



Avaya Solution & Interoperability Test Lab

Application Notes for Interoperating IgeaCare Apolo ENS Report and Notification Systems with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the Apolo Emergency Notification System (ENS) application by IgeaCare Systems Inc., to connect and interoperate with Avaya IP Office systems. The Apolo ENS application interacts with IgeaCom devices, also by IgeaCare Systems Inc, and telephone sets on Avaya IP Office systems.

Information in these Application Notes was obtained through compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for the Apolo Emergency Notification System (ENS) application by IgeaCare Systems Inc., to connect and interoperate with Avaya IP Office systems. The Apolo ENS application interacts with the IgeaCom 500 and IgeaCom 700 by IgeaCare Systems Inc, and Avaya IP Office system telephones.

The Apolo ENS application is based on client/server computing architecture and is comprised of more than twenty different client applications. The **ConnexALL Notification Server (CNS)** is the core application, where the central database, licensing, and real time event processing are dispatched and controlled. Each client application communicates directly with the CNS and is functional as long as it is network operational.

Only the client applications that are relevant to the interface between Apolo ENS and Avaya IP Office were addressed in compliance testing. These applications were:

- The **Device Assignment Client (DAC)** which permits staff members to view and modify the assignment of callpoints¹ to their respective telephone on one or more Avaya IP Office systems. DACs are deployed based on implementation strategy, which takes into account the number of users making assignments, their level of access, and the location of DACs. Two DAC clients were implemented in the compliance testing.
- The **Active Alarms Client (AAC)**, which provides the same real-time display of active callpoint and presence events found in every DAC. The AAC is intended for monitoring positions within the facility where the complete functionality of a DAC is not required.
- The **Popup Notification Client (PNC)**, which displays a callpoint event as a popup on a Windows based Personal Computer (PC).
- The **Virtual Wallboard Client (VWC)**, which can be used to display callpoint events on a PC-based scrolling marquee.
- The **Voice Response Client (VRC)**, which provides text-to-speech notification to any telephony device, including overhead paging equipment, wired and wireless handsets, and cellular telephones. In addition, the VRC client integrates the application with the facility's Avaya IP Office system to enable user interaction via touch-tone and voice menus. This enables a user to send predefined messages to pagers and wireless handsets from any touch-tone capable telephone set.

The Apolo ENS and client application were integrated into a Small Community Network (SCN) infrastructure of Avaya IP Office systems. Avaya IP Office SCN networks allow dial plan information to be shared between Avaya IP Office systems and are used to collectively ring extensions across two (or more) Avaya IP Office systems by dialing a single hunt group

¹ The CNS communicates or receives information to the location(s) callpoint through Avaya IP Office or across the server / client infrastructure. Callpoints are essentially endpoints that reside on Nurse Call Systems, Fire alarms, Communication Systems, Security Systems, etc.

extension. For the compliance testing, the IgeaCom500 was placed on an Avaya IP406 Office V2 system while the IgeaCom 700 was placed on an Avaya IP406 Office V2 system.

The IgeaCom devices were connected to Avaya IP Office analog telephone ports and were configured to alert an individual telephone or a group of telephones.

The configuration shown in **Figure 1** below was used for the compliance testing of the Apollo ENS and IgeaCom devices with the Avaya IP Office systems.

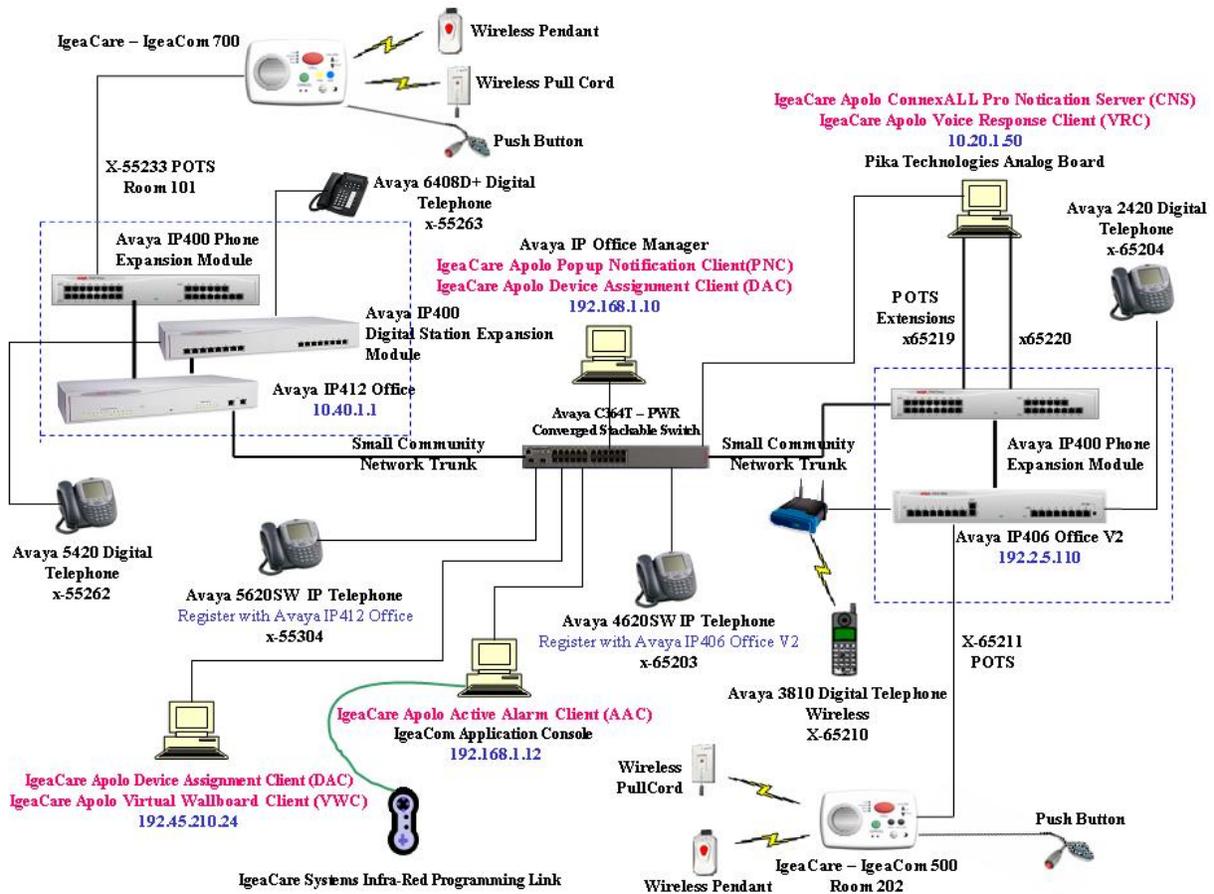


Figure 1 – Network Configuration Diagram

Note: For test purposes, pulling the wireless pull cord, or pushing the wireless pendant button are referred to as IgeaCom button pressing.

2. Equipment and Software Validated

The following products and software were used for the configuration in **Figure 1**:

Product	Software/Version
Avaya IP412 Office	4.0.10
Avaya IP406 Office V2	4.0.10
Avaya IP400 Phone Expansion Module	6.0.10
Avaya IP400 Digital Station Expansion Module	6.0.10
Avaya IP Office Manager	6.0.10
Avaya 4620 SW IP Telephone	2.3
Avaya 5620 SW IP Telephone	2.3
Avaya 2420 Digital Telephone	5.0
Avaya 5400 Digital Telephone	5.0
Avaya 3810 Digital Telephone Wireless	n/a
Avaya C364T – PWR Converged Stackable Switch	4.5.14
Pika Technologies, Pika Monte Carlo Analog Board	6.3
IgeaCom 500	IC500-B1.4S 0807-0285
IgeaCom 700	IC700-B1.0S 0806-0017
IgeaCare Systems Inc. Infra-Red Programming Link	n/a
IgeaCare Systems Inc. (for IgeaCom 500)	V6.11
IgeaCare Systems Inc. – ACS (for IgeaCom 700)	V6.08.3
PCs for Avaya IP Office Manager and IgeaCom Programming application	Windows 2003 XP Professional Service Pack 2

Table 1 – Product and Software Version

2.1. Pika Technologies

The Pika Monte Carlo Analog Board (Analog Board) must be installed into a networked PC to allow the Apolo ENS application call control to function. **Figure 1** displays the Analog Board installed on the same PC running the Apolo CNS and VRC applications. The ports from the Pika Analog Board are plugged directly into the Avaya IP 400 Phone Expansion module. This simulates POTS telephone functionality controlled by the CNS application. In this case, Pika Analog Board ports 0 and 2 were plugged into Avaya IP 400 Phone Expansion module port extensions 65219 and 65220, respectively.

3. Avaya IP Office

For all Avaya IP Office configuration information not addressed in this section, such as installation and initial configuration, etc., please refer to the Avaya IP Office product documentation in reference [1].

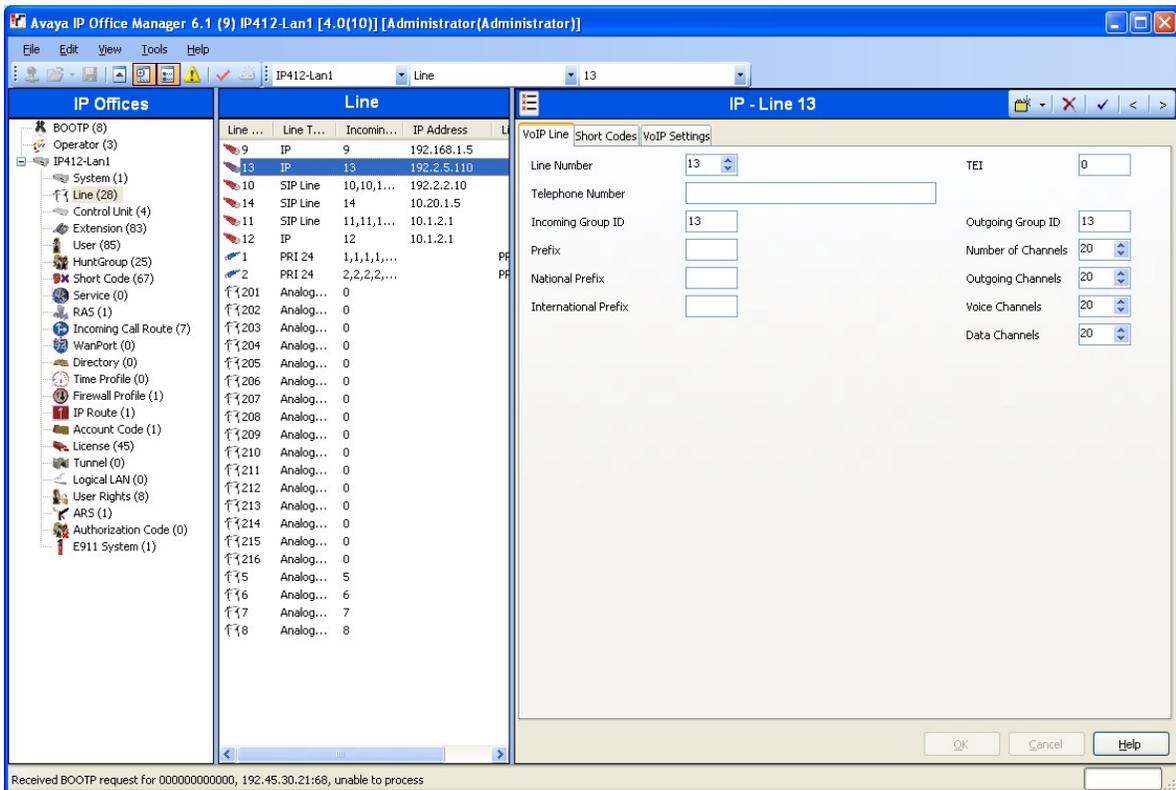
3.1. Avaya IP412 Office Configuration

The configuration information provided in this section describes the steps required to set up Avaya IP Office SCN, hunt groups, and user extensions on an Avaya IP412 Office. Except where noted, similar configurations are performed on each Avaya IP Office system.

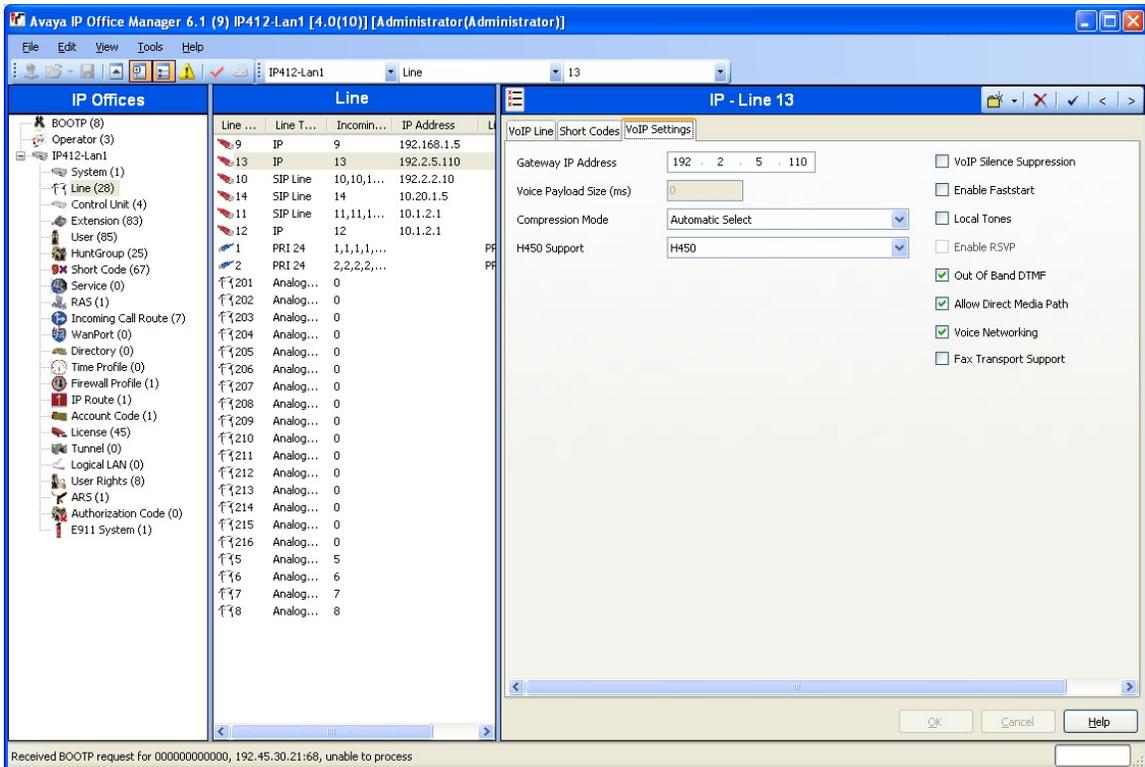
1. From the IP Office Manager PC, go to **Start** → **Programs** → **IP Office** → **Manager** to launch the Manager application. Log into the Manager application using the appropriate credentials.
2. In the Manager window that is displayed, select **File** → **Open** to search for the IP Office system in the network.
3. Log into the Avaya IP412 Office system using the appropriate login credentials to receive its configuration.

- In the **Avaya IP Office Manager** window, go to the configuration tree in the left-hand panel and right-click **Line** and select **New** → **IP Line** (not shown). The screen below should display.

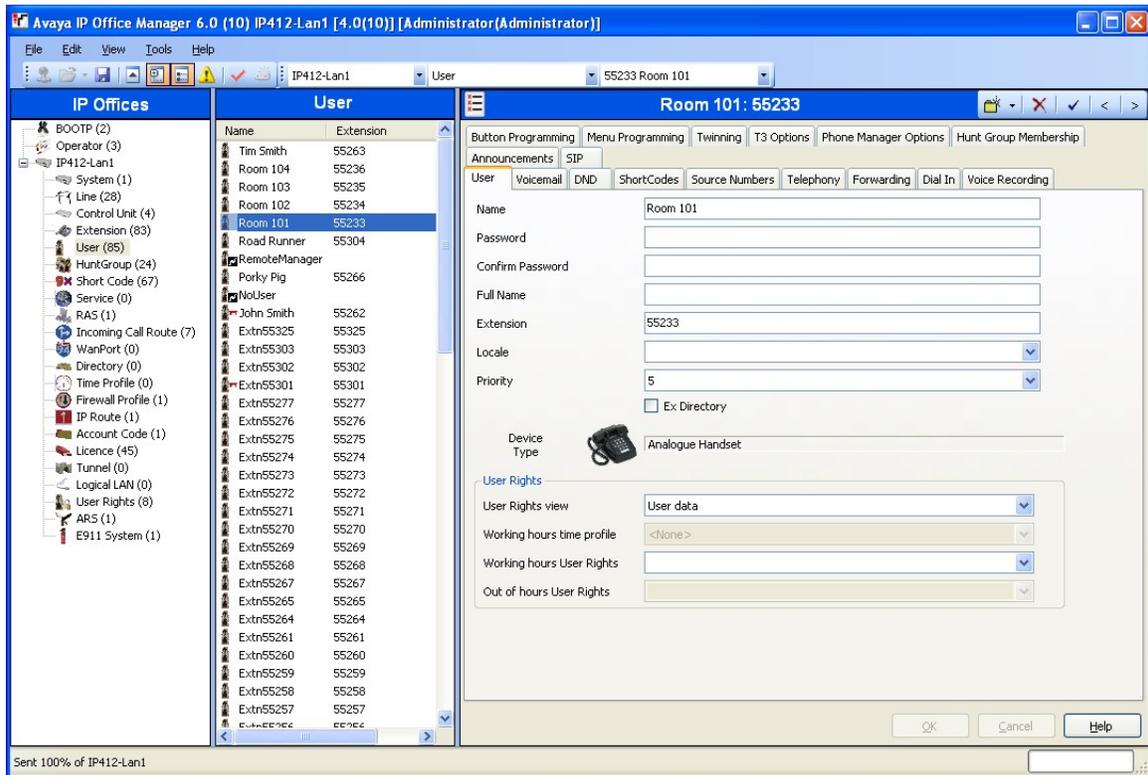
In this case, the system automatically assigned **13** as the **Line Number** (this will vary). Place the value **13** in the **Incoming Group ID** and **Outgoing Group ID** fields on the VoIP Line tab. Click the **VoIP Settings** tab.



- Set the **Gateway IP Address** to the IP address of the other Avaya IP Office (see **Figure 1**). Check the **Voice Networking** check-box to turn on SCN capabilities. Click **OK**.



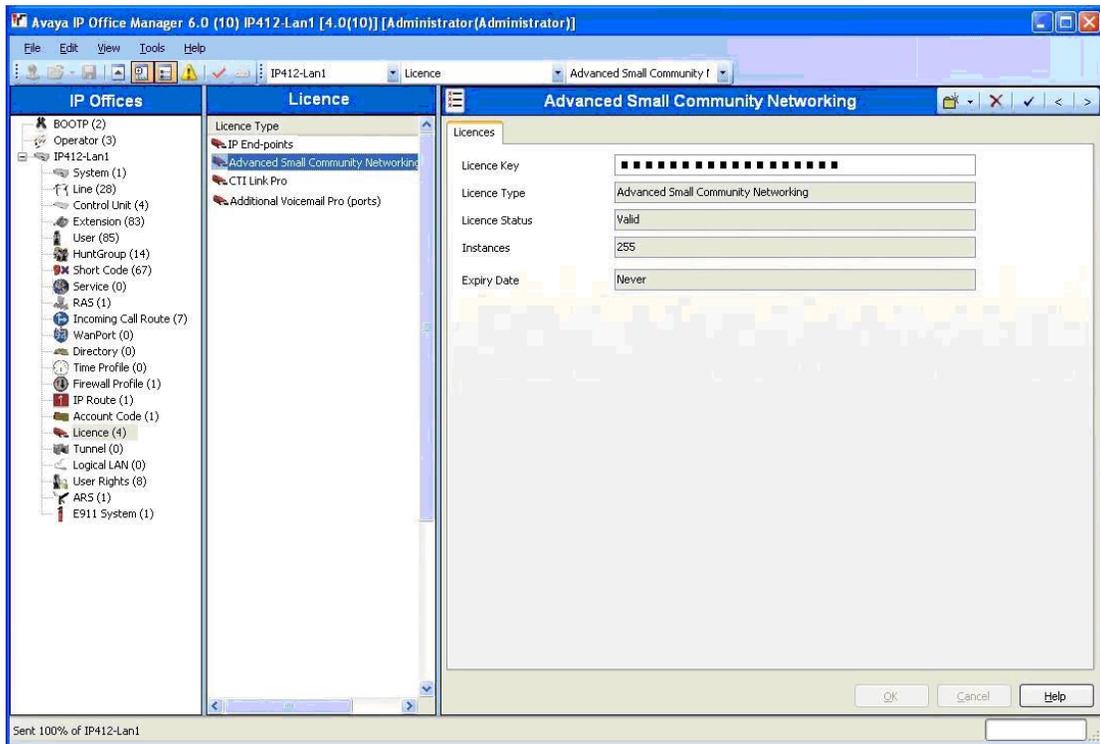
- In the **Avaya IP Office Manager** window, go to the Configuration Tree and double-click **User**. In the User list displayed, select the analog user assigned to the IgeaCom device, and assign a **Name** to this user. In this case, extension 55233 is assigned the Name **Room 101**, which indicates when the button is pressed on the IgeaCom 700 device, the endpoint party responding will see **Room 101** on the telephone display. Click **OK**.



- Repeat **Step 6** if additional IgeaCom devices are connected.

8. Check that the Advanced Small Community Networking license is installed by selecting **License** in the Configuration Tree. **Note:** A right-click in the middle panel allows a license key to be entered.

Note: The compliance testing was performed over SCN trunks, where the dial plan and hunt groups were shared. If this SCN network functionality is not required, this license is not necessary.



9. Select **HuntGroup** (HG) in the Configuration Tree. Create hunt group names, numbers, and member extensions to support the functions of IgeaCom devices as described in **Table 2** below.

IgeaCom Function	HG Name	HG Number	IgeaCom Phone#	HG Member Extension(s)
IgeaCom 500 Programming Application				
Call	Call500	55451	55451#,,*102*12#	55262
Pendant	Pend500	55452	55452#,,*102*16#	55262, 55263
Wireless Pull Cord	Bath500	55453	55453#,,*102*13#	55304
Call Cord	Bed500	55454	55454#,,*102*11#	55262, 65210
Menu	Menu500	55455	55455#,,*102*17#	65210
Maintenance	Man500	55456	55456#,,*102*18#	55304, 65210
Cancel	Cancel	65350	65350#,,*101*9999#	65219, 65220 (communicated back to CNS through Pika Board)
IgeaCom 700 Programming Application				
Emergency	Emer700	55471	55471#,,*101*12#	55304, 65210
Pendant	Pend700	55472	55472#,,*101*16#	65210
Wireless Pull Cord	Bath700	55473	55473#,,*101*13#	Cancel
BED	Bed700	55474	55474#,,*101*11#	55304
Staff Assist	Staff700	55475	55475#,,*101*18#	55262, 55263
Code Blue	Code700	55476	55476#,,*101*17#	55262
Cancel	Cancel	65350	65350#,,*101*9999#	65219, 65220 (communicated back to CNS through Pika Board)

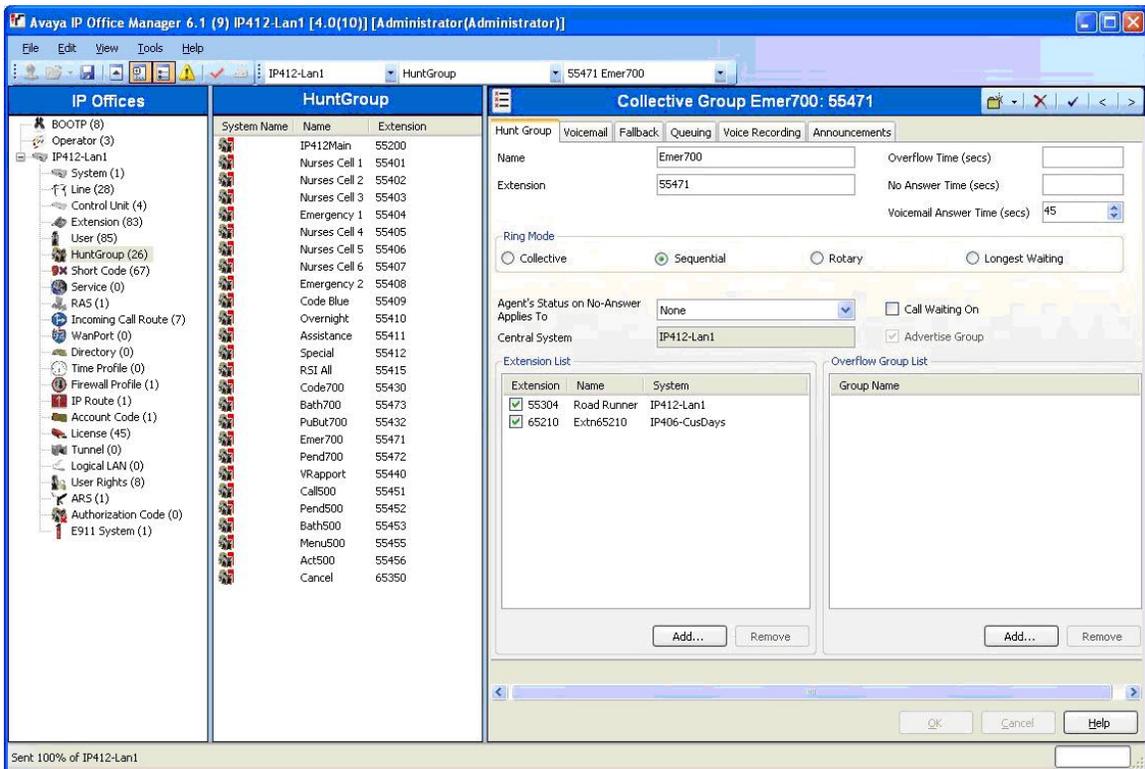
Table 2

Each IgeaCom device has been compliance tested using six different button push functions. Each hunt group represents one of the six IgeaCom functions and the associated extension number(s) notified when that function is activated. The alerting extensions will see the analog extension **Name** (e.g. Room 101) and the hunt group **Name** (e.g. Emer700) displayed on the telephone. **Note:** All hunt groups are set to **Collective Ring Mode**.

Create a hunt group by right-clicking on **HuntGroup** from the Configuration Tree and selecting **New** (not shown). On the right-hand panel, enter a **Name** for the hunt group.

In the **Extension** field, enter the extension assigned to the hunt group. Click on the **Add...** button and select the extension members from the extension list (not shown). In this case, the name of the hunt group is **Emer700**, the hunt group extension is **55471** and the member extensions are **55304** and **65210**. Click **OK**.

Note: Do not set up hunt groups on the other Avaya IP Office system using the SCN trunk.



10. In the **Avaya IP Office Manager**, select **File** → **Save** to push the configuration to the Avaya IP Office system and wait for the system to update. This completes configuration of Avaya IP412 Office.

11. Repeat **Steps 4 – 8** and **10** on the Avaya IP406 Office V2 system. This completes configuration of Avaya IP Office.

4. Configure IgeaCom

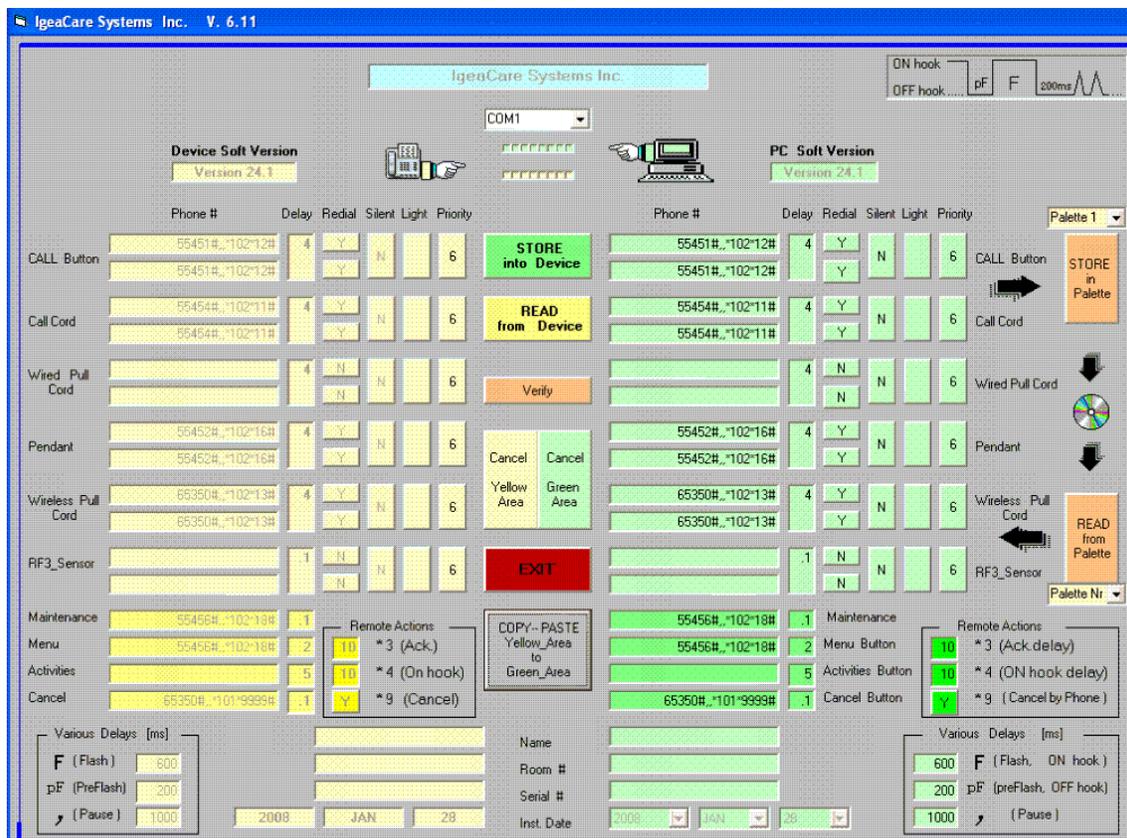
Each IgeaCom device must be programmed to reflect the dial plan of the Avaya IP Office systems. In addition to the dialed number, the IgeaCom device provides many additional dialing parameters as well as supporting visual display indicators. Please see IgeaCare Systems Inc. documentation Reference [3] for more detail information regarding configuration capabilities.

4.1. IgeaCom Administration

The IgeaCom devices require programming as described in **Table 2**. Refer to Reference [1.1] for IgeaCom configuration. This section applies to both the IgeaCom 500 and IgeaCom 700, therefore the appropriate programming application for the IgeaCom device must be running.

- The fields in the **Phone #** column on the right are derived from the values as per **Table 2**. The value placed in each field represents the associated hunt group number plus callpoint information parsed out by the Apollo ENS VRC application. In the first example line below, the button on the IgeaCom 500 device is being programmed as **55451#,,*102*12#**. This is interpreted as **<HuntGroup or Extension>#,,*<Room Number>*<CallPoint Type>#**.
Note: The commas (,,) are used for delay.

The screen below displays the IgeaCom 500 being programmed.



- Repeat the above for the IgeaCom 700 devices using **Table 2**.
- This completes the programming of the IgeaCom devices.

4.2. Apolo ENS

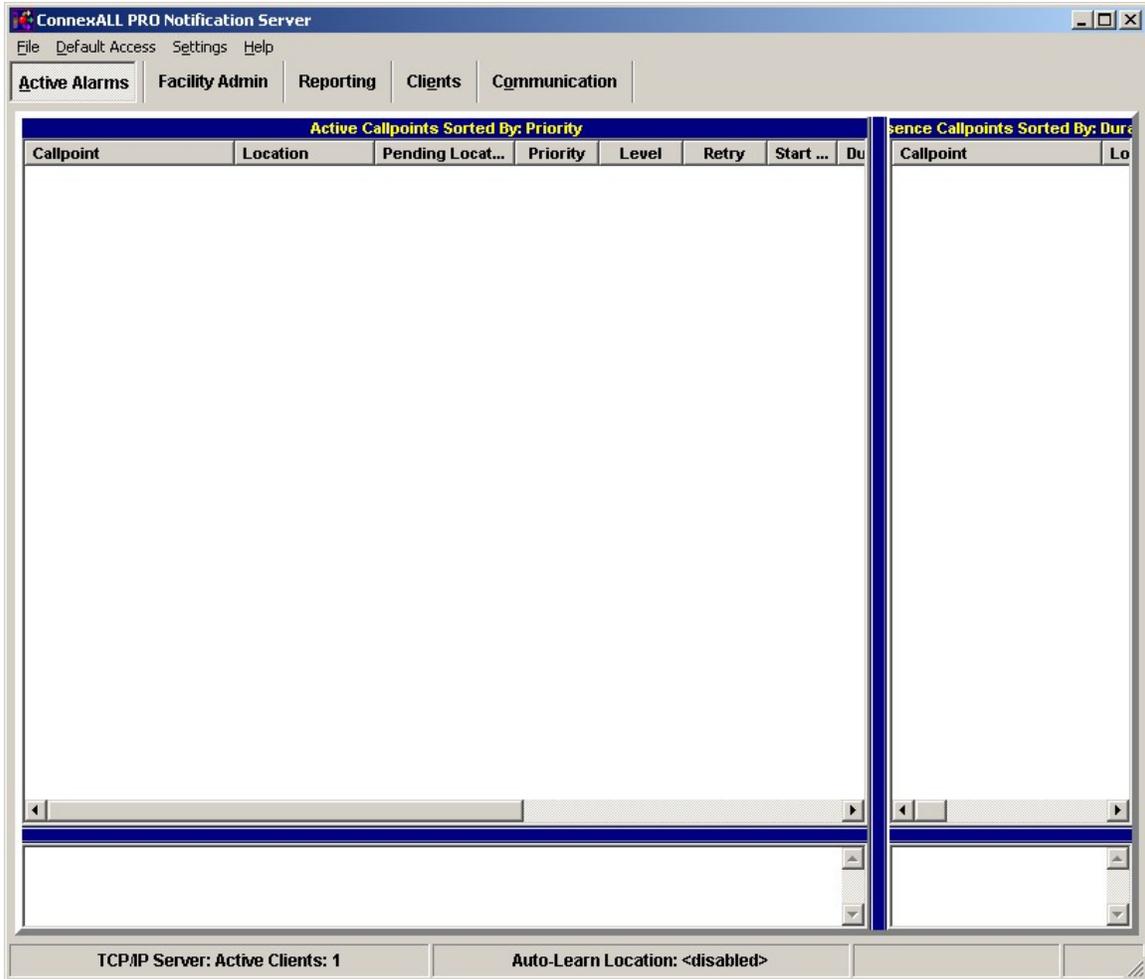
The Apolo ENS application suite is organized with Apolo ENS ConnexALL Notification Server (CNS) as the central database, and more than twenty supported Apolo ENS applications that communicate and gather data for CNS, or handle and display information provided by CNS. Compliance testing dealt only with the five applications described in this section. Since there are many aspects to Apolo ENS, the user should refer to Reference [5] and [6] when working through this section.

4.2.1. Installing Apolo ENS Server software

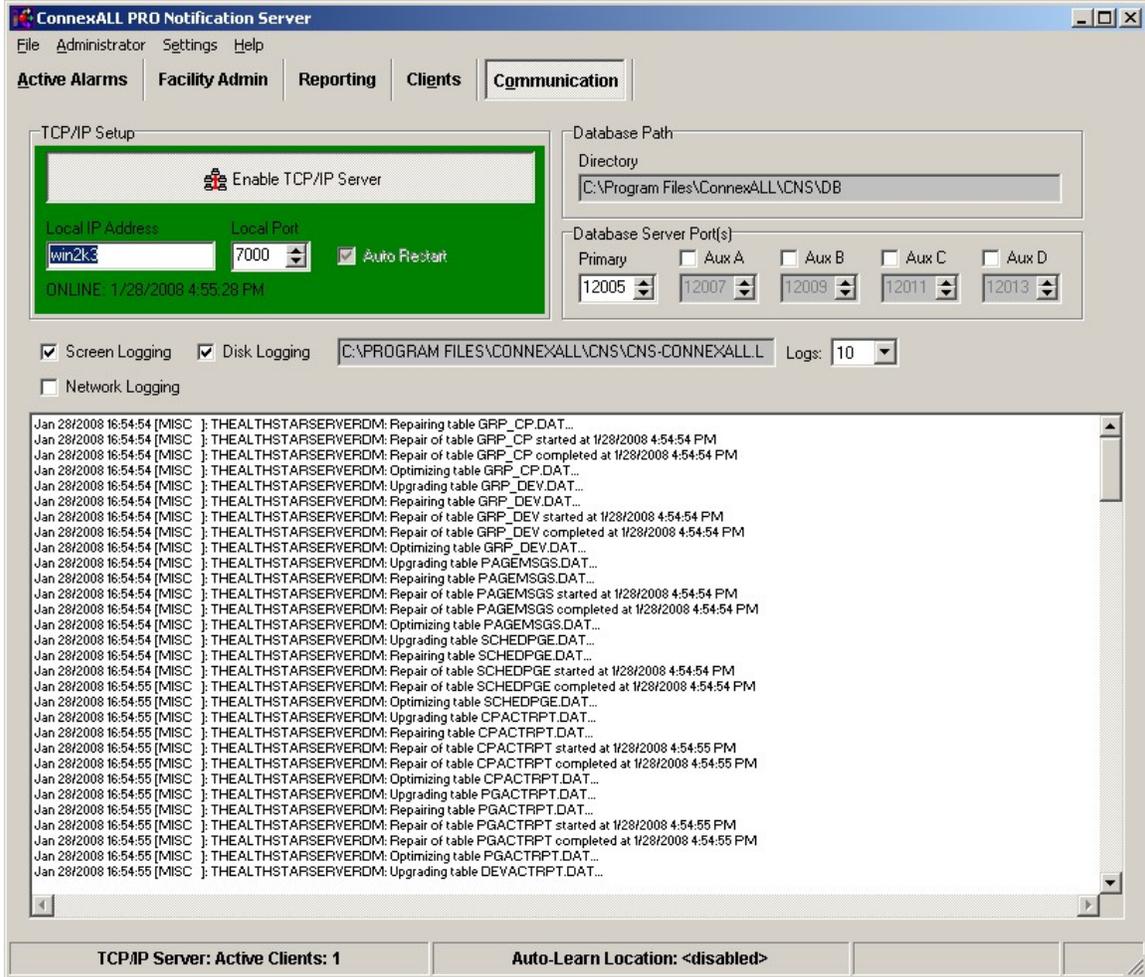
ConnexALL Notification Server (CNS) acts as the central repository for the system's database and coordinates the communications between all the client application modules.

1. Install the Apolo ENS server software on PCs as illustrated in **Figure 1**. **Note:** Each PC has a different set of Apolo ENS applications loaded. Start first with the PC that will run CNS. In the test configuration the PC with IP address 10.20.1.50 was used
2. When prompted to enter **Setup Type**, select **Full** (not shown) (Refer to Reference [5], Chapter 2).

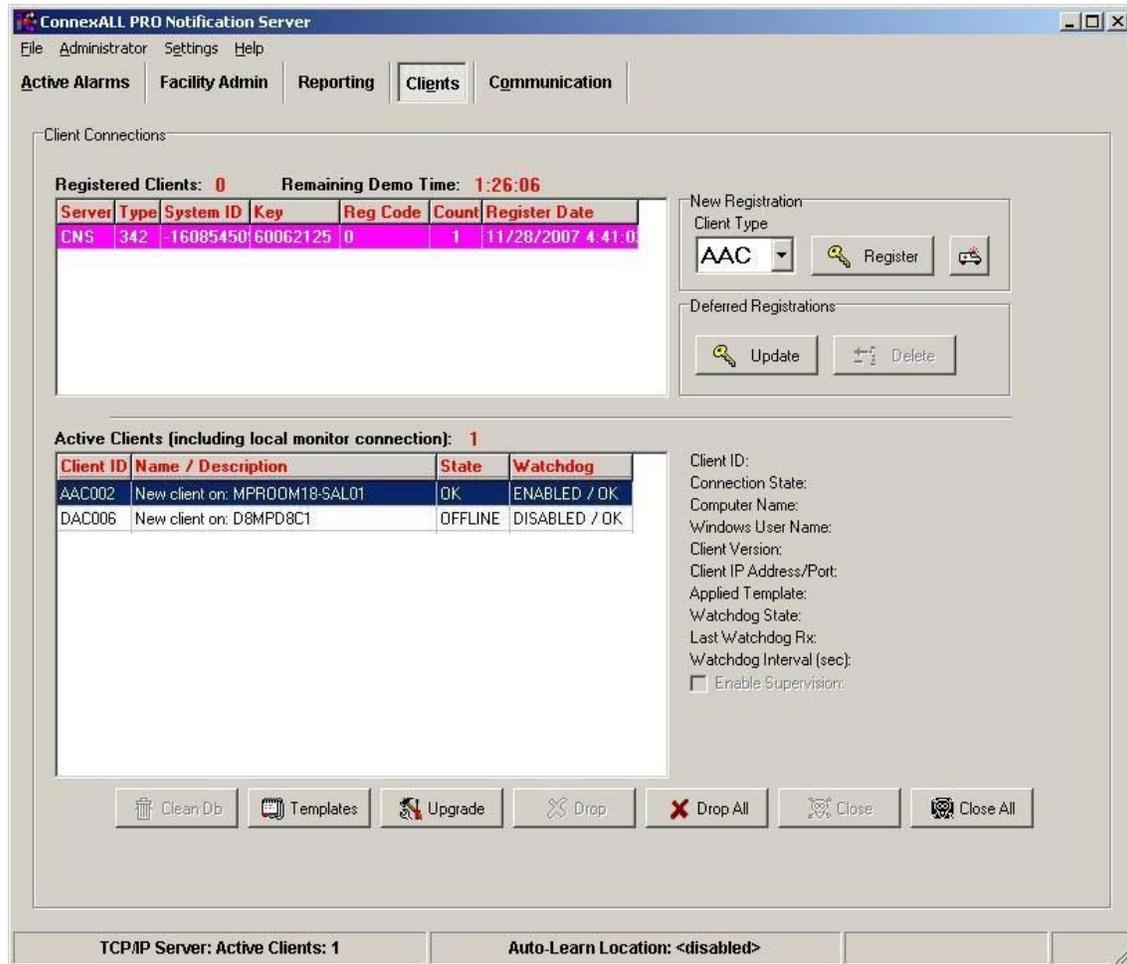
3. Activate the CNS application by selecting **Start** → **Programs** → **ConnexALL** → **CNS Notification Server**. After clicking through the product display screen and a database Auto-Repair screen (not shown), the screen below should display. Click on **Default Access** and login with the appropriate password (not shown).



- Click on **Communication** and enter the proper CNS machine name or IP address into the **Local IP Address** field. In this case, the machine name **win2k3** is being used. Click on **Enable TCP/IP Server**. The initially red window should turn green indicating the connection was successful as shown below.



- Click on the **Clients** tab. As Client applications are started (**Section 4.2.2**), they are added to the **Active Clients** list as shown below, with the following attributes: **Client ID** (Active Alarm Client (AAC) or Device Assignment Client (DAC)), **Name / Description** (machine name of client), **State** (OK or Offline), and **Watchdog** (Disable or Enable).



- This completes the **CNS Notification Server** installation.

4.2.2. Installing Apolo ENS Client software

The Apolo ENS suite has over twenty different client application modules. For compliance testing, five Apolo ENS client application modules were activated. Each client is a specialized software application that either collects input data for the CNS to process, or handles the output actions prescribed by CNS.

The table below indicates the PC on which each of the tested Apolo ENS application modules was loaded and configured in the test network.

Apolo ENS Client Application Module	PC IP Address
Voice Response Client (VRC)	10.20.1.50
Popup Notification Client(PNC)	192.168.1.10
Device Assignment Client (DAC)	
Device Assignment Client (DAC)	192.45.210.24
Virtual Wallboard Client (VWC)	
Active Alarm Client (AAC)	192.168.1.12

Table 3

1. Install the Apolo ENS application software on PCs as illustrated in **Table 3**. **Note:** Each PC has a different set of Apolo ENS applications loaded. Start with the PC that will run PNC. In the test configuration, the PC with IP address 192.168.1.10 was used.
2. When prompted to enter **Setup Type**, select **Custom** (not shown), and when prompted to **Select components to install** (not shown) select PNC and DAC from the list and complete the installation.
3. Repeat **Step 1** and **Step 2** for the remaining PCs in **Table 3**.

- Although not all the client applications were active, the PC running the Apolo CNS server was installed (**Section 4.2.1**) with all the client application modules listed in **Table 3**. This PC also had the Pika Analog Board interface (**Section 2.1**) and requires the VRC application for interconnection with Avaya IP Office.

Activate the VRC application by selecting **Start** → **Programs** → **ConnexALL** → **VRC Voice Response Client**. After the product display screen (not shown), the **VRC: Voice Response Client** screen below should display. Click on **Administrator** and login with the appropriate password (not shown). Under **Communications**, enter the proper **Server IP Address** by name or IP address. Click on **Enable TCP/IP Communication with Server**. The initially red window should turn green indicating the connection was successful, as shown below.

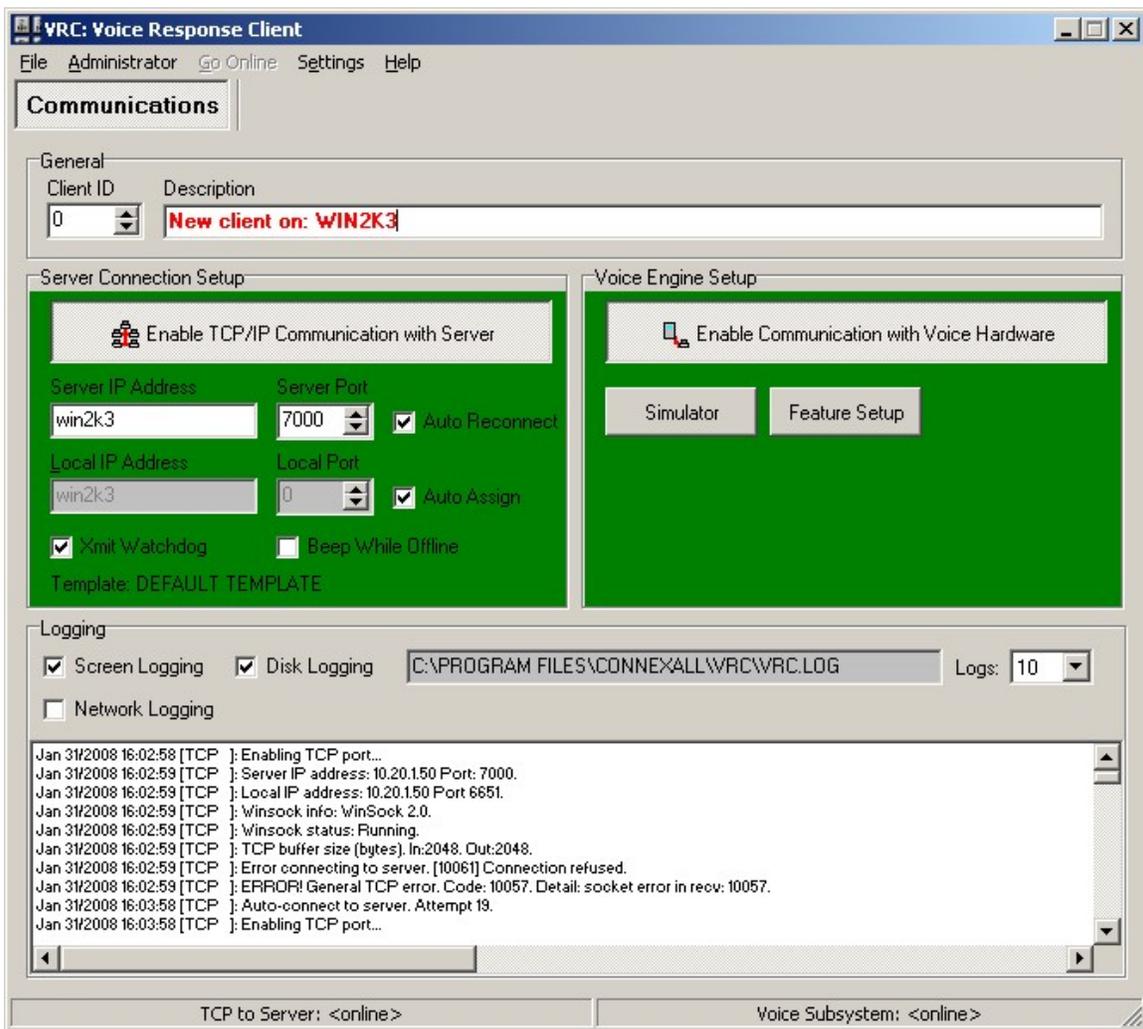


Figure 2 - Voice Response Client

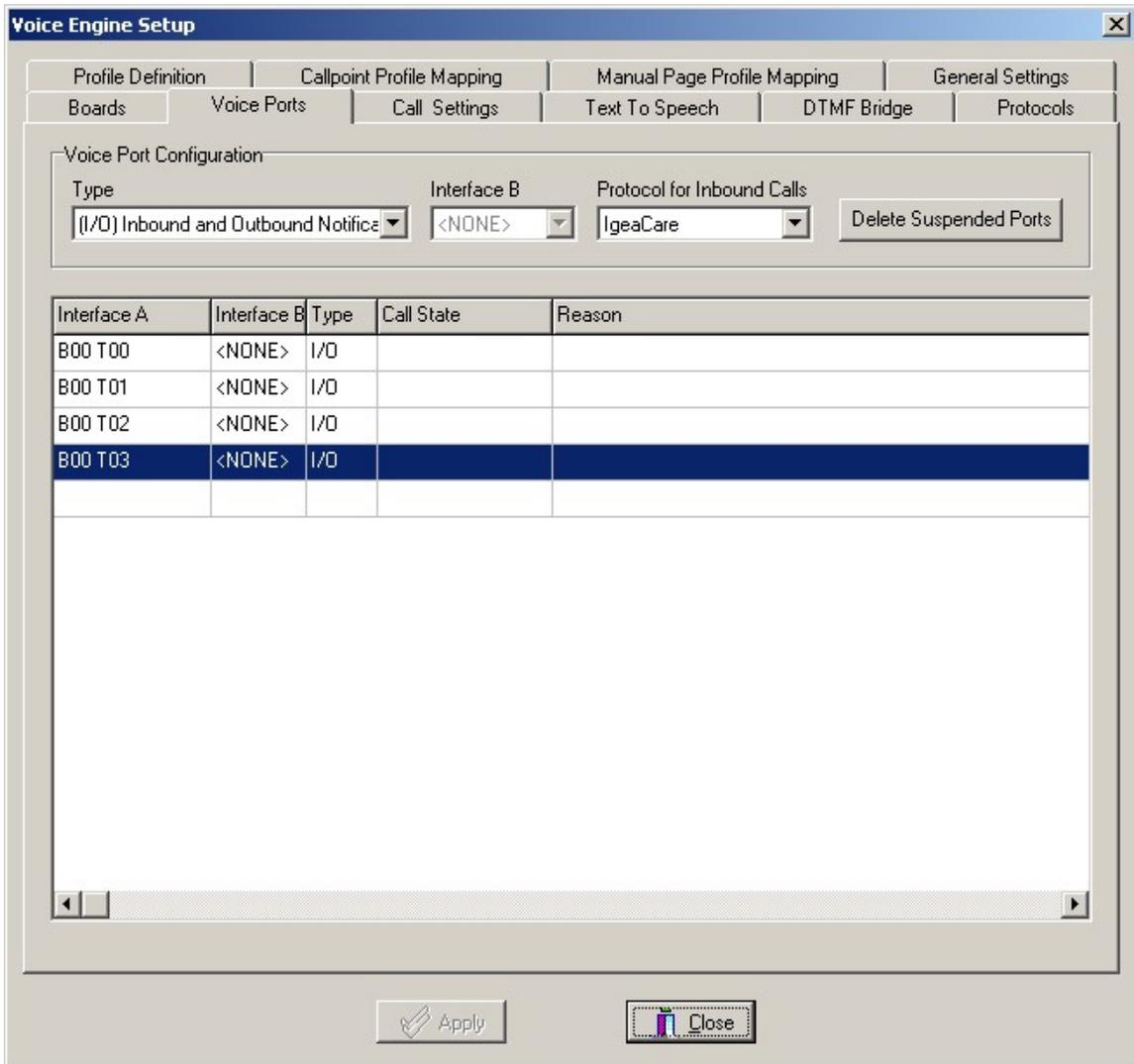
In the Voice Engine Setup section, click on **Feature Setup**; the **Voice Engine Setup** screen is displayed. The serial number of a single Pika Analog Board, as in the test configuration, is shown below in the **Board 0 (B00)** location. Click the **Voice Ports** tab.

Profile Definition	Callpoint Profile Mapping	Manual Page Profile Mapping	General Settings		
Boards	Voice Ports	Call Settings	Text To Speech	DTMF Bridge	Protocols

Board 0 (B00)	23600716
Board 1 (B01)	<UNASSIGNED>
Board 2 (B02)	<UNASSIGNED>
Board 3 (B03)	<UNASSIGNED>
Board 4 (B04)	<UNASSIGNED>
Board 5 (B05)	<UNASSIGNED>
Board 6 (B06)	<UNASSIGNED>
Board 7 (B07)	<UNASSIGNED>

Apply Close

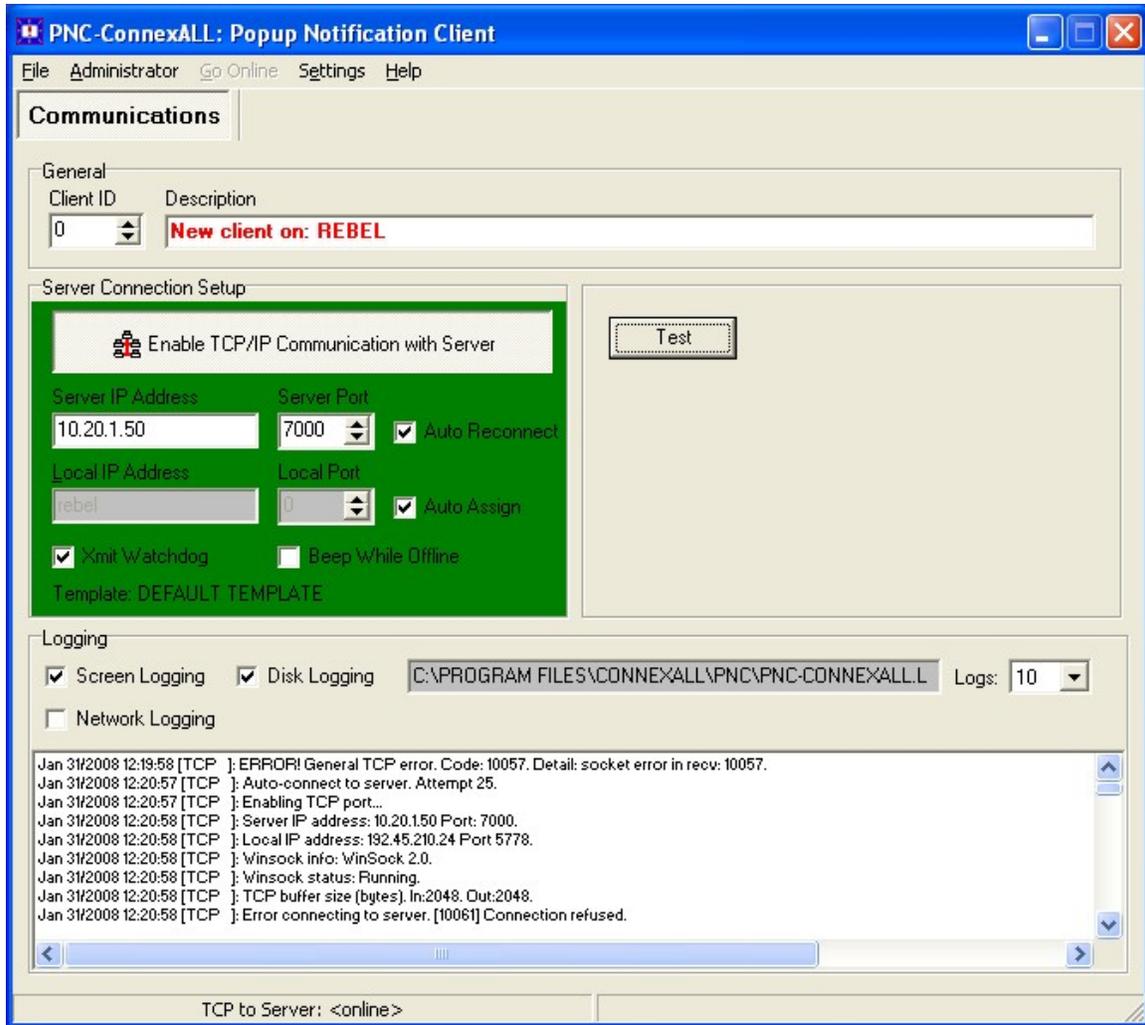
Check that the **Type** is set to **I/O Inbound and Outbound Notification** for all **Interface A** entries as the example below shows. **Note:** Depending on the number and types of Pika Analog Boards, the list of **Interface A** entries will vary. Click **Close**.



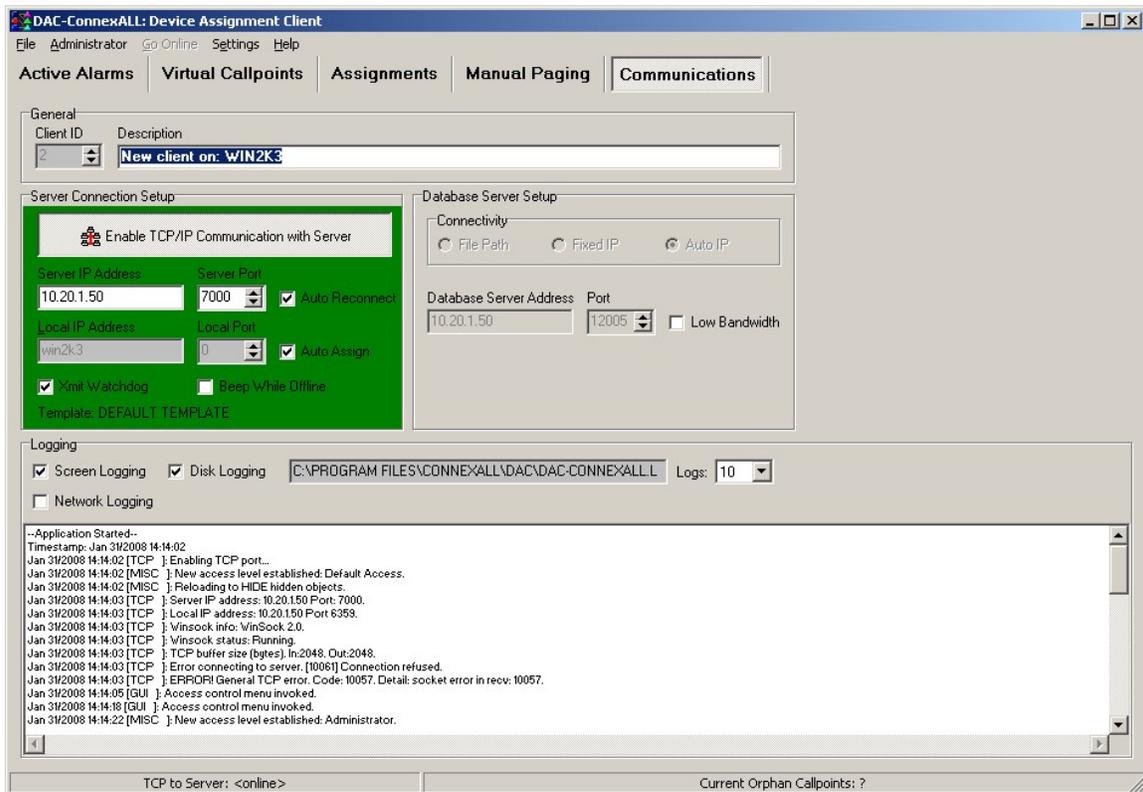
Click on **Enable Communication with Voice Hardware** in **Figure 2** when completed.

5. Activate the PNC application on its assigned PC by selecting **Start** → **Programs** → **ConnexALL** → **PNC Popup Notification Client**. After the product display screen (not shown), the **PNC-ConnexAll: Popup Notification Client** screen below should display. Click on **Administrator** and login with the appropriate password (not shown). Under **Communications**, enter the proper **Server IP Address** by name or IP address. Click on **Enable TCP/IP Communication with Server**. The initially red window should turn green indicating the connection was successful as shown below.

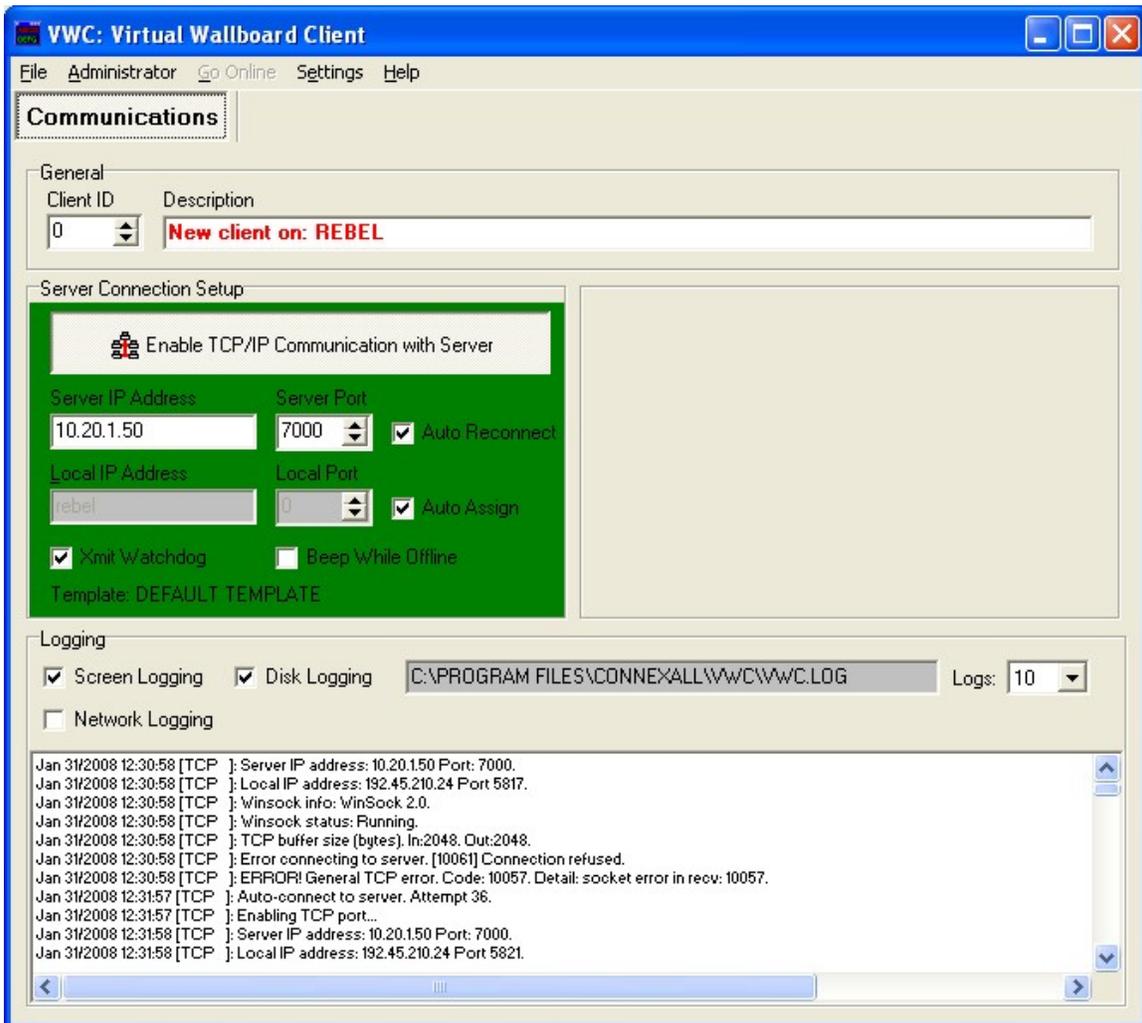
The PNC displays a callpoint event as a popup on a Windows-based PC.



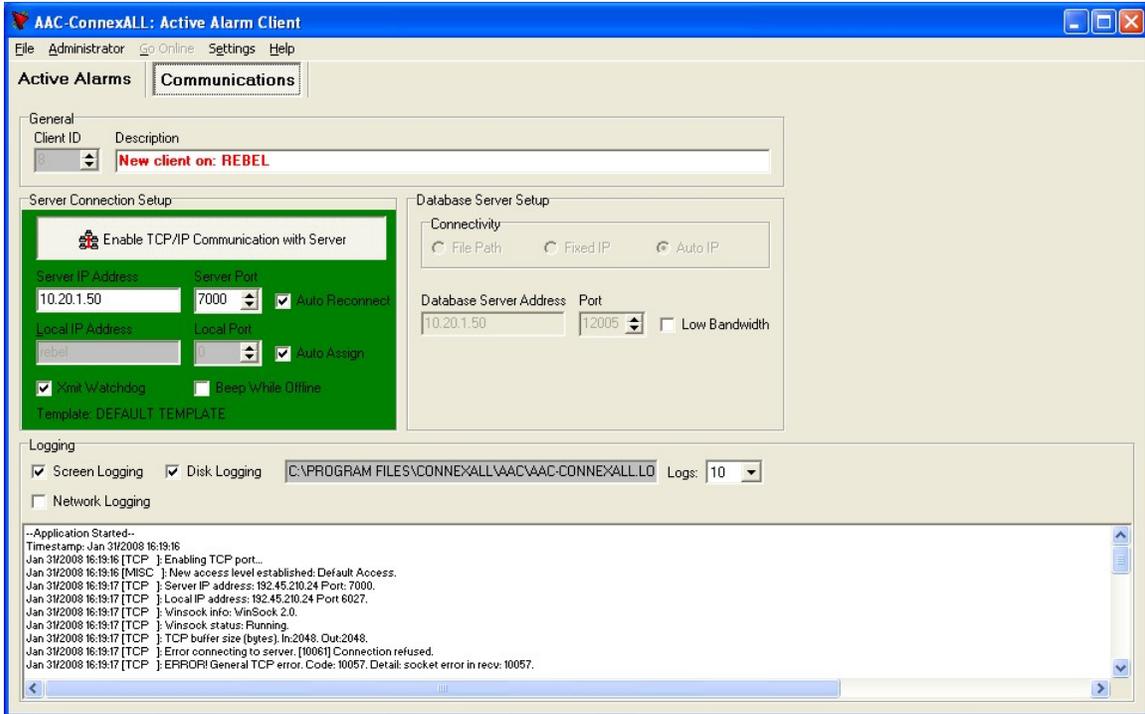
6. DAC permits staff members to view and modify the assignment of callpoints to their respective telephone. Activate the DAC application on its assigned PC by selecting **Start** → **Programs** → **ConnexALL** → **DAC Device Assignment Client**. After the product display screen (not shown), the screen below should display. Click on **Administrator** and login with the appropriate password (not shown). Under **Communications** tab, enter the proper **Server IP Address** by name or IP address. Click on **Enable TCP/IP Communication with Server**. The initially red window should turn green indicating the connection was successful as shown below.



7. The VWC can be used to display callpoint events on a PC-based scrolling marquee. Activate the VWC application on its assigned PC by selecting **Start** → **Programs** → **ConnexALL** → **VWC Virtual Wallboard Client**. After the product display screen (not shown), the **VWC Virtual Wallboard Client** screen below should display. Click on **Administrator** and login with the appropriate password (not shown). Under **Communications**, enter the proper **Server IP Address** by name or IP address. Click on **Enable TCP/IP Communication with Server**. The initially red window should turn green indicating the connection was successful as shown below.



8. AAC provides the same real-time display of active callpoint and presence events found in every DAC. The AAC is intended for monitoring positions within the facility where the complete functionality of a DAC is not required. Activate the AAC application on its assigned PC by selecting **Start** → **Programs** → **ConnexALL** → **AAC Active Alarm Client**. After the product display screen (not shown), the **AAC ConnexALL: Active Alarm Client** screen below should display. Click on **Administrator** and login with the appropriate password (not shown). Under **Communications** tab, enter the proper **Server IP Address** by name or IP address. Click on **Enable TCP/IP Communication with Server**. The initially red window should turn green indicating the connection has is successful, as shown below.

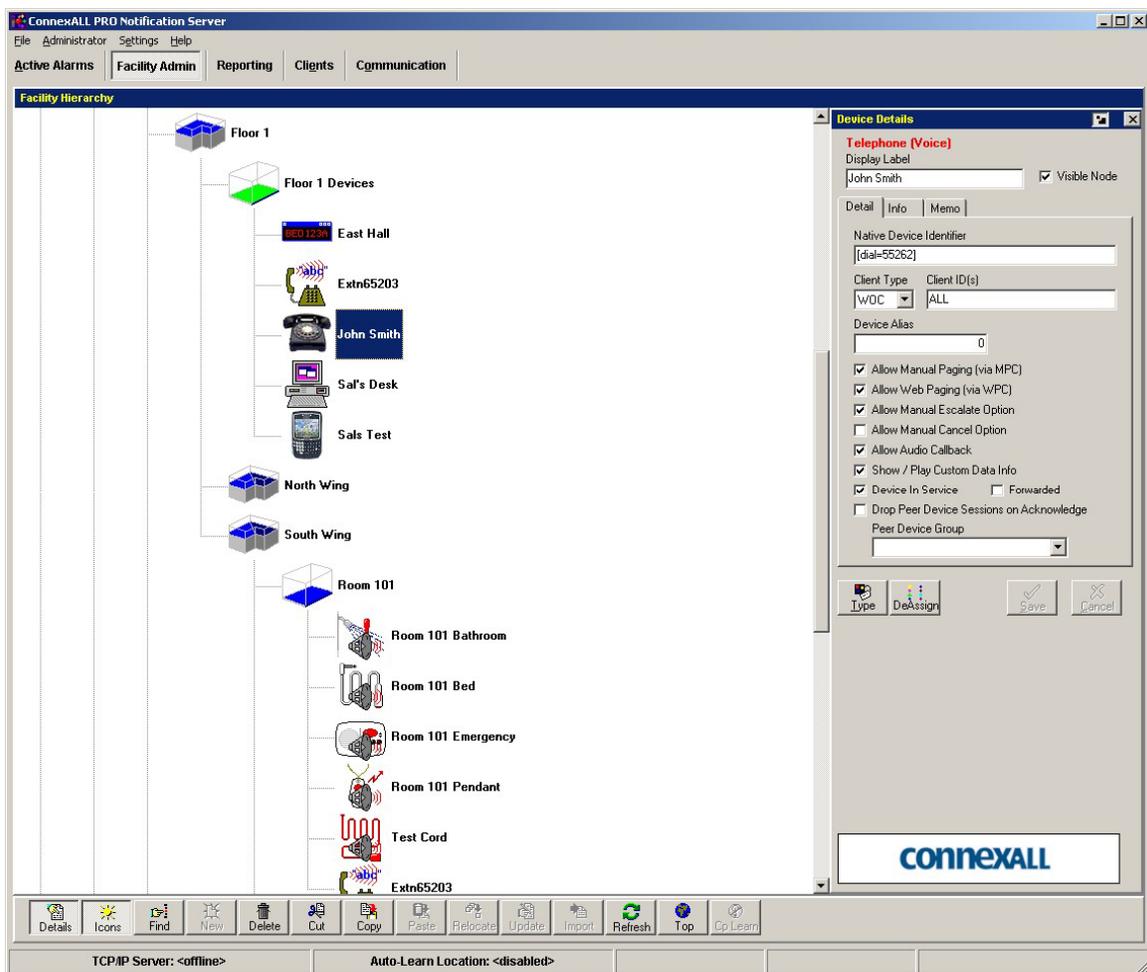


9. This completes the installation of the Apollo ENS client application modules.

4.2.3. Simple ConnexALL Notification Server Configuration.

In Apolo CNS administration (Section 4.2.1), under the **Facility Admin** tab, building-block details of an establishment's infrastructure are described and integrated with the aid of a rich collection of icon visual aids. The hierarchical tree is broken down into Campus, Building, Floor, Wing, Ward, Room, and Bed, but any requirement an establishment may want can be accommodated. At each point along the hierarchical design, a callpoint can be added, but more often than not, callpoints are placed on a floor or in a room setting. The example below describes the callpoints that are present on the floor, in this case **Floor 1 Devices**. In addition, **Room 101** is equipped with an IgeaCom device that is programmed to service the patient needs in the room.

For more details refer to Reference [5], Chapter 3.



5. Interoperability Compliance Testing

Interoperability compliance testing evaluated the ability of Apolo ENS software to connect and send various callpoint notifications through the Avaya IP Office system.

5.1. General Test Approach

The general test approach was to activate Apolo ENS callpoints to and from the Pika Analog Board through the Avaya IP Office systems.

Serviceability was conducted by unplugging/plugging the Pika Analog Board interconnection from the Avaya IP400 Phone Expansion module port. In addition, the Avaya IP Office system was reset as Pika Analog Board interconnections were being activated.

5.2. Test Results

All functions of Apolo ENS server/client passed compliance testing and all test cases completed successfully.

- There were no issues configuring the Apolo ENS server or client applications
- There were no communications difficulties within the network.
- Serviceability compliance tests passed.

6. Verification Steps

The following steps may be used to verify the configuration:

- Verify that Avaya IP Office system endpoints or hunt group can be contacted through the Apolo ENS applications.
- Verify the display information is correct on the ringing endpoint.
- Verify two-way communication after an endpoint answers and that it ends the call correctly.
- Verify serviceability by unplugging/plugging the Pika Analog Board interconnections without problems, along with resetting Avaya IP Office systems.
- Verify the VWC displayed on the user's PC as below.



7. Support

Technical support for IgeaCare Systems Inc. can be obtained by contacting IgeaCare Systems Inc at:

- Phone: (905) 707-1669 or 1-866-361-6225
- E-mail: support@igeacare.com
- Web: <http://www.igeacare.com>

8. Conclusion

These Application Notes describe the steps for configuring the IgeaCare Apolo ENS server and client applications with Avaya IP Office systems.

Although not tested in compliance, the procedures in this document can be used for IgeaCom 300, 301, 501, MP501, 600, and 601 devices. While the functionality may vary between devices, the administration is identical.

9. References

The following Avaya product documentation can be found at <http://support.avaya.com>:

[1] Avaya IP Office 4.0 Installation Manual, Issue 15e (31st January 2007), 15-601042.

Other Avaya Application Document:

[1.1] Application Notes for Interoperating IgeaCom Emergency Response Devices with Avaya IP Office – Issue 1.0

The following IgeaCom product documentation was used and referenced during the compliance test (<http://igeacare.com/downloads1.htm>):

[2] IgeaCom Acute Care User Guide V1.0, Part Number 9001001ACS

[3] IgeaCom User Guide V8.0, Part Number 9001001

[4] IgeaCom Software User Guide, V2.0 Part Number 9001002

The following documents are installed with the application:

[5] Apolo ENS Installation and Setup

[6] Apolo ENS User's Guide

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