VoxPro®

Audio Recorder and Editor
VoxPro 7.1

Administration Guide

Wheatstone Corporation

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Section 1. Installing VoxPro 7.1

System Recommendations

Minimum System Requirements

- Windows 7/8/10
- Intel Pentium Core or equivalent
- 4GB RAM
- USB port for hardware key (dongle)
- USB port or COM port for optional control panel
- Soundcard or audio device with WDM/DirectSound driver
- Microsoft .Net Framework 4.5

Recommended System

- Intel Core i5 or better, 3GHz or faster
- GPU with minimum 256MB dedicated graphics memory
- 1TB storage drive
- 8GB RAM
- Additional NIC if running an AOIP driver

When shopping for a computer for VoxPro 7.1, keep in mind that cost-saving features such as “integrated graphics” transfer the load of screen drawing and updating to the CPU, rather than to a dedicated GPU. An AOIP driver also uses the CPU and system memory in place of a physical sound card. Make sure that the computer you choose is up to the task it has been assigned, or it will cause nothing but problems. This is all the more important if you plan on running a resource-intensive application such as a web browser simultaneously with VoxPro 7.1. (Actually, we recommend that you dedicate a separate computer for web browsing and general internet access.)

Software Installation

If VoxPro 4, VoxPro 5, VoxPro 6, or VoxPro 7 is already installed, VoxPro 7.1 will “see” all of your existing user accounts and audio files. If you wish to uninstall the older version first, you may safely do so without affecting any user data or audio files.

Whether you are installing VoxPro 7.1 from a CD or a download, run the installer first, then attach your USB hardware key and the optional control panel after the installer has finished.

In the course of the installation, subsidiary installers from third party vendors will also run. The FTDI CDM driver is the driver for the USB control panel. You may cancel installation of the FTDI driver if you have already run it from an earlier installation of VoxPro7. You will also need to install the driver for your hardware security key (dongle) if you have not already done so.

AppConfig

VoxPro creates an **application configuration** folder at **C:\Users\Public\VoxPro**, which it uses to store configuration files, user lists, and users' audio files. You may set the application configuration folder to another location by creating a text file called **AppConfig.inf** in the folder where VoxPro7.1 is installed (usually **C:\Program Files (x86)\VoxPro7.1)**. The AppConfig file contains one line of text, which is the full path to your preferred configuration folder.

Technical Support

For technical support, please contact our technical support engineers at (252)638-7000 or email us at: **techsupport@wheatstone.com**.

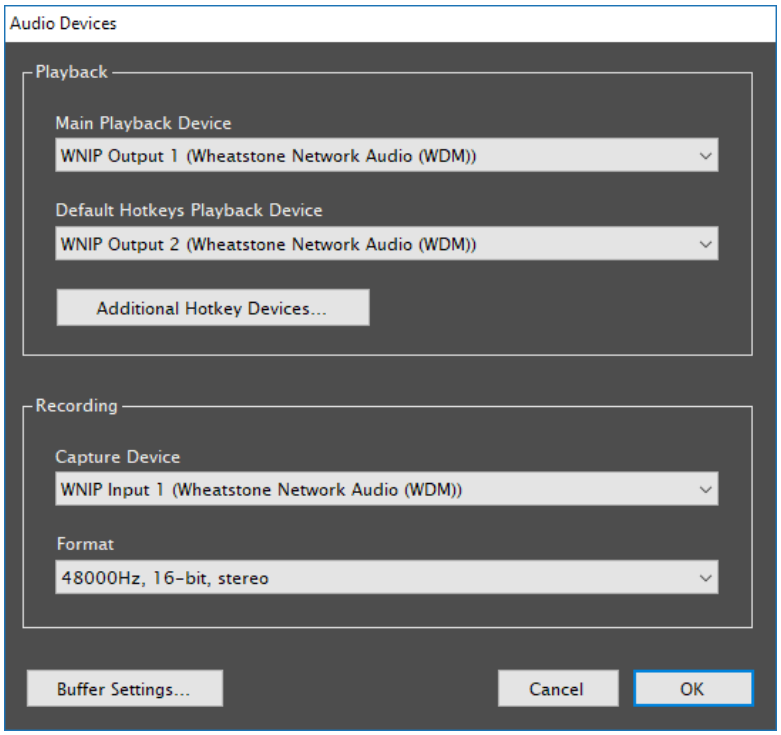
Section 2. Audio Devices and Setup

VoxPro 7.1 requires audio playback and capture devices which are DirectSound compliant. VoxPro 7.1 may use virtually any kind of audio device as long as it supports DirectSound: PCI/PCIe, external USB devices, virtual AOIP drivers, the on-board audio chip-set, consumer and professional soundcards. Please refer to the soundcard vendor's website for driver updates and technical support pertaining to the soundcard itself.

There should be no reason to disable the on-board audio device in order to use VoxPro 7.1. In fact, if you have a second audio device dedicated to VoxPro's use, then we recommend that the on-board device be set as the default Windows audio device, so that audio events external to VoxPro (such as system beeps and alerts, or internet video streaming) do not interfere with VoxPro's own use of audio resources. The on-board audio is also a good back-up resource in the event of problems with your primary audio interface.

Main Playback Device

To configure audio devices in VoxPro, log in to the Admin account, then open the **Audio Devices and Format** dialog box in the **Settings** menu. Choose the **main playback device** from the drop-down list. The **Default Windows Playback Device** refers to the default playback device selected in the Windows **Sound Manager** utility, which is accessible from the **Windows Control Panel**. You do not have to use the default Windows playback device, in fact, it's usually better not to.

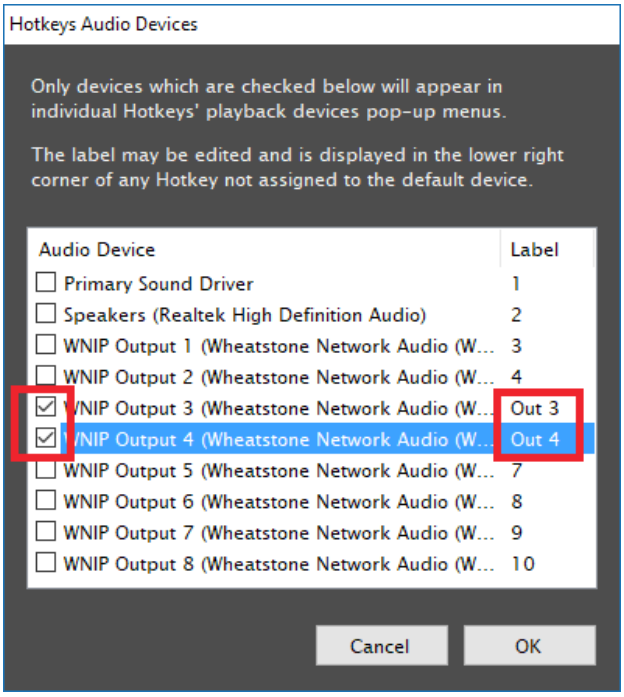


Capture (Record) Devices

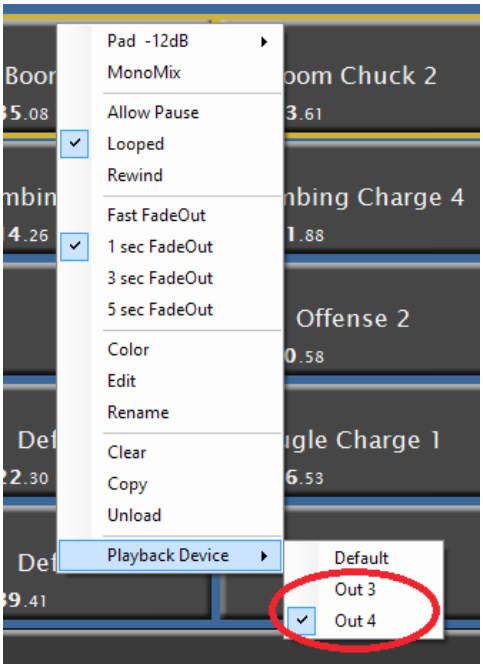
Choose the **capture device** used for **recording** from the drop-down list, and also set the format which will be used for recording and for importing files created outside of VoxPro. If you are using digital I/O (AES-EBU or SPDIF), or an AOIP driver, make sure that the format matches that of the studio network. If you have or are planning multiple VoxPro installations, we recommend that the format be the same on all of them, for maximum ease of file sharing.

Hotkeys Playback Device

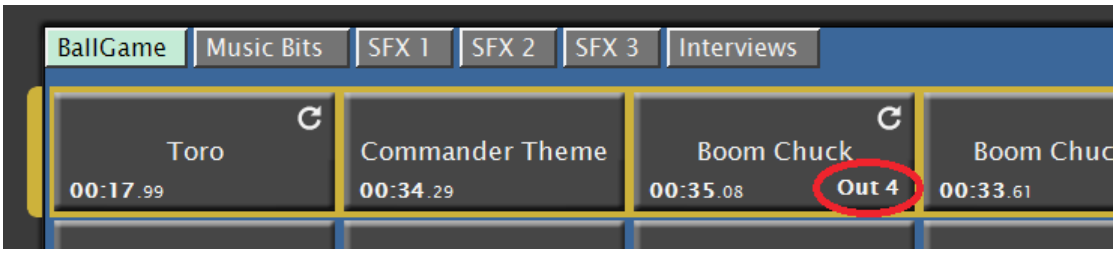
The **Hotkeys playback device** may be the same as your main output device, or you may route Hotkeys to a separate output device (thence to a different fader on the console). Click the Additional Hotkey Devices button to open another dialog box:



This dialog allows you, the Administrator, to control what your users see in the Hotkeys' Playback Devices pop-up menu. In our example, WNIP Output 1 has already been selected for main playback, and WNIP Output 2 has been designated as the default Hotkeys playback device. The Hotkeys Audio Devices dialog lists all playback devices present on the computer, and assigns a default label to each, which is simply its numerical index in the list. Select any additional audio devices that users are allowed to send Hotkey playback to, and edit the label so that it will be meaningful to your users. In our example we allow WNIP Outputs 3 and 4 to be selected as additional Hotkey playback devices. (Keep in mind that this only makes sense if you have routed the selected outputs to the console and they can be auditioned!). The default Hotkeys device is always an option, so your users would then see something like this in the Hotkey pop-up menu:



If the user chooses any playback device other than the default, the label is displayed as a reminder to the user in the lower right corner of the Hotkey cell. In this example, the third cell in the row has been set to play out WNIP Output 4:

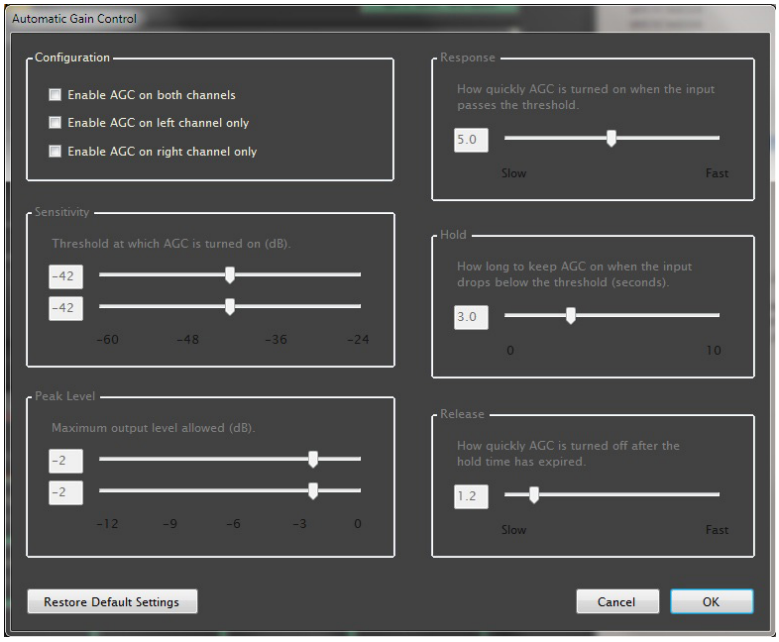


Monophonic Operation

Note that VoxPro may be configured as a **monophonic editor**, reading and writing single-channel audio files, by choosing one of the monophonic formats in the format drop-down list. When a monophonic file is loaded in the Editor, the Effects menu is adjusted so that operations pertaining to 2-channel files are replaced with single-channel versions, or disabled entirely if the operation has no meaning in a single-channel context.

Automatic Gain Control

Automatic Gain Control, or **AGC**, is a process which continuously monitors the incoming signal, turning up the volume when the signal is too low, and clamping down the volume when it gets too high. AGC is applied during the recording process. It operates on each channel independently, and is most commonly used for recording phone calls to maintain an even level on the caller's signal.



You must be logged into the Admin account to configure and enable AGC. From the **Settings** menu, open the **Automatic Gain Control** dialog box. Once enabled, the AGC setting is applied by default when a user starts recording or insert-recording. Users are able to disable AGC on a per-session basis from the **Record Options** dialog box in the **Settings** menu.

The most critical setting is **Sensitivity**, the threshold at which AGC is turned on. Sensitivity must be set to a value higher than the ambient noise floor; otherwise you will be amplifying background noise to an uncomfortable level. The noise floor is the average value displayed by the peak program meters ("VU" meters) when no one is speaking on either channel.

Peak Level is the maximum volume level below 0dB full scale that the compressed signal is allowed to attain.

Response is a measure of how quickly AGC is turned on after the input signal rises above the sensitivity threshold value. If the response is too slow, you will lose the beginning of the word, but if it is too fast, it can sound unnatural and even produce a click.

Hold is the length of time that AGC remains active after the signal has dropped below the sensitivity threshold. An example of the threshold dropping is when you stop speaking or pause between sentences. If the hold time is too short, it will "pump" the volume when you pause and then start speaking again.

Release is the rate that governs how quickly AGC is turned off after the hold time has elapsed. An overly fast release sounds unnatural, while an overly slow release can be annoying.

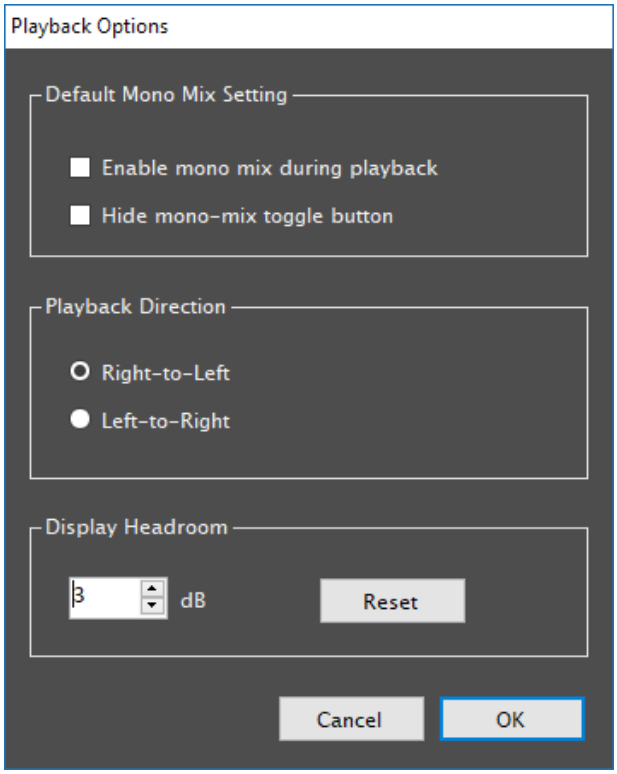
AGC is most effective when it is used to "even out" a signal which is already pretty good, rather than as compensation for signal levels which are inadequate to begin with. Thus, it will boost the volume on a soft caller, but not all callers; it will boost the volume on talent when they turn away from the mic, but not otherwise.

Volume Levels

There are no controls from within VoxPro to set the audio input or output levels. The **Windows Sound Manager**, accessible from the System Control Panel, provides input and output level controls for most audio devices. Many vendors also supply proprietary software control panels for setting levels and other configuration details.

Levels should be set correctly and then not touched. Make sure that AGC is disabled in VoxPro when adjusting the input level on your audio capture device.

The **display headroom** setting in the **Playback Options** dialog box (in the **Settings** menu) allows you to adjust the vertical scale of the displayed waveform in the Editor, essentially creating extra headroom above the top edge of the displayed maximum signal level. Display headroom is purely cosmetic, but can be useful for calibrating talent levels across the board. Like most of the options in the Settings menu, the value you set as Administrator becomes the default value for other users, but the Admin settings can be overridden on a per-user basis.



Section 3. VoxPro Hardware Control Panel

The current model RC-500 control panel is displayed in the Appendix 1 of the VoxPro 7.1 User Guide. It is currently available only as a USB 2.0 device. The current firmware, displayed in the LCD at boot-up, is Rev. 2.03. Earlier RC-500 models differ from the current all-black version only in the exterior paint.

An earlier RC-400 model had a raised jog wheel surrounded by a shuttle ring, located in the middle of the control panel, and a somewhat different button layout. Both the RC-400 and RC-500 were once available in a serial (RS-232) version as well, and many of these devices are still in service.

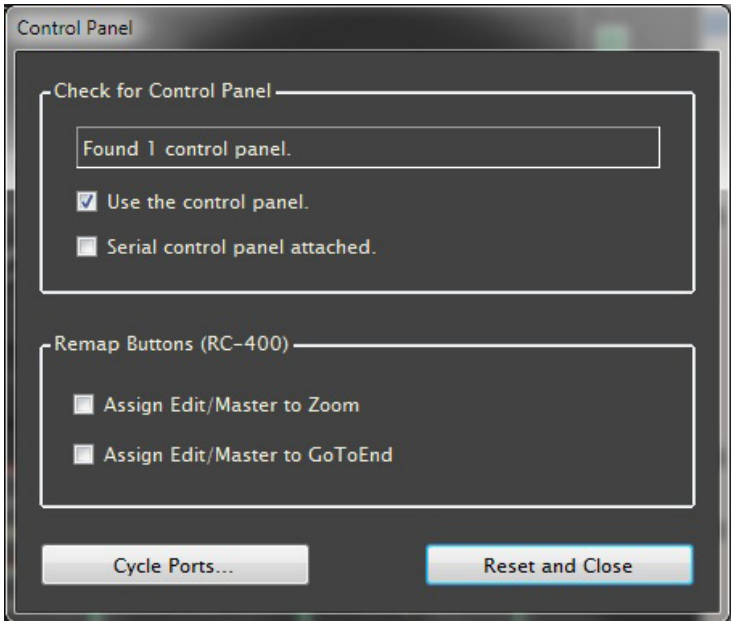
VoxPro 7.1 is able to use any version RC-400 or RC-500, serial or USB, control panel. These devices are manufactured for VoxPro by JL Cooper Electronics. JL Cooper also services controllers which are no older than seven years. (That rules out all RC-400 models as of the writing of this guide.) Parts for all models are available directly from JL Cooper. A parts list and RMA instructions for returning the control panel to JL Cooper for repair are available online at: **www.wheatstone.com/voxpro/voxpro-system-2**.

The current USB controller uses a driver from Future Technology Devices International (FTDI), found online at **www.ftdichip.com**. This driver is installed during the installation of the VoxPro software.

Basic Configuration

While logged in to the Admin account, open the Control Panel dialog box from the Settings menu. If you have a control panel, check the use the control panel option. If you have a serial control panel, select the serial control panel attached option. Do not select either of these options unless they apply; otherwise, VoxPro will expend resources trying to connect to the (non-existent) controller.

Note that you may connect up to four control panels (one of which may be serial) to one VoxPro computer.



Adapters and Extenders

The serial controller requires an external power supply (9V DC, 500mA, positive tip). Most computers sold today no longer have a COM port, but a serial-to-USB adapter is available from online retailers. Specifically, the ATEN UC-232A is the only adapter we have found which works with the VoxPro control panel.

If you need to extend distance between the USB control panel and the computer more than about 15 feet, you will need an **active extender** that can provide 500mA at the remote end (where the controller sits). We recommend you purchase a good-quality extender to avoid loss of connection and ensure reliable performance. We have been impressed with the extenders available from Network Technologies Incorporated, online at **www.networktechinc.com**.

Remapping Buttons

Not all versions of the control panel have the same set of buttons on the working surface. If your model does not have a **GoToEnd** button or a **Zoom** button, you can remap the **Edit|Master** button to perform either of these functions. These options are available in the **Control Panel** dialog box in the **Settings** menu. Note that the Admin settings will become the default user settings, which individual users may override. (Note that the current controller model does not have an **Edit|Master** button.)

Remote Control Jack

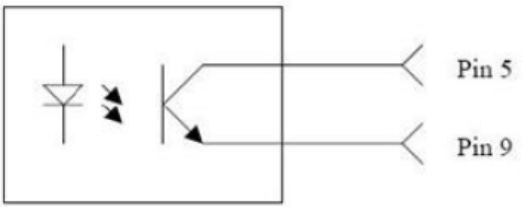
The 9-pin D-sub connector on the back of the RC-400 and RC-500 control panel is used to supply contact closures for triggering Play, Record and Stop functions from a remote device such as a studio console. There are also two opto-isolators on this connector that can be used to switch on a Record tally light or drive a relay when playing a Hotkey.

If you are running a **WheatNet AOIP** driver, then a much fuller set of bi-directional remote control functions is available directly through the driver. This interface described in greater detail at the end of this Admin Guide.

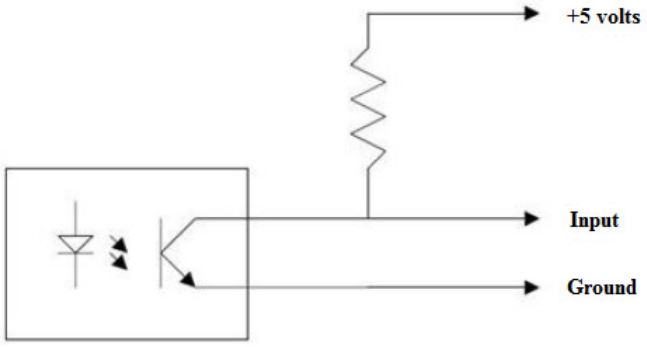
Pinout Diagram for Remote Functions:

Pin 1 - Common
Pin 2 - Play from Beginning
Pin 3 - Play from Cue
Pin 4 - Record
Pin 5 - Record tally, opto-isolator collector
Pin 6 - Hotkey tally, opto-isolator collector
Pin 7 - Hotkey tally, opto-isolator emitter
Pin 8 - Stop
Pin 9 - Record tally, opto-isolator emitter

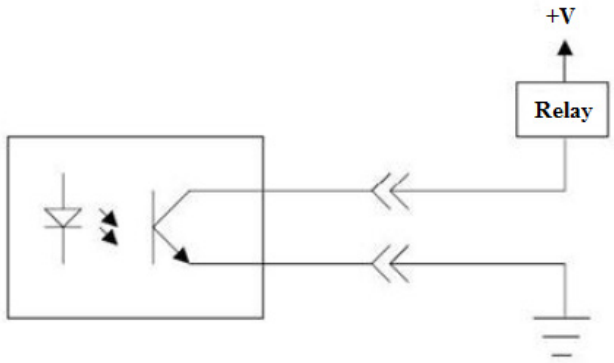
Output circuit of the GPI:



A typical circuit for connecting to equipment requiring CMOS or TTL levels:

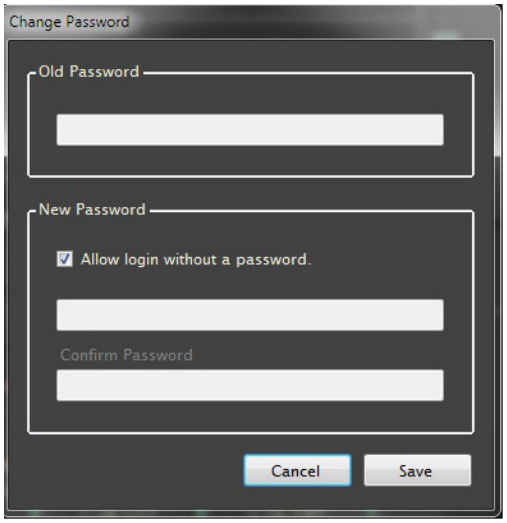


This is a typical circuit for connecting to equipment that requires a contact closure. Maximum current is 0.1A DC, maximum voltage is 50V DC:



Section 4. Creating and Managing User Accounts

When VoxPro is initially installed, there are only two user accounts, Administrator and Guest. The Guest account is always available to any user, and cannot be password protected. The Admin account is used to create and manage user accounts, and to make global settings that apply to all users. You may password-protect the Admin account (or any user account) by opening the **Change Password** dialog box from the **Settings** menu.

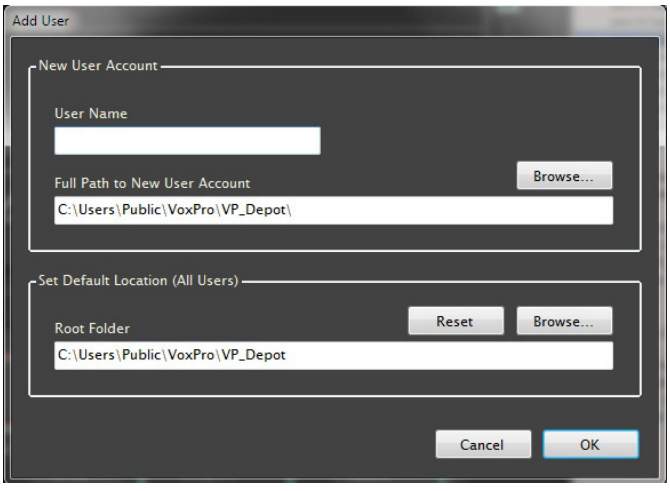


The Admin account can be used to create default settings for other users' preferences and custom settings. For example, the options you select in the EZ-Export Setup dialog will be the default EZ-Export settings for normal users. Users may customize or override these default settings within their own accounts.

We strongly recommend that you create a personal account for each user on the system, rather than expecting all users to share the same account. The reason for this is not only for personal privacy, but also because a large file collection in one account is slower to access and more difficult to manage than smaller file collections spread amongst several accounts.

Add User

To create a user account, select **Add User** from the **Accounts** menu. Note that there are two panels within this dialog box. The lower one displays the default root folder for VoxPro user accounts. By default, this location is located within the **Public** folder on the C: drive. The reason for this is that the Public folder is normally read/write accessible by everyone, and is also commonly shared with other computers on the LAN – so much so that there are specific tools in the Windows system control panel to streamline the process. However, you may change the default user root folder to any location, even a remote drive or NAS drive. The path to the default root folder may also be a UNC path, in the form **\\server\sharepoint\path\to\folder**.



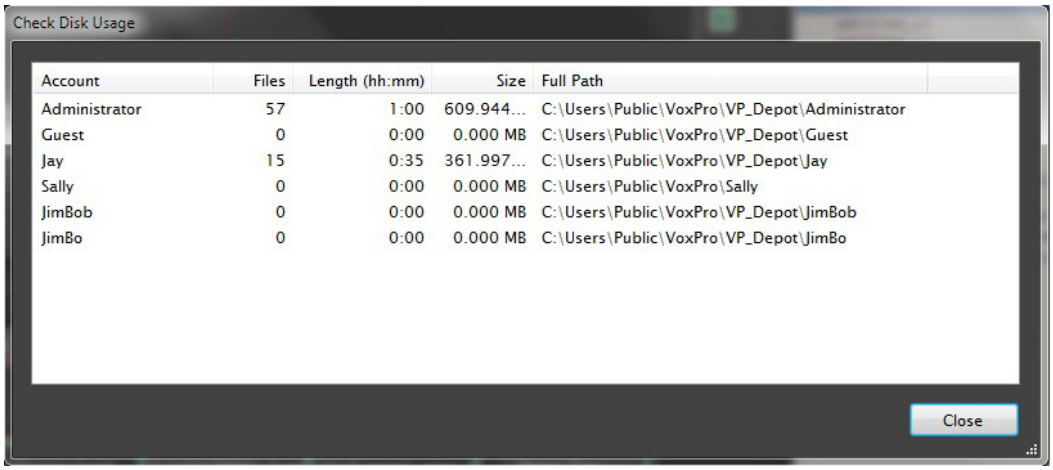
In the upper panel of the **Add User** dialog box, as you enter the new user's name, the path to the user's account is filled in. You may also change this path to any location. There is no requirement that all users must be in the same folder. In fact, one way to impose a file quota on your users is to create several partitions on a hard drive, then give each user his or her own partition.

In VoxPro parlance, user accounts created on a given computer are "owned" by that computer and are considered to be "local" users. User accounts created on other computers are "remote" users. If you create an account called "Mary" on two different

VoxPro computers (let's call the computers "Vox1" and "Vox2"), then you've created two different accounts: <Vox1>/Mary and <Vox2>/Mary. (Well, actually, that's only true most of the time. If the path to each Mary account points to the same network location, then the two accounts are effectively the same.)

User Stats and Info

You can get a quick overview of all the local users on a given computer with the **Check Disk Usage** dialog box in the **Accounts** menu. This dialog displays the amount of disk space consumed by each user, as well as the full path to each user's account.



Auto-Login

The **Auto-Login** feature is useful in situations where every VoxPro user also has their own Windows user account. This is especially common it environments in which a domain controller is in force, and every user logs in to their own domain account. If Auto-Login is enabled, then if your Windows user name matches your VoxPro user name, you will be logged into your VoxPro account automatically when you launch VoxPro from the desktop.

A Peek at the User Configuration File

VoxPro maintains its list of users in a file called **Users_Local.inf**, which is located in the folder **C:\Users\Public\VoxPro**. This file is a text file and may be edited manually using NotePad or WordPad. The file is not created until you add a user (aside from the default Admin and Guest accounts). When you open the file, you see that it is simply a list of full pathnames to each user's account.

Editing the **Users_Local** file manually lets you perform large-scale changes to the file system quickly and easily. For example, you can **add users, delete users, or move users**; simply by adding, deleting or changing the corresponding paths to those accounts. Close VoxPro before making any changes to Users_Local. After saving your changes, restart VoxPro.

Note that **deleting a user manually** from Users_Local is not the same as deleting that user's folder and files from the hard drive. That must be done manually, using Windows File Explorer or another command shell. Likewise **moving a user**: the Users_Local file simply tells VoxPro where a user's files are located currently, and carries no information about where they might have been in the past. If you have edited a user's path, then you should also ensure that the new path exists and move the user's files to that location,

or VoxPro will not see them. (No need to do this if there are no audio files to move: VoxPro will simply create the new path for you.)

Configuration Files from Remote Machines

Unless you explicitly disable the VoxPro Network, VoxPro broadcasts a list of its own local users over the LAN upon being launched. The local user list is also broadcast any time it is changed (for example, by adding or deleting a user from the **Accounts** menu), and it is also broadcast in response to receiving a user list from a remote VoxPro computer.

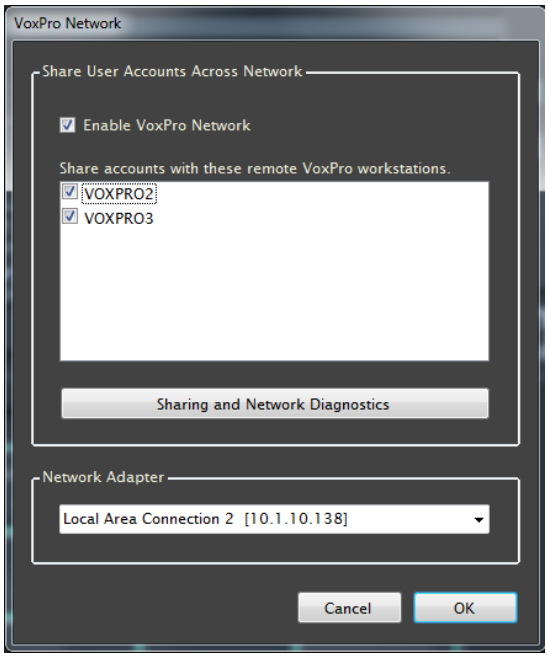
When a user list is received from a remote computer, VoxPro creates a user configuration file for that computer in the configuration folder C:\Users\Public\VoxPro. These remote user files take the name of the remote computer that sent them. For example, if you are on a computer called KXYZ-Vox1, and there are two other VoxPro computers in the station called KXYZ-Vox2 and KXYZ-Vox3, then you might also find files called Users_KXYZ-Vox2.inf and Users_KXYZ-Vox3.inf in the configuration folder. You should not try to edit these remote user configuration files. Any changes you make will be overwritten by VoxPro the next time it receives a user list from that computer.

Users on remote VoxPro computers are listed in the **Login** window after all the local users. So, for example, if there are accounts called Andy and Mary on KXYZ-Vox2, then you'll find <KZYX-Vox2>Andy and <KXYZ-Vox2>Mary in the login list. You'll also see remote users referred to in this manner in various menus within VoxPro, for example the **Copy To** function in the File List.

Occasionally a computer is removed from service, moved to another location, or given a new hostname, leaving a **"zombie" user list** in your configuration folder. The only ill effect of this is to create an annoyance – a list of users in the Login window which are no longer accessible. To fix it, simply delete the zombie user list from your configuration folder, then restart VoxPro.

VoxPro Network Configuration and Diagnostics

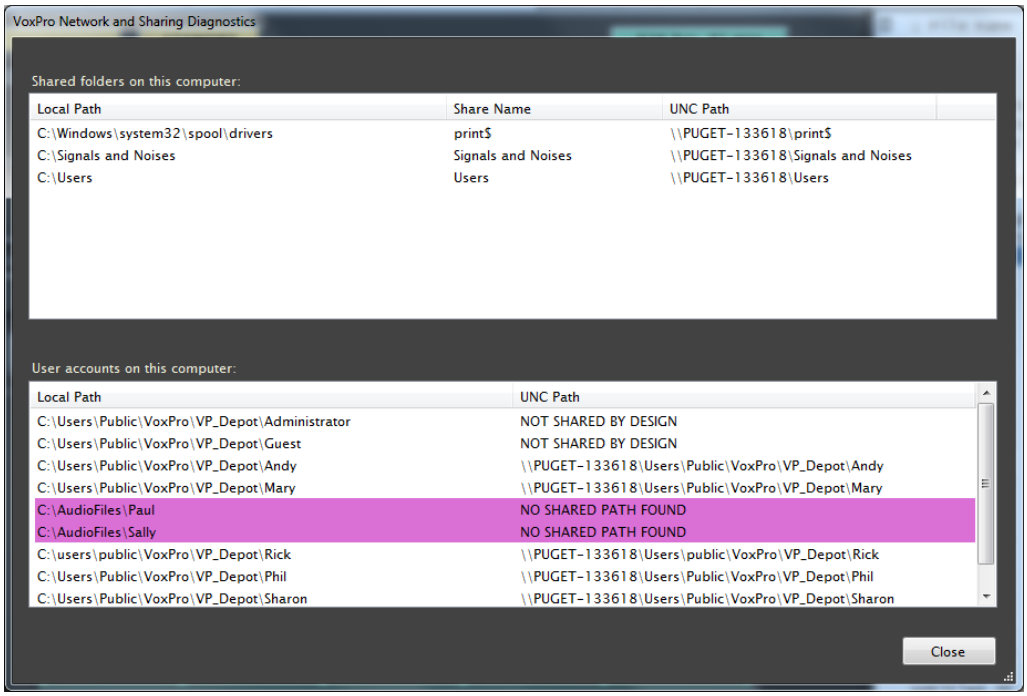
The **VoxPro Network** dialog box in the **Settings** menu provides access to network configuration settings, as well as diagnostic information about shared folders. By default, the VoxPro Network is enabled. If you disable it, then you are putting VoxPro in **standalone mode**, which by extension means that you have no further worries about remote access, file sharing, etc.



Note that you may also enable or disable access to user accounts which reside on remote machines on the LAN on a per-machine basis.

The **Network Adapter** setting is only meaningful on computers with multiple network interface cards, as it determines which NIC is to be used for internet connections, remote file access, and for broadcast messages to and from other VoxPro computers on the LAN. (Which would normally not be the same NIC used for your AOIP network.)

The **Sharing and Network Diagnostics** dialog box displays two crucial pieces of information which are useful when troubleshooting remote sharing issues. In the top panel is a list of the folders which have been shared on the local computer, along with the UNC paths to those locations. (This is essentially the same information that you'll find in the Windows **Computer Management** utility, under **System Tools / Shared Folders / Shares**.) In the bottom panel is a list of the local users, with each local path resolved to a UNC path if it exists. Users for which no shared path can be found are prominently highlighted.



Be aware that VoxPro uses **UDP broadcast protocol** on port 33333 to exchange user lists and send file update notifications. If VoxPro is blocked from sending or receiving UDP broadcast messages, VoxPro Network functions will not perform as designed.

File Sharing and Remote Access in Windows

It was stated earlier that VoxPro broadcasts its local user list over the LAN under various conditions. This is not entirely accurate. More precisely, VoxPro broadcasts that subset of its local user accounts which can be shared to the network. The Admin and Guest accounts are never shared, and are therefore never broadcast. Other user accounts are broadcast only if they reside in a folder which is shared to the network, meaning that the local path to the account can be resolved to a valid UNC path, or that the account is already in the form of a UNC path.

VoxPro abides by Windows protocols governing file sharing and remote access. If a domain controller has been configured on your LAN, then it manages access to all resources on the LAN. On a simple peer-to-peer network, you must configure sharing and remote access separately for each computer on the LAN.

There are three basic requirements to access an account on a remote computer: the folder the user account resides in must be shared to the network, the folder must allow full read and write permissions for all users, and certain conditions regarding user credentials must be satisfied.

Let's look at the sharing and permissions first, since they go more or less hand in hand. In Figure 4.1, we are looking at the **Sharing Properties** of the folder C:\Users, and we see that this folder has been shared to the network as \\PUGET-133618\Users (this computer's hostname is PUGET-133618).

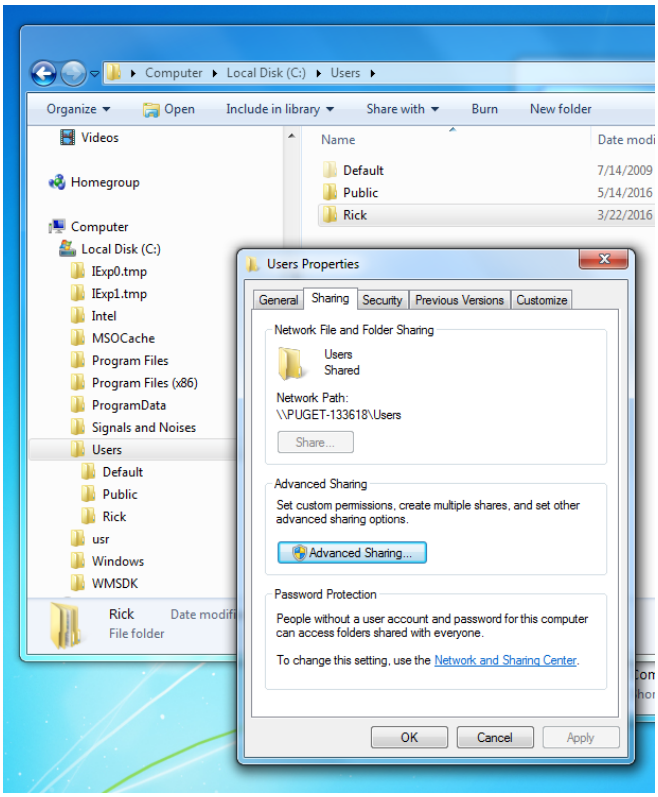


Figure 4.1 – Sharing Properties for the Users folder on the C: drive.

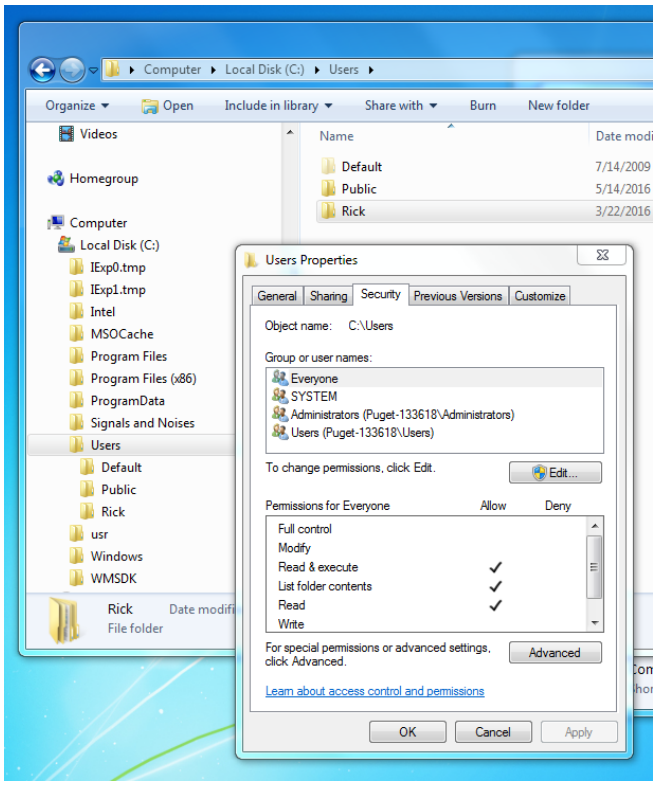


Figure 4.2 – Security settings on the top-level folder C:\Users.

Figure 4.2 shows the Security settings on the same folder. We see that anonymous users (the Everyone group) are allowed to read files in the folder and list folder contents, but no permission to change anything.

Now let us drill down deeper, to the Public folder, which is contained within the Users folder. Since Public is a subfolder of C:\Users, it inherits the sharing properties of its parent. In Figure 4.3, we see that it can be accessed remotely as \\PUGET-133618\Users\Public. Its security settings, however, may differ from those of the parent folder.

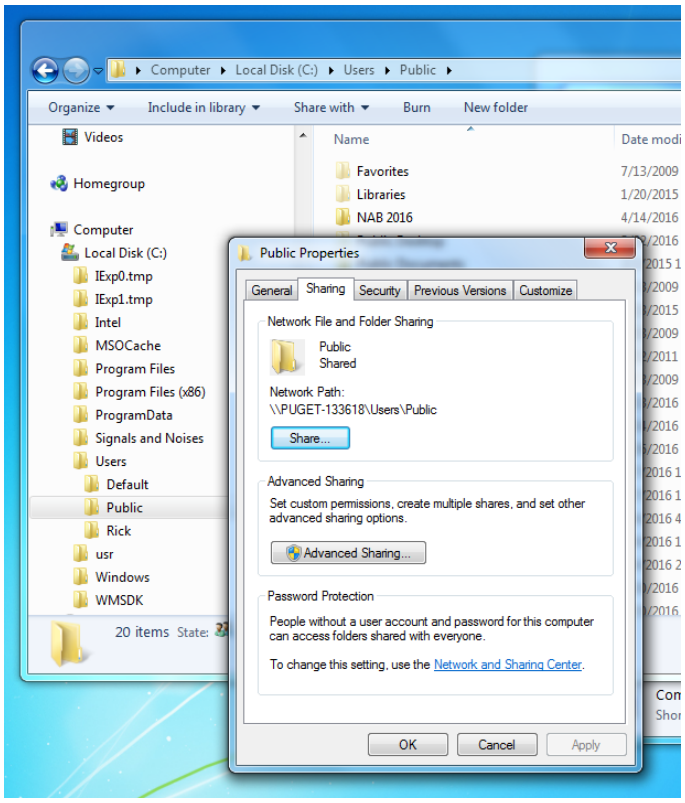


Figure 4.3 – Sharing properties for the folder C:\Users\Public.

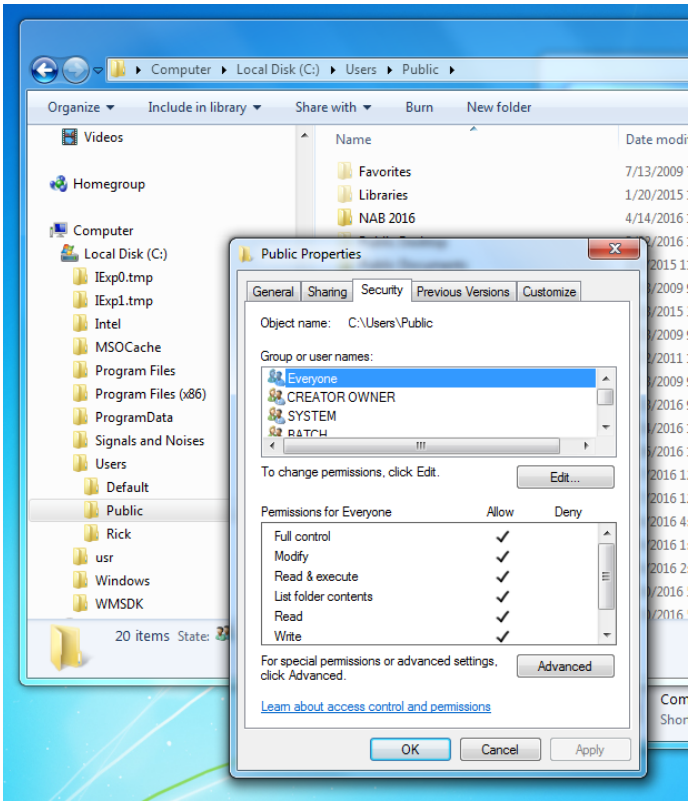


Figure 4.4 – Security settings for the folder C:\Users\Public.

In Figure 4.4 we see that file access within the Public folder has been made much more permissive than in its parent, and that all users have full read and write control.

If we drill all the way down to a user account folder, we can see that it inherits the network sharing properties of its top-level parent. In Figure 4.5, for example, we see that the user account Rick is accessible on the network as \\PUGET-133618\Users\Public\VoxPro\VP_Depot\Rick.

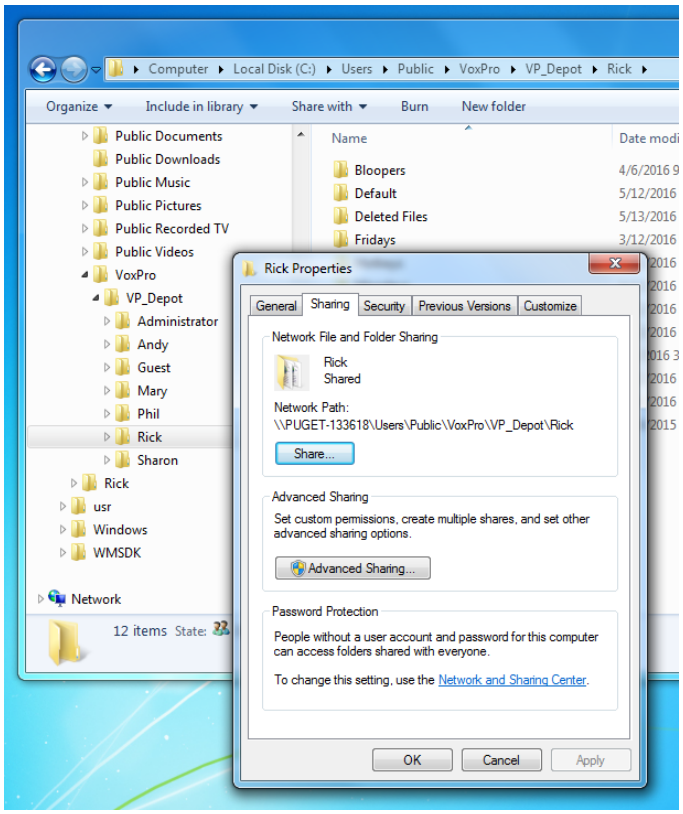


Figure 4.5 – Sharing properties for a user folder, inherited from a higher level folder.

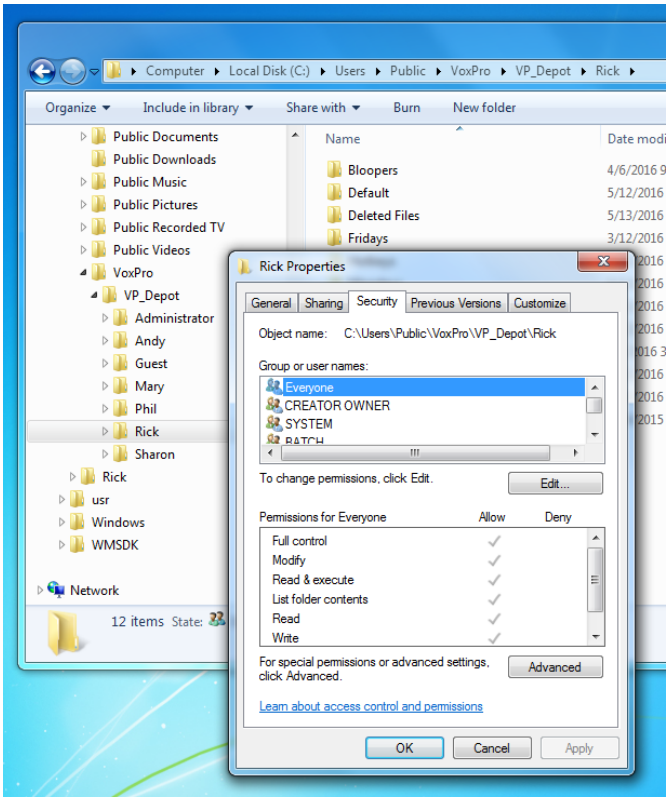


Figure 4.6 – Security settings for a user folder, inherited from a higher level folder.

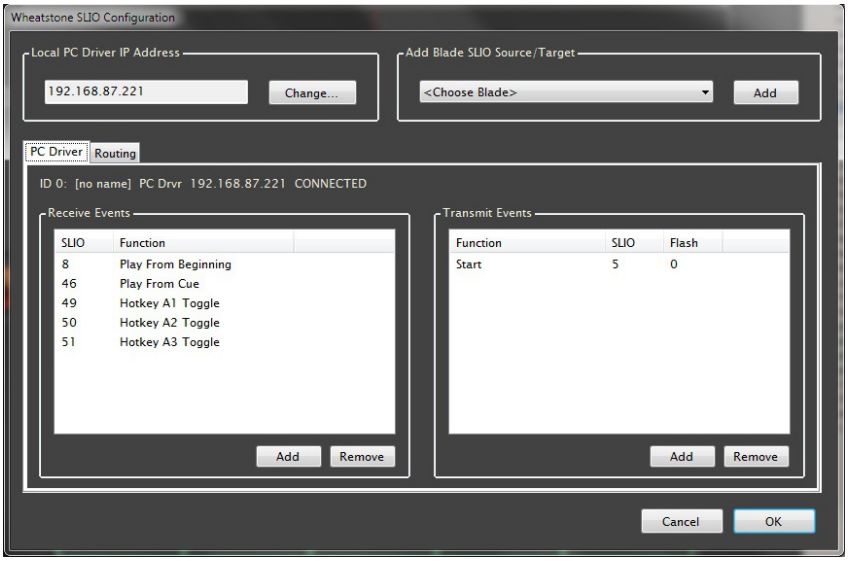
In Figure 4.6, we can see that the security permissions set for C:\Users\Public have also trickled down to this folder.

User credentials are handled in a different manner. The easiest method is to give all network users access to the Public folder, and to turn off password-protected sharing. Both of these options may be selected in the Windows **Network and Sharing Center**, under **Advanced Sharing Settings**. Look for the options called **Public folder sharing** and **Password protected sharing**. It should be sufficient to enable these options in the **Home or Work** profile, which is more secure than the Public profile.

Another way to accomplish essentially the same thing is to create the same Windows user account on each VoxPro computers on the LAN, using the same password. A user logged into a given Windows user account on one computer is given unfettered access to shared folders on a remote computer as long as the same user account and password combination exists on the remote computer.

Section 5. WheatNet Routing and Remote Control Functions

If the **WheatNet AOIP driver** is installed on the computer, VoxPro can use the WNIP ACI channel for sending and receiving Software Logic commands (SLIOs), and for sending source/destination routing commands as well as salvos. The **WheatNet Configuration** dialog box is available in the **Settings** menu if the WNIP driver is installed.

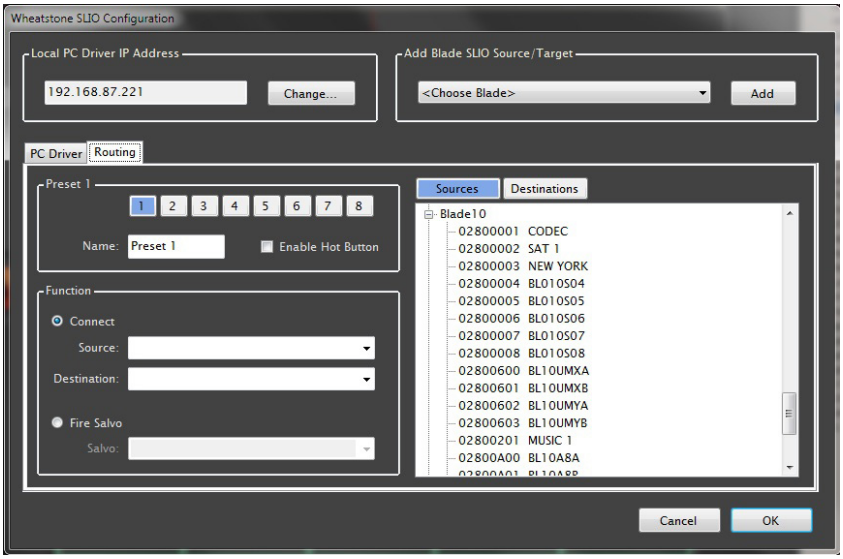


When VoxPro initially detects the presence of the WNIP driver, it prompts you for the IP address of the driver, which you may find in WheatNet-IP Navigator, or in the WheatNet Driver Configuration utility. Once you supply this address, you will not need to do it again unless the address of the local driver changes.

Most of the time, VoxPro will be sending and receiving messages to the local PC driver, but if you need to talk to a specific BLADE on the WheatNet-IP network, you may add an additional tab page for messages to and from that BLADE.

Incoming SLIOs may be mapped to basic transport controls (Play, Stop, Record), as well as starting and stopping Hotkeys.

Transport functions initiated from VoxPro (via control panel, keyboard or mouse) may be mapped into **outgoing SLIOs**. Playback, Record and Hotkey **Tally** functions are also available, which allow you to control button LEDs on console surfaces, or the On-Air light outside the studio door. The Play and Hotkey tallies also allow you to set a **warning flash** as playback approaches the end of the file.



Connections between WNIP **destinations** and **sources**, anywhere on the WheatNet-IP network, may be "rewired" by creating **routing presets** and assigning them to Hot Buttons that are then displayed in the main window menu bar. These functions are available from the **Routing** tab in the WheatNet Configuration dialog. Note that the Destinations and Sources tree views on the right side of this panel are for reference only, in case you don't have Navigator running somewhere

close by. Use the drop-down Source and Destination lists on the left side of the panel to create connection presets, or choose a **Salvo** (previously created in Navigator) to create a salvo preset.

Please refer to the *Wheatnet-IP BLADE3 Audio Over IP Network* manual for complete information about SLIOs, sources, destinations and Salvos.