# ScadaPhone Installation & Quick Start::

This document outlines the procedure for installing **ScadaPhone** and configuring a simple-but-functional project on your computer. The objective is to give an abbreviated step-by-step procedure for getting from **Software Installation** to **Live Demonstration**. Many features and details are intentionally omitted from this document for the sake of brevity.

Software Installation::

When installing ScadaPhone on a computer running under **Windows Vista** or higher, the **Windows User Account Control** (**UAC**) prompt is displayed; this is triggered because **ScadaPhoneInstall.exe** must request administrative privileges in order to make necessary changes to the **Windows Registry** and the hard drive. Click the **Yes** button to proceed with the installation.
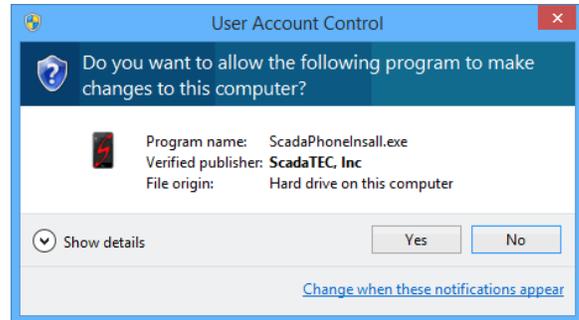
The Main Window of the **ScadaPhone Installer** only presents 3 options (initially):

- The **Program Directory** defaults to **C:\ScadaTEC\ScadaPhone\<version>** The version number is included in this path to ensure that subsequently installed versions of ScadaPhone do not overwrite existing installations; this is done in case the user decides to revert back to an older version in the event of licensing or compatibility issues. Adherence to this directory style is strongly recommended, but if an alternate installation location is desired, click the blue-hyperlink label to select an alternate installation path.

- If ScadaPhone has never been installed on the computer, an optional **Sample Project** can be installed; if the installation program detects a previous installation of ScadaPhone, the **Sample Project** option is omitted (see lower graphic) and the newly-installed version of ScadaPhone will be initialized to run the same project already selected by the previous installation.

- If the user wishes to change the location of the **Sample Project**, the blue-hyperlink label allows the user to select an alternative folder into which the **Sample Project** will be extracted.

When the installation options are set to acceptable values, clicking the **Install** button will either commence the file extraction process or display the following prompt regarding the **removal of existing shortcuts**:

Existing Shortcut(s) Found

Shortcuts to previously installed versions of ScadaPhone have been found.

It is highly recommended that these shortcuts be deleted before installing a new copy of ScadaPhone.

Explanation

Do you want to delete these shortcuts?

Yes : Delete the old shortcuts and proceed with installation (recommended)
No : Leave old shortcuts intact and proceed with installation (not recommended)
Cancel : Do nothing, cancel installation.

[Yes]   [No]   [Cancel]

Existing Shortcut(s) Removal Explanation

Shortcuts to previously installed versions of ScadaPhone have been found. By default, ScadaPhone installs to version specific folders so that older installations of ScadaPhone are not overwritten when a new version is installed (just in case reversion back to the older version becomes necessary due to licensing or compatability issues). The default folder for this version is C:\ScadaTEC\ScadaPhone\5.5.40

Project options available in newer versions may not be supported in older versions; when projects containing new options are loaded by older versions of ScadaPhone, the older version of ScadaPhone simply ignores (discards) any options that are not recognized. If the project is subsequently saved from the older version, these configuration settings will be lost. Therefore, sortcuts to older versions will be deleted to prevent any possible conflicts.

If this new version is only being installed for evaluation, and reversion back to the older copy of ScadaPhone is planned, the sortcuts for the older version can be restored by launching the the older version of ScadaPhone.exe (using the Windows Explorer) and clicking the FILE | PROGRAM | CREATE SHORTCUTS menu item.

Important Note: If your system uses some other method for launching ScadaPhone (e.g. a SCADA system start up script as opposed to a shortcut in the Windows Startup folder), make sure to reconfigure the appropriate link so that this new version of ScadaPhone is the one being launched.

[OK]

It is highly recommended that the **Yes : Delete old shortcuts...** option be selected (for the reasons outlined in the **Existing Shortcut(s) Removal Explanation** window).

After the files have been extracted, a prompt to **Create Shortcuts** is displayed. The default options are set to create a ScadaPhone shortcut on the Windows **Start Menu** and the Windows **Desktop**; if ScadaPhone needs to be launched on Start-Up, the 3rd check-box can be ticked to have the install program add the appropriate **.LNK** file to the **StartMenu\Programs\Startup** folder.

If you intend to launch ScadaPhone via some other means (e.g. a script command executed by the SCADA software), you can obtain a the path to the **Start Menu** shortcut (**.LNK** file) by clicking the **Copy Shortcut Path To Clipboard** button.

Using the **Start Menu** shortcut to launch ScadaPhone is preferable to having scripts reference the actual **ScadaPhone.exe** path, because of the reasons outlined in the **Why copy shortcut to clipboard** window.

After the **Create Shortcuts** prompt is closed, the installation process should be complete.

Create Shortcuts

☑ Create Start Menu Shortcut
☑ Create Desktop Shortcut
☐ Create Start-Up Shortcut

[Copy Shortcut Path To Clipboard]

Why copy shortcut to clipboard?

[OK]   [Cancel]

Why copy shortcut to clipboard?

Some ScadaPhone users choose to launch ScadaPhone by executing a command line within a script controlled by the SCADA system.

This method of starting ScadaPhone raises the possibility of error when new versions of ScadaPhone are installed; this is due to the fact that each new release of ScadaPhone installs into a version specific path (Example: C:\ScadaTEC\ScadaPhone\5.5.40\ScadaPhone.exe).

The version number part of the program path will have to be changed in the SCADA script for every upgrade if the following practice is not implemented:

The SCADA system should not directly launch ScadaPhone.exe, it should execute the desktop shortcut (the .LNK file) created by ScadaPhoneInstall.

ScadaPhoneInstall deletes and overwrites all pre-existing shortcuts so that the ScadaPhone.exe path in the desktop shortcut is always pointing to the newly-installed copy of ScadaPhone and not to an older version.

The Copy Shortcut Path To Clipboard button provides a convienient means for cutting and pasting the path to the desktop shortcut into the SCADA system script file. With this link, no script editing will be necessary when upgrades are installed.

[OK]

Configuring ScadaPhone::

After installation is completed, ScadaPhone can be launched by clicking one of the shortcuts created by the install program or by double-clicking the **ScadaPhone.exe** file in the **Windows Explorer**.
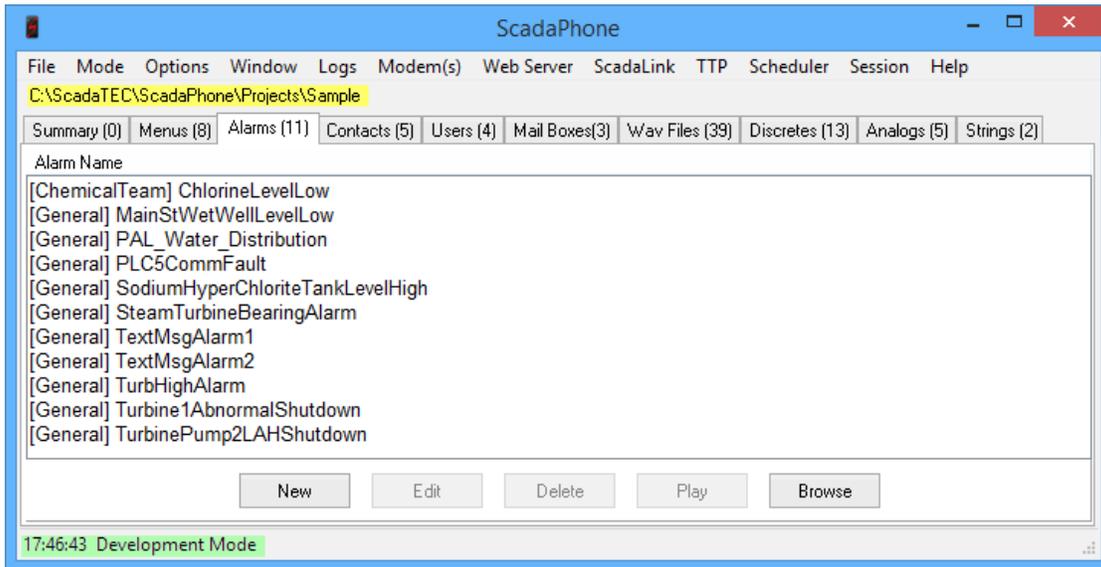
ScadaPhone's **Main Window** has an intuitive layout which displays the path to the currently loaded project folder (highlighted in yellow, above), the current time and program state (highlighted in green), and a tab control which provides one-click access to the various lists of information defined in the current project; all project-configuration operations are reachable from either the top menu bar or the buttons at the bottom of each page of the tab control.

When ScadaPhone is launched for the first time on a machine which had no previous version of ScadaPhone installed, the project will be set to either **Sample** or **Project1** (depending upon whether or not the **Sample Project** was extracted by the install program). To start a new project: Click the **File/Project/Load/New** menu item and enter an appropriate name for the new project.

In this example, a new **project folder** named **AnytownWTP** will be created.
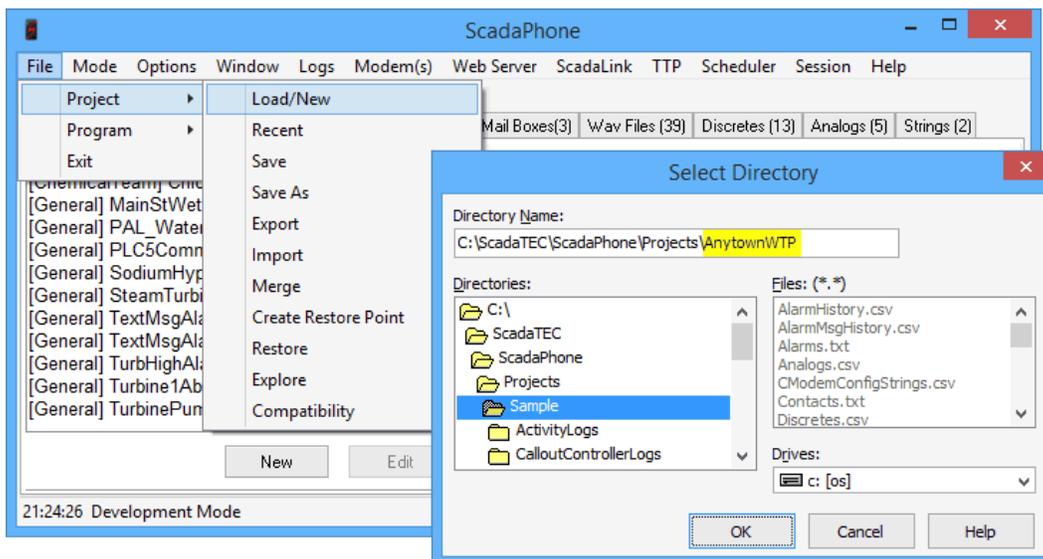
The newly-created project will initially have no **Alarms**, **Contacts**, or **Tags**, but there will be two automatically-created Menus: **MainMenu** & **AckWithoutLoginMenu**:
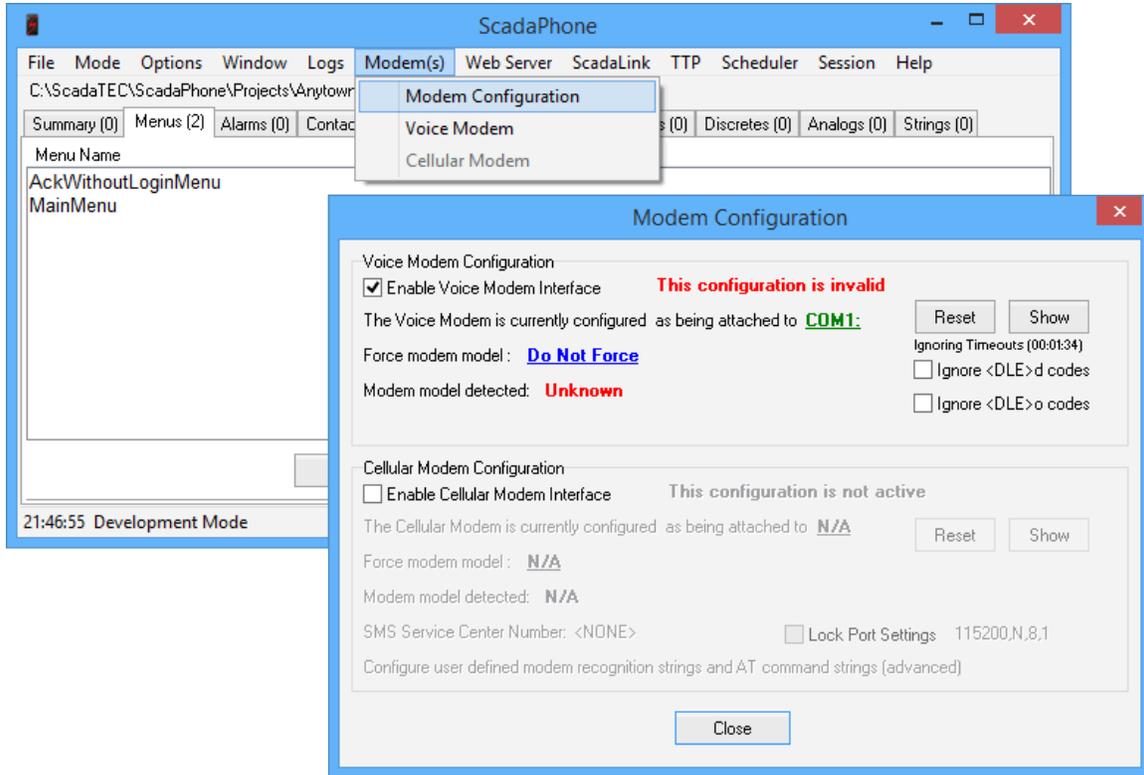
In addition to the two predefined menus, various other configuration settings are set to default values. The default modem setup assumes a **Voice Modem** will be installed on **COM1:** and the **Cellular Modem** interface is **disabled**.

If you have and intend to use a **Voice Modem** in your project, you can leave the check-mark in the **Enable Voice Modem Interface** check-box, but you may need to change the **COM** setting (by clicking on the underlined **COM** label) to direct ScadaPhone to the proper port number. If you do not intend to use **Voice Modem** with this project, clear the **Enable** check-box.

If you intend to use a **Cellular Modem**, there are a few more setup options, but the **Enable** & **COM Port** setup is the same. If you intend to run both **Voice** & **Cellular** modems, enable both; if your project will be using no modems (i.e. using **email** or network-based **paging**), leave both **Enable** boxes unchecked.

Another matter that must be addressed when setting up a project is the creation of a **Supervisor** User. Most of ScadaPhone's configuration controls require a **Supervisor** password when ScadaPhone is in **Run Mode**; however, at this point in the project-setup process, ScadaPhone should be in **Development Mode**, so there will be no supervisor-password prompts unless you try to either switch to **Run Mode** or click any of the buttons at the bottom of the **Users** tab (**New**, **Edit** & **Delete**). This would be a good point at which to create a **Supervisor** User; to do this, select the **Users** tab and click the **New** button (below the empty list box). Choose an easy-to-remember password (blank is acceptable). **You will need to use this password to enter additional User information.**
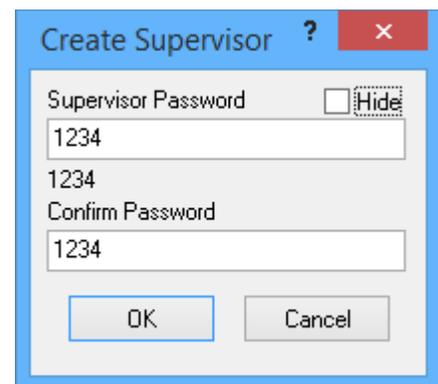
In addition to the **Voice Modem**, ScadaPhone can also make audio announcements through the computer's **Sound Card**; to enable this reporting method, open the **Audio Device Options** window and tick the **Use Sound Card When Possible** check-box:
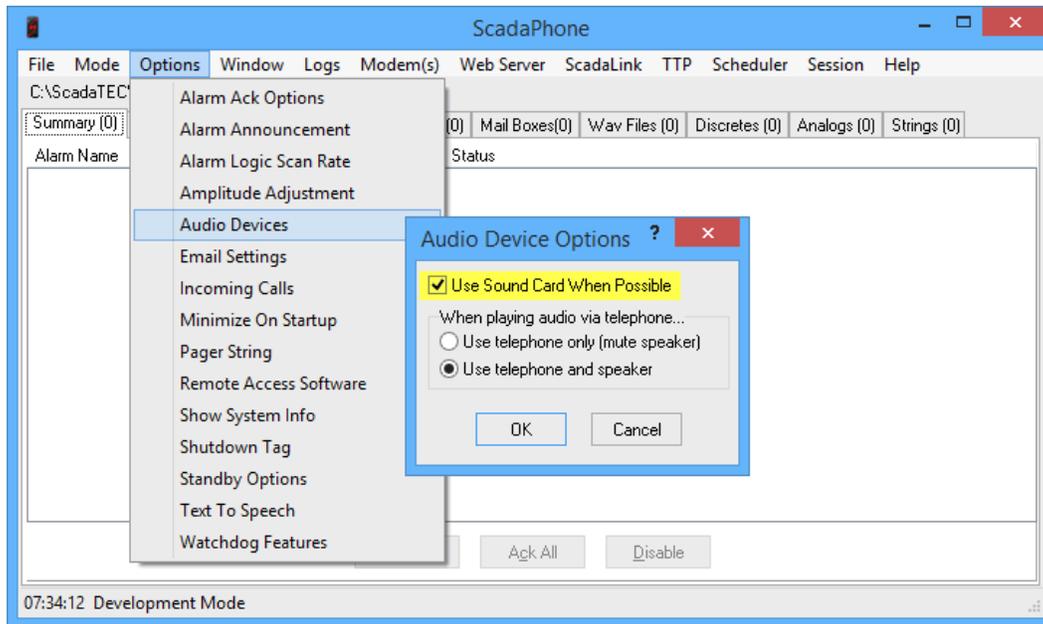
This option's default is **disabled**, due to the increasing trend for rack-mounted-server computers not having a **Sound Card** installed. If your system will have neither a **Voice Modem** nor a **Sound Card**, ScadaPhone will not be able to make audio announcements of alarm conditions and will be limited to **text messaging** (via Cellular **SMS**, **SNPP**, and/or **Email**).

If ScadaPhone's host computer has access to either a **LAN** or **Internet** based **SMTP Email** server, ScadaPhone can be configured to use that server via the **Email Settings** window (accessible via the **Options** menu item):

Note that multiple **SMTP Server** connections can be entered into the **Available SMTP Servers** list; this provides alternate connection paths in the event that the preferred server becomes unresponsive. Servers are listed in order of preference and can be **enabled** or **disabled** via the check-marks on the left margin of the list. Server settings can be changed in the **Edit SMTP Server** window (which is opened by the **New** & **Edit** buttons below the server list).
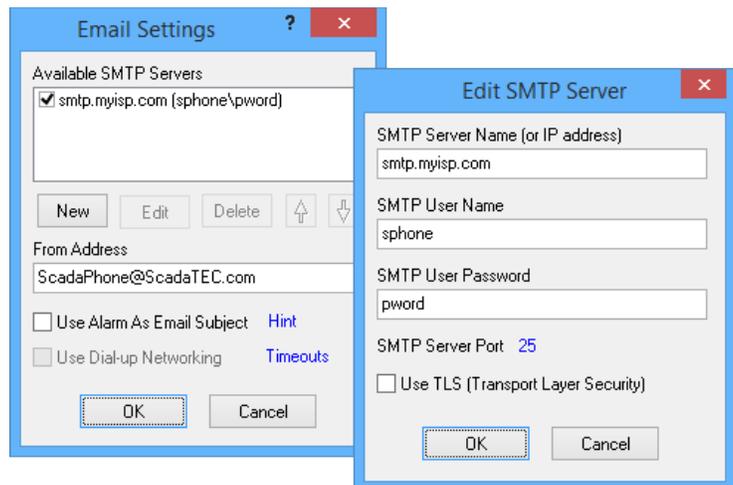
Note that some SMTP servers (such as **Gmail**) require **Transport Layer Security** (because they are web-based); other servers (such as the **SMTP Server** of your **Internet Service Provider** or LAN-based **SMTP Gateways**) may not require a secure connection. Consult the technical documentation for your SMTP Server to obtain the proper settings for ScadaPhone to use.

At this point, you will probably have a viable reporting method configured (i.e. Voice Modem, Cellular Modem, Sound Card or Email); the next configuration step will be to establish a connection to an **OPC Server** via ScadaPhone's **ScadaLink** interface.

ScadaPhone's **ScadaLink** interface provides the communication link between ScadaPhone and the SCADA Server from which the alarm-status information is to be obtained. The **ScadaLink** interface has three modes of communication: **OPC**, **DDE** or **OLE**. This document will focus on the most common: **OPC**.
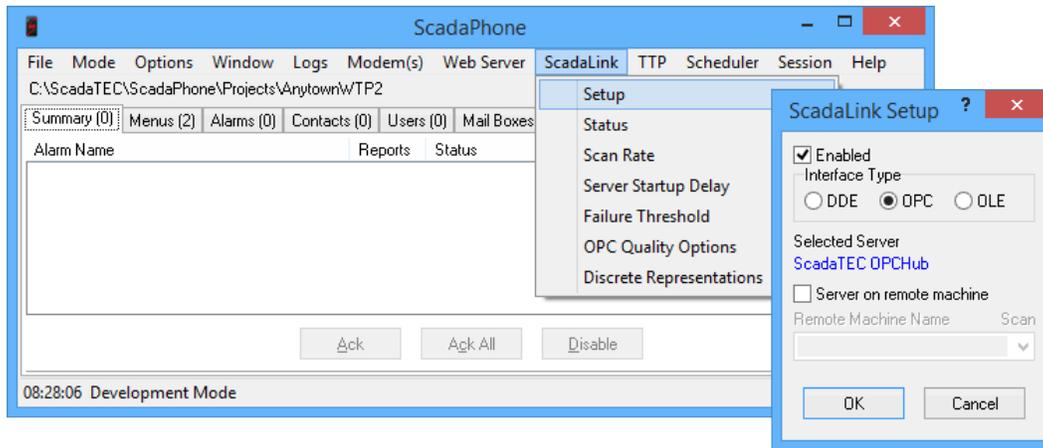
Clicking the blue-hyperlink labeled **Selected Server** will open ScadaPhone's **OPC Server List** (which will have entries for many OPC Servers which are not actually installed on your computer). To select an OPC Server connection which *is* available on your computer, click the **Browse** menu item:
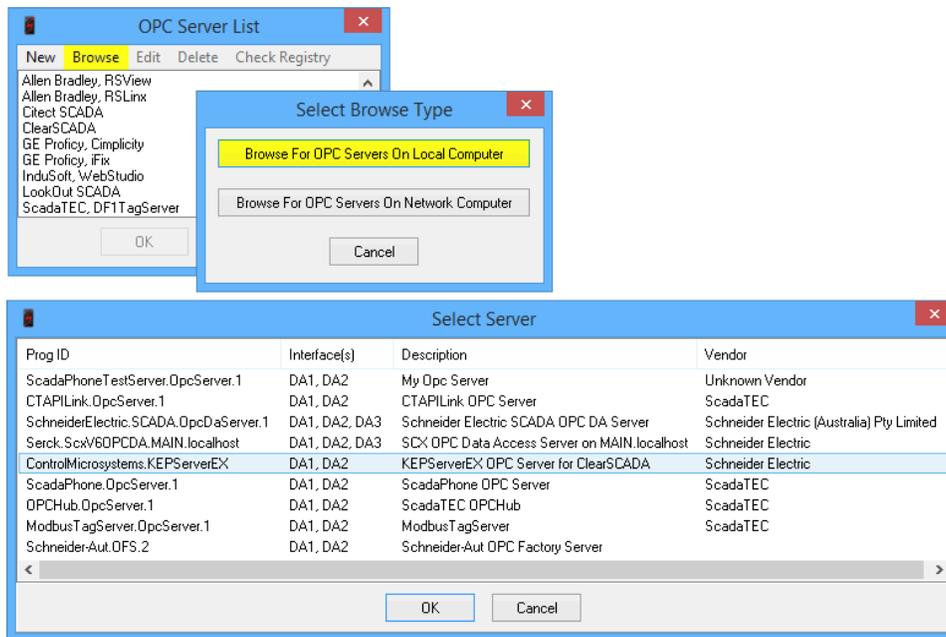
Highlighting the desired **OPC Server** and clicking **OK** will configure the **ScadaLink** interface to attempt connections with the appropriate **OPC Server** "**Prog ID"**. Before clicking **OK** on the **ScadaLink Setup** window, make sure that there is a check-mark in the **Enabled** box.

Now that the **ScadaLink** interface is setup, the next task will be to test the **OPC** link by adding some valid tag names to the **ScadaPhone Project** and placing ScadaPhone into **Run Mode**. In **Development Mode**, the **ScadaLink** interface remains idle unless the user requests to **Browse** the server.

In the next step, an **OPC Tag Browse** will be used to obtain a list of tag names from the **OPC Server's Tag Database** and add them to this ScadaPhone project. After the tags have been added, ScadaPhone can be placed into **Run Mode** and the ScadaLink interface will attempt to connect to the SCADA Server and poll for the current values of the specified tags.

To trigger an **OPC Tag Browse**, ScadaPhone must be in **Development Mode** and either the **Discretes**, **Analogs** or **Strings** tab must be selected in ScadaPhone's main-window tab control.

From the **Discretes** tab, clicking the **New** button will open the **New Discrete Tag(s)** window:
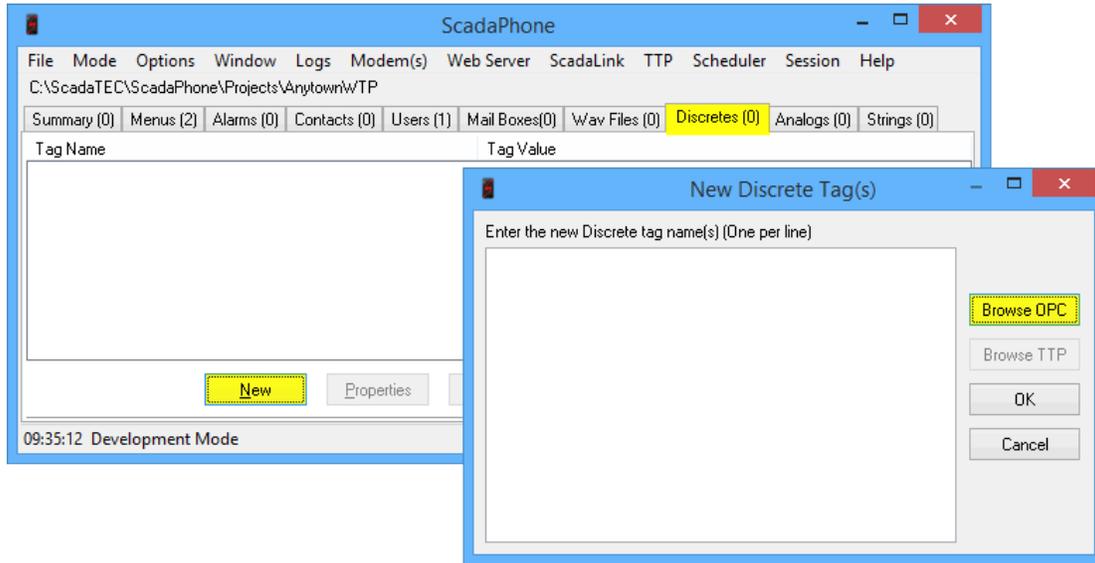
Note that the **Browse OPC** button is enabled (because the ScadaLink interface has been configured for an **OPC** connection); clicking the **Browse OPC** button will abandon the **New Discrete Tags(s)** window in favor of the **OPC Tag Browser** window. Note that the **New Discrete Tags(s)** window will also allow the user to manually enter (or Paste from the clipboard) a list of tag names to add to the ScadaPhone project. This is useful for defining other types of tags (e.g. **Computed** tags or **Holding** tags, as opposed to **ScadaLink** tags), but we will focus on the **OPC Tag Browse** for the purposes of this example.

In this example, an ill-behaved OPC Server was purposefully selected in order to highlight an issue which you may or may not encounter when browsing your OPC Server: The **Data Types** of the tags returned by the **Browse** are supposed to be specified correctly in the browse data returned by the server; however, this is not always the case. In this example, the server returned **6** tags, but declared them all to be **String** data-type. This is not correct and needs to be remedied.

ScadaPhone's **OPC Tag Browser** allows the user to make modifications to the **Data Types** so that the browsed tags will be categorized correctly in the ScadaPhone project.
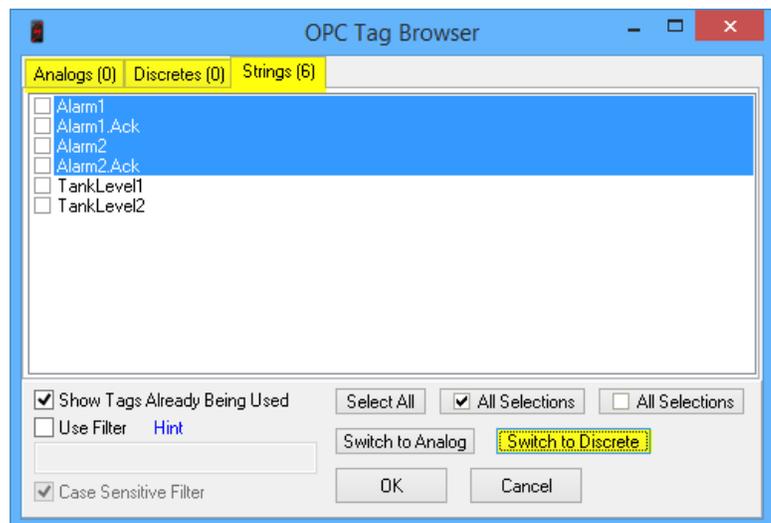
To change Data Types: Highlight the erroneously-categorized tags by **left-clicking** them (use **Ctrl** & **Shift** to select multiple tags) and then click the appropriate **Switch to...** button. The tags will immediately be moved to the correct data-type tab. When the tags have all been correctly sorted, visit each tab and place check-marks next to the tags you would like to import into the ScadaPhone project. After the check-marks are set as desired, clicking **OK** will complete the **OPC Tag Browse** and return to the main window.

Upon returning to the main window, you will be able to see the tags which were added from the browse operation. Note that the font color for the newly added tag names is gray; this indicates that the tags are defined in the ScadaPhone project, bur are not being used in any alarm or user-defined menu. Unused tags will still be polled by the ScadaLink Interface, the gray font is used to signal that *"This tag is not being used and can be removed in order to avoid unnecessary polling"*.
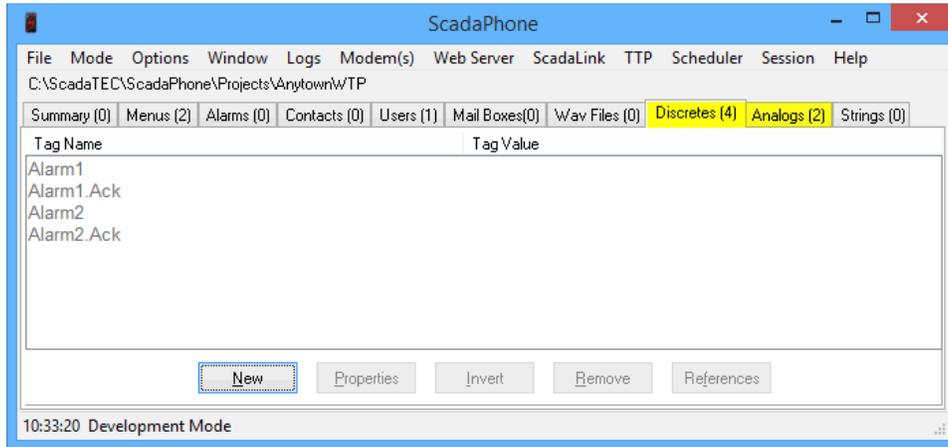
At this point, the **ScadaLink** connection can be tested by placing ScadaPhone into **Run Mode**. This is done via the **Mode** menu item on the main window. Also make sure that the **SCADA Server** is running and ready to service **OPC Client** connections.

Upon switching to **Run Mode**, ScadaPhone will display a "**Save Changes?**" prompt; click **Yes** to this prompt. Note that each time the project is saved to disk, a backup ZIP file containing the existing project files is created. This allows the system administrator to revert to a previous "known-good" copy of the project in the event that any of the project files are lost or become corrupted.
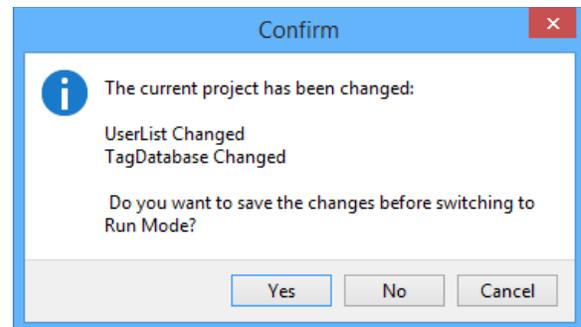
After answering the save-changes prompt, ScadaPhone will display the **Schedule Holes Warning** window which alerts the operator that there are periods of time in the upcoming week where there are **No Contacts Available** to receive alarm reports; this is correct because, at this point, no **Contacts** have been defined in this project. Simply click **OK** at the bottom of the window and it will be disabled for 5 minutes.
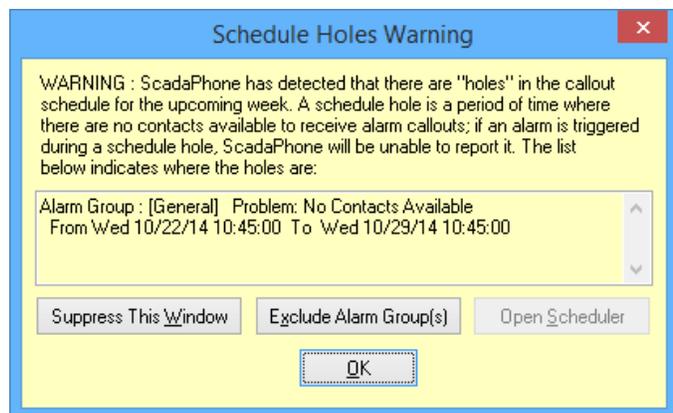
To see how the ScadaLink polling is going, open the **ScadaLink Status** window by clicking the **Status** menu item in the **ScadaLink** drop-down menu at the top of the main window. If the link is working correctly, the **Status** should be showing **Successful** most of the time.
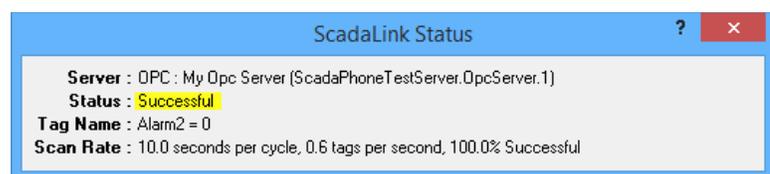
After verifying the **ScadaLink** communication, the next configuration step is to test the alarm reporting via whichever method was configured in the first part of this project setup (**Sound Card**, **Voice Modem**, **Cellular Modem** or **Email**).

To do this, at least one **Alarm** and one **Contact** needs to be defined in the ScadaPhone project.
To proceed, switch ScadaPhone to **Development Mode** and select the **Alarms** tab on the main window.

Alarms can be defined individually via the **New** button, or defined in batches with the help of the **Alarm Browser** by clicking the **Browse** button.

In this example, only one simple alarm will be created to test the alarm-reporting configuration.
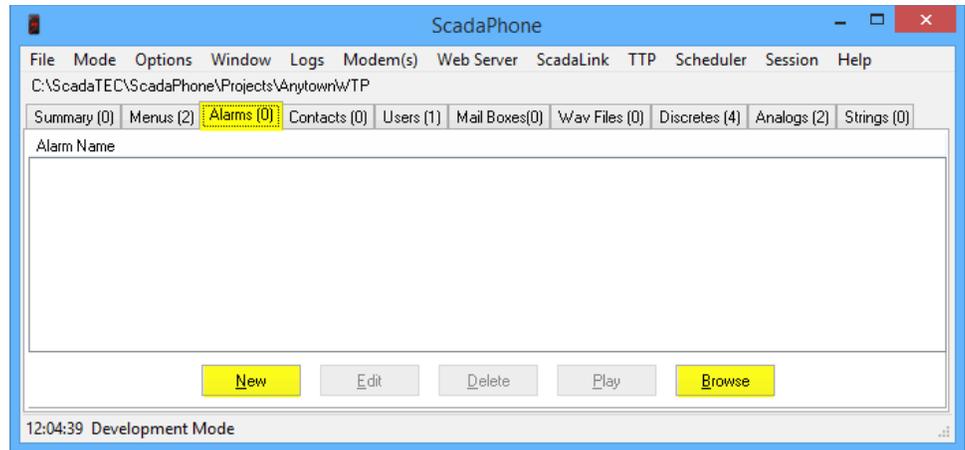
Click the **New** button to open the **Alarm Information** window:
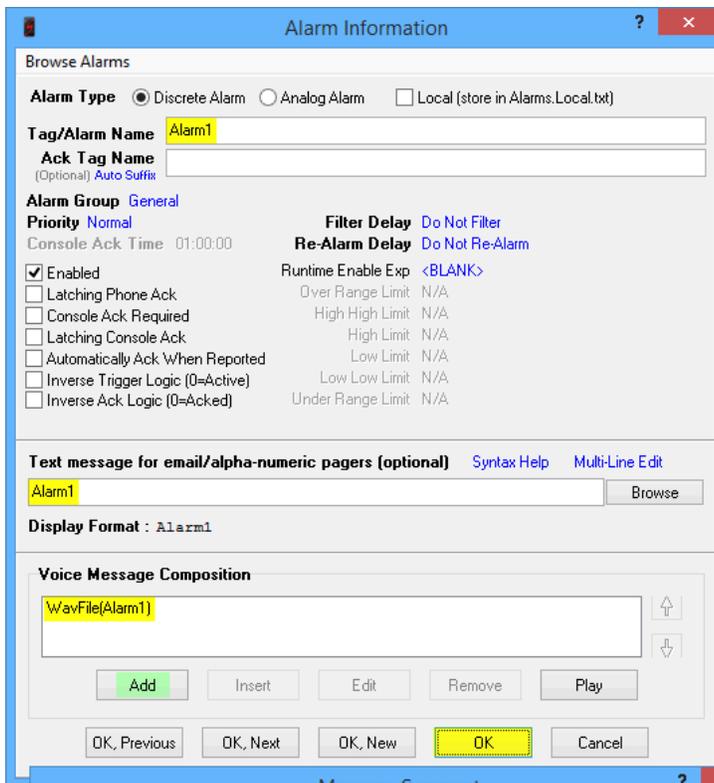
The highlighted items indicate the few configuration steps necessary to define a simple discrete-triggered alarm. The items highlighted in green show how to add a single WavFile segment to the alarm's **Voice Message**. When this alarm is triggered in Run Mode, it will send the "**Alarm1**" text when reporting to Cellular SMS, Email or Alphanumeric Pager; when reporting via Audio to a Sound Card or Voice Modem, ScadaPhone will look for a pre-recorded WAV file at the following file path:

<project>\WavFiles\Alarm1.wav

If no such file can be found, ScadaPhone will attempt to render it via the Windows **Text To Speech** (**TTS**) engine. If the **TTS** rendering is successful, the file will be saved in the proper location and will be available for all subsequent reports.
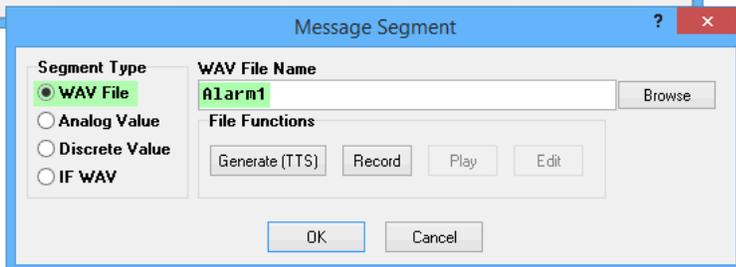
If rendering the file via **TTS** is not desirable, the audio file can also be recorded via microphone plugged into either the **Sound Card** or the **Voice Modem**. All ScadaPhone audio files are required to be 8000 samples-per-second, 16-bit samples, mono.

After defining an alarm to test, an **Alarm Contact** must be defined. To define an Alarm Contact, select the **Contacts** tab of ScadaPhone's main window and select **New**:
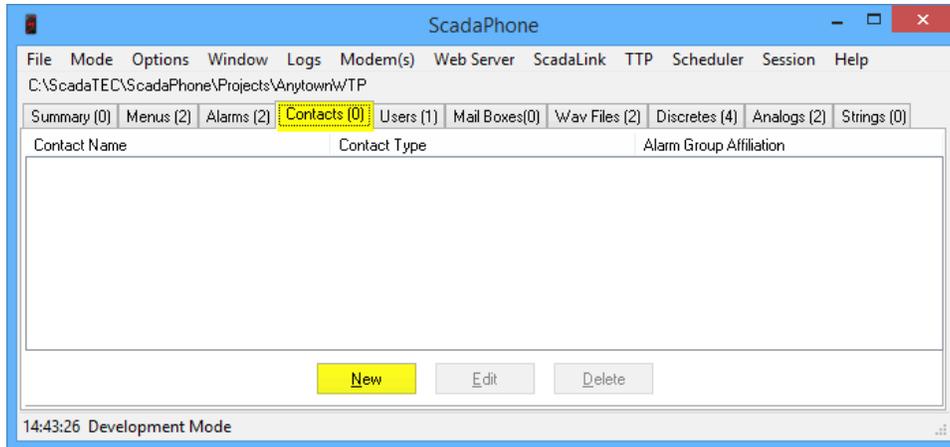
Clicking the **New** button opens the **Alarm Contact** window:
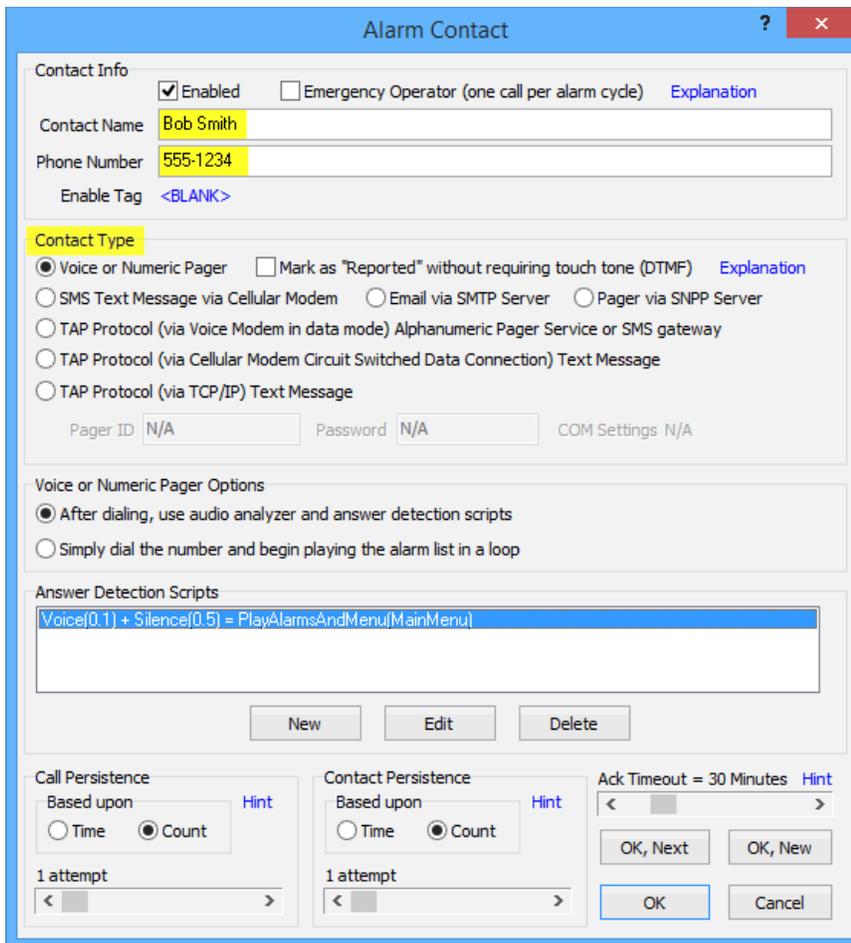
The **Alarm Contact** window has numerous dynamic controls which change their appearance based upon the selected **Contact Type**.

Clicking the various radio buttons contained in the **Contact Type** panel of this window will reveal and hide controls based on whether or not they are relevant to the selected type.

This example will assume that testing will be conducted trough a **Voice Modem**; to add an appropriate **Contact** to your project, you may need to select a different **Contact Type** to match the reporting method selected earlier in this process (e.g. Email, Cellular, etc...).

If any required fields are left blank, the pertinent controls will be highlighted in red and the **OK** buttons will be disabled until the required configuration information has been provided.

After the **Alarm Contact** has been configured, click **OK** to save it to the project's **Contacts** list.

The last required step in doing a complete alarm-report test is to add this **Contact** to an appropriate **Contact Sequence List** in the ScadaPhone **Scheduler**. ScadaPhone allows configuration of an unlimited number of alarm groups; each **Alarm Group** has its own unique **Contact Sequence List**. In this example, the only **Alarm Group** defined will be the default **General** group.

Upon exiting the **Alarm Contact** window, the **Schedule Holes Warning** window should be displayed; if so, click the **Open Scheduler** button in the lower right corner. If the warning window does not appear, the normal method for opening the **Scheduler** window is to simply click the **Scheduler** menu item from the main window:
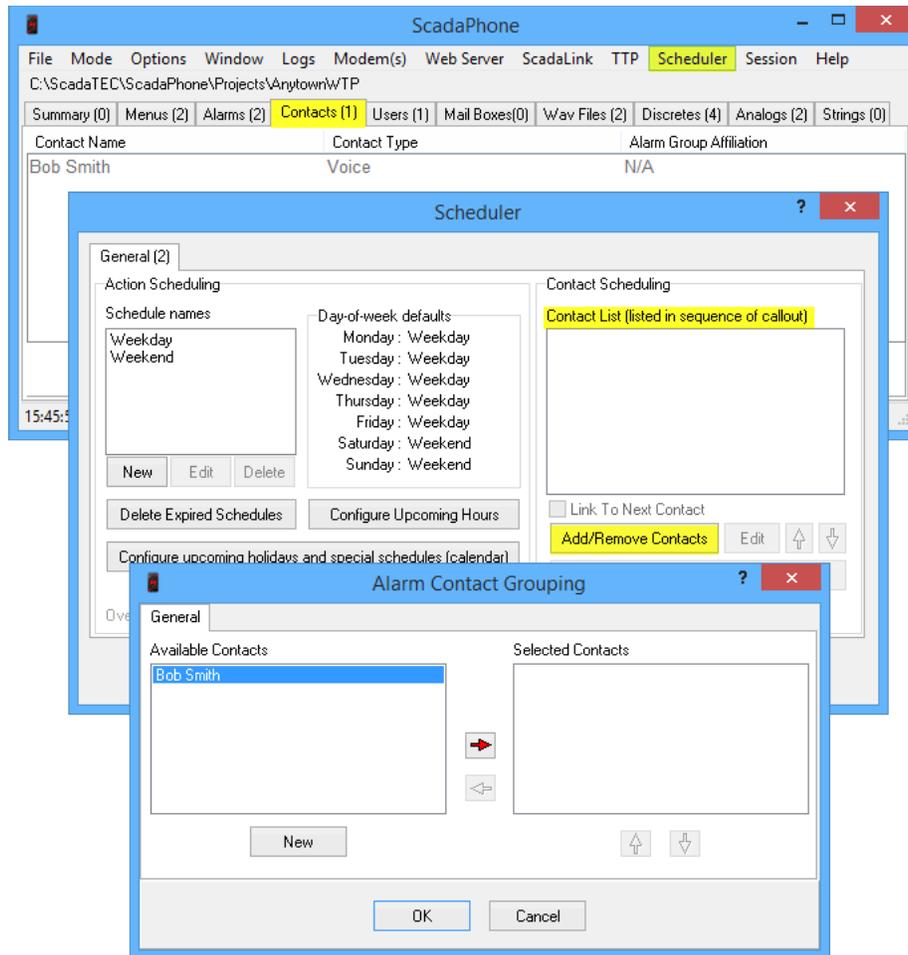
Contacts are added to and removed from **Contact Sequence Lists** via the **Alarm Contact Grouping** window (which is opened from the **Add/Remove Contacts** button under the **Contact Scheduling** section of the **Scheduler**). All Contacts defined in the project are initially listed under **Available Contacts**; to move an **Available Contact** over to the **Selected Contacts** list, highlight it and click the right-arrow. To remove a **Contact** from a specific Alarm Group's **Contact List**, simply reverse the process.

When finished, the **Scheduler** should look similar to the following:
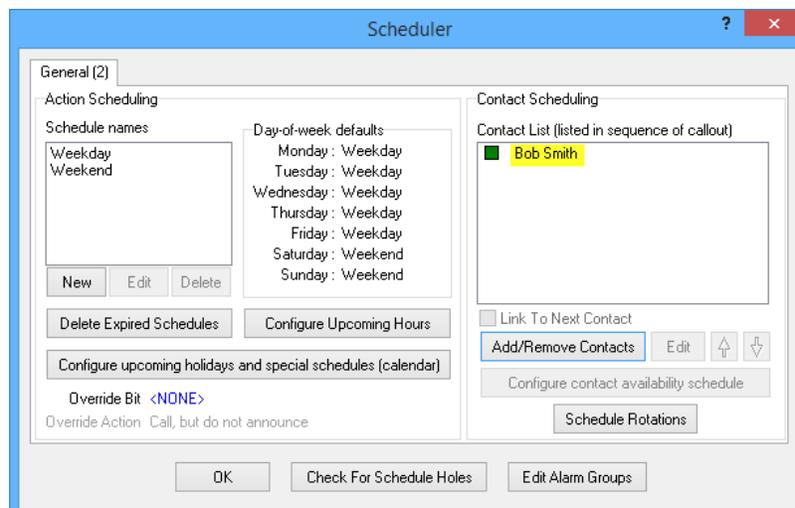
ScadaPhone Runtime Testing::

At this point, ScadaPhone can now be placed into **Run Mode** and should be able to **connect** with the selected OPC Server, **poll** the selected OPC tag(s), **detect** an alarm condition in the SCADA Server and **report** the alarm message to the alarm contact.

When ScadaPhone is in **Run Mode**, there are numerous logs which you can monitor to inspect status of ScadaPhone's SCADA Server polling, communications with the reporting devices, and many other indicators of system function.
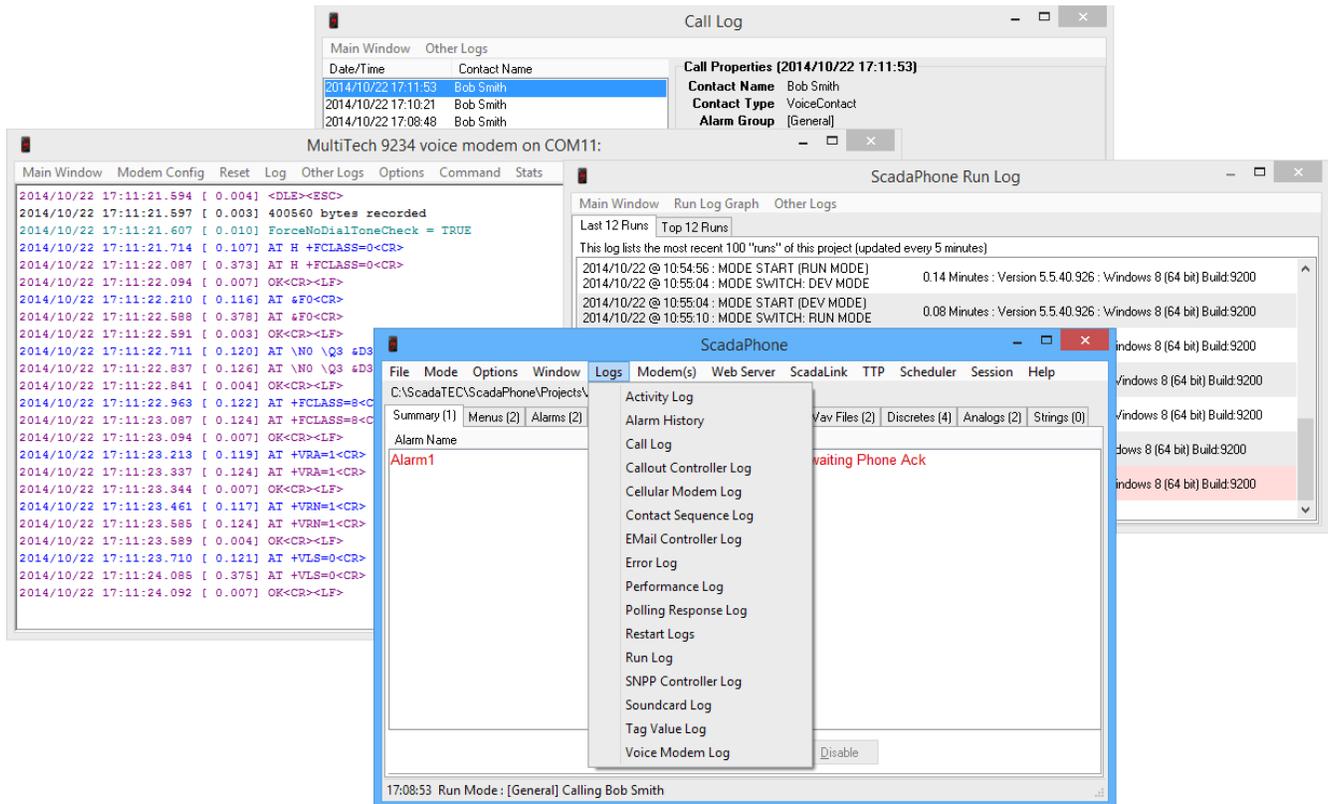
Appropriately, the best place to start an analysis of ScadaPhone's activity is the **Activity Log**. The Activity Log gives a broad view of various system activities. If this analysis indicates that there is a problem with the **Voice Modem** function, a more specific analysis can be made by examining the **Voice Modem Log**; if there appears to be a problem connecting to the **SMTP Email Server**, an examination of the **Email Controller Log** will let you evaluate the issue more precisely. ScadaPhone's logs provide an invaluable diagnostic tool for troubleshooting and resolving abnormal system events.

As was stated at the beginning of this document, many features and details were intentionally omitted from this document for the sake of brevity. A more in-depth description of the these features can be found in the **Help Files**.

If you encounter any problems while going through this procedure, contact:

      Email : support@scadatec.com
      Phone : 888-722-3283 (U.S.)

We will be happy to assist you in the evaluation process and look forward to hearing from you.