



NEC Corporation of America

DuVoice 5.0 (SIP)

Integration Guide to UNIVERGE[®] Spherical[®]

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Overview

This guide is intended to supplement the standard DuVoice 5.0 Installation Guide and Manual by providing specific details related to integrating DuVoice with Spherical. It is intended to be used in combination with the DuVoice Manuals. DuVoice manuals can be found within the NEC Information Portal under the Applications Menu > NEC Downloads > NEC Spherical > DuVoice or at www.duvoice.com. This integration Guide is intended for integration of the UNIVERGE Spherical system with DuVoice 5.0, SIP integration only.

DuVoice provides a sophisticated and cost effective messaging system. From a hospitality perspective, it not only provides the guest and staff messaging required but also acts as a middleware application to provide the required hospitality features, such as Property Management System interface, wake-up call support, IVR and Mini-bar support and much more. It also supports normal business operation and messaging.

Hospitality Features Supported

- Check In
 - Enable room mailbox
 - Deliver welcome message (optional)
 - Turn on long distance dialing COS
 - Guest name to telephone system
 - Guest Language
 - Set Wake Up Call
- Room Move
 - Move messages to the new room
 - Move scheduled wakeup calls
- During Stay
 - Receive ‘call front desk’ messages
 - Set wake up calls
 - Set or delete DND
- Check Out
 - Disable mailbox
 - Archive messages
 - Extinguish message waiting light
 - Remove wakeup calls for that room
 - Archive wake up call data
 - Remove any personal greetings
 - Remove any personal password
 - Reset extended stay class of service
 - Turn off long distance dialing COS
- Room Status
 - Pass room clean/dirty status +
 - Multiple status codes “repair, etc.”
- Data Swap
 - Data synchronization
 - Auto creation of guest mailboxes
- Reports Hotel staff has access to detailed reports on wake-up call activity.
 - **Pending Wakeup Report** shows all scheduled calls.
 - **Failed Wakeup** shows all rooms where wake-up calls were not answered by the guest.
 - **Wakeup Report** shows all wakeup activity for a specific room; including when calls were scheduled, who scheduled the calls as well as the result of completed calls.
- Failed Wakeup Alert In the event a wakeup call is not answered by the guest, the system will place an automated call to a pre-determined location to alert staff of the failed wakeup call.

Available DuVoice Options/Applications

DID Allocator

DID Allocator application is an optional feature used in some “Hospitality” environments. It allows a DID number to be assigned to a guest room at check-in and to be unassigned when the guest checks out. Depending on configuration, DID numbers can also be manually assigned to guests via the InnDesk application.

Mini Bar Integration

This application is also known as the “Inventory Status Interface”. The Inventory Status Interface (ISI) is a telephony interface designed to allow users to report item and quantity information to one or more remote servers. Although the original conception was to provide a method for a hotel's housekeeping staff to report usage of items from the guest room mini-bar, the interface has been designed to allow for any type of inventory reporting a user may require.

Features

- PMS integration is not required.
- Mailbox creation and voice mail integration is not required.
- Auto-attendant support is not required (except for providing the telephony interface).
- Unlimited number of user accounts.
- Unlimited number of items.
- Telephony interface supports user language preference.
- Administration interface allows recording item descriptions in any supported language.
- Web interface supports reporting of all item and user changes.
- System supports posting changes simultaneously to as many as five remote servers.

IVR Survey - Q&A Mailbox

The Survey IVR feature adds three new commands that allow you to create a QA script within Q&A Mailboxes that takes DTMF responses from the caller rather than verbal ones. The caller's responses are recorded as a single record in a comma-separated value (CSV) data file that can be imported into a database or a spreadsheet program for further processing.

A customer satisfaction survey, for example, would be a good use for this type of QA script. You could prompt the caller to enter an ID, then ask a series of performance-rating questions where the response is a single digit from 1 to 5, where 1 is 'very good' and 5 is 'very poor.' You could then process the data to see how your customer service department is fairing with respect to the selected metrics.

The CSV file generated to hold the callers' responses are named according to the script ID number and the current date. For example, the CSV file for script ID 101 (or for a custom script created in QA mailbox 101) generated on August 8, 2006 would be named: QA101-20060808.DAT. A new data file is created each day so that any given file contains only a single day's call data.

Each line in the CSV file represents a single call record and can contain both multiple-digit responses and single-digit responses. Every record in the file begins with the date and time of the call, the voice channel that the call arrived on, the caller ID (if available), the mailbox number and the mailbox name; all remaining fields are the responses from the caller. All times are in 24-hour format (e.g., 2:00 p.m. will be logged as 14:00:00).

IVR Outdial or Appointment Reminder

The “Appointment Reminder” application is designed to dial customer phone numbers and play some information for them (such as an appointment reminder) based on records stored in a comma separated value (CSV) data file. Custom prompting provides flexibility to use the application for a variety of purposes.

One of the features of the “IVR-Outdial – Appointment Reminder” application is its ability to handle multiple data sources, each of which may be considered a separate application. The ability to have multiple applications running concurrently—each with its own data file, configuration file and results log—provides the flexibility to support, for example, reminding patients about pending appointments for multiple doctors in the same office. In addition, there are two types of applications that can be used:

- **Appointment notification**—plays a custom greeting, states the called party's appointment date and time, and then offers the person an opportunity to reschedule if needed (this may involve either recording a message or being transferred to an extension, depending on configuration). The decision of when to call the person is based on the appointment date.
- **Message delivery**—plays a custom recording and then disconnects. As there is no associated date and time involved, the DV2000/DV4 will make the call immediately upon reading the valid record from the data file.

Licensing Requirements

When ordering DuVoice software from NEC, you are required to provide the email address of the engineer who will be handling the setup of your system. This is because DuVoice will use this email address to send you a URL Link, a Link ID and a License ID. These things will be used, in addition to the MAC Address of the Network Interface Card (NIC) installed on the PC/Server to which you are installing the DuVoice Software to obtain your Dialogic HMP SIP License file (refer to the DuVoice 5.0 Install Guide or the DuVoice 5.0 Manual for full details on downloading the license file).

The Spherica11 system integrates to the DuVoice system in two ways, via SIP Trunks from Spherica11 to SIP Ports on DuVoice and via Web Services. The following, minimum licensing is required for this integration:

- At least one Spherica11 Access License (SAL, NEC Part Number, 410003) used to create a Web Services User within the Spherica11 system
- Trunk Access Licenses (TAL, NEC Part Number, 410004) for each DuVoice SIP port to be configured in the DuVoice System (NEC Part Number, 412035 for individual SIP Ports. NEC Part Numbers 412031 and 412032 are SIP Hospitality Bundled Packages which include 4 SIP Ports, additional SIP Ports are added to these packages via the individual SIP Port license mentioned above)

PC/Server Requirements

- **Hard drive:** 20GB or larger
- **CPU:** Minimum 2GHz dual-core; faster is better, especially if you will be using InnDesk as well.
- **Memory:** 1GB or more.
- **Ports:** 1 LPT port, 1 COM port per each serial integration required (including PMS), 1 Network port or adapter
- **OS:** Windows XP SP3 or Windows 7, 32-Bit.
- **SIP:** Licensing for Dialogic HMP ports

Prerequisite to Using this Guide

Prior to following the steps within this guide and before installing your DuVoice Software, please refer to the DuVoice 5.0 Install Guide or the DuVoice 5.0 Manual as there are several things which must be completed prior to the steps which will be outlined in this guide. The following items must first be accomplished and are covered in detail within the DuVoice 5.0 Install Guide or DuVoice 5.0 Manual:

1. Prepare the operating system.
2. Install the Dialogic HMP license(s).
3. Install the Dialogic drivers.
4. Activate the Dialogic HMP license(s).
5. Configure the Dialogic drivers.
6. Install the hardware lock driver.
7. Install the voice messaging system software.

Integration Steps

<p>STEP 1: Follow all the steps outlined in the DuVoice 5.0 Install Guide prior to installing the DuVoice Software. After installing the DuVoice Software per the DuVoice 5.0 Install Guide, go to Step 2 below.</p>	<p>Refer to “DuVoice 5.0 Install Guide”. Located under documents section of www.duvoice.com or within the NEC Information Portal under Applications > NEC Downloads > NEC Spherical > DuVoice</p>
<p>STEP 2: Within Spherical Administration, create the Web Service User to be used by DuVoice, the SIP User Agent to be used by DuVoice and add an Initialization Setting to Spherical System Initialization Settings within Spherical Properties. Performing these steps prior to running the DuVoice Wizard on the DuVoice system will allow DuVoice to create a SIP Registration within the Spherical Administration Trunk screen, simplifying your installation.</p>	<p>Refer to “Spherical Initial Installation Steps”</p>
<p>STEP 3: Go to the DuVoice system and run the Initial Installation Wizard</p>	<p>Refer to “DuVoice Installation” section of this document.</p>
<p>STEP 4: Configure Spherical SIP Trunk</p>	<p>Refer to “Spherical Final Configuration Steps”</p>

Spherical Initial Installation Steps

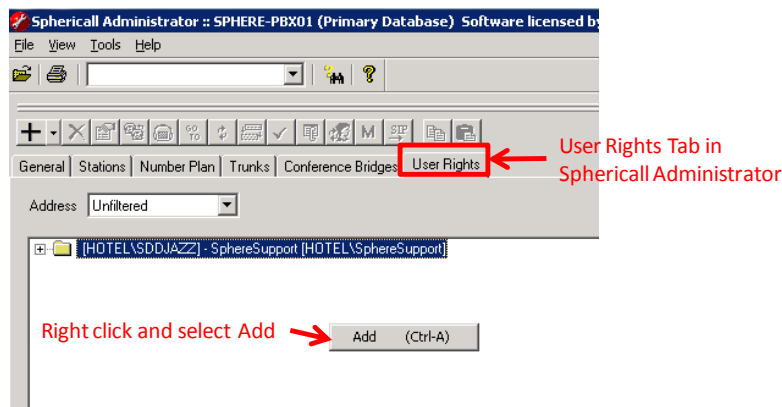
The following settings should be configured in the Spherical system prior to completing the integration steps on the DuVoice system. This will allow the DuVoice system once configured to register with the Spherical system creating a SIP Trunk entry within the Spherical Administrator, simplifying your installation task.

Setup a Spherical Web Services User

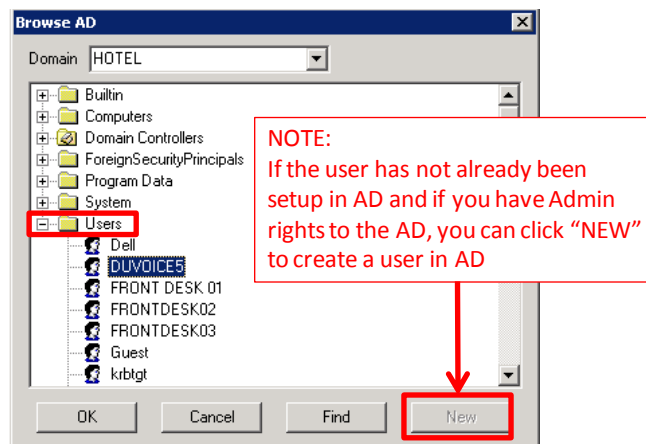
The DuVoice system utilizes Spherical Web Services to provide hospitality related features such as Check-in, Check-out, Class of Service Change, Do Not Disturb set/cancel and Name Display change. In order for DuVoice to utilize these Web Services, a Web Services User must be created in Spherical with username and password credentials. These credentials provide the system with the rights needed to perform administrative functions via the Spherical Web Services.

Follow these steps to set up a Spherical Web Services Administrator user. Once the Web Services user has been created, and after you have added your Spherical trunks (done in last step of this guide, not here), the Spherical Web Services user needs Full access to the phones and trunks which are to be controlled and administered by the DuVoice system. This, Spherical Web Services users will be configured also in the DuVoice system, later in this guide under [“DuVoice Installation”](#).

1. In **Spherical Administrator**, click on the **User Rights** tab. Right-click and select **Add**.

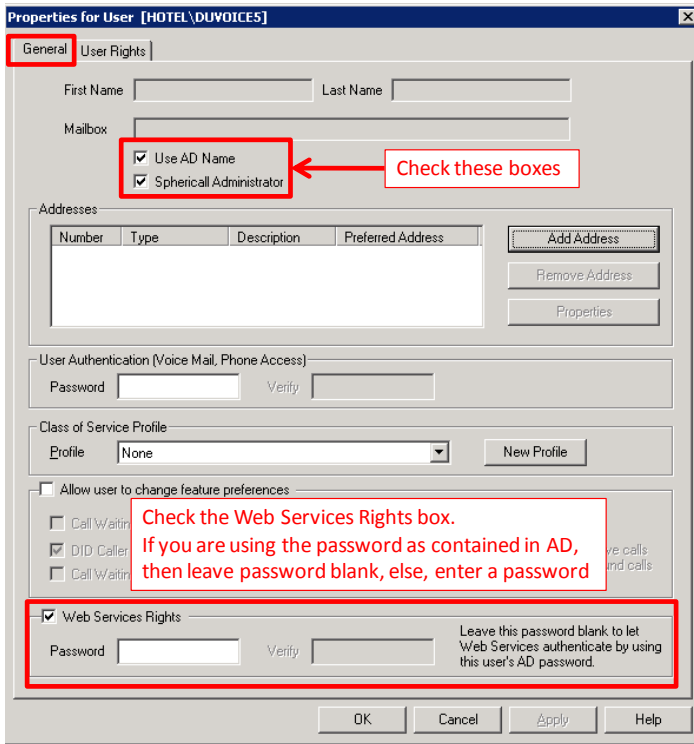


2. After clicking on “Add”, **Browse the AD** window and select the Web Services user which has already been setup in Microsoft Active Directory.

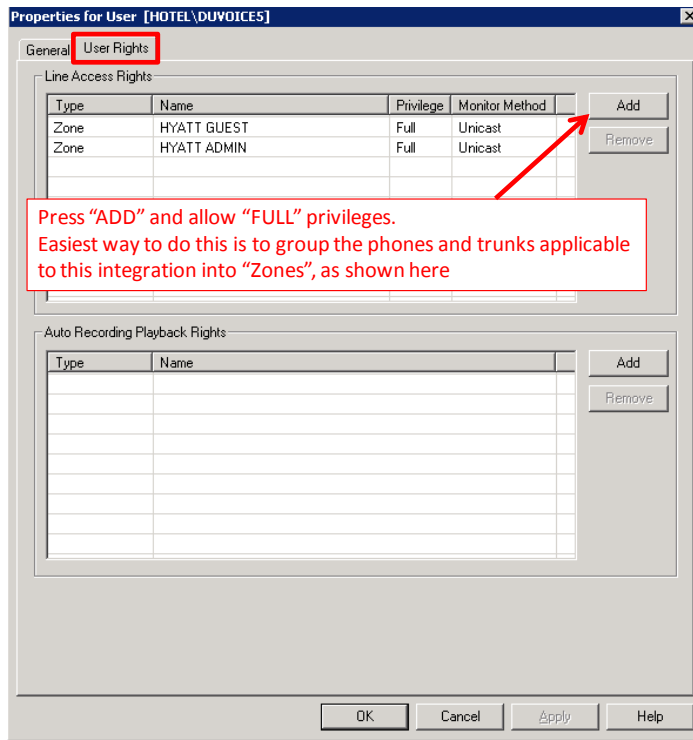


3. Choose a user from the supplied Active Directory List and click **OK**.
4. Right-click on the user you have created and select **View Properties**.

In the **General** tab of the **User Properties**, check the boxes as indicated and at the bottom of the window, tick the **Web Services Rights** checkbox and setup the Web Services user password. Click “OK” when complete.



5. Go to the User Rights Tab. The Spherical Web Services user must be granted rights for the trunks and stations it will control. Click “OK” when complete.

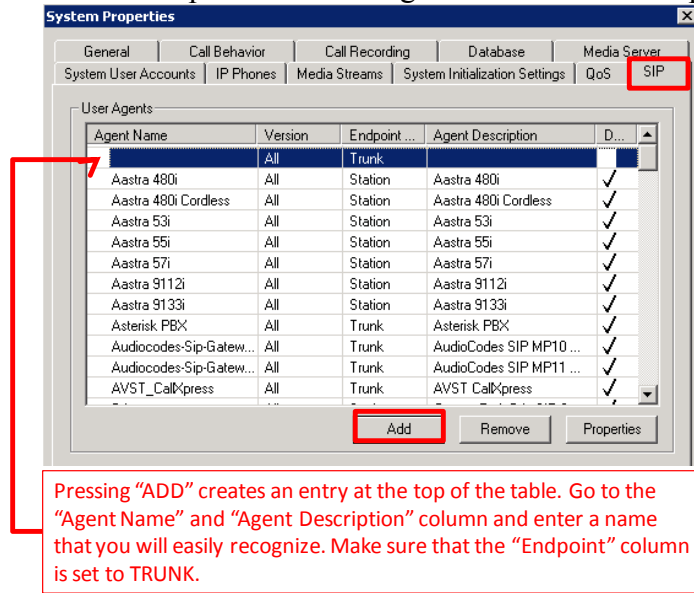


Setup Spherical SIP User Agent

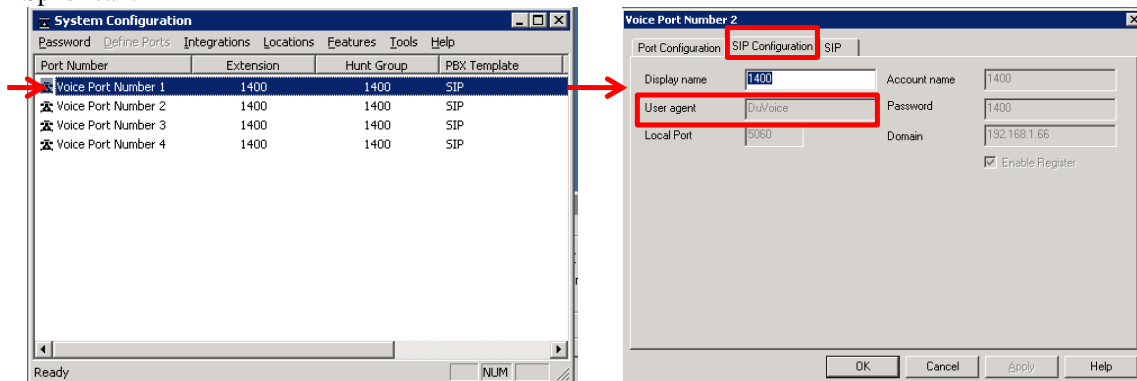
1. Login to the Spherical Administrator, right click on the main screen and select “View Properties”.



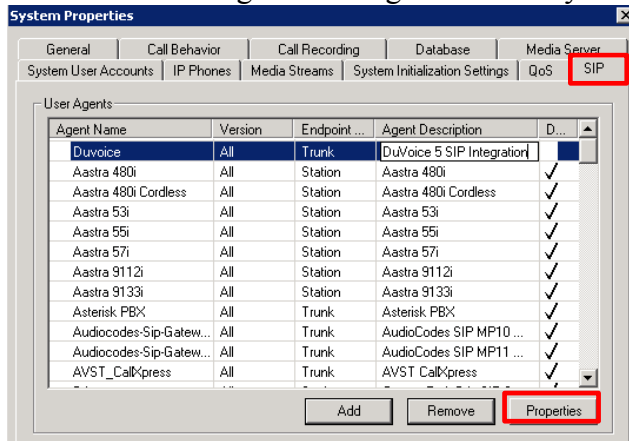
2. Go to the SIP tab within the Spherical Properties and press the “Add” button at the bottom of the screen. Note, default User Agent name on DuVoice is “DuVoice”. This is what MUST be entered under the “Agent Name” column on the Spherical User Agent to be defined in Spherical.



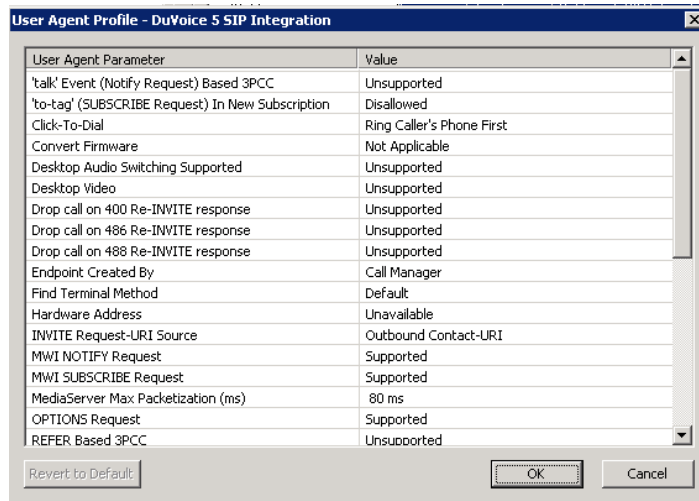
You can verify the User Agent Name used in DuVoice by opening up the System Configuration Dialog in DuVoice and “double-clicking” on a port. From there go to the SIP Configuration Tab to identify the name assigned. This name must be assigned as the Agent Name in Spherical.



- After making the entries noted in Step 2, highlight the new entry you have made, then press the “Properties” button to make sure all settings are configured correctly.



- After pressing the “Properties” button, the following screen will appear. Click in the “Value” column to make any changes.



Utilize the following table to make sure “User Agent Parameters” are set with the proper “values”. Parameters that are to be set differently than “default” are highlighted in Bold, Red Font.

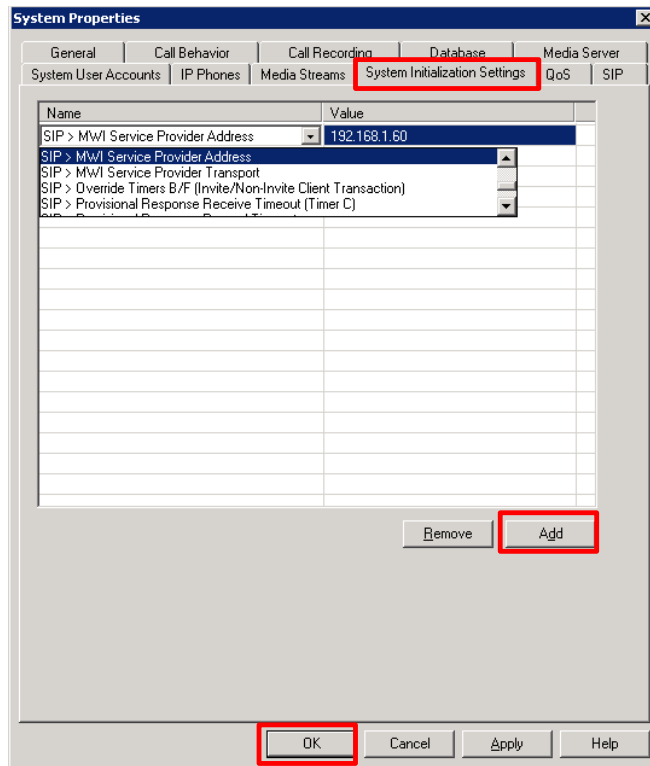
User Agent Parameter	Value
'talk' Event (Notify Request) Based 3PCC	Unsupported
'to-tag' (SUBSCRIBE Request) In New Subscription	Disallowed
Click-to-Dial	Ring Caller's Phone First
Convert Firmware	Not Applicable
Desktop Audio Switching Supported	Unsupported
Desktop Video	Unsupported
Drop call on 400 Re-INVITE response	Unsupported
Drop call on 486 Re-INVITE response	Unsupported
Drop call on 488 Re-INVITE response	Unsupported
Endpoint Created By	Call Manager
Find Terminal Method	Default
Hardware Address	Unavailable
INVITE Request-URI Source	Outbound Contact-URI
MWI Notify Request	Supported
MWI Subscribe Request	Supported

MediaServer Max Packetization (ms)	80 ms
OPTIONS Request	Supported
REFER Based 3PCC	Unsupported
REFER Based Transfer	Supported
Re-INVITE With Held SDP	Holds Call And Provides MoH
Receiving MoH	Supported
Reliable Provisional Response	Unsupported
Remote Reboot	Unsupported
Retry-After Value Sent In SIP Response (sec)	300 sec
Send Forwarding Information	Using Diversion Header
Send Transferring Information	Using Diversion Header
Session Timer	Unsupported
Session Timer Refresher	Call Manager
Timer C	Unsupported
URI 'qheaders' Parameter	Supported
Video	Unsupported
Xpidf+xml support for Presence	Supported

5. When finished, click “OK”.

Setup Spherical System Initialization Setting

1. While within System Properties, go to the “System Initialization Settings” tab. Click the “Add” button, then click in the “Name” column and scroll until you find “SIP > MWI Service Provider Address” and set this entry. In the “Value” column, input the IP Address of the DuVoice Server.



2. Click the “OK” button.

DuVoice Installation

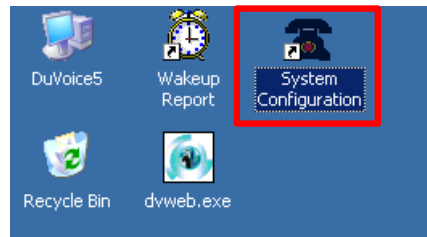
Once you have completed the steps within the DuVoice 5.0 Install Guide, you will need to complete the setup of the DuVoice system. The first time you run the system (or the first time you run your system after installing the software kit), it will automatically launch the Setup Wizard. This wizard is designed to take you through the minimum steps required to get the system up and running so that it can answer calls. You will not be allowed to run either Mailbox Administration or System Configuration until you have completed the wizard successfully. Refer to the DuVoice 5.0 Manual for complete details on the DuVoice Setup Wizard. This guide is intended as a supplement to the DuVoice documentation in order to provide specifics regarding integration to the UNIVERGE Spherical communications system.

DuVoice Setup Wizard

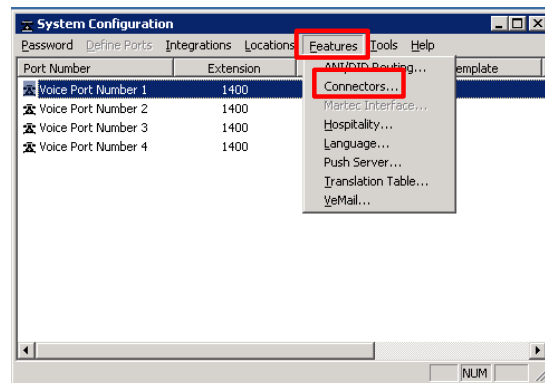
Key information required before running the Setup Wizard:

- Type of Telephone switch. When installing version 5.x of DuVoice for SIP integration, **the type of Telephone switch to be selected is “Spherical PBX”**.
- If presented with a screen that allows checking a box for “SIP Trunk”, check it. Also, if presented with a checkbox within one of the wizard screens for “register”, check it. This will enable the DuVoice to register with the Spherical and will create a trunk entry within the Spherical Administrator trunk screen, simplifying installation
- When asked for “Extension” numbers of each port, this will be a single extension number that you have or will setup in the Spherical system and assign to the “Outward Routing” portion of the Spherical SIP Trunk. Do not put a different extension number on each port. Each port will have the single extension number when integrating via SIP.
- IP Address of the Primary Spherical Manager

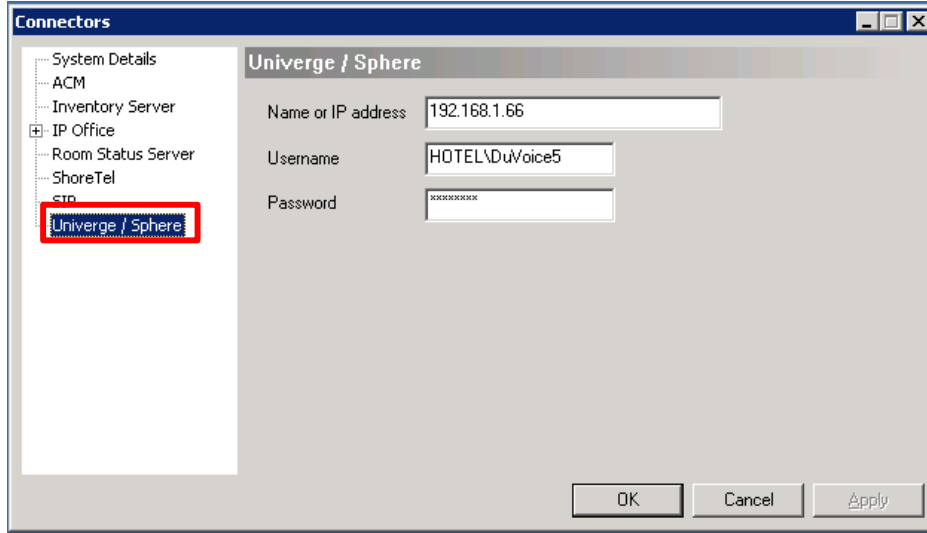
1. After completing the DuVoice Setup Wizard, go to the DuVoice desktop and find the “System Configuration” shortcut and double-click it:



2. Within the System Configuration go to “Features” and select “Connectors”:



3. Within the Connectors dialog, click on “UNIVERGE / Sphere” and input the Spherical Primary server name or IP Address, the Spherical Web Service username and password. Note, that if you setup the Spherical Web Service user to automatically use the “password” as maintained by Microsoft Active Directory, you will need to input the “username” as “Domain\Username”. Input the Password as assigned in Microsoft Active Directory or as assigned in the Spherical setup.

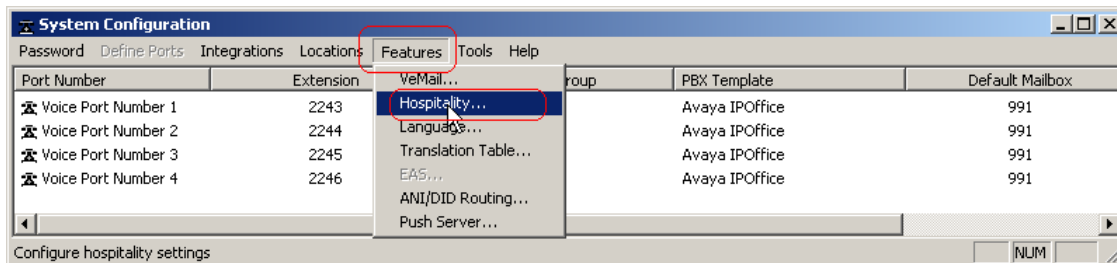


4. Continue with the rest of your DuVoice setup by following the DuVoice 5.0 Manual

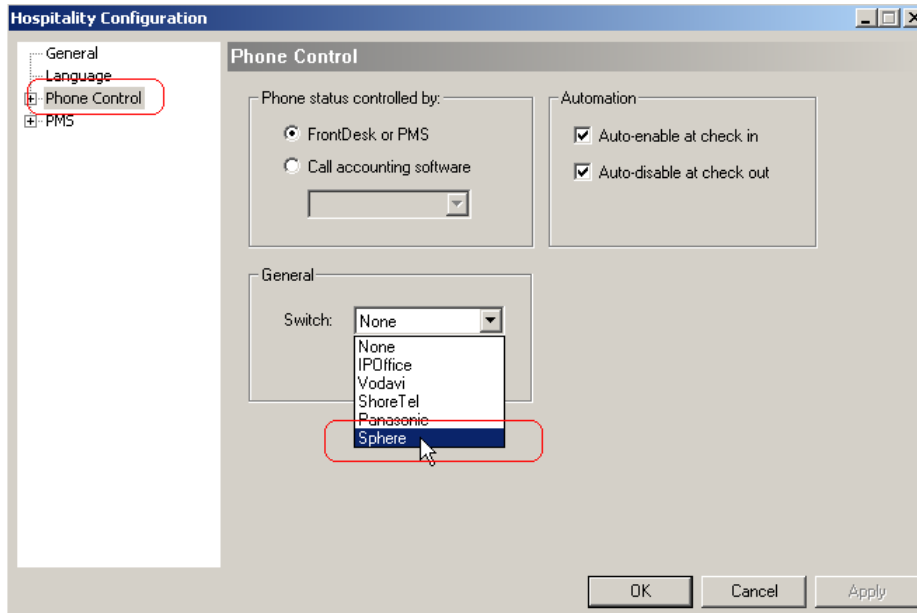
Spherical Phone controls setup for hospitality

The hospitality configuration menu is located in the DuVoice System Configuration program. All information are pertaining to the Spherical hospitality config only, the Property management interface and other hospitality options are available online at <https://manual.DuVoice.com>.

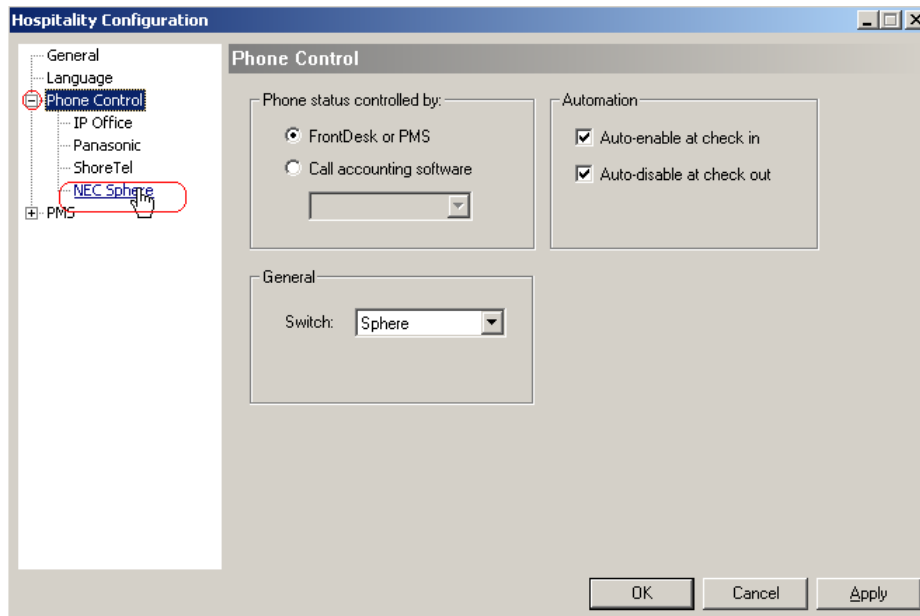
1. After opening the DuVoice System configuration program select “Features” from the top menu and select “HOSPITALITY”.



2. With the hospitality menu opened click on the Phone Control section and select NEC Sphere from the phone system type drop down menu.



3. Once you have set the Phone control to Spherical you will need to expand the menu under the phone control options and select the NEC Sphere.



The Spherical system imposes phone restrictions via Class of Service settings; use these settings to specify which Class of Service (COS) on the Spherical to assign the given room extension in each case. Refer to "[Spherical Class of Service Setup](#)" for configuration on the Spherical system.

- o **Checked In**—the room mailbox/extension will be assigned to this Class of Service at check-in, if the [Auto-enable at check-in](#) setting is enabled. See Screen Shot below for entry of COS which matches setup in Spherical.
- o **Checked Out**—the room mailbox/extension will be assigned to this Class of Service at check-out, if the [Auto-disable at check-out](#) setting is enabled. See Screen Shot below for entry of COS which matches setup in Spherical.

These COS names are case-sensitive; this means that the name "UNRESTRICTED" and the name "Unrestricted" refer to two different COS, **not** the same COS.

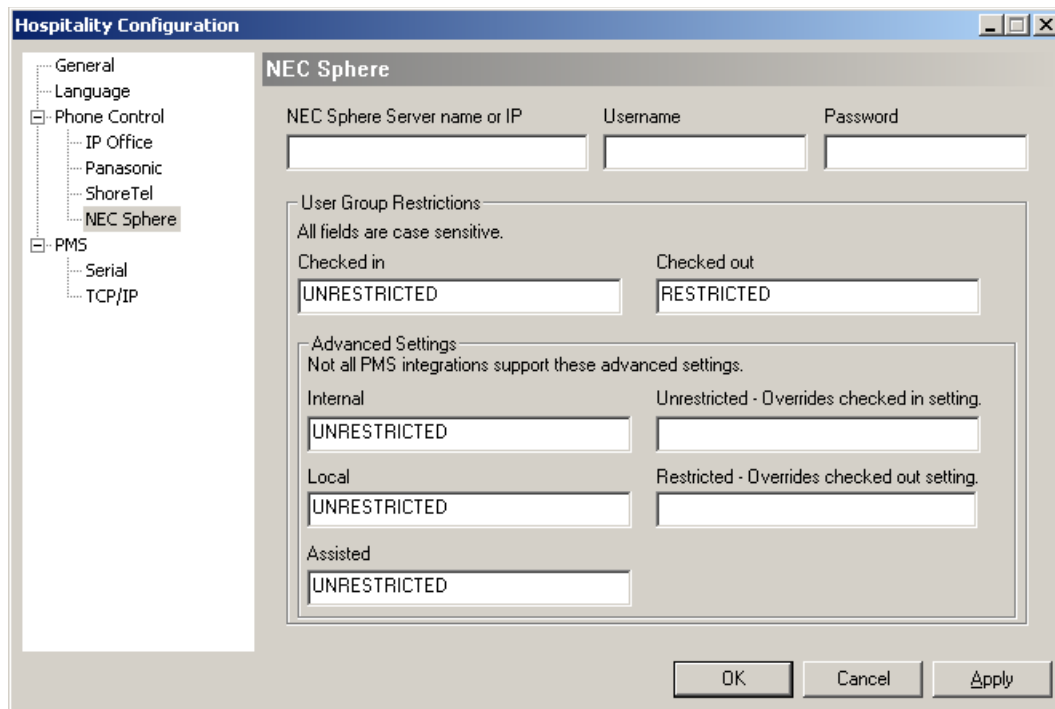
If you blank out either group name, it will be reset to the default value. For *Checked in*, the default group name is UNRESTRICTED; for *Checked out*, it is RESTRICTED.

Advanced Settings

Not all PMS integrations will send phone restriction states to the DV2000/DV4. So while it can change phone restriction status at check-in and check-out, it may not be able to specify restrictions at the finer-grained level implied by these advanced settings:

- **Internal**—COS that limits the extension to internal station-to-station calls only
- **Local**—COS that limits the extension to local or internal calls only
- **Assisted**—COS that allows operator-assisted long distance calls only.
- **Unrestricted**—COS that places the least restrictions on the types of calls that can be made. Overrides the *Checked In* setting.
- **Restricted**—COS that places the most restrictions on the types of calls that can be made. Overrides the *Checked Out* setting.

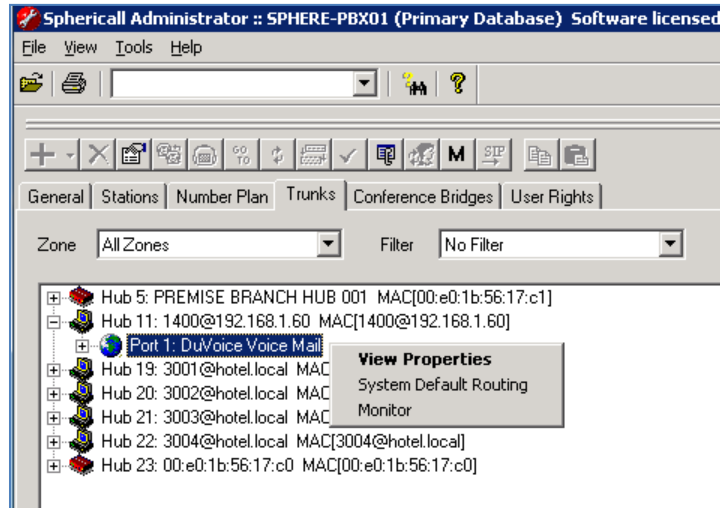
Warning: If the COS name specified does not exist on the Spherical, the phone settings *will not* be changed and the Spherical *does not* return an error message that it failed



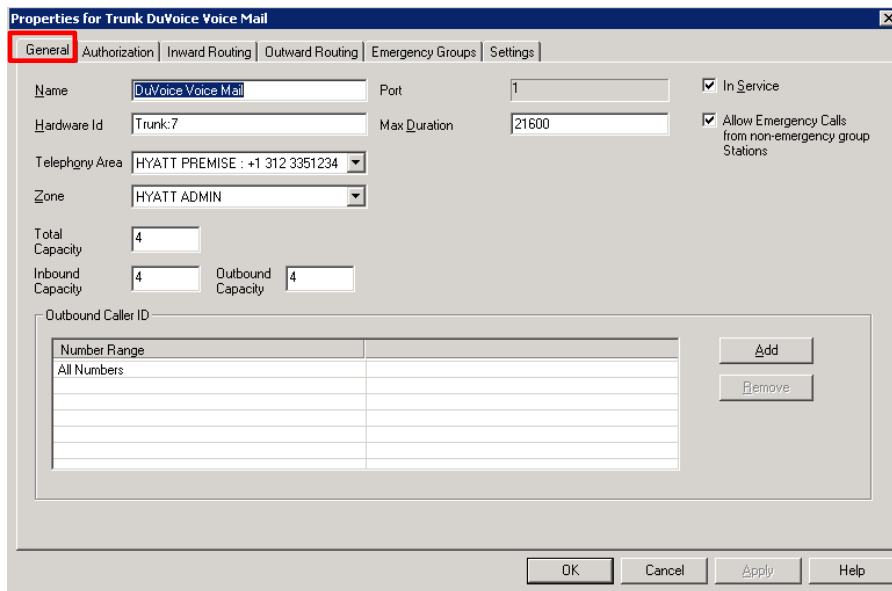
Spherical Final Configuration Steps

If all of the steps have been followed to this point, the DuVoice System should have registered with the Spherical system and created a trunk record within the Spherical Administrator.

1. Login to the Spherical Administrator and go to the “Trunks” tab. Find the trunk entry which was made by the DuVoice registration and right-click on it, then select “View Properties”.

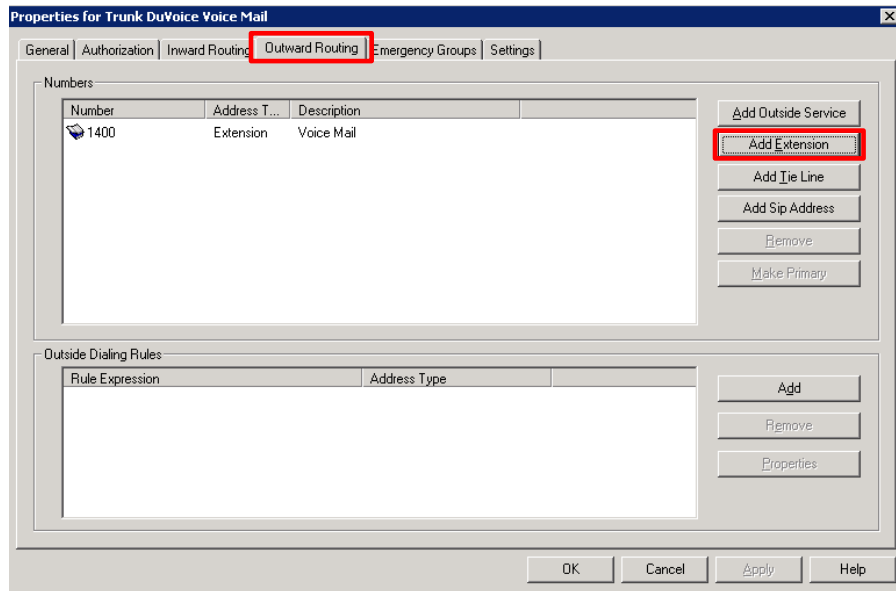


2. On the “General” tab of the trunk properties setup the following information:

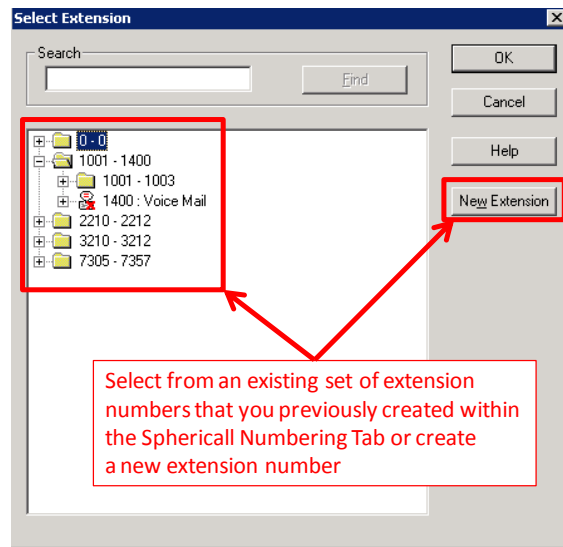


- Provide a Name for the trunk
- Select the appropriate “Telephony Area” for the trunk
- Input the appropriate “Zone” for the trunk.
- Enter the total capacity of this SIP Trunk. This is the total quantity of Trunk Access Licenses you purchased and should equal the total quantity of SIP Ports you purchased on the DuVoice system.
- Set the “Inbound” and “Outbound” capacity equal to the Total Capacity
- Make sure to check the “In Service” box and the “Allow Emergency” calls box

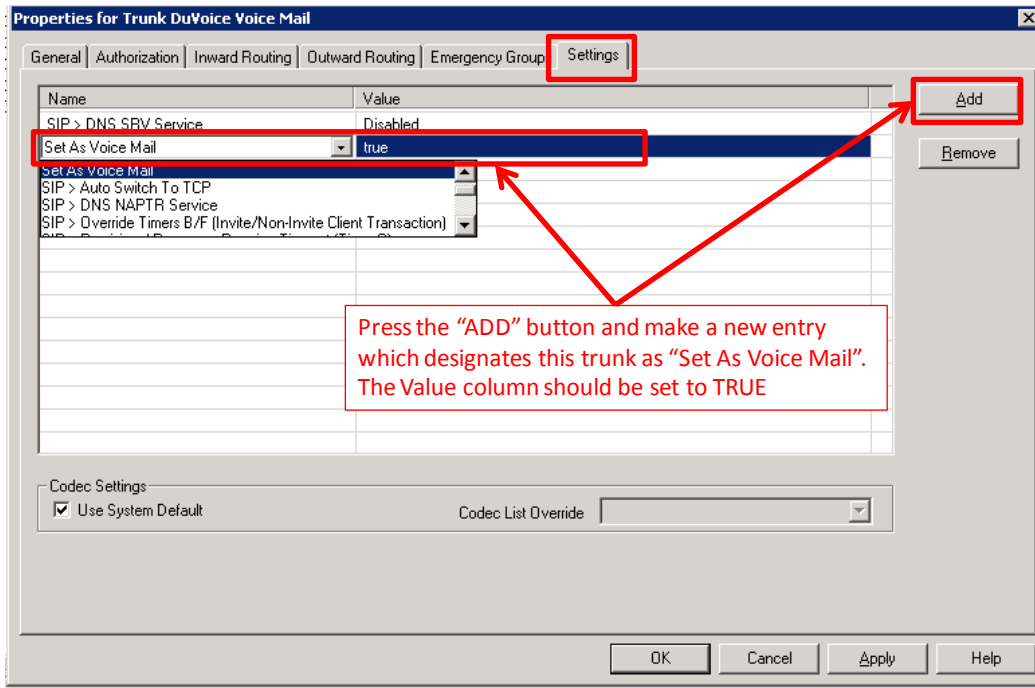
- Go to the “Outward Routing” tab of the Trunk Properties. This is where you will setup an extension number for access to the DuVoice System. This is the only extension number that should have been entered on the DuVoice System Ports when you were configuring them previously. Press the “Add Extension” button.



- When you press the “Add” button in the previous step, the following dialog appears, which will allow you to select an extension from an existing list or to create a new extension.



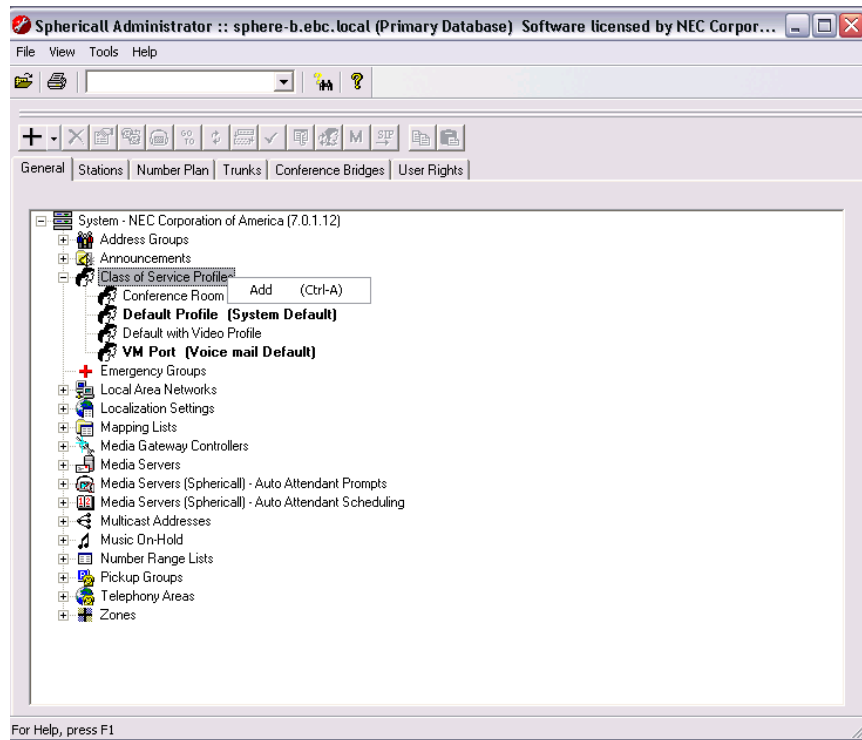
- After you have assigned the extension number to the SIP Trunk, go to the “Settings” tab of the trunk properties. Here you will designate this SIP Trunk as providing Voicemail interface.



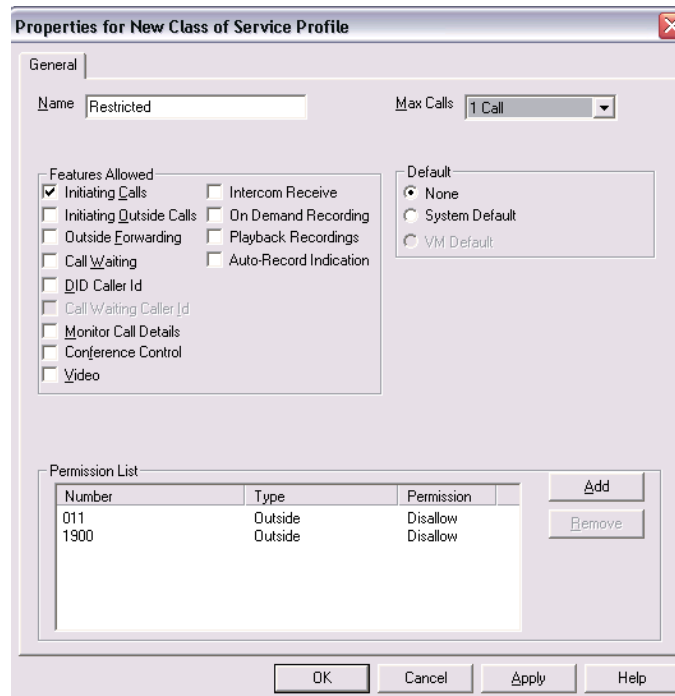
6. Press "OK".

Spherical Class of Service Setup

1. Log into the Spherical Administrator and expand the first line. Highlight the "Class of Service Profile" and right click and select "Add".



2. After clicking “Add” you will be presented with the following dialog. Enter a name for the Class of Service (COS) and set the features you want enabled for this COS. Note, the name you enter for the COS’s that you will specify in DuVoice for Check-in and Check-out must match exactly, including lower and/or upper cases used.



3. Click “OK” to finish COS setup. Repeat steps 1 through 3 to add additional COS templates.

Conclusion

This completes the initial integration of the DuVoice system with the UNIVERGE Sphericall system. For additional information refer to the online help and/or documents. Documentation can be found within the NEC Information Portal under the Applications Menu > NEC Downloads > NEC Sphericall or at www.duvoice.com.