



# Digital Space Traveler User Guide

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# 1 . . . Introduction

With Digital Space Traveler (or simply "Traveler"), groups of people are able to talk with their own voices through expressive and animated avatars in three-dimensional virtual communities over the Internet. (Avatars are on-line 3D models that people use to personify themselves while online in a Traveler session.)

Natural conversations are achieved through low latency, full-duplex, real-time voice technology over TCP/IP networks, including direct dial-up or ethernet Internet connections. Through Traveler's 3D sound features, users are fully immersed in the virtual environments with realistic social dynamics.

Digital Space Traveler works as a *Netscape Navigator* (3.0 or later) or *Microsoft Internet Explorer* (3.0 or later) Web browser helper application. To begin communicating over the Internet with your own voice, download and install Digital Space Traveler right away (see ["Getting Started"](#)).

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## 2 . . . Getting Started

To get started using Digital Space Traveler, ensure that you have the proper equipment and that your sound and microphone equipment is properly configured. The following sections cover these areas.

### System Requirements

To run Traveler, you will need the following hardware:

- Pentium or Pentium Pro Multimedia PC--not a 486; not even a very fast 486
- Windows 95 or above
- A PPP Internet connection. SLIP connections are not currently supported.
- Minimum of 16MB RAM (32MB RAM recommended for Windows NT 4.0)
- Internet connection: either 14.4k bps modem, 28.8k bps modem (recommended), or LAN/ISDN connection
- Microphone and speakers, or headset with microphone
- *Netscape Navigator* (3.0 or later) or *Microsoft Internet Explorer* (3.0 or later)
- Sound card and Windows driver

### Hardware Setup and Test

Ensure that your hardware is properly set up to connect to the Internet. Check that your microphone and sound equipment work properly by reviewing the following sections.

## Checking Your Microphone and Sound Equipment

It is important to verify that your microphone and speaker equipment are properly set up *before* going online because without these two integral components, you will not be able to communicate. Check your equipment, as follows:

1. From the Windows *Start* menu, select *Programs/Accessories/Multimedia/Sound Recorder*.
2. From the *Sound Recorder* window, click on the red dot "record" button and speak into your microphone for a few seconds. When you have finished recording your voice, click on the black rectangle "stop" button.
3. Click on the single black arrow "play" button to replay your recorded voice through your speakers (or headset). You should be able to hear your voice as you recorded it. If not, refer to the following section.

## Troubleshooting Your Sound System

If you are not able to hear your recorded voice, check for a problem in one or more of the following areas:

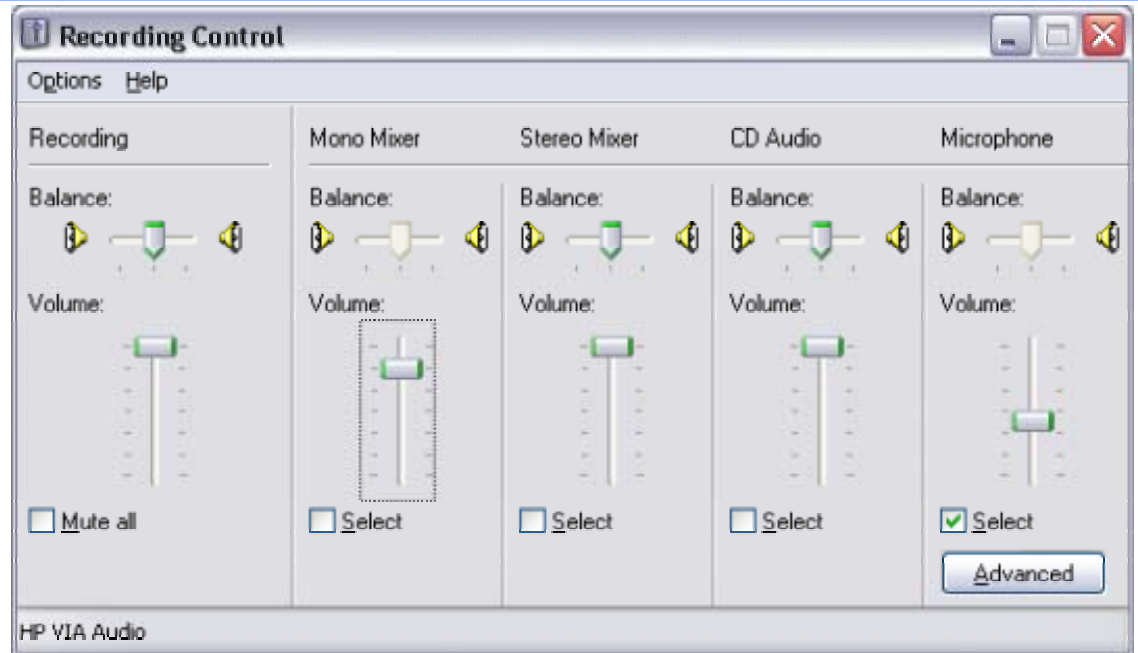
- **Check the volume control on your speakers.** Is the volume knob turned up?
- **Check the hardware.** Are the speaker and microphone jacks tightly seated? Is the microphone plugged into the proper input jack on the sound card? (Be sure it is not plugged into a modem or speakerphone jack.)
- **Check the microphone configuration.** Is the microphone selected as an input device for recording? Check your configuration with these steps:

1. Check the microphone's on/off switch, if there is one. Make sure the microphone is turned on.
2. Double-click on the yellow speaker icon on the Windows taskbar (lower-right corner of the screen). A *Volume Control* window appears.

(If the speaker icon is not present on your screen's taskbar, select *Settings/Control Panel/Multimedia* from the Windows *Start* menu. Check the "Show volume control on the taskbar" setting in the *Playback* panel of the *Audio* property page.)

3. Select *Options*, then *Properties*. A *Properties* window appears.
4. In the *Adjust Volume for* panel, select "Recording" and ensure that "Microphone" is checked in the list beneath the panel. (If not, then select it.)
5. Press the "OK" button and the *Recording Control* window appears, similar to Figure 1 (the window may vary slightly depending on the installed card and driver).
6. In the "Microphone Balance" controls area, ensure that "Select" is checked and that the "Volume" slider is set within the mid to high range.

*Figure 1 : Microphone Balance Panel (Part of Recording Control Window)*



## Downloading and Installing Digital Space Traveler

Download Traveler from Digital Space Commons Web site (<http://www.digitalspace.com/index.html>) and install it, as follows:

1. Click on the Digital Space Traveler download link. When the *Save As...* window is displayed, indicate where to save the downloaded executable file.
2. Double-click on the downloaded executable file.
3. An *InstallShield Self-extracting EXE* window is displayed, prompting to continue installation. Press the "Yes" button, and the files begin to get extracted.
4. The "Setup" installation screens are displayed. Follow the prompts, including choosing a destination to install Traveler (or assume the default).
5. When installation is complete, you are prompted to restart your computer. *Traveler cannot be launched until you restart your computer.*
6. After restarting your computer, you should be ready to "Go Traveling"

## 3 . . . Traveler in 7 Steps

So you are excited, and want to be in Traveler now, and don't want to read through an entire user guide. We'll get you there, in just 7 easy steps.

Fair warning though. The virtual community is a community unlike any other, so after going through these steps, you may want to go ["Back to the Basics"](#). What you learn from the basics will enhance your virtual experience.

Perform the following steps to get Traveling as soon as possible:

1. Download and install Traveler on your Multimedia Pentium PC. (Refer to ["System Requirements"](#) to be sure that you have the necessary equipment.)

**Note:** If you have another application running that utilizes your sound card, you cannot run Traveler simultaneously. Close the other application before launching Traveler.

2. Click on the Digital Space Traveler shortcut icon that was placed on your desktop during installation.

*Figure 2 : Digital Space Traveler Shortcut Icon*



3. A *License Agreement* window is displayed. After reading and agreeing to the agreement in full, press the "I Accept..." button.
4. In the displayed *Choose an Avatar* window you can choose and name an avatar, then press the "Let's Go Traveling" button.
5. The main Traveler window is displayed, with zooming colored rectangles against a black background, as Traveler finds the selected space (see [Figure 4](#)). You will be joining a "no-connected space" which contains portals to take you into Digital Space Traveler. Choose a portal to take you Traveling!
6. Eventually, the window displays a *space* inside the Traveler *community*. You may see other avatars floating around the space, provided there are avatars in the room (if not use the "where is everyone in this community...." to find and occupied space.)
7. Hold down the [Ctrl] key while speaking, and release it to hear others. (Refer to the ["Speaking and Listening"](#) section.)

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## 4 . . . Back to the Basics

This section provides you with some basics, such as terminology, what to expect when you launch into your first Traveler experience, and some first-time setup procedures.

## Terminology

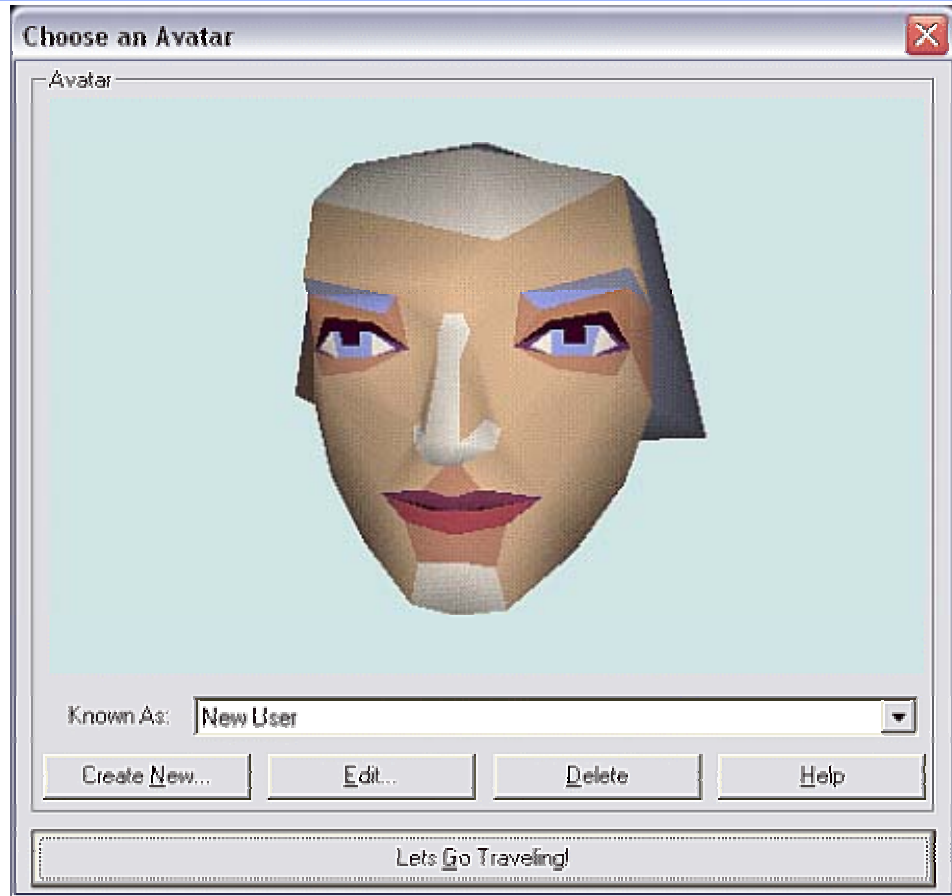
Digital Space Traveler experiences are undoubtedly new and different than any virtual experience that you have encountered before. It is important to give definition to some key terms related to your travels. If these defined terms do not make complete sense to you right away, do not despair. They will soon--as soon as you enter Traveler's virtual communities, experiencing Traveler first-hand.

- **Avatars** are on-line 3D models that people use to personify themselves while in a Traveler session. Each Traveler user joining a virtual space is represented by an avatar model of their choice, which can then be moved around a space through navigational keystroke commands. You can customize avatars by adjusting their appearance (and voice pitch if you have a full-duplex driver and sound card) as well.
- A **community** is a group of spaces collectively grouped together. Within a single community, avatars can move between different spaces by way of portals.
- **Spaces** are 3D environments that you encounter when you enter a community, and again when you travel through different portals. They are the areas where you conduct your 3D virtual experience with other avatars. A space may vary dramatically in scenery, other avatars present, ambient sounds, and floating or stable objects that represent portals or links.
- **User Spaces** are spaces created by users when a regular space is too crowded, or when a user wants to hold a special event such as a discussion on a particular topic. They are temporary spaces in that they only exist as long as at least one avatar is in the user space.
- **Portals** are virtual doors or entrances into other spaces, enabling you to travel quickly between spaces. There are two types of portals: *regular portals* and *user portals*. Regular portals are public portals established by the host of the Traveler site. User portals enable users to create user spaces (or enter existing user spaces). Both types of portals are typically represented in a space by 3D graphical objects (although the objects do not have to be 3D), depending on how the host of the Traveler site designed the space(s).
- **Links** connect you to URL addresses on the Web, which may or may not be within the same Web site from where you begin your travels. Examples of some links could be an event calendar, or a related Web page. Links, like portals, are typically represented in a space by 3D graphical objects (although the objects do not have to be 3D), depending on how the host of the Traveler site designed the space(s).

## What to Expect Once In Digital Space Traveler

When you first launch Traveler, you are presented with the *Choose an Avatar* window, illustrating a default "New User" avatar. This avatar will be your on-line presence in a Traveler virtual community.

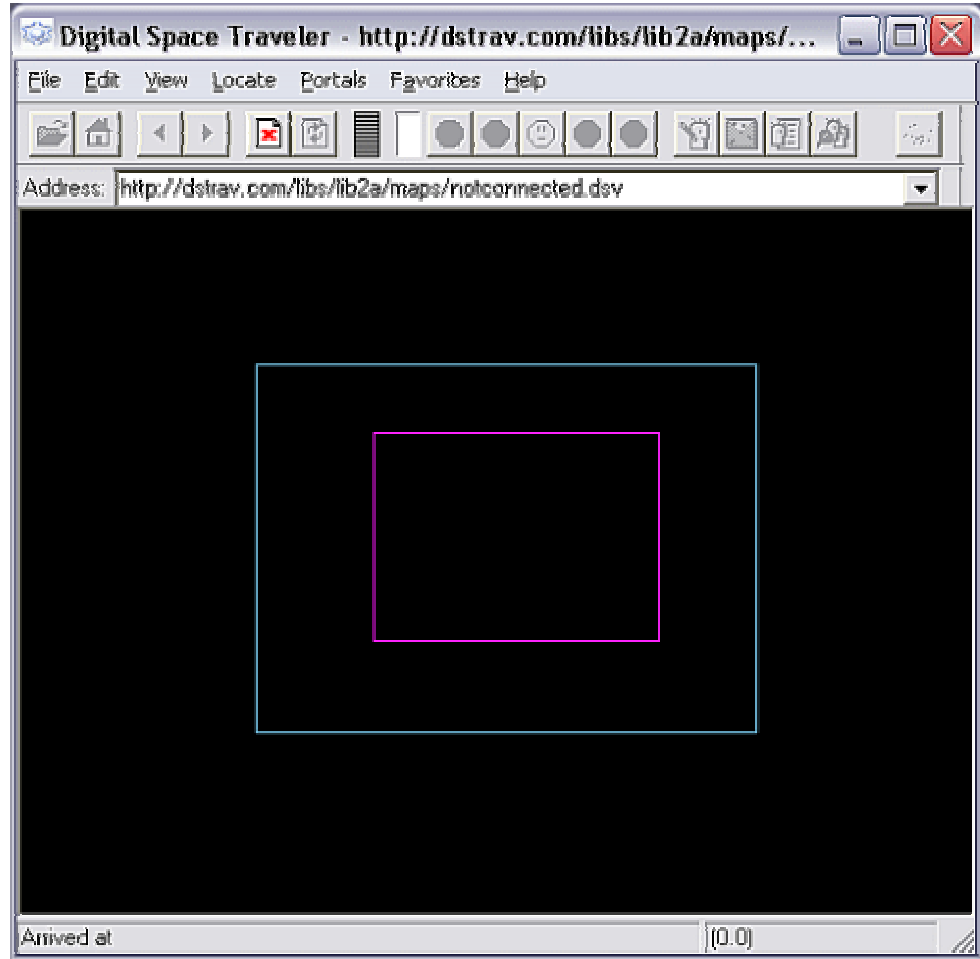
*Figure 3 : First Time New User Entrance*



From this window, you can go Traveling by pressing the "Lets Go Traveling!" button. The main Traveler window is displayed, with zooming colored rectangles against a black background, as Traveler finds a space ([Figure 4](#)).

*Figure 4 : Main Traveler Window While Transitioning to a New Space*



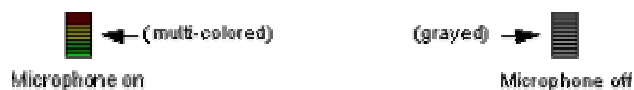


## Speaking and Listening

After entering a space, use the [Ctrl] key to activate and deactivate the microphone, as follows:

- *When speaking* - Press the [Ctrl] key. This action activates the microphone. The colored bars on the Microphone Signal Level Meter on the toolbar fluctuate as your voice level changes. Also when speaking, a red lips icon appears in your Windows taskbar (lower right corner of screen).
- *When not speaking* - Release the [Ctrl] key. This action inactivates the microphone, indicated by a grayed Microphone Signal Level Meter.

*Figure 5: Microphone Signal Level Meter on Toolbar*



If you cannot hear people, or can only hear people faintly, you may be too far away from them. Refer to the

section on ["Navigational Keystroke Commands"](#) to move your avatar closer to other avatars.

Using the [Ctrl] key to activate the microphone is known as *"Push to Talk"* mode. By default, "Push to Talk" mode is on, requiring you to press the [Ctrl] key when speaking and to be heard by others. You can turn "Push to Talk" mode off, and be heard without having to hold down the [Ctrl] key. This option (to turn "Push to Talk" off) is only available if you have a full-duplex sound system (i.e., a full-duplex sound card and driver). Further, you should *only* choose to turn "Push to Talk" mode off if you are using headphones or a headset (headphones plus a microphone). If you do not use headphones or a headset, everything you hear through your speakers is recaptured by your system's microphone, sending echoes to all other avatars in your community space.

To change this mode at any time, access the *Microphone* property page (select *Settings* from the *Edit* menu). Uncheck the "Push To Talk?" check box. Then, press the "OK" button.

**Remember:** You should only turn "Push to Talk" mode off if you wear headphones or a headset.

## Establishing Settings

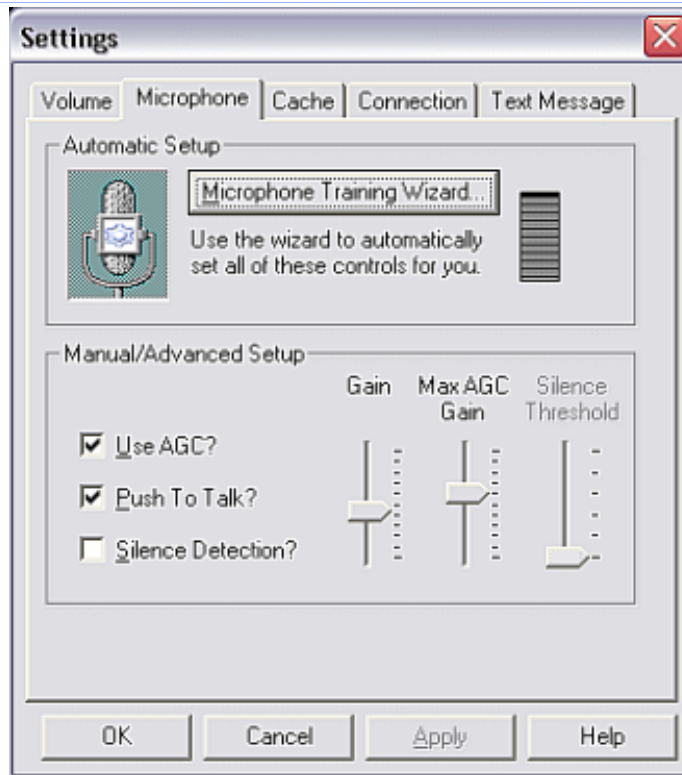
When you launch Traveler for the first time, the *Microphone* and *Connection* properties are already preset. These property pages enable you to adjust your microphone to your voice level and define your Internet connection speed, respectively. The following sections also discuss the *Volume*, *Cache*, and *Text Message* property pages.

To access these property pages select *Settings* from the *Edit* menu. Changes made to the *Volume*, *Microphone*, *Cache*, and *Text Message* property pages take effect immediately upon pressing the "OK" button in a changed property page. Changes made to the *Connection* property page take effect the next time you "Go Traveling".

## Microphone

The *Microphone* property page enables you to adjust your microphone settings to your voice level. The two panels, *Automatic Setup* and *Manual/Advanced Setup*, are described in the following sub-sections. (Also refer to the ["Establishing Settings"](#) section.)

*Figure 6 : Microphone Property Page*



## Automatic Setup

In the *Automatic Setup* panel, the *Microphone Training Wizard* button enables you to run an automatic microphone controls adjustment procedure. During the 6-step guided procedure, your voice level is reflected in the Microphone Signal Level Meter (black box with a fluctuating yellow bar). When the procedure has completed, your microphone settings in the *Manual/Advanced Setup* panel have been automatically adjusted to your voice level and background noises.

After initially running the Microphone Training Wizard, you should not have to run it again, unless someone in your space comments about not being able to hear you. In such a case, if you choose to run the Microphone Training Wizard while in Traveler, you will not be able to hear others, or be heard by others, during the microphone training.

(Note that the Microphone Signal Level Meter also appears on the Traveler toolbar when you are in Traveler.)

## Manual/Advanced Setup

The sliders in the *Manual/Advanced Setup* panel are automatically adjusted by running the Microphone Training Wizard. You can also manually adjust these sliders, or check/uncheck them while in Traveler by

accessing the *Microphone* property page (select *Settings* from the *Edit* menu).

Following is a description of the check box settings:

- **Use AGC?** - This setting refers to using AGC, or Automatic Gain Control, to set a constant volume level for your voice when you speak into your microphone. This makes a whisper louder or a shout softer so that both have about the same volume when projected from another system's speakers. By default, this setting is checked.
- **Push To Talk?** - This setting can be changed in full-duplex systems only. It refers to using the "Push to Talk" mode while in Traveler, a mode that, when activated, requires you to push the [Ctrl] key while speaking and allows you to be heard by others. By default, this setting is checked. Refer to ["Speaking and Listening"](#) to learn more about "Push to Talk" mode. (Note that you should only inactivate "Push to Talk" mode if you are using headphones or a headset.)
- **Silence Detection?** - This setting sends your voice only when the level is above that specified by the Silence Threshold slider (which is set by the Microphone Training Wizard). By default, this setting is checked.

## Connection

There are two panels to the *Connection* property page: *Connection Speed* and *Networking*, which are described in the following sub-sections. (Also refer to the ["Establishing Settings"](#) section.)

*Figure 7 : Connection Property Page*



## Modem Connection

Select the type of Internet connection that you have. Then press the "OK" button.

## Networking with Firewalls

If your connection is via a LAN, you may have a problem connecting if your site is protected by a "firewall." Attempt to "Go Traveling" with the "Use TCP for Voice Packets" option unchecked. If it does not work, try again with the "Use TCP for Voice Packets" option checked. If you are still having difficulties contact your system administrator and provide the following information.

Digital Space Traveler, by default, establishes an outgoing TCP connection to port 3060 of the Digital Space Community Server and uses UDP as the transport for voice packets. UDP packets are sent to and received from server port 3060. In this case, when Traveler connects from inside a firewall to a server located outside the firewall, the firewall must allow outgoing TCP connections to server port 3060 and bi-directional UDP packet flow to and from server port 3060.

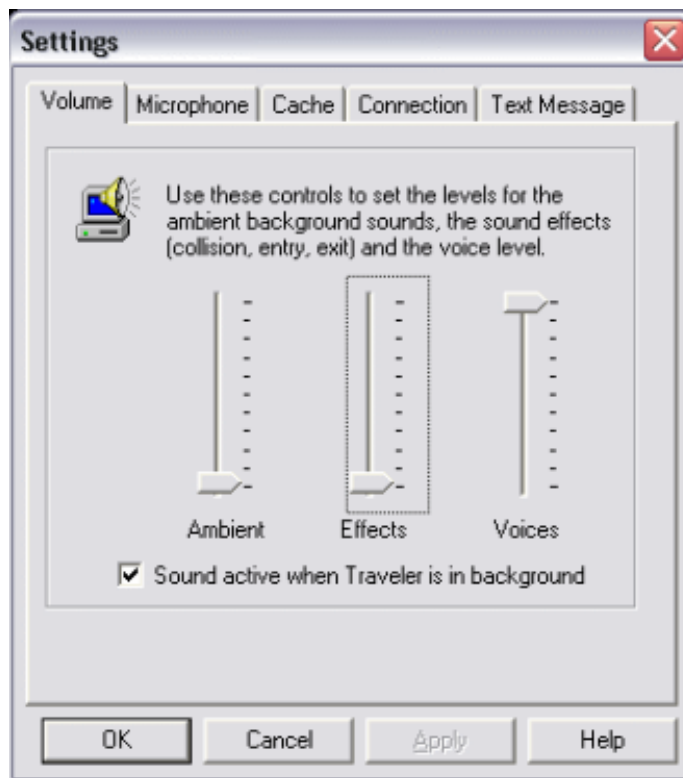
If you are connecting through a firewall, and your firewall is configured to allow a clear path for TCP but not UDP, you may use TCP for voice packet transport. (Select "Use TCP for Voice Packets" in Traveler's *Connection* property page in [Figure 7](#).) With "Use TCP for Voice Packets" selected, the firewall needs to

allow outgoing TCP connections to port 3060 only, and does not have to permit UDP traffic. Using TCP for voice packets, however, may reduce the quality of your audio.

## Volume

The *Volume* property page enables you to adjust the volume levels of ambient, effects, or other voice sounds within a space. (Also refer to the ["Establishing Settings"](#) section.)

*Figure 8: Volume Property Page*



The volume settings are distinguished as follows:

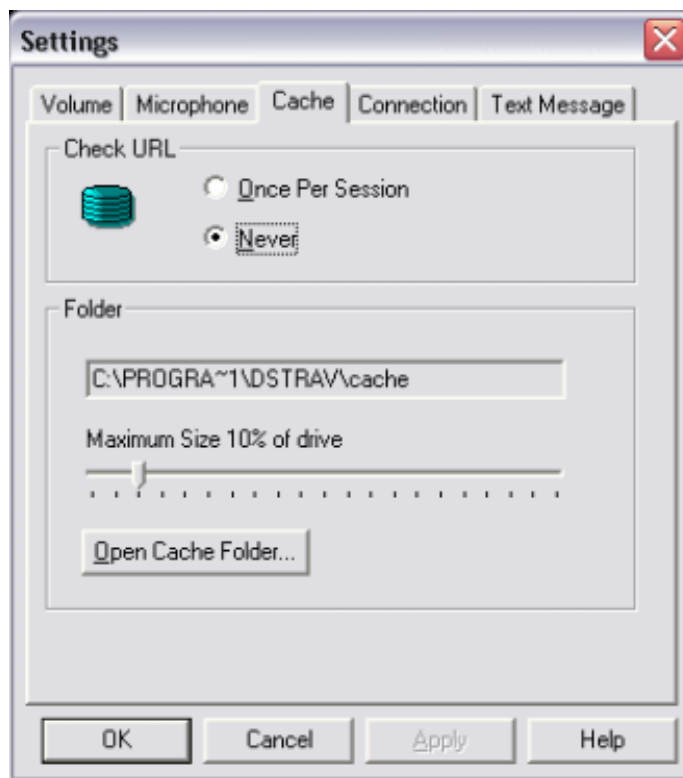
- **Ambient** - The background sounds you hear while in a space (other than sound effects or voice). Ambient sounds are typically specific to the space environment. An example of an ambient sound could be the sound of wind.
- **Effects** - The special effect sounds associated with a particular space. Effects sounds are typically specific to an action or occurrence within a space environment. Examples of effects sounds could be the sounds heard when two people collide in a space, or when a person enters or exits a space.
- **Speech** - The voice level of others in a space. If you are having trouble hearing others in a space, this setting may be set too low. Drag the sliders in the different volume settings higher or lower

according to your preferences. Check the "Sound active when Traveler is in background" option to hear conversations and ambient sound when your Traveler window is in the background or minimized.

## Cache

The *Cache* property page contains settings related to your Traveler cache. [Figure 9](#) illustrates typical cache settings based on a normal installation of Traveler, assuming default paths were not changed during the Traveler installation. (Also refer to the ["Establishing Settings"](#) section.)

*Figure 9 : Cache Property Page*



The cache settings are described as follows:

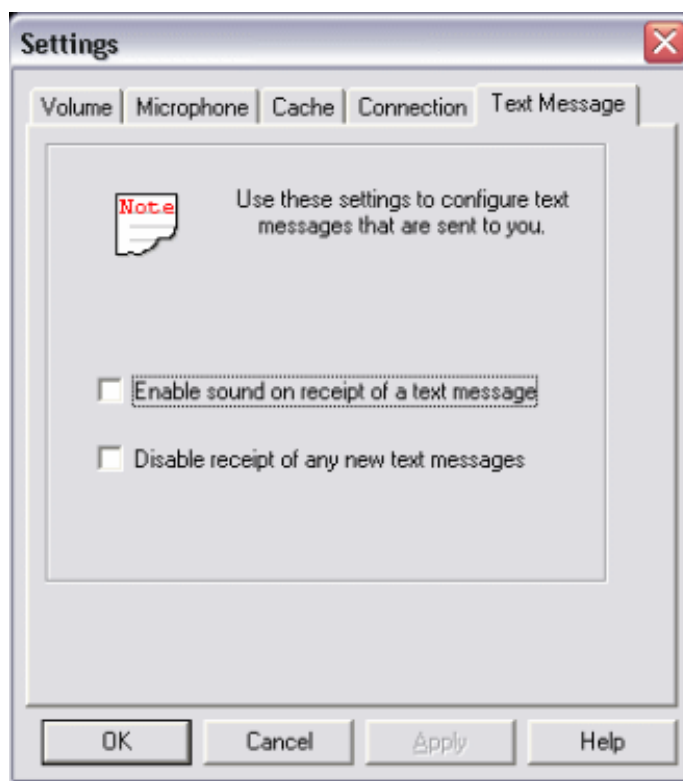
- **Check URL** - Depending on the selection, this setting tells Traveler when to update your cache folder contents: either "Once Per Session" or "Never". If "Never" is selected, the cache will never update old "cached" files with newer versions, which may cause problems with accessing certain spaces. Therefore, "Once Per Session" is the recommended setting.
- **Folder** - Reflects the location of where Traveler cached files are saved.
- **Maximum Size % of drive** - Indicates the maximum size percentage of cache that stores Traveler

specific cached files, as a percentage of your hard drive. When this percentage point is reached, the cached files used the least are purged first. In general, however, none of these settings should require resetting.

## Text Message

The *Text Message* property page settings allow you to enable or disable the receipt of text messages from other people within the same space while in Traveler. (Also refer to the ["Establishing Settings"](#) section.)

*Figure 10 : Text Message Property Page*



If you leave the "Enable sound on receipt of a text message" option checked, you will be audibly notified through a "text message receipt" sound (e.g., ring sound) when you receive a text message.

If you check "Disable receipt of any new text messages", and someone within your space attempts to send you a text message, s/he will receive the error message shown in [Figure 11](#).

If another user has checked "Disable receipt of any new text messages" and you try to send that user a text message, you will be informed that s/he cannot receive your message.

*Figure 11 : Error Message When Text Messaging Is Disabled*





(Also refer to the ["Text Message Button"](#) section.)

## Improving Performance

Following are some ways to improve the performance of Traveler on your system:

- The size of the main Traveler window affects how fast the graphics are rendered. The larger the window, the slower the rendering rate. Reduce your window size to improve performance.
- Extra open windows and/or applications hinders the performance of Traveler. Close extra windows and applications to improve performance.
- To see how your performance is being improved, note the change in the FPS (frames per second) rate on the status bar. As the FPS rate increases, performance improves.


## User Interface




Traveler's user interface is relatively intuitive after a few short journeys into Traveler virtual communities. The following section describes the user interface in great detail, starting off with the menus.







### Menus

Many of Traveler's menus are also accessible using keyboard hotkeys, or toolbar buttons. Table 1 defines all the commands found in Traveler's menus.

*Table 1: Digital Space Traveler Menus*

Menu	Command	Description	Hotkeys	Toolbar Button
File	Open	Opens a <i>Travel To</i> dialog. By typing in a URL to a space, you can travel directly into a space. If the URL is a Web page, your Web browser displays the designated Web page instead.	[Ctrl] [O]	

	Travel To Start Space	Quickly places you in a pre-specified "start space" as defined with the "Set Start Space" command. The default start space is Digital Space's <i>Traveler Destinations</i> Web page. Also refer to the " <a href="#">Settings</a> " section for more details.	---	
	Set Start Space	Allows you to set the space that you are in as your start space. You can then quickly return to your start space after traveling between many spaces.	---	---
	Create Shortcut	Allows you to create a Windows shortcut file that you can store anywhere on your computer. When you double-click on the shortcut file, Traveler is launched, and you are entered into the space that the Shortcut was created for.	---	---
	Exit	Allows you to exit out of Traveler, and consequently the space you were in.	---	---
Edit	Cut	Standard text editing commands for cutting, copying or pasting text in text input areas of Traveler (e.g., profile, text messaging, email, etc.). The Copy and Paste commands are especially useful for copying text messaging history to a text file.	[Ctrl] [X]	---
	Copy		[Ctrl] [C]	---
	Paste		[Ctrl] [V]	---
	Customize your Avatar	Opens the <i>Customize Avatar</i> window where you can modify you avatar's appearance, emotion, voice pitch, profile, and start space URL. Refer to the " <a href="#">Customize Avatar Window</a> " section for more details.	[Ctrl] [A]	
	Settings	Opens the <i>Settings</i> window where you can configure your microphone, connection, volume, cache, and text message settings.	---	---
View	Toolbar	Toggle control to hide or display the toolbar of the main Traveler window. If checked, the toolbar is displayed. Refer to the " <a href="#">Toolbar</a> " section for more details.	---	---
	Address Bar	Toggle control to hide or display the address bar of the main Traveler window. If checked, the address bar is displayed. Refer to the " <a href="#">Address Bar</a> " section for more details.	---	---
	Status Bar	Toggle control to hide or display the status bar of the main Traveler window. If checked, the status bar is displayed. Refer to the " <a href="#">Status Bar</a> " section for more details.	---	---
	Next	Places you in the next space, after using the "Previous" command.	---	

	Previous	Places you in the previously visited space.	---	
	Stop Transition	Stops a space transition and returns you to the space you were previously in.	---	
	Reenter	Allows you to reload the current space. One reason you might want to reenter is to see a new avatar that may have entered your space, but one that you do not have art for already in your cache.	---	
Locate	Where is everyone in this community...	Opens the <i>Where is everyone in this community...</i> window that shows you who and where everyone is in a community. Refer to the " <a href="#">Where is everyone in this community... Window</a> " section for more details.	[Ctrl] [W]	
	Map	Opens the <i>Map</i> window which displays a map of where all avatars, portals (regular and user), and links are located within a space, relative to one another. Refer to the " <a href="#">Map Window</a> " section for more details.	---	
	List of who's in this space	Opens the <i>List of who's in this space</i> window, a list of people in the space that you are in. Refer to the " <a href="#">List of Who's in This Space... Window</a> " section for more details.	---	
	Create a user space...	Allows you to create a user space from within a space that has user portals. Refer to the " <a href="#">What Are User Spaces?</a> " section for more details.	---	---
Portals	Portals	Displays available portals and links that you can access in a community.	---	---
Favorites	Add To Favorites...	Allows you to create a Windows "Favorites" shortcut file of a space's URL, so you can quickly return through the shortcut.	---	---
	Open Favorites...	Allows you to open the Windows "Favorites" folder of shortcuts to spaces.	---	---
Help	Help Topics	Launches an online Help Topics module with information on key topics and access to more information.	---	---
	About Traveler...	Displays a window with the copyright information and version number of your copy of Traveler.	---	---

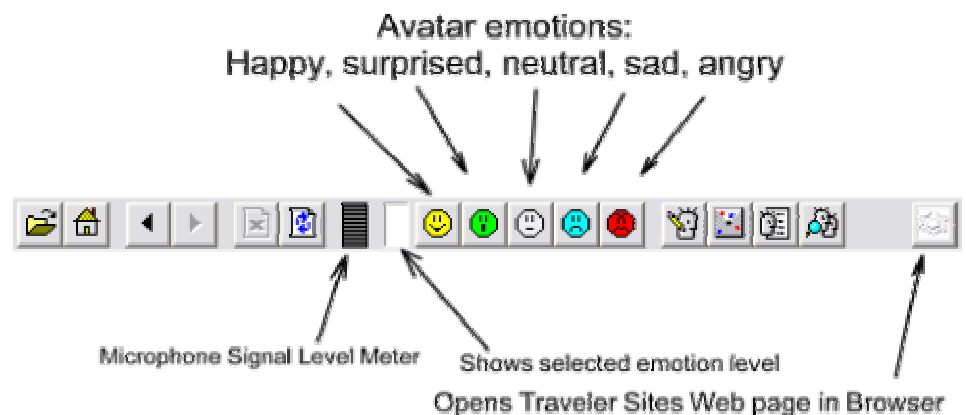
## Toolbar

The toolbar, which provides a shortcut to many of the commands found in the menus, is optionally displayed

at the top of the Traveler user interface. Some of the toolbar's features are:

- To hide the toolbar, select *Toolbar* from the *View* menu to uncheck it. To display the toolbar, reselect *Toolbar* from the *View* menu (checking it).
- When you hold your cursor over the toolbar buttons, "tooltips" are displayed, defining what each button does. A description also appears in the status bar (located at the bottom of the main Traveler window).
- The toolbar can be dragged to another area of your screen. Drag on a non-button area of the toolbar to a place outside of the main Traveler window (making it a "floating" toolbar).
- You can change the size of a floating toolbar by dragging on its bottom or sides.
- To bring a floating toolbar back into the main Traveler window, drag it back to the top of the window, or double-click on a non-button area of the toolbar. (If you have changed its size, you do not have to change it back to its original size first.) The toolbar is displayed in Figure 12. The buttons that have corresponding menu commands are defined in [Table 1](#). Other toolbar buttons are labeled in Figure 12.

*Figure 12 : Floating Toolbar*



## Address Bar

The address bar lists the URL of the space that you are in at any given time while in Traveler. If you jump around between spaces, a collection of space names where you have been are stored (within the same connected session only), and retrievable through the small downward arrow on the right-side of the address bar. By selecting a space name, you can return to a space that you were previously in.

You can also type in a URL of a space into the address bar. Then press the [Enter] key. You will travel to the space specified, or your Web browser will open to a Web page, if applicable, and place the Traveler window in the background; the Traveler connection will be maintained.

## Status Bar

The left-side of the status bar at the bottom of the main Traveler window displays status messages. Following is a list of typical status messages:

- The status of a transition as you travel to a new space.
- The name of an avatar that you place your cursor over within the main Traveler window or the *Map* window.
- The name of a portal or link that you place your cursor over within the main Traveler window or the *Map* window.
- Text messaging status when receiving or sending a text message.

On the right-side of the status bar is:

- The FPS (frames per second) drawing rate for the main Traveler window, as you move between spaces, and the scenery is changed.
- The number of avatars in a space.
- The progress when transitioning from space to space.

## Traveler Destinations Web Page

At the [Digital Space Traveler Destinations web page](#), you will find a number of virtual communities listed, which will differ in look, color, style, feel, and purpose. Each site contains spaces to explore and to meet many different people.

You can also access the *Traveler Destinations* Web page by pressing the linked button (Traveler icon) on the toolbar, as follows:



If you know a URL of a Traveler space, you can access that space directly from within your Web browser without having to go to the *Traveler Destinations* Web page first.

## Getting Help

Following are some ways to get help while using Traveler.

- On-line help accessed through the *Help* menu.
- *Digital Space Traveler Start* page and other helpful resources accessed through

## 5 . . . All About Avatars

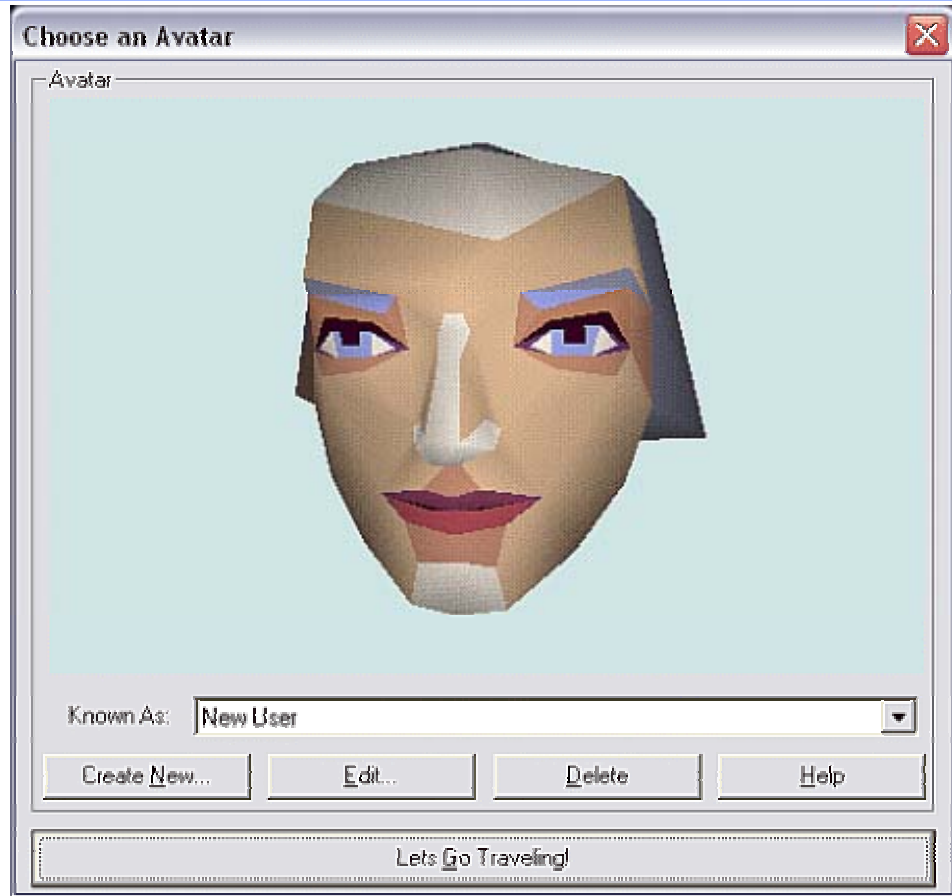
When you travel between virtual spaces, you are personified by an on-line 3D model known as an "avatar". You can customize an avatar by modifying its appearance (or voice pitch if you have a full-duplex driver and sound card) at any time during your travels, in addition to expressing emotion.

The following sections describe how to select and name your first avatar, create new avatars, customize existing avatars, and delete named avatars.

### Your First Avatar Model

Before entering a space the first time in each Traveler session, the *Choose an Avatar* window is displayed. Figure 13 illustrates this window for first-time users before transitioning into a space, whereby a "New User" avatar model is displayed. At this point, you can "Go Traveling!" with the shown "New User" avatar, or create a new one.

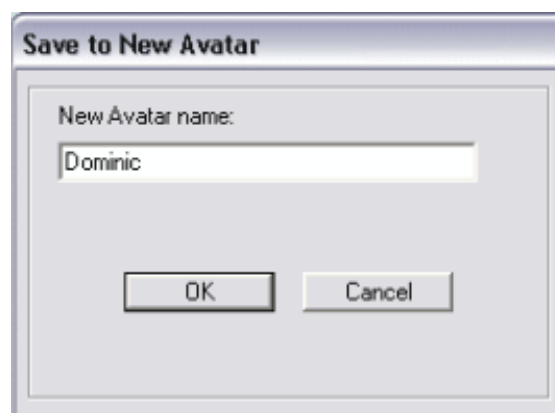
*Figure 13 : Choose an Avatar Window*



If you "Go Traveling!" with the "New User" avatar, the avatar will look like the 3D model shown, and the avatar's name will appear as "New User" to all others already in Traveler.

To create a new avatar with a new name or different model and appearance, from the *Choose an Avatar* window, press the "Create New..." button. A *Save to New Avatar* window appears, where you can name a new avatar.

*Figure 14 : Save to New Avatar Window*



Type in a name for the avatar you are creating. The name you choose becomes the name that all others in a space will know you by while in Traveler. After pressing "OK" in the *Save in New Avatar* window, the *Customize Avatar* window is displayed, which is described in the following section.

If you create multiple new avatars, when you launch Traveler, you can use the pull-down "Known As" list to select from the names of avatars that you have created. Also note that when you create a new avatar, the profile of the avatar selected in the "Known As" field is copied to the new avatar you are creating (although you can modify the profile through the *Profile* property page). Refer to the ["Profile"](#) section.

## Customize Avatar Window

You can customize many different attributes of an avatar while in Traveler (or off-line too). Access the *Customize Avatar* window in one of the following ways:

1. Select the *Customize your Avatar* command from the *Edit* menu; or
2. Press [Ctrl] [A] from within the main Traveler window; or
3. Press the "Customize your Avatar" icon button on the toolbar, as follows:



4. If you are not in Traveler, upon launching into the *Choose an Avatar* window ([Figure 13](#)), press the "Edit" button. The *Customize Avatar* window is displayed with access to five tabbed property pages. Common to the property pages are the following components:

- o *Previewing your avatar from all sides* - Drag on the vertical or horizontal sliders adjacent to the avatar preview window to view an avatar from different angles. You can tilt the avatar up or down, or rotate it horizontally (up to 360 degrees).
- o *Previewing avatar emotions* - While in Traveler, you are able to display emotion through your avatar. Select different avatar emotions (located beneath the avatar preview window) to preview what your avatar's different emotions will look like.

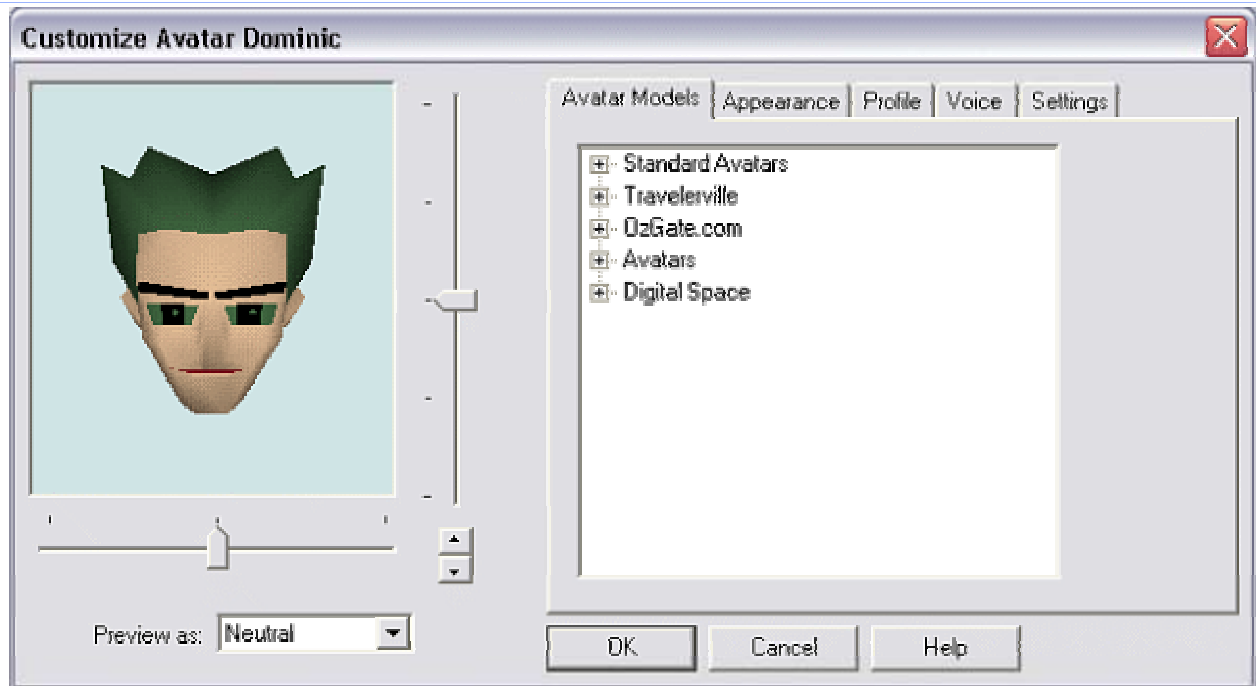
The following sections describe the *Customize Avatar* property pages' other components in more detail.

## Avatar Models

Through the *Avatar Models* property page, you can select and preview different avatar models, or delete old avatar sub-themes that have become unsupported over time.

*Figure 15 : Selecting an Avatar Model*





Click on different avatar models from the list(s) to view the models in the preview window. Select an avatar to be your on-line presence in the spaces that you visit.

Over time, avatar "sub-theme" directories (i.e., grouped directories) may become unsupported by a Traveler site that first introduced them. You will know when a sub-theme is no longer supported because you will receive an error message when you attempt to select an avatar within an unsupported sub-theme directory. In this case, delete a sub-theme directory by right-clicking on the sub-theme directory and selecting "Delete". Note that you can typically delete any sub-theme directory except "Standard Avatars". Also, you can only delete avatars individually if they exist under the root directory, and not in a sub-theme directory.

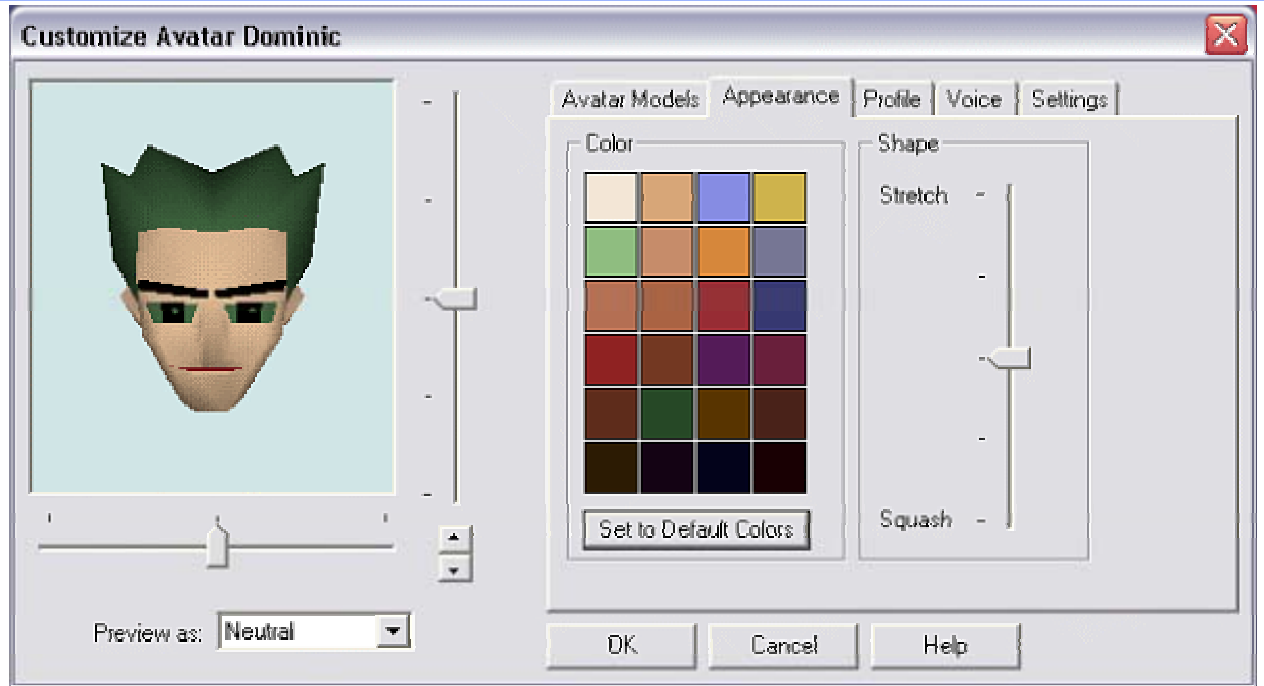
One other feature available in the *Avatar Models* property page is the ability to display a "Properties" window of selected avatars (avatars released with Traveler 2.0 or later only). Select an avatar, right-click, then select "Properties". As you will notice, displaying "Properties" is only available for avatars, not avatar sub-theme directories.

Any changes made in the *Avatar Models* property page while in Traveler take effect immediately upon pressing the "OK" button.

## Appearance

Through the *Appearance* property page, you can modify the colors and shape of your selected avatar while previewing it from different angles and with different emotion.

*Figure 16 : Modifying Your Avatar's Appearance*



The components of the *Appearance* property page are:

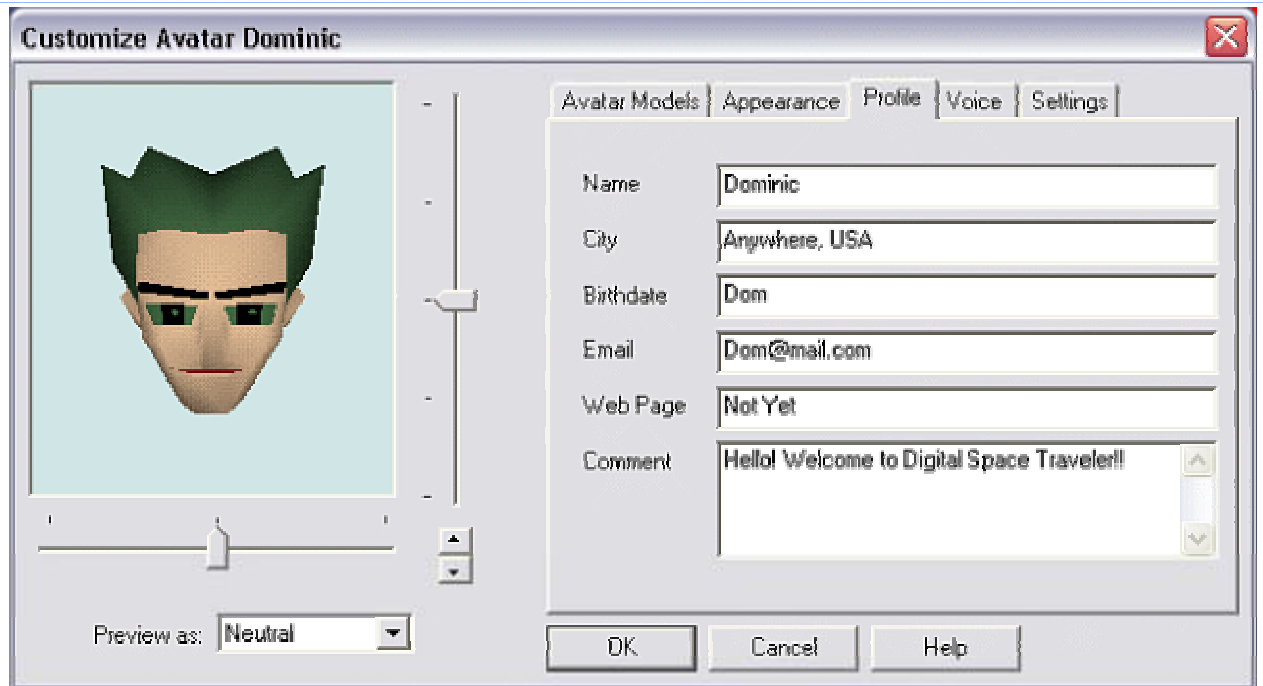
- *Modifying an avatar's colors* - Drag different color swatches from the color palette onto the avatar in the preview window. To revert back to the avatar's original colors, press the "Set to Default Colors" button.
- *Modifying an avatar's shape* - Drag the shape slider up and down to "stretch" or "squash" the avatar, respectively.

Any changes made in the *Appearance* property page while in Traveler take effect immediately upon pressing the "OK" button.

## Profile

Through the *Profile* property page, you can create a profile to be associated with each named avatar that you create.

*Figure 17 : Creating a Personal Profile to Be Associated with an Avatar*



The information entered into the *Profile* property page can be viewed by all others in a community while in Traveler. Although profile information is optional and specific to each created/named avatar, it becomes quite useful to others while in Traveler. Often, the profile becomes a starting point for discussions between others within a space.

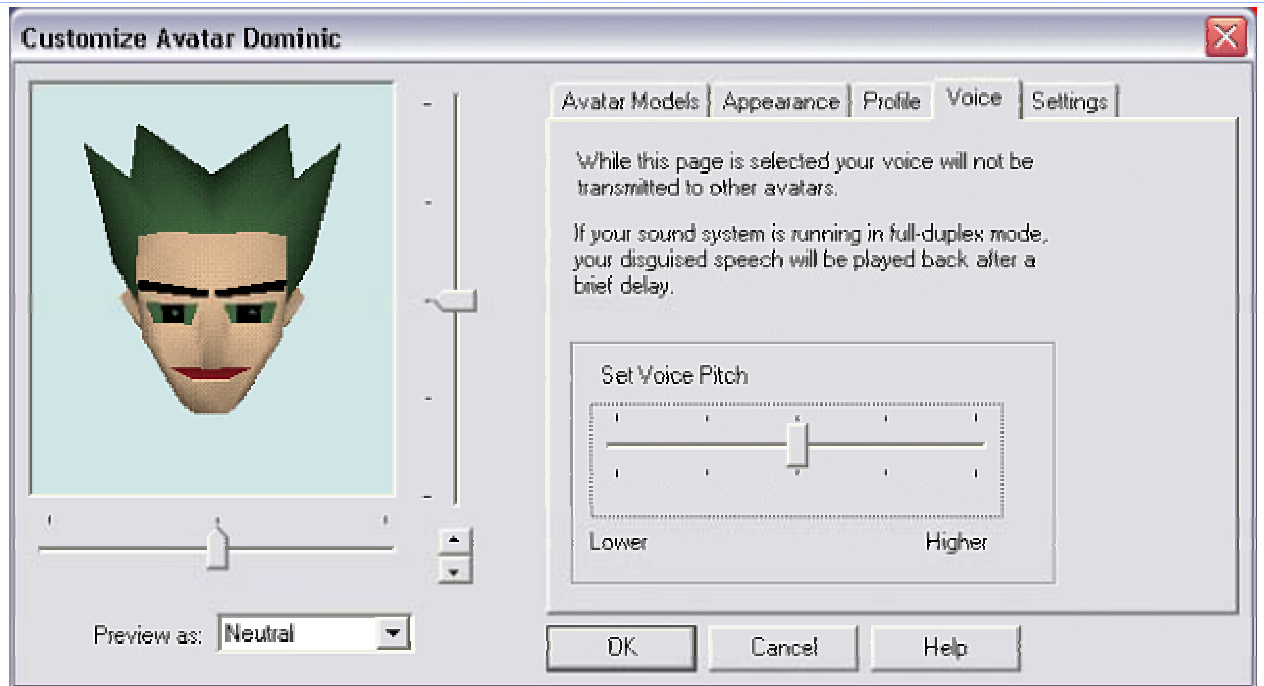
Enter your profile information by typing into the different fields, using the [Tab] key to jump forward, or [Shift] [Tab] to jump backward between the fields. Note that the name used in the *Profile* property page, and the name of your avatar are not the same, unless you make them the same.

Any changes made in the *Profile* property page while in Traveler take effect immediately upon pressing the "OK" button.

## Voice

Through the *Voice* property page, you can modify and test how your voice will sound to others while in Traveler.

*Figure 18 : Modifying How Your Voice Will Sound to Others*



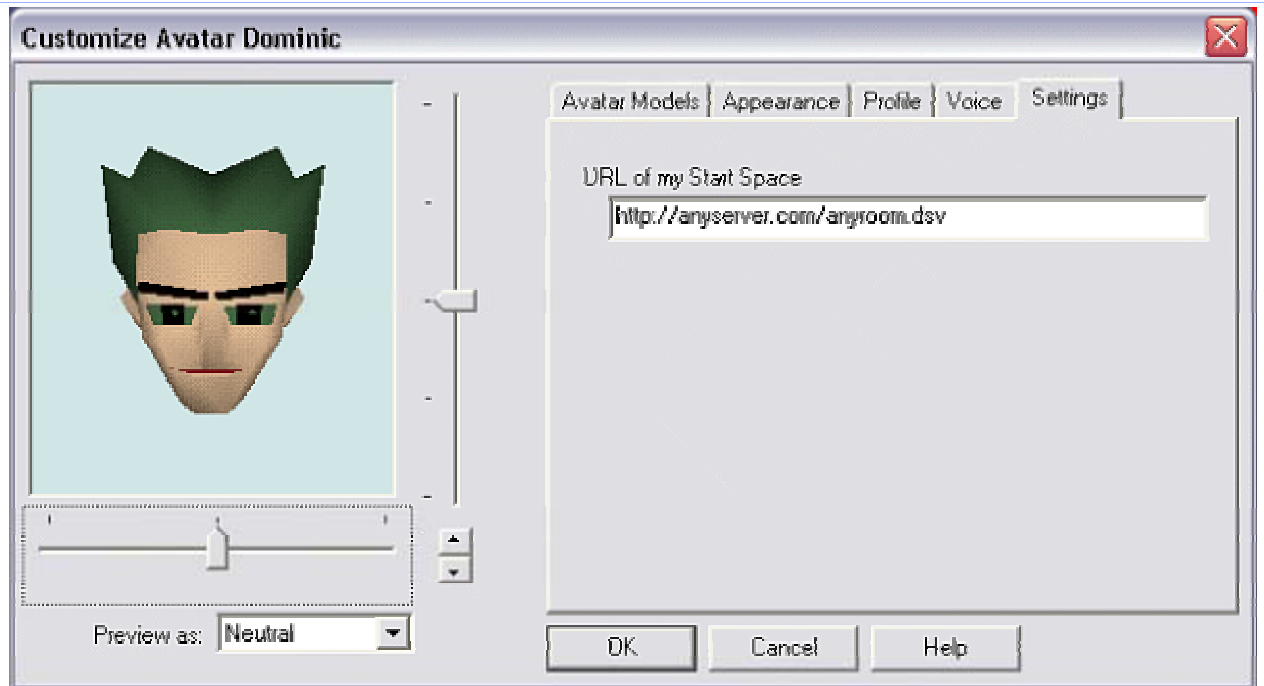
If you have a full-duplex system (i.e., full-duplex sound card and driver), you can hear what your voice will sound like while in Traveler (you must already be in Traveler), and adjust its pitch as desired. To try this, speak into your microphone, and your voice is played back. Adjust the "Set Voice Pitch" slider to the right or left, then speak a few more words into your microphone. Your adjusted voice is then played back.

Any changes made in the *Voice* property page will take effect immediately upon pressing the "OK" button.

## Settings

Through the *Settings* property page, you can define a starting space for your avatar.

*Figure 19 : Defining a Start Space*



The URL start space refers to the space where your avatar will start at the beginning of a Traveler session. The default start space is typically the main gateway of the Traveler site that you are entering. To change the Traveler start space, you can type a URL to a space into the "URL of my Start Space" field.

An easier method of setting a start space, however, is to use the "Set Start Space" command from the *File* menu. If you use this command, the URL in the *Settings* property page will be changed to reflect the designated start space. If you have multiple avatars defined, you can specify a different URL start space for each avatar.

Any changes made in the *Settings* property page while in Traveler take effect immediately upon pressing the "OK" button.

## Deleting a Named Avatar

You can delete an avatar from the *Choose an Avatar* window ([Figure 13](#)) before going Traveling.

Select the name of the avatar to be deleted from the pull-down "Known As" list. Then press the "Delete" button (on *Choose an Avatar* window, not keyboard).

# 6 . . . Now That You Are in Digital Space Traveler

Once you have entered a Traveler space, you can navigate within it, and enter other spaces within a community with navigational keystroke commands. You can interact with and carry on discussions with other people in the same space.

The following sections describe how to navigate your avatar around or between a space, and mechanisms to interact with other avatars.

## Navigational Keystroke Commands

To explore within a community space, there are a number of navigational keystrokes to move your avatar through the space. Your view as you maneuver throughout the space is through your avatar's eyes--what your avatar sees--except when using the "third person perspective" keystrokes command. Table 2 lists navigational keystroke commands for Traveler.

<b>Navigational Action</b>	<b>Traveler 2.0 Keystrokes</b>
"Push-to-Talk"	[Ctrl]
move forward	up arrow
move backward	down arrow
rotate left	left arrow
rotate right	right arrow
slide up	[Alt] up arrow
slide down	[Alt] down arrow
slide left	[Alt] left arrow
slide right	[Alt] right arrow
pitch backward	[Page Up]
pitch forward	[Page Down]
roll left	[Insert]
roll right	[Delete]
move faster (to be used in combination with all preceding commands)	[Shift]

realign horizontally	[End]
return to entry point	[Home]
third person perspective (4-way toggle)	[Ctrl] [I]
Go near a selected avatar	Double-click on: <ul style="list-style-type: none"> <li>• an avatar in main Traveler window</li> <li>• a name within <i>List of who's in this space...</i> window</li> <li>• a head icon within <i>Map</i> window</li> </ul>
Quick enter into a portal	Double-click on: <ul style="list-style-type: none"> <li>• a portal object in main Traveler window</li> <li>• a space name within <i>Where is everyone in this community...</i> window</li> <li>• a portal icon within <i>Map</i> window</li> </ul>
Quick open a link (in Web browser)	Double-click on: <ul style="list-style-type: none"> <li>• a link object in main Traveler window</li> <li>• a link icon within <i>Map</i> window</li> </ul>

## Interacting with Other Avatars

After you enter a space, the right-side of the status bar tells you how many people are in the space. When you see other avatars, by placing your cursor over them, the status bar reflects the avatar's name that you are "pointing to". Similarly, if you place the cursor over portals or link objects, the status bar tells you what portal or link that you are pointing at. (Portals can come in many different guises, depending on how a community's graphics are designed.)

To speak to someone else within a space, you need to be in close range of their avatar. Similarly, if someone's avatar is near you, and they speak, you'll be able to hear them. If you are too far away, even though you are both in the same space, your voice may be too soft for them to hear you. Using the navigational commands described in [Table 2](#), you can move closer to other avatars within a space. To speak, press the [Ctrl] key. When not speaking, release the [Ctrl] key. (Refer to ["Speaking and Listening"](#) for other options regarding speaking in a space.)

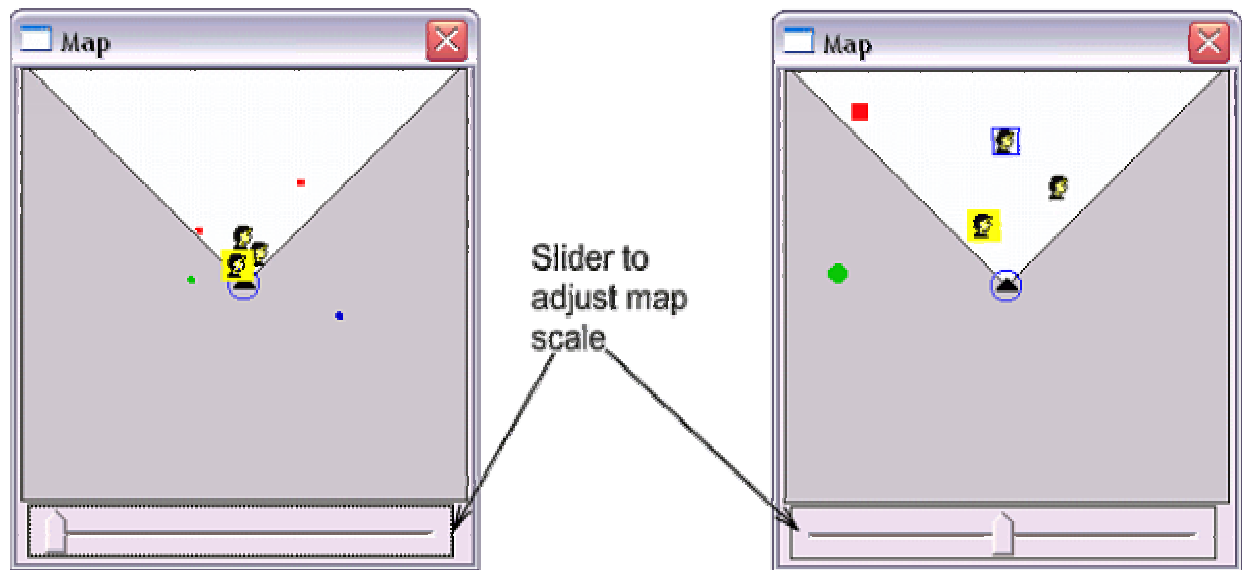
## Map Window

To get a perspective of where all the avatars, portals, and links are within a space, press the "Map" button on the toolbar (or select *Map* from the *Locate* menu), as follows:



A window similar to Figure 20 is displayed. While the *Map* window is open, you can navigate your avatar, represented by the centered triangle, within the space using the navigational keystrokes. See how your movements affect your position in the space, relative to the space and others.

Figure 20 : Map Window of Where Everyone Is in a Space



Triangle - denotes you  
White area - your field of vision when your avatar is upright  
Heads - other avatars in same space  
Blue squares surround heads - who's talking (can be more than one)  
Yellow highlight - who you have selected  
Red squares - portals to other spaces in community  
Green diamonds - user portals in community  
Blue diamonds - links to a specific Web page

Following is a list of functions that can be invoked from the *Map* window (refer to "Map Key" in Figure 20)

- Drag the scale slider to display avatars or portals that are out of the map range.
- Place the cursor over any head icon. The status bar shows who you are pointing to.
- Place the cursor over a portal, or a link icon. The status bar shows you what portal or link you are pointing to.
- Double-click on any head icon to quickly move near the selected avatar.
- Double-click on a portal to enter the selected portal.
- Double-click on a link icon and your Web browser opens the linked Web page.

**List of who's in this space... Window**

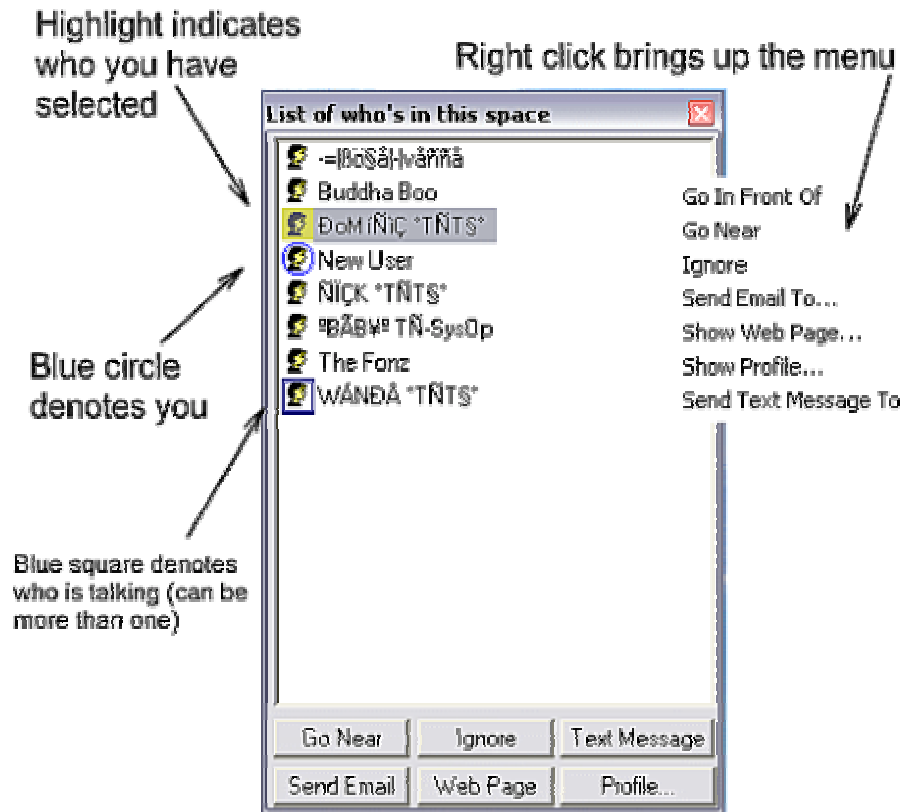


To see who's in a space that you are in, press the "Show list of who's in this space" button on the toolbar (or select the "List who's in this space..." command from the *Locate* menu), as follows:



A window similar to Figure 21 is displayed.

Figure 21 : List of who's in this space... Window



From this window, button options are available for interacting with others in the space. Before pressing a button, select (single-click) a name from the list. The button option functions can also be invoked through right-clicking on a name, which displays a short menu.

The button options are described in the following sections.

### Go Near Button

By pressing the "Go Near" button, your avatar quickly moves near the avatar of the selected name. Other ways to quickly navigate your avatar near another are as follows:

- Double-click on a name in the *List of who's in this space...* window.

- Press [Alt] [G] after selecting a name in the *List of who's in this space...* window.
- Right-click after selecting a name in the *List of who's in this space...* window, and select "Go Near" from the shortcut menu.
- Right-click on an avatar in space and select the "Go Near" command.

### Ignore Button

The "Ignore" button allows you to ignore someone in a space that may be bothering you or that you do not want to listen to. When you ignore someone, you will not be able to hear anything that person says, nor can you receive any text messages from that person. However, if the ignored person were to send you a text message, they would not be notified that you did not get it, or that you are ignoring them. When you ignore someone, their head icon becomes crossed in your *List of who's in this space...* window, as follows:



If you reselect an ignored name, the "Ignore" button reflects "Unignore" instead. Turn the ignored state off by pressing the "Unignore" button.

You can also toggle the "Ignore/Unignore" functions by pressing [Alt] [I] after selecting a name in the *List of who's in this space...* window.

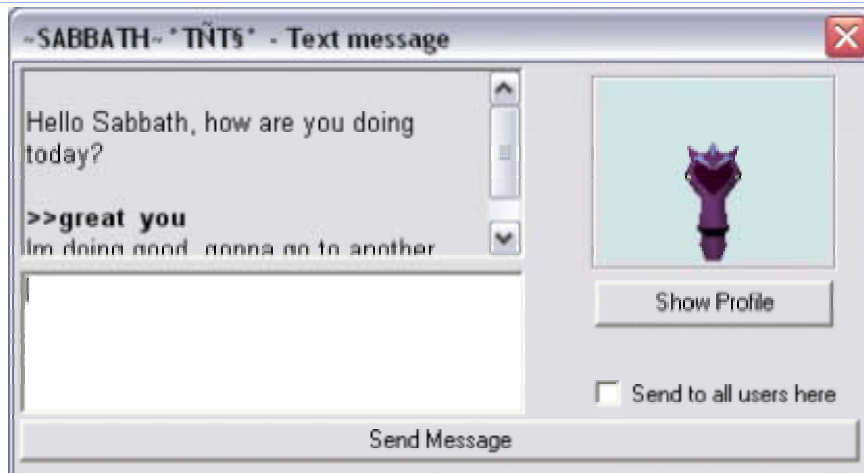
### Text Message Button

Text messaging enables you to send a short text message to someone else within the same space while in Traveler. Text messaging is private between the two users involved in a text message discourse. Following is how text messaging works:

1. After selecting a name from the *List of who's in this space...* window, press the "Text Message" button. A dialog window with a thumbnail image of the selected avatar is displayed, along with a white text input area.
2. Type in the white area (maximum of 80 characters between "sends"), then press the "Send Message" button. The recipient is alerted of the text message by an alerting sound. The Text Message dialog window appears on their screen (and closes on yours).
3. The recipient may write back, and press the "Send Message" button.
4. You are alerted of the new message by an alerting sound. Also, the status bar at the base of the Traveler window reflects who has sent the text message to you.

The history of the text message discourse is saved in the area above the input area. Figure 22 displays a text messaging that went back and forth a few times.

*Figure 22 : Text Messaging Dialog Window*



If the users end their text messaging, but then resume a discussion later while in the same space, the text history remains, and new text messaging is appended. The text message history is cleared if you leave the space, or reenter; the history in the other person's *Text Message* window is retained, until they leave the space, or reenter. If the person you were text messaging with leaves the space, and you still have the *Text Message* window open, the "Send Message" button reverts to "User has left the space".

If you would like to save the history, drag to highlight the text, then use [Ctrl] [C] to copy it to a clipboard. Use [Ctrl] [V] to paste the text into another application that accepts text. If the same Text Message window is then closed, the history is gone forever and cannot be retrieved. If you send a text message to someone else in the space, a new *Text Message* window is created.

For additional settings involving text messaging, refer to the ["Text Message"](#) section.

### **Profile... Button**

By pressing the "Profile..." button after selecting a name within the *List of who's in this space...* window, you can view the profile of the person associated with an avatar. You can see name, city, birthdate, email address, Web page URL, and any other information they have provided.

Following are some other options for reviewing profiles:

- Right-click on an avatar in the space and select the "Show Profile..." command.
- Right-click on a name in the *List of who's in this space...* window, and select the "Show Profile..." command.
- Press [Alt] [P] after selecting a name in the *List of who's in this space...* or *Where is everyone in this community...* windows.
- Right-click on a head icon in the *Map* window, and select the "Show Profile..." command.
- Double-click on a name in *Where is everyone in this community...* window (with any space selected)

## Send Email Button

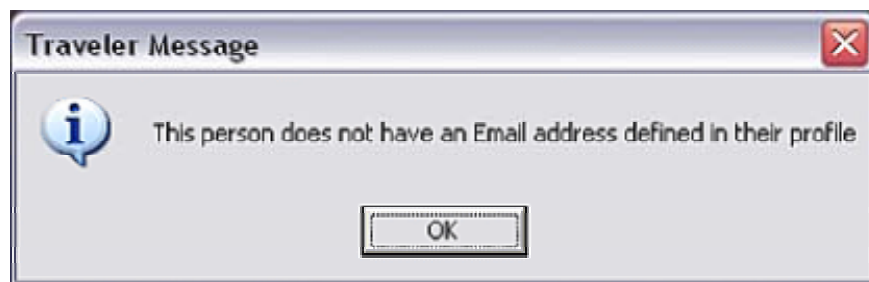
The "Send Email" button allows you to send email to individuals in the same space who have specified their email address in their profile. If an email address is defined and you press "Send Email", your email application is launched.

Following are some other options for sending email:

- Right-click on an avatar in space and select the "Send Mail To..." command.
- Right-click on a name in the *List of who's in this space...* window, and select the "Send Mail To..." command.
- Press [Alt] [E] after selecting a name in *List of who's in this space...* or *Where is everyone in this community...* window.
- Right-click on a head icon in the *Map* window, and select the "Send Mail To..." command.

If an email address is not specified in a profile, and you attempt to send that person email anyway, the following error message is returned.

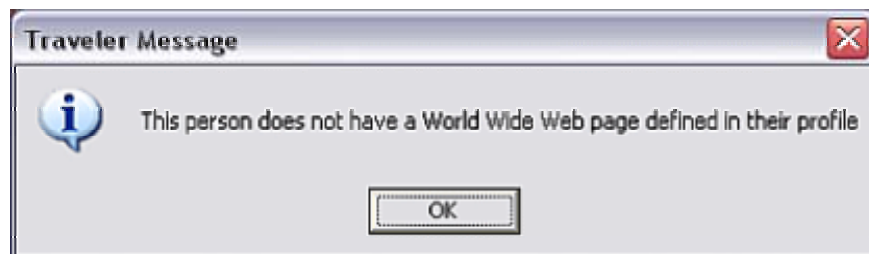
*Figure 23 : Cannot "Send Email" Because No Email Address Is Defined in Profile*



## Web Page Button

The "Web Page" button directs your browser to open the Web page of someone you have selected who has specified a Web page in their profile. If a Web page URL is not specified in their profile, and you had pressed the "Web Page" button, the following error message is displayed.

*Figure 24 : No Web Page Defined in Profile*



Following are some other options for viewing Web pages:

- Right-click on an avatar in space and select the "Show Web Page..." command.
- Right-click on a name in the *List of who's in this space...* window, and select the "Show Web Page..." command.
- Press [Alt] [W] after selecting a name in *List of who's in this space...* or *Where is everyone in this community...* window.
- Right-click on a head icon in the Map window, and select the "Show Web Page..." command.

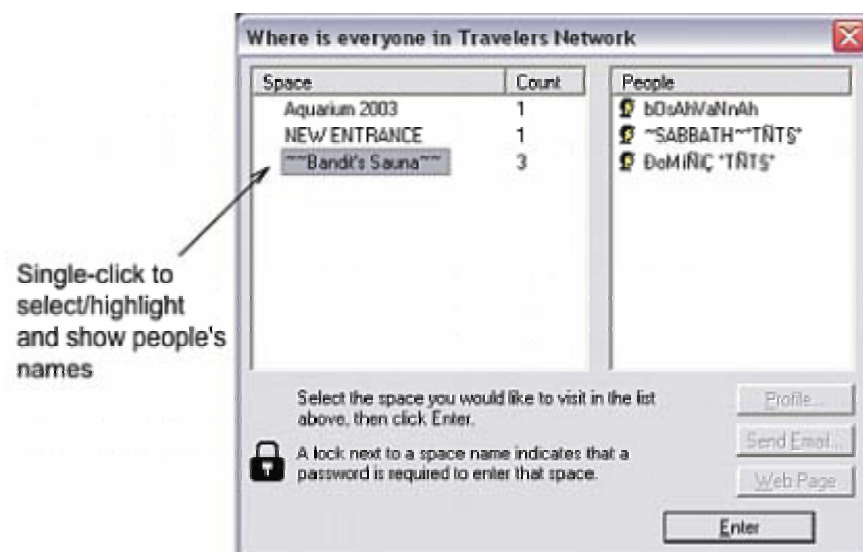
### ***Where is everyone in this community... Window***

To see where everyone is within a community, press the "Where is everyone in this community..." button on the toolbar (or select *Where is everyone in this community...* from the *Locate* menu), as follows:



Figure 25 is an example of a *Where is everyone in this community...* window.

*Figure 25 : Where is everyone in this community... Window*



The window displays both regular and password-protected spaces; password-protected spaces are identified by a lock icon next to the space name. "Locked" spaces may or may not show the participants, depending on how the space was set up (i.e., when creating a user space, you can block the participants from being viewable).

Following is a list of functions that can be invoked from the *Where is everyone in this community...* window

- Click on any space name, and a corresponding list of people in that space appears in the *People*

- panel.
- Double-click on a space name (or right-click on a space name and select "Join Space") to enter into the selected new space.
  - Double-click on a name within the *People* panel, and a profile is displayed.
  - After selecting a name in the *People* panel, the buttons in the lower right corner become active. Press any of these buttons to invoke the labeled commands.

## Showing Emotion

While talking with someone else in a space, you can express emotion through your avatar's expressions. The emotions you can display are: happy, surprised, neutral (default), sad, and angry.

### Toolbar Emotions

Press a toolbar emotion button to express emotion through your avatar. For example, if you are talking with another person who tells a joke, you can press the "happy" button after the punchline, and your avatar will smile. If the other person's avatar is near or in front of yours, they will see your avatar smile. If the other person says something sad, press the "sad" button, and your avatar will display a sad expression.

Just as emotions are ever-changing and temporary with people, emotions are temporary with avatars. To the left of the emotion toolbar buttons is an *emotion level box*. This box displays your avatar's emotion and its intensity by the color and level, respectively, as you press emotion buttons (one or multiple times). Eventually, the emotion level box returns to "no-color" when your avatar's emotion has returned to a neutral state.

### Previewing Avatar Emotions

Emotions also play a part in the property pages of the *Customize your Avatar* window. When you are modifying the appearance of your avatar, you can select different emotions to preview what your avatar will look like while Traveler. Refer to the ["Customize Avatar Window"](#) section.

## Navigating from Space to Space

There are many ways to navigate your avatar from space to space. The following list summarizes the different space-to-space travel options.

- Enter a URL in the *Travel To* window via *File/Open* commands.

- Double-click on a space name within the *Where is everyone in this community...* window (refer to "[Where is everyone in this community... Window](#)" section).
- Double-click on a portal object.
- Right-click on a portal object, and select the "Activate" command.
- Select a portal from the *Portals* menu.
- Create a new user space (refer to "[What Are User Spaces?](#)" section).
- Select *File/Travel to Start Space*, or press the corresponding toolbar button (refer to [Table 1](#)).
- Select *View/Previous*, or press the corresponding toolbar button (refer to [Table 1](#)).
- Select *View/Next*, or press the corresponding toolbar button (refer to [Table 1](#)).
- Double-click on a previously saved URL shortcut file from the saved "Favorites" shortcuts via the *Favorites/Open Favorites* command (refer to "[Favorite Spaces](#)" section).
- Type in or select a URL from the Address Bar (refer to "[Address Bar](#)" section).
- Click on a link to a 3D virtual community on a Web page (for example, "[Digital Space Traveler Destinations Web Page](#)").

## Traveler Shortcut Menus

From within the Traveler window, there are shortcut menus that may be accessed by right-clicking in certain areas of the user interface. Once a shortcut menu is displayed, the menu stays up (unless you click outside of the menu), and you can make a selection by highlighting a menu item and then clicking the left or right mouse button.

By right-clicking within a space, a shortcut menu like Figure 26 is displayed. Refer to [Table 1](#) for further explanation of these menu items.

*Figure 26 : Right-Click Shortcut Menu When Cursor Is in Space*



By right-clicking when your cursor is placed over an avatar in a space or in the *Map* window, a shortcut menu like Figure 27 is displayed. Refer to the "[List of Who's in This Space... Window](#)" section for further explanation of these menu items.

*Figure 27 : Right-Click Shortcut Menu When Cursor Is on Another Avatar*



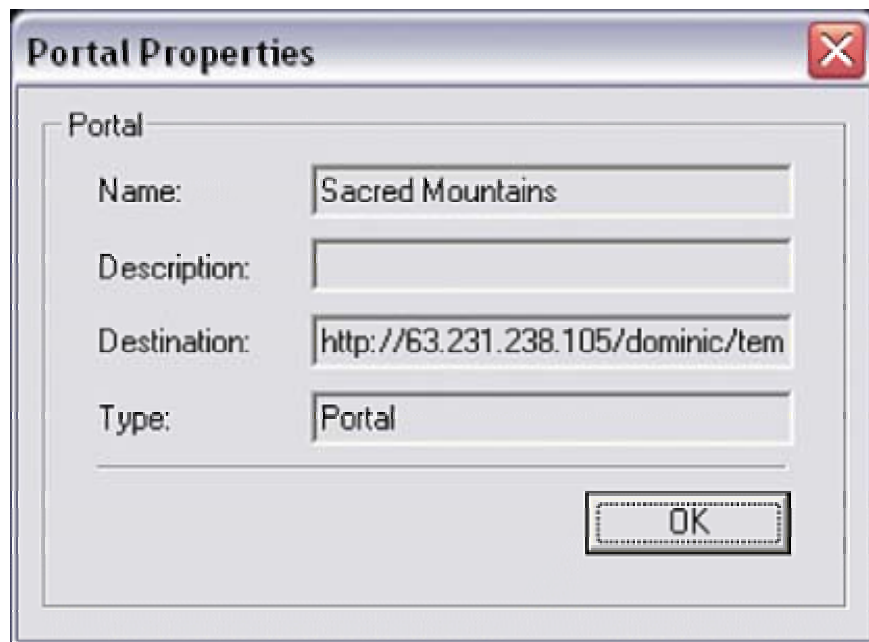
By right-clicking when your cursor is placed over a portal or link object in a space or in the *Map* window, a shortcut menu like Figure 28 is displayed.

*Figure 28 : Right-Click Shortcut Menu When Cursor Is on a Portal*



If you select "Activate", you will access the selected portal or link. "Go Near" brings you near to the portal or link object. If you select "Properties", a window similar to Figure 29 is displayed, showing the properties of the selected portal or link.

*Figure 29 : Portal Properties*



## **Favorite Spaces**

The *Favorites* menu offers the following commands:



- **Add to Favorites** - Creates and saves a \*.URL space shortcut file that includes the URL of the space you are in at the time that you invoke the "Add to Favorites" command. This file is saved to the Windows "Favorites" folder, or any other folder that you designate when the *Save As* window is displayed.
- **Open Favorites** - Opens the Windows "Favorites" folder, where you can select a previously saved space shortcut file.

In addition, the *Favorites* menu includes the name of the space that you are in at any given time during your travels.

---

## 7 . . . What Are User Spaces?

User Spaces are spaces created by users when a regular space is too crowded, or when a user wants to hold a special event such as a discussion on a particular topic or a private discussion with a few friends. They are temporary spaces in that they only exist as long as at least one avatar is in the user space; they are deleted when the last avatar in a user space leaves the space.

User spaces can be created whenever you are in a space that has *user portals*. To see if the space you are in has a user portal(s), access the *Portals* menu. A user portal is marked with a green bullet preceding its name and is identified as a "User Portal".

As an example, Figure 30 shows a user portal within the Portals menu.

*Figure 30 : Portals Menu, Including User Portals*



## "Create a user space..." Menu Command

Assuming that there *is* a user portal in the space you are in, select the "Create a user space" command from the *Locate* menu. (If there are no user portals in the space you are in, then the "Create a user space..." command is disabled.) The *New Space* window is displayed, as shown in Figure 31.

Figure 31 : New Space Window

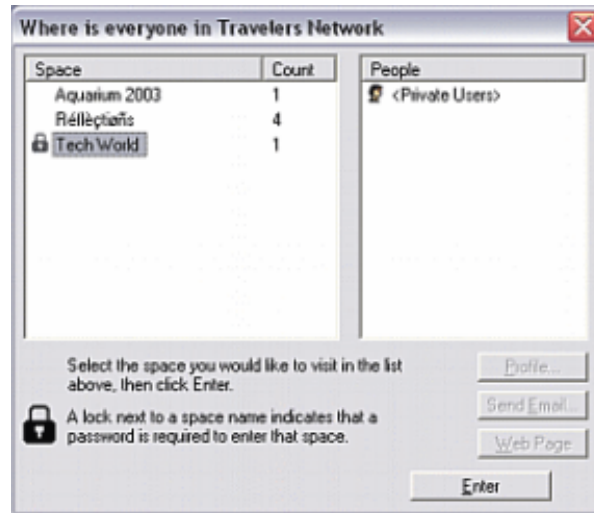


Type in a name for your new user space. If you want to make the user space password-protected, check the "Require a password to enter this space" option, and then type in a case-sensitive password. You can restrict the visibility of who's in your space when other users access the *Where is everyone in this community...* window, by selecting the "Don't show list of people..." option.

Press the "OK" button and your new space is created and you are transitioned into it. The new space (e.g., "The Hut") appears in the *Where is everyone in this community...* window, so other avatars can join you in

your new user space, as long as there is no password protection.

*Figure 32 : Where is everyone in this community.. Window Displaying Password Controlled User Space with List of People in User Space Remaining Anonymous*



When a space requires a password and a user attempts to enter, a *Protected Space Password* window is displayed, as shown in Figure 33.

*Figure 33 : Protected Space Password Window*



A user is allowed three tries to enter the correct, case-sensitive password. If they do not input the proper password, an error message is displayed.

## Entering a User Space

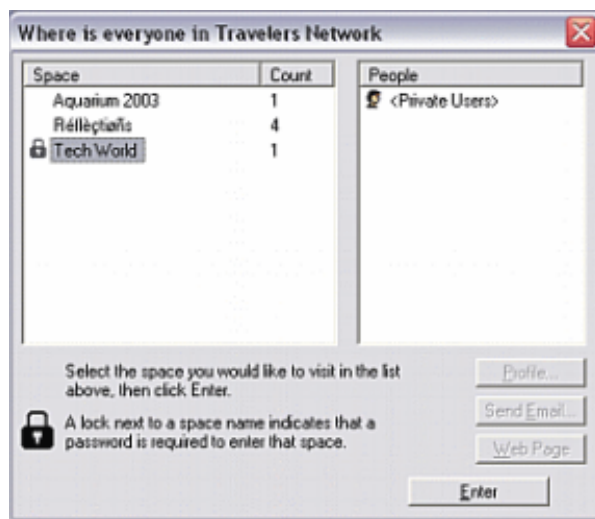
Enter a user space in one of the following ways:

- Select a user portal in the *Portals* menu; or
- Double-click on a graphical user portal in your main Traveler window; or

- Select a user space listed in the *Where is everyone in this community...* window.

If you use either of the ways described in the first two bullets, and there is more than one user space created off of a single portal, a window similar to Figure 34 is displayed, listing other user spaces of the selected portal.

*Figure 34 : Where is Everyone in [User Portal Name] Window*



Within this window, you can select the user space that you want to access by double-clicking on a user space name (or highlight a user space name, and press the "Enter" button). If no other user spaces exist already (upon accessing the selected user portal), a window offering you an opportunity to create a user space is displayed.

*Figure 34 : No Public User Spaces Here*



If you press the "Create" button, the *New Spaces* window ([Figure 31](#)) is displayed, just as if you had selected the "Create a user space..." command from the *Locate* menu.

## 8 . . . Problems

The following section addresses some problems that you could encounter with Traveler, and ways to work around or resolve the problems.

### Unable to Move an Avatar while in Traveler

If you are in a space, and you cannot move your avatar, click inside the Traveler window to ensure that it is the active window. Sometimes, if you have extra windows open, it is possible to inadvertently make one of them the active window, instead of the Traveler window.

### Connecting

On occasion, you may experience problems accessing a Digital Space community server. These problems could be:

- The community that you are trying to access is full (maximum number of participants has been reached).
- The server you are trying to access has been brought down for maintenance.

In these cases, the problems are often temporary, and an error message may advise you to "...Please try again later." When you try again later, you may be able to get in Traveler without incident. Otherwise, without waiting, you can try accessing a different community hosted by a different server.

With other problems, such as packet loss due to heavy Internet traffic, noisy telephone lines, or other network problems, symptoms could be more dramatic: you get disconnected, or you experience broken and choppy voice quality. Following are two ways to help diagnose Internet problems, and to better understand the performance level problems between your computer and the Internet.

- **Using "ping".** The ping program allows you to see how the Internet is performing, and if there are timeout problems. *First, connect to the Internet.* Then run the following "ping" command from the MS\_DOS prompt in the Windows sub-directory:

```
ping -n 100 -l 210 anyserver.com
```

This command sends out 100 data packets, each being 210 bytes long (the size of a Digital Space voice packet), to Digital Space server. The server then bounces them back to your machine. The results from this command will show you how many packets it receives and how many packets are timed out. If there are a lot of packets timing out--like 8 or more for a modem connection, and 5 or more for a LAN or ISDN connection--then you know that the Internet is not doing well, at least at that particular moment.

- **Using "tracert".** If you find that your Internet connection is poor through the above "ping" command, use the tracert program to chart your path through the Internet. *First, connect to the Internet.* Then run the following "tracert" command from the MS\_DOS prompt in the Windows sub-directory by typing:

- `tracert anyserver.com`

The tracert program reports each Internet router hop and the time it took for your test to get there. If you see long pauses and high numbers next to the "ms" (milliseconds) label for some of the hops, that would indicate where the problems are in your connection. Sometimes the results of the "tracert" command point directly to your Internet provider. If so, contact your Internet provider and let them know what you have learned through these commands so they can resolve the problem.

Sometimes these Internet-related problems are just temporary, due to Internet traffic, and if you try to log on later, the problems could be gone. If the problems persist for an extended amount of time, contact your Internet service provider.

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<sup>1</sup>Generically referred to as just "Windows" throughout this guide.

<sup>2</sup>Sound card that comes installed in shipped PCs.

<sup>3</sup>Only user spaces created from a user portal in a VRML space can be password-protected (i.e., .dsv or .wrl extensions on the space's filename in the URL). Spaces with an .dss extension on the filename cannot be password-protected.