

SERIES 2™



Home Media Features Guide

**Connecting your TiVo® Series2™ DVR to a home network
Using Home Media Features**

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Getting Started

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To learn more about digital

technology, read the Digital

Entertainment white paper at

www.tivo.com/guides. Click on “What

is Digital Entertainment?”

Digital Technology and TiVo

Digital technology is blurring the lines between different kinds of home entertainment. Not too long ago, people used completely different equipment to watch TV, view slide shows of photos, or listen to music.

The home entertainment center brought the TV and the stereo together. Digital cameras have taken the slide projector out of the slide show by allowing you to view photos on your computer (or even on your TV!). The digital video recorder (DVR) is making digital recording of TV programs commonplace.

By providing a convergence point for all the digital entertainment in your home, the TiVo® Series2™ DVR makes it easy for you to enjoy music, photos, and TV programming in the comfort of your living room.

Home Media Features

Your TiVo Series2 DVR can do more than find and record your favorite TV programs—much more! Connect your DVR to a home network, and you'll have access to these bonus features:

- **Digital Music Player** — Use the home entertainment center in your living room to listen to the digital MP3 music collection stored on your computer.
- **Digital Photo Viewer** — View slideshows of digital photos stored on your computer without huddling around a small computer monitor.
- **Multi-Room Viewing** — Record programs in the living room and watch them in the bedroom, or vice versa.
- **Enhanced Online Scheduling** — You don't need a home network to use TiVo Central Online (www.tivo.com/tco). But if your home network includes a shared broadband Internet connection, your DVR retrieves your Online Scheduling requests faster and more often.

System Requirements

Here's what you need to take advantage of your TiVo Series2 DVR's Home Media Features:

- At least one TiVo Series2 DVR with active TiVo service. At least two Series2 DVRs with TiVo service are needed for Multi-Room Viewing.
- A wired (Ethernet) or wireless home network.
- A USB network adapter for each DVR you want to connect to your home network.
- For Digital Music and Digital Photos, you will need to download the free TiVo Desktop application for your home computer (either a Windows® based PC or a Macintosh®). See below for TiVo Desktop system requirements.

TiVo Desktop System Requirements

TiVo Desktop for Windows supports the following operating systems:

- Windows 98
- Windows 2000
- Windows ME
- Windows XP

To use TiVo Desktop for Macintosh, you need:

- A Mac[®] with Mac OS X v10.2 or later
- iTunes[®] 3 or later for music
- iPhoto[™] 2 or later for photos



Manage My Account (at

www.tivo.com/manage) is the one place to go for all of your account needs! With Manage My Account, you can name your DVRs, activate additional DVRs, and update TiVo service account information such as your address and credit card number.



You can choose any name for your DVR, up to 16 characters. It might be helpful to associate a DVR's name with its location in your home. For example, you might name the DVR in your living room "Living Room."

Home Media Features Checklist

These are the steps you need to complete to start using the Home Media Features of your TiVo Series2 DVR. You might want to read through this list before getting started.

- **Name Your DVRs.** Naming your DVRs will help you identify them when using features like Online Scheduling and Multi-Room Viewing. While you're logged in to Manage My Account at www.tivo.com/manage, choose DVR Preferences from the left hand menu.
- **Get a Network Adapter.** Each Series2 DVR you want to connect to your home network needs a USB network adapter. Before purchasing any adapters, check our list of recommended adapters at www.tivo.com/adapters. You can purchase network adapters at the TiVo Store (www.tivo.com/store), or at a local electronics store.
- **Prepare Your Home Computer.** For Digital Music and Digital Photos, download and install the TiVo Desktop application on a network connected computer running either Windows[®] 98, ME, 2000 or XP, or Mac OS[®] X v10.2 with iTunes and iPhoto. Just go to www.tivo.com/desktop. After you've installed the TiVo Desktop application, you can begin to publish your music and photos. (Remember, you won't be able to use this feature until you've completed these steps.)
- **Connect Your DVRs to Your Home Network.** See Chapter 2, "Connecting Your DVR to Your Home Network" on page 8.
- **Enjoy Home Media Features.** To learn how to use these features see "Using Home Media Features" on page 24.

Helpful Web Addresses

The table below lists web addresses for information or services you may find helpful.

Web Address	Information or services available
www.tivo.com/manage	Name your DVRs, enable them for Multi-Room Viewing transfers, update your TiVo account information
www.tivo.com/support	Online customer support, troubleshooting tips, and more
www.tivo.com/desktop	Download the TiVo Desktop application for your home computer
www.tivo.com/network	Get more information about creating a home network and making your TiVo DVR a part of it
www.tivo.com/tco	Browse program listings and schedule recordings using TiVo Central Online
www.tivo.com/adapters	List of recommended USB network adapters
www.tivo.com/store	Purchase accessories, including USB network adapters, for your TiVo DVR
www.tivo.com/guides	View or download guides for your TiVo DVR
www.tivo.com/mediapartners	Products and services from TiVo partners designed to work with Home Media Features
www.linksys.com/edu	Help setting up a home network from Linksys, a leading manufacturer of home networking equipment

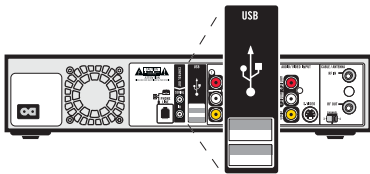
Connecting Your DVR to Your Home Network

- 9 Introduction to Home Networks
 - 11 Connecting to a Home Network Using a Wireless Network Adapter
 - 12 Connecting to a Home Network Using Wired (Ethernet)
 - 13 Completing the DVR's Network Settings
 - 20 Connecting Two Series2 DVRs for Multi-Room Viewing
-



If you don't already have a home network and you want to learn how to create one, Linksys — a leading manufacturer of wireless and always-on Internet networking equipment — provides valuable information on its website at: www.linksys.com/edu.

Other online resources also describe the steps and types of equipment used to set up a home network. You can try going to a popular search engine like Google (www.google.com) or Yahoo (www.yahoo.com) and typing the phrase “setting up a home network” in the search field. You will obtain a number of search results (links) that supply guidance to help you set up your home network.



The USB ports on the back of a TiVo Series2 DVR



Some models of the DIRECTV® DVR with TiVo service also have USB ports, but they are not currently active.

Introduction to Home Networks

This chapter shows you how to connect a TiVo Series2 DVR to a home network. When we refer to a “home network,” we mean two or more devices (probably computers), connected to a router. Connecting your DVR(s) to a home network is the best way to take full advantage of your DVR's Home Media Features. You should do this if:

- You want to use your DVR's Digital Music Player or Digital Photo Viewer, or you want to transfer programs between two or more DVRs with Multi-Room Viewing.

Even if you don't have a home network, you can still connect two TiVo Series2 DVRs to each other to use Multi-Room Viewing. See page 20.

- You want your DVR to use a broadband Internet connection instead of a phone line to connect to the TiVo service. If your home network includes a broadband Internet connection (for example, DSL or a cable modem), you can eliminate the DVR's need for a phone line for regular TiVo service connections. (The DVR will still need a standard phone line connection for Guided Setup.)

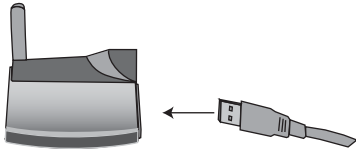
In addition, with a broadband Internet connection, recording requests you make using TiVo Central Online (www.tivo.com/tco) are delivered to your DVR much faster. This allows you to request programs as little as one hour before they air! (If your DVR is using a phone line to connect to the TiVo service, processing an Online Scheduling request can take up to 36 hours.)

USB Ports, Wireless and Wired Network Adapters

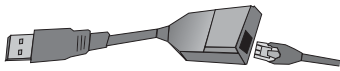
On the back of any TiVo Series2 DVR you will see one or two USB ports that can be used to connect either a wireless or a wired (Ethernet) USB network adapter. Only one network adapter can be connected at a time. If your Series2 DVR has two ports, you can use either one.

USB network adapters let a TiVo Series2 DVR use a USB port to communicate with other networked devices. Whether you choose wireless or wired (ethernet), you will need a network adapter for each DVR you wish to connect.

TiVo has recommendations for compatible models of wireless and wired (Ethernet) network adapters. Be sure to check TiVo online support at www.tivo.com/adapters for the latest information.



**A Wireless USB network adapter
(yours may look different)**



**An Ethernet USB network adapter
(yours may look different)**



Do not use the CDs that are included with your network adapters to set up your TiVo Series2 DVRs. These CDs are intended to load drivers and network adapter software on your personal computer.

Choosing Wireless or Wired (Ethernet)

You can connect your Series2 DVR to your home network using either a wireless or wired (Ethernet) connection. Here are some notes to help you decide which approach you want to use.

- **Wireless.** Connecting your DVR wirelessly may be more convenient because you do not have to run a cable from your DVR to another device. However, wireless networks are typically more expensive and slower than Ethernet networks, and may be subject to interference from appliances such as microwaves and 2.4 GHz cordless phones. To connect wirelessly, you must have a wireless access point or wireless router on your home network. On most home networks, the wireless access point is part of an integrated hub/router and home gateway.

To connect a Series2 DVR to a home network wirelessly, see “Connecting to a Home Network Using a Wireless Network Adapter” on page 11.

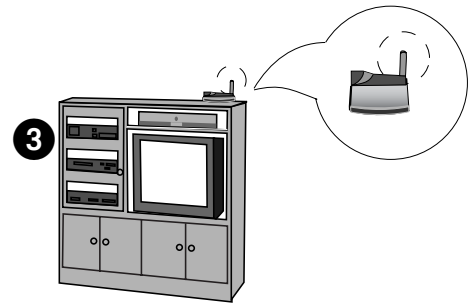
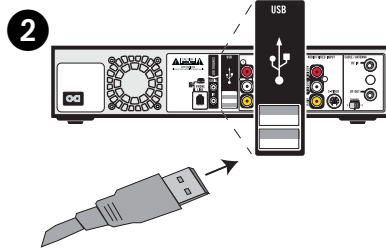
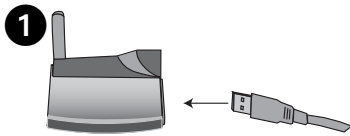
- **Wired (Ethernet).** Ethernet connections are generally faster, less expensive, more reliable and less susceptible to interference than wireless networks. Using Multi-Room Viewing to transfer a program is quicker over wired (Ethernet) than it would be over a wireless connection.

To connect a Series2 DVR to a wired (Ethernet) network, see “Connecting to a Home Network Using Wired (Ethernet)” on page 12.

Connecting to a Home Network Using a Wireless Network Adapter

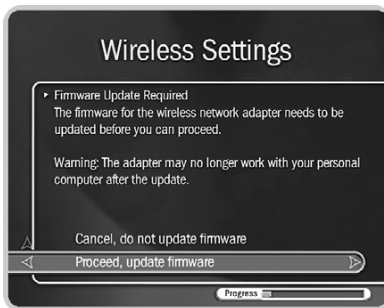
Use this example if you have a home network that includes a wireless access point or wireless router, or for each DVR in a wireless peer-to-peer network. You can leave your DVR plugged in while you connect a network adapter.

To connect a wireless network adapter to your TiVo Series2 DVR:



The cable may already be attached to your wireless network adapter.

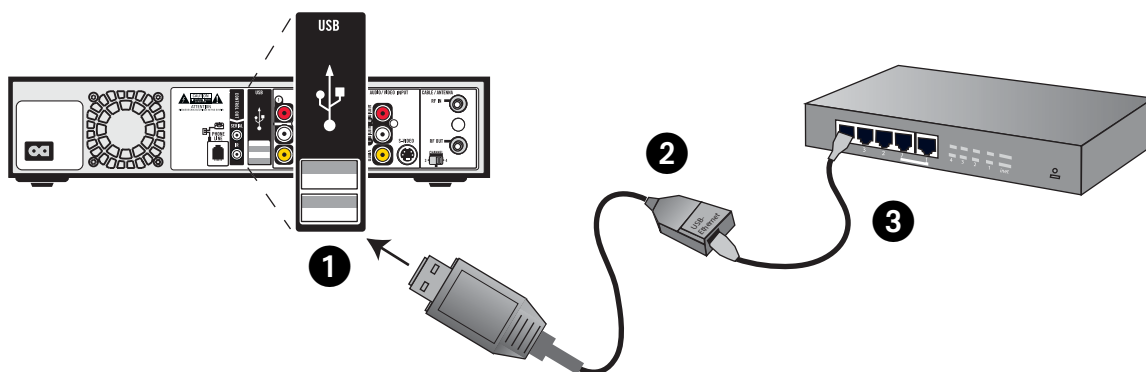
- 1. Connect to the adapter.** If it is not already attached, connect one end of the USB cable that came with your wireless network adapter to the port located on the back of the adapter.
- 2. Connect to the DVR.** Connect the other end of the USB cable to the USB port on the TiVo Series2 DVR. The power light on the wireless adapter may come on before the cable is completely inserted into the USB slot. Make sure you push the cable all the way into the USB slot.
- 3. Position the adapter.** Position the adapter in an open location so that the signal is easily transmitted. For example, if your DVR is in an entertainment center, you might place the adapter on top of your entertainment center. Do not place the wireless adapter near the TiVo DVR's power supply or on a power strip or surge protector. Doing so can cause signal interference or reduce signal strength.
- 4. Firmware update.** When you first connect a wireless network adapter to your TiVo Series2 DVR, you may see a screen that says "Firmware Update Required." This means your DVR has a software update for the wireless network adapter you have connected. Select the option to update. This should not take more than a minute or two.
During the update, **do not** disconnect the network adapter wires or the power to the TiVo Series2 DVR. Either action might damage the adapter.
- 5. Important message.** The first time you press the TiVo button after you connect a network adapter, you will see an Important Message. Review it, then press SELECT on the TiVo remote to go to TiVo Central.
- 6. Next Step.** Go to "Completing the DVR's Network Settings" on page 13.



Connecting to a Home Network Using Wired (Ethernet)

This example shows you how to connect a TiVo Series2 DVR to a network hub using a wired (Ethernet) network adapter. You can leave your DVR plugged in while you connect a network adapter.

To connect a wired (Ethernet) network adapter to your TiVo Series2 DVR and your network hub, follow these steps:

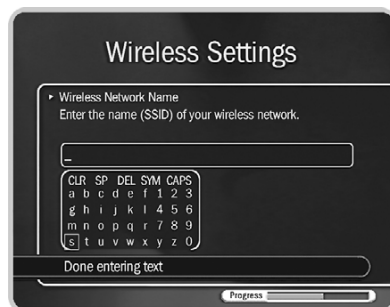
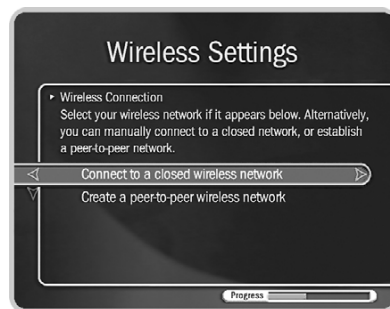
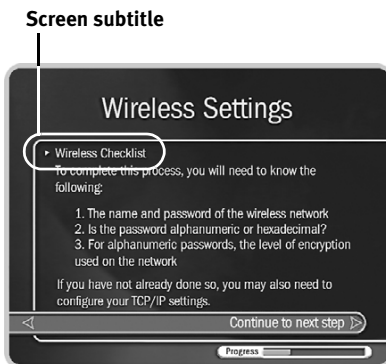


1. **Connect to the DVR.** Connect the USB end of the Ethernet adapter to the USB port on the TiVo Series2 DVR.
2. **Connect Ethernet to the adapter.** Plug one end of an Ethernet cable into the Ethernet adapter.
3. **Connect Ethernet to the hub router.** Plug the other end of the Ethernet cable into your home network's hub or router.
4. **Important message.** The first time you press the TiVo button after you connect a network adapter, you will see an Important Message. Review it, then press SELECT on the TiVo remote to go to TiVo Central.
5. **Next Step.** If your home network has DHCP, wait a few minutes for your DVR to automatically complete its network settings, and then you're done!

If your home network doesn't have DHCP, or if you're having trouble establishing a network connection, go to "TCP/IP Settings for a Home Network" on page 15.



Many of the screens you use to complete Wireless Settings or TCP/IP Settings have the same title. However, they have different subtitles. In this document, each screen is identified by its subtitle.



Completing the DVR's Network Settings

If your DVR is connected to a wired (Ethernet) network adapter, skip to “TCP/IP Settings for a Home Network” on page 15.

Wireless Settings for a Home Network

If you have a wireless home network, and have connected a wireless network adapter to your TiVo Series2 DVR, as described on page 11, you are ready to complete Wireless Settings for a home network.

To get to Wireless Settings: press the TiVo button on the remote control to go to TiVo Central, then select Messages & Setup, then Settings, then Phone & Network Setup, then “Edit phone or network settings,” then Wireless Settings.

Wireless Checklist

This is the first Wireless Settings screen you will see. It lists information you need to complete wireless settings. You can find all this information in the configuration settings of your network's wireless access point or router.

If your wireless network does not use encryption (WEP), then you only need to provide a wireless network name; you do not need to provide a password format or password.

When you are ready to continue, press SELECT on your remote control.

Wireless Connection and Wireless Network Name

You must now provide the name of your wireless network. Wireless networks have a network name (sometimes called an SSID for *service set identifier*). A wireless network may be *open* or *closed*. Open wireless networks broadcast their network names, allowing devices in their vicinity to identify them automatically. Closed wireless networks do not broadcast their network names, so they cannot be identified automatically.

This screen lists the names of nearby wireless networks that your DVR has been able to identify. If you have a wireless router (or wireless access point) and you did not set a network name, your network is probably using a name supplied by the router's manufacturer.

If your network's name is listed, select it. (You may be able see more names by pressing CHAN DOWN to scroll down the screen.)

Otherwise, select “Connect to a closed wireless network.”

- On the “Wireless Network Name” screen, enter the name of your network by using the arrow keys on your TiVo remote to highlight a character, then pressing SELECT to enter it.

You must use capital and lowercase letters appropriately. For example, to find a network named “My Network” you must capitalize the “M”

and “N”; entering “my network” would not work. Use THUMBS UP and THUMBS DOWN to change to uppercase or lowercase. Select “Done entering text” when you are finished.

If the DVR detects that your wireless network does not use encryption (WEP) you will see the Confirm Settings screen, described on page 15.

Wireless Password Format

You see the Wireless Password Format screen if there is a chance that your wireless network uses WEP encryption.

WEP is a kind of encryption used by wireless networks to improve their security. There are different levels of WEP encryption, typically called 40, 64, 104, 128, or 256-bit encryption. Encryption at higher levels offers better security. At the highest levels (104-bit or above), WEP encryption may slow down the transfer of programs from one DVR to another by a small amount. WEP is usually turned on or off through the configuration settings of a wireless access point or router. If your network uses WEP, then it has a password or “key.”

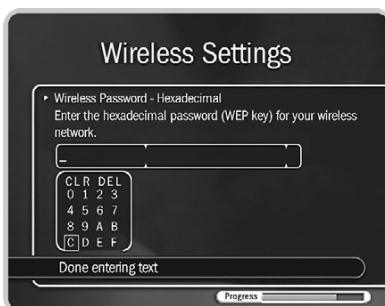
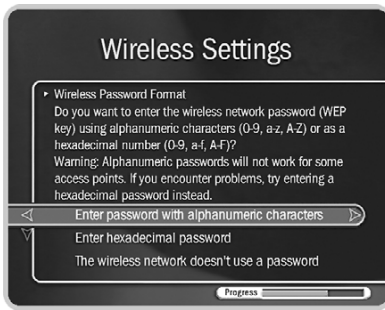
To connect a DVR to a network that uses encryption, you need to provide:

- **A wireless password format.** WEP passwords may be hexadecimal (a combination of letters from A-F and numbers from 0-9), or alphanumeric (a combination of letters from A-Z and numbers from 0-9). If your network has both an alphanumeric and a hexadecimal password, we strongly recommend you use the hexadecimal password.
- **A wireless password.** It does not matter whether the letters of a hexadecimal password are uppercase or lowercase, but for alphanumeric passwords, capitalization is important. For example, if the password is “Password,” then entering “password” will not work. Some hexadecimal passwords have only numbers.
- **A level of wireless encryption.** If you specify an alphanumeric password, you must also specify a level of wireless encryption. TiVo Series2 DVRs are compatible with 40, 64, 104, and 128-bit encryption; they are not currently compatible with 256-bit encryption.

Choose a format or select “The wireless network doesn’t use a password.” If you select “The wireless network doesn’t use a password,” you will see the Confirm Settings screen, described on page 15.

Wireless Password - Alphanumeric or Hexadecimal

- **Hexadecimal (preferred).** Enter a hexadecimal password by using the arrow keys on your TiVo remote to highlight a character, then pressing SELECT to enter it. It does not matter if a letter is uppercase or lowercase. Some hexadecimal passwords contain only numbers.
- **Alphanumeric.** Enter an alphanumeric password by using the arrow keys on your TiVo remote to highlight a character, then pressing SELECT to





enter it. You must use capital and lowercase letters appropriately. For example, if your password is “MyPassword”, entering “mypassword” will not work. Use THUMBS UP and THUMBS DOWN to change to uppercase or lowercase. Select “Done entering text” when you are finished.

Wireless Encryption

If you entered an alpha-numeric password, you will see this screen. Select the level of encryption used by your wireless network. If your network uses 104-bit encryption, select 128-bit encryption. TiVo Series2 DVRs are not currently compatible with 256-bit encryption.

Confirm Settings

Select “Accept these settings” if they are correct. For steps you can take to troubleshoot issues with your wireless connection, see “General Network Troubleshooting” on page 51.

Change Connection Type?

You see this screen if you are not using a shared Internet connection to connect to the TiVo service. If your network includes a broadband Internet connection, select “Yes” to use it to connect to the TiVo service.

Next Step

You have completed wireless settings. If your home network has DHCP, and you do not have a DHCP Client ID, the DVR will automatically complete network setup. We recommend that you confirm the DHCP settings of your network by continuing with “TCP/IP Settings for a Home Network,” below.

If your home network does not have DHCP, or if you have a DHCP client ID, continue with “TCP/IP Settings for a Home Network.”

TCP/IP Settings for a Home Network

You are ready to complete TCP/IP settings if:

- You are connecting your TiVo Series2 DVR to your home network wirelessly and have already completed “Wireless Settings for a Home Network” on page 13, or
- You have a wired (Ethernet) adapter connecting your TiVo Series2 DVR to your home network.

Basic TCP/IP Concepts

This section describes a few basic TCP/IP concepts. If you are familiar with home networking, you can skip to “Begin TCP/IP Settings” on page 16.

- **IP Address.** TCP/IP settings are used to manage *IP addresses* on a network. An IP address is a number that identifies a single device on a network (in much the same way that a home address identifies a single home in the US). IP addresses use four numbers separated by periods. Each number can be from 0 to 255. Some example IP addresses are: 192.168.0.1 and 10.8.3.25
- **DHCP and Static IP Addresses.** *DHCP* automatically assigns IP addresses to devices on a network. Most home networks include a router or home gateway that has DHCP. If your network has DHCP, or you are creating a peer-to-peer network, your Series2 DVR can obtain its IP address automatically. An IP address assigned by DHCP is called a *dynamic IP address* because it may change automatically as devices are added to or removed from the network.

If your network does not have DHCP, you must specify an IP address for your Series2 DVR. An IP address you specify is considered a *static IP address*, because it will not change until you specify a new one.

If you assign a static IP address to your DVR, remember that:

- The first three sets of numbers in the IP address usually must match the first sets of numbers in the IP address used by another device on the network (for example, a computer). The first three sets of numbers for IP addresses on a home network are usually: '192.168.0.' or '192.168.1.'
- If the first three numbers match those of another IP address, the last number has to be unique.

For example, two IP addresses for devices on the same network might be '192.168.1.5' and '192.168.1.6'.

Begin TCP/IP Settings

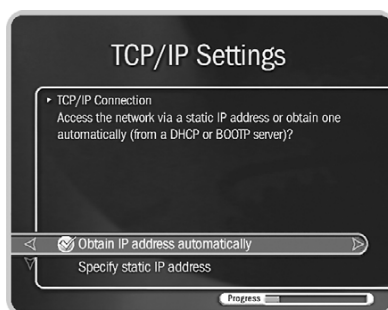
To get to TCP/IP Settings: press the TiVo button on the remote control to go to TiVo Central, then select Messages & Setup, then Settings, then Phone & Network Setup, then "Edit phone or network settings," then TCP/IP Settings.

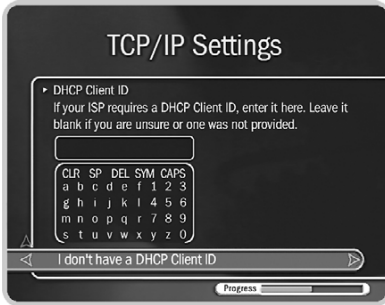
TCP/IP Connection

On the first screen in TCP/IP Settings, you specify how your DVR gets an IP address. You can choose to:

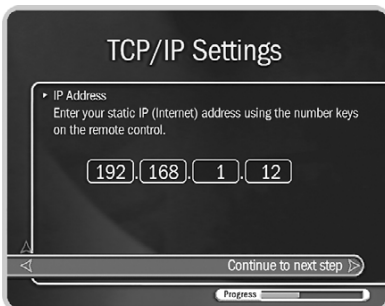
- Obtain the IP address automatically. Use this option if your router or gateway has DHCP. Continue with "DHCP Client ID," below.
- Specify a static IP address if you don't have a DHCP server. Continue with "Static IP Address Checklist" on page 17.

If you are not sure what to select, you can try "Obtain IP address automatically." This selection will work for most people. If it does not work,





To find TCP/IP settings on a Macintosh, open System Preferences and click on Network . For help finding TCP/IP settings on a Windows-based computer, see “Appendix A: Finding TCP/IP Settings on a Windows-Based Computer” on page 62.



you can return to TCP/IP Settings later and make other selections. (A brief description of IP addresses is provided in “Basic TCP/IP Concepts” on page 15.)

DHCP Client ID

Unless you received a DHCP Client ID from your Internet service provider (ISP), you can select “I don’t have a DHCP Client ID.” This selection will work for most people.

If your ISP provided you with a DHCP Client ID, enter it by using the arrow keys on your TiVo remote to highlight a character, then pressing SELECT to enter it.

You must use capital and lowercase letters appropriately. For example, if your DHCP Client ID is “ID7343”, entering “id7343” will not work. Use THUMBS UP and THUMBS DOWN to change to uppercase or lowercase. Select “Done entering text” when you are finished.

Skip to “Confirm Settings” on page 18.

Static IP Address Checklist

If you do not have a DHCP server, you need to provide:

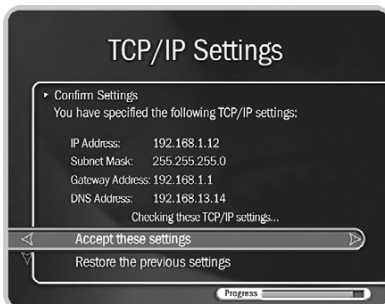
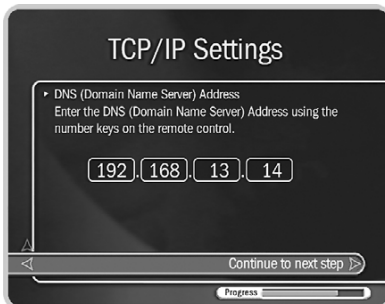
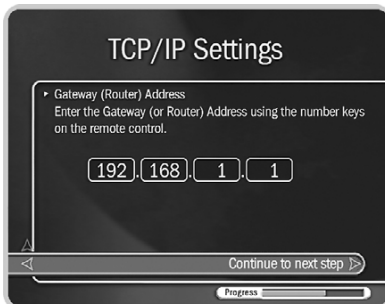
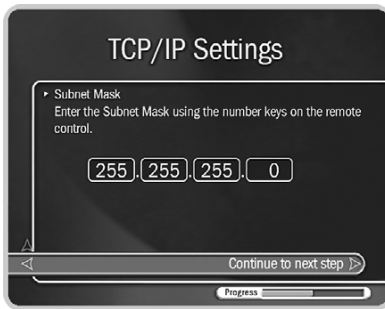
- An IP address for your TiVo Series2 DVR,
- A Subnet Mask for your home network,
- An IP address for your home gateway or router, and
- An IP address for a DNS (Name Server).

You will create a unique IP address for your DVR. The Subnet Mask, gateway or router IP address, and DNS IP address are usually provided by your Internet service provider (ISP). They are also usually available on the configuration screens of your home gateway or router.

If you have a computer on your home network, you may be able find the Subnet Mask, home gateway, or router IP address, and DNS IP address in the computer’s TCP/IP settings. In addition, you can use your computer’s IP address to help create an IP address for your DVR. For example, if your computer’s IP address is ‘192.168.1.2’ then your DVR’s IP address should probably also start with ‘192.168.1’ and end with a number other than 2.

IP Address

The first three sets of numbers in the IP address are usually the same as other devices on your home network. The final number is usually unique to a device on your home network. For example, with the IP address ‘192.168.1.12’, the first part, ‘192.168.1’, would be common to all devices on the network. The last part, ‘12’, would be unique to a device on the network.



Subnet Mask

A subnet mask allows communication between a large network (such as the Internet) and a smaller sub-network (such as your home network). It uses the same format as an IP address and is usually provided by your Internet service provider (ISP). The subnet mask for a home network is usually '255.255.255.0'.

You may also be able to find the subnet mask by inspecting the IP settings of a computer on the same home network.

Gateway (Router) Address

Enter the IP address of your home gateway or router. The IP address is usually available in the configuration screens for your gateway or router. Some common values for the gateway or router IP address on a home network are '192.168.0.1' and '192.168.1.1'. If you use a router supplied by your Internet service provider (ISP), your ISP should also have supplied the router's IP address.

You may also be able to find the home gateway or router IP address by inspecting the IP settings of a computer on the same home network.

DNS (Domain Name Server) Address

If your home network includes a broadband connection to the Internet, your Internet service provider (ISP) will have given you a DNS address. You may also be able to find the DNS address by inspecting the IP settings of a computer on the same home network.

Confirm Settings

Review the settings and select "Accept these settings" if they are correct.

Congratulations, your TiVo Series2 DVR should now be connected to your home network!

For steps you can take to troubleshoot issues with your TCP/IP Settings, see "General Network Troubleshooting" on page 51.

Change Connection Type

If your DVR uses a phone line to connect to the TiVo service, you will see this screen anytime you complete Wireless Settings or TCP/IP Settings.

Only select Yes if your DVR is connected to a network that includes a broadband Internet connection. Advantages of connecting to the TiVo service over the Internet are:

- You may disconnect your phone line from the DVR. You only need to reconnect your phone line if you repeat Guided Setup.
- You can use Online Scheduling to schedule a program to record an hour before it begins.

2

Connecting Your DVR to Your Home Network



For steps you can take to troubleshoot issues with your connection to the TiVo service, see “General Network Troubleshooting” on page 51.

After you select Yes or No, you see the Phone & Network Settings screen. Press LEFT arrow to see Phone & Network Setup. The first line of Phone & Network Setup should read: Connect Via: Network.

To test the new connection, select Test Connection. On the next screen, press SELECT.



This section shows you how to create a peer-to-peer network between two TiVo Series2 DVRs. It is possible to create a peer-to-peer network that includes a personal computer, but that requires the installation of software and drivers for your personal computer. Examples of such a network are not provided in this document.

Connecting Two Series2 DVRs for Multi-Room Viewing

If you don't already have a home network, but want to use Multi-Room Viewing (described on page 25), consider setting up a *peer-to-peer* network. A peer-to-peer network connects devices directly (for example, two or more TiVo Series2 DVRs), without a router.

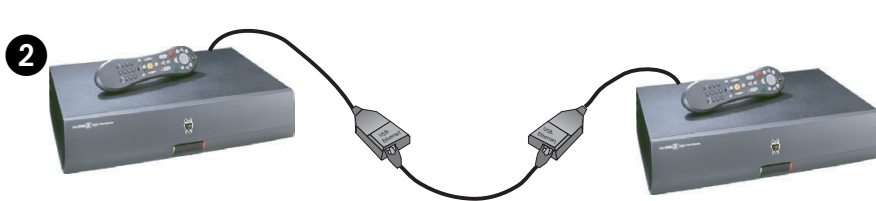
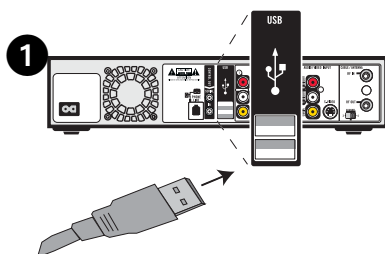
You can create either a wireless or wired (Ethernet) peer-to-peer network, as described in the following two sections.

Connecting Two Series2 DVRs to Each Other Using Wired (Ethernet)

In addition to two Series2 DVRs, you need the following to complete this setup:

- An Ethernet network adapter for each TiVo Series2 DVR. Check our list of recommended adapters at www.tivo.com/adapters.
- A *crossover* Ethernet cable to connect the two DVRs. A crossover cable is used to connect two devices without a hub or switch. Make sure the packaging for the cable clearly describes it as a crossover cable.

You can leave the DVRs plugged in while you connect them to each other.



Verify that you can see one DVR in the Now Playing list of another.

1. **Plug in the adapters.** Connect the USB end of an Ethernet adapter to the USB port on each TiVo Series2 DVR.
2. **Connect the crossover cable.** Connect the Ethernet crossover cable to each of the network adapters.
3. **Verify.** Wait 5 minutes for the DVRs to begin communicating over the cable, then check Now Playing on one DVR. At the bottom of Now Playing (you can press the ADVANCE button to reach the bottom of the list), you should see the other DVR. Select that DVR to verify that you can see programs in its Now Playing list.

You're done! If you have further questions, see "Multi-Room Viewing Troubleshooting" on page 59.

Connecting Two Series2 DVRs to Each Other Wirelessly

To create a wireless peer-to-peer network between TiVo Series2 DVRs:

1. Connect a wireless network adapter to each DVR. See “Connecting to a Home Network Using a Wireless Network Adapter” on page 11.
2. Use one DVR to create the wireless peer-to-peer network. See “Creating a Wireless Peer-to-Peer Network”, below.
3. Connect the other DVR(s) to the peer-to-peer network. See “Wireless Settings for a Home Network” on page 13.



Creating a Wireless Peer-to-Peer Network

To get to Wireless Settings, press the TiVo button on the remote control to go to TiVo Central. Select Messages & Setup, then Settings, then Phone & Network Setup, then “Edit phone or network settings,” then Wireless Settings.

Wireless Checklist. This section provides the settings you need to create your peer-to-peer wireless network. As you complete the following screens, you should write these settings down so they are readily available when you connect additional DVRs to your network.

Select “Continue to next step.”



Wireless Connection. Select “Create a peer-to-peer wireless network.”

Peer-to-Peer Wireless Channel. Wireless networks can broadcast on different channels. If you have multiple wireless networks in the same area, placing them on different channels can improve performance by reducing network congestion.

Select any channel number between 1 to 11. If you are uncertain about which number to use, try channel 11.

Press SELECT to continue to the next step.



Wireless Network Name. Enter a name for your peer-to-peer wireless network. Use the arrow buttons on the remote to highlight a letter. Press SELECT to enter it.

Write down your network name and be sure to note which letters are upper case and which are lowercase. You will need the network name to connect other DVRs to your network. Select “Done entering text” when you are finished.

Confirm Settings. Review the settings and select “Accept these settings” if they are correct. If you have further questions, see “Multi-Room Viewing Troubleshooting” on page 59.

Change Connection Type. You see this screen after you have configured your wireless settings. Select “No, continue to connect via the phone.”



Verify that you can see one DVR in the Now Playing list of another.



Use Manage My Account (online at www.tivo.com/manage) to change the name of your DVRs.

Next Steps. For each additional DVR, use the network settings you just created to complete “Wireless Settings for a Home Network” on page 13. After completing Wireless Settings for an additional DVR, verify the connections as described below.

Your DVRs will assign themselves compatible IP addresses. This means that even though the peer-to-peer network does not have a DHCP server, you do not have to complete TCP/IP settings for any of the DVRs.

Verify. Wait 5 minutes after completing Wireless Settings. This gives the DVRs time to assign themselves IP addresses and begin communicating with each other.

Check the Now Playing list of each DVR. At the bottom of Now Playing (you can press the ADVANCE button to reach the bottom of the list), you should see any other DVR on the peer-to-peer network. Select another DVR to verify that you can see programs in its Now Playing list.

You’re done! If you have further questions, see “General Network Troubleshooting” on page 51.

Using Home Media Features

- 25 **Multi-Room Viewing**
 - 28 **Online Scheduling**
 - 31 **Music & Photos**
-



If you have not named your TiVo Series2 DVRs (using Manage My Account at www.tivo.com/manage), they are automatically given names using the last four characters of their TiVo service numbers.



When you use Manage My Account to enable Multi-Room Viewing for a DVR, you won't see that DVR on the Now Playing screens of your other networked DVRs right away. Your other DVRs will be notified of the change the next time they connect to the TiVo service.

Multi-Room Viewing

Multi-Room Viewing allows you to transfer programs from one TiVo Series2 DVR in your home to another. To use Multi-Room Viewing, you must have at least two TiVo Series2 DVRs, and:

- The DVRs must be on the same TiVo service account. (The TiVo service subscription for each DVR must be owned by the same person.)
- The DVRs must be connected to the same home network. For details, see “Connecting Your DVR to Your Home Network” on page 8.
- Each DVR must have active TiVo service.
- Multi-Room Viewing must be enabled for each DVR at Manage My Account (www.tivo.com/manage). This option is turned off by default, so you will need to turn it on for each DVR you want to use for Multi-Room Viewing.

After you have connected the DVRs to your home network, the Now Playing list of each DVR will show the names of the others.

In this section, the “sending DVR” refers to the DVR that a program is transferring from, the “receiving DVR” refers to the DVR a program is transferring to.

Choosing Which DVRs Use Multi-Room Viewing

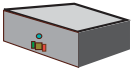
You can use Manage My Account to turn Multi-Room Viewing on or off for any of your DVRs. To enable or disable Multi-Room Viewing for a DVR:

1. Sign in to Manage My Account at www.tivo.com/manage.
2. On the left side of the screen, click on DVR Preferences.
3. Click in the box to the right of a DVR's name to turn Multi-Room Viewing on or off.
4. Click the Save Preferences button near the top of the page.
5. On the DVR, connect to the TiVo service to retrieve the new settings. To do this, go to TiVo Central, then Messages & Setup, then Settings, then Phone & Network Setup, then “Connect to the TiVo service now.” Press SELECT to connect to the TiVo service.



How to Transfer a Program

To transfer a program from one TiVo Series2 DVR within your home to another:

1. In the Now Playing list on the receiving DVR, you will see other DVRs on your home network with the DVR icon next to their names. Select the DVR containing the program you want to transfer. This will be the sending DVR. 
2. Press SELECT on the name of a program you want to transfer. (You cannot transfer a program while it is recording on the sending DVR.) Then select "Watch on this TV."
3. On the Getting Program screen, you can choose to watch the program as it is transferring, or continue browsing Now Playing on the sending DVR. If you watch the program as it is transferring, you might experience intermittent delays in the transfer. You may want to complete the transfer before viewing the program.

Stopping a Transfer in Progress

To stop a program transfer while it is in progress, select the program in Now Playing and then select "Stop transferring."

On the Stop Transfer screen, if you choose "Stop transfer & delete from Now Playing," the portion of the program that has already transferred to the receiving DVR is deleted. The program remains unchanged on the sending DVR.

Transferring From a Paused Location

There may be times when you watch the beginning of a program, but want to watch the rest in another location. For example, you may get half way through a movie in your living room, and then want to watch the rest of it in your bedroom before you go to sleep. You can choose to transfer only the part you have not watched. The program cannot be playing on the sending DVR when you start the transfer.

1. In Now Playing on the receiving DVR, select the sending DVR.
2. Press SELECT on the program you want to transfer, then select "Watch from the paused location."
3. On the Getting Program screen, you can choose to watch the program as it is transferring, or continue browsing Now Playing on the sending DVR.

Multiple Transfers

Your DVR can only send one program at a time. It can also only receive one program at a time. If you choose to transfer more than one program to it, it completes the first transfer before starting on the next. A DVR may both

send and receive a program at the same time, but doing so will probably reduce the speed of both transfers.

If you have more than two Series2 DVRs connected to your home network, we recommend that you do not transfer programs from one DVR to two or more receiving DVRs at the same time.

Watching While Transferring

If you watch a program as it is transferring, you might experience intermittent delays in the transfer. You may want to complete the transfer before viewing the program. The following factors affect the time required to complete a complete transfer:

- Whether the two DVRs have a wireless or wired (Ethernet) connection. Wired (Ethernet) connections are much faster. If your home network uses a hub or router, using a wired (Ethernet) connection for even one of the DVRs will probably speed up transfers.
- Wireless signal strength. If one or both of the DVRs is connected wirelessly, improving the wireless signal strength may increase transfer speeds. See “Check signal strength” on page 53 for steps to improve wireless signal strength.
- The video quality of the recorded program. Programs recorded at lower video quality, such as Medium, transfer more quickly than programs recorded at higher video qualities like High or Best.
- The number of transfers occurring simultaneously. A DVR may send and receive a program at the same time, but doing so will probably reduce the speed of both transfers.

Now Playing Icons

The icons that appear next to programs listed in Now Playing also apply to programs that you have transferred. For example, a red dot appears for a program that is recording or transferring onto the DVR, and other colored dots indicate the length of time a program will be saved.

TiVo Suggestions work a bit differently. A program that was recorded as a TiVo Suggestion on DVR #1 and then transferred to DVR #2 is not considered a TiVo Suggestion on DVR #2, since DVR #2 didn't “suggest” it to you.



Different models of TiVo DVRs

may use different names for levels of video recording quality. Therefore, the listed video quality of a program may be different on the receiving DVR than it was on the sending DVR. The receiving DVR will show the program at the quality that most closely matches the quality on the sending DVR.

Online Scheduling

You don't need a home network to use Online Scheduling at TiVo Central Online (www.tivo.com/tco). But if your home network includes a shared broadband Internet connection, your DVR retrieves your Online Scheduling requests faster and more often—within an hour!

Although TiVo Central Online uses your DVR's selected channel lineup, be aware that it may display program info for programs that are broadcast on channels you do not actually receive. (For example, if Showtime® is in your channel lineup, programs that air on Showtime are displayed in search results even if you don't subscribe to it.)

Before you schedule a recording, make sure it is on a channel you actually receive so you do not end up with an "empty recording" in Now Playing. Refer to the lineup card you received from your cable or satellite provider for your complete list of channels. Then check the Channels You Receive screen on your DVR. To do this, go to TiVo Central, then Messages & Setup, then Settings, then Channels, then Channels You Receive. Make sure each channel you receive has a yellow checkmark next to it.

To find programs using TiVo Central Online, go to www.tivo.com/tco and sign in. Once you're signed in, you can search for shows to record.



It's important to remember that some common words are ignored in searches so as not to clutter your search results. Ignored words include pronouns ("we," "she"), prepositions, ("for," "from") articles ("the," "an"), and conjunctions ("and," "but"), among others. For example, if you're searching for the movie "About Schmidt," be sure to enter the whole title, as a search for just "about" will not return any results.

Using a Simple Search to Look for Shows

The Simple Search is the default search form available under "Search TV Listings" when you sign in to TiVo Central Online. To use the Simple Search:

- **By show or subject** — Type in the name of a show (like "Frasier") or a favorite subject (like "tennis" or "antiques") in the "Search for" field. Using the pull-down menu, specify if your entry is in the "Title," in the "Title or Description," or the name of an "Actor/Director." The results list every matching show that's on within the next couple of weeks, along with a summary description.
- **By channel** — Go to your favorite channel and check out what's on at a particular date and time within the next couple of weeks. Your search results provide a list of shows for 24 hours starting from the time that you've specified.

Using an Advanced Search to Look for Shows

For a more detailed search of TV Listings, click the "Advanced Search" link to the right of "Search TV Listings."

Advanced Search has all of the searchable options in the Simple Search (Title, Description, Actor/Director) plus the ability to specify a category, a subcategory, and a choice of time periods.

Viewing Your Search Results

When you look at the list of search results, you see that some of the program listings are color-coded in blue (for movies), green (for sports), or white (for all other programs). The grid at the bottom of the screen identifies each color category so that you can tell at a glance what types of programs are listed.

To see the detailed description for a particular program, click the program's title. You also see a list of upcoming episodes.

When you click the associated channel for an episode, you see the Browse by Channel page. All programs that are broadcast on that channel for a 24-hour period are listed, starting with the air time of the episode associated with the channel.

Scheduling a Recording

Once you've found programs you want to record, it's easy to schedule recordings on your DVR. From the list of search results, click the name of a program and choose one of the following options:

- **Record this episode** — Click this button to record a program and specify the priority and quality of the show.
- **Get a Season Pass** — Click this button to record this program every time it shows on this channel.

Whatever recording option you choose, you can also choose to receive a confirmation e-mail message sent to the e-mail address you provide. There is no instant online conflict resolution when you use Online Scheduling, so the e-mail notification is useful for notifying you of conflicts with other recorded programs. You can resolve a conflict by:

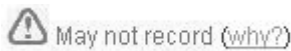
- Finding another showing of the program in the list of search results and recording that showing.
- Changing the recording priority setting to the highest priority: “Cancel other programs if necessary.”

If you decide to resolve the conflict by rescheduling the recording, be aware that your new scheduling request will take another 36 hours to process if you are using a phone or dial-up connection to the TiVo service, or as little as one hour with a broadband Internet connection. You must always factor in this time when using Online Scheduling.

Program Times Shown In Red

The list of programs with air times in red indicate that these programs might not record on your DVR if you schedule them. It is a visual reminder that there might not be enough time for your DVR to connect to the TiVo service to get the recording request.

If you click a program title that shows an air time in red, you will see a “May not record” warning next to the program description.



You can start a connection to the TiVo service to receive scheduling requests at any time. Just go to TiVo Central, select Messages & Setup, then Settings, then Phone & Network Setup, then “Connect to the TiVo service now.” After the connection to the TiVo service has successfully completed, any new recording requests are processed.

Connecting to the TiVo Service

When you make an Online Scheduling request, the request is received by your DVR the next time it connects to the TiVo service. If your DVR uses a shared broadband connection to the Internet, it checks a few times each hour for recording requests from TiVo Central Online. It retrieves the request within an hour of the time you scheduled it.

If your DVR uses a phone to connect to the TiVo service, it only checks for recording requests when it makes its regular connection to the TiVo service. It can take up to 36 hours before it makes its next automatic connection and retrieves your recording request.



Music & Photos

Music & Photos lets you use your TiVo Series2 DVR to play music or display photos that are stored on your home computer. Before you begin, make sure your DVR is connected to your computer via a home network, as described in Chapter 2, “Connecting Your DVR to Your Home Network.”

Here’s how Music & Photos works. You probably already have a collection of MP3 music files and digital photos on your home computer. To make these available on your DVR, you “publish” your music and photos using the TiVo Desktop application, available for free at www.tivo.com/desktop.

In this section, you’ll learn about installing the TiVo Desktop application, publishing your music and photos, and enjoying them on your DVR. Using TiVo Desktop on a Windows-based PC is different from using it on a Macintosh. Skip to the section that is appropriate for you by consulting the table below.

To learn about...	Go to...
Using TiVo Desktop for Windows to publish your music and photos	page 32
Using TiVo Desktop for Macintosh to publish your music and photos	page 40
Playing Your Music on Your DVR	page 44
Viewing Your Photos on Your DVR	page 46



For system requirements, see page 6.



If you are using Windows XP, you may get a firewall warning when installing TiVo Desktop. Make sure you allow TiVo Desktop to move through the firewall, or you won't be able to view photos or hear music on your DVR.

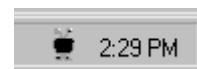
Installing TiVo Desktop for Windows-based PCs

To install the TiVo Desktop application for Windows-based PCs:

1. Download the TiVo Desktop application from www.tivo.com/desktop.
2. Make sure other Windows applications are not running, then double-click TiVoDesktop.exe to start the installation program.
3. Follow the instructions in the Installation Wizard screens.
4. When the installation is complete, click "Finish."

The TiVo Desktop application for Windows has two components:

- **TiVo Publisher** lets you choose music and photos to publish. Run the TiVo Publisher application when you want to change the selection of music or photos available to your TiVo Series2 DVR. To run TiVo Publisher, double-click the TiVo logo or select Programs > TiVo Desktop > TiVo Publisher from the Start menu.
- **TiVo Server** sends the music and photos to your TiVo Series2 DVR. TiVo Server runs automatically after you install it and whenever you start your PC. It gives your DVR access to music and photos you have published. You can tell TiVo Server is running by looking for a TiVo logo on the right side of your Windows Taskbar (the small area at the bottom of your computer screen). If you are using Windows XP, you may need to check your icon hiding settings in order to see the TiVo icon.



Using TiVo Publisher for Windows

TiVo Publisher stores shortcuts to your music and photos files, and information about how you want those files displayed on your DVR.

Publishing Your Music

Publishing your music means making MP3 files available over your home network to your TiVo Series2 DVR. Publishing does not copy music files to your DVR, so published music does not use any of your DVR's recording space.

If your computer creates a separate profile for each user (each user logs in with a password), then each user publishes music independently. Each user's songs and playlists are only available to the DVR when that user is logged on to the PC. Windows XP allows multiple users to log on at the same time. If more than one person is logged on, each person's music is available to the DVR.

Playlists and Folders. TiVo Publisher works with music in MP3 file format. A good way to organize your MP3 music collection is to use playlists, or groupings of songs you play together. TiVo Publisher supports most popular playlist formats. For a list of compatible formats, see page 35.



Your published music and photos are not available to your DVR if your computer is in "sleep" mode.

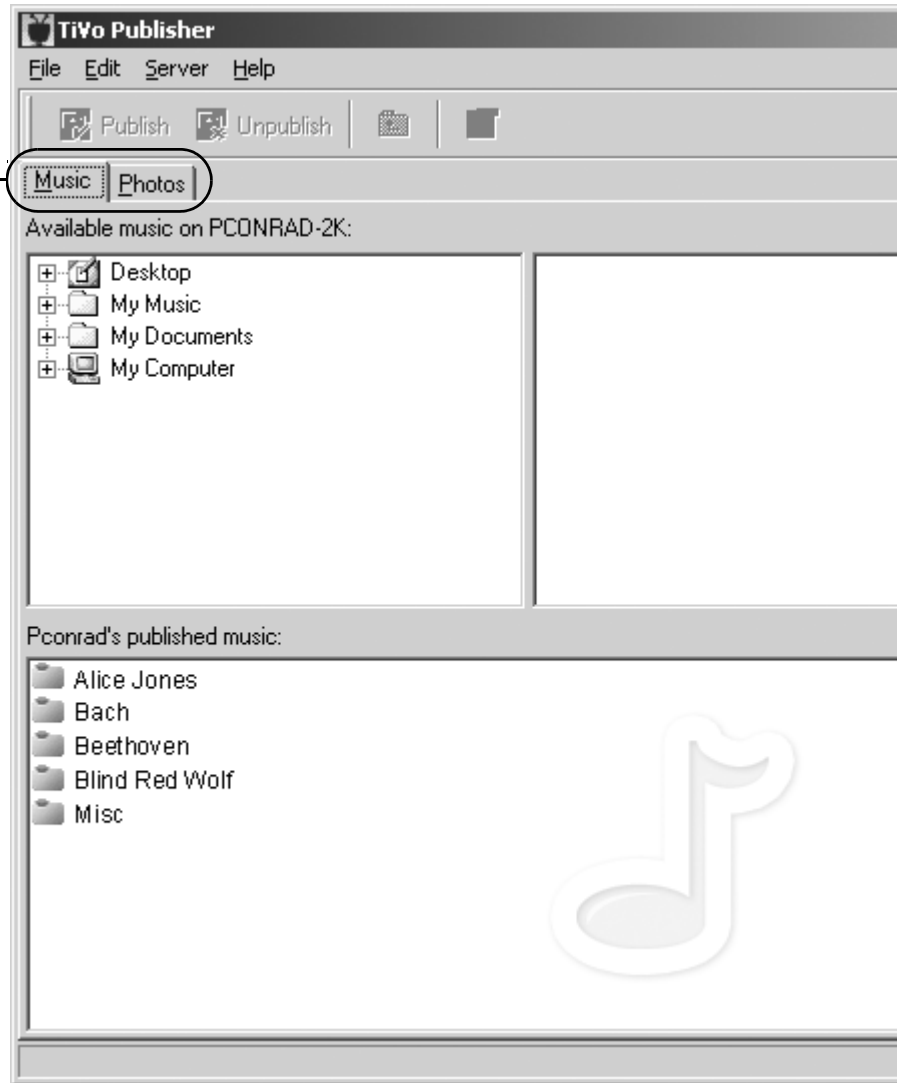


If you want to hear songs in the order they are arranged on an album or CD, create a playlist of the songs in that order, then publish and play that playlist. Or, create and publish a folder, making sure each song's file name starts with its track number.

Click the "Music" tab when you want to publish music.

If your MP3 player software uses a playlist format that is not supported, you can publish music in folders that you organize manually. The main difference between a folder and a playlist on your DVR is:

- songs in a folder play in alphabetical order.
- songs in a playlist play in the order you specified when you created the playlist.



You can also publish music by dragging and dropping files and folders from Windows into the bottom pane of the TiVo Publisher window.



If a folder contains both music and photos, you can publish it under the "Music" tab. However, only the music in the folder is available to the DVR. To publish the photos, you must use the "Photos" tab.

To publish a playlist or folder of music:

1. In TiVo Publisher, click the "Music" tab.
2. In the upper left pane, navigate to the folder containing the playlist or folder you want to publish.
3. Click once on the playlist or folder, then click the Publish button.

That's it! Now go to "Playing Your Music on Your DVR" on page 44.



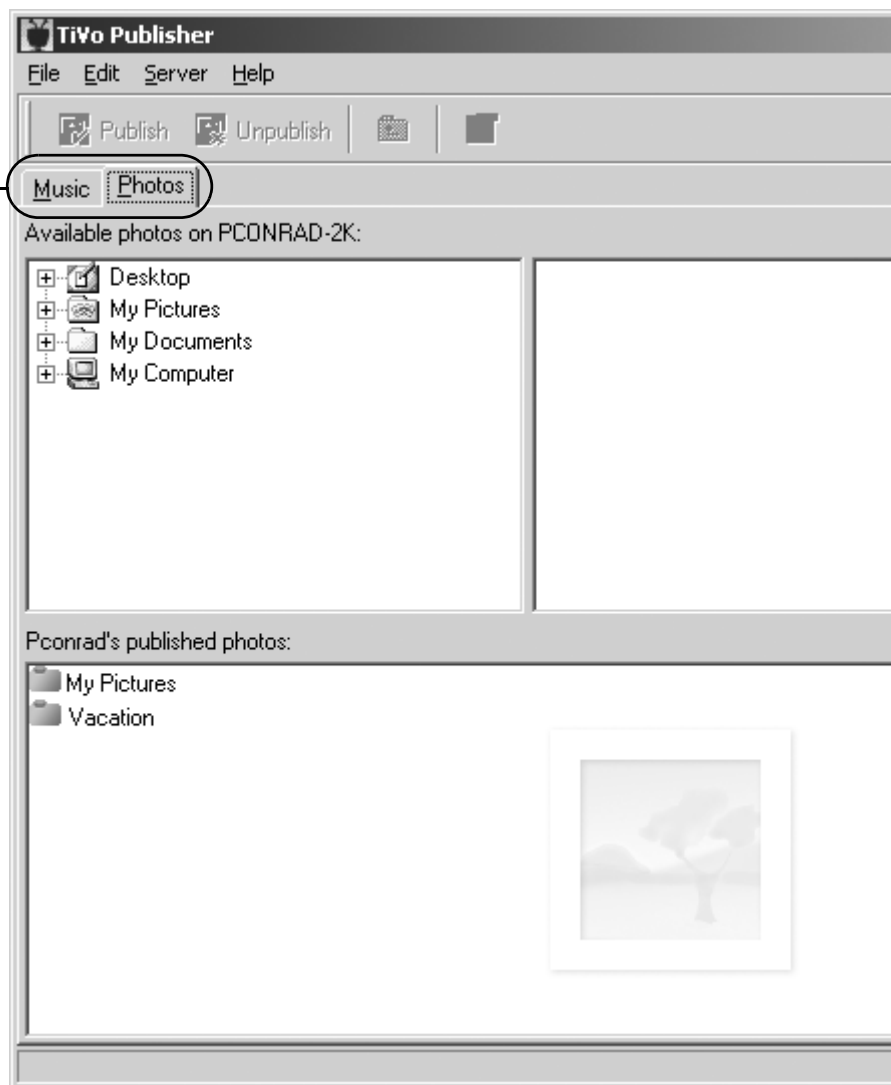
If a folder contains both music and photos, you can publish it under the “Photos” tab. However, only the photos in the folder are available to the DVR. To publish the music, you must use the “Music” tab.

Publishing Your Photos

Publishing your photos makes image files available over your home network to your TiVo Series2 DVR. Publishing does not copy image files to your DVR, so it does not use any of your DVR’s recording space.

If your computer creates a separate profile for each user (each user logs in with a password), then each user publishes photos independently; one user’s images and folders are not available to the DVR when another user is logged on to the PC. Windows XP allows multiple users to log on at the same time. If more than one person is logged on, each person’s photos are available to the DVR.

Click the “Photos” tab when you want to publish photos.



To publish a folder of photos:

1. In TiVo Publisher, click the “Photos” tab.
2. In the upper left pane, navigate to the folder you want to publish.

- Click once on the folder, then click the Publish button (or choose File > Publish).

That's it! Now go to "Viewing Your Photos on Your DVR" on page 46.

Unpublishing Music or Photos

You might want to remove published content from the TiVo Server. To unpublish media files:

- In TiVo Publisher, find the content you want to unpublish in the lower pane.
- Highlight the media files you want to unpublish and press the Unpublish button (or choose File > Unpublish).

Using TiVo Publisher with Multiple Users (Windows XP)

Windows XP lets each person who uses the computer (each "user") set up individual preferences. Each user can install different software or customize the look of the computer's screen.

After one user installs TiVo Desktop, both TiVo Publisher and TiVo Server are available to other users of the same computer. Each user can run TiVo Publisher to select music and photos. When a user logs in, that user's collection of published music and photos become available to the TiVo Series2 DVR if TiVo Server is running for that user.

When the user who installed TiVo Desktop logs in, TiVo Server starts automatically. Other users must select the option to start it automatically as described in "Starting, Exiting, and Pausing the TiVo Server" on page 39.

TiVo Publisher File Types (Windows)

Music File Types. TiVo Publisher works with music in the MP3 format.

Music Playlist Types. TiVo Publisher works with playlists in the following formats used by common PC music players:

M3U	PLS	ASX	B4S
-----	-----	-----	-----

Photo File Types. TiVo Publisher works with photos in these formats:

BMP	TIFF	DIB	GIF	JPG	PNG
-----	------	-----	-----	-----	-----

When these files are displayed on the television, they are scaled down to the resolution of the screen (approximately 640 x 480). Smaller image files are not scaled up to the screen resolution, and may not fill the screen completely.



There are many applications that convert music from other file formats to MP3 files available via the Internet.

Using TiVo Server for Windows

You can start and exit the TiVo Server from TiVo Desktop. For more information about starting and exiting the TiVo Server, see “Starting, Exiting, and Pausing the TiVo Server” on page 39. When the server is not running, music and photos on your PC will not be available on your DVR.

You can fine-tune the way TiVo Server operates using TiVo Server Properties. To open the Properties window, choose Server > TiVo Server Properties from TiVo Publisher. Control TiVo Server using these three tabs:

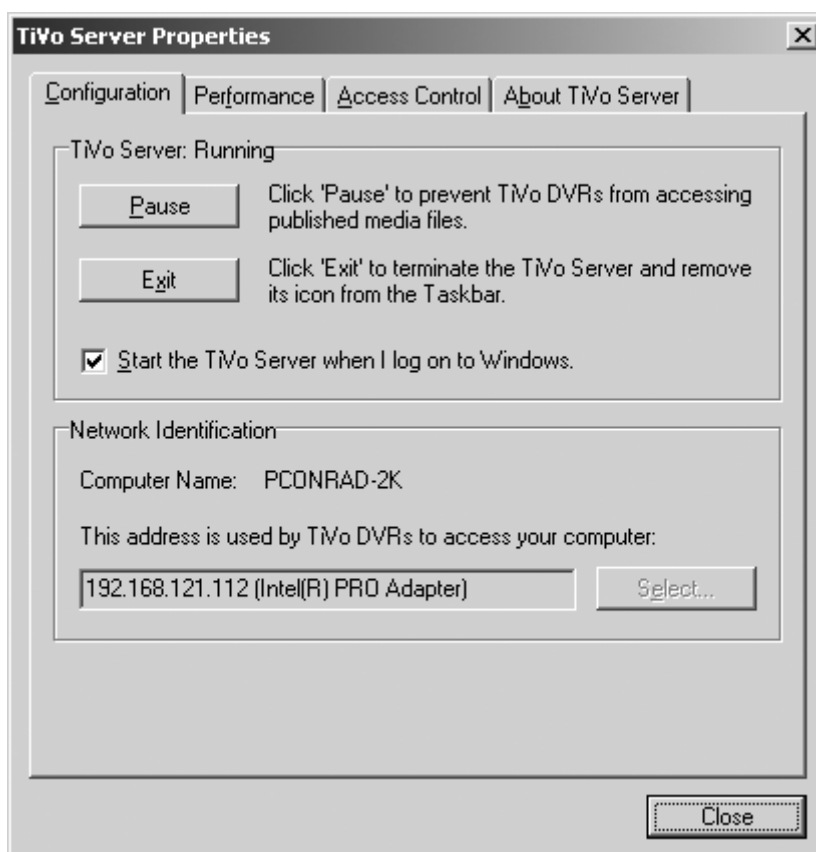
- Configuration
- Performance
- Access Control

Configuration

The Configuration tab shows whether the server is running, whether it will run when you log onto Windows, and the computer’s name and IP address.



If TiVo Server Properties lists a DVR’s IP address as “Unknown,” the TiVo Server is not connected to that DVR. Confirm that the DVR is physically connected to the same network as the computer running TiVo Publisher (as described in “Connecting Your DVR to Your Home Network” on page 8), then check the DVR’s network settings. (See “Completing the DVR’s Network Settings” on page 13 and “General Network Troubleshooting” on page 51.)



In the Server Status area are buttons marked “Pause” and “Exit.” Pressing “Pause” pauses the server and changes the name of the Pause button to “Resume.” When the server is paused, the TiVo Series2 DVR cannot access music and photos on your PC. Pressing Resume starts the server again, making media files available to your TiVo Series2 DVR. Pressing “Exit” shuts down the TiVo Server application.

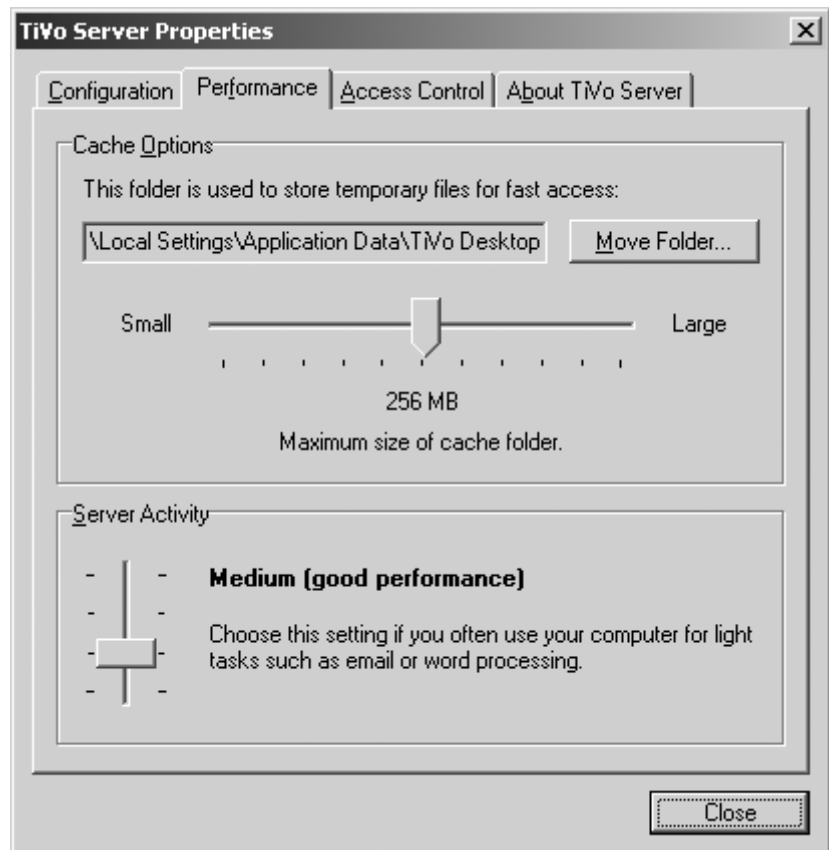
If you want your music and photos to be available whenever your PC is running, you should check the “Start the TiVo Server when I log on to Windows” box. If this box is not checked, then logging on to Windows will not start the TiVo Server, and music and photos on your PC will not be available to your TiVo Series2 DVR until you start the TiVo Server by hand.

The Computer Name field shows how your computer is identified in the Music & Photos screen on the TiVo Series2 DVR. If you have more than one computer on your home network, choosing a descriptive name for each can help you find the correct music and photos from your DVR. You can change the name of your computer using your computer’s operating system. See your computer’s help system for information on how to do this.

The IP Address field shows the IP address of your PC. If your TiVo Series2 DVR has trouble seeing the computer, you’ll need this IP address for troubleshooting. The Select button lets you choose an IP address if your computer has more than one (if running VPN, for example, or if you have multiple network adapters or devices like web cams).

Performance

Use the Performance tab to optimize the performance of TiVo Server.



In general, the more resources the PC dedicates to TiVo Server, the faster the Music & Photos feature operates. However, devoting too many resources to TiVo Server may slow down other tasks on the PC.

The TiVo Server uses a cache folder whose location appears in the Cache Folder field. The “Move Folder” button lets you browse for a new location and place the cache folder there. Beneath this field is a control that lets you control the size of the cache. A larger cache speeds up the performance of Music & Photos, but uses more of the PC’s hard drive. If you use the PC for other resource-intensive tasks, you might want to keep the cache smaller.

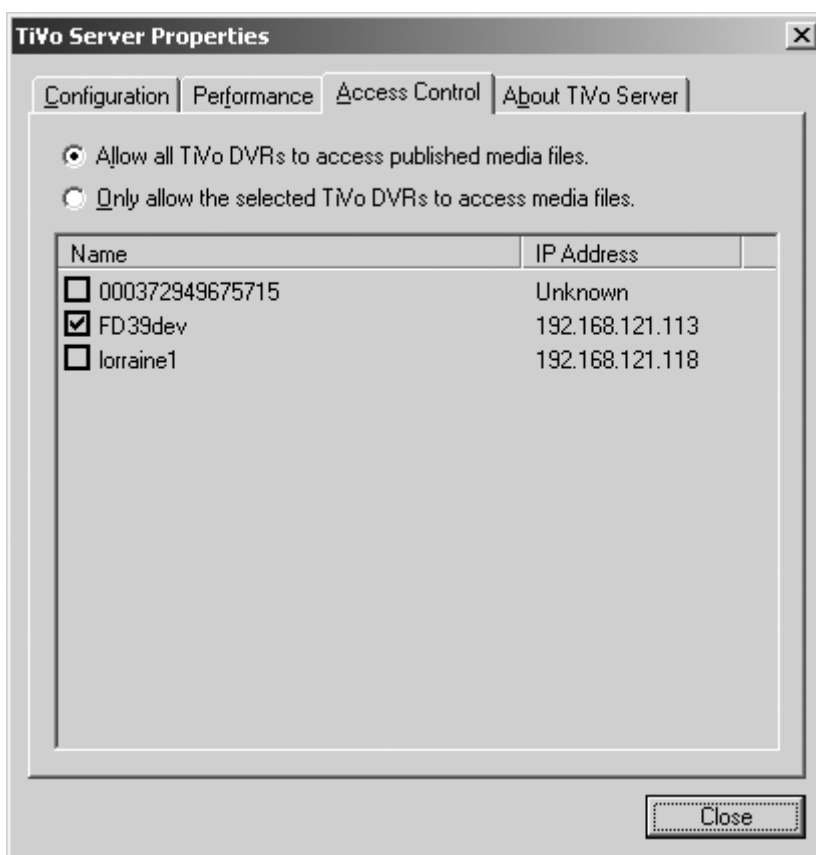
A control called Server Activity lets you determine how much of your PC’s resources Music & Photos uses. If you use your PC frequently, drag this control toward the low end so that your PC will run faster when you are using it. If your PC is not usually doing something else when you use Music & Photos, drag this control toward the high end for maximum performance when viewing music and photos on your TiVo Series2 DVR.

Access Control

The Access Control tab lets you determine which DVRs have access to the music and photos stored on your PC.



The access control settings are provided for convenience and are not intended to assure true security. The only way to fully protect your network is with a hardware firewall.



Normally, the music and photos published from your PC are available to any TiVo Series2 DVR connected to the same home network. In some cases, you might want to allow only certain DVRs access to the music and photos on your PC.



To configure TiVo Server to start whenever Windows starts, see “Using TiVo Server for Windows” on page 36.

Click the Access Control tab to see a list of all the DVRs on your home network. You can allow all DVRs in the list access to the music and photos on your PC by clicking the radio button marked “Allow any TiVo Series2 DVR to access media files.” This option is selected by default.

To share music and photos with only certain DVRs, click the radio button marked “Only allow the selected TiVo Series2 DVRs to access media files.” In the list below, place a checkmark in the box next to each DVR that should have access to your music and photos.

Starting, Exiting, and Pausing the TiVo Server

You might want to pause or exit the TiVo Server if you need all your PC’s resources for a difficult task. Pausing or exiting the TiVo Server means that no TiVo Series2 DVR has access to media files on your PC. When you are finished working on the PC, you might want to resume or restart the server. Resuming or restarting the server gives TiVo Series2 DVRs access to media files on your PC, according to the preferences you choose in “Access Control” on page 38.

Pausing the TiVo Server is almost never necessary, but may improve performance if you are doing several other things at once on the computer.

To pause the TiVo Server:

1. Open TiVo Publisher.
2. Choose Server > Pause.

To resume the TiVo Server:

1. Open TiVo Publisher.
2. Choose Server > Start / Resume.

If you are doing complex work on the computer, and pausing the TiVo Server does not improve the performance sufficiently, you can exit the TiVo Server instead of pausing it.

To Exit the TiVo Server:

1. Open TiVo Publisher.
2. Choose Server > TiVo Server Properties.
3. Under the Configuration tab, click Exit.

To Start the TiVo Server:

1. Open TiVo Publisher.
2. Choose Server > Start / Resume.



You can also pause, exit, and resume the TiVo Server by right-clicking the TiVo icon on the Taskbar, then choosing the appropriate item from the menu that appears.



For system requirements, see page 6.

Installing TiVo Desktop for Macintosh

TiVo Desktop for Macintosh lets you make music and photos stored on your Mac available to your TiVo Series2 DVR. It's easy to use because it is designed to work exclusively with iTunes and iPhoto.

To download and install the TiVo Desktop application for Mac:

1. Download the TiVo Desktop application from www.tivo.com/desktop.
2. Make sure no applications are running. If System Preferences is running, quit from it.
3. Double-click "TiVoDesktop_Mac_1.8.dmg" to create a volume named TiVoDesktop.
4. Double-click the TiVoDesktop volume to open it.
5. Within the volume, double-click "TiVoDesktop.pkg."
6. Follow the installation instructions as they appear on the screen.
7. When the installation is complete, click Close.



Your published music and photos are not available to your Series2 DVR if your computer is in "sleep" mode.

Using TiVo Desktop for Macintosh

TiVo Desktop stores shortcuts to your music and photos files, and information about how you want those files displayed on your DVR.

Turning TiVo Desktop On or Off

When TiVo Desktop is first installed, it is off. To turn it on:

1. Open System Preferences and, under Other, click on TiVo Desktop.
2. Click Start.

TiVo Desktop now starts automatically whenever you start your Macintosh. If you want to turn it off, return to TiVo Desktop under System Preferences and click Stop.



There are many applications that convert music from other file formats to MP3 files available via the Internet.

TiVo Desktop File Types (Macintosh)

Music File Types. TiVo Desktop works with music in the MP3 format.

Music Playlist Types. TiVo Desktop works with playlists created using iTunes.

Photo File Types. TiVo Desktop works with photos in these formats:

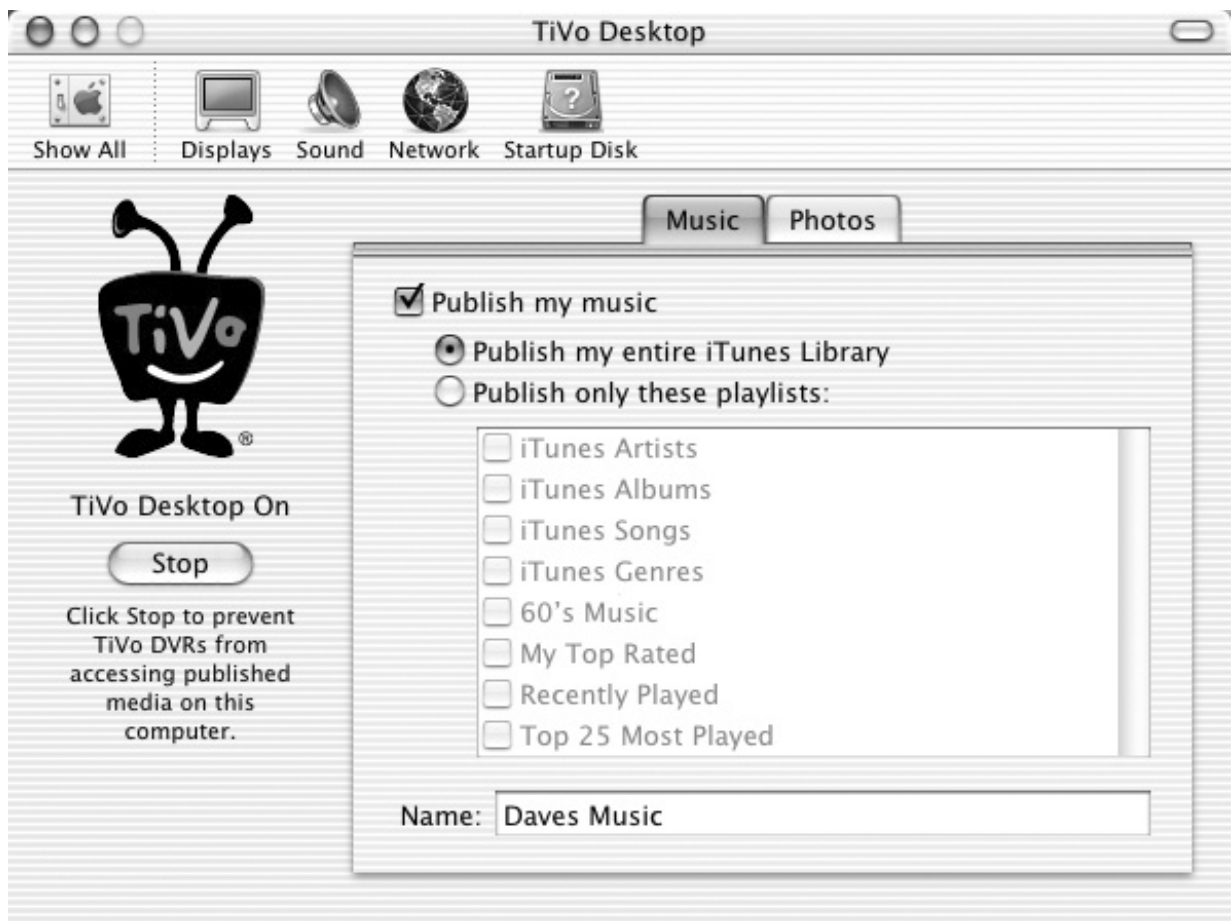
BMP	TIFF	GIF	JPG	PNG
-----	------	-----	-----	-----

When these files are displayed on the television, they are scaled down to the resolution of the screen (approximately 640 x 480). Smaller image files are not scaled up to the screen resolution, and may not fill the screen completely.

Publishing Your Music

Publishing your music means making MP3 files and playlists on your Macintosh available over your home network to your TiVo Series2 DVR. Publishing does not copy files to your DVR, so published music does not use any of your DVR's recording space.

TiVo Desktop works with music in MP3 file format. A good way to organize your MP3 music is to use playlists, or groupings of songs you play together. TiVo Desktop can use the playlists you create using iTunes.



To publish your music:

1. Open System Preferences and, under Other, click on TiVo Desktop.
2. Click to put a checkmark beside "Publish my music."
3. To publish all of your iTunes music library, click on the button beside "Publish my entire iTunes Library." To only publish some of your playlists, click on the button beside "Publish only these playlists," then click to put a checkmark in the box beside each playlist you want to publish.

That's it! Now go to "Playing Your Music on Your DVR" on page 44.

Publishing Your Photos

Publishing photos means making photo files available over your home network to your TiVo Series2 DVR. Publishing does not copy files, so published photos do not use any of your DVR's recording space.

Organizing your photos is important. If you use iPhoto to put them in albums that make sense to you, you will have an easier time finding them on the DVR. For example, you might put all your photos from a ski trip in an album called "Ski Trip."



To publish your photos:

1. Open System Preferences and, under Other, click on TiVo Desktop.
2. Click on the Photos tab.
3. Click to place a checkmark beside "Publish my photos."
4. To publish all photos in your library, click on the button beside "Publish my entire iPhoto Library." To only publish some of your albums, click on the button beside "Publish only these albums," then click to put a checkmark in the box beside each album you want to publish.

That's it! Now go to "Viewing Your Photos on Your DVR" on page 46.

Unpublishing Music or Photos

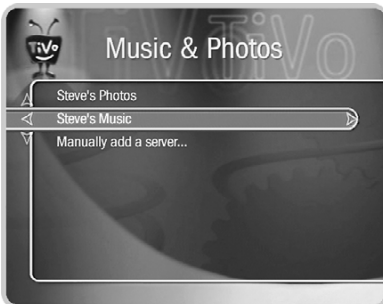
You might want to remove published content from TiVo Desktop. To unpublish media files:

1. Open System Preferences and, under Other, click on TiVo Desktop.
2. Click on either the Music or Photos tab.
3. To unpublish all of your music, click to remove the checkmark beside "Publish my music," otherwise, click to remove the checkmarks next to the playlists you wish to unpublish.

To unpublish all of your photos, click to remove the checkmark beside "Publish my photos," otherwise, click to remove the checkmarks next to the albums you wish to unpublish.



The Music & Photos screen shows computers that have published media files using TiVo Desktop. The Music screen shows a list of all the music folders, playlists, and songs you have published.



The music banner and the song info banner appear when you start playing a song, playlist, or folder. You can hide them both by pressing CLEAR.



Playing Your Music on Your DVR

Make sure that the volume on your television or home entertainment center is set to a pleasing level. To listen to music on the TiVo Series2 DVR:

1. From TiVo Central, select Music & Photos.
2. On the Music & Photos screen, you see an option that lets you view the music stored on your computer. For example, if your computer name is "My Computer" and your username is "Steve," then the option is called "Steve's Music on My Computer." If your computer is not named, the option is called simply "Steve's Music." Select this option.
3. You will see any playlists or folders that you have published. Highlight one and press PLAY. In a few seconds, music starts playing. After the first song ends, the second song in the playlist or folder begins.

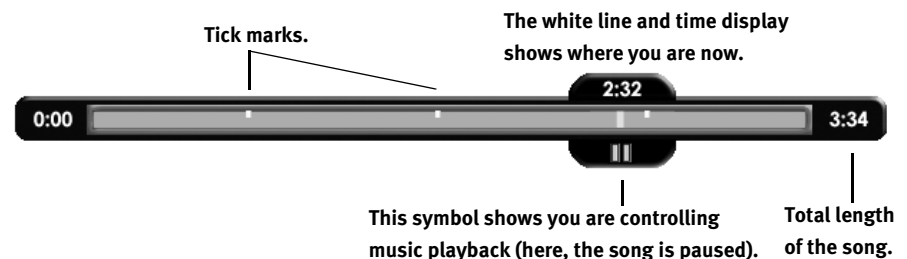
If you are unable to hear music on your TiVo Series2 DVR, please refer to "Music & Photos Troubleshooting" on page 54.

The Control Buttons, Status Bar, and Music Banner

Control Buttons. With the exception of SLOW, which doesn't work while playing music, the control buttons on your TiVo remote (PLAY, PAUSE, FAST FORWARD, REWIND) work while you are playing music on your DVR just like they do while watching recorded TV programs. Press ADVANCE to skip to tick marks on the status bar while fast-forwarding or rewinding. Skip to the next or previous track using CHAN UP/DOWN. Jump back 8 seconds with INSTANT REPLAY.

While music is playing, you can press the LEFT arrow to return to the Music screen. A note reminds you that you can press LIVE TV to return to the music playback screen. If you exit the Music feature, the music will stop, and the LIVE TV button will display live TV.

Status Bar. When you press any of the control buttons, the status bar appears on the lower part of the screen. The status bar represents the total length of the song currently playing. Three white tick marks are evenly-spaced, regardless of the song length. A white vertical line shows you where you are in the song. Press CLEAR to hide the status bar, and anything else on the screen.



Music Banner. The music banner at the top of the screen is similar to the channel banner shown when watching live TV. Press the RIGHT arrow to display the music banner while a song is playing. It shows the folder or

playlist name, the number of songs in the folder or playlist, and the total time of all songs. It also shows the shuffle or repeat options selected, and the current time. You can press ENTER to change the play options.

Changing the Music Play Options

The Music Play Options screen lets you choose how music plays on your TiVo Series2 DVR. To get to the Music Play Options screen:

1. From TiVo Central, select Music & Photos.
2. Select a music option.
3. Highlight a song and press SELECT.
4. Highlight “Play,” then “Options,” and press SELECT.

The Music Play Options screen lets you change the following options:

Shuffle. When shuffle is on, the DVR plays songs in the selected playlist or folder in random order. When this option is off, the DVR plays songs in a folder alphabetically by file name, and songs in a playlist in the order shown on the screen.

Repeat. When repeat is on, the DVR plays songs in the selected playlist or folder repeatedly. You can choose to repeat all songs, or just one. When this option is turned off, the DVR plays the entire playlist or folder only once.

Include Subfolders. When this option is on, the DVR plays:

- All the songs in the selected folder.
- All the songs in other playlists or folders inside the selected folder.

When this option is turned off, the DVR plays only the songs in the selected folder.

When “Include Subfolders” is turned off, the DVR does not automatically play songs in other playlists or folders within the selected folder.

Sorting the List of Music in a Different Order

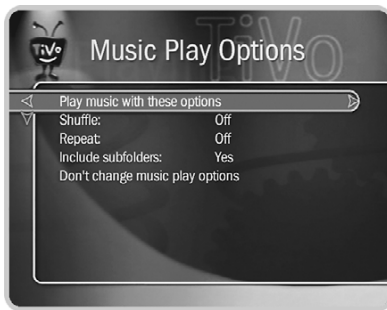
Normally, your DVR displays the contents of a folder alphabetically by file name. You can change this order on the Music Browsing Options screen. To get to the Music Browsing Options screen:

1. From TiVo Central, select Music & Photos.
2. Select “Music on Your Computer.”
3. From the Music screen, press ENTER to see Music Browsing Options.

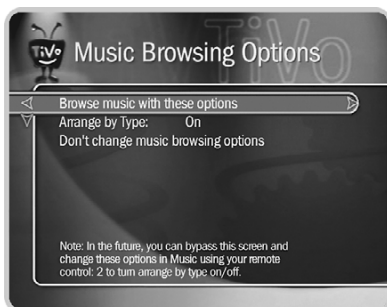
Arrange by Type. When this option is on, the DVR displays all the folders at the top of the screen, then all the playlists, then all the songs at the bottom. When this option is off, the DVR displays the folders, playlists and songs sorted together. If “Include Subfolders” is turned on, then the “Arrange by Type” setting can affect the order of playback within the folder.



The Music Play Options screen
lets you change the way your DVR plays music.



The Music Browsing Options screen
lets you change the way songs, playlists and folders are sorted on your DVR.





iPhoto on the Mac organizes groups of photos into “albums.” For simplicity, iPhoto albums and folders on a computer are both referred to in this section as “folders.”



Viewing Your Photos on Your DVR

To view photos on the TiVo Series2 DVR:

1. From TiVo Central, select Music & Photos.
2. On the Music & Photos screen, you should see an option that lets you view the photos on your computer. For example, if your computer name is “My Computer” and your username is “Jill,” the option is called “Jill’s Photos on My Computer.” If your computer is not named, the option is called simply “Jill’s Music.” Select this option.
3. You will see any folders that you have published. Highlight one and press PLAY. In a moment you see a slide show of photos from the folder. Photos display in the slide show in alphabetical order by file name.

If you are unable to see photos on your TiVo Series2 DVR, please refer to “Music & Photos Troubleshooting” on page 54.

The Control Buttons, Status Bar, and Photo Banner

Control Buttons. With the exception of SLOW, which doesn’t work while viewing photos, the control buttons on your TiVo remote (PLAY, PAUSE, FAST FORWARD, REWIND) work while you are viewing a slide show on your DVR just like they do while watching recorded TV programs. Press ADVANCE to skip to tick marks on the status bar while fast-forwarding or rewinding. Skip to the next or previous photo using CHAN UP/DOWN. You can even jump back one photo by pressing INSTANT REPLAY.

To view photos at your own pace, highlight a single photo inside a folder and press PLAY to display it. It will stay on the screen until you press FAST FORWARD to see the next photo in the folder. Press REWIND to see the previous photo.

Status Bar. When you press any of the control buttons, the status bar appears on the lower part of the screen. The status bar represents the total length of the slide show currently playing. The white tick marks are evenly-spaced, regardless of the slide show length. A white vertical line shows you where you are in the slide show. Press CLEAR to hide the status bar, and anything else on the screen other than your photos.

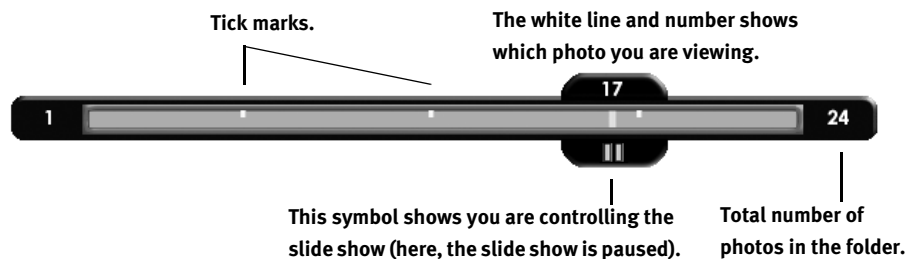
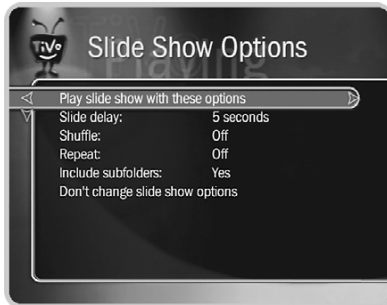


Photo Banner. The photo banner at the top of the screen is similar to the channel banner shown when watching live TV. Press the RIGHT arrow to display the photo banner while viewing a photo or slide show. It shows the slide show name, the number of photos in the folder, and the current



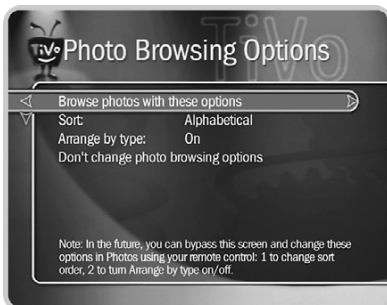
The Slide Show Options screen

lets you change the way the DVR plays slide shows of your photos.



The Photo Browsing Options screen

lets you change the way photos are sorted on your DVR.



photo's file name. It also shows the shuffle or repeat options selected, and the current time. You can press ENTER to change the slide show options. When viewing a single photo, the photo banner shows only that photo's name, and the current time.

Changing the Slide Show Options

The Slide Show Options screen lets you choose how photos display on your TiVo Series2 DVR. To get to the Slide Show Options screen:

1. From TiVo Central, select Music & Photos.
2. Select "Photos on Your Computer." (Your selection may say something different depending on how your computer is named.)
3. Highlight a photo or folder and press SELECT.
4. Highlight "Play slide show," then "Options," and press SELECT.

The Slide Show Options screen lets you change the following options:

Slide Delay. This option determines the time to display each photo before going to the next.

Shuffle. This option displays the contents of the selected folder in random order. When this option is turned off, the DVR plays the folder's photos alphabetically by file name, as shown in the grid on the screen.

Repeat. This option displays the contents of the selected folder repeatedly. When this option is turned off, the DVR displays the folder's photos only once.

Sorting the List of Photos in a Different Order

Normally, your DVR displays photos in a folder alphabetically by file name. On the Photo Browsing Options screen, you can change the order in which the Photos screen displays the grid of photos.

To get to the Photo Browsing Options screen:

1. From TiVo Central, select Music & Photos.
2. Select "Photos on Your Computer."
3. From the Photos screen, press ENTER.

The Photo Browsing Options screen lets you choose the following options:

Sort. This option determines how the photos and folders are sorted in the grid display. Possible choices for this option are:

- **Alphabetically.** When you choose this, the photos and folders display in alphabetical order.
- **By date taken.** When you choose this, the photos and folders display in the order the photos were taken.

- **By date modified.** When you choose this, the photos and folders display in the order the files were last modified on your computer.

Arrange by Type. When this option is on, the DVR displays all the folders at the top of the list, and the photos beneath them. When this option is off, the DVR displays folders and photos sorted together. When you play a slide show, photos appear in the order that they are arranged on the Photos screen.

Rotating a Photo

If a photo appears incorrectly oriented on your television, you can use your TiVo Series2 DVR to rotate it to the correct position. This does not affect the rotation of the original image file on the computer.

To rotate a photo:

1. From TiVo Central, select Music & Photos.
2. Choose “Photos on My Computer.”
3. Highlight a photo in the grid and press SELECT.
4. On the Photo screen, select “Rotate 90° clockwise.” Select this option again if the photo needs additional rotation.

Other TiVo DVRs will show the photo in its new rotation, but not until they reload the photo from the TiVo server. To reload a photo, press LEFT until you return to the Music & Photos screen, then return to the photo.



You can rotate a photo on the Photo screen.



Music & Photos Icons

	A song title inside a music folder or playlist.
	A highlighted song title. Press PLAY to play the song.
	A playlist created on your computer.
	A highlighted playlist. Press PLAY to start playing songs in the playlist.
	A folder of songs. Press PLAY to start playing songs in the folder.
	A photo that the DVR is unable to display.

Troubleshooting

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 - 54 **Music & Photos Troubleshooting**
 - 59 **Multi-Room Viewing Troubleshooting**
 - 59 **Online Scheduling Troubleshooting**
-

General Network Troubleshooting

The following are steps for troubleshooting problems connecting your TiVo Series2 DVR to your home network.

My DVR is not connecting to the TiVo service

Your TiVo Series2 DVR can connect to the TiVo service using your home network's broadband Internet connection, or using a phone line. To change the type of connection the DVR uses to connect to the TiVo service, press the TiVo button to go to TiVo Central. Select Messages & Setup, then Settings, then Phone & Network Setup, then "Change connection type."

If your DVR's "Connection Type" is set to "Network," follow these steps:

- **Check that the Internet connection is available.** If you disable your home network's connection to the Internet, your DVR may be trying to connect while the link is down. Try to go online and view a website from a computer on the same network as your DVR. If you cannot, you must fix the connection from your network to the Internet before troubleshooting your DVR's connection to the TiVo service. If you can browse the web, then see "My DVR is not connecting to my home network."
- **Use a phone line.** Use a regular phone line to connect to the TiVo service.

If your DVR's "Connection Type" is set to "Phone," follow these steps:

- **Use broadband (if available).** If you have a home network with a broadband Internet connection, try allowing the DVR to use it to connect to the TiVo service over the Internet. Doing this eliminates the DVR's need to use a phone line. See "Connecting Your DVR to Your Home Network" on page 8.
- **Check Viewer's Guide and Online Support.** Check phone troubleshooting in your Viewer's Guide or online at www.tivo.com/support.

To connect to the TiVo service, press the TiVo button to go to TiVo Central. Select Messages & Setup, then Settings, then Phone & Network Setup, then "Connect to the TiVo service now."

My DVR is not connecting to my home network.

Any of the steps below may fix a network connection; you probably will not have to complete each one. Additional steps for wireless networks are at "My DVR is not connecting to my wireless home network." on page 53.

1. Check network adapter.

- The network adapter that you attached may not be supported. If your network adapter is compatible with the DVR, and functioning properly, a MAC address—an identifier unique to the network adapter you purchased—is visible on the Phone & Network Setup



If your network adapter is compatible with the DVR, and functioning properly, a MAC address—an identifier unique to the network adapter you purchased—is visible on the Phone & Network Setup screen. To check, go to TiVo Central by pressing the TiVo button, select Messages & Setup, then Settings, then Phone & Network Setup. The MAC address should be on the top right side of the Phone & Network Setup screen. If you do not see a MAC address listed (or you don't see the MAC address field at all), the DVR is not recognizing the network adapter that you have installed. The adapter is either not compatible, not functioning properly, or not properly connected.

screen. To check, from TiVo Central select Messages & Setup, then Settings, then Phone & Network Setup. The MAC address should be on the top right side of the Phone & Network Setup screen. If you do not see a MAC address listed, the TiVo Digital Video Recorder (DVR) is not recognizing the network adapter you installed. The adapter is either not compatible, not functioning properly, or not properly connected. If you do see a MAC address, the adapter you are using may or may not be compatible. For more information, see “Choosing Wireless or Wired (Ethernet)” on page 10.

- The network adapter or cabling could be defective. If you have another adapter or USB cable available, try that adapter or cabling.
2. **Check connection to the network adapter.** Unplug the USB cable from the back of your DVR and then plug it back in. Make sure the cable is pushed all the way in; sometimes lights on the adapter turn on before the USB cable is pushed all the way in. Unplug the side of the USB cable connected to the adapter and then plug it back in.
 3. **Restart the DVR.** Press the TiVo button on the remote to go to TiVo Central. Select Messages & Setup, then Restart or Reset System, then Restart the TiVo DVR. Press THUMBS DOWN three times, then press ENTER.
 4. **Check physical connections.** Ensure that all network equipment is receiving power and that all cable connections for routers, hubs, access points, and computers in the network are working. Verify that the "link" light is lit on all devices connected to the network.
 5. **Powercycle network devices.** If you have a router or wireless access point, unplug it, wait a moment, and then plug it back in. This will temporarily halt your network's Internet connection. It may take up to a minute for your equipment to “restart” after you plug it back in.
 6. **Check your Network Settings.** Verify that your Network Settings are correct. Complete TCP/IP Settings, even if you did not when you first connected your DVR. For more information, see “Completing the DVR's Network Settings” on page 13.
 7. **Update router or home gateway firmware.** If your home network includes using a router, home gateway, or wireless access point, it may need a firmware update. Firmware is a software program that is loaded onto a hardware device. You can usually find any updated firmware at the Customer Support website for the manufacturer of your hardware. (For example, if you have a Linksys device, check firmware updates available at www.linksys.com/download.) Older firmware may cause unpredictable results. It may be necessary to powercycle your device before and after you reinstall the firmware.



A connection to the network access point may take several minutes once the problem is resolved. Be certain the Phone & Network Setup screen has had time to update to display the true network status before making any additional changes. To refresh the Phone & Network Setup screen using the remote control, press the LEFT arrow to go to the previous screen, and then press the RIGHT arrow to return to the Phone & Network Setup screen.

8. **Check Static IP Address.** If you assigned an IP address to your DVR, check that its IP address is unique on your network. Also, confirm that the first three sets of numbers of the DVR's IP address are the same as those of other devices on the network. (For example, if your computer's IP address starts with "192.168.1" then your DVR's IP address must also start with "192.168.1".) To find TCP/IP settings on a Macintosh, open System Preferences and click on Network. For help finding the IP address of Windows-based computers, see "Appendix A: Finding TCP/IP Settings on a Windows-Based Computer" on page 62.

If you have a wireless network and haven't already done so, you should also try the steps in "My DVR is not connecting to my wireless home network," below.

My DVR is not connecting to my wireless home network.

1. **Check power at wireless access point.** Ensure the wireless access point or wireless router is receiving power and that the "link" light is on.
2. **Change password format.** If you used an alphanumeric password for your wireless network, try using a hexadecimal password instead. You can find a hexadecimal password (sometimes referred to as a "Key" or "WEP Key") in the configuration settings for your wireless access point or wireless router. If more than one hexadecimal password is listed, always use the first one. To change the password format, follow the instructions for completing Wireless Settings at "Wireless Settings for a Home Network" on page 13.
3. **Check for an 802.11g wireless access point.** TiVo Series2 DVRs use the 802.11b wireless networking standard. The DVR is not currently compatible with the 802.11g standard. Some 802.11g access points have an "802.11b only" mode or an "802.11b and 802.11g" mode that may work with your DVR. Refer to your access point's documentation for information about how to switch between available modes.
4. **Check signal strength.** On the Phone & Network Setup screen (press the TiVo button to go to TiVo Central, then select Messages & Setup, then Settings, then Phone & Network Setup) check the wireless signal strength. The following may improve wireless signal strength:
 - Make sure the wireless adapter is placed well away from the DVR's power supply, or power strips, or surge protectors. Any of these may cause interference and reduce signal strength. Some household appliances, such as microwave ovens and 2.4 GHz cordless phones may also reduce signal strength when they are in use.
 - Verify that the wireless network adapter's antenna is fully extended.
 - Move the wireless network adaptor to a higher position, or give it a better line of sight to your wireless gateway (router).

- Reduce the distance between the wireless network adapter and the wireless access point. Wireless networks typically have a range of 100 - 300 feet, but distances can vary based on walls, floors, and other obstructions. It may be necessary to adjust the location adapter of your wireless access point or router to be closer to the network adapter attached to your TiVo DVR(s).
 - Consider adding a signal booster to your network (available from some wireless equipment manufacturers).
5. **Check network name.** In Wireless Settings (press the TiVo button to go to TiVo Central, select Messages & Setup, then Settings, then Phone & Network Setup, then "Edit phone or network settings," then Wireless Settings), check that the network name (SSID) for your network access point is listed correctly. To change the network name, follow the instructions for completing Wireless Settings at "Wireless Settings for a Home Network" on page 13.

If you haven't already done so, you should also try the steps in "My DVR is not connecting to my home network." on page 51.

Music & Photos Troubleshooting

What music file formats can I use?

The TiVo Desktop application works with music in the MP3 format.

Can I convert other music formats to MP3?

There are numerous applications available on the Internet (at websites such as www.mp3.com) to convert music from other file formats to MP3 files.

Why don't my songs play in the same order as they appear on the CD?

First, make sure that the Shuffle option is turned off in Music Play Options. (To see Music Play Options, highlight a song or playlist and press SELECT. On the next screen, highlight Options and press SELECT.) If you publish songs in a folder, then the DVR plays them alphabetically by file name. To specify a play order for a group of songs, use the music jukebox software on your computer to create a playlist with the songs ordered as you want to hear them, then use TiVo Publisher to publish the playlist so you can listen to it on your DVR.

What playlist formats can I use?

- TiVo Desktop for Windows works with playlists in the following formats used by common digital music players:

M3U	PLS	ASX	B4S
-----	-----	-----	-----

- TiVo Desktop for Macintosh works with playlists created using iTunes 3 on the Mac.

What image file formats can I use?

- TiVo Desktop for Windows works with the following image formats:

BMP	DIB	GIF	JPG	PNG
-----	-----	-----	-----	-----

- TiVo Desktop for Macintosh works with the following image formats:

BMP	TIFF	GIF	JPG	PNG
-----	------	-----	-----	-----

I can't see my computer in the "Music & Photos" screen.

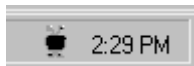
1. **Check that your computer is on and is not in "sleep" mode.**
2. **Check published music or photos.** Confirm that you have published music and/or photos. (See "Publishing Your Music" on page 32 or "Publishing Your Photos" on page 34.)
3. **Check the computer's connection to your home network.** Check the computer's connections to your home network. If your home network includes a shared Internet connection, check that your computer is on your home network by opening a browser such as Internet Explorer and going to www.tivo.com.
4. **Check the DVR's connection to your home network.** See "General Network Troubleshooting" on page 51.
5. **Restart the computer.**
6. **Check network security software.** Some network security software, such as some VPN and personal firewall applications, may block the TiVo Desktop application's access to your home network. If you are using network security software, try turning it off. Some network security software, such as some versions of the Cisco VPN application, can only be turned off through appropriate configuration settings; simply quitting from the application may not end all of its processes.

Additional troubleshooting step for Macintosh only:

7. **Check the Mac firewall.** If your Macintosh is using the firewall—a kind of security software for computers connected to a network—that is provided as a feature of the Mac OS, try the following steps. If you are



On Windows-based computers, you can tell that the TiVo Server is running when you see a TiVo logo on your Windows Taskbar. To configure TiVo Server to start whenever Windows starts, see “Using TiVo Server for Windows” on page 36.



using other firewall or security software, please consult the documentation that came with the software.

- a. Open System Preferences and click “Sharing.”
- b. Click on the “Firewall” tab.
- c. Make sure “TiVo Desktop” is checked.

Additional troubleshooting steps for Windows only:

8. **Check that you are signed in.** If your computer runs Windows XP, make sure you have signed in.
9. **Check that TiVo Server is installed and running.** When TiVo Server is running, a TiVo icon appears in the System Tray, near the clock. If you do not see the TiVo icon, from the Start menu, choose Programs. Choose TiVo Desktop and click TiVo Publisher (Start>Programs>TiVo Desktop>TiVo Publisher). From the Server menu, choose Start/Resume. The TiVo icon should appear in the system tray.
10. **Check the IP address used by TiVo Server.** Right click on the TiVo Server icon in the system tray and select Properties. In the IP address box, click Select. If more than one IP address is listed, make sure that computer’s IP address is selected.
11. **Check Access Control.** Check that you have not set TiVo Server Access Control settings that might block this DVR.
 - a. From the computer’s Start menu, launch TiVo Publisher (Start > TiVo Desktop > TiVo Publisher).
 - b. From the Server menu, select Properties.
 - c. Under the “Access control” tab, make sure your TiVo Series2 DVR is in the list and its box is checked, or that the radio button next to “Allow any TiVo Series2 DVR to access media files” is checked.

For a description of Access Control, see “Access Control” on page 38.
12. **Pause and resume.** If the server is running and there are published media files, pause and resume the server:
 - a. Open TiVo Desktop.
 - b. From the Server menu, choose Properties.
 - c. Under the “Configuration” tab, press “Pause.”
 - d. When the button changes to read “Resume” click it again.
13. **Provide the computer’s IP address manually.** If your TiVo DVR does not detect the computer running TiVo Server, you can manually add the computer’s IP address to the TiVo DVR’s list of available Music & Photos servers.
 - a. In TiVo Desktop, from the Server menu, choose Properties.

- b. Under the “Configuration” tab, note the computer’s IP address.
- c. On the TiVo Series2 DVR, press the TiVo button to go to TiVo Central, then select Music & Photos, then “Manually add a server.”
- d. Enter the IP address from step b and select “Add server to list.”

I can’t hear my music on my TiVo Series2 DVR.

1. **Check volume, power, and speakers.** Make sure your television or entertainment center are powered on, that the volume is at an acceptable level, and that the correct speakers are selected.
2. **Check connections.** If the TiVo Series2 DVR is connected to home stereo equipment, check all cables and connections.
3. **Check the song.** Make sure that a song is actually playing on the TiVo Series2 DVR. Double-check the contents of the song file by playing it on your computer to make sure it contains music.

Windows only: There are no photos in the folder on my TiVo Series2 DVR.

It is possible to accidentally publish folders that have no photos. Make sure that the folder you published actually contains photo files on the computer, and that those photo files were published. You can look in the folder in the lower pane of the TiVo Publisher window (under the Photos tab) to check whether the folder contains image files.

Windows only: There are no songs in the list on my TiVo Series2 DVR.

It is possible to accidentally publish folders that have no music. Make sure that the folder you published actually contains music files on the computer, and that those music files were published. You can look in the folder in the lower pane of the TiVo Publisher window (under the Music tab) to check whether the folder contains music files.

I changed some published music or photos, and I can’t see the changes on my TiVo Series2 DVR.

Some changes do not appear on the DVR right away. To force the DVR to reload new or changed information from the TiVo Server:

1. Press the TiVo button to go to TiVo Central.
2. Select Music & Photos.

Check to see whether your music and photos now appear as they should.

I rotated a photo on one DVR, but it appears un-rotated on another DVR.

Some changes do not appear on other TiVo Series2 DVRs right away. To force another DVR to reload new or changed information:

1. Press the TiVo button to go to TiVo Central.

2. Select Music & Photos.

Check to see whether your music and photos now appear as they should.

I rotated a photo on my DVR, but it is un-rotated on my computer.

When you rotate an image on your TiVo Series2 DVR, it does not change the original image on the computer.

I can't listen to music while viewing photos.

The current version of the Music & Photos feature does not let you listen to music while viewing photos.

My images look too small on the TV.

Images smaller than the resolution of the television (approximately 640 x 480 pixels) are not resized to fill the screen.

An error occurred while I was browsing photos or listening to music.

1. **Check that music or photos have not been deleted.** If you move or delete files while the DVR is playing them, it may cause an error on the DVR. If you have a Windows-based PC and this happens, restart TiVo Server. Double-click on the TiVo Icon in the task bar (next to the clock) to launch TiVo Desktop. Click on "Server" and select "TiVo Server Properties." Click on "Exit" and then on "Yes." Restart TiVo server by selecting it from the Start Menu (Start Menu > Program > TiVo Desktop > TiVo Publisher).
2. **Check the number of files in folders or playlists.** The group of photos or music you are trying to access may be too large. You can try to use folders or playlists with fewer music or photos files. Users of Windows based PCs can also try adjusting performance settings of the TiVo Desktop application. See "Performance" on page 37.

The DVR responds slowly when I browse photos or listen to music.

1. **Publish multiple folders.** If there are a large number of files in a folder you have published, navigating music and photos on your DVR may be slow. Publish more folders with fewer music files or photos in each one.

Additional troubleshooting steps for Windows only:

2. **Remove unusable files.** Move non-photo files out of the folders of photos you publish, and non-music or playlist files out of the folders of music and playlists you publish. Other kinds of files, such as video files, in a published folder can cause TiVo Desktop, and your DVR, to be slow when using Music & Photos.
3. **Change performance settings.** Try adjusting the TiVo Desktop application's performance settings. See "Performance" on page 37.

Multi-Room Viewing Troubleshooting

I can't see one DVR in the Now Playing list of another.

1. **Check four criteria for Multi-Room Viewing.** To use Multi-Room Viewing, both DVRs must:
 - a. Be TiVo Series2 DVRs with active TiVo service.
 - b. Be on the same TiVo service account. If the TiVo service subscription for both DVRs is owned by the same person, they are on the same account in Manage My Account (www.tivo.com/manage). If they are on different accounts, call TiVo Customer Support at 877-367-8486 to have your accounts combined.
 - c. Be enabled for Multi-Room Viewing at Manage my Account.
 - d. Be on the same home network.
2. **Check network connections.** If two DVRs meet all four criteria, but are not on each other's Now Playing lists, there may be a network problem. See "General Network Troubleshooting" on page 51.

Online Scheduling Troubleshooting

My DVR did not record a program I requested on TiVo Central Online.

1. **Check Recording History.** Your DVR's Recording History may explain why the program did not record. To view Recording History, press the TiVo button to go to TiVo Central, then select Pick Programs to Record,

then To Do List, then View Recording History. Find and select the program that did not record to view a brief explanation.

2. **Check the To Do List.** If you chose to record the program only if it did not conflict with other recordings at the same time, the DVR may have found an alternate showing of the program to record that did not conflict with other programs. Check the To Do List to determine whether the program is still scheduled to record. To reach the To Do List, press the TiVo button to go to TiVo Central, then select Pick Programs to Record, then To Do List.
3. **Check connection.** To test the DVR's connection to the TiVo service, press the TiVo button to go to TiVo Central, then select Messages & Setup, then Settings, then Phone & Network Setup, then "Connect to the TiVo service now," then press SELECT. If the connection fails: for a shared broadband connection, see "General Network Troubleshooting" on page 51; for a connection over a phone, see the phone troubleshooting in the Viewer's Guide that came with your DVR, or check our online customer support at www.tivo.com/support.
4. **Check Channels You Receive.** If the program you requested does not air on a channel you receive, the DVR will not be able to record it. In addition, if you receive the channel but it is not checked on the Channels You Receive list, the DVR cannot record from it. To check the Channels You Receive list, press the TiVo button to go to TiVo Central, then select Messages & Settings, then Settings, then Preferences, then Customize Channels, then Channels You Receive. Every channel you receive that you wish to schedule recordings from should have a checkmark beside it. To add or remove a checkmark, highlight a channel and press SELECT.

I requested a confirmation e-mail but did not receive one.

If you or your Internet Service Provider have a filter to delete junk e-mail, you may have to change the filter's settings to receive e-mail from TiVo.

A program recorded at a different time than I requested

If you chose to record the program only if it did not conflict with other recordings at the same time, the DVR may have found an alternate showing of the program to record that did not conflict with other programs.

Appendix A: Finding TCP/IP Settings on a Windows-Based Computer

- 63 Finding TCP/IP Settings on a Computer Running Windows 2000 or XP**
 - 63 Finding TCP/IP Settings on a Computer Running Windows 98 or ME**
-

Finding TCP/IP Settings on a Computer Running Windows 2000 or XP

1. From the Windows Taskbar, click Start, then choose Run. A dialog box appears.
2. Type cmd into the dialog box and click OK. A command window appears.
3. Type in:

```
ipconfig /all
```

and then press Enter.

The screen displays values for the computer's IP Address, Subnet Mask, Default Gateway, and DNS address. See the example on the next page.

Use the Subnet Mask number listed on the Subnet Mask screen in TCP/IP Settings. Use the Default Gateway number on the Gateway (Router) Address screen. Use the DNS Server address (use the top DNS Server address if more than one is shown) on the DNS (Domain Name Server) Address screen.



Remember, each device on a network must have a unique IP address. The numbers after the last period ('.') in the IP address you assign to the TiVo Series2 DVR must be different from the last numbers in the IP address used by the computer.

Finding TCP/IP Settings on a Computer Running Windows 98 or ME

1. From the Windows Taskbar, click Start, then choose Run. A dialog box appears.
2. Type winipcfg into the dialog box and click OK. The IP Configuration dialog appears. Click on "More Info>>" to see complete IP information. See the example on page 65.
3. The device connecting your computer to your home network should be selected from the pull-down menu at the top of the screen. (It usually is by default.) If a different device is selected, you may see incorrect IP information. This screen shows the IP Address of the computer and a DNS Server, as well as the network's Subnet Mask and Default Gateway information.

Use the Subnet Mask number listed on the Subnet Mask screen in TCP/IP Settings. Use the Default Gateway number on the Gateway (Router) Address screen. Use the DNS Server address on the DNS (Domain Name Server) Address screen.


```
C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Steve>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : 16RAS
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Unknown
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

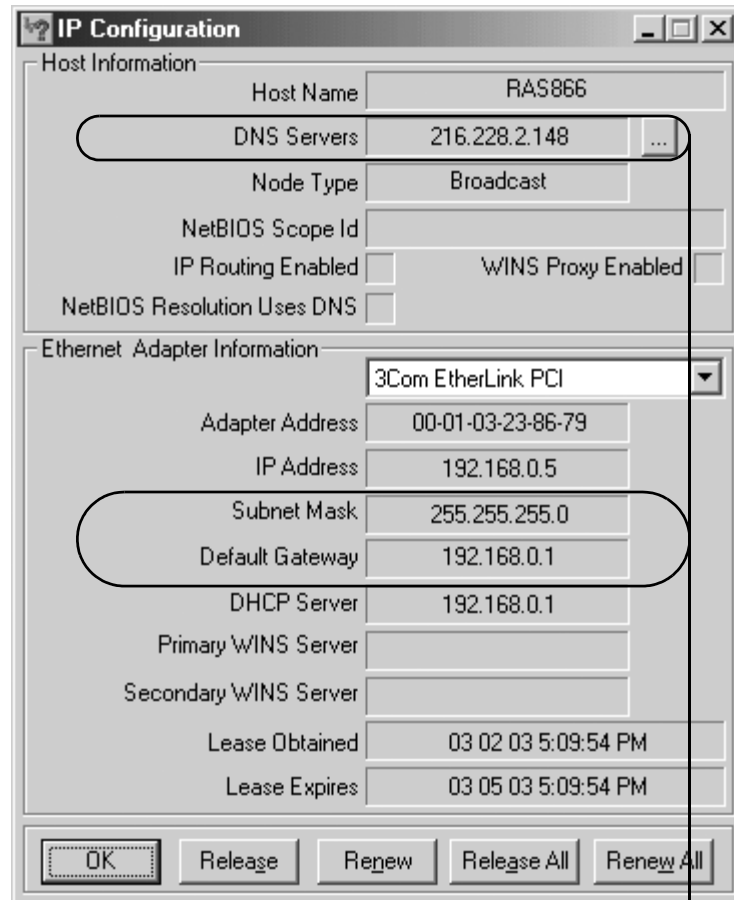
Ethernet adapter Network Bridge:

    Connection-specific DNS Suffix . . :
    Description . . . . . : MAC Bridge Miniport
    Physical Address. . . . . : 02-05-5D-37-24-33
    Dhcp Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    IP Address. . . . . : 192.168.0.7
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1
    DHCP Server . . . . . : 192.168.0.1
    DNS Servers . . . . . : 116.225.2.148
                           116.225.2.120
    Lease Obtained. . . . . : Friday, April 04, 2
    Lease Expires . . . . . : Monday, April 07, 2

C:\Documents and Settings\Steve>_
```

This screen shows TCP/IP Settings on a computer running Microsoft Windows 2000 or XP.

The Subnet Mask, Default Gateway, and DNS Server addresses are listed here.



This screen shows TCP/IP Settings on a computer running Microsoft Windows 98 or ME.

The Subnet Mask, Default Gateway, and DNS Server addresses are listed here.

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