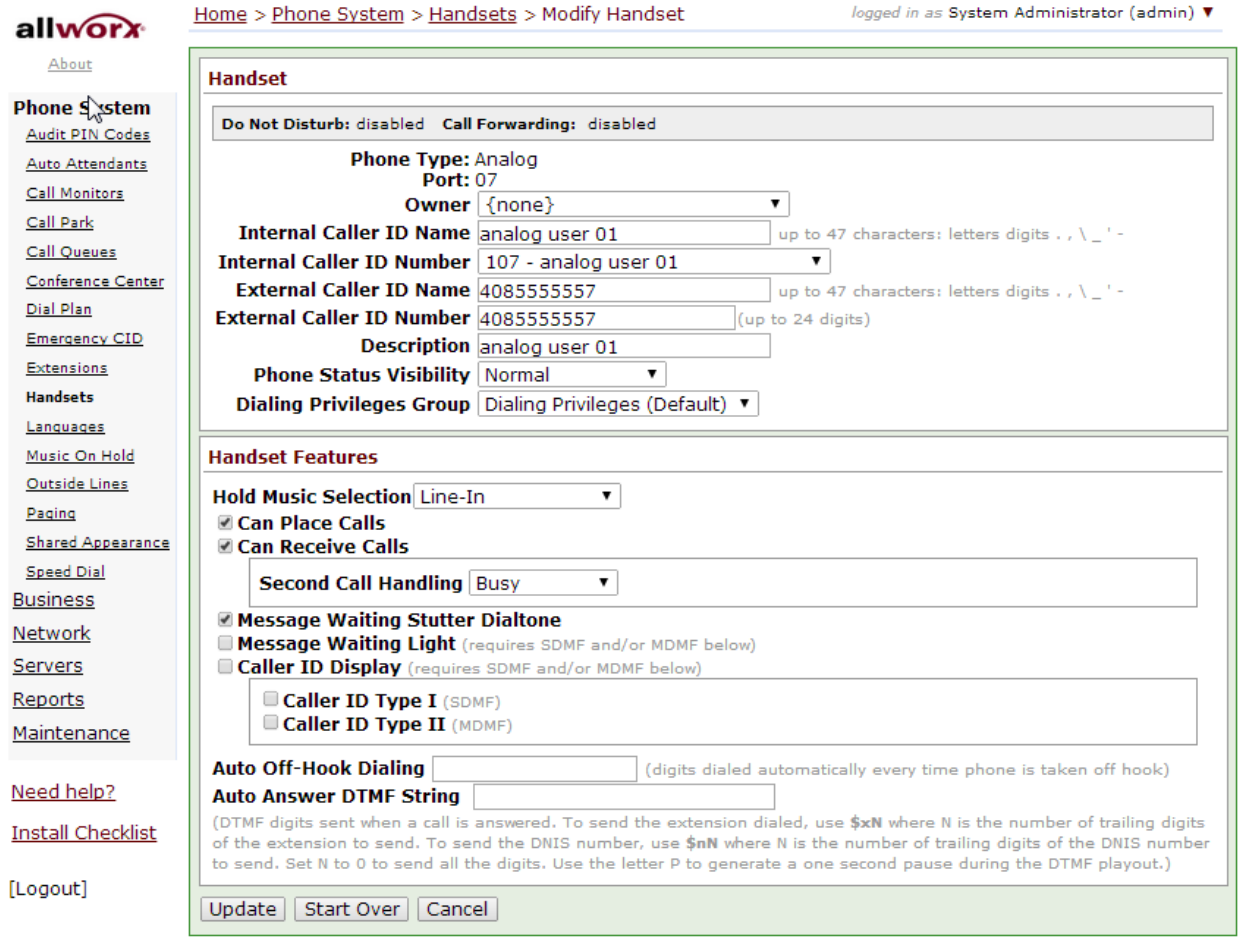
1) Select the analog user we just created in the **Owner** field

2) Do not select anything in the **Extension** field.
3) Select user owner's extension in the **Caller ID Number** field.
4) Enter a name in the **Caller ID Name** field.
5) Enter a description in the **Description** field.
6) Click the **Add** button.



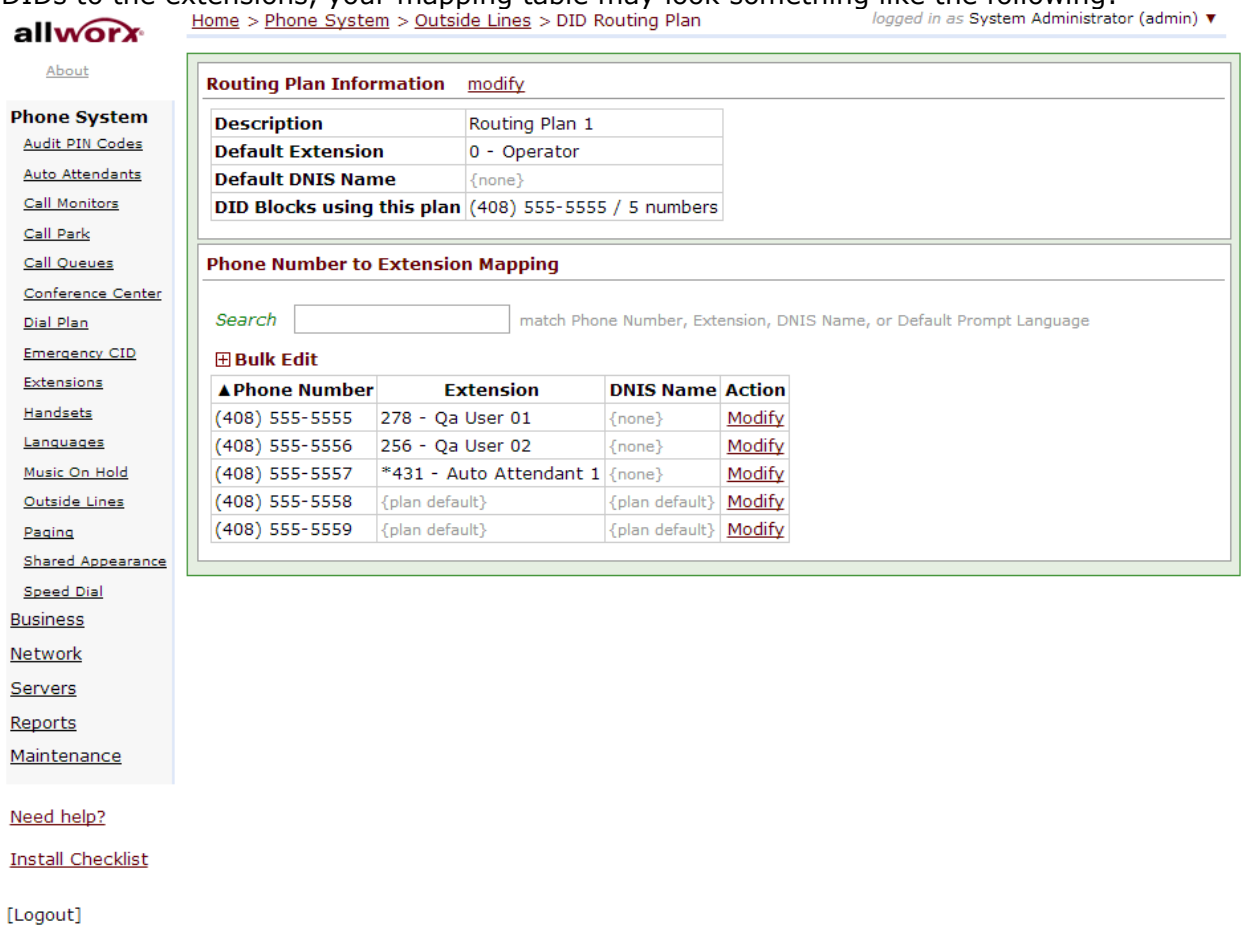
5.12 Configuring Caller ID for Analog phones

To configure Caller ID for the user, navigate to **Home** > **Phone System** > Handsets > Analog Handsets and click the **Modify** link of the newly created entry.
Enter an external Caller ID Name in the **external Caller ID Name** field. This field will be used as the Display part of the **From** header when the phone sends the Invite message for the outbound call.
Enter an external Caller ID Name in the **external Caller ID Number** field. This field will be used as the user part of the **From** header when the phone sends the Invite message for the outbound call.
Leave other field as defaults and then click the **Update** button.

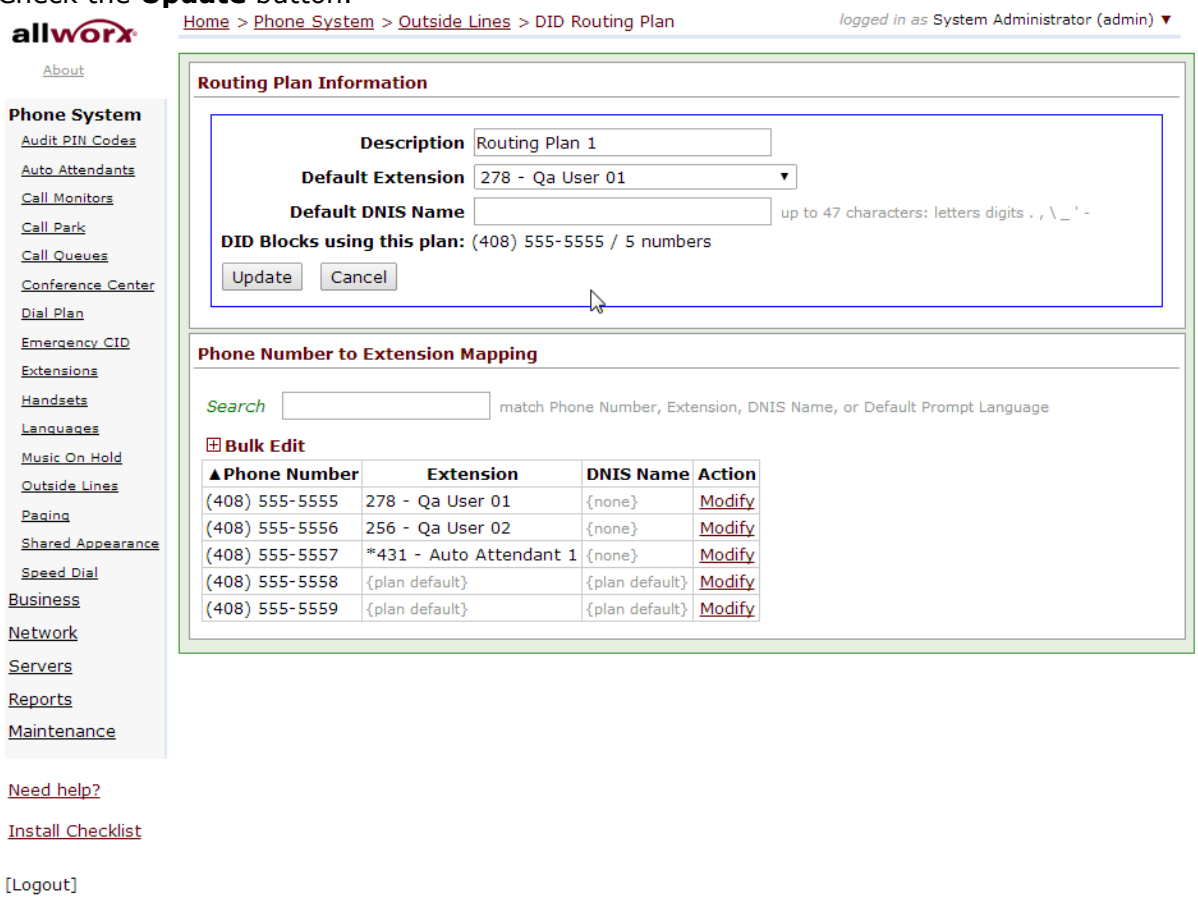


5.13 Mapping DIDs to appropriate extensions

For the DIDs we have assigned to the extensions, we must make sure incoming calls to these DIDs will get routed to correct extensions and ring the correct phones. Navigate to **Home** > **Phone System** > **Outside Lines** > **Direct Inward Dial Routing Plans** and then click the **Details** link to map each DID to its extension. Assuming you have already mapped some DIDs to the extensions, your mapping table may look something like the following:

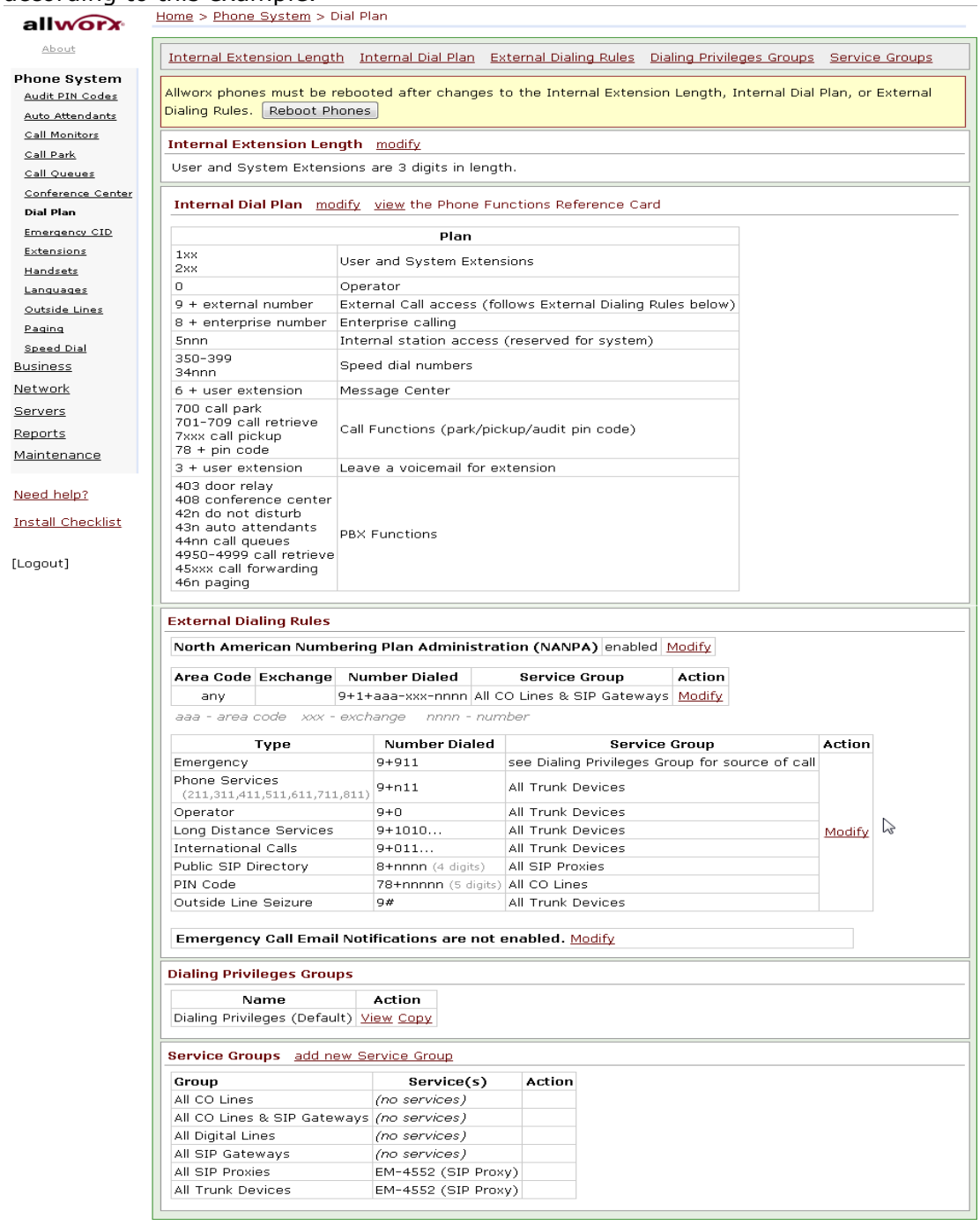


Earlier we have created extension **278** and assigned 408-555-5555 as its Caller ID for outbound call. Click the **Add number to table** link to map the same DID for incoming calls to this extension.
Select **(408) 555-5555** from the **Phone Number(s)** drop-down list.
Select **278 from the Extension** drop-down list.
Check the **Update** button.



5.14 Viewing External Dialing Rules configured for SIP trunk

To see the External Dialing Rules configured for this SIP trunk, navigate to **Home** > **Phone System** > **Dial Plan**. The external dialing rules in the screen shot below are pretty much the same as the defaults except the area code and the Service Group has been changed to according to this example.



allworx

Home > Phone System > Dial Plan

About

Phone System
- Audit PIN Codes
- Auto Attendants
- Call Monitors
- Call Park
- Call Queues
- Conference Center
- Dial Plan
- Emergency CID
- Extensions
- Handsets
- Languages
- Outside Lines
- Paging
- Speed Dial

Business
Network
Servers
Reports
Maintenance

Need help?
Install Checklist

[Logout]

Internal Extension Length | Internal Dial Plan | External Dialing Rules | Dialing Privileges Groups | Service Groups

Allworx phones must be rebooted after changes to the Internal Extension Length, Internal Dial Plan, or External Dialing Rules. Reboot Phones

Internal Extension Length modify

User and System Extensions are 3 digits in length.

Internal Dial Plan modify view the Phone Functions Reference Card

Plan	
1xx 2xx	User and System Extensions
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 34nnn	Speed dial numbers
6 + user extension	Message Center
700 call park 701-709 call retrieve 7xxx call pickup 78 + pin code	Call Functions (park/pickup/audit pin code)
3 + user extension	Leave a voicemail for extension
403 door relay 408 conference center 42n do not disturb 43n auto attendants 44nn call queues 4950-4999 call retrieve 45xxx call forwarding 46n paging	PBX Functions

External Dialing Rules

North American Numbering Plan Administration (NANPA) enabled Modify

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

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+nnnn (4 digits)	All SIP Proxies	
PIN Code	78+nnnnn (5 digits)	All CO Lines	
Outside Line Seizure	9#	All Trunk Devices	

Emergency Call Email Notifications are not enabled. Modify

Dialing Privileges Groups

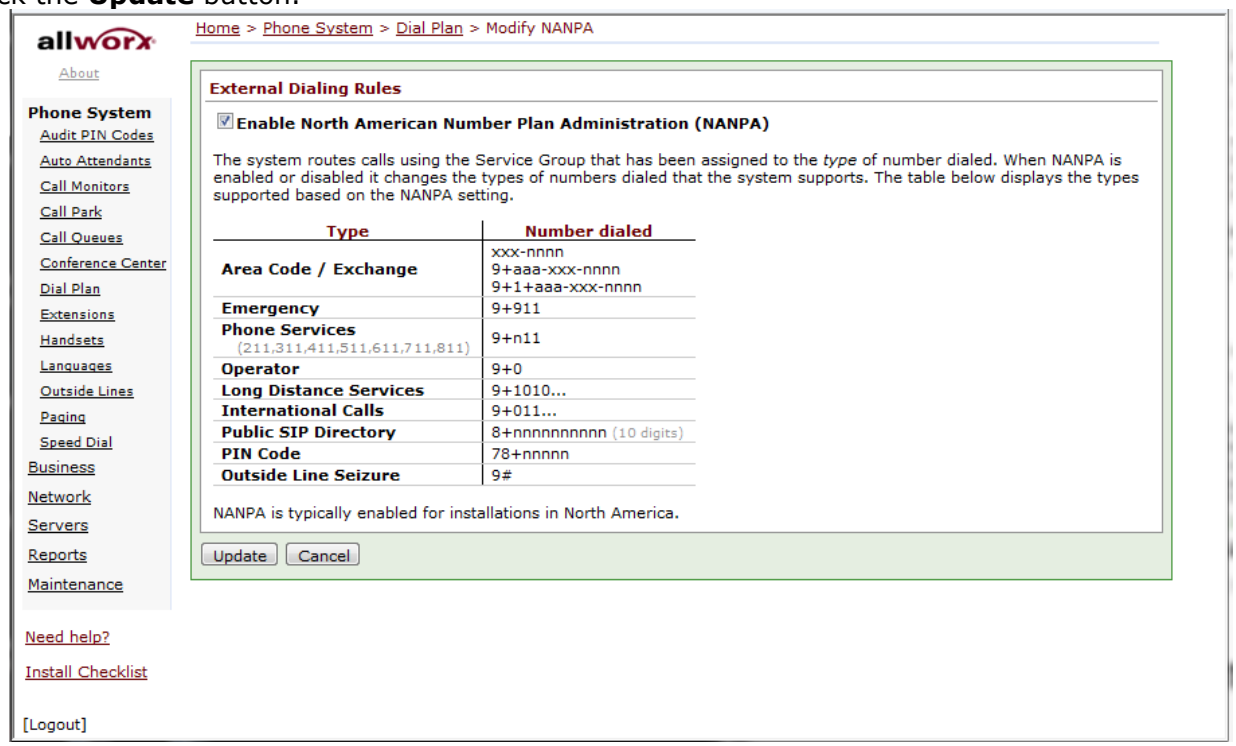
Name	Action
Dialing Privileges (Default)	View Copy

Service Groups add new Service Group

Group	Service(s)	Action
All CO Lines	*(no services)*	
All CO Lines & SIP Gateways	*(no services)*	
All Digital Lines	*(no services)*	
All SIP Gateways	*(no services)*	
All SIP Proxies	EM-4552 (SIP Proxy)	
All Trunk Devices	EM-4552 (SIP Proxy)	

5.15 Enabling NANPA

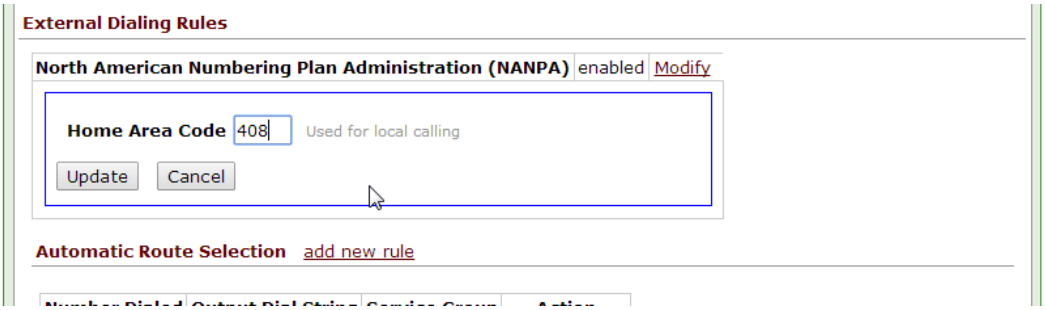
To enable North American Number Plan Administration (NANPA), from **Home** > **Phone System** > **Dial Plan** > **External Dialing Rules**, click the **Modify** link for **North American Number Plan Administration (NANPA)**.
Check the Enable North American Number Plan Administration (NANPA) checkbox.
Click the **Update** button.



Notice that, besides dialing **9** first to call outside of the PBX, you can also dial **8**, followed by a 10-digit number when a **1** is not needed to precede the 10-digit number for the call.

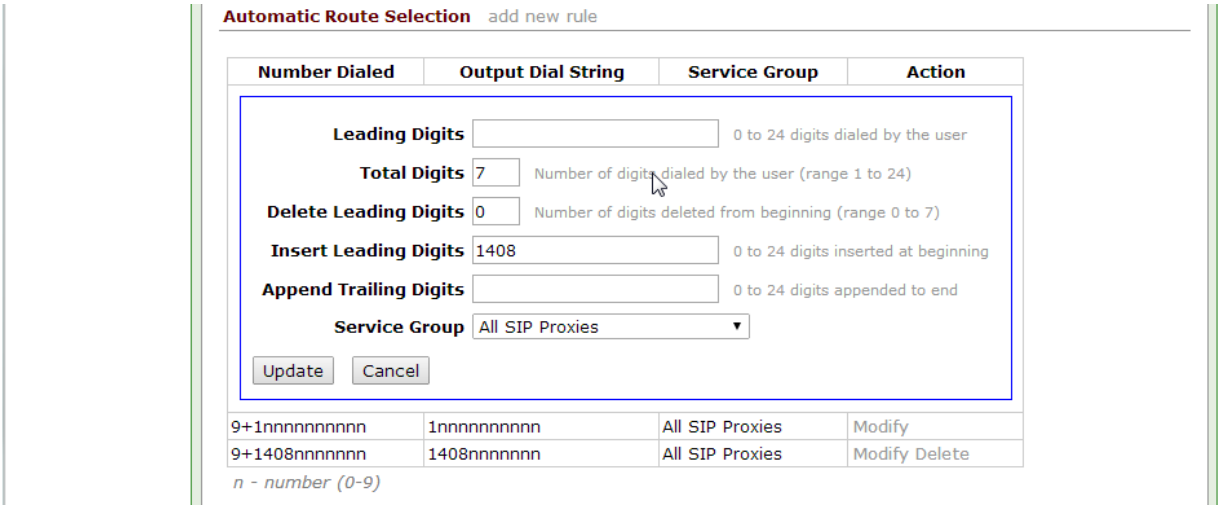
5.16 Setting Area code for 7-digit dialing

Set the Area Code to allow 7-digit dialing. From **Home** > **Phone System** > **Dial Plan** > **External Dialing Rules**, click the **Modify** link next to the **Home** entry and the **All others** entry.
Enter the Area Code (**408** in this example) in the **Area Code** field.



Under Automatic Route Selection:

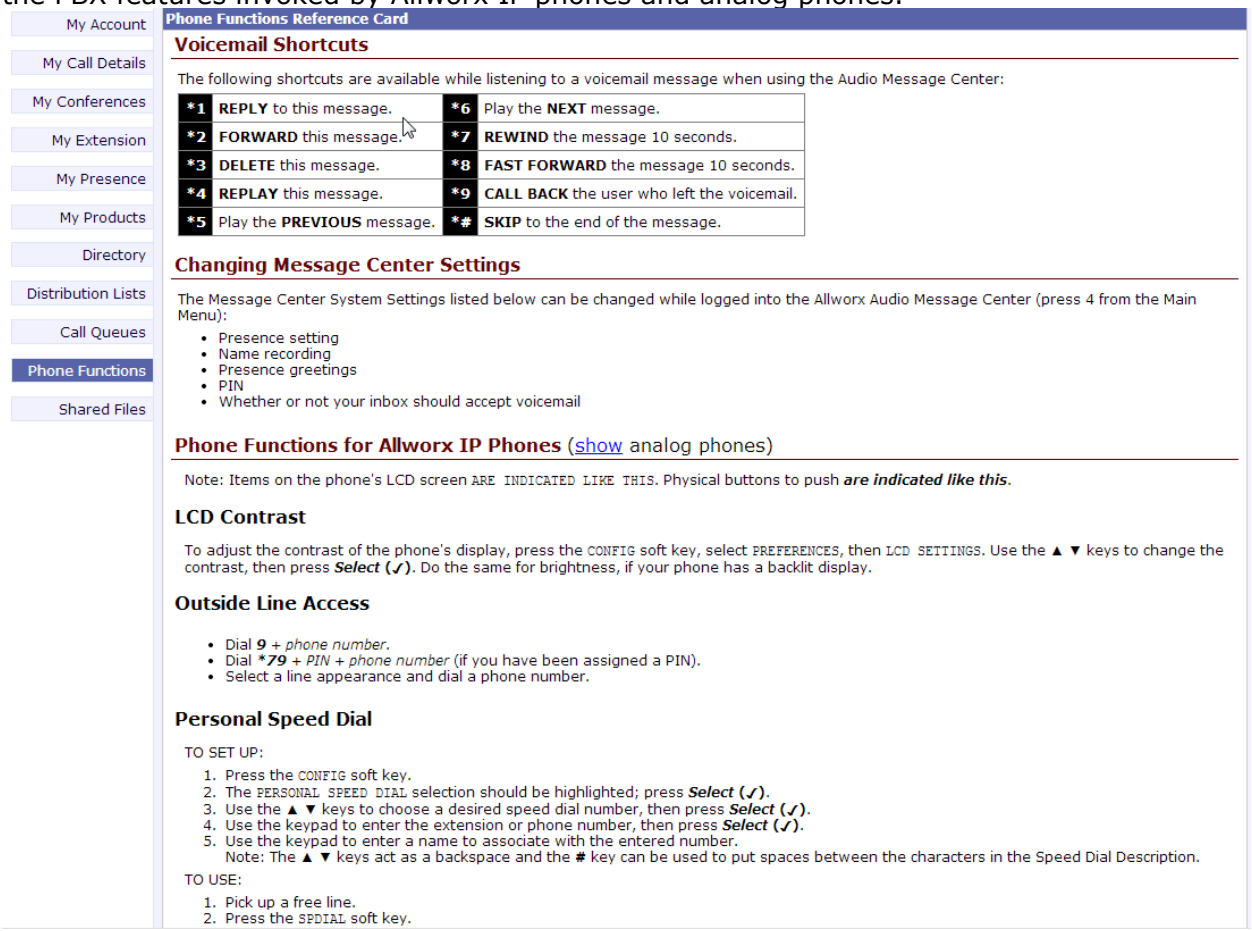
Click Modify next to Number Dialed plan
Select All SIP Proxies in the Service Group field.
Click the **Update** button.



Now you can dial **9** followed by a 7-digit number for calls that are within the same area code. For all other area codes, dialing **9** first must be followed by **1** and then followed by the 10-digit number. For calls that do not require to be preceded by **1**, you can always dial **8**, followed by a 10-digit number.

5.17 PBX Call features

PBX Call Features - navigate to **Home** > **Phone System** > **Dial Plan** > **Internal Dial Plan** and then click **View** to see the information from **Phone Function Reference Card**, including the PBX features invoked by Allworx IP phones and analog phones.



3. Press the number on the keypad corresponding to the desired speed dial.

Phone Directory

Press the ▲ ▼ keys to display the company directory and either use the keypad to spell the person's last name or scroll to the desired entry, then press ***Select*** **(✓)** to place a call.

Check Voicemail Messages

If your phone supports the Visual Message Center, press the ***Messages*** button once for the Visual Message Center or twice for the Audio Message Center. If your phone does not support the Visual Message Center, press the ***Messages*** button once to access the Audio Message Center. You can also dial ****6*** + *your extension* from any office phone or from within the company Auto Attendant to access the Audio Message Center.

Change Presence Setting

Press the `Presence` soft key (if your phone display has one) or press and hold the ***Mute/DND*** button until a list of presences appear on the display. Use the ▲ ▼ keys to choose a desired presence, then press ***Select*** **(✓)**.

Do Not Disturb

Press the ***Mute/DND*** button to place the phone in Do Not Disturb mode. The phone will not ring, the ***Mute/DND*** button will be illuminated amber, and any calls to the user will go to the next destination in your extension call route (usually your voicemail inbox). Press the ***Mute/DND*** button again to end Do Not Disturb.

Intercom

Press the ***Intercom*** button, if your phone has one, and then dial the extension of the person you would like to talk to.

Call Forwarding

Dial ****45*** + *an extension* to forward any calls that come into the phone to that extension. To disable Call Forwarding, dial extension ****450***.

Transfer

ONE-TOUCH
If your phone is configured for ONE-TOUCH transfers and if it has ***BLF*** keys, press the ***BLF*** key for the intended recipient of the transfer. Hang up or wait on the line to announce the transfer.

LEGACY UNANNOUNCED (Blind) TRANSFERS
If your phone is configured to use the legacy unannounced transfer method use the following procedure to perform the transfer:

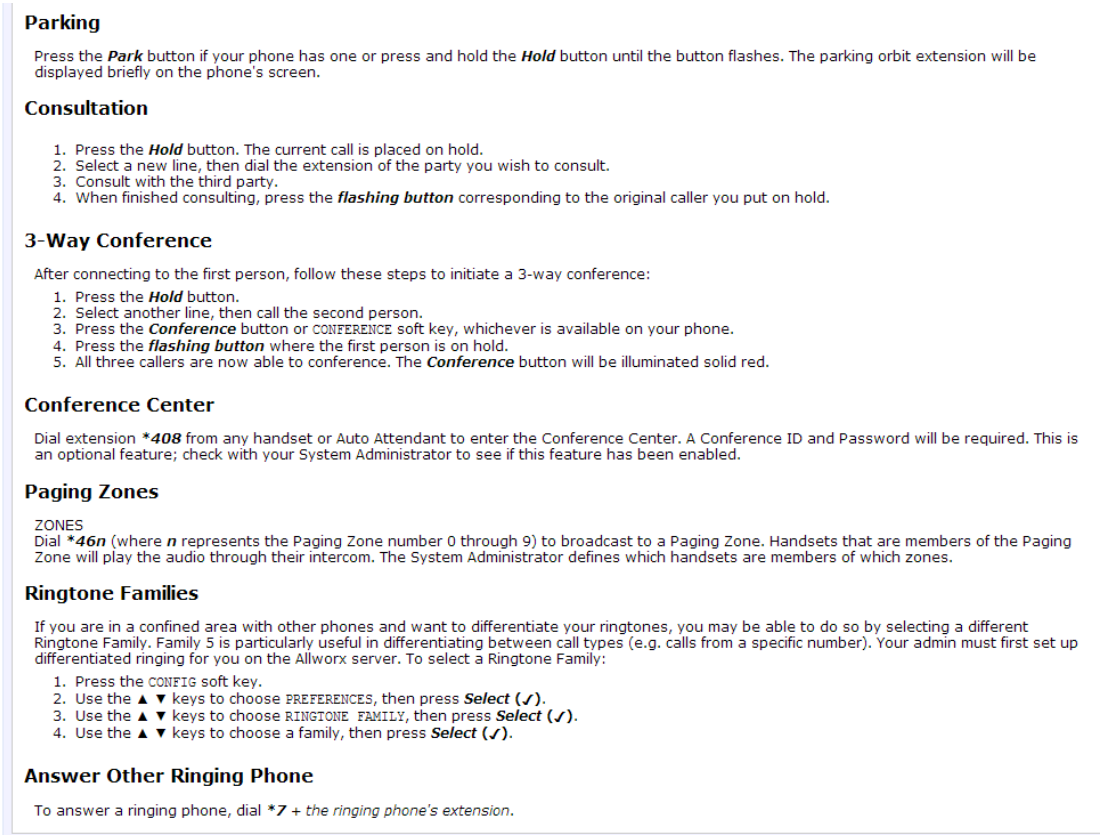
1. Press the ***Transfer*** button. The current call is placed on hold.
2. At the dial tone, dial the extension of the intended recipient of the transfer.
3. The call is immediately transferred.

DIALED TRANSFER

1. Press the ***Transfer*** button. The current call is placed on hold.
2. At the dial tone, dial the extension of the intended recipient of the transfer.
3. Hang up or wait on the line to announce the transfer.

TO A USER'S VOICEMAIL

1. Press the ***Transfer*** button. The current call is placed on hold.
2. At the dial tone, press the `VMAIL` soft key, then dial the user's extension.



Parking

Press the ***Park*** button if your phone has one or press and hold the ***Hold*** button until the button flashes. The parking orbit extension will be displayed briefly on the phone's screen.

Consultation

1. Press the ***Hold*** button. The current call is placed on hold.
2. Select a new line, then dial the extension of the party you wish to consult.
3. Consult with the third party.
4. When finished consulting, press the ***flashing button*** corresponding to the original caller you put on hold.

3-Way Conference

After connecting to the first person, follow these steps to initiate a 3-way conference:

1. Press the ***Hold*** button.
2. Select another line, then call the second person.
3. Press the ***Conference*** button or CONFERENCE soft key, whichever is available on your phone.
4. Press the ***flashing button*** where the first person is on hold.
5. All three callers are now able to conference. The ***Conference*** button will be illuminated solid red.

Conference Center

Dial extension ****408*** from any handset or Auto Attendant to enter the Conference Center. A Conference ID and Password will be required. This is an optional feature; check with your System Administrator to see if this feature has been enabled.

Paging Zones

ZONES
Dial ****46n*** (where ***n*** represents the Paging Zone number 0 through 9) to broadcast to a Paging Zone. Handsets that are members of the Paging Zone will play the audio through their intercom. The System Administrator defines which handsets are members of which zones.

Ringtone Families

If you are in a confined area with other phones and want to differentiate your ringtones, you may be able to do so by selecting a different Ringtone Family. Family 5 is particularly useful in differentiating between call types (e.g. calls from a specific number). Your admin must first set up differentiated ringing for you on the Allworx server. To select a Ringtone Family:

1. Press the CONFIG soft key.
2. Use the ▲ ▼ keys to choose PREFERENCES, then press ***Select*** (✓).
3. Use the ▲ ▼ keys to choose RINGTONE FAMILY, then press ***Select*** (✓).
4. Use the ▲ ▼ keys to choose a family, then press ***Select*** (✓).

Answer Other Ringing Phone

To answer a ringing phone, dial ****7*** + *the ringing phone's extension.*

Blind (Unattended) Call Transfer – see the **Transfer** section from the Phone Function Reference Card.
Consultative (Attended) Call Transfer – see the **Transfer** section from the Phone Function Reference Card.
Three-Way Calling – see the **3-Way Conference** section from the Phone Function Reference Card.
Call Forward to Another Extension - see the **Call Forwarding** section from the Phone Function Reference Card.
Do Not Disturb - see the **Do-Not-Disturb** section from the Phone Function Reference Card.
Call Pickup - see **Home** > **Phone System** > **Internal Dial Plan** > **7xxx call pickup**. When a phone is ring, any other phones can pick up the call by dialing **7**, followed by the extension of the ringing phone.
Call Park – see the **Parking** section from the Phone Function Reference Card.
Call Retrieve (retrieving a parked call) - see **Home** > **Phone System** > **Internal Dial Pla**n > **701-709 call retrieve**. The PBX will announce the location (extension) when the user parks a call. Any other phones can later on pick up the parked call by dialing **7**, followed by the extension of the parked call.
Call Waiting
When a call is up (the button for that call should be solid green), the PBX will indicate a new incoming call to the same DID with a flashing green button.
To answer the second call, the user must put the first call on hold first by pressing the **Hold** button (the button for the first call will change from solid green to flashing green).

The user answers the second call by pressing the flashing button for the second call (the button should change from flashing green to solid green).

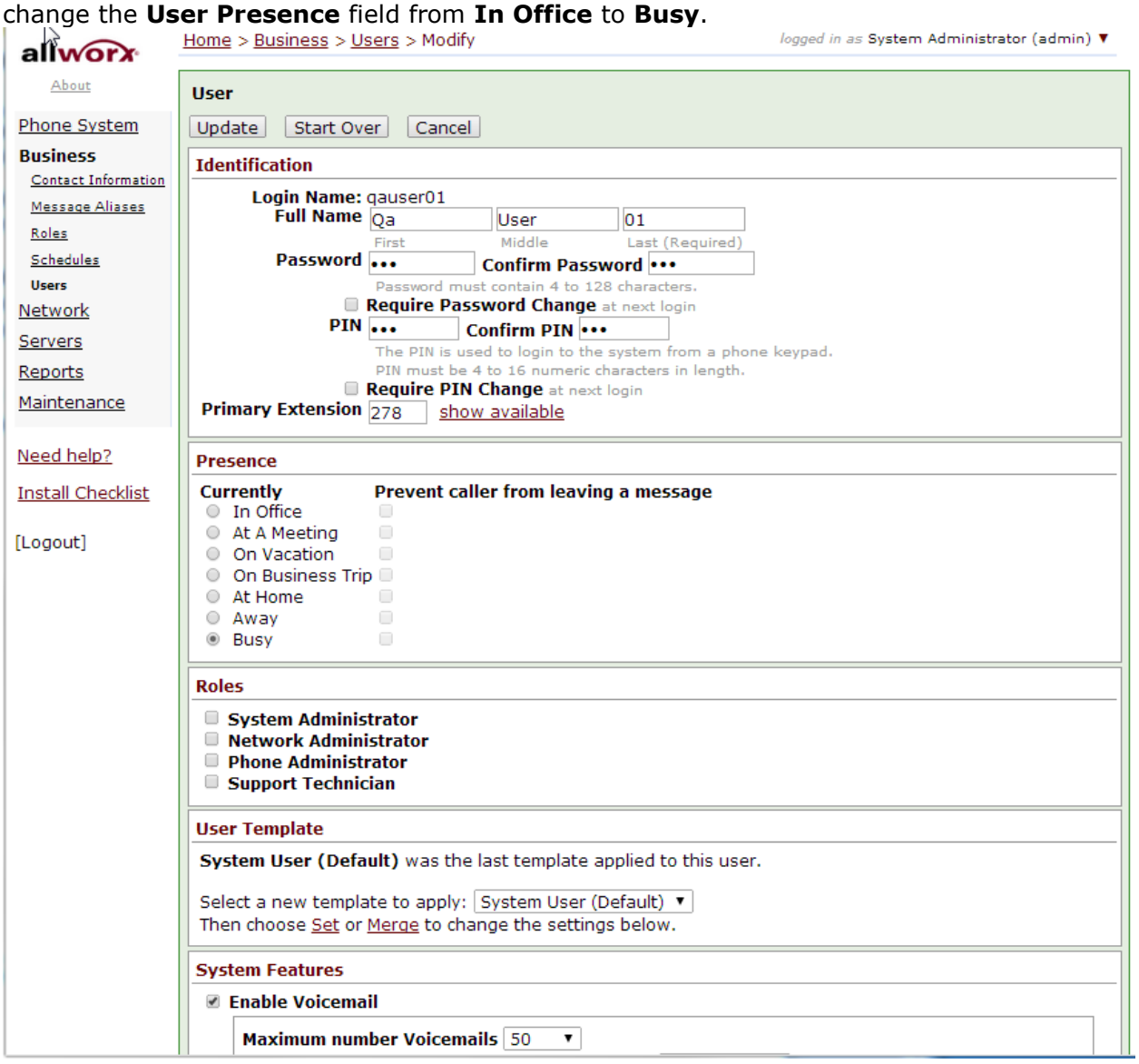
Call Hold and Call Resume

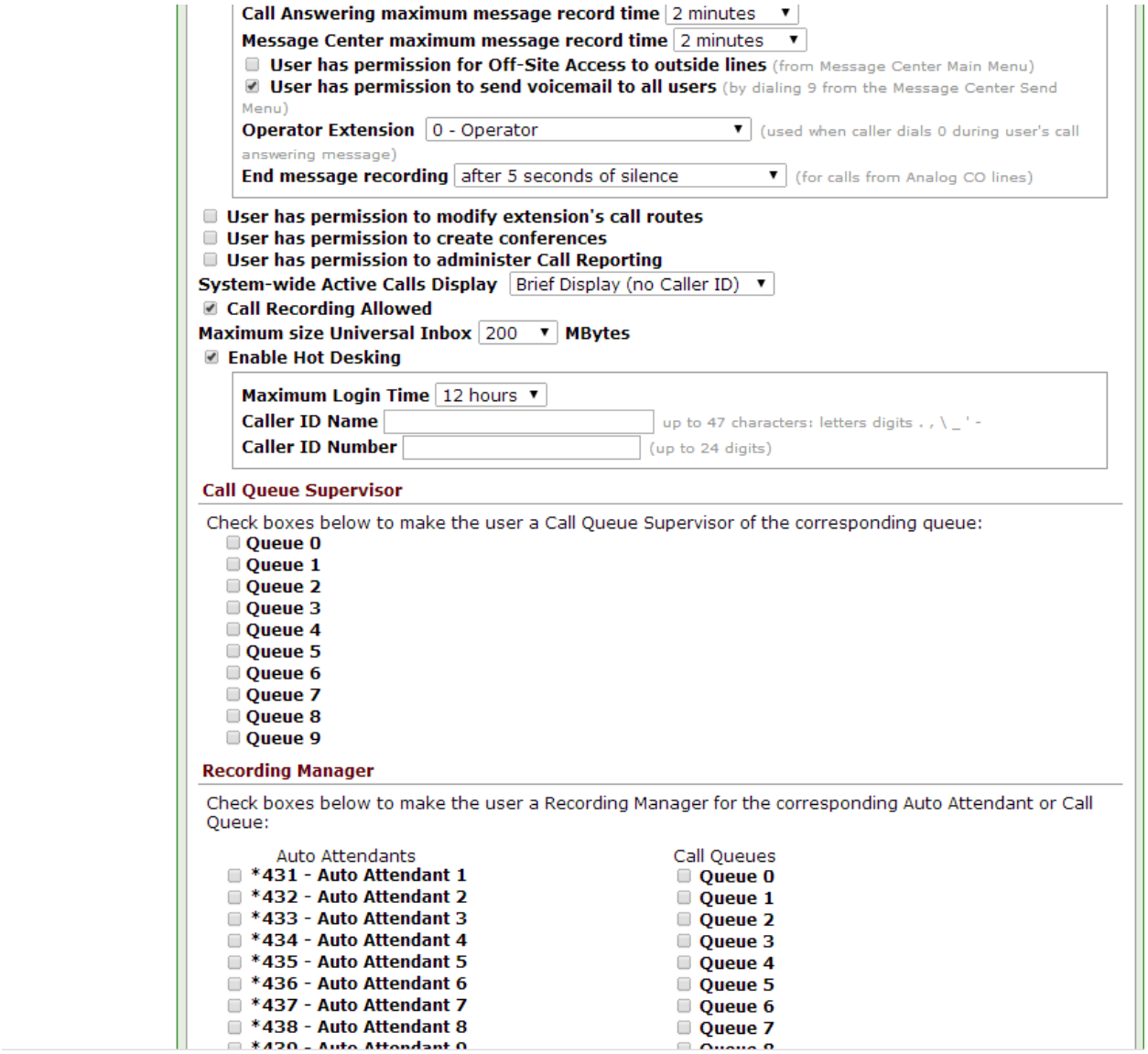
To put a call on Hold after a call is up (the button for that call should be solid green), press the **Hold** button to put the call on hold (the button for that call should change to flashing green).

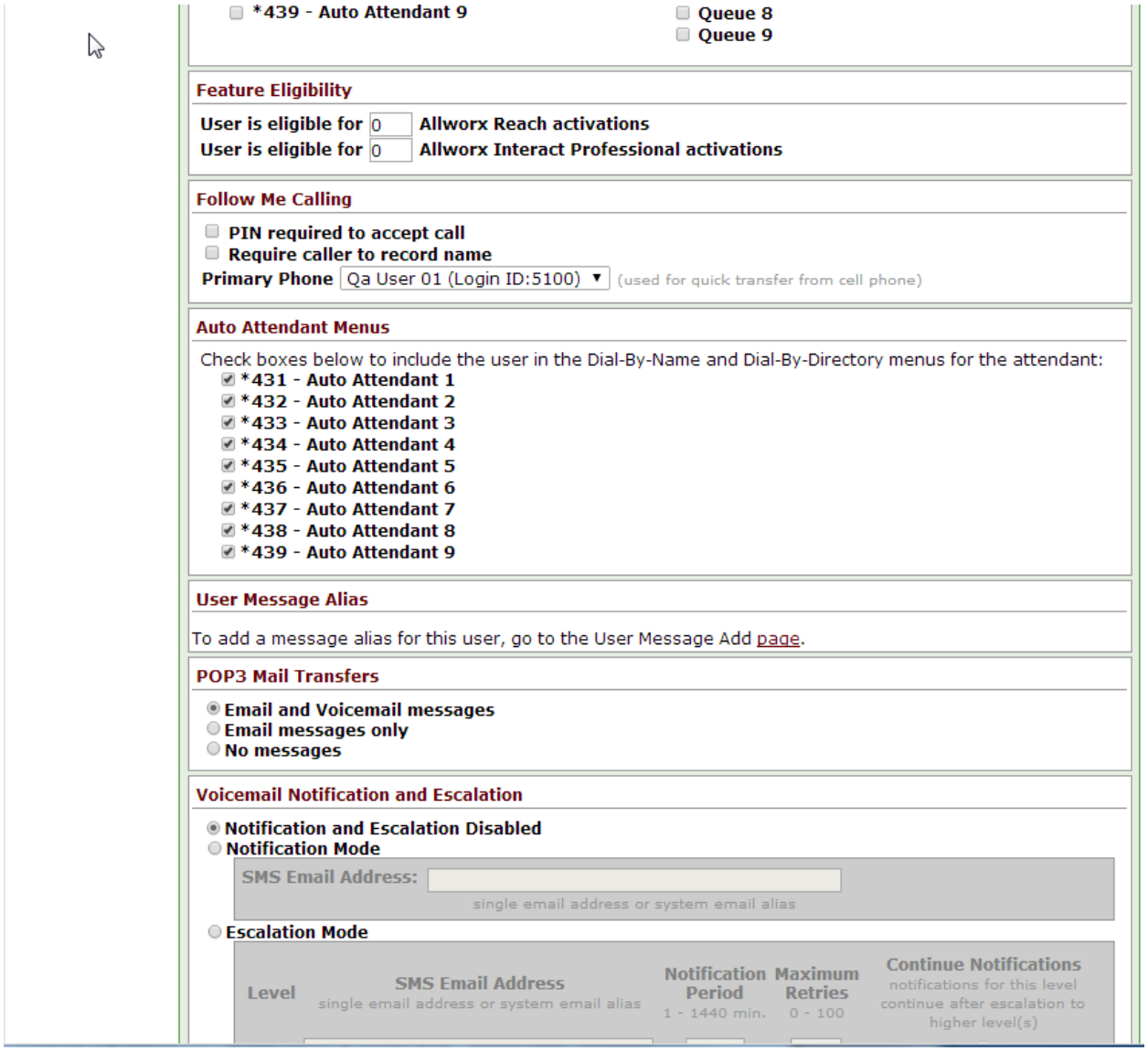
To resume the held call (the button for that call should be flashing green), press the flashing button (the button for that call should change back to solid green).

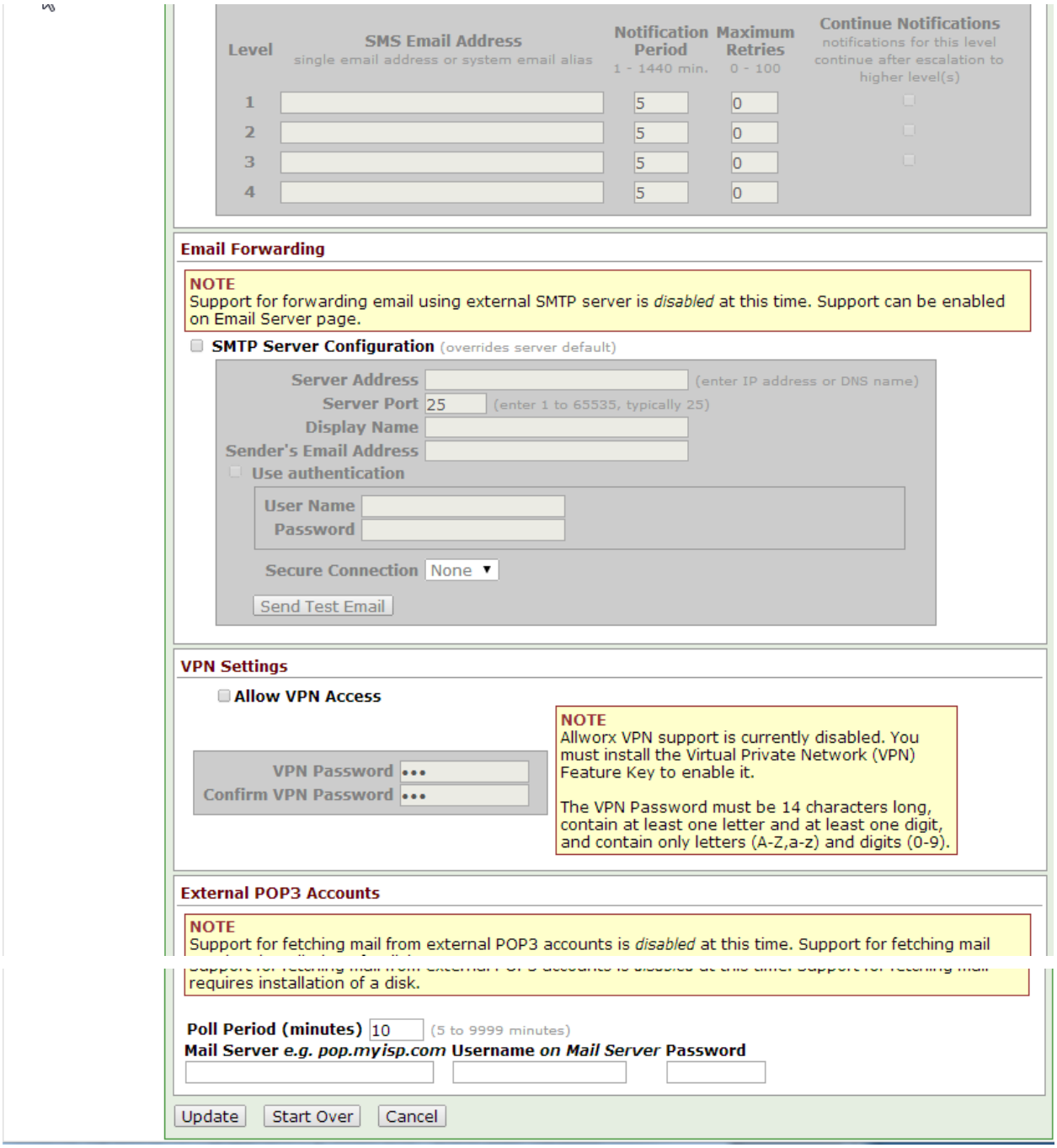
Call Forward Busy to PSTN Number

Navigate to **Home** > **Business** > **User**, click the **Modify** link of the user's extension and then change the **User Presence** field from **In Office** to **Busy**.

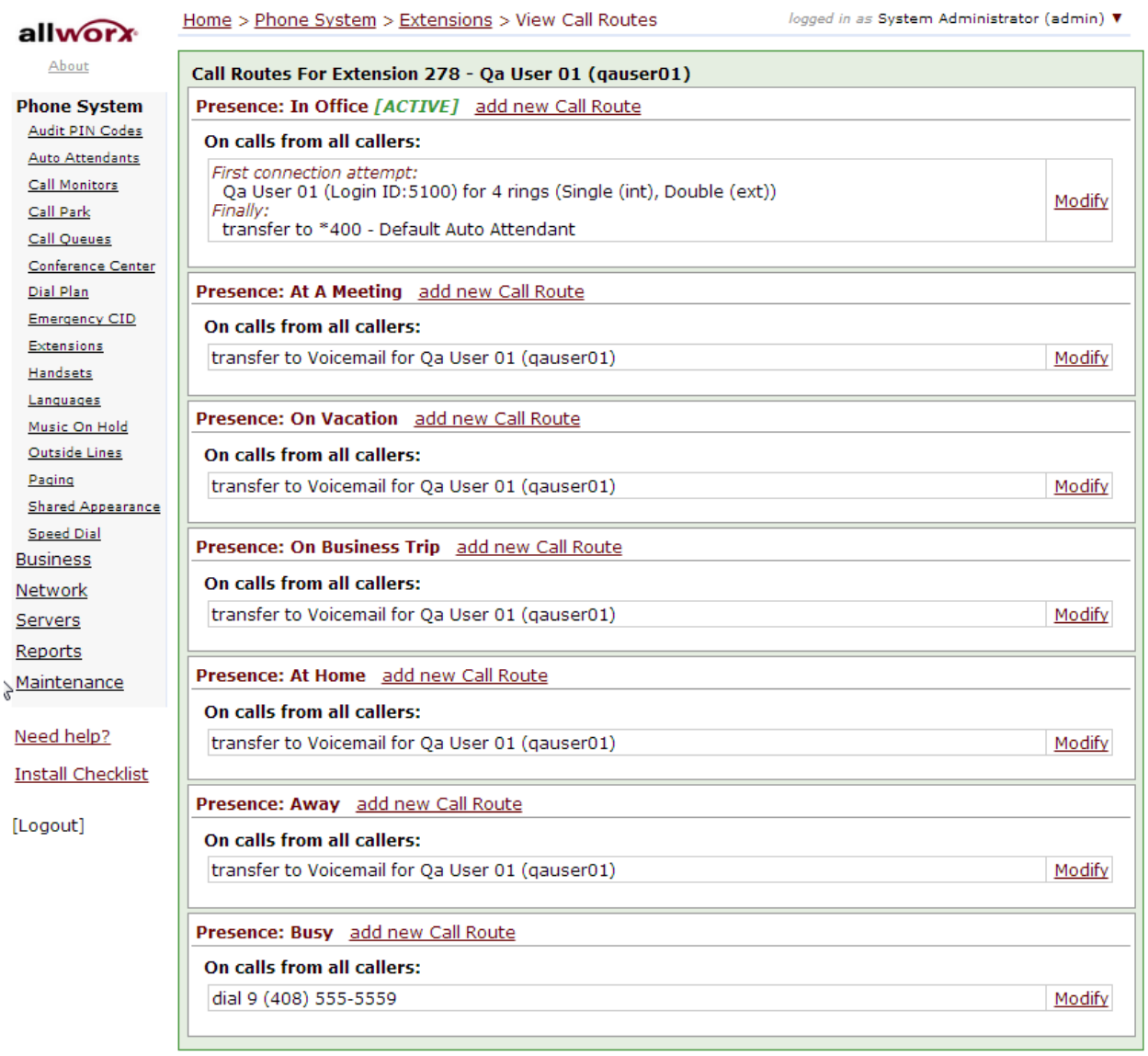



Call Answering maximum message record time 2 minutes
Message Center maximum message record time 2 minutes
User has permission for Off-Site Access to outside lines (from Message Center Main Menu)
User has permission to send voicemail to all users (by dialing 9 from the Message Center Send Menu)
Operator Extension 0 - Operator (used when caller dials 0 during user's call answering message)
End message recording after 5 seconds of silence (for calls from Analog CO lines)
User has permission to modify extension's call routes
User has permission to create conferences
User has permission to administer Call Reporting
System-wide Active Calls Display Brief Display (no Caller ID)
Call Recording Allowed
Maximum size Universal Inbox 200 MBytes
Enable Hot Desking
Maximum Login Time 12 hours
Caller ID Name up to 47 characters: letters digits . , \ _ ' -
Caller ID Number (up to 24 digits)
Call Queue Supervisor
Check boxes below to make the user a Call Queue Supervisor of the corresponding queue:
Queue 0
Queue 1
Queue 2
Queue 3
Queue 4
Queue 5
Queue 6
Queue 7
Queue 8
Queue 9
Recording Manager
Check boxes below to make the user a Recording Manager for the corresponding Auto Attendant or Call Queue:
Auto Attendants
*431 - Auto Attendant 1
*432 - Auto Attendant 2
*433 - Auto Attendant 3
*434 - Auto Attendant 4
*435 - Auto Attendant 5
*436 - Auto Attendant 6
*437 - Auto Attendant 7
*438 - Auto Attendant 8
Call Queues
Queue 0
Queue 1
Queue 2
Queue 3
Queue 4
Queue 5
Queue 6
Queue 7


*439 - Auto Attendant 9
Queue 8
Queue 9
Feature Eligibility
User is eligible for 0 Allworx Reach activations
User is eligible for 0 Allworx Interact Professional activations
Follow Me Calling
PIN required to accept call
Require caller to record name
Primary Phone Qa User 01 (Login ID:5100) (used for quick transfer from cell phone)
Auto Attendant Menus
Check boxes below to include the user in the Dial-By-Name and Dial-By-Directory menus for the attendant:
*431 - Auto Attendant 1
*432 - Auto Attendant 2
*433 - Auto Attendant 3
*434 - Auto Attendant 4
*435 - Auto Attendant 5
*436 - Auto Attendant 6
*437 - Auto Attendant 7
*438 - Auto Attendant 8
*439 - Auto Attendant 9
User Message Alias
To add a message alias for this user, go to the User Message Add page.
POP3 Mail Transfers
Email and Voicemail messages
Email messages only
No messages
Voicemail Notification and Escalation
Notification and Escalation Disabled
Notification Mode
SMS Email Address:
single email address or system email alias
Escalation Mode
Level
SMS Email Address
single email address or system email alias
Notification Period
1 - 1440 min.
Maximum Retries
0 - 100
Continue Notifications
notifications for this level continue after escalation to higher level(s)

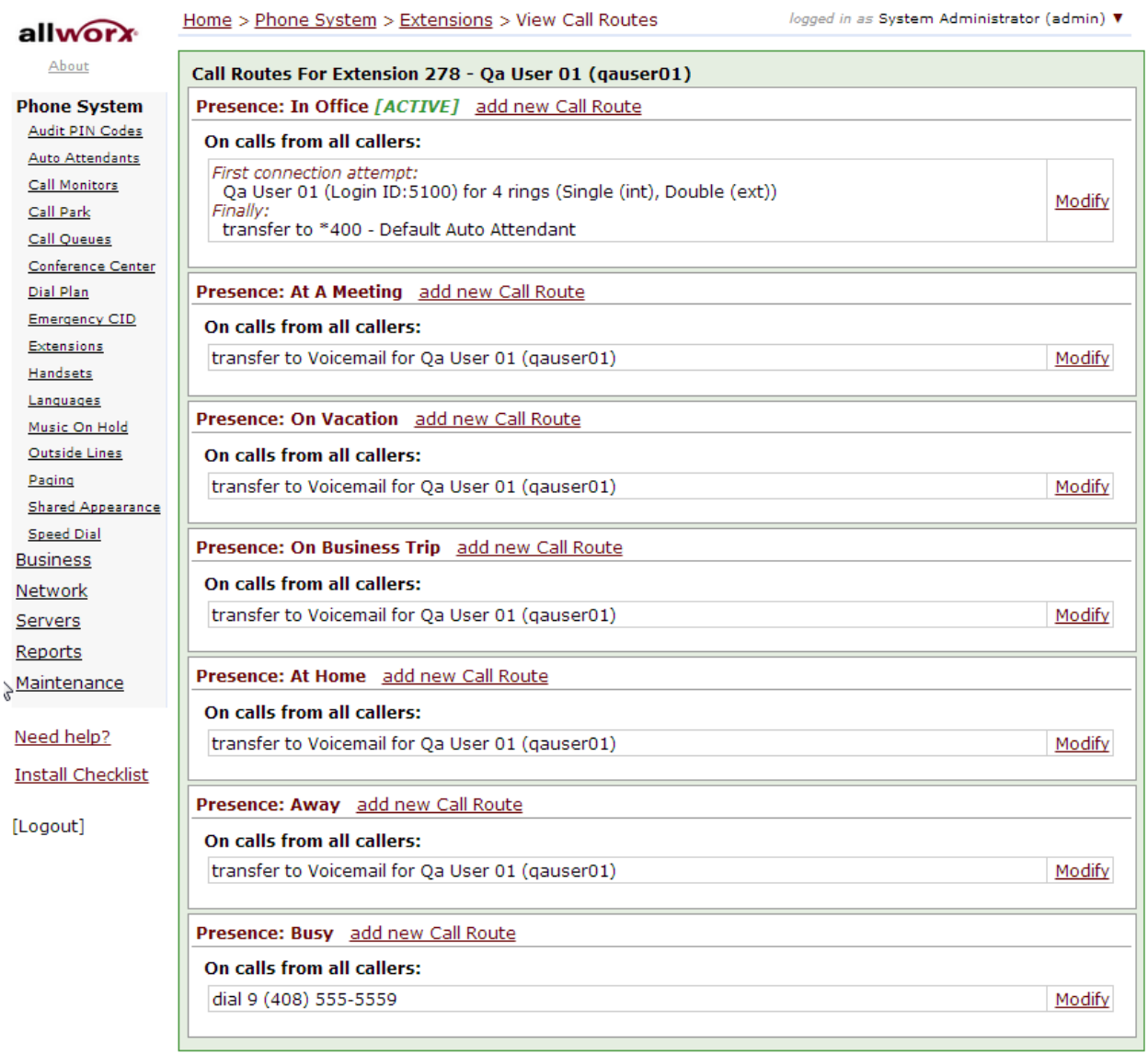


Navigate to **Home** > **Phone System** > **Extension**, click the **View Call Routes** link of the user's extension, click the **Modify** link of **Presence: Busy** section.
Select the **Dial number** radio button and then enter the PSTN number (preceded by **91** or **8**) to dial.
Leave other fields as defaults and then click the **Update** button.



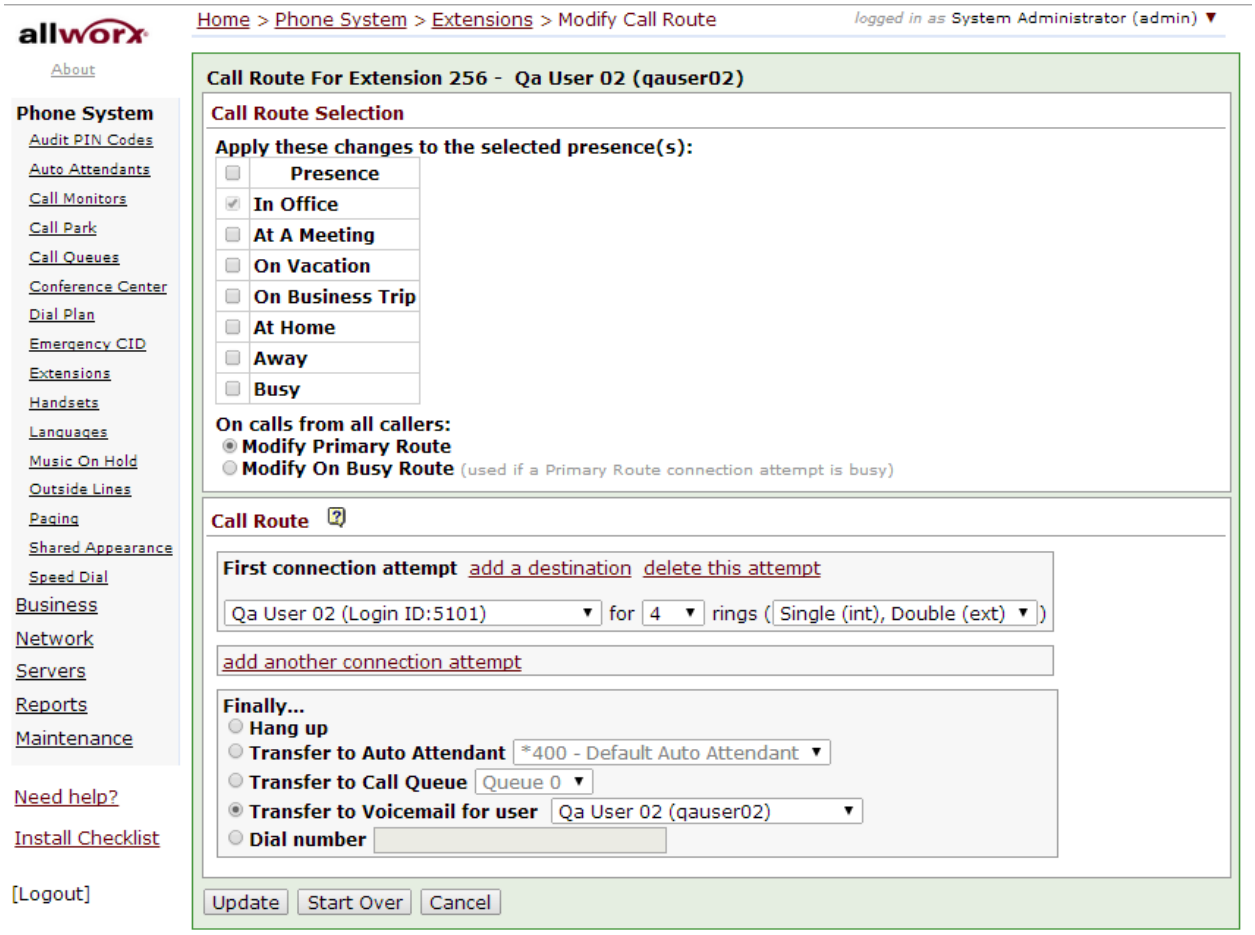
Call Forward to No Answer to PSTN Number

Navigate to **Home** > **Phone System** > **Extension**, click the **View Call Routes** link of the user's extension, click the **Modify** link of **Presence: In Office** section.
Select the **Dial number** radio button and then enter the PSTN number (preceded by **91** or **8**) to dial.
Leave other fields as defaults and then click the **Update** button.



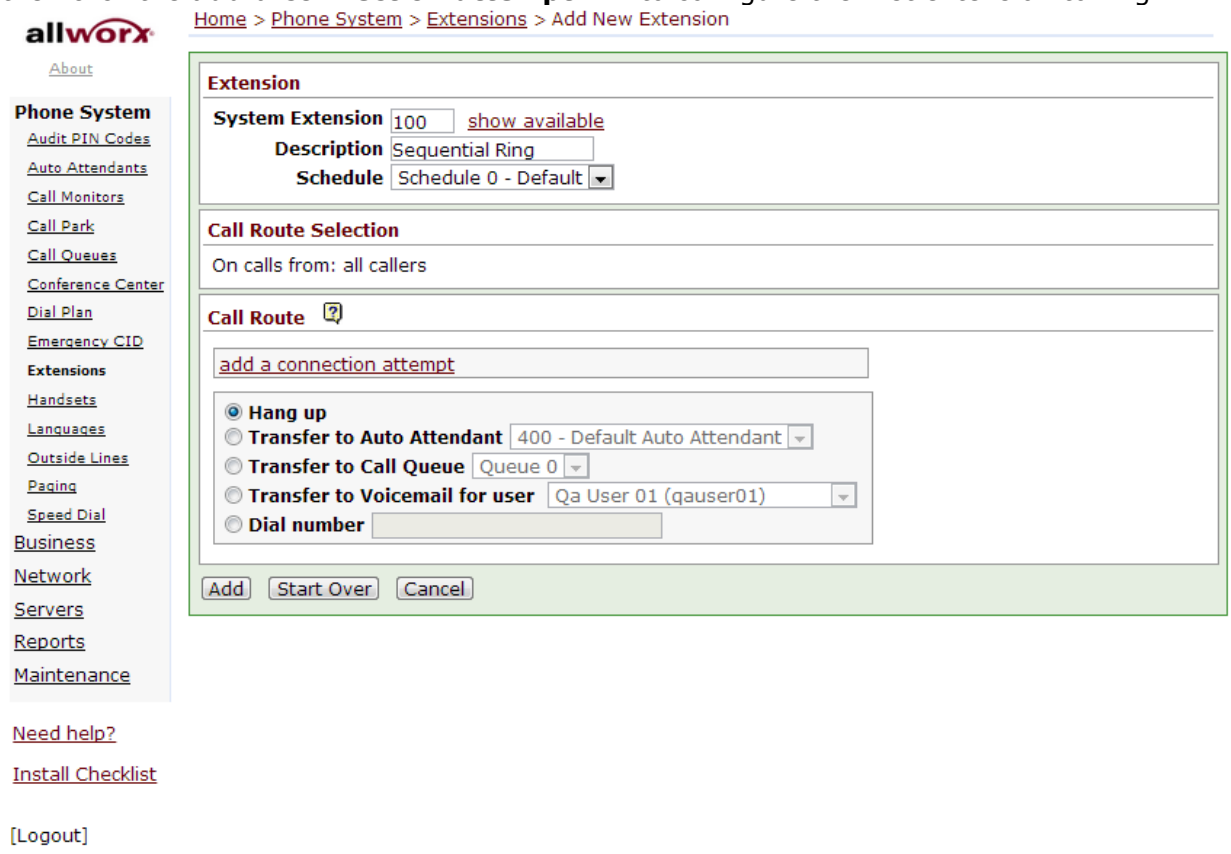
Call Forward Always to PSTN Number

Navigate to **Home** > **Phone System** > **Extension**, click the **View Call Routes** link of the user's extension, click the **Modify** link of **Presence: In Office** section.
Select **Follow Me →** from the drop-down menu of the **First connection attempt** field and enter the PSTN number (preceded by **91** or **8**) to dial.
Leave other fields as defaults and then click the **Update** button.

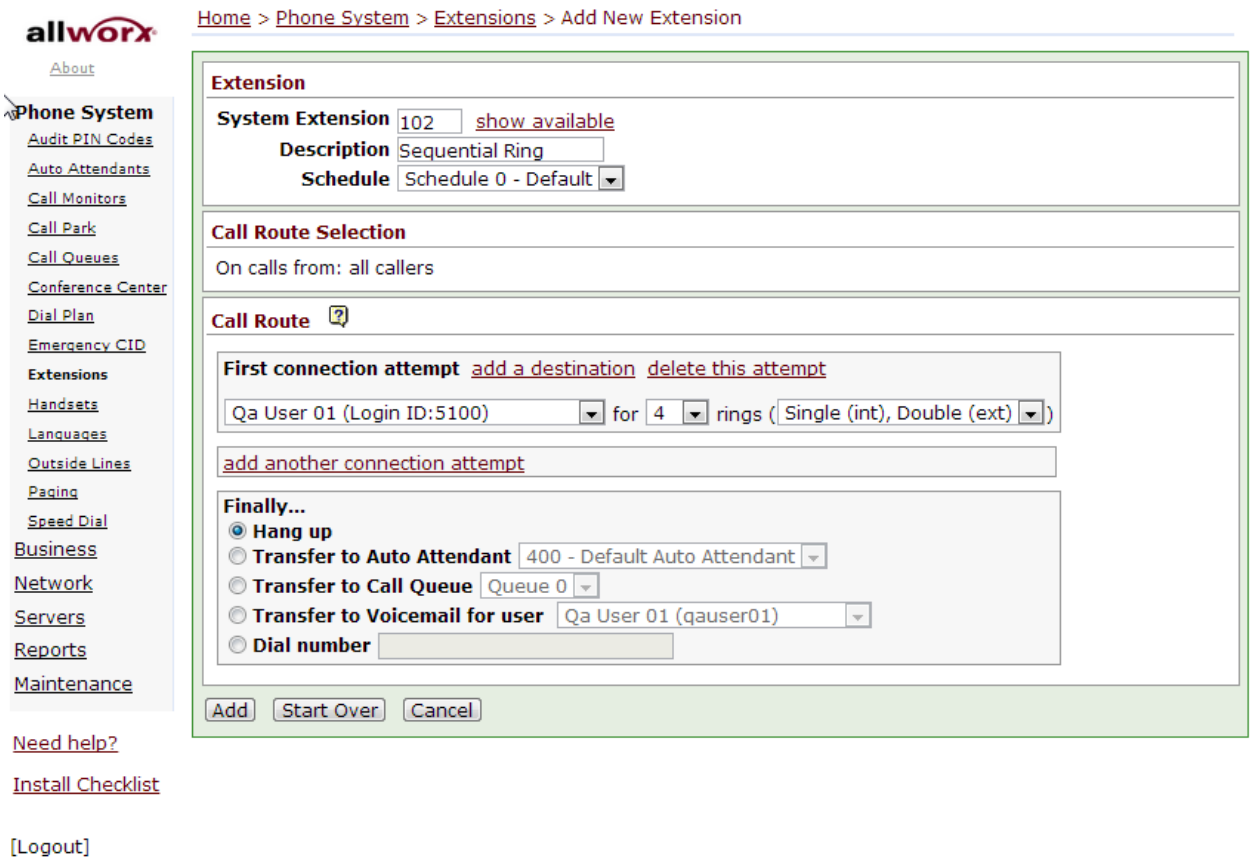

allworx
About
Phone System
Audit PIN Codes
Auto Attendants
Call Monitors
Call Park
Call Queues
Conference Center
Dial Plan
Emergency CID
Extensions
Handsets
Languages
Music On Hold
Outside Lines
Paging
Shared Appearance
Speed Dial
Business
Network
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Phone System > Extensions > Modify Call Route
logged in as System Administrator (admin)
Call Route For Extension 256 - Qa User 02 (qauser02)
Call Route Selection
Apply these changes to the selected presence(s):
Presence
In Office
At A Meeting
On Vacation
On Business Trip
At Home
Away
Busy
On calls from all callers:
Modify Primary Route
Modify On Busy Route (used if a Primary Route connection attempt is busy)
Call Route
First connection attempt add a destination delete this attempt
Qa User 02 (Login ID:5101) for 4 rings (Single (int), Double (ext))
add another connection attempt
Finally...
Hang up
Transfer to Auto Attendant *400 - Default Auto Attendant
Transfer to Call Queue Queue 0
Transfer to Voicemail for user Qa User 02 (qauser02)
Dial number
Update
Start Over
Cancel

5.18 Sequential Ring

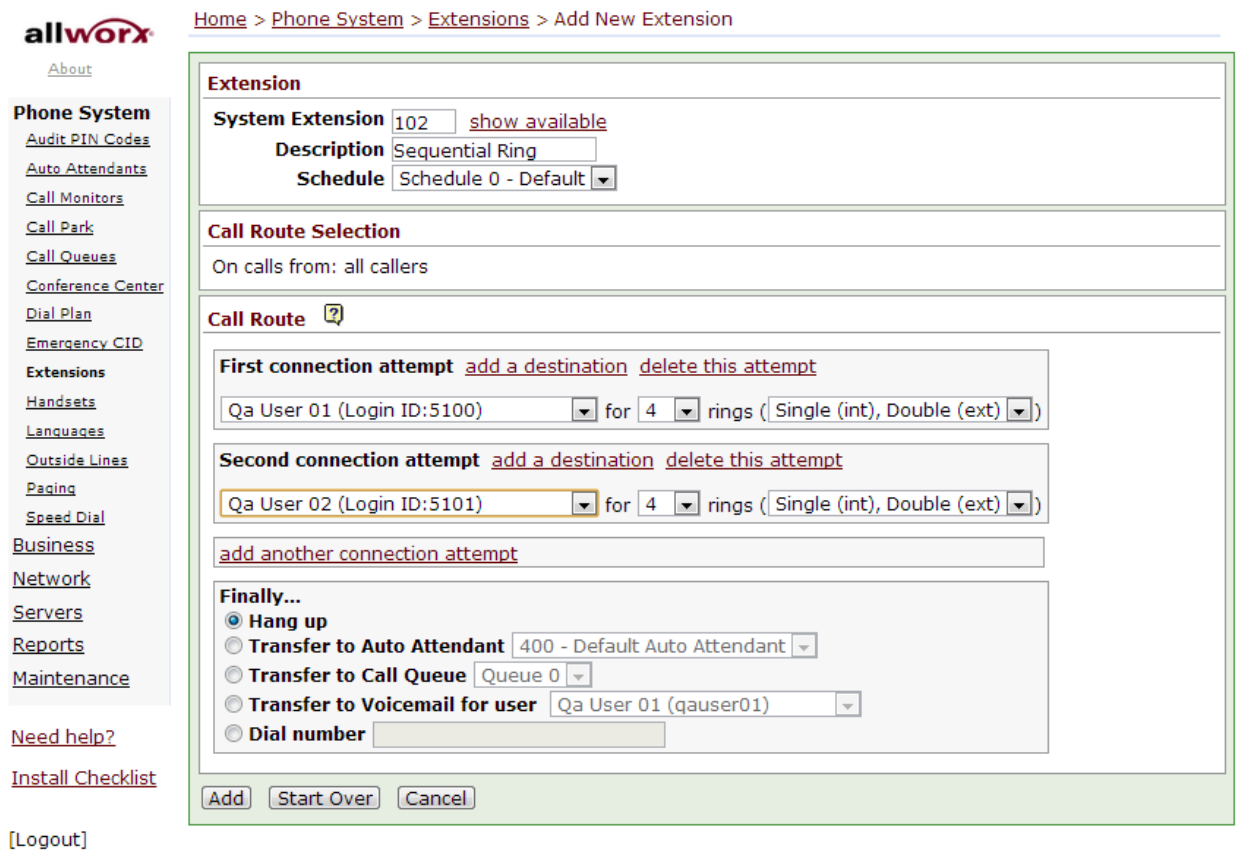
Navigate to **Home** > **Phone System** > **Extension** and click the **add new extension** link to create a new extension for handling the Sequential Ring feature. From there, enter an unused extension in the **System Extension** field, enter a description in the **Description** field and then click the **add a connection attempt** link to configure the first extension to ring.



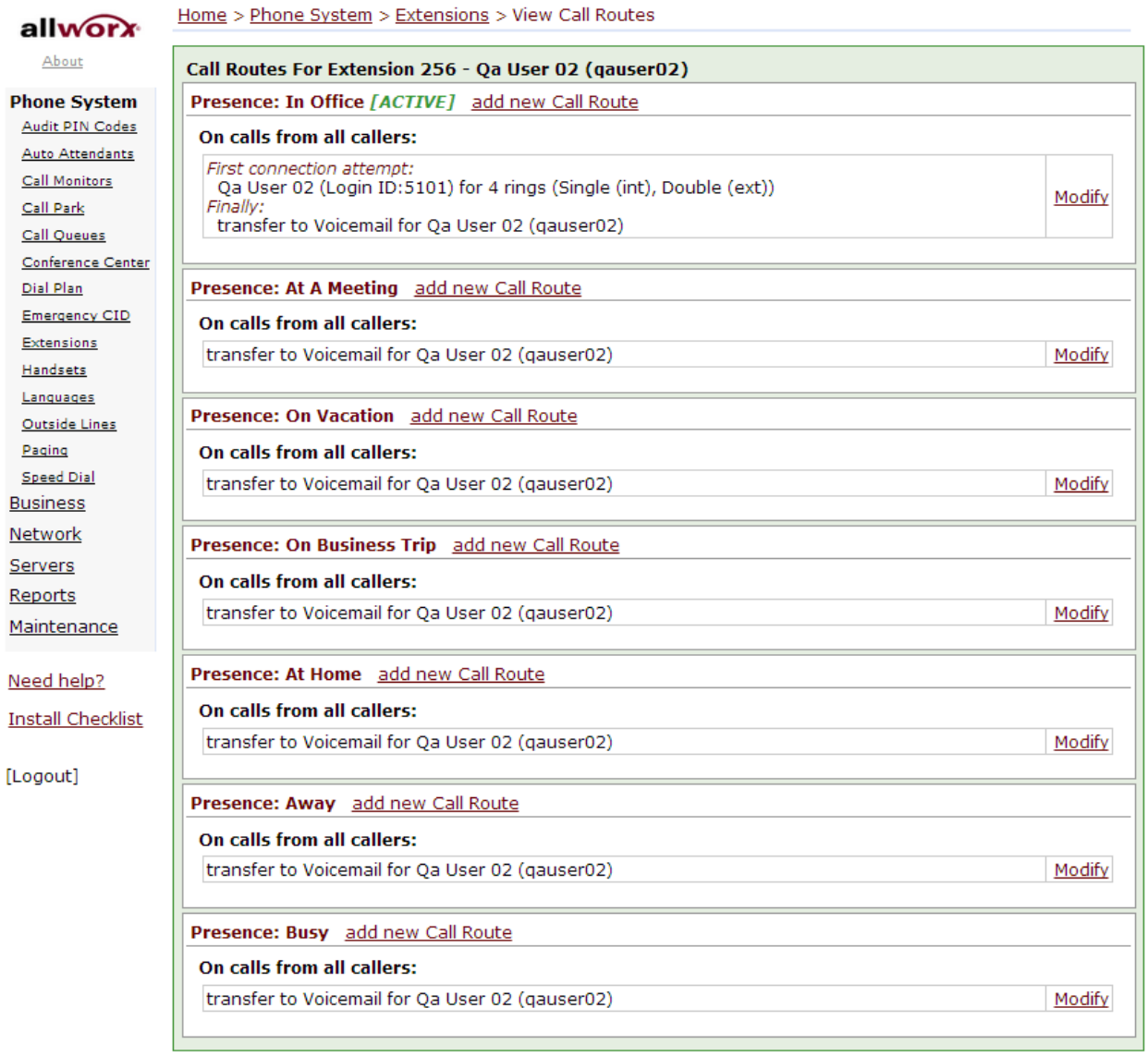
Select the first extension to ring by selecting its user in the **First connection attempt** section, leave other fields as defaults and then click the **add a connection attempt** link to configure the next extension to ring.



Select the second extension to ring by selecting its user in the **Second connection attempt** section, leave other fields as defaults and then click the **add another connection attempt** link to configure the next extension to ring.

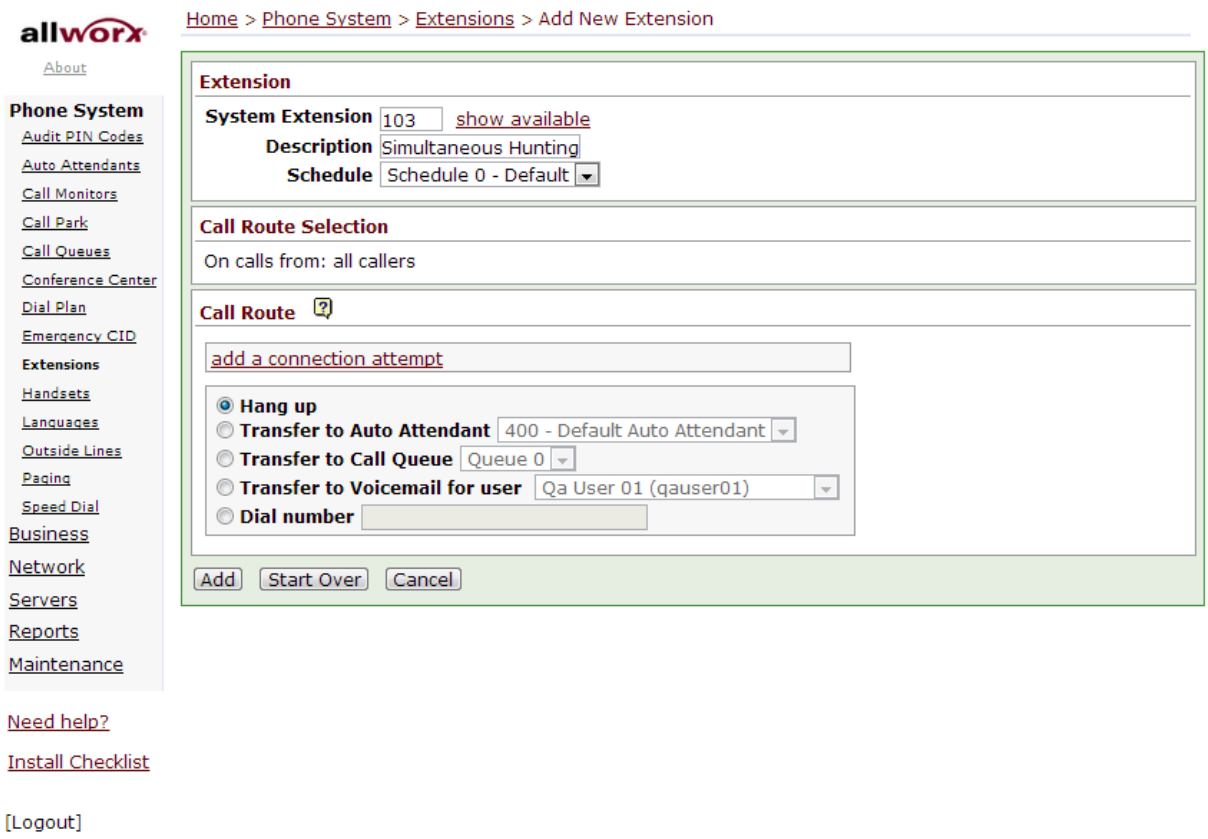


When you are done with adding the next extension to ring, click the **Add** button. Extension **123** should show the call routes for the sequential ring of your choices.

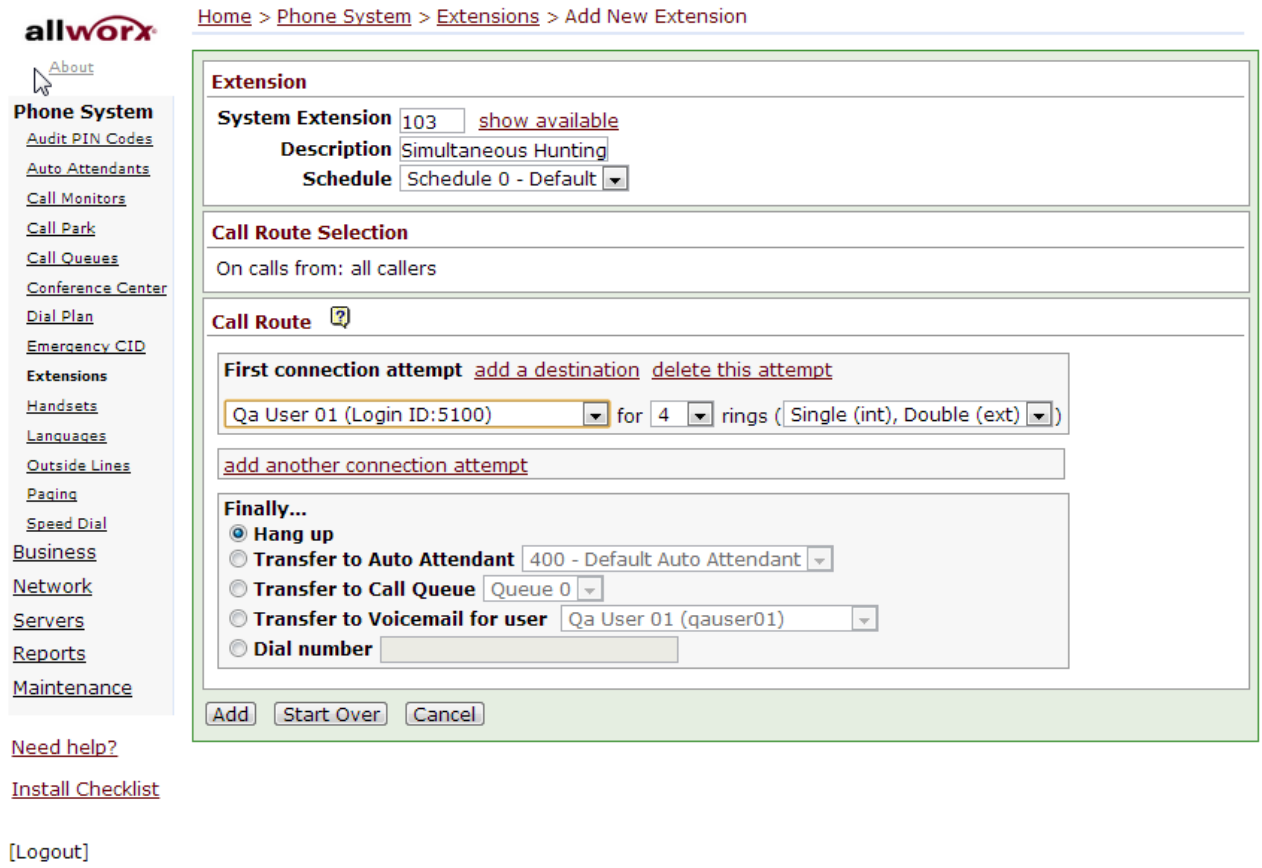


5.19 Simultaneous Hunting Policy

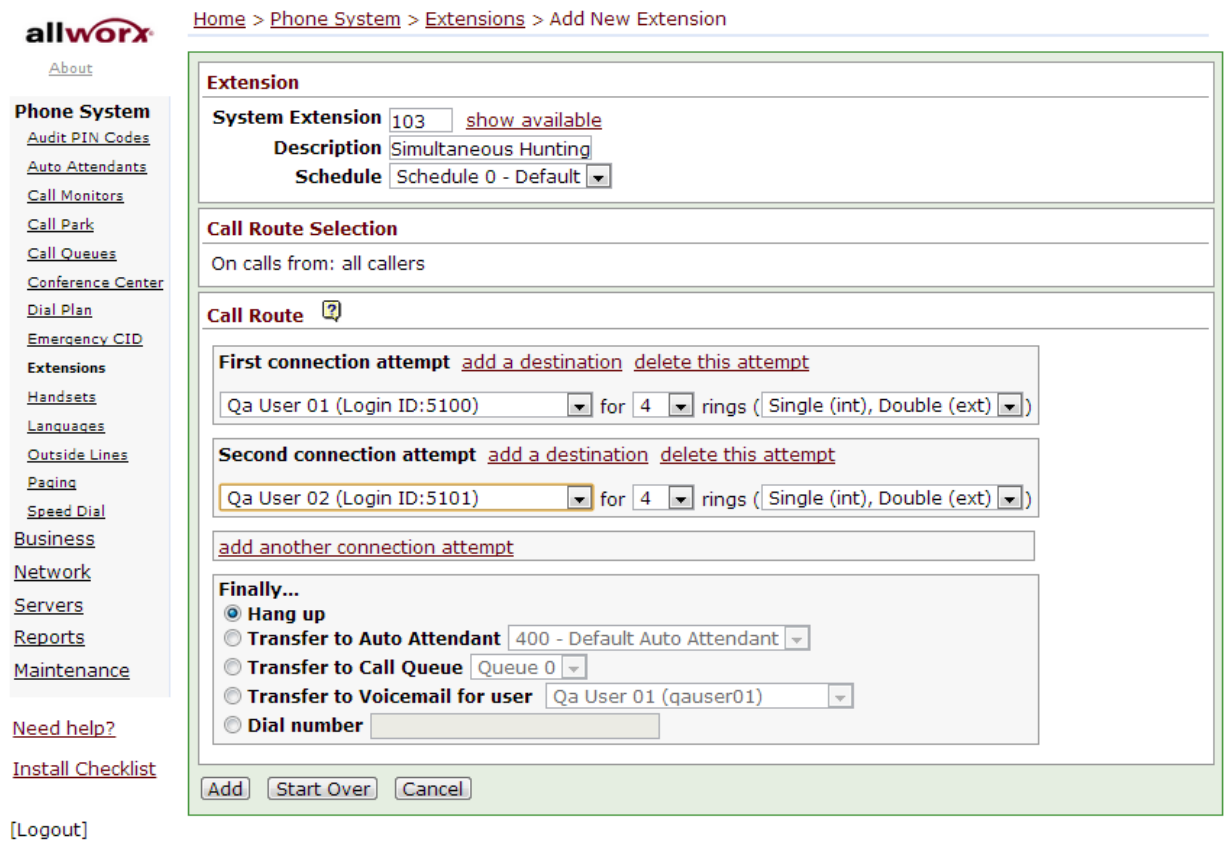
Navigate to **Home** > **Phone System** > **Extension** and click the **add new extension** link to create a new extension for handling the Simultaneous Hunting Policy feature. From there, enter an unused extension in the **System Extension** field, enter a description in the **Description** field and then click the **add a connection attempt** to configure the extension to ring.



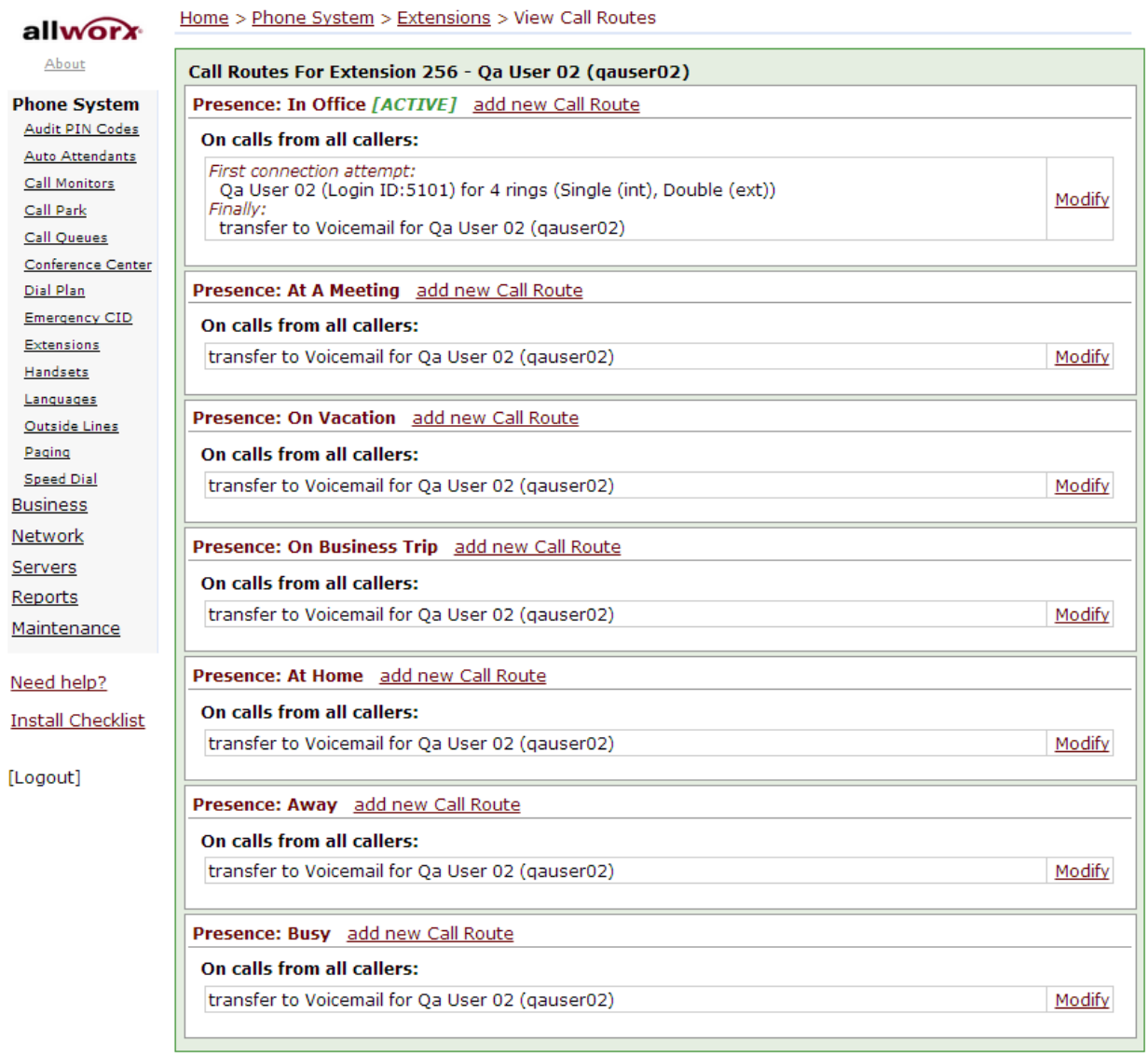
Select the extension to ring by selecting its user in the **First connection attempt** section, leave other fields as defaults and then click the **add a destination** link to add another extension to ring at the same time



Select another extension to ring at the same time by selecting its user in the in the new entry of the **First connection attempt** section, leave other fields as defaults and then click the **add a destination** link to add another extension.

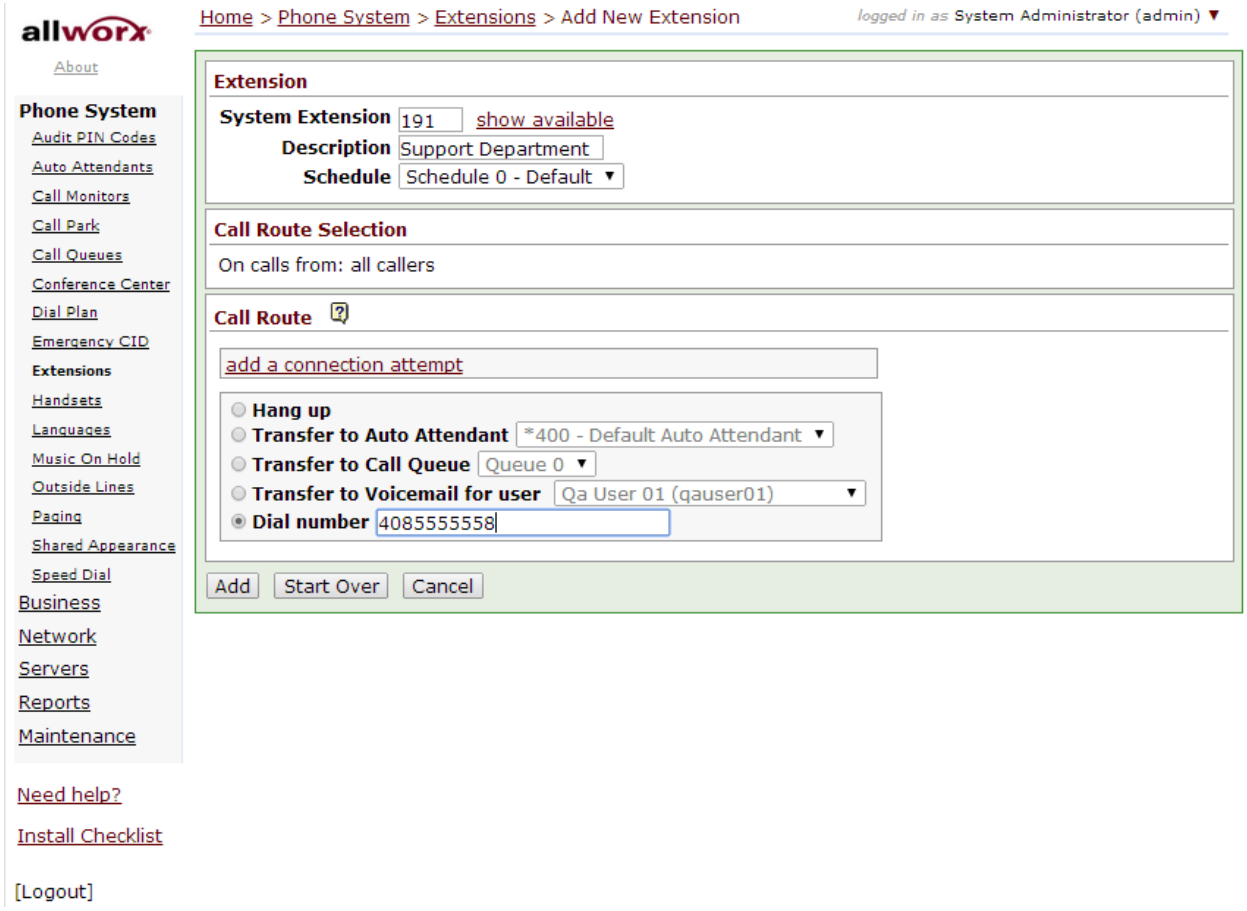


When you are done with adding all the extensions to ring at the same time, click the **Add** button. Extension **111** should show the call routes for the Simultaneous Hunting Policy of your choices.

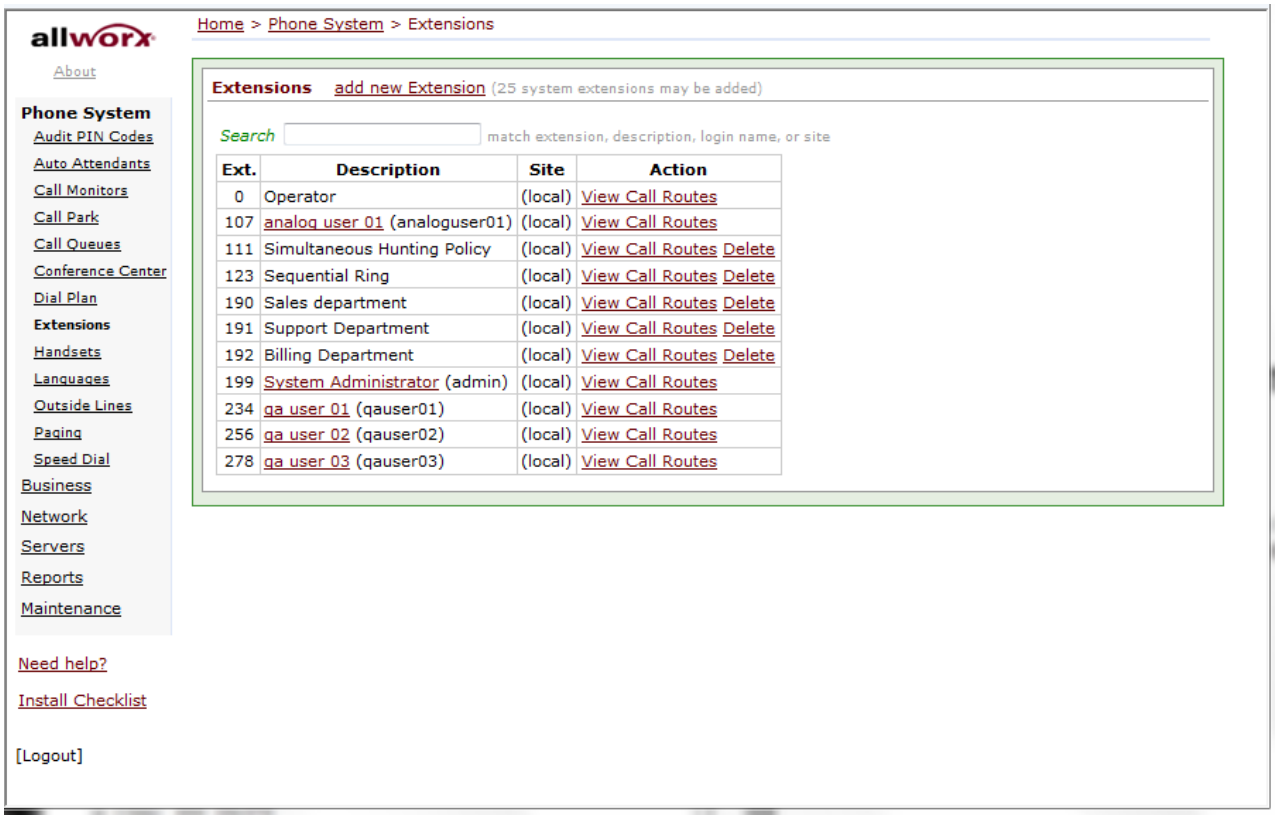


PBX Auto-Attendant to PSTN Numbers (for example: the first number assigned to Sales, the second number assigned to Support and the third number assigned to Billing). When the Auto-Attendant prompts the caller for DTMF digits, we want the Auto-Attendant to call one of these 3 PSTN number, depending on what digit it receives.

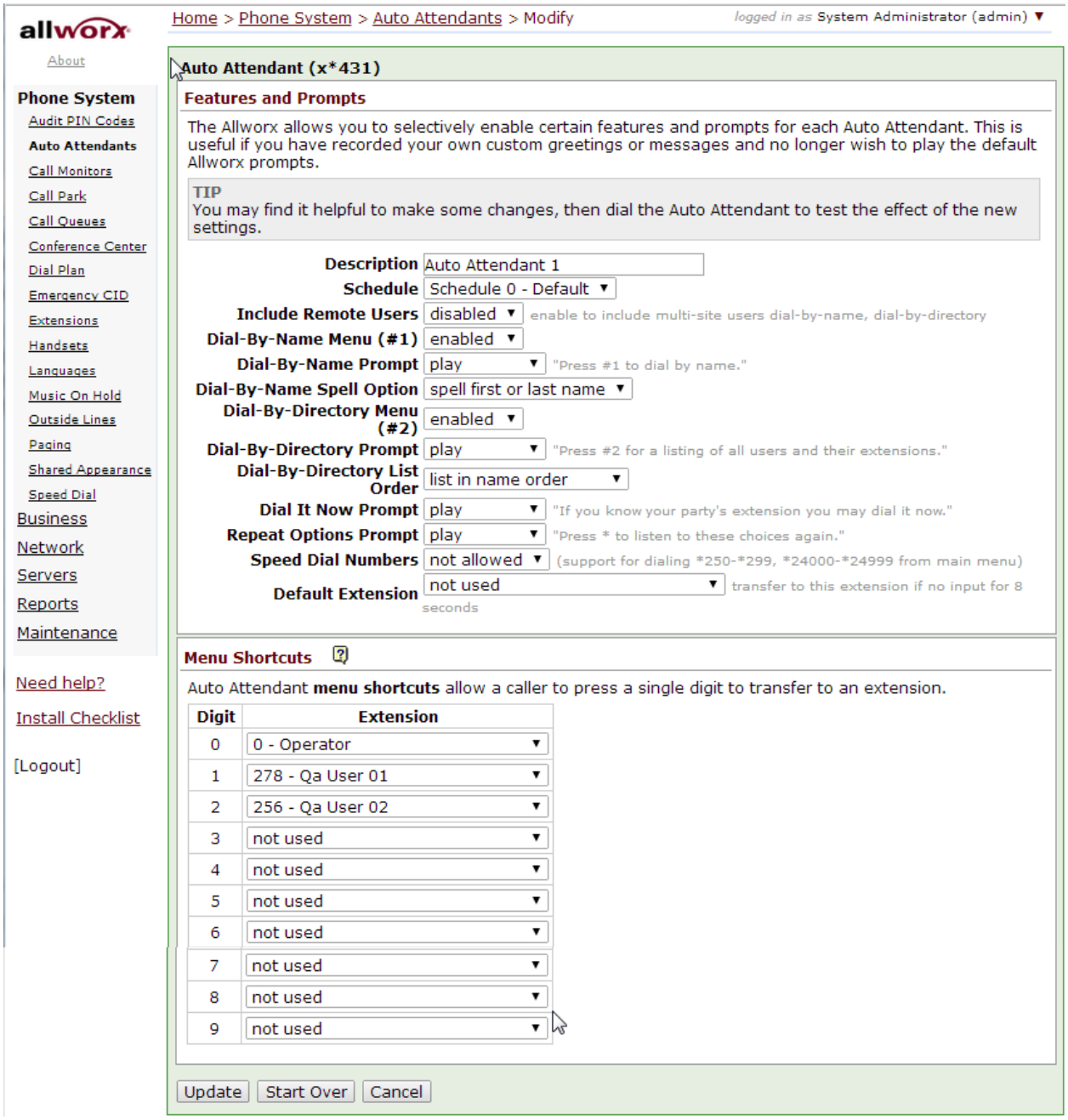
Navigate to **Home** > **Phone System** > **Extension** and click the **add new extension** link to create a new extension (each extension will be used for handling one PSTN number to call). From there, enter an unused extension in the **System Extension** field, enter a description in the **Description** field, select the **Dial number** radio button, and enter a PSTN number (preceded by **91** or **8**) to dial and then click the **Add** button.



In this example, we have created 3 extensions, 190, 191 and 192, for the PBX Auto-Attendant to dial the 3 PSTN Numbers, as follows:



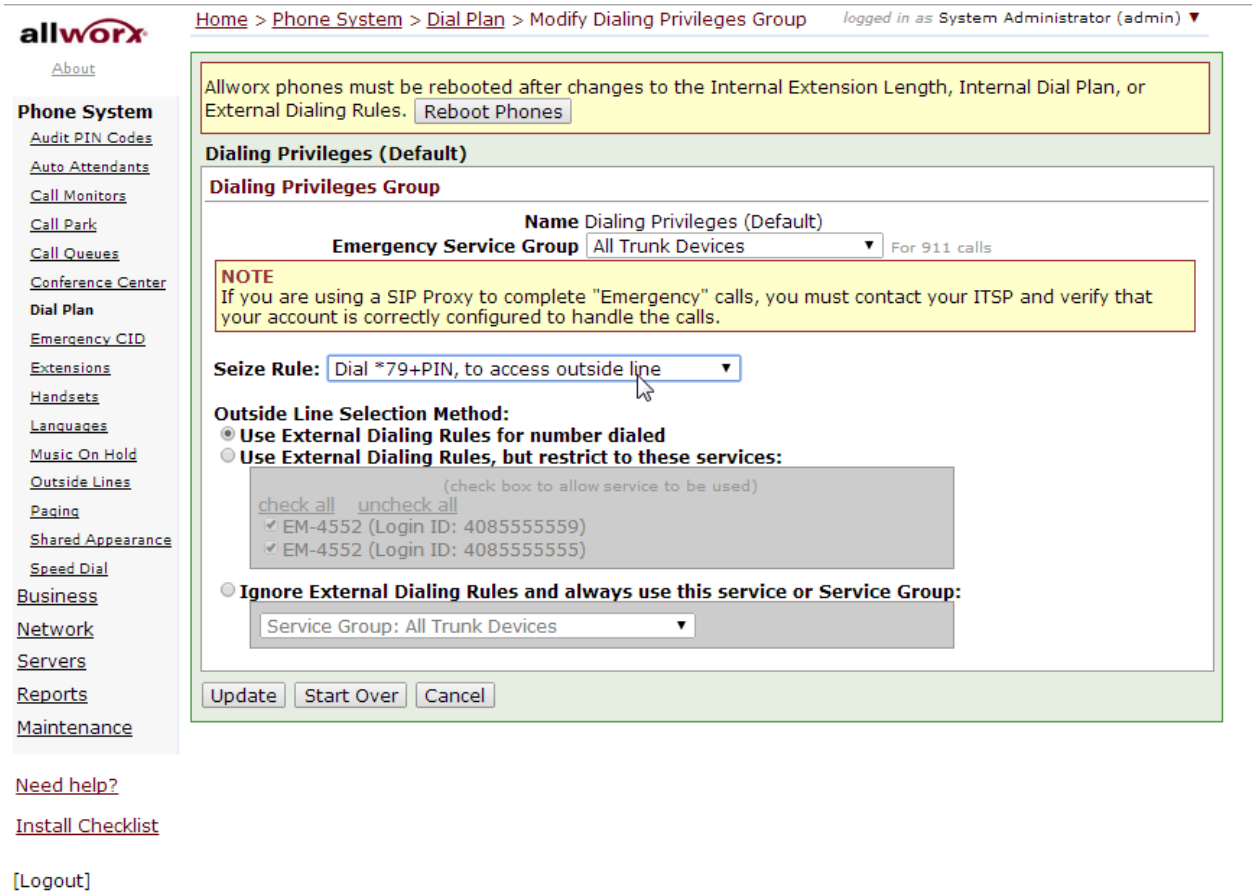
Navigate to **Home** > **Phone System** > Auto Attendants and click the **Modify** link in the **x431 – Auto Attendant 1** section. From there, select extension **190** for the Digit **1** field, select extension **191** for the Digit **2** field, select extension **192** for the Digit **3** field, leave other fields as defaults and then click the **Update** button.



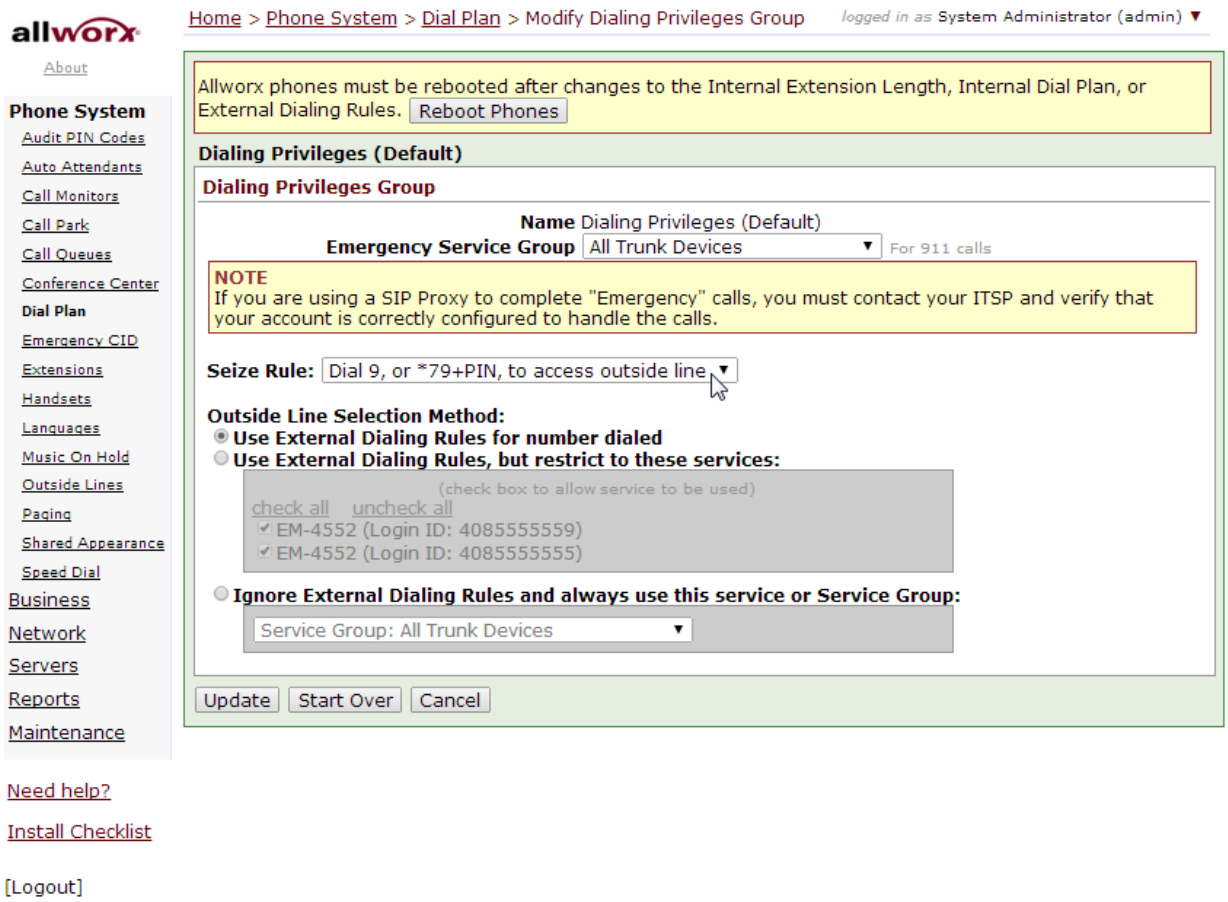
PBX Account Codes – Allworx PBX does not support Account Codes.
PBX Authorization Codes – Once the PBX Authorization Code is enabled, users that do have the dialing privileges would not be able to dial **9** to make outside calls. These users must dial **78** followed by the Authorization Code before they can dial the number they intend to dial after the digit **9**.
To enable the PBX Authorization Codes, navigate to **Home** > **Phone System** > **Audit PIN Codes** and click the **add new PIN Code** link to create a new PIN code. From there, enter a

5-digit number (**77777** in this example) in the **PIN Code** field, enter a description in the **Description** field and then click the **Add** button.

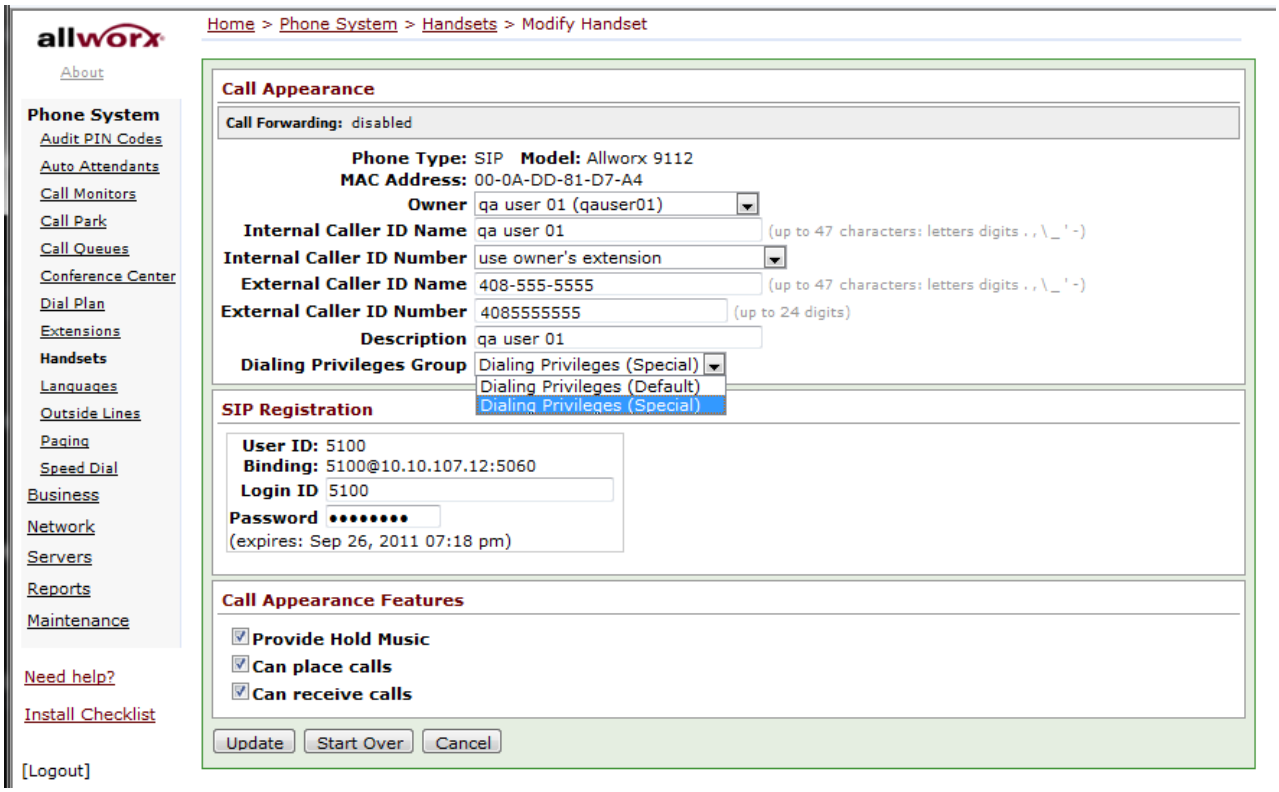
The default Dialing Privileges Group do not require the users to use PIN code for making outside calls. To enforce the PIN code for dialing outside calls, first we should change the default Dialing Privileges Group to require PIN code for making outside calls. Navigate to **Home** > **Phone System** > **Dial Plan** > **Dialing Privileges Groups**, click the **View** link of **Dialing Privileges (Default)** and then click the **Modify** link of **Dialing Privileges Group**. From there, select **Dial *79+PIN, to access outside line** in the **Seize Rule** field, leave other fields as defaults and then click the **Update** button.



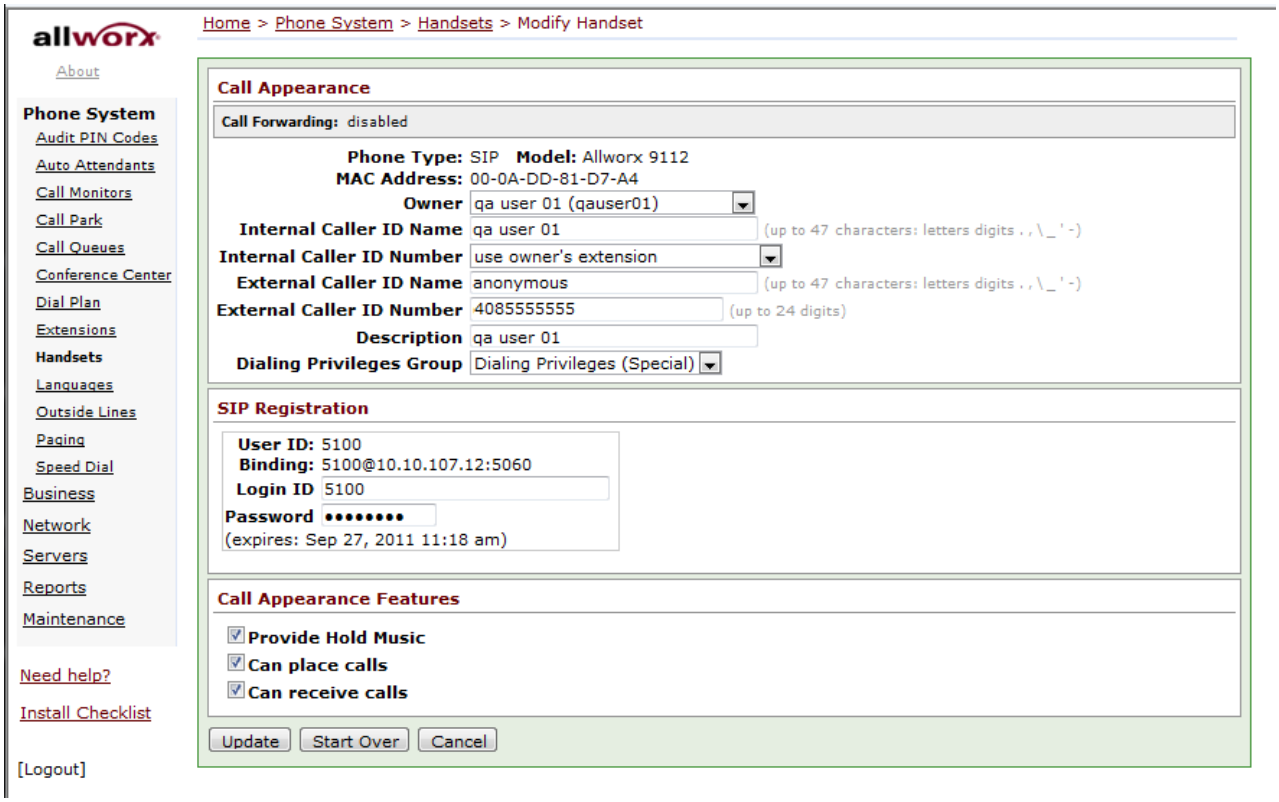
If you like, you may also want to create a special Dialing Privileges Group to allow certain users to dial without the PIN code. Navigate to **Home** > **Phone System** > **Dial Plan** > **Dialing Privileges Groups**, click the **Copy** link of **Dialing Privileges (Default)** and then, after the screen refreshes, click the **View** link of **Copy of Dialing Privileges (Default)** and then click the **Modify** link of **Dialing Privileges Group**. From there, enter a name (**Dialing Privileges (Special)** in this example) in the **Name** field, select **Dial 9, or *79+PIN, to access outside line** in the **Seize Rule** field, leave other fields as defaults and then click the **Update** button.



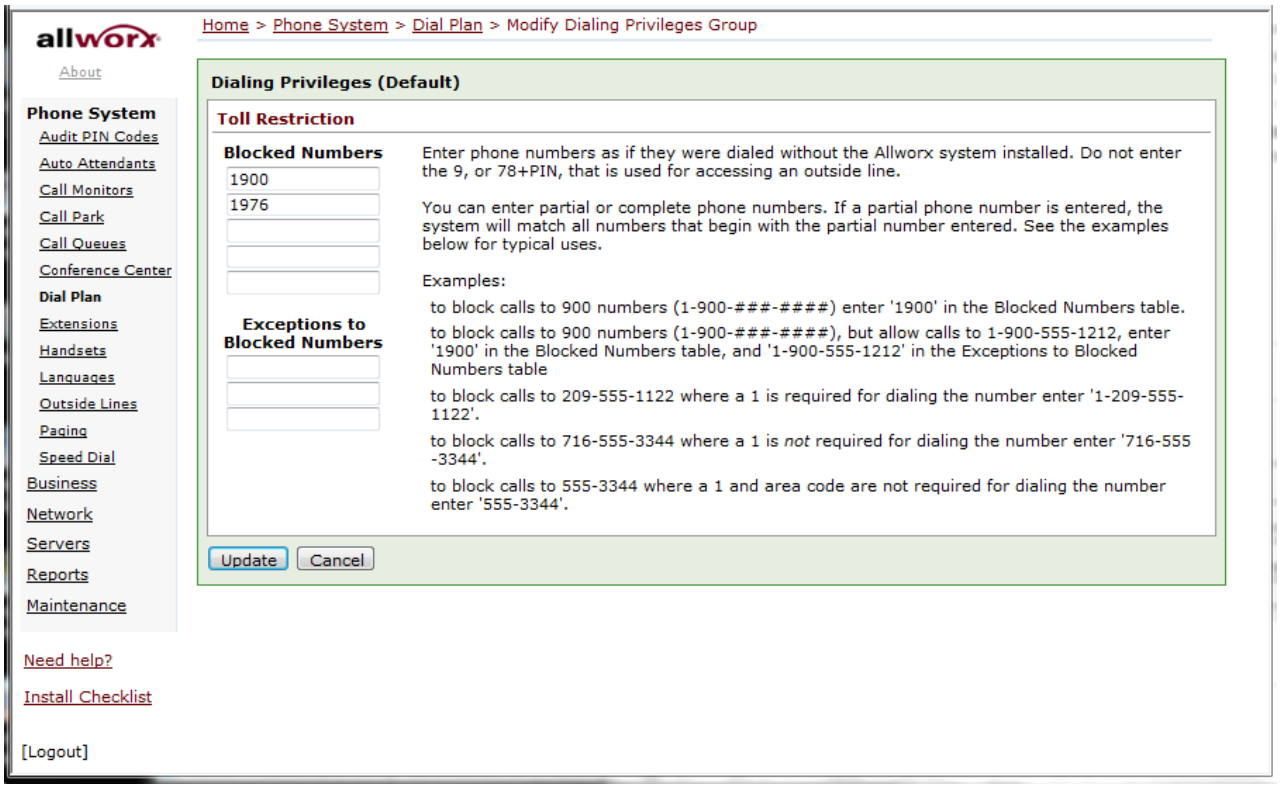
To assign different dialing privileges to different users, navigate to **Home** > **Phone System** > **Handsets**, click the **Modify** link of the selected user, select Dialing Privileges (Default or Special) in the **Dialing Privileges Group** field and then click the **Update** button. Note that for users that are required to use PIN code, instead of dialing **9 1 8005551212**, these users must dial **78 77777 1 8005551212**, according to this example.



Caller ID Blocked – Anonymous Caller ID – The PBX allows you to configure the Display part of the **From** header to any alphanumeric characters (i.e.: **anonymous**) but it does not allow the User part of the **From** header to have any non-digit characters. If you must change the User part of the **From** header, you can use the header manipulation capability from EdgeMarc. To configure the user's Caller ID as **anonymous** in the Display part of the **From** header from the PBX, navigate to **Home** > **Phone System** > **Handsets** and click the **Modify** link of the selected user. From there, enter **anonymous** in the **External Caller ID Name** field and then click the **Update** button.

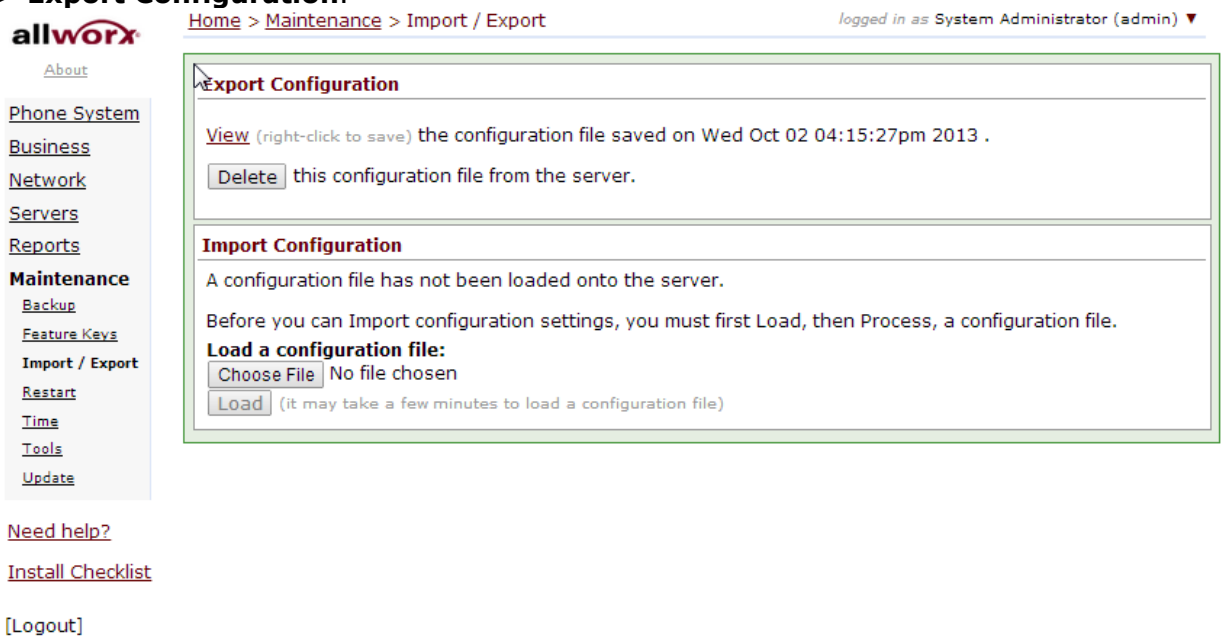


900/976 Call Blocking – To prevent the users from making certain calls, the PBX allows you to block these calls identified by the area codes. To block certain outbound calls identified by area codes, navigate to **Home** > **Phone System** > **Dial Plan** and click the **View** link of the Dialing Privileges Group. From there, click the **Modify** link of Toll Restriction to add the area codes of the numbers to be blocked under **Blocked Numbers** and then click the **Update** button.

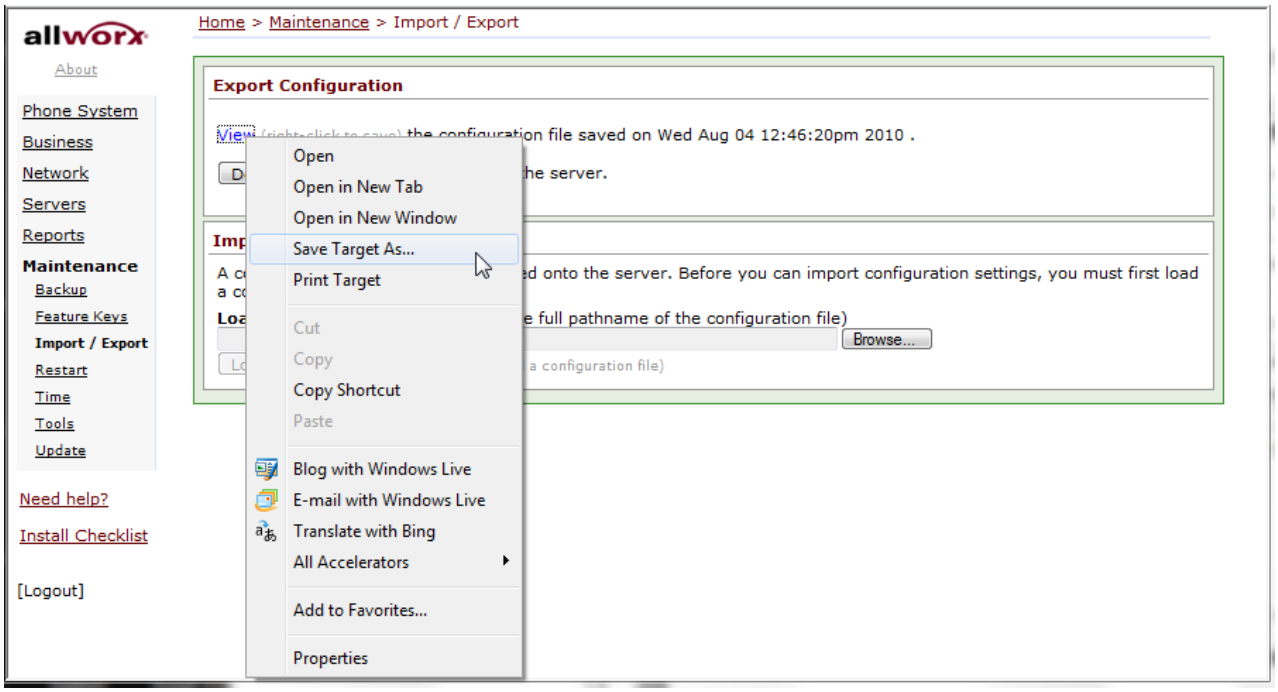

allworx
About
Phone System
Audit PIN Codes
Auto Attendants
Call Monitors
Call Park
Call Queues
Conference Center
Dial Plan
Extensions
Handsets
Languages
Outside Lines
Paging
Speed Dial
Business
Network
Servers
Reports
Maintenance
Need help?
Install Checklist
[Logout]
Home > Phone System > Dial Plan > Modify Dialing Privileges Group
Dialing Privileges (Default)
Toll Restriction
Blocked Numbers
1900
1976
Exceptions to Blocked Numbers
Enter phone numbers as if they were dialed without the Allworx system installed. Do not enter the 9, or 78+PIN, that is used for accessing an outside line.
You can enter partial or complete phone numbers. If a partial phone number is entered, the system will match all numbers that begin with the partial number entered. See the examples below for typical uses.
Examples:
to block calls to 900 numbers (1-900-###-####) enter '1900' in the Blocked Numbers table.
to block calls to 900 numbers (1-900-###-####), but allow calls to 1-900-555-1212, enter '1900' in the Blocked Numbers table, and '1-900-555-1212' in the Exceptions to Blocked Numbers table
to block calls to 209-555-1122 where a 1 is required for dialing the number enter '1-209-555-1122'.
to block calls to 716-555-3344 where a 1 is not required for dialing the number enter '716-555-3344'.
to block calls to 555-3344 where a 1 and area code are not required for dialing the number enter '555-3344'.
Update
Cancel

5.20 Backing up the PBX configurations

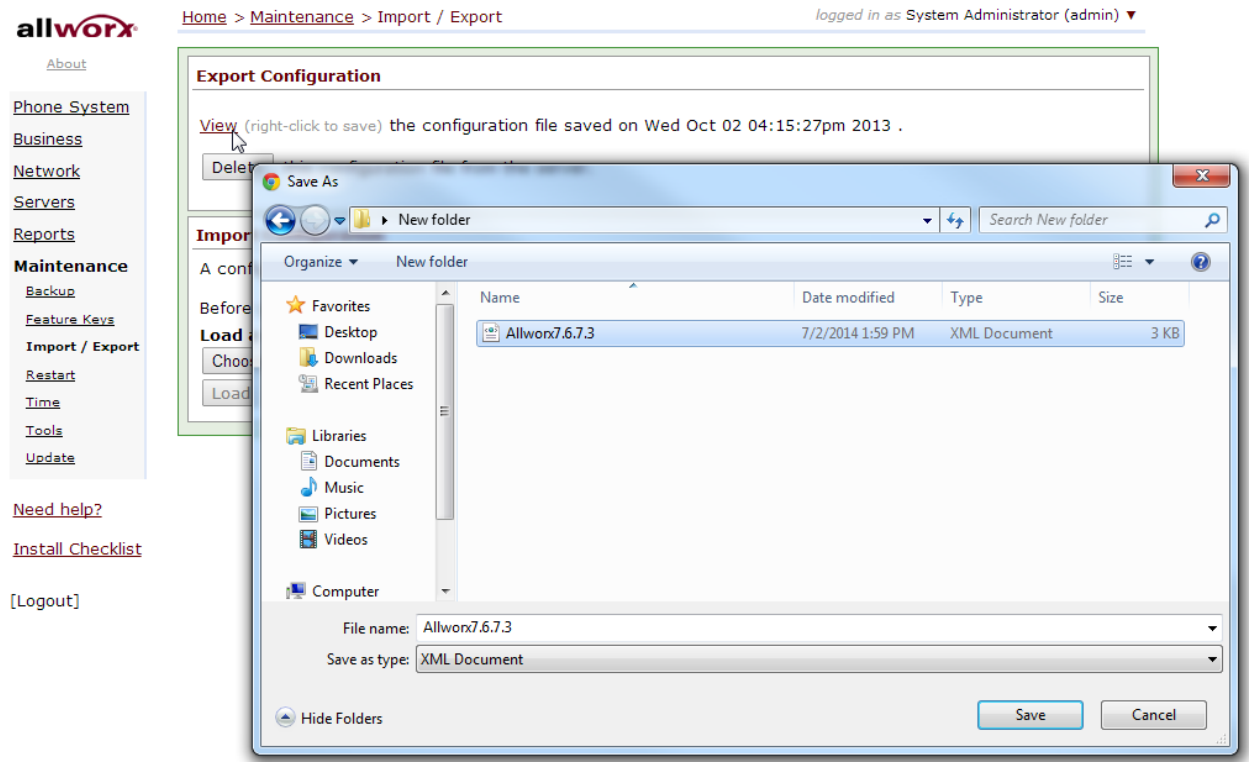
Backing up the PBX configurations:
To back up your PBX configurations, navigate to **Home**> **Maintenance** > **Import / Export** > **Export Configuration**.



Right-click the **View** link and, from the pop-up menu, click the **Save Target As...** link.



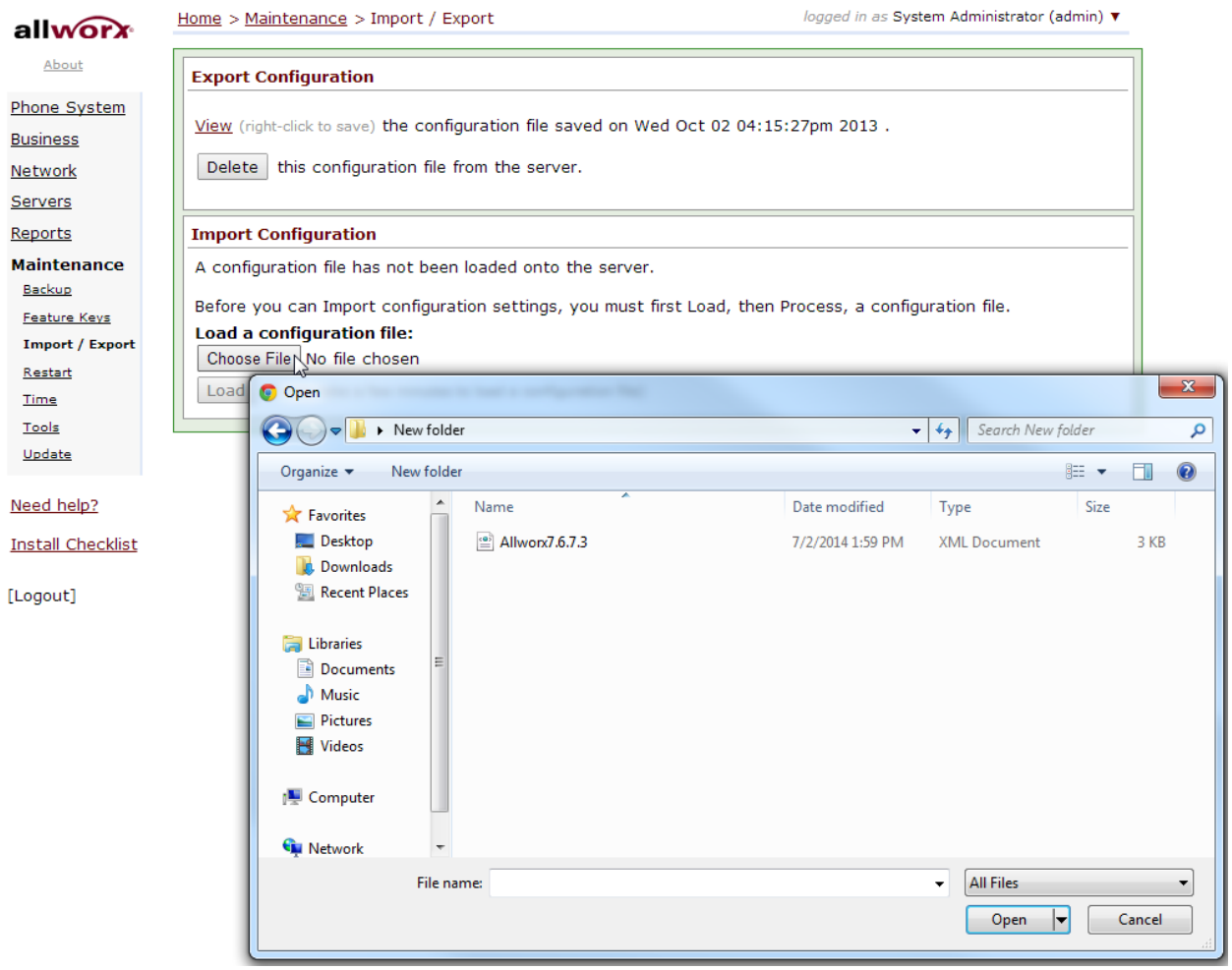
From the pop-up screen, select the path and enter the file name in the **File name** field. Note that the file name for PBX configuration should end with **.xml**.
Click the **Save** button to save the PBX configuration file.



5.21 Restoring the PBX configurations

Restoring the PBX configurations:

To restore your PBX configurations, navigate to **Home**> **Maintenance** > **Import / Export** > **Import Configuration**.
Browse and load a previously saved PBX configuration file in the **Load a configuration file** field.
Click the **Load** button.



For advanced configurations and support please contact the Edgewater Technical Assistance Center support@edgewaternetworks.com or call 408.351.7255.