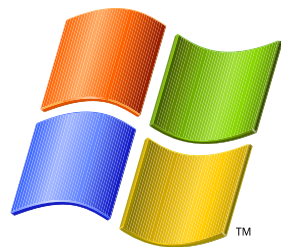


*How to Stream Media Using*



**Windows**  
**Media™ 9 Series**



Toll-Free (800) 254-7554  
[www.vitalstream.com](http://www.vitalstream.com)

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## Introduction

As a Microsoft® Windows Media® 9 Series Certified Hosting Provider, VitalStream is uniquely qualified to quickly and reliably deliver your Windows Media audio and video to audiences, both large and small, anywhere in the world. VitalStream, together with our technology and channel partners, provides all of the tools you need to encode, manage and stream your Windows Media audio and video via the Internet.

VitalStream belongs to several Microsoft® partnership programs including the Windows Media Service Provider program and other Web Presence Provider programs.



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## Microsoft® Windows Media® 9 Series Overview

Windows Media 9 Series dramatically improves the playback experience for your audience by delivering instant-on / always-on streaming. Windows Media Audio and Video 9 Series provides compression improvements of 20% for audio and 15 - 50% for video compared with Windows Media 8.

- ✓ **Instant-On Always-On Streaming:** Fast Streaming can provide an instant-on, always-on streaming experience, effectively eliminating buffering time.
- ✓ **Multiple Bitrate Support:** Windows Media Player can automatically pick the best video size and audio quality to stream based on the current connection speed – and dynamically adapts during streaming.
- ✓ **Unmatched Audio and Video Quality:** Windows Media extends industry's best audio and video quality with 20% improvement.
- ✓ **Scalable:** Supporting approximately twice as many concurrent streaming users per server compared with the previous version.

## Elements of the Windows Media 9 Series Platform

Windows Media 9 Series is more than just a player or a media format. It is the most comprehensive platform for developing and deploying digital media solutions. Listed below you will find the separate components of the Windows Media 9 Series Platform.



- ✓ **Windows Media Player:** This is the player, preinstalled on nearly all PCs, that your audience will use to play your Windows Media formatted content via the Internet.
- ✓ **Windows Media Encoder:** Use this application to convert your media into the most popular format for streaming.
- ✓ **Windows Media Audio and Video Codecs:** The Windows Media Audio and Video 9 Series codecs, the leading technology for compressing and decompressing data, deliver unmatched audio and video quality at any bit rate.
- ✓ **Windows Media Services:** Windows Media Services 9 Series, part of Windows Server 2003, is the industry's most powerful streaming media server.

## How to Broadcast with Windows Media 9 Series

There are three steps to streaming your Windows Media-formatted content via the Internet. The first step is to compress or encode your media to make it suitable for streaming via the Internet. Second, you will configure the distribution settings for your media. Finally, you will stream your media using VitalStream's fast and reliable content delivery network.

### Step 1: Compress / Encode Your Media

The first step to streaming online is to convert your media into a digital format capable of being distributed or broadcast over the Internet. To enable you to encode your media, Microsoft has provided Windows Media Encoder, a free software application. However, if quality is of utmost importance, we recommend that you send your media to one of VitalStream's expert encoding partners.

#### Do-It-Yourself Encoding

If keeping costs down is a priority and you have some technical knowledge, you can encode your media yourself. Microsoft has made it easier than ever before with the new version of Windows Media Encoder.

#### What You Will Need

Read on for the various source footage, hardware and connectivity requirements that you will need in order to encode and deliver your media via the Internet.

#### Source Footage:

Your source footage will come from two places, either a local file on your hard drive (MPG or AVI file) or a video feed (camera connected via FireWire or capture card). You will need plenty of hard drive space for converting and storing your source footage and encoded files. High-quality external FireWire drives can be purchased from ProMax to give you plenty of available disk space. Footage from cameras often has scan lines on the bottom 50 pixels of the picture. Use the video size tab and crop to remove these. For footage coming from an analog source use de-interlacing to remove flickering inherent in footage designed for television playback.

#### Recommended Capture Cards:

**For Video:** ViewCast Osprey 220  
Osprey 500 Capture Card

**For Audio:** SoundBlaster Compatible Audio Card  
ST Audio Media 7.1 DSP24 System

#### Public Internet Connection:

For live webcasts your encoding station will need to be on a public IP address. If the first numbers in your machine's IP Address are '10,'198.162' or '127', you do not have a public Internet address. To broadcast from those IP addresses you will need special configurations on your proxy or firewall. Before a live event be sure to check your IP address. Your IP address may change when you restart your computer if it is assigned via DHCP.

Be sure the Internet connection between the encoder and VitalStream's network has enough bandwidth to support the desired choices. If you are connected with a 500 Kbps DSL line you can broadcast a sustained bit rate of 180Kbps. We recommend that your bandwidth equal at least 2 times the bitrate to pull a redundant stream.

#### How to Test Your Current IP Address:

**Step 1:** Go to the start bar and select Start > Run  
**Step 2:** Type in "CMD"  
**Step 3:** Type in "IPCONFIG" in the command line

## How to Use Windows Media Encoder

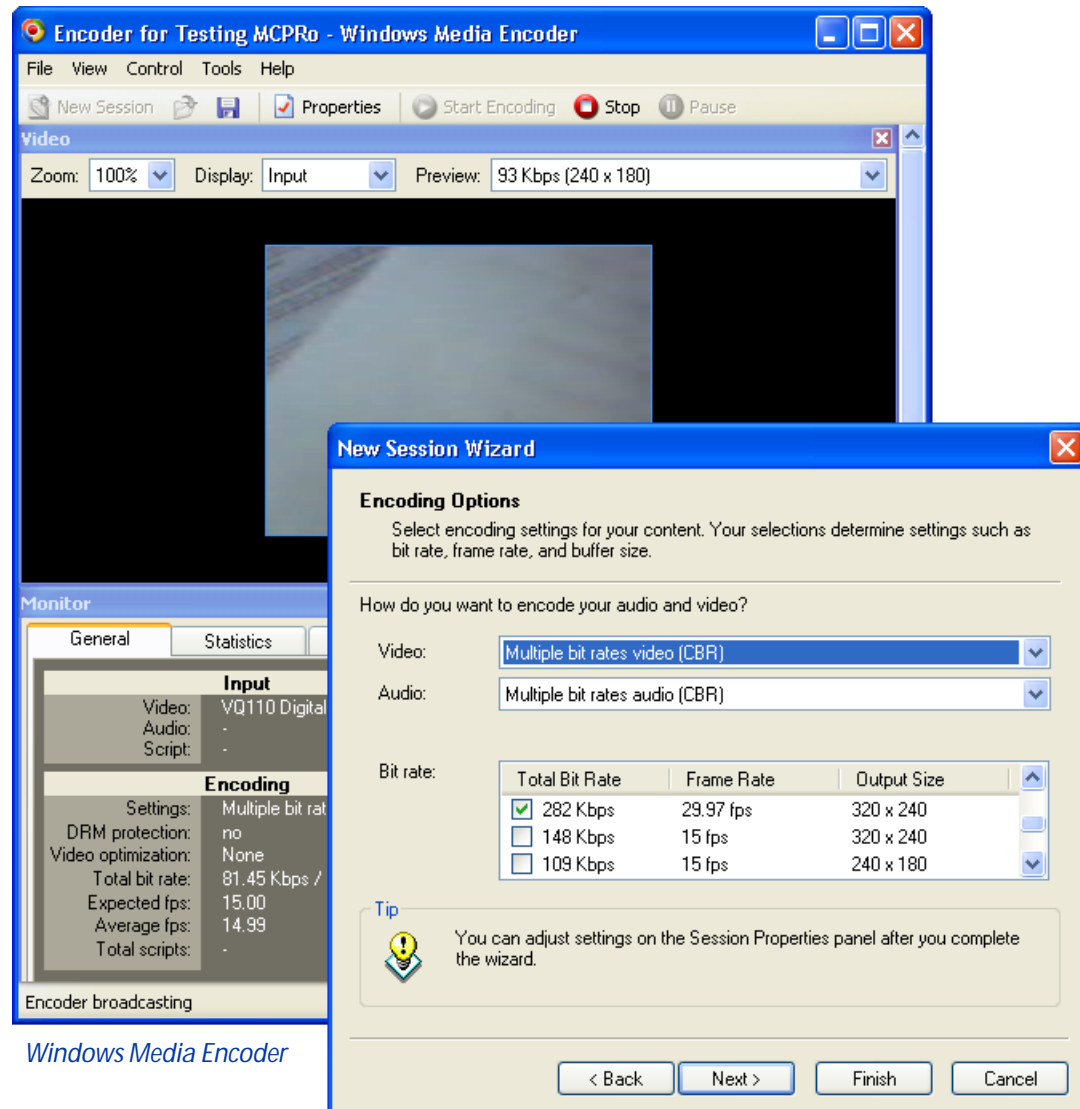
This tutorial covers using Windows Media Encoder, a free application that enables you to encode live or prerecorded audio and video content to Windows Media files or streams.

### New Session Wizard Step-by-Step

- 1 Select your video and audio source. The configuration option allows you adjust settings. Click 'Next'.
- 2 For events to be broadcast with MediaConsole, select 'Pull from the encoder'. Click 'Next'.
- 3 Enter a free port (8080 is usually the default). Click 'Next'.
- 4 On the following screen (pictured to the right), use the checkboxes to select the bitrates you want to support. Click 'Next'.
- 5 The next screen allows you to archive to a local file. Be sure to select client side. You can now click 'Finish' to start encoding.

**Optional:** You can click 'Next' if you would like to include video files and click 'Next' again to enter display information.

After you click 'Finish', the main encoding screen will appear. Press 'Start Encoding' to begin the broadcast. To access advanced options press the 'Properties' button and adjust your settings.



Windows Media Encoder

Windows Media Encoder New Session Wizard

Download Windows Media Encoder at: <http://www.microsoft.com/windows/windowsmedia/9series/encoder/>

**On Demand**

You can encode a webcast and save it to your local machine if you are recording a webcast from a location without Internet connectivity. Later on, you can move the encoded file to a location with high-speed Internet access and upload the archive to MediaConsole for on demand playback.

**Professional Encoding**

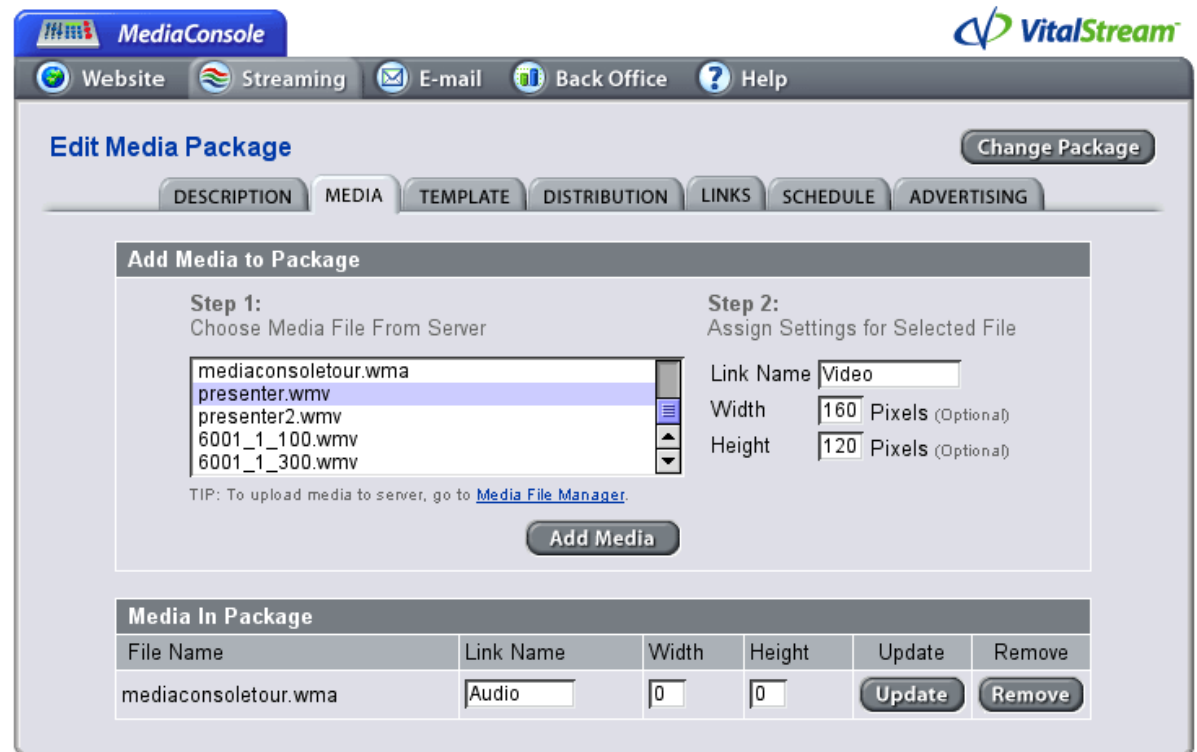
A key factor in delivering high quality streaming media is the quality in which the audio or video is encoded. For the highest quality output we recommend that you outsource your encoding needs to one of VitalStream’s professional encoding partners. Professional encoding houses have access to equipment that will dramatically improve the quality of the encoding. This includes balanced audio inputs and advanced video filtering to reduce unwanted noise. For more information, call (800) 254-7554 and ask to speak with VitalStream’s Reseller Manager.

**Step 2: Configure Distribution Settings**

Before you can distribute your media online, you must first upload, protect and package the encoded files. This step involves choosing whether you would like authentication, pay-per-view and a custom skin.

**VitalStream® MediaConsole®**

MediaConsole is a web-based service that simplifies the process of streaming and is exclusively available to VitalStream customers with StreamPack accounts. MediaConsole is a powerful tool that enables you to control all aspects of your streaming media and hosting accounts. Use MediaConsole to manage, distribute and sell your media over the Internet.



MediaConsole: Add Media to Package

### Free MediaConsole Trial Account

To try MediaConsole for yourself, visit:

<http://www.vitalstream.com/strm/index-mc.asp>

### MediaConsole Features

- ✓ **Easy-to-Use:** An intuitive point-and-click interface makes even complex tasks easy to perform.
- ✓ **Profitable Media Streaming:** Multiple payment systems, including pay-per-view, help convert your media stream into a revenue stream.
- ✓ **Payment Gateway Support:** MediaConsole has built-in support for multiple payment gateways including PayPal, iBill and LinkPoint.
- ✓ **Digital Rights Management:** Ensure the secure delivery of your media with access controls.
- ✓ **Real-Time Reporting:** Use up-to-the-minute, comprehensive reports to learn more about your audience.

### Real-time Reporting Features

- ✓ Group Files to Get Combined Reports
- ✓ Track Average Viewing Time Per File or Group
- ✓ Track Total Viewing Time Per Clip or Group
- ✓ Side-by-Side Report by Format
- ✓ Track Total Bandwidth Per Clip or Group
- ✓ Track Current Audience
- ✓ Drill-Down Views From Months to 15 Minutes

### Create a Custom Skin / Embedded Player

Here is a demonstration of building an embedded player using the Windows Media 9 Series Active X control. The concept was to build a video jukebox that allows the users to quickly watch videos without having to wait for buffering between movie clips. The customized web page is based upon code samples found in the Windows Media SDK. In order for users to view the web page, they must have Windows Media Player 9 Series installed.

Learn more about the Windows Media SDK at:

<http://msdn.microsoft.com/library/default.asp?url=/nhp/Default.asp?contentid=28000411>

Additional elements were added to improve the user experience and add some style to the custom skin. A graphic comes up when the connecting event occurs. You can easily add additional items that are triggered by the many events available to the programmer. The SDK has a complete list.

We set up some variables that allow us to easily change the file path to the media we want to play. The files are located in the media folder on the server with the naming convention of "folder-name/clipname\_speed\_extention". Please note that Windows Media Services 9 Series paths now start with 'rtsp:' instead of 'mms:'. You can still use 'mms:' so older players will stream it, but the streams will take a short time longer to load.

```
var Strspeed = '300';  
var Strfld = 'rtsp://astralwerks.vitalstream.net/'
```

This function returns a complete path to the Media Object then calls the play method.

```
function startplayer(Strfld,Strrclip,Strest) { //v2.0  
  MediaPlayer1.filename=Strfld+Strrclip+Strspeed+Strest;  
  return eval(MediaPlayer1.play())
```

This code checks for events sent from the media object. In this example we call the hide layers function to hide the graphic that says connecting. Even though there is no buffering, a small wait occurs between each clip as the media file is changed and the player connects to the server and authenticates. This function is called from an onclick JavaScript command attached to the side buttons.

```
onclick="startplayer(Strfld, 'Beth_Orton_Anywhere_', 'v9.wmv')"
<SCRIPT LANGUAGE = "JScript" FOR = MediaPlayer1 EVENT = PlayStateChange (NewState)>
// Test for the current state.
// If playing, display the name of the current media.
switch (NewState){
  case 3:
    //PLAYING
    MM_showHideLayers('mediabox','','show')
    MM_showHideLayers('CONNECTBOX','','hide')
    break;
  default:
    //BUFFERING
    MM_showHideLayers('mediabox','','hide')
    MM_showHideLayers('CONNECTBOX','','show')
}
</SCRIPT>
```

Next down the page is the embedded ActiveX control. This is the video window on the web page. Notice the Windows Media Player has a new Class ID. The text entered in the 'id=' tag is important because it is used as your player object.

```
<object id="MediaPlayer1" classid="CLSID:22D6F312-B0F6-11D0-94AB-0080C74C7E95" codebase=
"http://activex.microsoft.com/activex/controls/mpplayer/en/nsmp2inf.cab#Version=6,0,02,902"
standby="Loading Microsoft® Windows® Media Player components..."
type="application/x-oleobject">
```

The parameters shown below set the various properties of the media player. When you set the "BufferingTime" parameter to 0, it will override the client's preferences and start playing the audio and video immediately. With dialup users, the Instant-On feature will not work as well so a small amount of buffer time may be required. For most of the parameters (like "AutoSize"), the options are either 1 (for on) or 0 (for off).

```
<param name="AutoStart" value="True">
<param name="AnimationAtStart"
  value="0">
<param name="AutoSize" value="1">
<param name="BufferingTime" value="0">
<param name="Filename"
  value="YOURFILENAME ">
<param name="ShowControls" value="0">
<param name="ShowAudioControls"
  value="0">
<param name="ShowDisplay" value="0">
<param name="ShowGotoBar" value="0">
<param name="ShowPositionControls"
  value="0">
<param name="ShowStatusBar" value="0">
<param name="TransparentAtStart"
  value="1">
</object>
```



## Step 3: Stream Your Media

After you have encoded and packaged your media for distribution, it is time to stream your media to your audience. This is perhaps the most important part of the digital broadcasting process because you need to be sure that your service provider has the expertise and network infrastructure to deliver your media quickly and reliably.

This is the area in which VitalStream specializes. We have the expertise, experience and the network infrastructure to handle the largest Internet events. When you use our award-winning content delivery network, you can be sure that your audience is getting the best interactive experience available.

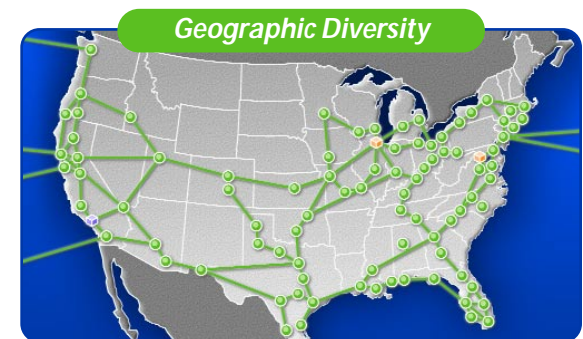
### VitalStream's Award-Winning Content Delivery Network

VitalStream has engineered an award-winning Content Delivery Network that combines performance with geographic diversity to deliver your media broadcasts with the highest possible quality. The Network features geographic diversity with multiple Broadcasting Centers and POPs distributed around the globe. It is also designed with a carrier-neutral foundation with respect to connectivity across multiple tier-1 backbone networks.

"VitalStream's network and services provide content owners with a highly reliable and scalable platform for delivering Windows Media content via the Internet," said Jonathan Usher, director of the Windows Digital Media Division at Microsoft. "We have high certification standards, so acceptance into this program means that content owners can be assured that VitalStream's content delivery network has the capacity and performance to serve their needs."

### Recent Awards

StreamCheck, an independent third-party company that specializes in the measurement of CDN quality of service, awarded VitalStream's content delivery network a StreamQ rating of A+, the highest score available, for its ability to stream media in the United States and internationally (Asia and Europe). The test was part of the high certification standards that VitalStream met to be



accepted into Microsoft Windows Media 9 Series Certified Hosting Provider Program.

VitalStream was also awarded Best Content Delivery Network in Streaming Magazine's Reader's Choice Awards 2003.

## Resources

There are numerous resources on the web to help you learn more about Windows Media 9 Series. VitalStream also has a network of service providers that can help you with all of your streaming media needs.

### Helpful Websites

See the list below for websites that can help you with your Windows Media 9 Series streaming efforts.

#### Microsoft Websites:

Microsoft Windows Media Website:

<http://www.microsoft.com/windows/windowsmedia/>

Windows Media 9 Series How To:

<http://www.microsoft.com/windows/windowsmedia/howto.aspx>

Windows Media Technical Resources for the Enterprise:

<http://www.microsoft.com/windows/windowsmedia/Enterprise/TechResources/default.aspx>

#### Other Websites:

VitalStream Corporate Website:

<http://www.vitalstream.com>



Toll-Free (800) 254-7554  
[www.vitalstream.com](http://www.vitalstream.com)

## VitalStream Partners

VitalStream is focused on delivering the best streaming media services and building the fastest, most reliable content delivery network in the world. We rely on our qualified VitalPartners to round out our solutions by offering our customers services for:

- ✓ Encoding
- ✓ Audio / Video Production
- ✓ Website / User Interface Design
- ✓ Database & Software Development
- ✓ And More...

If you require any of the services listed above, call (800) 254-7554 and ask to speak to our Reseller Manager who will then put you in contact with a qualified VitalStream VitalPartner.

## Conclusion

Microsoft Windows Media 9 Series represents a significant leap in stream quality, performance and security. VitalStream is committed to supporting Windows Media technologies as part of our effort to provide our customers with the best streaming services available. For help deploying your own Windows Media 9 Series streaming broadcasts, call (800) 254-7554 and ask to speak with a VitalStream Account Executive.