



CHAPTER 2

Getting to Know the Cisco Digital Media Encoder 2200

Revised: November 9, 2009, OL-17938-01

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Introduction

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What is Streaming Media?

Streaming media is media that is consumed (read, heard, viewed) while it is being delivered. Streaming is more a property of the delivery system than the media itself. The distinction is usually applied to media that is distributed over computer networks; most other delivery systems are either inherently streaming (radio, television, Internet TV) or inherently non-streaming (books, video cassettes, audio CDs).

Cisco Digital Media Encoder 2200 is designed specifically for streaming audio and video media over an IP network.

Streaming Infrastructure

Before setting up your new Cisco Digital Media Encoder 2200, it is useful to understand the complete overview of live streaming video—from video capture to streaming video playback.

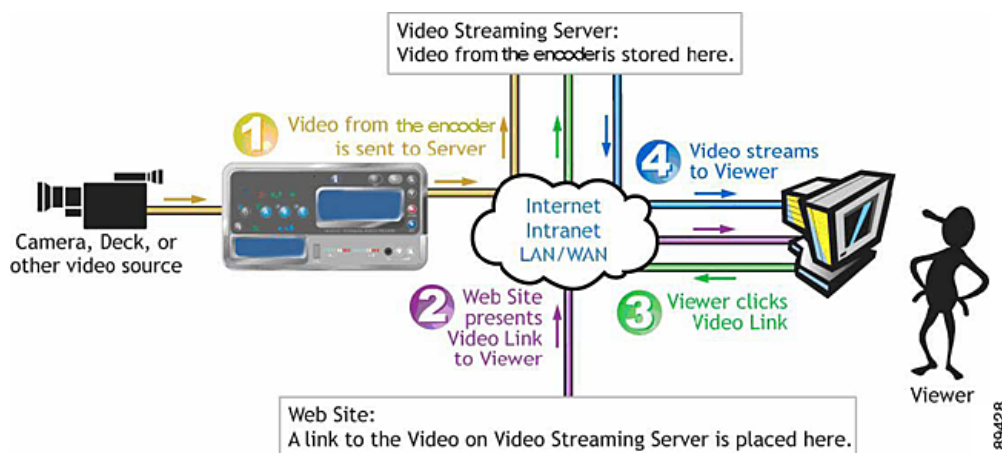
There are many applications for capturing video into the computer environment that can range from DVD authoring to live webcasting. Regardless of the final use of the video, all can be categorized into three main workflow processes:

- Single video/session capture (one-off file capture for non-real time delivery)
 - Typically the captured file is then processed and/or authored into its final form for delivery
- Batch video/session capture (archiving, scheduling and storage)
 - Multiple source content is to be digitalized
 - Device control is needed for unattended source
 - Ability to schedule sessions is needed to capture timed events
- Live video capture, processing and delivery (webcasting)
 - Can be single or multiple sources
 - Live event at a specific time
 - Can be a remote or local capture
 - Final content is delivered in real time to viewers

Each category has its unique set of requirements that also dictates different user interfaces, functionality and experiences. The Cisco Digital Media Encoder 2200 is designed for live video capture, processing and delivery.

Figure 2-1 is a diagram illustrating the video path starting with the source, like a camera or video player, going through the encoder, to the server, across an IP network, to a software player and displayed on a monitor for audience viewing.

Figure 2-1 Video Path



Simple Guide to Streaming Audio and Video Types

Cisco Digital Media Encoder 2200 can create several different types of audio and video streams. Although all are a type of IP video format, each has certain properties that make it more attuned to a specific streaming video application. Cisco Digital Media Encoder 2200 was designed for creating video content in a reduced resolution to allow the content to be streamed across the Internet to be played back on a computer or a handheld mobile device.

[Table 2-1](#) lists all formats supported by Cisco Digital Media Encoder 2200 with suggested application uses. All of these formats can be used for many different applications.

Table 2-1 *IP Video Compression for Streaming in Full Resolution or Lower*

Format	Description
Windows Media [®]	Streaming Internet video and mobile devices
RealVideo [®] /Helix [®]	Streaming Internet video and mobile devices
MPEG-4	Handheld devices and mobile phones

In choosing the right streaming format for your needs, you should first consider the audience to which you will be sending your content. What is the most common player that they will have available to watch your content? This will determine the format of the stream that you will create for your audience.

To determine the data rate that you will stream your content, you will need to determine the IP bandwidth to which your audience has access. For example, if the access method uses an ISDN connection or less, then you would stream your video and/or audio at a low data rate such as QCIF at 56kbps. If the access is much greater like a cable modem or DSL connection, then you can provide a higher quality stream at full resolution at 2 Mbps.

Cisco Digital Media Encoder 2200 provides preconfigured encoding profiles for different bandwidth connections. The profiles loaded will depend upon how you configure your encoder on its initial startup.

Tutorial

There are two interfaces for operation of your Cisco Digital Media Encoder 2200: the encoder front panel LCD display and buttons and the *Niagara SCX Web Interface*. This tutorial is divided into the following two parts:

1. [Basic Operation: Using the Front Panel, page 2-4](#)
2. [Advanced Operation: Using the Niagara SCX Web Interface, page 2-15](#)



Note

To access the *Niagara SCX Web Interface* or the Niagara SCX Encoder Explorer Software, you will need a computer with a current web browser installed that has an IP connection to the encoder via a local network on which both the encoder and the computer reside or through a direct IP connection by using the included RJ-45 cable to connect directly from the encoder to a computer.

Basic Operation: Using the Front Panel



Note

For information about the front panel buttons, see the “Front Panel Diagram” section on page 1-6.

This section includes the following topics:

- [Startup, page 2-4](#)
- [Shutdown, page 2-5](#)
- [Alternate Shutdown Method, page 2-5](#)
- [Starting an Encoding Session, page 2-6](#)
- [Checking CPU Usage, page 2-7](#)
- [Stopping an Encoding Session, page 2-8](#)
- [Connecting an External Storage Device, page 2-8](#)
- [Exporting Captured Video Files, page 2-8](#)

Startup



Note

If this is the first time that the encoder has been started, read the “Completing First Start Setup” section on page 1-8 before continuing.

To start your encoder, press the <POWER> button on the front panel.
While powering up, the encoder LCD readout will display the following series of messages:

--	--	--

When *System is Ready* for operation, the encoder LCD display will alternate between status readouts that are similar to the following:

--	--

Shutdown

To shutdown the encoder, briefly press the **<POWER>** button on the front panel.

The encoder LCD readout will display the following messages:

```
ViewCast Corporation
Name: CP08360002
Serial: CP08360002
Shutdown Complete
```

After a few seconds, the encoder will power off.



Caution

Allow the encoder to power down normally. If you force the system to shutdown improperly, data can be corrupted. If so, the next time the system is started it can take several minutes to complete startup.

Alternate Shutdown Method

Alternatively, you can shut down the encoder by using the **EASE** menu.

Press the **<MENU>** button to display the **EASE** menu.

```
+Encode
Access Health
Setup System
Export Files
```

Using the **<UP>** and **<DOWN>** arrow buttons, scroll down until **Shutdown System** is displayed and selected.

```
Access Health
Setup System
Export Files
+Shutdown System
```

Press **<ENTER>**.

Then, confirm that you wish to shut down the system using the **<UP>** and **<DOWN>** buttons to select either **Yes** or **No**. Press **<ENTER>**.

<pre>Shutdown System? Yes +No</pre>		<pre>Shutdown System? +Yes No</pre>
<pre>System Stopping.</pre>	<pre>ViewCast Corporation Name: CP08360002 Serial: CP08360002 Shutdown Complete</pre>	

Starting an Encoding Session

The encoder LCD readout will display a list of available encoder profiles that can be used together with the current status of each.



Note

The name of each encoder profile is abbreviated to display the first 10 characters. When creating names for custom profiles, be sure to create unique names that will be distinguishable by the first ten characters.

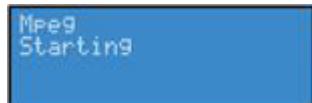
Use the **<UP>** and **<DOWN>** buttons to move the select arrow to point to the encoder profile that you want the encoder to use for this encoding session.



Once you select the encoder profile you need, press the **<STREAM>** button again to start the encoder.



The encoder LCD readout then displays messages about the encoder start process.



After the encoder session has successfully begun, the encoder LCD readout returns to the previous display of available encoders. The screen will indicate that the encoder profile you selected has begun encoding.



If the encoder you started was assigned to one of the **EZStream ABC** buttons, the corresponding button flashes and steady illuminates during and after the starting process.



By repeating this method, you can quickly start multiple encoders at the same time.

Cisco Digital Media Encoder 2200 is a two-channel encoder, which means you can connect and stream up to two audio and video sources at any given time. However, you can stream the same audio and video at multiple data rates and multiple formats to provide the best user experience for different viewing audiences.

For example, you can stream Windows Media at full resolution at 1 Mbps and the same time stream RealVideo at CIF resolution at 300kbps.

**Warning**

There are limitations to the number of streams that you can capture simultaneously. If you attempt to capture more streams than the encoder is capable of processing simultaneously, the streams will drop frames and the video will appear to stutter resulting in a poor viewer experience. If the number of sessions is not reduced in order to reduce CPU load, all encoding sessions could self-terminate without warning.

Checking CPU Usage

Since you are able to start multiple streams, understanding how much of the processing power of the encoder is being used is invaluable. If you are using less than 50%, then you should be able to start another encoding session without adversely affecting system performance.

Press the **<MENU>** button to display the main menu on the encoder LCD readout.



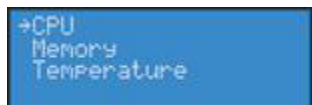
The LCD readout will display the following menu choices:



Using the **<UP>** and **<DOWN>** buttons, move the arrow until it is next to the menu item **Access** and then press the **<ENTER>** button.



The LCD readout will display the **Access** menu choices. Press the **<ENTER>** button with **CPU** menu item selected.



The encoder LCD readout displays the amount of CPU cycles in use. When the encoder is idle (no encoder sessions running), the CPU percent displayed should be 4% or less. If one or more encoder sessions are running, then the percent displayed will be much higher and will fluctuate in a range of +/- 10 percentage points.



Press the **<ENTER>** button to return to the previous menu.



Stopping an Encoding Session

To stop an encoder, press the **<STOP>** button.

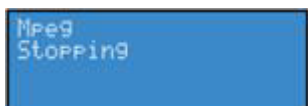


The encoder LCD readout displays the list of encoding and shows the current status of each session.

Using the **<UP>** and **<DOWN>** buttons, move the pointer to the position next to the encoding session you want to terminate.



Press the **<STOP>** button again, and the encoder session selected will terminate.



To return to the main menu, press the **<MENU>** button.



Connecting an External Storage Device

The Cisco Digital Media Encoder 2200 rear panel provides two USB ports, and the front panel provides one. You can connect almost any standard USB flash drive to one or both of these ports. This allows you to export any AV files you may have created on the encoder's local storage drive. The local storage drive is the D drive when you use the **Save to File** setting while you employ the *Niagara SCX Web Interface*.

When you insert a USB flash drive in one of the USB ports on the Cisco Digital Media Encoder 2200, the encoder automatically detects the removable storage device and assigns a random drive letter to the device. This device can capture files directly or can be employed to use the encoder **Export File** function, which is available for access when using the front panel menu.

Exporting Captured Video Files

You can export your captured video files to an external USB drive.

**Note**

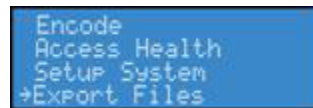
To export files to a USB device from Cisco Digital Media Encoder 2200, you must set a default location for the captured video files via the *SCX Web Interface*, and place those files in that default location. This can be done on the **System Configuration** page of the web interface at the ***Default AV Folder** box. By default, this folder is set to D:\AVFiles. After you input the preferred default location in the *Default AV Folder box, you can begin exporting your files from the encoder.



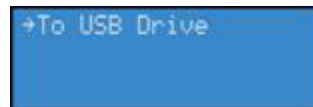
Press the **<Menu>** button to access the encoder menu.



Using the **<UP>** and **<DOWN>** arrow buttons, highlight the **Export Files** option, and press the **<Enter>** button.



Then, select the **To USB Drive** option, and press **<ENTER>**.



The next screen will ask you to select the drive destination and provide a list of active USB drives connect to the encoder.



Select the USB drive to which you wish to export, and press **<ENTER>**.

The next screen will ask you to select a source file, i.e., the file you want to export to the USB device.



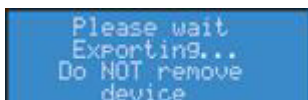
Your source file should appear on the following screen.

**Note**

The file name on this screen is for instructional purposes only.



Upon seeing the name of the file you wish to export on the screen, press <ENTER>. You will then see the following screens.



Once the encoder is finished exporting the file, you can remove the USB device.

DME Security Best Practices

We wrote topics in this section to answer and expand upon these customer questions about DME security:

- **CSCsz67661**—How do I change the factory-default password for Windows?
- **CSCta04924**—How do I disable unneeded Windows services, such as NNTP, SMTP, and SNMP?
- **CSCsz67661**—How do I safeguard my encoded files on the DME file share?

**Warning**

Factory-defined passwords exist by default on all new and newly restored DMEs. These credentials persist until you change them. Because they are well-known, these credentials are a security vulnerability in your network. Therefore, we recommend very strongly that you change them promptly each time that you start to configure a DME.


In addition, some services are enabled by default that you might never use. We recommend that you disable all unneeded services.

- [Factory-Defined Login Credentials, page 2-11](#)
- [Changing Factory-Defined Login Credentials, page 2-11](#)
- [Other Required Password Maintenance \(Only When Autologon Is Configured\), page 2-13](#)
- [Tasks to Complete After Changing DME Login Passwords, page 2-14](#)
- [Disabling Unneeded Services, page 2-14](#)
- [After a Live Event Is Finished, Remove Its Encoded Video Files from the DME File Share, page 2-15](#)

Factory-Defined Login Credentials

Table 2-2 lists login credentials that are predefined on DMEs.

Table 2-2 Factory-Defined User Accounts and Passwords

Username	Password	DME Model				Notes
		DMS-DME 2200	DMS-DME 2000	DMS-DME 1100	DMS-DME 1000	
User Accounts for Microsoft Windows— See Harden Windows, page 2-12 .						
GoStream	password ¹	—	—	—	X	<div></div> <div>Warning Never configure a DME to log in automatically. Doing so prevents true security in your network.</div> <div>If—despite our recommendation—you configure a DME to log into Windows automatically, password management becomes far more complex. Thus, any time that you neglect to change an auto-logon password specifically, you will prevent your DME from working as designed. See Other Required Password Maintenance (Only When Autologon Is Configured), page 2-13.</div>
Niagara	password	X	X	X	—	
SCXUser	viewcast	X	X	X	X	Used for the Niagara SCX service as well as the web service. This is not the user account that is used to log-in to Niagara SCX.
User Accounts for the Niagara SCX Web Interface— See Harden the web interface, page 2-13 .						
admin	admin	X	X	X	X	Used for the web-based administrative console on DMEs. Login is possible only through a system from which your DME is reachable. Its connection to your DME might be either direct or networked.

1. In 5.2.187 and later releases on a DME 1000.

Changing Factory-Defined Login Credentials



Be very careful as you complete this workflow. Any mistakes that you make might prevent your DME from booting correctly or functioning correctly.

Before You Begin

- This workflow uses the instance of Microsoft Windows that runs on your DME. Even though a remote management connection might be sufficient, we recommend instead that you connect a keyboard, a mouse, and a monitor to your DME directly and use them to control Windows.
- From Step 1, this workflow assumes that your DME is either new or in a factory-restored condition. If this is not true, or if you are not sure, we recommend very strongly that you **perform a factory restore operation now**.

Procedure

	Task	Steps	Notes
Step 1	Harden Windows Change the Windows password for the main account.	<ol style="list-style-type: none"> Choose Start > Settings > Control Panel > User Accounts, and then: <ul style="list-style-type: none"> If you have a DME 1000, choose GoStream > Change my password. Otherwise, choose Niagara > Change my password. Change the password as desired. Click Change Password. 	Depending on your DME model type, the username is either Niagara or GoStream. See Table 2-2 on page 2-11 .
Step 2	Harden Niagara SCX Change the password for the SCXUser account, which you use to log in to Niagara SCX Encoder Explorer.	<ol style="list-style-type: none"> Choose Start > Settings > Control Panel > User Accounts > SCXUser > Change my password. Change the password as desired. Click Change Password. 	—
Step 3	Stop agent services	<ol style="list-style-type: none"> Do either of the following: <ul style="list-style-type: none"> Choose Start > Run. Type system32 and press Enter. Double-click GoStreamStopServices.bat. Choose Start > All Programs > Viewcast > Niagara SCX > Niagara SCX Agent, and then click Stop. 	—
Step 4	Update web.config to use the new password Edit the web.config file.	<ol style="list-style-type: none"> Use Windows Explorer to browse to \inetpub\wwwroot\encoderswebservice. OR Browse instead to one of the following: <ul style="list-style-type: none"> For a DMS-DME 1000, \inetpub\wwwroot\GoStream. Otherwise, \inetpub\wwwroot\Niagara. Open the web.config file in a text editor, such as Notepad.exe. Locate the line of text that looks like this: <pre><identity impersonate="true" userName="scxuser" password="viewcast"/></pre> Edit the password string in this line of text. Save your work and exit the text editor. 	—
Step 5	Restart your DME		—

	Task	Steps	Notes
Step 6	Check for errors	Point the DME web browser at http://localhost/encoderswebservice/ , and then verify that the SCX service is available.	—
Step 7	Harden the web interface	<ol style="list-style-type: none"> Point your browser to the HTTP address of your DME. Enter the username and the password, as prompted. The factory default for each of these is admin. Click Log In. Choose Configuration > My NiagaraPro. Click the username admin in the NiagaraPro Properties area. Enter the current password in the Password field. Enter the new password identically in both of these fields: <ul style="list-style-type: none"> New Password Confirm New Password Click Change Password. <p>The changed password takes effect immediately.</p>	—

**Tip**

Saved changes are lost each time that you perform a factory restore operation. Remember to repeat this procedure any time that login credentials use factory-defined values.

What to Do Next

- If Windows is configured to allow automatic logins, see [Other Required Password Maintenance \(Only When Autologon Is Configured\)](#), page 2-13.
- Otherwise, see [Tasks to Complete After Changing DME Login Passwords](#), page 2-14.

Other Required Password Maintenance (Only When Autologon Is Configured)

**Warning**

Never configure Microsoft Windows on your DME to enter login passwords automatically. Doing so creates a significant security vulnerability in your network.

If you disregard the warning against allowing automatic logins and you configure them nonetheless, you must take additional steps to ensure that logins occur as expected after you change the encrypted auto-logon password that Windows uses.

Procedure

- Step 1** Search the DME hard drive for *TweakUI.exe*. In most cases, this file is in F:\Windows. Alternatively, you can download this file as part of a Microsoft tools package at <http://www.microsoft.com/windowsxp/downloads/powertoys/xppowertoys.mspx>.
- Step 2** Open **TweakUI**, and then choose **Logon > Autologon**.
- Step 3** Click **Set Password**.
- Step 4** Enter the new password twice, as prompted. Be careful that the password matches exactly.
- Step 5** Click **OK** to save your work and exit TweakUI.
- Step 6** Restart your DME.
- Step 7** Verify that login occurs automatically and that the Windows desktop loads.



Note If you disregard the warning against allowing automatic logins and configure them nonetheless, ViewCast software will not work unless the Windows desktop loads correctly on your DME.

Tasks to Complete After Changing DME Login Passwords

Procedure

	Task	Notes
Step 1	Perform basic setup functions via the front panel.	See Basic Operation: Using the Front Panel, page 2-4 .
Step 2	Test and validate that your DME performs as expected.	Tip If your DME does not perform as expected, we recommend that you complete a factory restore operation. In this case, the factory-defined login credentials that you changed will become active again and might expose your network to attack or other types of unauthorized use.

Disabling Unneeded Services

**Caution**

Intuders might use exposed services as security attack vectors against your network.

If your DME enables and exposes any service that is not required, you can disable it. Possible examples of such services include NNTP, SMTP, and SNMP.

Procedure

-
- Step 1** Choose **Start > Programs > Administrative Tools > Services**.
- Step 2** Double-click the name of a service that should be disabled.
- Step 3** Click the **Log On** tab.
- Step 4** Do one of the following:
- If only one hardware profile is listed, click it, and then click **Disable**.
 - If multiple hardware profiles are listed, click one, then click **Disable**, and repeat as often as necessary until you have disabled this service on each profile.
- Step 5** Click **Apply**, and then click **OK**.
- Step 6** Restart Windows.
-

After a Live Event Is Finished, Remove Its Encoded Video Files from the DME File Share



Caution

We strongly recommend that you save copies of the encoded video files on your DME file share, and then promptly delete the original files from your DME.

The file share uses a factory-default username and password, which you cannot change. Anyone who knows which network node is your DME and knows these login credentials can mount the file share and manipulate its files.

Advanced Operation: Using the Niagara SCX Web Interface

This section includes the following topics:

- [Accessing the Web Interface, page 2-15](#)
- [Starting an Encoding Session, page 2-17](#)
- [Stopping an Encoding Session, page 2-18](#)
- [Viewing the Activity Log, page 2-19](#)
- [Configuring the EZStream Buttons, page 2-20](#)

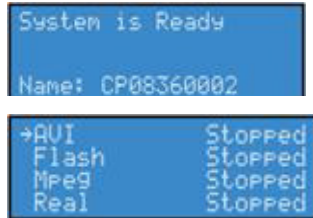
Accessing the Web Interface

The *Niagara SCX Web Interface* does not require software and works with any computer that has a current web browser, including Microsoft® Windows®, Macintosh®, and Linux® machines. The Cisco Digital Media Encoder 2200 system must either reside on a shared IP network with the computer or can be directly connected to a Windows computer by using an Ethernet cable (RJ-45).

To access the *Niagara SCX Web Interface*, open the web browser on your computer and access the web interface by typing in the encoder machine name. For example, you would type `http://cp08360002`. The network name of the encoder is also its serial number and can be obtained from the LCD readout during the power up process.

If the encoder is already powered up, the serial number can be obtained from the LCD display while the system is idle.

At that time the encoder LCD display will alternate between readouts that are similar to the following display:



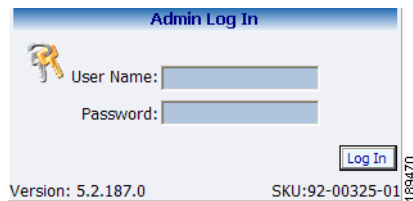
If the name is not immediately displayed on the **System is Ready** window, press the <UP> and <DOWN> arrow buttons to toggle through the system information until the name is displayed.

The serial number is also located on the bottom of the encoder.

Enter the encoder name in the web browser (as shown below), and press **enter**.



You will be prompted with a login screen that requires a user name and password. By default, the user name and password are both *admin*.



After logging in, you will have access to all of the web-enabled functions, including encoder operations, management, and system configuration tools.



Note

If you cannot browse to the encoder by using its machine name, type in the encoder IP address instead. This information is also available from the **System is Ready** window when the system is idle.

Starting an Encoding Session

To start an encoding session, move the mouse pointer over **Encoders** in the menu bar, and click on **All Encoders** in the drop-down menu.



All of the encoder profiles loaded on the encoder will be presented in a list indicating format and current status.

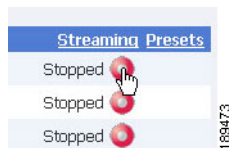
Encoders
This page allows you to perform encoder setup and removal.

☐ Auto refresh page [Add Encoder](#)

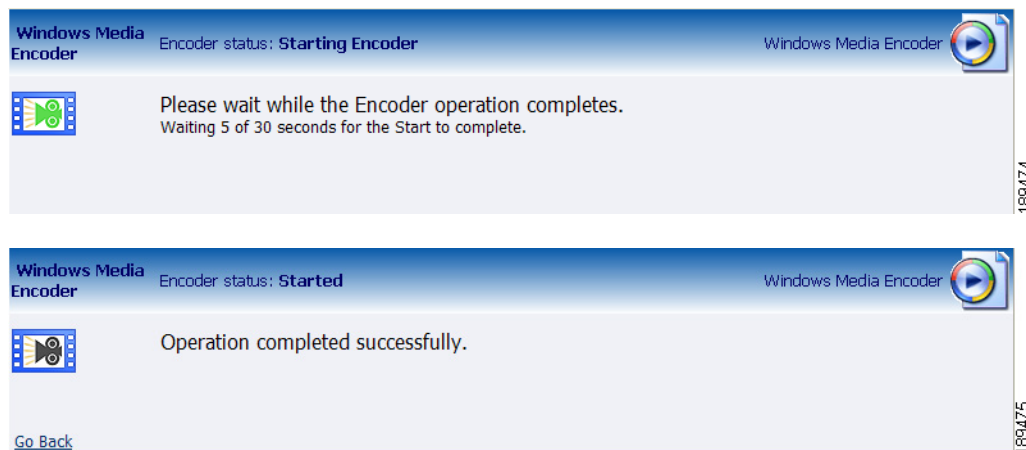
NiagaraPro Encoders | Total records : 5

Name	Description	Last Status	Streaming	Preset
Edit Del AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Flash	Flash Encoder	OK	Stopped	
Edit Del Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del Real	Helix Producer Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	OK	Stopped	

Press the red **Stream** icon located in the right column of the encoder you wish to start.



The web page automatically updates with messages detailing the encoder start progress.



After the encoder has started successfully, the web page will return to the **All Encoders** page with the encoder status updated to reflect the **Started** mode.

Encoders
This page allows you to perform encoder setup and removal.

☐ Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 5

	Name	Description	Last Status	Streaming	Preset
Edit Del	AVI	AVI Encoder Driver	OK	Stopped	
Edit Del	Flash	Flash Encoder	OK	Stopped	
Edit Del	Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del	Real	Helix Producer Encoder	OK	Stopped	
Edit Del	WME	Windows Media Encoder	Encoder started	Started	

Stopping an Encoding Session

If you are not already on the **All Encoders** page, move your mouse over **Encoders** in the menu bar and click **All Encoders** in the drop-down menu.



This will bring you to a web page similar to the following.

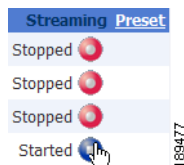
Encoders
This page allows you to perform encoder setup and removal.

☐ Auto refresh page [Add Encoder](#)

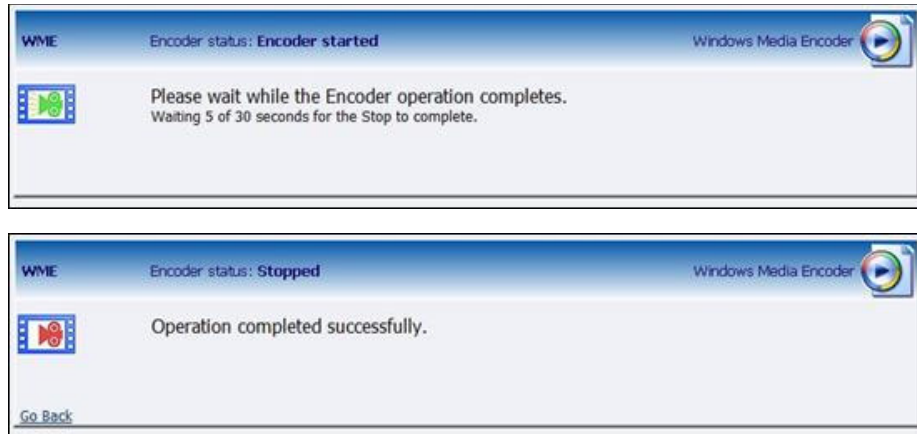
NiagaraPro Encoders | Total records : 5

	Name	Description	Last Status	Streaming	Preset
Edit Del	AVI	AVI Encoder Driver	OK	Stopped	
Edit Del	Flash	Flash Encoder	OK	Stopped	
Edit Del	Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del	Real	Helix Producer Encoder	OK	Stopped	
Edit Del	WME	Windows Media Encoder	Encoder started	Started	

Press the blue icon, which indicates it is a streaming encoder, located in the right column of the encoder you wish to stop.



The web page automatically updates with messages detailing the encoder stop progress.



After the encoder has stopped successfully, the web page will return to the **All Encoders** page with the encoder status updated to reflect **Stopped** mode.

Encoders
This page allows you to perform encoder setup and removal.

☐ Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 5

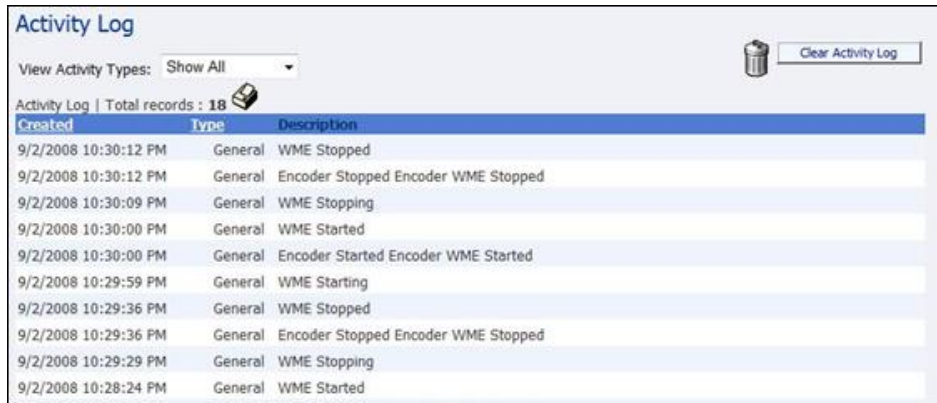
	Name	Description	Last Status	Streaming	Preset
Edit Del	AVI	AVI Encoder Driver	OK	Stopped	
Edit Del	Flash	Flash Encoder	OK	Stopped	
Edit Del	Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del	Real	Helix Producer Encoder	OK	Stopped	
Edit Del	WME	Windows Media Encoder	Stopped	Stopped	

Viewing the Activity Log

The Activity Log records the Encoder Start and Stop events. To view the Activity Log, move the mouse pointer over **Status** in the menu bar, and click on **Activity Log** in the drop-down menu.



The log is updated for every event on the encoder. The log now includes the starting and stopping events for the encoder from the “Starting an Encoding Session” section on page 2-17 and “Stopping an Encoding Session” section on page 2-18.



Created	Type	Description
9/2/2008 10:30:12 PM	General	WME Stopped
9/2/2008 10:30:12 PM	General	Encoder Stopped Encoder WME Stopped
9/2/2008 10:30:09 PM	General	WME Stopping
9/2/2008 10:30:00 PM	General	WME Started
9/2/2008 10:30:00 PM	General	Encoder Started Encoder WME Started
9/2/2008 10:29:59 PM	General	WME Starting
9/2/2008 10:29:36 PM	General	WME Stopped
9/2/2008 10:29:36 PM	General	Encoder Stopped Encoder WME Stopped
9/2/2008 10:29:29 PM	General	WME Stopping
9/2/2008 10:28:24 PM	General	WME Started

Each event is date and time stamped. Pressing the **Clear Activity Log** button in the upper-right clears all logged activities.

Configuring the EZStream Buttons

The encoder provides one-button streaming via the **EZStream** buttons located on the front panel of the system. By default, these buttons are not assigned to an encoder. The *Niagara SCX Web Interface* is used to configure each button to a specific encoder.

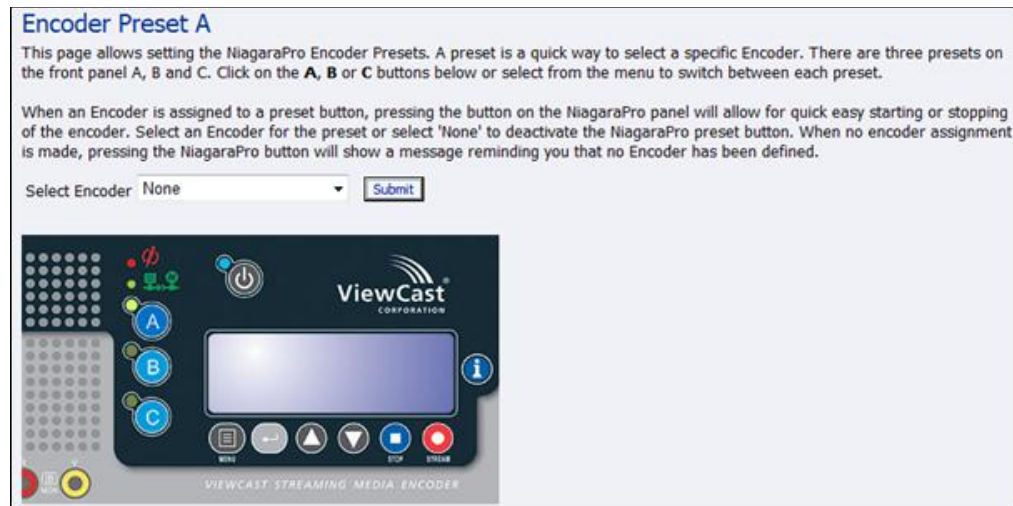
You can assign a preset encoder using the *Niagara SCX Web Interface* by moving your mouse pointer over **Encoders** in the menu bar and selecting **Preset A**, **B**, or **C** in the drop-down menu. A preset is a quick way to select and assign a specific encoder to Preset A, B, or C.



Encoder Preset (A, B, and C)

When you access the Encoder Preset A page, you are presented with the configuration page for the *EZStream A* button. This page contains a graphic representation of the front panel of the encoder. The A button is highlighted on this graphic representing that you are actively assigning an encoder to this corresponding *EZStream* button.

This page presents a **Select Encoder** field and a link at the bottom of the page to view the **View All Encoders** page. If an encoder has been assigned to the Preset, then you will also be presented with an **Edit** link next to the **View All Encoders** link.



Select Encoder

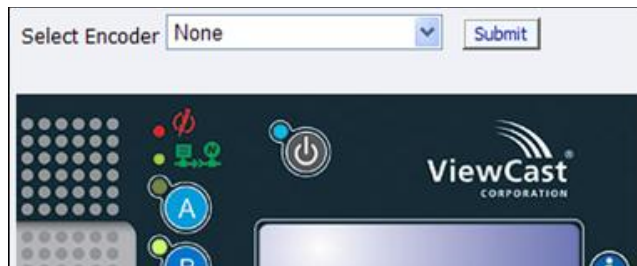
Click the drop-down list next to **Select Encoder**. This provides the complete list of encoders available on the system.



Select the encoder you wish to assign, and click the **Submit** button.

The web page will update the preset A and provide a message reporting *Encoder Preset: A updated successfully*.

By clicking on the **B** and **C** buttons on the encoder graphic, you can assign encoders to the *EZStream* buttons in the same way, as shown in the following diagram.

**Note**

It is not possible to assign the same encoder to two *EZStream* buttons simultaneously. If an encoder is already assigned to a button and you assign it to another button, the encoder will remove the association to the previous button in favor of the most current request.

View All Encoders

After assigning encoders to the A, B, and C buttons, the **Preset** column on the **All Encoders** page updates to reflect these changes.



Edit Preset Encoder Profile

After assigning encoders to the *EZStream* buttons, you can access the encoder editing page by clicking the button **Edit Encoder** link at the bottom of the **Preset** page.



The following sections show what each encoding format property page looks like. For more information on setting up each type of encoder, see the “[Editing an Encoder Profile](#)” section on page 2-26.

- [AVI Encoder Properties, page 2-23](#)
- [Flash Encoder Properties, page 2-23](#)
- [MPEG-4 Encoder Properties, page 2-24](#)
- [Real Encoder Properties \(Helix\), page 2-25](#)
- [Windows Media Encoder Properties, page 2-26](#)

AVI Encoder Properties

Encoder Properties

Name: AVI ☐ Auto Start Stopped

Video Settings

☒ Source: Osprey-5X0 Video Device 1.1

Input: Composite

Signal: NTSC_M

Proportions: Standard

Size: CIF 320x240

Format: YUY2

Audio Settings

☒ Source: Osprey-5X0 Audio Device 1

Input: Unbalanced

[Bottom](#)

Streaming to a File

☒ Save to file

File Name: default folder

D:\AVFiles\capture.avi

Advanced Streaming Settings

SimulStream

☒ Enable SimulStream

☒ Enable multiple instances for each filter

Show 5 filters per device.

Deinterlace

Type: Motion Adaptive

Motion Threshold

☒ Smooth ☐ Sharp

Value: 16

[All Encoders](#) [Delete Encoder](#) [Top](#)

Flash Encoder Properties

Encoder Properties

Name: Flash ☐ Auto Start Stopped

Video Settings

☒ Source: Osprey-5X0 Video Device 1.1

Input: Composite

Signal: NTSC_M

Proportions: Standard

Size: 640x480

Audio Settings

☒ Source: Osprey-5X0 Audio Device 1

Input: Unbalanced

[Bottom](#)

Advanced Flash Video Settings

Frame Rate: 29.97000000 fps

Bitrate: 768 kbps

Advanced Flash Audio Settings

Format: 44.100 kHz, 16 bit, Stereo

Bitrate: 128 kbps

[Bottom](#)

Streaming to a File

☒ Save to file

File Name: default folder

D:\AVFiles\capture.flv

Advanced Streaming Settings

SimulStream

☒ Enable SimulStream

☒ Enable multiple instances for each filter

Show 5 filters per device.

Deinterlace

Type: Motion Adaptive

Motion Threshold

☒ Smooth ☐ Sharp

Value: 16

[All Encoders](#) [Delete Encoder](#) [Top](#)

MPEG-4 Encoder Properties

Encoder Properties
Name:
☐ Auto Start
Stopped
MPEG4 Encoder Driver **H.264**

Video Settings
☒ Source: Osprey-5X0 Video Device 1.2
Input: Composite
Signal: NTSC_M
Proportions: Standard
Size: FULL 640x480
Format: YUY2

Audio Settings
☒ Source: Osprey-5X0 Audio Device 1
Input: Unbalanced

Preset
None

Advanced MPEG Video Settings
MPEG Type: H264 - MP4
Encoder Quality: Real-time
Frame Rate: 29.9700000
Bitrate (kbps): 768
Enable B-frames ☐

Advanced MPEG Audio Settings
Audio Format: 44.100 kHz, 16 bit, Stereo
Audio Type: Low Complexity
Audio Encoder: AAC
Bitrate: 128

Streaming Properties
☐ Enable Streaming
Destination IP: 789.1.1.1
Callback IP: 172.16.1.142
Video Port: 5050
Audio Port: 5052
Time to Live: 30
Stream Info: Stream Info Here...
Stream Title: Streaming Server
SDP File: capture.sdp

Advanced Streaming Settings
SimulStream
☒ Enable SimulStream
☒ Enable multiple instances for each filter
Show 5 filters per device.

Streaming to a File
☒ Save to file
File Name: default folder
D:\AVFiles\capture.mp4

Portable Media
☐ Enable Saving
Media Title: Title

All Encoders
Delete Encoder
Submit

Bottom
Top

Real Encoder Properties (Helix)

Encoder Properties
Name:
☐ Auto Start
Stopped

Video Settings
☒ Source: Osprey-5X0 Video Device 1.3
Input: Composite
Signal: NTSC_M
Proportions: Standard
Size: FULL 640x480

Audio Settings
☒ Source: Osprey-5X0 Audio Device 1
Input: Unbalanced

Preset

[Bottom](#)

Streaming Properties

Real Streaming properties
☐ Enable Streaming
Broadcast Method: Legacy Push (ver 8.x, 7.x, G2)
Transport: ☒ UDP ☐ TCP
Server Address:
Port/Port Range: 4000-4000
Multicast Address:
Listen Address: Automatic
Stream Name:
Path(optional):
User Name:
Password:
Frame Rate: 15
Video Quality: Normal Motion Video
Audio Content: Voice Only
Video Noise Filter: Off
☐ De-Interlace filter
☐ Inverse Telecine

Streaming to a File
☒ Save to file
File Name: default folder
D:\AVFiles\capture.rm

Advanced Streaming Settings

Audience Selection
☐ 100% Quality Download (VBR)
☒ 128k Dual ISDN
☐ 12k Substream for 28k Dial-up
☐ 150k LAN
☐ 16k Substream for 28k Dial-up
☐ 1M Download (VBR)
☐ 5M Download (VBR)
☐ 5M Multichannel (VBR)
☐ 5M Surround Stereo (VBR)
☐ 64k Single ISDN
☐ 70% Quality Download (VBR)
☐ 750k Download (VBR)
Select all
Unselect all

☐ Enable SureStream

SimulStream
☒ Enable SimulStream
☒ Enable multiple instances for each filter
Show 5 filters per device.

Deinterlace
Type: Motion Adaptive

Motion Threshold
☒ Smooth ☐ Sharp
Value: 16

[All Encoders](#)
[Delete Encoder](#)

[Top](#)

Windows Media Encoder Properties

Encoder Properties

Name: WME ☐ Auto Start Stopped

Video Settings

☒ Source: Osprey-5X0 Video Device 1.4

Input: Composite

Signal: NTSC_M

Proportions: Standard

Size: FULL 640x480

Audio Settings

☒ Source: Osprey-5X0 Audio Device 1

Input: Unbalanced

Streaming Properties

Windows Media Capture Profiles:

Windows Media Video 8 for Broadband (NTSC, 700 Kbps)

44 of 57 Windows Media 9 audio and video compression at 1.5Mbps with CBR from NTSC source

☒ Enable Pull

Pull from Port: 7007

☐ Enable Push

Push to Port: 80

Server:

Alias:

User Name:

Password:

☐ Enable Scripting

Advanced Streaming Settings

SimulStream

☒ Enable SimulStream

☒ Enable multiple instances for each filter

Show 5 filters per device.

Deinterlace

Type: Motion Adaptive

Motion Threshold

☒ Smooth ☐ Sharp

Value: 16

☐ Enable DRM

DRM Settings (Windows Media only)

Profile: None

Description: None

Key: N/A

Note: Changing the capture profile may change the current video height/width settings as well as the audio/video input capture selection.

Streaming to a File

☒ Save to file ☒ Index the file

File Name: default folder

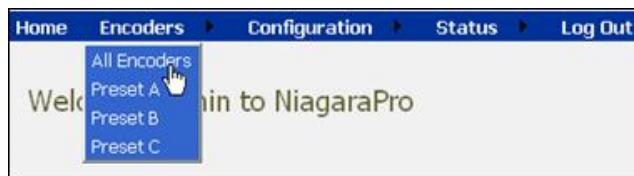
D:\AVFiles\capture.wmv

[All Encoders](#) [Delete Encoder](#) [Submit](#) [Top](#)

Editing an Encoder Profile

When you create a new encoder, the **Encoder Properties** page appears. You will be able to edit the new profile provided by default to your specific encoder settings and requirements. The property windows for editing a new encoder or an existing encoder are identical.

You can also edit an existing encoder profile by going to the **All Encoders** page.



Click the **Edit** link next to the encoder whose properties you wish to modify.

Encoders
This page allows you to perform encoder setup and removal.

☐ Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 5

Name	Description	Last Status	Streaming	Preset
Edit Del AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Flash	Flash Encoder	OK	Stopped	
Edit Del Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del Real	Helix Producer Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	OK	Stopped	

The properties page for that encoder is then displayed.

Video & Audio Settings

Regardless of the encoder type, all types require that you set the audio and video properties. These values are the same for all encoder types except for the added color space setting for AVI and MPEG-4.

You can enable or disable video and/or audio by clicking the check box next to **Source** under Video Settings and/or Audio Settings. When enabled, the **Input**, **Signal**, **Proportions**, **Size** fields under **Video Settings**, and the **Input** field under **Audio Settings**, as shown in the following screenshot.

Encoder Properties

Name: WME ☐ Auto Start Stopped

Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: Osprey-5X0 Video Device 1.4	<input checked="" type="checkbox"/> Source: Osprey-5X0 Audio Device 1	
Input: Composite	Input: Unbalanced	
Signal: NTSC_M		
Proportions: Standard		
Size: FULL 640x480		

Although the Cisco Digital Media Encoder 2200 is a single channel encoder, meaning you can capture from two independent audio and video sources at any given time, you can capture multiple streaming formats and resolutions simultaneously from the same video source. To accomplish this, the video source is seen as multiple inputs denoted by incrementing decimal values. They appear in the following manner:

Name: WME

Video Settings

☒ Source: Osprey-5X0 Video Device 1.1

Input: Osprey-5X0 Video Device 1.1

Signal: Osprey-5X0 Video Device 1.4

Proportions: Osprey-5X0 Video Device 2.1

Size: Osprey-5X0 Video Device 2.2

Osprey-5X0 Video Device 1.2

Osprey-5X0 Video Device 1.3

Osprey-5X0 Video Device 1.5

Osprey-5X0 Video Device 2.3

Osprey-5X0 Video Device 2.4

Osprey-5X0 Video Device 2.5

The audio source settings include the choices set forth below.



Warning

Ensure that all of the encoders using the same video **Proportion** and **Size** settings also use the same video and audio source settings. For example, all encoders capturing at Standard proportion and CIF size are set to Osprey-5x0 Video Device 1.1 while encoders capturing at Standard proportion but QCIF resolution are set to Osprey-5x0 Video Device 1.2.

Set **Input** for both video and audio to match the connectors on the back of the encoder to which you have connected your video and audio source. This could be Composite or S-Video, or SD SDI for video input and Unbalanced, XLR Balanced, XLR AES/EBU, or embedded SDI for audio input.

When you performed the First Start Setup, you determine if your video signal was NTSC or PAL. The **Signal** field adds granularity for regional NTSC, PAL, and SECAM settings. If you are uncertain which setting applies, refer to the owner's manual for the video source you have connected to the encoder hardware.

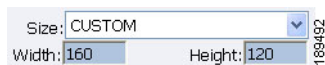
The **Proportions** setting uses the term Standard, meaning square pixels for a VGA monitor, and CCIR-601, meaning elongated pixels for a TV monitor. Choose the setting that reflects the type of display on which your content will be viewed. For example, if you will be streaming your video on the Internet to be viewed on a computer monitor, select **Standard**. If the inaccurate setting is selected, your streaming video will be distorted.

The **Size** field refers to the pixel size of the encoded video. The standard sizes are as follows:

- Full-size for full screen video
- CIF for video scaled from full-size to one-fourth size
- QCIF for video scaled from full-size to one-fourth of CIF size

You can also specify a custom size for your video. This is useful when capturing video to be played on a mobile video device that requires a non-standard size for compatibility.

If you select **Custom** from the drop-down menu, two additional fields will appear allowing you to type in the exact size you want the resulting video to be.



**Note**

If you specify a video size that is not compatible with the color space of your source video, the encoder will automatically correct the size to the closest compatible setting when you click the **Submit** button. The color space format setting, entitled **Format**, is available only in **AVI** and **MPEG-4 Encoder Properties** and appears as an additional field under the **Size** setting (see below).



Now that you have completed all of the Video and Audio settings, you can proceed to the encoder type settings at the bottom of the page.

Streaming Properties

As previously stated, these settings will vary according to the encoder type. Please refer to each encoder properties page setting in this document for further explanation and detail on the **Streaming Properties Settings** and **Advanced Streaming Settings** sections of each encoder.

Advanced Streaming Settings

This section includes the following topics:

- [SimulStream, page 2-29](#)
- [Deinterlace, page 2-31](#)

SimulStream

SimulStream employs filters to change the appearance of an image or part of an image by altering the shades and colors of the pixels in some manner. Filters are used to increase brightness and contrast as well as to add a wide variety of textures, tones and special effects to a picture. SimulStream filters have two interrelated purposes, as follows:

- They allow applications to enumerate and list video capture and preview pins or streams (each with different settings) as named entries in their video device select lists. The video device driver can be configured to show multiple filters per device. Each filter has one preview pin and one capture pin. Standard applications have the capability to access a particular filter without any custom programming specialized for Osprey devices.
- Each filter has independent settings for cropping, default output size, watermarks, and captions that can be stored between sessions. Compared with the previous “pin-based” method, no requirements are necessary for a particular startup order to associate settings with instantiations.

Please see the **Enable SimulStream** dialog box below.

Streaming Properties

Windows Media Capture Profiles:
 Windows Media Video 8 for Broadband (NTSC, 700 Kbps)
 44 of 57 Windows Media 9 audio and video compression at 1.5Mbps with CBR from NTSC source

☒ **Enable Pull**
 Pull from Port:

☐ **Enable Push**
 Push to Port:
 Server:
 Alias:
 User Name:
 Password:

☐ **Enable Scripting**

Streaming to a File
☒ **Save to file** ☒ **Index the file**
 File Name:

[All Encoders](#) [Delete Encoder](#) [Top](#)

Advanced Streaming Settings
SimulStream
☒ **Enable SimulStream**
☒ **Enable multiple instances for each filter**
 Show filters per device.

Deinterlace
 Type:

Motion Threshold
☒ **Smooth** ☐ **Sharp**
 Value:

☐ **Enable DRM** **DRM Settings (Windows Media only)**
 Profile:
 Description: None
 Key: N/A

Note: Changing the capture profile may change the current video height/width settings as well as the audio/video input capture selection.

The checkbox next to **Enable SimulStream** at the top of the dialog box, when checked, enables SimulStream to run for the currently selected encoder.

The encoder includes a full SimulStream license installed for each A/V channel, and this checkbox controls full SimulStreaming.



Note

When you change the **Enable SimulStream** status and click **Submit**, you must restart the appliance. If you do not, SimulStream may become partially active, but the capture devices may be incorrectly named, and their pins may be incorrect.

Show filters per device

With the Show filters per device control, you can set the device driver to expose multiple filters per device for enumeration and selection by encoders. If, for example, 5 filters per device are chosen, device lists in applications will show four entries for the currently chosen device. For device 1, they are designated as 1.1, 1.2, 1.3, 1.4, and 1.5.



Note

The number of filters you request will not display or work correctly until the system is restarted.



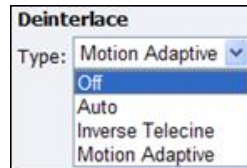
Note

While it is possible to expose and enumerate multiple filters per device, the practical number of working filters will be less. The practical number of filters depends on the capability of the appliance, the types of filtering enabled, the types of scaling and color format conversions requested per encoder, and the type of processing employed. If the appliance has multiple capture channels, the number of filters is the total across all channels. In addition, some types of processing, such as deinterlacing and gamma corrections, which are performed once per channel may, in this case, occur multiple times. In summary,

an appliance can support multiple concurrent filters on one device if the processing per filter is light. However, only 2 or 3 simultaneously running filters can be supported if the processing load inside or outside the driver is particularly heavy.

Deinterlace

The **Deinterlace** field has four drop-down choices. These choices are Off, Auto, Inverse Telecine, and Motion Adaptive, as you can see below.



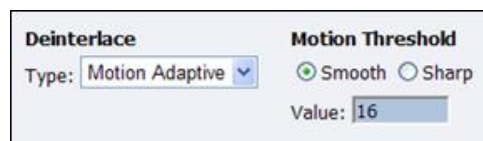
In further explanation of each choice, please see the following definitions.

- **Off** —Performs no deinterlacing of any kind.
- **Auto**—Applies inverse telecine deinterlacing to all telecine video. Applies motion adaptive deinterlacing to all video that is not telecine. Switches dynamically between the two modes as the content changes. Available for NTSC video only.
- **Inverse Telecine**—Applies inverse telecine deinterlacing to all telecine video. Performs no deinterlacing of video that is not telecine. Available for NTSC video only.
- **Motion Adaptive**—Applies motion adaptive deinterlacing to all video.

Deinterlace settings are applied and stored per-device and are applied to all filters and pins associated with a device.

Motion Adaptive Deinterlace

Motion adaptive deinterlace is an algorithm for deinterlacing pure video (non-telecine) content. It detects which portions of the image are still, and which portions are in motion, and then applies different processing to each scenario. Motion Adaptive Deinterlace is the only type of deinterlacing that uses **Motion Threshold** under **Advanced Streaming Settings—Simulstream**.



Telecine and Inverse Telecine

Telecine video is NTSC video which was originally created on film at 24 frames per second. In the telecine conversion process, certain fields are repeated in a regular, recurring sequence. If a telecined sequence is viewed directly on a progressive screen, interlacing artifacts will be visible.

The process called “inverse telecine” is the reverse of “telecine” — inverse telecine drops the redundant fields and reassembles the video in a 24 fps progressive format. Interlacing artifacts are 100 percent removed. If the video is viewed at 24 fps, you will see the exact timing and sequencing that was on the original film. If the video is viewed at 30 fps, every fifth frame will be repeated. However, there will be no deinterlacing artifacts.

Telecine and inverse telecine only apply to NTSC video. They are not used for PAL and SECAM video. The **Auto** and **Inverse Telecine** button choices will be disabled when either PAL or SECAM is selected as the video standard.

Motion Threshold

Motion Threshold adjusts the threshold of difference from spatially- and temporally-related pixels, which are judged to be “motion.” If you enter a higher value, the number of pixels in motion will be greatly reduced. If you enter a lower value, the number of motion pixels greatly increases until the entire screen, more or less, is considered in motion. The recommended default is 16.

Sharp and Smooth Motion

When the **Sharp Motion** radio button is selected, detail in motion areas will be sharper, but at the expense of somewhat jagged diagonal edges.

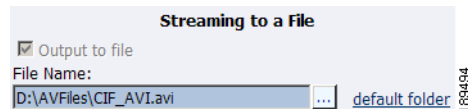
When the **Smooth Motion** radio button is selected, more loss of detail will occur in motion areas, but edges will be smoother.

Since the eye does not clearly see detail in areas of motion—and edge artifacts are highly intrusive—the **Smooth** algorithm is preferred for most applications. The Smooth algorithm uses a bit more CPU.

Both algorithms treat still areas in the same fashion, and there should be no loss of detail in still areas.

AVI Encoder Settings

AVI is an uncompressed audio and video storage format and, therefore, only has the ability to **save** to a file. You can type in a unique name for the generated AVI file and modify the directory path to the location the file will be stored. Clicking the **Default Folder** link will insert the path of the default folder for file storage on the encoder. By default the path is d:\AVFILES\.




Note

It is not recommend that you store files in any other directory on the encoder.

Once you have saved your file to the encoder internal hard drive, we recommend that you move the drive to another external storage device such as a USB drive or a network drive for backup purposes.

After you have input your settings, click the **Submit** button at the bottom of the page to save your changes.



Warning

If you click away from the current page to another web page without clicking Submit, your changes will be lost.

Flash Encoder Settings

The **Flash Encoder Settings** are similar to the AVI settings for saving the audio and video to a file. However, Flash adds some additional frame and bit rate controls. The frame rate changes the frames per second at which the video will be encoded. The audio format setting can be used to modify the audio frequency and changes stereo to mono. The bit rate settings pertain to the amount of data per second the audio and video are captured. Decreasing the bit rate for both or either will decrease the playback viewing quality.

The **Flash encoder** creates a Flash format audio and video file. You can type in a unique name for the Flash file (.flv).

Advanced Flash Video Settings

Frame Rate: fps

Bitrate: kbps

Advanced Flash Audio Settings

Format:

Bitrate: kbps

[Bottom](#)

Streaming Properties

☐ Enable Streaming

Server Address:

Stream Name:

Server Type:

User Name:

Password:

Advanced Streaming Settings

SimulStream

☒ Enable SimulStream

☐ Enable multiple instances for each filter

Show filters per device.

Deinterlace

Type:

Motion Threshold

☒ Smooth ☐ Sharp

Value:

Streaming to a File

☐ Save to file

File Name: default folder

[All Encoders](#) [Delete Encoder](#) [Top](#)

After you have input your settings, click the **Submit** button at the bottom of the page to save your changes.



Warning

If you click away to another web page without clicking Submit, your changes will be lost.

MPEG-4 Encoder Settings

This section includes the following topics:

- [Encoder Settings Web Interface, page 2-33](#)
- [Real Encoder Settings \(Helix\), page 2-39](#)

Encoder Settings Web Interface

The Cisco Digital Media Encoder 2200 software MPEG-4 compression engine provides (1) H.264, MPEG-4, Part 10, (Baseline Profile) (2) MPEG-4, Part 2, (Simple Profile) and (3) H263 (Simple Profile) encoding functionality. This product provides the capabilities to encode streams for Internet video, mobile phones, set top boxes and create media files for other MPEG-4 compatible devices such as iPods®.

The *Niagara SCX Web Interface* provides options for basic and advanced settings for the video and audio options of MPEG-4 available with the encoder.

The following figure illustrates the screen you will see after creating an encoder through the *Niagara SCX Web Interface*.

The **Advanced MPEG Video Settings** provide you with the ability to choose the **MPEG Type** required for your output. These MPEG Types include the following:

- **H.264–MP4:** H.264, MPEG-4, Part 10, or AVC (Advanced Video Coding) was designed for very high-data compression while maintain better quality than its predecessor, H.263. It was also created to address a broad range of applications from low bit rate to high bit rate and from low resolution such as cell phones to high resolution such as broadcast. The encoder's H.264 is Baseline Profile.
- **H.264–3G2:** This setting will create an H.264 stream stored in a 3G2 container.
- **H.264–3GP:** This setting will create an H.264 stream stored in a 3GPP container.
- **MPEG4–MP4:** MPEG-4, Part 2, or H.263, is designed for situations where low bit rate and low resolution are mandated by other conditions of the applications, like network bandwidth or device size. Examples of video applications for H.263 are cell phones, some low end video conferencing systems, and surveillance systems. H.263 is important for legacy handheld devices that do not support H.264.



Note

By default, the encoder's H.263 uses Simple Profile unless you select the **Enable B Frames** option. If B frames are enabled, then the resulting stream will be Advanced Simple Profile.

- **MPEG4–3G2:** This setting will create an H.263 stream stored in a 3G2 container.

- **MPEG4-3GP:** 3GP is a multimedia container format defined by the Third Generation Partnership Project (3GPP) for use on 3G mobile phones. It stores video streams such as MPEG-4 or H.264 and audio streams such as AMR or AAC. This setting will create an H.263 stream stored in a 3GPP container. There are two defined standards for this format:
 - 3GPP for GSM based mobile phones
 - 3GPP2 for CDMA based mobile phones
- **H263-MP4:** MPEG-4, Part 2, or H.263, is designed for situations where low bit rate and low resolution are mandated by other conditions of the applications, like network bandwidth or device size. Examples of video applications for H.263 are cell phones, some low end video conferencing systems, and surveillance systems. H.263 is important for legacy handheld devices that do not support H.264.



Note By default, the encoder's H.263 uses Simple Profile unless you select the **Enable B Frames** option. If B frames are enabled, then the resulting stream will be Advanced Simple Profile.

- **H263-3G2:** This setting will create an H.263 stream stored in a 3G2 container.
- **H263-3GP:** This setting will create an H.263 stream stored in a 3GPP container.



Note

The **Encoder Quality** setting is currently not active and will not affect the results of the encoding stream or file.



Note

Some players, such as Quicktime® player, are not compatible with streams that include B frames. If your resulting stream has quality issues on playback, try disabling B frames to ensure compatibility with most players.

The Advanced MPEG Audio Settings, provide you with several Audio Formats, Audio Types, Audio Encoders, and Bitrates from which to choose. These choices include several options as to audio sampling, and whether the audio is to be encoded monophonically (mono) or stereo.

Advanced MPEG Audio Settings

Audio Format: 44.100 kHz, 16 bit, Stere

Audio Type: Low Complexity

Audio Encoder: AAC

Bitrate: 8

Advanced MPEG Audio Settings

Audio Format: 44.100 kHz, 16 bit, Stere

Audio Type: 11.025 kHz, 8 bit, Mono
11.025 kHz, 8 bit, Stereo

Audio Encoder: 11.025 kHz, 16 bit, Mono
11.025 kHz, 16 bit, Stereo

Bitrate: 22.050 kHz, 8 bit, Mono
22.050 kHz, 8 bit, Stereo
22.050 kHz, 16 bit, Mono
22.050 kHz, 16 bit, Stereo
33.075 kHz, 8 bit, Mono
33.075 kHz, 8 bit, Stereo
33.075 kHz, 16 bit, Mono
33.075 kHz, 16 bit, Stereo
44.100 kHz, 8 bit, Mono
44.100 kHz, 8 bit, Stereo
44.100 kHz, 16 bit, Mono
44.100 kHz, 16 bit, Stereo
16.000 kHz, 8 bit, Mono
16.000 kHz, 16 bit, Mono
48.000 kHz, 8 bit, Mono
48.000 kHz, 8 bit, Stereo
48.000 kHz, 16 bit, Mono
48.000 kHz, 16 bit, Stereo

The **Audio Type** setting is only related to AAC Encoding. If you select **AMR** in the **Audio Encoder** field, this setting is not used. The Audio Type field provides you with a drop-down box, which includes the following two choices:

- **Main:** This format is the same as Low Complexity, but adds backward prediction.
- **Low Complexity (LC):** The simplest and most widely used and support AAC audio format.



Note

Depending on the player on which the resulting stream will be heard, either choice—Main or Low Complexity—will use a specific set of tools to encode the audio stream. You should make your choice based on the requirement of the playback software or device. The most widely supported format is LC profile.

The **Audio Encoder** settings provides you with a drop-down box, which includes the following three choices:

- **AAC (Advanced Audio Coding):** A standardized, lossy compression and encoding scheme for digital audio. AAC achieves better audio quality than MP3 and has been named a standard by the Motion Picture Experts Group (MPEG)
- **AMR-NB (Adaptive Multi-Rate Narrow-Band – 8 kHz):** An audio data compression scheme optimized for speech coding. AMR was adopted as the standard narrowband speech codec by 3GPP and is widely used in GSM.
- **AMR-WB (Adaptive Multi-Rate Wide-Band – 16 kHz):** An audio data compression scheme optimized for speech coding. AMR was adopted as the standard wideband speech codec by 3GPP and is widely used in GSM.

**Note**

When you select **AMR Encoder** for audio, the audio will automatically be encoded using 8 kHz mono for playback on cell phones. When you select AMR-WB for audio, you must change the Audio Format to be 16 kHz, 16 bit, mono, for playback on cell phones.

The **Audio Bitrate** drop-down box provides you with several choices, ranging from 8 to 320.

The web interface for the encoder includes options for **Streaming Properties** and **Advanced Streaming Properties**. As to the broadcast type you choose, you have the option to check the **Enable Streaming** box. Please see the “[Real Encoder Properties \(Helix\)](#)” section on page 2-25 for a more detailed description of enabling pull. Another option provides you with the abilities to **Save to Portable Media** and provide a **Media Title**.

The screenshot displays the configuration page for the Cisco Digital Media Encoder 2200. It is divided into several sections:

- Advanced MPEG Video Settings:** Includes dropdowns for MPEG Type (H264 - MP4), Encoder Quality (Real-time), and Frame Rate (29.9700000). It also has a Bitrate (kbps) input field set to 768 and an unchecked checkbox for Enable B-frames.
- Advanced MPEG Audio Settings:** Includes dropdowns for Audio Format (44.100 kHz, 16 bit, Stereo), Audio Type (Low Complexity), and Audio Encoder (AAC). It also has a Bitrate dropdown set to 128.
- Streaming Properties:** Contains a checkbox for Enable Streaming. Below it are input fields for Destination IP, Callback IP, Video Port, Audio Port, Time to Live, Stream Info, Stream Title, and SDP File.
- Advanced Streaming Settings:** Includes a checkbox for Enable SimulStream and another for Enable multiple instances for each filter. It also has a 'Show' dropdown set to 5 filters per device.
- Deinterlace:** Includes a dropdown for Type set to Motion Adaptive.
- Motion Threshold:** Includes radio buttons for Smooth (selected) and Sharp, and a Value input field set to 16.
- Streaming to a file:** Includes a checked checkbox for Save to file, a File Name input field set to default folder, and a file selection button.
- Portable Media:** Includes an unchecked checkbox for Enable Saving and a Media Title input field set to Title.

At the bottom, there are links for All Encoders, Delete Encoder, a Submit button, and a Top link.

Under the **Advanced Streaming Settings** feature, you have the options to output to a file while streaming, or only output to a file. You must type in a unique name and location for this file.

Check the **Output to file** box if you would like to save the encoded content to a file. Enter a file destination in the field provided. By default, this folder is set to D:\AVFiles\Out.

Check the **Save to Portable Media** box if you would like to save the stream from portable media to a file.

**Note**

Remember the file name is referenced to the encoder system not to the system running SCX Explorer.

When SCX Manager and SCX Explorer are not on the same computer, always start your browse for files at My Network Places and work down or enter the entire file pathname beginning with the system name (for example, \\fileserver\c\videos). If you simply enter a file name, you may inadvertently browse your local computer when the media file resides on the remote computer.

To stream your MPEG-4 content, select **Enable Streaming**. Set the appropriate streaming properties.

**Note**

Live streaming and streaming to a file cannot be accomplished at the same time. Only one box can be checked at a time. To stream Live and to file at the same time, a separate profile must be set up.

The screenshot shows a window titled "Streaming Properties". It contains a checkbox labeled "Enable Streaming" which is checked. Below this are several input fields: "Destination IP:" with the value "239.1.1.1", "Callback IP:" with "172.16.1.143", "Video Port:" with "5050", "Audio Port:" with "5052", "Time to Live:" with "30", "Stream Info:" with "Stream Info Here.", "Stream Title:" with "Streaming Server", and "SDP File:" with "c:\capture.sdp".

**Note**

The default settings will enable multicast streaming. If this is not desired, change the IP address for Group to the IP address of the server to which you want to stream from the encoder.

The save **SDP File** field will require a name and destination path for the resulting SDP file created when the stream is started. If you are streaming to a Helix®, a Quicktime, or a Darwin server, refer to its respective documentation or online message boards for setup details specific for the individual streaming server.

**Note**

You can stream point-to-point by selecting a share destination directory for the saved SDP file. Remember to disable multicasting by entering in the IP address of the PC to which you want to stream.

For example, if you want another PC to view the stream, save the SDP file to a share folder on the local drive. The other PC can open the SDP file and the stream can be played in a Quicktime or other MPEG-4 compatible streaming player. Since MPEG-4 encoding can be CPU intensive, it is not recommend that you view the stream on the same system as the encoder unless you have a very powerful system (dual-core processors or better). Doing so may overtax the host CPU which will cause video quality degradation and encode session failure.

After you have input your settings, click the **Submit** button at the bottom of the page to save your settings.

**Warning**

If you click away to another web page without clicking Submit, your changes will be lost.

Real Encoder Settings (Helix)

Real (Helix) is both a storage format and a streaming format. In addition to the ability to output to a file, the Real Encoder can stream to a Helix Server. The settings for the Real Encoder include the ability to adjust parameters for connecting and streaming to the server.

Broadcast Method: There are several different broadcast types for streaming Real format video to a Helix Server, as follows:

- **Push, Account-Based Login (Helix Server):** Account-based, push broadcasting allows you to send a stream to Helix Server version 9 or later. In this method, the encoder maintains a monitoring connection to Helix Server. This connection allows it to pass a user name and password to authenticate access to the server. Helix Server uses this connection to send statistics about the broadcast stream back to the encoder.
- **Push, Password-Only Login (Helix Server):** Unlike account-based broadcasting, password-only broadcasting does not establish a monitoring connection. Therefore, this type of broadcasting requires less network overhead, but receives no feedback from Helix Server. This broadcast method allows you to send a live stream to Helix Server version 9 or later. However, you must set up the server as a receiver in a splitting arrangement. Please refer to Helix Server documentation for details.
- **Push, Multicast (Helix Server):** In a multicast, the encoder can deliver the same broadcast stream to any number of Helix Servers without increasing its outgoing bandwidth. The Helix Servers will need to be pre-configured for a multicast from the encoder. Refer to your Helix Server documentation for details.
- **Pull (Helix Server):** In pull broadcasting, the encoder begins to generate broadcast packets as soon as you start the encoding. However, it does not deliver the broadcast stream until Helix Server requests the stream, which occurs when the first RealPlayer® user requests the broadcast. In that

way, Pull broadcasting saves bandwidth between the encoder and Helix Server when no one is viewing the broadcast. This broadcast method allows you to send a stream to Helix Server version 9 or later.

- **Legacy Push (8.x, 7.x, G2):** The legacy push method is similar to the account-based push method. However, the legacy push does not use a monitoring connection to provide server feedback and statistics and is not as robust a broadcast method as an account-based push. Use this broadcasting method only when sending a broadcast stream to a server that predates Helix Server version 9, such as RealSystem Server G2, 7, or 8.

Transport Protocol: When you use a push broadcast method, you specify whether to use UDP or TCP upon delivering the broadcast stream to Helix Server. UDP is the preferred protocol due to the lower network overhead. But you may want to use TCP when delivering the broadcast over a lossy environment.

For the **Server Address** field, enter the IP address or DNS name of the Helix Server used for the broadcast, such as 207.188.7.176 or helixserver.example.com.

For the **Port/Port Range** field, specify the HTTP port on Helix Server. The default value is port 80, which is the server's default HTTP port. If multicasting, indicate the range of ports on the Helix Server receivers where the broadcast packets will be sent. The encoder and Helix Server negotiate the actual ports to use once the broadcast begins. The default range is from 30001 to 30020.

If using a Multicast Address, enter the multicast address for the broadcast stream in the **Multicast Address** field. The Multicast Address must be in the range 224.0.0.0 to 239.255.255.255.

The **Listen Address** field is the IP address of your machine where Helix Producer will listen for resend requests from the server.

The listen address sets the IP address that Helix Mobile Producer Live uses to listen for packet resend requests from Helix Server. For the listen address, you can use one of the following possible values:

- **Automatic:** This is the safest setting, and will work with most firewall configurations
- **System IP:** The IP address of the machine
- **System IP 2:** The second IP of the machine is multi-homed
- An IP address typed in by the user

If your Helix Mobile Producer Live machine has multiple IP addresses, enter the IP address that Helix Mobile Producer Live should use for communications from Helix Server. If you are broadcasting through a firewall performing network address translation (NAT), set the listen address to the IP address of the firewall or the value 0.0.0.0. The 0.0.0.0 value tells Helix Server to allow a Helix Mobile Producer Live connection from any IP address. The connection still requires the valid password, however.

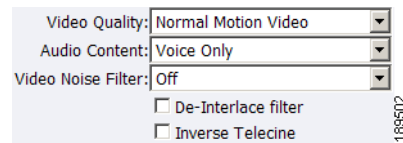
In the **Stream Name** field, enter a name for the broadcast stream. This name resembles a clip name and should use the appropriate extension, either .rm for a constant bit rate stream or .rmvb for a variable bit rate stream. This name appears in the broadcast URL.

The **Path (optional)** field specifies a virtual path, which can be used for archiving or splitting on Helix Server. Use a simple name followed by a forward slash, such as news/.

In the **User Name** and **Password** fields, enter the User Name and Password defined in each Helix Server receiver definition. The broadcast connection fails if the value is incorrect.

Frame Rate, or frame frequency, is the measurement of the frequency (rate) at which an imaging device produces unique consecutive images called frames. The term applies equally well to computer graphics, video cameras, film cameras, and motion capture systems. Frame rate is most often expressed in frames per second (fps), or simply hertz (Hz).

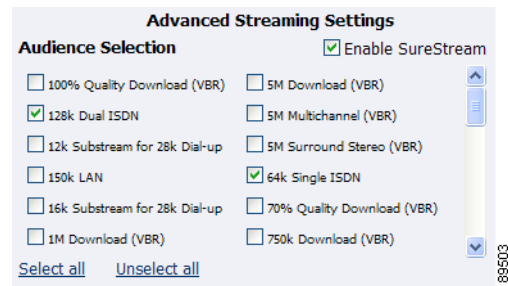
The next series of fields activate the Real Encoder's filters to improve video and audio quality. These filter settings will depend upon the type of content you are streaming and your subjective preference. It is recommended you experiment with these settings and view their results on a test capture.



The Cisco Digital Media Encoder 2200 features integrated de-interlacing and inverse telecine filters that automatically apply when needed. This allows the encoder to perform at maximum efficiency.

**Note**

We recommend that you do not enable the Real Encoder de-interlace and inverse telecine filters since applying filters multiple times can produce undesirable results and consume additional system resources.



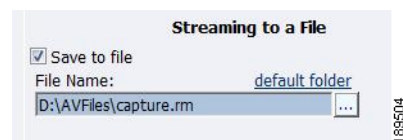
Enable SureStream™: SureStream allows you to encode the broadcast stream for multiple audiences. However, each primary stream or substream you choose increases the processor load during encoding and adds to the outgoing bandwidth requirements. For example, with SureStream enabled, you can choose the 56k Dial-up audience and the 128k Dual ISDN audience. In addition, with SureStream enabled, the encoding might require twice as much processing power.

Regardless of whether or not you enable SureStream, you must choose at least one **Audience Selection** for your stream.

You can also choose to output to a file while streaming or output only to a file. Type in a unique name for the file.

**Note**

If you use the same name as a current file, the current file will be overwritten.



After you have input your settings, click the **Submit** button at the bottom of the page to save your changes.

**Warning**

If you click away to another web page without first clicking *Submit*, your changes will be lost.

Windows Media Encoder Settings

Windows Media is both a storage format and a streaming format. In addition to the ability to output to a file, the Windows Media encoder can stream to a Windows Media Server. The settings for Windows Media encoder include the ability to set parameters for connecting and streaming to the server.

The screenshot displays the configuration interface for the Windows Media Encoder, divided into two main sections: **Streaming Properties** and **Advanced Streaming Settings**.

Streaming Properties:

- Windows Media Capture Profiles:** A dropdown menu showing "Windows Media Video 8 for Broadband (NTSC, 700 Kbps)". Below it, text indicates "44 of 57 Windows Media 9 audio and video compression at 1.5Mbps with CBR from NTSC source".
- Enable Pull:** Checked. "Pull from Port:" is set to 7007.
- Enable Push:** Unchecked. "Push to Port:" is set to 80.
- Server:** Empty text field.
- Alias:** Empty text field.
- User Name:** Empty text field.
- Password:** Empty text field.
- Enable Scripting:** Unchecked.
- Streaming to a File:**
 - Save to file:** Checked.
 - Index the file:** Checked.
 - File Name:** "D:\AVFiles\capture.wmv" (with a "default folder" link).

Advanced Streaming Settings:

- SimulStream:**
 - Enable SimulStream:** Checked.
 - Enable multiple instances for each filter:** Checked.
 - Show filters per device:** 5.
- Deinterlace:**
 - Type:** Motion Adaptive.
- Motion Threshold:**
 - Smooth:** Selected (radio button).
 - Sharp:** Unselected (radio button).
 - Value:** 16.
- Enable DRM:** Unchecked.
- DRM Settings (Windows Media only):**
 - Profile:** None.
 - Description:** None.
 - Key:** N/A.

Notes and Controls:

- A note states: "Note: Changing the capture profile may change the current video height/width settings as well as the audio/video input capture selection."
- Buttons at the bottom include "All Encoders", "Delete Encoder", "Submit", and a "Top" link.

First, select a **Windows Media Capture Profile** from the drop-down menu.



Note

Some Windows Media Capture Profiles have pre-defined video resolutions and input selections. When you select a Windows Media Capture Profile, verify that your current video and audio settings have not been modified. If they have been modified, simply change these settings back to their previous settings and click the **Submit** button.

When streaming audio and video, there are two methods of delivery, as follows:

- **Pull:** Using this method, the encoder begins to generate broadcast packets as soon as you start the encoding. However, it does not deliver the broadcast stream until Windows Media Server requests the stream. This method does not provide a secure connection to the server and should only be used if the encoder and server reside within the same network firewall.
- **Push:** Using this method, the encoder maintains a secure connection to Windows Media Server. This connection allows the encoder to pass a user name and password to authenticate access to the server.

To enable clients to pull the stream from Cisco Digital Media Encoder 2200, you set up a session and begin broadcasting directly from the encoder. Clients (Windows Media servers or players) can connect to the stream at any time by using the following URL format:

- `http://IP_address:port` (for Internet connections)
- `http://encoding_computer_name:port` (for LAN connections)

By default, the encoder supports up to 50 direct connections during a broadcast.

**Note**

The greater the number of direct connections to the encoder, the more system resources are required. We do not recommend having players connect directly to Cisco Digital Media Encoder 2200. Streaming servers should connect to the encoder and, in turn, players should connect to the servers.

Select the **Enable Pull** check box. Then, enter a port number that will be used by the server to pull the stream from the encoder.

**Note**

Be sure to enter a port number that is not already assigned to another encoder. If two encoders attempt to use the same port number, one or both encoders will fail to start.

Select **Enable Push** and enter a port number that is not assigned to another encoder. Then, enter the server name or IP address, Alias (optional), user name, and password.

You can also choose to output to file at the same time you are streaming to a server. However, you can set the server to archive the file and streaming, allowing the encoder to reserve its system resources for encoding. Refer to the Windows Media Server documentation for details.

If you check **Index the file**, viewers will be able to direct access any point within the Windows Media® file using the Windows Media player. **Indexing is also required for editing the Windows Media file using Microsoft Windows Media Utilities.**

After you have input your settings, click the **Submit** button at the bottom of the page to save your changes.

**Warning**

If you click away to another web page without first clicking Submit, your changes will be lost.

The *Niagara SCX Web Interface* will then display the **All Encoders** list.

Encoders					
This page allows you to perform encoder setup and removal.					
<input type="checkbox"/> Auto refresh page					Add Encoder
NiagaraPro Encoders Total records : 5					
Name	Description	Last Status	Streaming	Preset	
Edit Del AVI	AVI Encoder Driver	OK	Stopped		
Edit Del Flash	Flash Encoder	OK	Stopped		
Edit Del Mpeg	MPEG4 Encoder Driver	OK	Stopped		
Edit Del Real	Helix Producer Encoder	OK	Stopped		
Edit Del WME	Windows Media Encoder	Stopped	Stopped		

Deleting an Encoder Profile

You can also delete encoder profiles from the encoder. It is valuable to remove encoders you will not use, as every encoder profile, regardless if active or idle, uses active memory.

**Note**

Once you delete a custom profile, you cannot restore it. It must be recreated.

**Note**

If you delete a default encoder profile, you can restore it by using the **Restore Encoder Factory Defaults** function. Running the Restore Encoder Factory Defaults will remove any custom encoder profiles you have created and load only the default encoder profiles.

To delete an encoder profile, you must access the All Encoders list in the *Niagara SCX Web Interface*.



The screenshot shows the 'Encoders' page in the Niagara SCX Web Interface. It includes a title 'Encoders', a description 'This page allows you to perform encoder setup and removal.', an 'Auto refresh page' checkbox, and an 'Add Encoder' link. Below is a table with 5 records. Each row has 'Edit' and 'Del' links, a status icon, and a 'Streaming' button.

Name	Description	Last Status	Streaming	Preset
Edit Del AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Flash	Flash Encoder	OK	Stopped	
Edit Del Mpeg	MPEG4 Encoder Driver	OK	Stopped	
Edit Del Real	Helix Producer Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Stopped	Stopped	

You can delete an encoder by clicking the **Del** link next to the encoder you wish to remove.

Alternatively, you can click the **Edit** link to view the encoder profile, verify that it is the encoder that you wish to remove.

Then, click the **Delete Encoder** link at the bottom of the page once you have verified that it is the encoder you want to delete.



My Cisco Digital Media Encoder 2200

To link to the Cisco Digital Media Encoder 2200 page, go to **Configuration** on the menu at the top of the web page, and click on **My Niagara Pro II** from the drop-down list.

The **My Cisco Digital Media Encoder 2200** page provides details on software versions, network name, serial number, and hard drive configurations. Most of the data on this page is for informational purposes and cannot be altered. However, the following two fields allow modifications:

- Computer Name
- Admin password

The screenshot shows the 'Machine Properties' page of the Cisco Digital Media Encoder 2200 web interface. The navigation bar at the top includes links for Home, Encoders, Configuration, Status, and Log Out. The page displays various system information:

- Computer Name:** CP08360002 (with a 'Click to change name' link)
- Windows Version:** 5.1.2600.131072
- Service Pack:** Service Pack 2 (with a 'Reboot Now' link)
- NiagaraPro Properties:**
 - User Name:** admin
 - Serial Number:** CP08360002
- Fixed Hard Drive:**
 - C:\: 2,037.00 MB free out of 3,092.00 MB
 - D:\: 232,120.00 MB free out of 232,448.00 MB
 - E:\: 17.00 MB free out of 195.00 MB
 - F:\: 1,421.00 MB free out of 2,729.00 MB
- Memory:** 2,617.00 MB bytes free out of
- Software Versions:**
 - Web: 5.2.187.0
 - SKU#: 92-00353-01
 - VCST.Scx.Common.dll Version: 5.2.187.0
 - VCST.Scx.EncodersLib.dll Version: 5.2.187.0
 - VCST.Utility.Diagnostics.dll Version: 5.2.187.0
 - VCST.Utility.SystemInfo.dll Version: 5.2.187.0
 - VCST.Scx.GoStream.Data.dll Version: 5.2.187.0
 - VCST.UtilityLib.dll Version: 5.2.187.0
- Software Update History:**

Date	Version	Description
8/21/2008 2:42:10 PM	FCN 01	Allows the filename to be lowercase letters.
8/21/2008 2:42:11 PM	FCN 02	Enables alternate method for encoding to Windows Media. (Default is disabled)
8/21/2008 2:42:12 PM	FCN 03	Adds link to DRM information to the desktop.
8/21/2008 2:42:13 PM	FCN 04	Enable Real username/Password. Sets default path for files.
8/21/2008 2:42:13 PM	FCN 05	This update does not apply to embedded systems - ignored.
8/21/2008 2:42:14 PM	FCN 06	Adds Wide Screen capture size for PAL (512x288) to the Flash encoder.
8/21/2008 2:42:15 PM	FCN 07	Enable Real username/Password
8/21/2008 2:42:16 PM	FCN 08	Corrects problem with password authentication with Akamai and LimeLight.
8/21/2008 2:42:17 PM	FCN 09	Allows scripts to be written into files created by the Real Networks encoder.
8/21/2008 2:42:18 PM	FCN 10	Fixes fast display of Closed Caption for WME encoding and updates the Mpeg encoding engine.

A note at the bottom states: "Note: Changing the computer name will require the system to be rebooted after submitted."

Computer Name

The **Computer Name** field contains the current network name for the encoder. This is the same name that you typed into a web browser to access the *Niagara SCX Web Interface*. You can change the Computer Name by clicking the **Click to change name** link next to this field.

This screenshot shows a close-up of the 'Computer Name' field. The current name is 'GP074802'. To the right of the text input field is a blue link that says 'Click to change name'. Below the name field, the 'Windows Version' (5.1.2600.131072) and 'Service Pack' (Service Pack 2) are listed. A 'Reboot Now' link is also visible. A vertical text label '189509' is on the right side of the form.

The screen will refresh and now the **Computer Name** field is an editable text field. Type in a new name for the encoder.

Then, click the **Submit** button at the bottom of the page.

The page will refresh and you will be prompted to reboot the encoder. Your changes will not take effect until the system is restarted.

Click the **Reboot Now** link to restart the system and apply the Computer Name change.

While the encoder is restarting, the following message will appear in the web interface.

The Web service is currently not available. Please wait for the service to be restarted and returned to normal service. This page will automatically refresh.

In Progress... **System Reboot**

Tuesday, December 04, 2007 4:55:08 PM

189511



Note

The restart process takes approximately two minutes to complete.

When encoder has restarted, you will be returned to the Login screen.



Note

If you close your web browser and later want to log into the *Niagara SCX Web Interface*, you will need to use the new computer name you created to access the encoder.

Cisco Digital Media Encoder 2200 Properties

The encoder **Properties** section has two fields: User Name and Serial Number. Only the **User Name** field allows modification, which changes the User Password from the factory default.

- [Changing the Login Password from the Factory Default, page 2-46](#)
- [Restoring the Login Password to the Factory Default, page 2-47](#)

Changing the Login Password from the Factory Default

Click the **admin** link in the User Name field. You will be presented with a new screen that allows you to change your login password for the *Niagara SCX Web Interface*.

NiagaraPro Properties:

User Name: admin
Serial Number: CP08360002



Note

You cannot change the User Name for the *Niagara SCX Web Interface*.

Type in your current password in the **Password** field and then type in the new password in both the **New Password** and **Confirm New Password** fields.

**Note**

The *Niagara SCX Web Interface* password is case sensitive.

Change your password for the
NiagaraPro web login.

•

Passwords are case sensitive

Change Your Password

User Name: admin

Password:

New Password:

Confirm New Password:

Change Password Cancel

[Back to home page](#)

Then, click the **Change Password** button. You will then be presented with the following results:

Change your password for the
NiagaraPro web login.

•

Passwords are case sensitive

[Password Changed successfully, click to login](#)

**Note**

You will need to log back into the web interface with your new password.

Restoring the Login Password to the Factory Default

If you have forgotten or lost your password, you can restore the default password by running the **Restore Factory Defaults** option. For more information, see the [“Restore Factory Defaults” section on page 2-51](#).

Cisco Digital Media Encoder 2200 Alerts

The Alerts page can be viewed by navigating to the **Configuration** link at the top of the web page and clicking on the **Alerts** link.

The following is a representation of a page that allows you to control how the encoder handles application alerts that may occur during streaming or other operations. Cisco Digital Media Encoder 2200 can optionally send an email to multiple recipients should an alarm present itself. The alarm light on the front panel of the encoder automatically lights when there is an alarm.

Alerts

This page allows you to control how NiagaraPro handles application alerts that may occur during streaming or normal operations. NiagaraPro can optionally send a single email or close a hardware contact on the dual dock for each condition selected below.
Warning!!! Email Configuration is incomplete. Click to see the NiagaraPro [Email address](#).

NiagaraPro Alerts | records : 9

	Send Email	Light Alarm	Close Contact	Displayed Text	Description
Edit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Exception	
Edit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Encoder Error	
Edit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Undefined	
Edit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Encoder Started	
Edit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Encoder Stopped	
Edit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCX Service Stopped	
Edit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SCX Service Started	
Edit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Warning	
Edit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	High Temperature!	

Email Alert

You can optionally send an email alert to specific email address in the event of an application alarm. Checking **Send Email** will enable this feature. You must specify the email address to which an alert will be sent, along with your email server user name, password, and server name. For more information about configuring Cisco Digital Media Encoder 2200 to send email alerts, see the “[System Configuration Settings](#)” section on page 2-50.

Alarm Light

Checking the **Light Alarm** box will instruct the encoder to light the front panel alarm light should an alert become necessary.

Edit Alert Settings

To edit the settings for each alert listed, click the **Edit** link in the row of the alert you want to modify. Note that at this juncture, you will be presented with two alternatives: to either update the alarm or cancel the alarm.

Should you decide to update, once you have made your modifications to the alert settings, click the **Update** link to enter your settings and return to the **Alerts** list.

Network Properties

The Network Properties page can be viewed by navigating to the **Configuration** link at the top of the web page and clicking on **Network Properties**.

The **Network Properties** page provides detailed information on the encoder's current network settings for the Network Interface Card (NIC).


(TCP/IP) Network Properties

Network Card(s) Primary NIC
 Description: Broadcom NetXtreme Gigabit Ethernet

☒ Obtain an IP address automatically
☐ Use the following IP information

IP Address: 172.16.1.181
 Subnet Mask: 255.255.255.0
 Default Gateway: 172.16.1.251
 Preferred DNS Server: 172.16.1.3
 Alternate DNS Server: 172.16.2.3

Advanced Settings on [CP08360002](#)

MAC Address: 00:E0:81:4C:38:FA
 Primary WINS Server: 172.16.1.4
 Secondary WINS Server: 0.0.0.0
 Active Network Link: 

Network Card(s)

Cisco Digital Media Encoder 2200 has two 1,000 megabit network connections. To view the current properties for each card, select the card you wish to view from the drop-down menu in the **Network Card(s)** field.

Advanced Settings (Network)

Advanced Settings provides the encoder network name, MAC Address and server IP address settings.



Advanced Settings on [GP072105](#)

MAC Address: 00:60:E0:04:D8:46
 Primary WINS Server: 172.16.1.5
 Secondary WINS Server: 172.16.1.12
 Active Network Link: 

The encoder network name is a link. If you click this link, you will be directed to the **My Cisco Digital Media Encoder 2200** page. From this page you can change the encoders's network name. For more information, see the [“Computer Name”](#) section on page 2-45.

The **Active Network Link** field uses two icons to indicate whether the network interface card selected has a network connected.

Table 2-3 *Network Link Icons and Descriptions*

Icon	Description
	The network link is detected.
	The network link is not detected.

System Configuration Settings

The System Configuration page can be viewed by navigating to the **Configuration** link at the top of the web page and clicking on **System Configuration**.

The **System Configuration Settings** page allows you to modify your encoder default system settings. You can configure email settings so that Cisco Digital Media Encoder 2200 can send an email to predefined email addresses whenever the encoder encounters an alert condition. You can also customize the information that the encoder displays on its front panel when the system is idle.

This page also provides the ability to restore your encoder to its original factory disk image, returning all of the system settings to their original state. Using the **Restore Factory Defaults** option will remove all custom settings and takes approximately 10 minutes to complete.

This page allows you to modify your NiagaraPro default system settings.

Enter a valid email settings to have NiagaraPro send emails for [alert conditions](#). Optionally select the information to show on the NiagaraPro display when NiagaraPro is idle. You can customize the idle screen text or use the default settings.

System Configuration Settings [Restore NiagaraPro Factory Defaults](#)

Email Settings:

Send Emails To:

Email From:

Subject:

SMTP (Mail) Settings:

User Name:

Password:

SMTP Host: [Save and Send Test Email](#)

Idle Screen Information:

Cycle this information in the display when NiagaraPro is idle.

☐ Active IP ☒ Computer Name ☒ CPU

☒ Memory ☒ Hard Drive ☒ Temperature

Idle screen text: Line 1

Note: Each line in the display is 20 characters.

Line 2

Line 3

Line 4

***Default AV Folder:**

High Temperature Alert: degrees Celsius. (view [Alert Configuration](#))

Restore Factory Defaults

Click the **Restore Factory Defaults** link to start the process.

This page allows you to modify your NiagaraPro default system settings.

Enter a valid email settings to have NiagaraPro send emails for [alert conditions](#). Optionally select the information to show on the NiagaraPro display when NiagaraPro is idle. You can customize the idle screen text or use the default settings.

[System Configuration Settings](#) [Restore NiagaraPro Factory Defaults](#)

The following screen gives details of the process that you are about to execute and allows you the opportunity to cancel the process.

Restore Factory Defaults

Restore to factory Defaults allows the rebuilding of the NiagaraPro primary disk drive (C:) to be set to the original system defaults. This reconfigures the system and all files on the primary disk will be removed and the factory image reinstalled.

This option should only be selected if you are experiencing significant difficulties with your system or you wish to return to the factory defaults. Selecting this process will stop all running programs and take approximately 10 minutes to complete.

Do not power off or interrupt the system restore once started. A message on the NiagaraPro LCD display will be left on the screen while the restoring executes and removed when finished. All services will automatically restart and allow you to set your personal settings with the menu or with this Web site when completed.

Continue with restoring the entire system back to Factory Defaults ?

Yes [Restore my system](#) back to the factory defaults or No, take me back to the [Home Page](#)

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Note

Restore Factory Defaults rebuilds the encoder primary disk drive (C:) with the original system image. All custom settings and any files saved to drive C: will be lost. This process cannot be reversed. However, you can manually re-enter your custom settings once the encoder restore process is completed.



Note

The default directory for saving your audio and video files is D:\AV Files\. When using the **Restore Factory Defaults** option, only drive C: is re-imaged. All files and folders on drive D: are preserved. To ensure your personal files are not removed, always use the default directory – drive D – for storage of personal files.

Email Settings

If you are unfamiliar with setting up an SMTP email account for sending email, please contact your network administrator for assistance.

To configure encoder **Email Settings**, you will need to enter the following information:

- The address to which to send the email (separate multiple email address with a comma)
- A valid email address from which the email comes
- A subject line for your email alert—required
- The SMTP (mail server) settings
 - User name for server access
 - Password (if required)
 - The name of the SMTP server

Email Settings:	
Send Emails To:	<input type="text"/>
Email From:	<input type="text"/>
Subject:	<input type="text" value="System Status Report on CP08360002"/>
SMTP (Mail) Settings:	
User Name:	<input type="text"/>
Password:	<input type="password"/>
SMTP Host:	<input type="text"/> Save and Send Test Email

**Note**

For security purposes, the password for your account will not be displayed once it has been entered into the settings. However, although this field appears blank after you click the **Submit** button, the password information has been retained.

**Note**

If you change any information in this dialogue box, you will need to re-enter your SMTP password before clicking the **Submit** button. Not doing so will overwrite the previously entered password with a blank entry.

Once you have entered the information above, click the **Submit** button to save your changes.

You can test your settings by clicking the **Save and Send Test Email** link. The resulting page will report if the email was successfully sent or there was a send failure.

Idle Screen Information

This section allows you to modify the information that is displayed in the encoder LCD display on its front panel.

Check the boxes next to the information you wish to be displayed. This information is cycled as the LCD display alternates between status information and encoder information.

At the top of the LCD idle screen is the default message **System is Ready**. You can customize this message.

Idle Screen Information:			
Cycle this information in the display when NiagaraPro is idle.	<input type="checkbox"/> Active IP	<input checked="" type="checkbox"/> Computer Name	<input checked="" type="checkbox"/> CPU
	<input checked="" type="checkbox"/> Memory	<input checked="" type="checkbox"/> Hard Drive	<input checked="" type="checkbox"/> Temperature
Idle screen text:	System is Ready		
<small>Note: Each line in the display is 20 characters.</small>		Line 1	
		Line 2	
		Line 3	
		Line 4	

Once you have entered the information above, click the **Submit** button to save your changes.

Default Directory Setting

**Note**

We strongly recommend that you do not alter the default directory setting unless you understand the risk of saving your files to a directory not located on drive D. If you save your files to another drive on the encoder, these files could be deleted if you use the **Restore Factory Defaults** feature.

**Note**

Only drive D on the encoder has available storage to save your files.

**Note**

Drives C, E, and F are used strictly for encoder operational programs. Any modifications to these drives can permanently damage your system and void your warranty.

The Default AV Folder is the directory that the encoder stores AV files created whenever you select the **Save to File** option in an encoder profile. Refer to the Save to File option under the [AVI Encoder Properties](#), [Flash Encoder Properties](#), [MPEG-4 Encoder Properties](#), [Real Encoder Properties \(Helix\)](#), and [Windows Media Encoder Properties](#) sections for information about setting an encoder profile to create an AV file.

High Temperature Alert

The Alert Configuration links to the Alerts page. For information on setting the Alerts, refer to the [“Cisco Digital Media Encoder 2200 Alerts” section on page 2-47](#).

You can enable an alert if the encoder reaches a predefined maximum temperature level. To set the level, select from the **High Temperature Alert** drop-down menu.