

Cisco Digital Media Encoder 2000 User Guide

October 2007

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Cisco Digital Media Encoder 2000 User Guide

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Preface

Congratulations on the purchase of your Cisco Digital Media Encoder 2000! You are the fortunate owner of a state-of-the-art streaming media system. Now you can capture and stream your audio and video content over the Internet or any local or wide area IP network. All you need is your audio and video source (such as a camera or deck) a streaming media server or hosting provider, and an IP connection to your viewing audience.

For a complete overview on streaming audio and video over an IP network, go to the section entitled *Introduction* and read the *Streaming Infrastructure section*. That section explains how streaming media works.

The Cisco Digital Media Encoder 2000 is an easy-to-use streaming device. You simply connect your audio and video source to the encoder, select your target playback device, enter your streaming server information, and press the *Stream button*. You're streaming live!

The encoder can be configured and used straight out of the box for most streaming uses. For more advanced settings or controlling your encoder from another networked computer, you will use the *Niagara SCX Web Interface*.

The front panel of your Cisco Digital Media Encoder 2000 can be customized using the encoder Configuration web browser interface. This configuration tool also provides the ability to set many other system parameters for your encoder.

We hope you enjoy your Cisco Digital Media Encoder 2000!



Warning

Read the installation instructions before connecting the system to the power source.



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

Package Contents

Completely unpack all of the contents from the box and inspect each item for damage and ensure that you have all of the components listed below:

- Cisco Digital Media Encoder 2000 system
- Power Cable
- BNC-to-RCA Converter, Male-to-Female (8)
- Cisco Digital Media Encoder 2000 User Guide
- Cisco Digital Media Encoder 2000 Quick Start Guide
- 75 OHM BNC Terminator
- 1 Pair Rack Slide Rails
- 2 Rack Handles
- 1 Niagara Software CD
- 1 Niagara SCX CD

If any of these components are missing or damaged, do not continue with the installation. Contact the reseller from which you purchased your Cisco Digital Media Encoder 2000 system for assistance in obtaining any missing parts or for parts replacement.

The encoder serial number is located on the right side of the chassis.



Warning

Installation of the equipment must comply with local and national electrical codes.

Related Documentation

For other Digital Media System documentation, see http://www.cisco.com/en/US/products/hw/video/tsd_products_support_category_home.html.

Safety Warnings and Information

Safety Instructions

Rack Mount Installations

A) Operating Temperature: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of a rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature of 40° C .

B) Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that the overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing: Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

FCC Notice

The Cisco Digital Media Encoder series of devices has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Shielded cables: Connections between this device and peripherals must be made using shielded cables in order to maintain compliance

with FCC radio emission limits.

Modifications: Modifications to this device not approved by Cisco Systems could void the authority granted to the user by the FCC to operate the device.

Other Notice Note to CATV Installer: This reminder is provided to call to the CATV installer’s attention Section 820-40 of the NEC, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



Warning

Installation of the equipment must comply with local and national electrical codes.

Environmental Product Disposal Information: Dispose of this product in accordance with local and national disposal regulations (if any), including those governing the recovery and recycling of waste electrical and electronic equipment (WEEE).



<http://cisco-returns.com>

Go to <http://cisco-returns.com> for instructions.

RoHS Compliant: Cisco Systems is committed to compliance with the European directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, Directive 2002/95/EC, the RoHS directive.



From the 1st of July 2006, products that are supplied to the European Union will comply with the RoHS directive. Cisco Systems certifies that equipment shipped to the European Union conforms to the Directive with exceptions using the Category 3 exemption provided in the Annex of the 2002/95/EC directive.

Underwriters Laboratories Inc. The Cisco Digital Media Encoder 2000 device was found to comply with the UL’s requirements.



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Do *not* attempt to open the case of the encoder. If you do so, there is high risk of electrical shock, which may cause damage to the encoder and/or personal physical injury or death to you and/or others. *No* user-serviceable parts exist inside the encoder. If you open the encoder case and/or make unauthorized changes to the case, the warranty will be voided.

Do not install the encoder near any heat sources such as radiators, heat registers, stoves, and/or other equipment, that produce heat. Attentive concern and exercise of care by installing the encoder away from any heat sources is vital to the safety of the person or persons using the product. Installing the encoder near such heat sources could result in personal injury or death to you and/or others.

Never insert objects of any kind into the encoder through any encoder openings, as the objects may touch dangerous voltage points, short out parts, and result in a risk of fire or electrical shock.

Do not stack the encoder on top of or below other electronic devices as this can cause heat build-up and vibration of the encoder. These conditions can damage the encoder thus voiding the limited warranty.

Do not install the encoder in any area where the temperature is less than 5°C or more than 40°C. Transfer from temperature extremes may cause condensation. Let it sit unplugged at room temperature for at least 45 minutes before plugging it in.

Do not block any ventilation openings to the encoder. Improper ventilation may be hazardous. Blocking ventilation openings could result in overheating of the encoder, which, in turn, may cause fire or electric shock, which may cause damage to the encoder and/or personal physical injury or death to you and/or others. Install the encoder in strict accordance with the manufacturer's instructions, carefully following any and all steps set forth in the instructions in order to avoid physical injury or death to you and/or others.

Do not place the encoder in an enclosure such as a cabinet without proper ventilation.

Fully unplug the encoder during lightning storms, or other dangerous weather that might produce lightning, or when the

encoder is unused for long periods of time.

To reduce the risk of fire or electric shock, do *not* expose the encoder to rain or moisture of any kind. Exposing the encoder to rain or other types of moisture could result in impairment to the encoder and physical injury or death to you and/or others.

Encoder shall not be exposed to water or moisture in any way. Liquids in any form should not be placed on or near the encoder. If you place liquids in any form on or near the encoder, do so at your own risk, for there is a high risk of electrical shock that could occur, which may cause damage to the encoder and/or personal physical injury or death to you and/or others.

Refer all servicing to authorized service personnel. Servicing is required when the encoder has been damaged in any way, such as the power supply cord or plug is damaged, liquid has been spilled on the encoder, or objects have fallen into or onto the encoder, the encoder has been exposed to rain and/or other types of moisture, does not operate as described in the user guide, or has been dropped. This list is nonexclusive. Cisco Systems assumes no liability or responsibility for any encoder still in use that has been damaged in any way, manner or form.

With the encoder, employ only attachments, accessories and/or any and all other equipment specified by the manufacturer.

Do not use accessories or attachments not recommended by the encoder manufacturer. This will void the Limited Warranty.

Do not in any manner attempt to service the encoder yourself, as opening or removing covers may expose you to dangerous voltage, and will void the Limited Warranty. Refer all servicing to authorized service personnel.

Protect the power cord from being walked on, strained or pinched in any way, particularly at plugs, electrical receptacle, and the point where the power cord exits from the encoder.

Do not use adapter plugs or remove the grounding prong from the power cable.

Operate the encoder using only the type of power source indicated on the marking label on the back panel of the unit. Unplug the encoder power cord by gripping the power plug and removing the plug from the power source. Do not pull the cord to remove the power source from the encoder.

Do not plug the encoder into a wall outlet that contains an overload

of electrical cords and, more specifically, power strips, as this type of overload can result in a risk of fire or electrical shock.

When using the encoder, employ an outlet that contains surge suppression and ground fault protection. For added protection during a lightning storm or other dangerous weather, or when the encoder is left unattended and/or unused for long periods of time, unplug the power cord from the wall outlet and disconnect the lines between the encoder and the video source.

Always carefully handle the encoder. Avoid excessive shock and vibration to the encoder at all times, as these conditions can damage the encoder and/or cause personal physical injury or death to you and/or others.

Warranty

The following information is a general warranty overview.

For complete warranty details, please refer to the specific warranty included with each product.

Cisco Systems warranties are pass through warranties to the end user.

Cisco Systems warrants all Cisco Systems software Products to meet their current published specifications as stated in the applicable Software License Agreement or other license document supplied with the Software Product. Cisco Systems assigns any warranties it may have from any third party suppliers of Products to the Reseller or end user. Any modification voids this warranty or any other existing or available warranties. Cisco Systems hardware Products are warranted against defects in material and workmanship under normal use for the period of 24 months from date of sale (12 months for GoStream). Where specific warranties exist that provide more substantial coverage, then notwithstanding the warranty provisions herein, such Product warranties shall be controlling and shall preempt or supersede the warranty provisions herein.



Before installing the Cisco Digital Media Encoder 2000, read and comply with the following safety warnings to ensure that you do not damage the equipment or cause personal injury.

- **WARNING:** Installation of the equipment must comply with local and national electrical codes.
- **WARNING:** Read the installation instructions before connecting the system to the power source.
- **WARNING:** Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
- **WARNING:** This product requires short-circuit

(overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.

- **WARNING:** The power supply must be placed indoors.
- **WARNING:** The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.
- **WARNING:** Do not work on the system or connect or disconnect cables during periods of lightning activity.
- **WARNING:** To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.

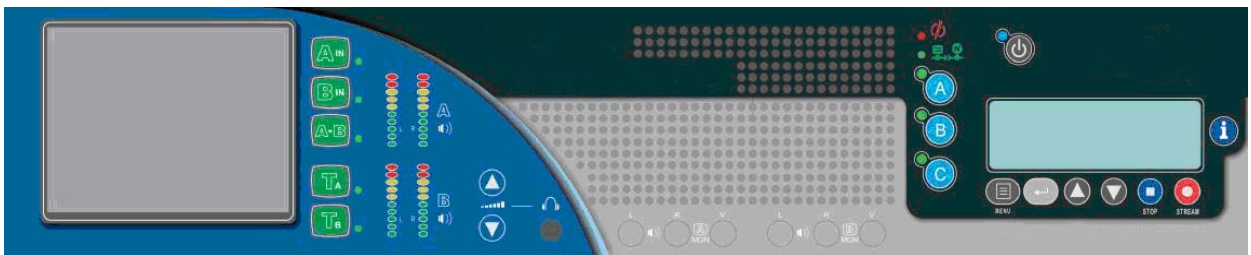
Installation Guide

This section will guide you through the physical connection and setup of your Cisco Digital Media Encoder 2000 system.

There are two parts to the complete installation of the Cisco Digital Media Encoder 2000, as follows:

1. Connection of the Cisco Digital Media Encoder 2000 streaming media encoder
2. Configuration of the Cisco Digital Media Encoder 2000 system

Most of the basic operations you will routinely use are performed from the front panel of the Cisco Digital Media Encoder 2000 system.



You may want to access advanced setup and operations, and to do so you must access the *Niagara SCX Web Interface* from a computer that resides on the same network as the encoder.

Although these advanced operations are not required for most streaming applications, you may want to customize your encoding settings and assign specific encoding profiles to the *EZStream[®] ABC* buttons on the front panel. The *SCX Web Interface* provides the ability to remote control your Cisco Digital Media Encoder 2000 from a computer that could be rooms or continents away from the system provided both your Cisco Digital Media Encoder 2000 and the computer have Internet access to communicate with each other.

First, connect the Cisco Digital Media Encoder 2000 streaming media encoder. Please see the following section for connection information.

Connecting the Cisco Digital Media Encoder 2000 Streaming Encoder

Although it has many features and capabilities, the Cisco Digital Media Encoder 2000 streaming media encoder at its most basic function takes digital and analog audio and video inputs, and processes the signals and then encodes them into digital IP video formats. Then the Cisco Digital Media Encoder 2000 delivers the IP audio and video content to a storage device or streams it over an IP network.

There are four requirements for setting up the Cisco Digital Media Encoder 2000 for streaming or capturing video, as follows:

- AC power source (100-240v)
- Audio/Video source (camera, video player, or other A/V output device)

- IP network and/or Internet connection
- A streaming media server for streaming your content to many viewers

Connecting to an Electrical Power Source

Plug the power cable provided with your encoder to the block end of the power unit located on the upper corner on the rear panel of the encoder.

Plug the other end into a wall outlet or surge protection enabled power strip that is connected to wall outlet or other common power source.

 Warning

The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.

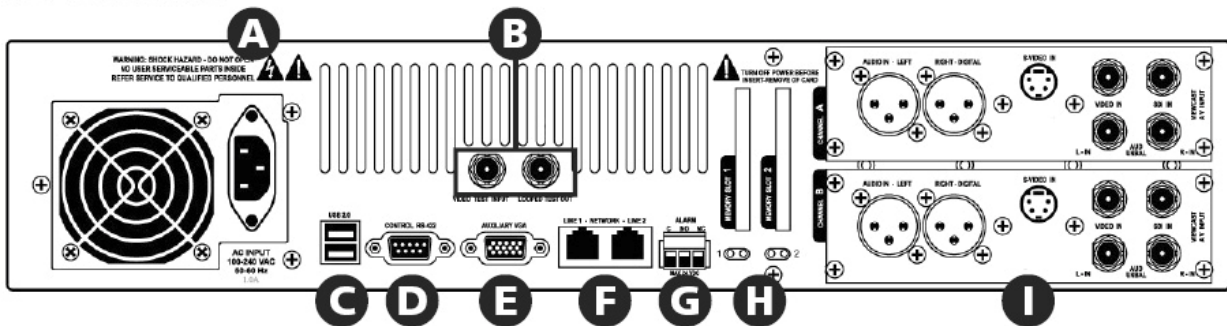
 Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity.

Cisco Digital Media Encoder 2000 Rear Panel Diagram

The diagram and table below illustrates all of the connectors and other components of the Cisco Digital Media Encoder 2000 rear panel.

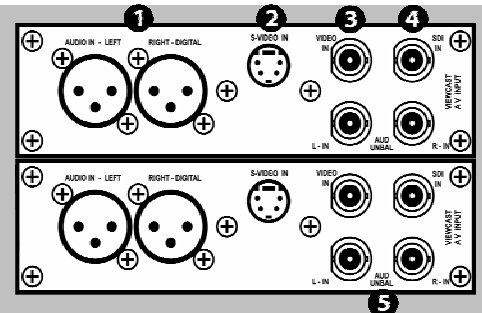
Rear Panel Features



The diagram above shows the rear panel of the Cisco Digital Media Encoder 2000. The Analog Input section of the rear panel is used to connect your audio and video source to the Cisco Digital Media Encoder 2000.

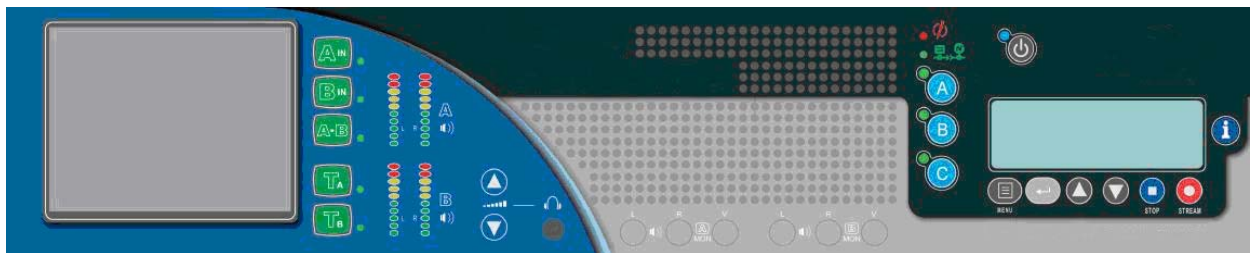
Using the reference chart and images below, you can connect the appropriate device and power to the Cisco Digital Media Encoder 2000.










Port	Description
A AC Power Input	Provides system power.
B Video Test Ports	BNC connector for composite video IN/OUT. Allows you to connect a video test signal, such as a color bar generator, to calibrate the video settings for video capture sessions.
C USB 2.0 Connectors	Use these ports to connect USB control devices, such as a keyboard and mouse, or USB memory devices.
D Control RS-422 Connector	9-pin D connector. Allows you to control the Cisco Digital Media Encoder 2000 via RS-422 protocols providing integration into a broadcast studio master control center. This is a standard RS-422 port that can be used with deck control software.
E Auxiliary VGA Connector	Use this port to connect an external VGA monitor, so that you can view the Windows XP Interface.
F Network Ports (Line 1 & 2)	Dual Ethernet ports provide redundant connections to your network.
G Alarm Relay Connector	Use this port to connect an external device (such as an audible bell or buzzer) so that if the system fails, it will trigger an external audible sound.
H Memory Slots 1 & 2	Compact Flash card slots for removable storage.
I Channel A & B AV Inputs	Each AV Input channel provides the following input ports: <ul style="list-style-type: none"> Left/Right XLR connector for balanced audio sources; Right XLR connector for AES/EBU audio Mini-DIN connector for S-Video sources BNC connector for composite video sources BNC connector for SDI Video Sources with embedded SDI audio Left/Right BNC connectors for unbalanced audio sources


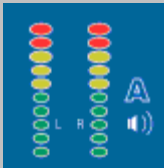



Cisco Digital Media Encoder 2000 Front Panel Diagram

You should familiarize yourself with the front panel controls for the Cisco Digital Media Encoder 2000. Besides the basic buttons for power, start/stop, up/down and menu access, there are also several indicator lights. The diagram and table below illustrates all buttons and lights so you can review the front panel functions and interface.



Control Buttons	Description
	<p>Power Pressing this button once will power up Cisco Digital Media Encoder 2000. When the Cisco Digital Media Encoder 2000 is powered up, pressing this button once will power down the system. Pressing and holding for 5 seconds will perform an immediate power off.</p>
	<p>EZStream® Buttons When an encoder profile is assigned to one of these buttons, pressing the assigned button and then the Stream button will start the encoder. Pressing the assigned button and then the Stop button will stop the encoder.</p>
	<p>Alarm Information When the Alarm Light indicator is lit, pressing this button will provide a log of the most recent alarms recorded. Pressing the Enter button will clear these alarms from the log.</p>
	<p>Menu Pressing this button will activate the Cisco Digital Media Encoder 2000 menu on the LCD display.</p>
	<p>Enter Pressing this button will enter or accept the menu choice highlighted on the LCD display. It is used for Cisco Digital Media Encoder 2000 menu operations.</p>
	<p>Up/Down These buttons are used for Cisco Digital Media Encoder 2000 menu navigation on the LCD display.</p>
	<p>Stream Pressing this button when an encoder profile is highlighted in the LCD display will start the encoder.</p>
	<p>Stop Pressing this button when an encoder profile is highlighted in the LCD display will stop the encoder.</p>
Indicator Lights	
	<p>Alarm This light indicates that an application alert has occurred.</p>

	<p>Remote Control This light indicates that another user is accessing the Cisco Digital Media Encoder 2000 across the network from a computer.</p>
	<p>Audio Activity These lights indicate audio input presence.</p>
<p>Connectors</p>	
	<p>Headphone Jack & Volume Buttons The jack allows headphones to be connected to the Cisco Digital Media Encoder 2000 for audio monitoring. The Volume Buttons control the audio level on the headphones.</p>

Configuring the Cisco Digital Media Encoder 2000 Streaming Media Encoder

First Start Setup

The first time the Cisco Digital Media Encoder 2000 is powered, the LCD display will be presented with a series of menus that will assist in setting up the system clock, date, and video input format (NTSC (North America/Japan) or PAL).

To start the Cisco Digital Media Encoder 2000, press the **<POWER>** *button* located on the front panel.



During the power up process, the Cisco Digital Media Encoder 2000 LCD readout displays the following message:

```
ViewCast Corporation
Niagara 2.0.0.41
Serial: P5PC000000
Booting
```

After the Cisco Digital Media Encoder 2000 powers up the first time, it displays the following message:

```
Welcome to setup!
Set time, date, and
video format,
PRESS ENTER ...
```

Press the **<ENTER>** *button* to begin the initial setup.



The Cisco Digital Media Encoder 2000 will now ask you to set the date.



To set the month and day, use the <UP> and <DOWN> *arrow keys* to increment the numerical value of the month.



Once you set the numerical value for the month, press the <STREAM> *button* to move to the *day field*.



Again, use the <UP> and <DOWN> *arrow keys* to increment the numerical value of the day.



Press <STREAM> to enter the value and move to the *year field*.



Use the same process for setting the month and day to set the year.

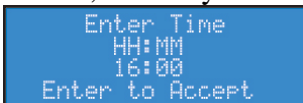
If you want to change a previous setting, you can continue pressing the <STREAM> *button* until the cursor cycles around to the month.



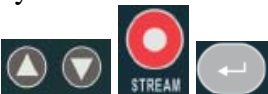
Once you are satisfied with your settings, press the <ENTER> *button* to accept the settings, and move to the next screen to set the system clock.



The Cisco Digital Media Encoder 2000 uses Military Time, which is based on a 24-hour clock format, for its system clock entries.



Use the <UP>, <DOWN>, <STREAM>, and <ENTER> *buttons* to set the hour and minute of the system clock.



Once you are satisfied with your settings, press the **<ENTER> button** to accept the settings.



The last setting is the selection of the video input format that you will enter into the Cisco Digital Media Encoder 2000.

You will see the following prompt message.

```
Select the video
format to use for
all encoders.
PRESS ENTER ...
```

Press the **<ENTER> button** to continue.



Select your video source format from either NTSC or PAL.

```
+NTSC
PAL
```

Press the **<ENTER> button** to set the format, then the final screen will appear confirming you have successfully set up your Cisco Digital Media Encoder 2000.



```
First time setup is
completed.
PRESS ENTER ...
```

Press the **<ENTER> button** to exit the setup menu and begin using your Cisco Digital Media Encoder 2000.



Configuring Cisco Digital Media Encoder 2000 to Connect to an IP Network

NOTE: If you are not familiar with network protocols, please contact your network administrator for assistance.

The Cisco Digital Media Encoder 2000 network settings for its two 1,000 megabit network interfaces default to dynamically obtain an IP address from a DHCP server on the network.

If a DHCP server is not available or cannot be found on the network, then the Cisco Digital Media Encoder 2000 will assign its own IP address.

For most network environments, it will not be necessary to modify these default settings. However, if you wish to assign a static IP address to the Cisco Digital Media Encoder 2000's Network Interface Cards (NICs), then you can change the network setting using the Cisco Digital Media Encoder 2000 front panel menu.

Changing the Cisco Digital Media Encoder 2000 Network Settings

Press the Menu button to access the Cisco Digital Media Encoder 2000 EASE menu.



The **EASE menu options** are as follows:

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

Use the **<UP>** and **<DOWN>** buttons to move the select arrow in the menu until the arrow points to **Setup System option**.



Now, press the **<ENTER>** button.



The Cisco Digital Media Encoder 2000 LCD readout will display the **Setup** menu. Using the **<UP>/<DOWN>** buttons, select **Network** and press the **<ENTER>** button.

```
→Network
Time & Date
Temperature Alarm
Factory Restore
```

Select the network interface you wish to modify and then press **<ENTER>**.

```
Secondary LAN
→Primary LAN
```

Select **Change Settings** and press the **<ENTER>** button.

```
→Link Status
MAC Address
View Settings
Change Settings
```

The next menu presents the various network settings. Selecting one of these menu items allows you to change these individual settings. Once you modify these settings, the changes will be saved until you modify the settings again or you until restore the Cisco Digital Media Encoder 2000 back to its original factory settings.

Select **DHCP On/Off**, then press the **<ENTER>** button. If you wish to cancel this process, press the **<MENU>** button to return to the main menu.

```
→DHCP On/Off
IP Address
Gateway
```

The following pictures and their respective actions represent your choices.



Press this **button** to select and continue.



Press this **button** to cancel and exit.

The next menu offers you the choice to enable DHCP for the network interface.

```
Enable DHCP?
Yes  →No
```

Using the <UP> and <DOWN> **buttons**, you can toggle the selection from the **No** to the **Yes option**. After you make your selection, press the <ENTER> **button** to input the change. The Cisco Digital Media Encoder 2000 will confirm you wish to change this setting.

```
Confirm Enable DHCP
for NIC Nic2?
→Yes  No
```

Press <ENTER> to confirm your choice. The Cisco Digital Media Encoder 2000 will return to the menu to select another individual setting to modify.

```
→DHCP On/Off
IP Address
Gateway
```

To input a static address for the IP address and/or Gateway, select either from the menu and press the <ENTER> **button**.

Using the <UP> and <DOWN> **arrow keys** to increment numerical value, enter a static IP address. Press the <STREAM> **button** to move to the next field. When you have correctly entered the IP address or Gateway address, press <ENTER> to input the data into the Cisco Digital Media Encoder 2000. When setting a static IP address, a screen will appear that will allow you to set the subnet address.

```
IP Address:      Gateway Address:
000.000.000.000 000.000.000.000
Press Enter     Press Enter
```

```
Subnet
000.000.000.000
Press Enter
```

If you wish to remove a static IP address and/or Gateway previously set on the Cisco Digital Media Encoder 2000, simply enable DHCP by using the method described directly above. Any previously entered static address will be removed.

Introduction

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 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).

The Cisco Digital Media Encoder 2000 is designed specifically for streaming audio and video media over an IP network.

Streaming Infrastructure

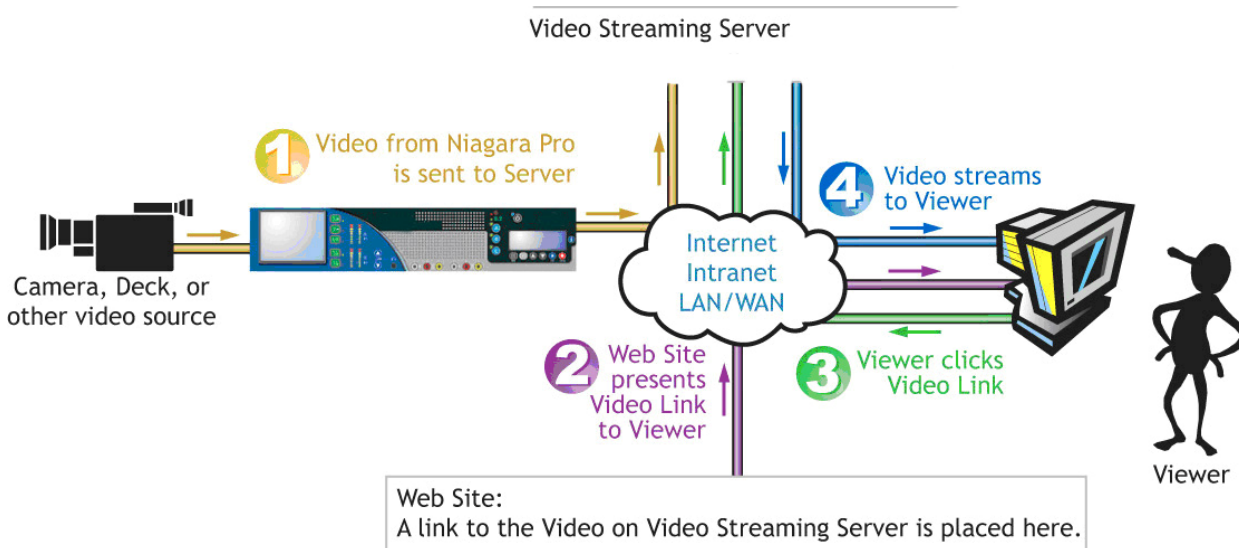
Before setting up your new Cisco Digital Media Encoder 2000, it is useful to understand the complete overview of live streaming video – from video capture to streaming video playback.

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

- Single video/session capture (i.e. 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 (i.e. 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 (Web casting)
 - 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 2000 is designed for live video capture, processing and delivery.

Below is a diagram illustrating the video path starting with the source, like a camera or video player, going through the Cisco Digital Media Encoder 2000, to the server, across an IP network, to a software player and displayed on a monitor for audience viewing.



Simple Guide to Streaming Audio and Video Types

The Cisco Digital Media Encoder 2000 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. The Cisco Digital Media Encoder 2000 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.

The following chart lists all formats supported by the Cisco Digital Media Encoder 2000 with suggested application uses. All of these formats can be used for many different applications.

IP Video Compression for Streaming in Full Resolution & Lower

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

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 they will have available to watch your content? This will determine the format of the stream you will create for your audience.

To determine the data rate 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.

The Cisco Digital Media Encoder 2000 provides preconfigured encoding profiles for different bandwidth connections. The profiles loaded will depend upon how you configure your Cisco Digital Media Encoder 2000 on its initial startup.

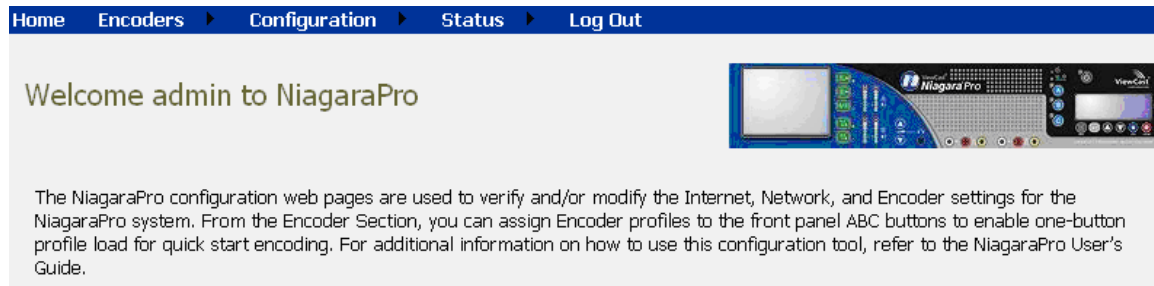
Tutorial: Getting to Know your Cisco Digital Media Encoder 2000

There are two interfaces for operation of your Cisco Digital Media Encoder 2000 streaming media encoder.

- 1) The Cisco Digital Media Encoder 2000 front panel LCD display and buttons



- 2) The Cisco Digital Media Encoder 2000 SCX Web Interface



NOTE: To access the *Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 via a local network on which both the Cisco Digital Media Encoder 2000 and the computer reside or through a direct IP connection using the included RJ45 cable to connect directly from the Cisco Digital Media Encoder 2000 to a computer.

This tutorial is divided into two parts; using the *front panel of the Cisco Digital Media Encoder 2000* and using the *Niagara SCX Web Interface*.

Basic Operation: Using the Cisco Digital Media Encoder 2000 Front Panel

Startup

NOTE: If this is the first time the Cisco Digital Media Encoder 2000 has been started, please read the previous section entitled *First Start Setup* before continuing.

To start your Cisco Digital Media Encoder 2000 encoder, press the <POWER> **button** on the front panel.



While powering up, the *Cisco Digital Media Encoder 2000 LCD readout* will display the following series of messages:

ViewCast Corporation Niagara 2.0.0.41 Serial: P5PC000000 Booting ...	Starting OS ..	Initializing System	Starting SCX
---	----------------	---------------------	--------------

Starting System	System initializing Testing...	System initializing Loading Encoders...
-----------------	-----------------------------------	--

When the Cisco Digital Media Encoder 2000 is ready for operation, the *Cisco Digital Media Encoder 2000 LCD display* will alternate between status readouts similar to the following:

System is Ready Name: P5PC0646001	→Flash Stopped Full_AVI Stopped Full_Real_1 Stopped Full_WM_2Mb Stopped
--	--

Shutdown

To shutdown the Cisco Digital Media Encoder 2000, briefly press the **Power button** on the front panel.



The *Cisco Digital Media Encoder 2000 LCD readout* will display the following messages:

System Stopping.	ViewCast Niagara System is shutting down - Please Wait
------------------	--

After a few seconds, the Cisco Digital Media Encoder 2000 will power off.

Caution: Allow the Cisco Digital Media Encoder 2000 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.

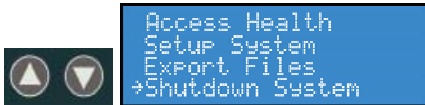
Alternate Shutdown Method

Alternatively, you can shut down the Cisco Digital Media Encoder 2000 using the **EASE menu**.

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



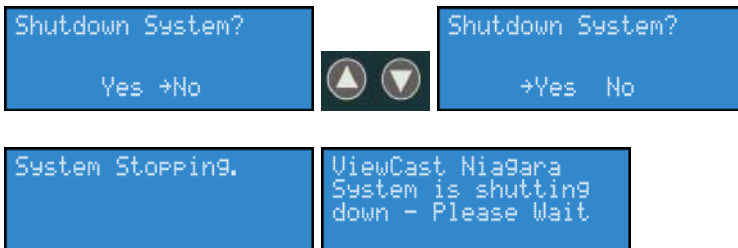
Using the **<UP>** and **<DOWN> arrow buttons**, scroll down until **Shutdown System** is displayed and selected.



Press **<ENTER>**.



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

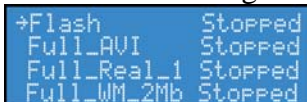


Starting an Encoding Session

Press the **<STREAM> button** to start an encoding session using the front panel of your Cisco Digital Media Encoder 2000.



The **Cisco Digital Media Encoder 2000 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 10 characters.

Use the <UP> and <DOWN> *buttons* to move the select arrow to point to the encoder profile you want the Cisco Digital Media Encoder 2000 to use for this encoding session.



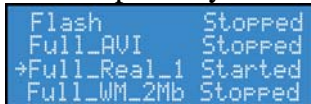
Once you select the encoder profile you need, press the <STREAM> *button* again to start the encoder.



The *Cisco Digital Media Encoder 2000 LCD readout* then displays messages about the encoder start process.



After the encoder session has successfully begun, the *Cisco Digital Media Encoder 2000 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.

The Cisco Digital Media Encoder 2000 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 you can capture simultaneously. If you attempt to capture more streams than the Cisco Digital Media Encoder 2000 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.

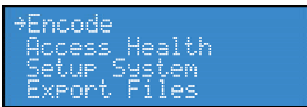
Checking CPU Usage

Since you are able to start multiple streams, understanding how much of the processing power of the Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 LCD readout.



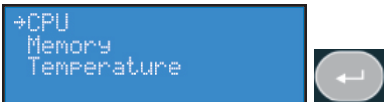
The **LCD readout** will display the following menu choices:



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 **Cisco Digital Media Encoder 2000 LCD readout** displays the amount of CPU cycles in use. When the Cisco Digital Media Encoder 2000 is idle (no encoder sessions running), the CPU percent displayed should be 4 percent 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 *Cisco Digital Media Encoder 2000 LCD readout* displays the list of encoders and shows the current status of each session.

```

→Flash          Stopped
Full_AVI        Stopped
Full_Real_1     Started
Full_WM_2Mb     Stopped
    
```

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



```

Flash          Stopped
Full_AVI        Stopped
→Full_Real_1   Started
Full_WM_2Mb     Stopped
    
```

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

Full_Real_1 Stopping	Full_Real_1 Stopped
-------------------------	------------------------

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



Connecting an external storage device

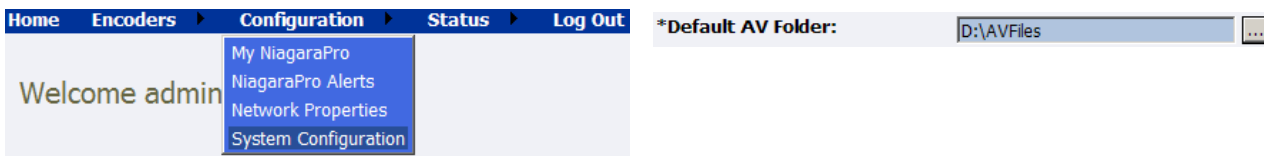
The Cisco Digital Media Encoder 2000 rear panel provides two USB ports. You can connect almost any standard USB flash device to one or both of these ports. This allows you to export any AV files you may have created on the Cisco Digital Media Encoder 2000's local storage drive. The local storage drive 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 device in one of the USB ports on the Cisco Digital Media Encoder 2000, the Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 *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 device.

NOTE: To export files to a USB device from the Cisco Digital Media Encoder 2000, you must set a default location for the captured video files via the *Cisco Digital Media Encoder 2000 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.



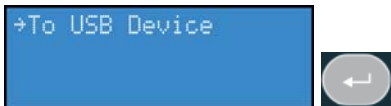
After you input the preferred default location in the **Default AV Folder* box, you can begin exporting your files from the Cisco Digital Media Encoder 2000.

Press the **<Menu>** *button* to access the Cisco Digital Media Encoder 2000 menu.

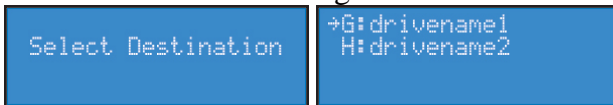
Using the **UP/DOWN arrow buttons**, highlight the **Export Files option** and press the **<Enter>** *button*.



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



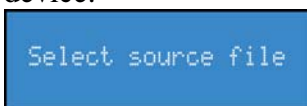
The next screen will ask you to select the drive destination and to provide a list of active USB drives connected to the Cisco Digital Media Encoder 2000.



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



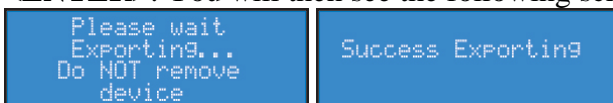
The next screen will ask you to select a source file, i.e., the file you want to export to the USB device.



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 shown directly above, press **<ENTER>**. You will then see the following screens.



Once the Cisco Digital Media Encoder 2000 is finished exporting the file, you can remove the USB device.

Advanced Operation: Using the Niagara SCX Web Interface

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 Windows, Macintosh, and Linux machines. The Cisco Digital Media Encoder 2000 system must either reside on a shared IP network with the computer or can be directly connected to a Windows computer using an Ethernet cable (RJ45).

To access the *Niagara SCX Web Interface*, open the Web browser on your computer and access the Web Interface by typing in the Cisco Digital Media Encoder 2000 machine name. For example, you would type <http://ps078906>. The network name of the Cisco Digital Media Encoder 2000 is also its serial number and can be obtained from the LCD readout during the power up process.

If the Cisco Digital Media Encoder 2000 is already powered up, the serial number can be obtained from the LCD display while the system is idle.

At that time, the *Cisco Digital Media Encoder 2000 LCD display* will alternate between readouts similar to the following displays:



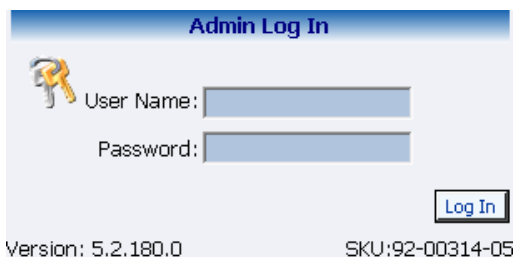
If the name is not immediately displayed on the *Cisco Digital Media Encoder 2000 is Ready* window, press the <UP> and <DOWN> *arrow buttons* to toggle through the system information until the name is displayed.

The serial number is also located on the bottom of the Cisco Digital Media Encoder 2000.

Enter the Cisco Digital Media Encoder 2000 name in the Web Browser (as shown below) and press *enter*.



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

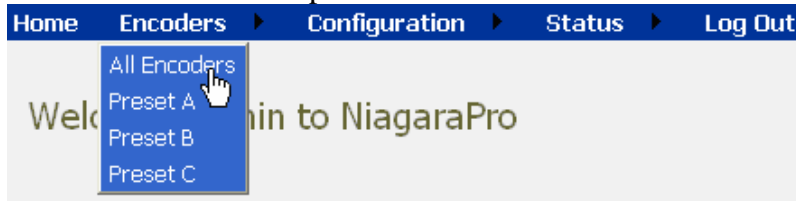


After logging in, you will have access to all of the Web-enabled functions including encoder operations, management, and system configuration tools.

NOTE: If you cannot browse to the Cisco Digital Media Encoder 2000 using its machine name, type in the Cisco Digital Media Encoder 2000 IP address instead. This information is also available from the *Cisco Digital Media Encoder 2000 is Ready* window when the system is idle.

Starting an Encoding Session

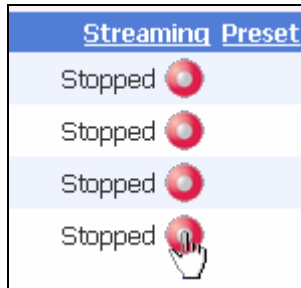
To start an encoding session, move the mouse pointer over **Encoders** in the menu bar and click on **All Encoders** in the drop-down menu.



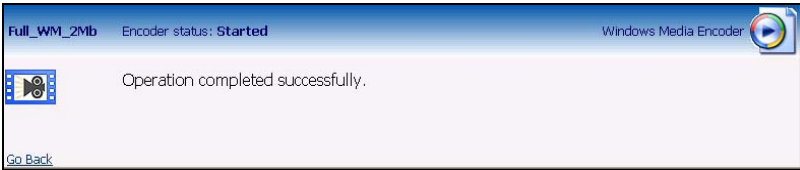
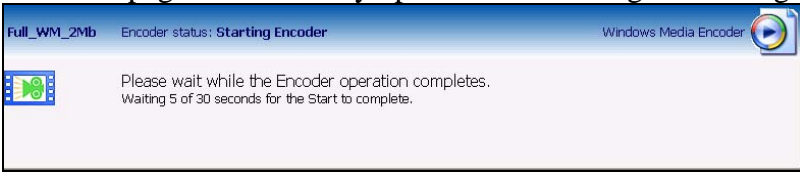
All of the encoder profiles loaded on the Cisco Digital Media Encoder 2000 will be presented in a list indicating format and current status.

Encoders					
This page allows you to perform encoder setup and removal.					
<input type="checkbox"/> Auto refresh page					Add Encoder
NiagaraPro Encoders Total records : 7					
Name	Description	Last Status	Streaming	Preset	
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped		
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped		
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped		
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped		
Edit Del WME	Windows Media Encoder	Encoder started	Stopped		
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped		
Edit Del wme3	Windows Media Encoder	Stopped	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 stopped 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 : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped	
Edit Del wme3	Windows Media Encoder	Stopped	Stopped	

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.

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

Auto refresh page [Add Encoder](#)

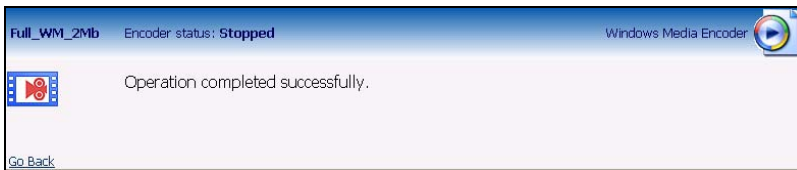
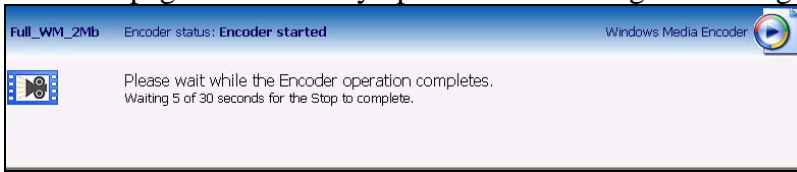
NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped	
Edit Del wme3	Windows Media Encoder	Stopped	Stopped	

Press the blue **Stop** icon 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 **Started mode**.

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

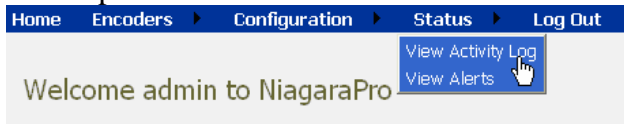
Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped
Edit Del WME	Windows Media Encoder	Encoder started	Stopped
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped
Edit Del wme3	Windows Media Encoder	Stopped	Stopped

Viewing the Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000. The log now includes the starting and stopping events for the encoder from the previous sections.

The screenshot shows the 'Activity Log' page. At the top, there is a 'View Activity Types' dropdown set to 'Show All' and a 'Clear Activity Log' button with a trash icon. Below this is a table with the following data:

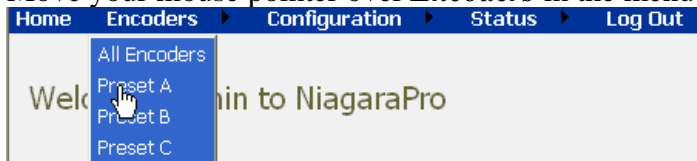
Created	Type	Description
11/9/2006 9:49:09 AM	General	Full_WM_2Mb Stopped
11/9/2006 9:49:07 AM	General	Encoder Stopped Encoder Full_WM_2Mb Stopped
11/9/2006 9:49:02 AM	General	Full_WM_2Mb Stopping
11/9/2006 9:48:14 AM	General	Full_WM_2Mb Started
11/9/2006 9:48:12 AM	General	Encoder Started Encoder Full_WM_2Mb 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 Cisco Digital Media Encoder 2000 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.

Move your mouse pointer over *Encoders* in the menu bar and click *Preset A* in the drop-down menu.



Encoder Preset (A, B, and C)

The Cisco Digital Media Encoder 2000 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. The controls to configure these buttons are located in the *Encoder Preset A*, *Encoder Preset B*, and *Encoder Preset C pages*.

When you access the *Encoder Preset A page*, you are presented with the configuration option for the *EZStream A button*. On this page is a graphic representation of the front panel of the Cisco Digital Media Encoder 2000. The *A button* is highlighted on this graphic representing you are actively assigning an encoder to this corresponding *EZStream button*.

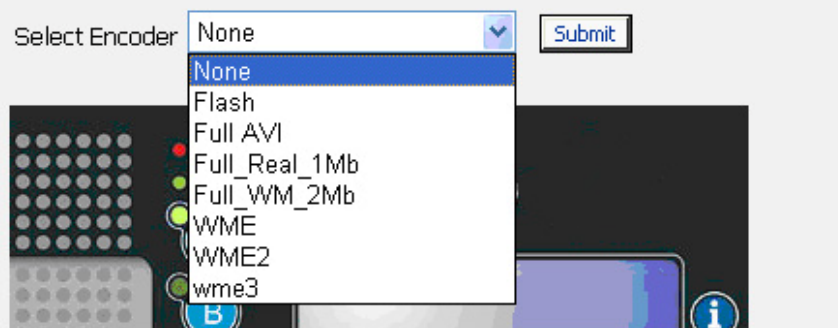


This page presents a *Select Encoder field* and a link at the bottom of the page to view the *View All Encoders page*. If an encoder has been assigned to the Preset, then you will also be presented with an *Edit link* next to the *View All Encoders link*.

Select Encoder

The *Select Encoder field* provides a drop-down menu which presents the complete list of all encoders available on the Cisco Digital Media Encoder 2000.

of the encoder. Select an Encoder for the preset or select 'None' to deactivate the NiagaraPro preset button. When no encoder assignment is made, pressing the NiagaraPro button will show a message reminding you



To assign an encoder select an encoder from the list and click the *Submit button*.

Select Encoder

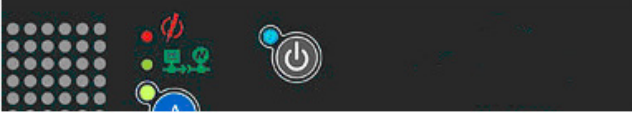
The Web page will update the **Preset A EZStream button** and report success.

Encoder Preset : A updated successfully
Encoder Preset A

This page allows setting the NiagaraPro Encoder Presets. A preset is a quick way to select a specific Encoder. There are three presets on the front panel A, B and C. Click on the **A**, **B** or **C** buttons below or select from the menu to switch between each preset.

When an Encoder is assigned to a preset button, pressing the button on the NiagaraPro panel will allow for quick easy starting or stopping of the encoder. Select an Encoder for the preset or select 'None' to deactivate the NiagaraPro preset button. When no encoder assignment is made, pressing the NiagaraPro button will show a message reminding you that no Encoder has been defined.

Select Encoder



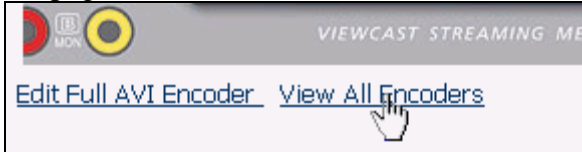
By clicking on the **B and C buttons** on the Cisco Digital Media Encoder 2000 graphic, you can assign encoders to those **EZStream buttons** the same way.



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, Cisco Digital Media Encoder 2000 will remove the association to the previous button in favor of the most current request.

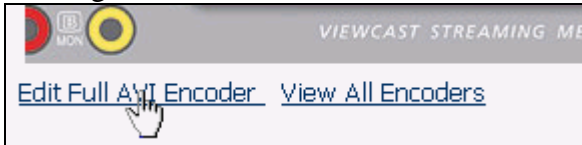
View All Encoders

After assigning encoders to **A**, **B**, and **C buttons**, the **Presets column** on the **All Encoders page** is updated to reflect these changes. To view these changes, click the **All Encoders link** at the bottom of the page.



Edit Preset Encoder Profile

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



AVI Encoder Properties

Name:
Stopped
AVI Encoder Driver

Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Video Device 1.1"/>	<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Audio Device 1"/>	None
Input: <input type="text" value="Composite"/>	Input: <input type="text" value="Unbalanced"/>	
Signal: <input type="text" value="NTSC_M"/>		
Proportions: <input type="text" value="Standard"/>		
Size: <input type="text" value="CUSTOM"/>		
Width: <input type="text" value="400"/> Height: <input type="text" value="300"/>		
Format: <input type="text" value="YUY2"/>		

[Bottom](#)

Advanced Streaming Settings

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

<h4>Deinterlace</h4> <p>Type: <input type="text" value="Auto"/></p>	<h4>Motion Threshold</h4> <p><input checked="" type="radio"/> Smooth <input type="radio"/> Sharp</p> <p>Value: <input type="text" value="17"/></p>
---	--

Streaming to a File

Output to file

File Name: [default folder](#)

Flash® Encoder Properties

Name:
Stopped ●
Flash Encoder

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Advanced Flash Video Settings

Frame Rate: fps

Bitrate: kbps

Audio Settings

Source:

Input:

Advanced Flash Audio Settings

Format:

Bitrate: kbps

Preset

None

[Bottom](#)

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

Output to file

File Name:

...

MPEG-4 Encoder Properties

Name:
Stopped
MPEG4 Encoder Driver **H.264**

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Advanced MPEG Video Settings

MPEG Type:

Encoder Quality:

Frame Rate:

Bitrate (kbps):

Enable B-frames

Audio Settings

Source:

Input:

Advanced MPEG Audio Settings

Audio Format:

Audio Type:

Audio Encoder:

Bitrate:

Preset

None

Streaming Properties

Enable Streaming

Destination IP:

Callback IP:

Video Port:

Audio Port:

Time to Live:

Stream Info:

Stream Title:

SDP File:

Portable Media

Enable Saving

Media Title:

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

Output to file

File Name: ...

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

[Top](#)

NOTE: The preceding image is an example of Mpeg-4 streaming. MPEG files cannot be saved to a file and streamed simultaneously.

Real Encoder Properties (Helix)

Name:
Stopped ●
Helix Producer Encoder

Video Settings

Source: Osprey-560 Video Device 1.1

Input: Composite

Signal: NTSC_M

Proportions: Standard

Size: FULL 640x480

Audio Settings

Source: Osprey-560 Audio Device 1

Input: Unbalanced

Preset

None

[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: 4040

Multicast Address:

Listen Address: Automatic

Stream Name:

Path(optional): encoder

User Name:

Password:

Frame Rate: 15

Video Quality: Normal Motion Video

Audio Content: Voice Only

Video Noise Filter: Off

De-Interlace filter

Inverse Telecine

Advanced Streaming Settings

Enable SureStream

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](#)

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show 5 filters per device.

Deinterlace

Type: Auto

Motion Threshold

Smooth Sharp

Value: 17

Streaming to a File

Output to file

File Name:

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

[Top](#)

Windows Media Encoder Properties

For more information on setting up each type of encoder, proceed to the next section entitled *Editing an Encoding Profile*.

The screenshot shows the 'Windows Media Encoder' interface. At the top, the name is 'Full_WM_2Mb' and the status is 'Stopped'. The interface is divided into several sections:

- Video Settings:**
 - Source: Osprey-560 Video Device 1.1
 - Input: Composite
 - Signal: NTSC_M
 - Proportions: Standard
 - Size: FULL 640x480
- Audio Settings:**
 - Source: Osprey-560 Audio Device 1
 - Input: Unbalanced
- Preset:** None
- Streaming Properties:**
 - Windows Media Capture Profiles: Windows Media 9 (2M)
 - 30 of 56 Use this profile for high quality audio/video content intended for local playback or for download and playback.
 - 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: Auto
 - Motion Threshold:**
 - Smooth Sharp
 - Value: 17
 - Streaming to a File:**
 - Output to file Index the file
 - File Name: [] default folder
 - Enable DRM
 - DRM Settings (Windows Media only):**
 - Profile: None
 - Description: None
 - Key: N/A

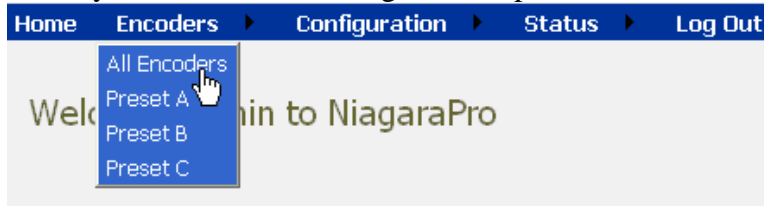
At the bottom, there are links for 'All Encoders', 'Delete Encoder', a 'Submit' button, and a 'Top' link.

Editing an Encoder Profile

When you create a new encoder, you will be prompted to edit the new profile to your specific encoder settings and requirements. You can also edit the existing encoder profiles provided by default on Cisco Digital Media Encoder 2000. The property windows for editing a new encoder or an existing encoder are identical.

If you have performed the steps for adding an encoder, you should already see the *encoder properties page*.

If not, you can edit an existing encoder profile. Go to the *All Encoders screen*.



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

NiagaraPro Encoders | Total records : 7

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	A
Edit Del MYAVI	AVI Encoder Driver	OK	Stopped	
Edit Del Real	Helix Producer Encoder	OK	Stopped	
Edit Del REAL PRODUCER	Helix Producer Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	

The properties page for that encoder is then displayed.

Video & Audio Settings

Regardless of the encoder type, all types require 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 Flash[®].

You can enable or disable video and/or audio by clicking the check box next to **Source**: When enabled, the **Source**, **Input**, **Signal**, **Proportions**, **Size**, and **Input fields** can be edited.

The screenshot shows the configuration window for the Cisco Digital Media Encoder 2000. The window title is "Mpeg4v10_Full" and it indicates the encoder is "Stopped". The interface is divided into several sections:

- Video Settings:**
 - Source: Osprey-560 Video Device 1.1
 - Input: Composite
 - Signal: NTSC_M
 - Proportions: Standard
 - Size: FULL 640x480
- Audio Settings:**
 - Source: Osprey-560 Audio Device 1
 - Input: Unbalanced
- Advanced MPEG Video Settings:**
 - MPEG Type: H264
 - Encoder Quality: Real-time
 - Frame Rate: 29.9700898
 - Bitrate (kbps): 768
 - Enable B-frames:
- Advanced MPEG Audio Settings:**
 - Audio Format: 44.100 kHz, 16 bit, Stere
 - Audio Type: Low Complexity
 - Audio Encoder: AAC
 - Bitrate: 128
- Preset:** None

A "Bottom" link is visible in the bottom right corner of the window.

Although the Cisco Digital Media Encoder 2000 is a two channel encoder, meaning you can only capture from two physical 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:

- Osprey 560 Video Device 1.1
- Osprey 560 Video Device 1.2
- Osprey 560 Video Device 1.3
- Osprey 560 Video Device 1.4
- Osprey 560 Video Device 1.5

Warning: Ensure 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-560 Video Device 1.1** while encoders capturing at Standard proportion but QCIF resolution are set to **Osprey-560 Video Device 1.2**.

Set **Input** for both video and audio to match the connectors on the back of the Cisco Digital Media Encoder 2000 to which you have connected your video and audio source. This would be either **Composite**, **S-Video** or **SDI** for video input and **Unbalanced**, **XLR Balanced**, **XLR AES/EBU** or **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 Cisco Digital Media Encoder 2000 hardware.

The proportion 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.

Size:
 Width: Height:

NOTE: If you specify a video size incompatible with the color space of your source video, Cisco Digital Media Encoder 2000 will automatically correct the size to the closest compatible setting when you click the **Submit button**. The color space format setting is only available in **AVI** and **Flash encoder properties** and appears as an additional field under the **Size setting** (see below).

Video Settings

Source: Osprey-560 Video Device 1.1
 Input: Composite
 Signal: NTSC_M
 Proportions: Standard
 Size: FULL 640x480

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. As previously stated, these settings will vary according to the encoder type.

Advanced Streaming Settings

SimulStream and DirectShow Filters

Filters have two interrelated purposes, as follows:

- They allow applications to enumerate and list DirectShow 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 1 to 10 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.

Enable SimulStream Checkbox

Advanced Streaming Settings
SimulStream

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

Deinterlace
 Type:

Motion Threshold
 Smooth Sharp
 Value:

The checkbox at the top of the group, when checked, enables SimulStream to run for the currently selected device.

All Niagara appliances include a full SimulStream license installed for each A/V channel, and this checkbox controls full SimulStreaming.

When you change the *SimulStream Enable status* and click **Submit**, it is strongly recommended you restart the appliance. If you do not, SimulStream may become partially active, but the filters may be incorrectly named, and their pins may be incorrect.

Show filters per device

Show filters per device.

With this control, you can set the device driver to expose 1 to 10 filters per device for enumeration and selection by encoders. If, for example, 4 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

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 up to 10 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 being done. 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 5, 6, or more 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, as follows:

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

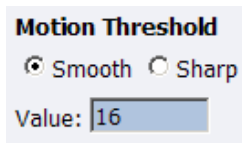
Motion adaptive deinterlace is an algorithm for deinterlacing pure video (non-telecine) content. It detects which portions of the image are still, which portions are in motion, and then applies different processing to each scenario.

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 — it drops the redundant fields and reassembles the video in a 24 fps progressive format. Interlacing artifacts are 100% 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 buttons 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

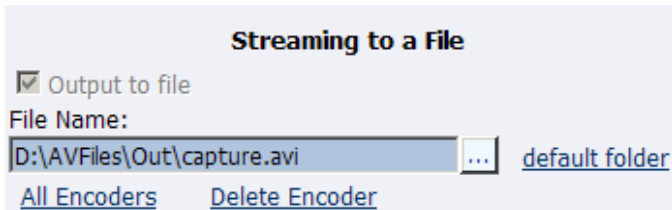
AVI is an uncompressed audio and video storage format and therefore only has the ability to *save to a file*. You can type in a unique name for the generated AVI file and modify the directory path to the location the file will be stored. Clicking the **Default Folder link** will insert the path of the default folder for file storage on the Cisco Digital Media Encoder 2000. By default the path is **d:\AVFILES**.

The screenshot shows the AVI Encoder Driver configuration window. At the top, the name is 'Full_AVI' and the status is 'Stopped'. The window is divided into several sections:

- Video Settings:**
 - Source: Osprey-560 Video Device 1.1
 - Input: Composite
 - Signal: NTSC_M
 - Proportions: Standard
 - Size: CUSTOM
 - Width: 400, Height: 300
 - Format: YUY2
- Audio Settings:**
 - Source: Osprey-560 Audio Device 1
 - Input: Unbalanced
- Preset:** None
- Advanced Streaming Settings:**
 - SimulStream:**
 - Enable SimulStream
 - Enable multiple instances for each filter
 - Show 5 filters per device.
 - Deinterlace:** Type: Auto
 - Motion Threshold:** Smooth, Sharp, Value: 17
- Streaming to a File:**
 - Output to file
 - File Name: D:\AVFiles\Out\capture.avi
 - default folder

NOTE: It is not recommend you store files in any other directory on the Cisco Digital Media Encoder 2000. This directory provides approximately 85 gigabytes of data storage, which is not available on any other internal hard drive on Cisco Digital Media Encoder 2000.

Once you have saved your file to the Cisco Digital Media Encoder 2000 internal hard drive, ViewCast recommends you move the drive to another external storage device such as a USB drive or a network drive for backup purposes.



Streaming to a File

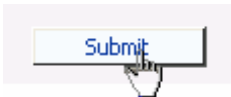
Output to file

File Name:

D:\AVFiles\Out\capture.avi ... [default folder](#)

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

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

Name: Stopped Flash Encoder

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Audio Settings

Source:

Input:

Preset

None

Advanced Flash Video Settings

Frame Rate: fps

Bitrate: kbps

Advanced Flash Audio Settings

Format:

Bitrate: kbps

Advanced Streaming Settings

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace

Type:

Motion Threshold

Smooth Sharp

Value:

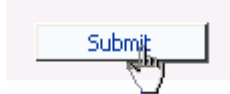
Streaming to a File

Output to file

File Name:

[Bottom](#)

After you have input your settings, click the **Submit button** at the bottom of the page to save your changes. If you click away to another Web page without clicking **Submit**, your changes will be lost.



MPEG-4 Encoder Settings

Encoder Settings Web Interface

The Cisco Digital Media Encoder 2000 software MPEG-4 compression engine provides H.263, MPEG-4 Part 2 SP/ASP, and H.264/MPEG-4 Part 10 Baseline 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®.

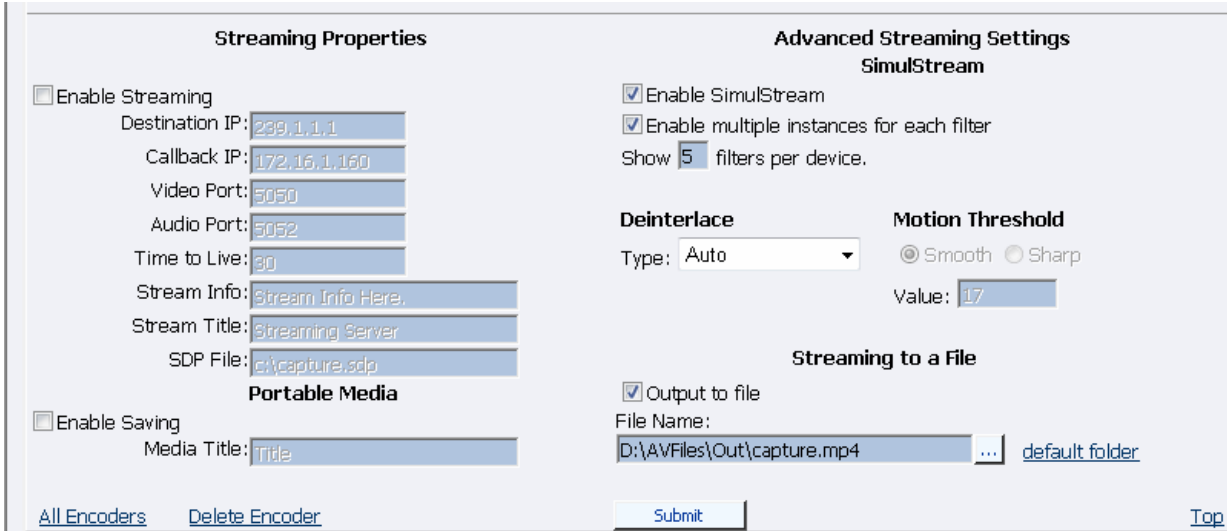
The Cisco Digital Media Encoder 2000 Web interface provides options for basic and advanced settings for the video and audio options of MPEG-4 available with the Cisco Digital Media Encoder 2000.

The figure below illustrates the screen you will see after creating an encoder through the Cisco Digital Media Encoder 2000 Web interface.

Name: Stopped MPEG4 Encoder Driver **H.264**

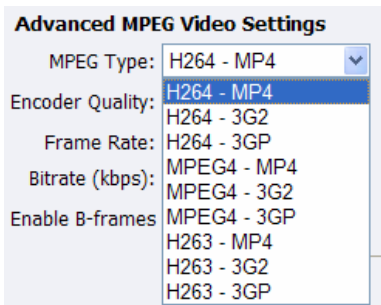
Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Video Device 1.1"/>	<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Audio Device 1"/>	None
Input: <input type="text" value="Composite"/>	Input: <input type="text" value="Unbalanced"/>	
Signal: <input type="text" value="NTSC_M"/>		
Proportions: <input type="text" value="Standard"/>		
Size: <input type="text" value="FULL 640x480"/>		
Advanced MPEG Video Settings	Advanced MPEG Audio Settings	
MPEG Type: <input type="text" value="H264"/>	Audio Format: <input type="text" value="44.100 kHz, 16 bit, Stere"/>	
Encoder Quality: <input type="text" value="Real-time"/>	Audio Type: <input type="text" value="Low Complexity"/>	
Frame Rate: <input type="text" value="29.9700898"/>	Audio Encoder: <input type="text" value="AAC"/>	
Bitrate (kbps): <input type="text" value="768"/>	Bitrate: <input type="text" value="128"/>	
Enable B-frames <input type="checkbox"/>		

[Bottom](#)



NOTE: The preceding image is an example of saving to a file. MPEG files cannot be saved to a file and streamed simultaneously.

The **Advanced MPEG Video Settings** provide you with the ability to choose the **MPEG Type** required for your output. As set forth in the figure and descriptions of the **MPEG Types** set forth below, these 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 supported 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 is the basic MP4 compression which can be used for Web (streaming media) and mobile

devices. Use this compression setting if you are experiencing compatibility issues with your playback software or device when using H.263 or H.264.

MPEG4 – 3G2

This setting will create an MPEG-4 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.

There are two defined standards for this format which are:

- 1) 3GPP for GSM based mobile phones
- 2) 3GPP2 for CDMA based mobile phones

This setting will create an MPEG-4 stream stored in a 3GPP container.

H.263 – 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, 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.

H.263 – 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.

Also included under *Advanced MPEG Video Settings* are drop-down boxes for *Encoder Quality*, ranging from *Real-time* to *Highest*, along with *Frame Rate* and the *Bitrate (kbps)*.

Advanced MPEG Video Settings	
MPEG Type:	H264 - MP4
Encoder Quality:	Real-time
Frame Rate:	Real-time
Bitrate (kbps):	Lowest
Enable B-frames	Low
	Medium
	High
	Highest

Frame Rate:	29.9700000
Bitrate (kbps):	768

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.

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

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, Stereo
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

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

Main – This format is the same as LC (above), but adds backward prediction.

Low Complexity (LC) – The simplest and most widely used and support AAC audio format.

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

NOTE: Depending on the player on which the resulting stream will be heard, either choice 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 provide you with a drop-down box, which includes two choices, as follows:

AAC (Advanced Audio Coding) is 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 (Adaptive Multi-Rate Narrow-Band) is 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.

Advanced MPEG Audio Settings

Audio Format: 44.100 kHz, 16 bit, Stereo

Audio Type: Low Complexity

Audio Encoder: AAC

Bitrate: AAC
AMR-NB

NOTE: When you select AMR Encoder for audio, the audio will automatically be encoded using 8 kHz mono for playback on cell phones.

The **Audio Bitrate** drop-down box provides you with several choices, as can be seen in the figure below.

Advanced MPEG Audio Settings

Audio Format: 44.100 kHz, 16 bit, Stereo

Audio Type: Low Complexity

Audio Encoder: AAC

Bitrate: 128

8
10
12
14
16
20
24
28
32
40
48
56
64
80
96
112
128
160
192
224
256
320

The Web interface for the Cisco Digital Media Encoder 2000 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 following section entitled **Real Encoder (Helix)** 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**.

Name: Stopped MPEG4 Encoder Driver **H.264**

Video Settings

Source: Osprey-560 Video Device 1.1
 Input: Composite
 Signal: NTSC_M
 Proportions: Standard
 Size: FULL 640x480

Audio Settings

Source: Osprey-560 Audio Device 1
 Input: Unbalanced

Preset

None

Advanced MPEG Video Settings

MPEG Type: H264
 Encoder Quality: Real-time
 Frame Rate: 29.9700898
 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: 239.1.1.1
 Callback IP: 172.16.1.160
 Video Port: 5050
 Audio Port: 5052
 Time to Live: 30
 Stream Info: Stream Info Here
 Stream Title: Streaming Server
 SDP File: c:\capture.sdp

Advanced Streaming Settings

SimulStream

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

Deinterlace

Type: Auto

Motion Threshold

Smooth Sharp
 Value: 17

Streaming to a File

Output to file
 File Name: D:\AVFiles\Out\capture.mp4 [default folder](#)

Portable Media

Enable Saving
 Media Title: Title

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

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

Check the *Save to Portable Media* box if you would like to save the encoded content to a file. Enter a file destination in the field provided.

NOTE: Remember the file name is referenced to the encoder system, not to the system that is 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 (e.g., [\\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: 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 recommended that view the stream on the same system as the Niagara SCX 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 Web interface page to save your settings.



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

Real Encoder Settings (Helix)

Name:
Stopped
Helix Producer Encoder

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Audio Settings

Source:

Input:

Preset

None

[Bottom](#)

Streaming Properties

Real Streaming properties

Enable Streaming

Broadcast Method:

Transport: UDP TCP

Server Address:

Port/Port Range:

Multicast Address:

Listen Address:

Stream Name:

Path(optional):

User Name:

Password:

Frame Rate:

Video Quality:

Audio Content:

Video Noise Filter:

De-Interlace filter

Inverse Telecine

Advanced Streaming Settings

Audience Selection

100% Quality Download (VBR) 5M Download (VBR)

128k Dual ISDN 5M Multichannel (VBR)

12k Substream for 28k Dial-up 5M Surround Stereo (VBR)

150k LAN 64k Single ISDN

16k Substream for 28k Dial-up 70% Quality Download (VBR)

1M Download (VBR) 750k Download (VBR)

Select all [Unselect all](#)

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace

Type:

Motion Threshold

Smooth Sharp

Value:

Streaming to a File

Output to file

File Name: default folder

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

[Top](#)

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:

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, Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000.
- 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, Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000. Refer to your Helix Server documentation for details.
- Pull (Helix Server)
 - In pull broadcasting, Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 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.

Transport Protocol: UDP TCP

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.

Stream Name :

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.

Server Address:

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.

Multicast Address:

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/.

Path(optional):

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. Cisco Digital Media Encoder 2000 and Helix Server negotiate the actual ports to use once the broadcast begins. The default range is from 30001 to 30020.

Port/Port Range:

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

User Name:
Password:

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.

Video Quality:
Audio Content:
Video Noise Filter:
 De-Interlace filter
 Inverse Telecine

The Cisco Digital Media Encoder 2000 features integrated de-interlacing and inverse telecine filters that automatically apply when needed. This allows the Cisco Digital Media Encoder 2000 to perform at maximum efficiency. ViewCast recommends 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.

Advanced Streaming Settings

Audience Selection Enable SureStream

<input type="checkbox"/> 100% Quality Download (VBR)	<input type="checkbox"/> 5M Download (VBR)
<input type="checkbox"/> 128k Dual ISDN	<input type="checkbox"/> 5M Multichannel (VBR)
<input type="checkbox"/> 12k Substream for 28k Dial-up	<input type="checkbox"/> 5M Surround Stereo (VBR)
<input type="checkbox"/> 150k LAN	<input type="checkbox"/> 64k Single ISDN
<input type="checkbox"/> 16k Substream for 28k Dial-up	<input type="checkbox"/> 70% Quality Download (VBR)
<input type="checkbox"/> 1M Download (VBR)	<input type="checkbox"/> 750k Download (VBR)

Select all [Unselect all](#)

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.

Streaming to a File

Output to file

File Name:

D:\AVFiles\Out [default folder](#)

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

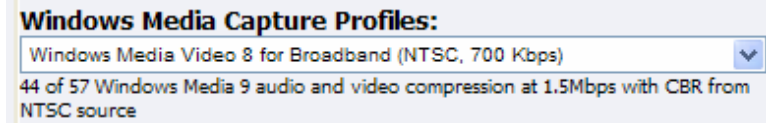
Windows Media is both a storage format and a streaming format. In addition to the ability to output to a file, the Windows Media encoder can stream to a Windows Media Server. The settings for Windows Media encoder includes the ability to set parameters for connecting and streaming to the server.

The screenshot shows the configuration window for a Windows Media Encoder. At the top, the window title is "Name: Full_WM_2Mb" and the status is "Stopped". The interface is divided into several sections:

- Video Settings:** Includes "Source" (Osprey-560 Video Device 1.1), "Input" (Composite), "Signal" (NTSC_M), "Proportions" (Standard), and "Size" (FULL 640x480).
- Audio Settings:** Includes "Source" (Osprey-560 Audio Device 1) and "Input" (Unbalanced).
- Preset:** Set to "None".
- Streaming Properties:**
 - Windows Media Capture Profiles:** A dropdown menu showing "Windows Media 9 (2M)" with a description: "30 of 56 Use this profile for high quality audio/video content intended for local playback or for download and playback." Below it are checkboxes for "Enable Pull" (checked, with "Pull from Port: 7007") and "Enable Push" (unchecked, with "Push to Port: 80", "Server:", "Alias:", "User Name:", and "Password:" fields).
 - Enable Scripting:** Unchecked.
- Advanced Streaming Settings:**
 - SimulStream:** Includes "Enable SimulStream" (checked), "Enable multiple instances for each filter" (unchecked), and "Show 5 filters per device."
 - Deinterlace:** Type set to "Auto".
 - Motion Threshold:** Radio buttons for "Smooth" (selected) and "Sharp", with a "Value" of 17.
 - Streaming to a File:** Includes "Output to file" (unchecked) and "Index the file" (checked). The "File Name" field is empty, with a "default folder" label.
 - DRM Settings (Windows Media only):** Includes "Enable DRM" (unchecked), "Profile" (None), "Description" (None), and "Key" (N/A).

At the bottom of the window, there are links for "All Encoders", "Delete Encoder", a "Submit" button, 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 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 Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 maintains a secure connection to Windows Media Server. This connection allows Cisco Digital Media Encoder 2000 to pass a user name and password to authenticate access to the server.

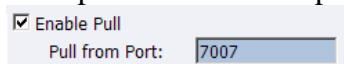
To enable clients to pull the stream from the Cisco Digital Media Encoder 2000, set up a session and begin broadcasting directly from the Cisco Digital Media Encoder 2000. Clients (Windows Media servers or players) can connect to the stream at any time by using the following URL format:

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

NOTE: The greater the number of direct connections to Cisco Digital Media Encoder 2000, the more system resources are required. ViewCast does not recommend having players connect directly to Cisco Digital Media Encoder 2000. Streaming servers should connect to Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000.

NOTE: Be sure to enter a port number 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 not assigned to another encoder. Then, enter the *server name* or *IP address*, *Alias* (optional), *user name*, and *password*.

Enable Push

Push to Port:

Server :

Alias:

User Name:

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 Cisco Digital Media Encoder 2000 to reserve its system resources for encoding. Refer to the Windows Media Server documentation for details.

Streaming to a file

Output to file Index the file

File Name: ... [default folder](#)

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.



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 : 7						
Name	Description	Last Status	Streaming	Preset		
Edit Del Flash	Flash Encoder	OK	Stopped			
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	C		
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped			
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	A		
Edit Del WME	Windows Media Encoder	OK	Stopped	B		
Edit Del WME2	Windows Media Encoder	OK	Stopped			
Edit Del wme3	Windows Media Encoder	OK	Stopped			

Deleting an Encoder Profile

You can also delete encoder profiles from the Cisco Digital Media Encoder 2000. 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 to Factory Settings function**.

NOTE: Running the **Restore to Factory Settings** 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**.

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

Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	OK	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	C
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	A
Edit Del WME	Windows Media Encoder	OK	Stopped	B
Edit Del WME2	Windows Media Encoder	OK	Stopped	
Edit Del wme3	Windows Media Encoder	OK	Stopped	

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

Edit Del Full AVI	AVI Encoder Driver	OK
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK
Edit Del Full_WM_2Mb	Windows Media Encoder	OK

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

NiagaraPro Encoders | Total records : 7

Name	Description
Edit Del Flash	Flash Encoder OK
Edit Del Full AVI	AVI Encoder Driver OK
Edit Del Full_Real_1Mb	Helix Producer Encoder OK
Edit Del Full_WM_2Mb	Windows Media Encoder OK

Name: Stopped AVI Encoder Driver

Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: Osprey-560 Video Device 1.1 Input: Composite Signal: NTSC_M Proportions: Standard Size: CUSTOM Width: <input type="text" value="400"/> Height: <input type="text" value="300"/> Format: YUY2	<input checked="" type="checkbox"/> Source: Osprey-560 Audio Device 1 Input: Unbalanced	None

[Bottom](#)

Advanced Streaming Settings

SimulStream

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

Deinterlace Type: Auto	Motion Threshold <input checked="" type="radio"/> Smooth <input type="radio"/> Sharp Value: <input type="text" value="17"/>
----------------------------------	--

Streaming to a File

Output to file
 File Name: ... default folder

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



My Cisco Digital Media Encoder 2000

Machine Properties

Computer Name:	<input type="text" value="NP073901"/>	Click to change name
Windows Version:	5.1.2600.131072	
Service Pack:	Service Pack 2	
	Reboot Now	
NiagaraPro Properties:		
User Name:	<input type="text" value="admin"/>	
Serial Number:	<input type="text" value="NP073901"/>	
Fixed Hard Drive:		
C:\	1,079.00 MB free out of 2,051.00 MB	
D:\	88,803.00 MB free out of 91,142.00 MB	
E:\	18.00 MB free out of 195.00 MB	
F:\	832.00 MB free out of 1,996.00 MB	
Memory:	607.00 MB bytes free out of 1,022.00 MB	
Software Versions:	Web 5.2.180.0	
	SKU#: 92-00314-05	
	<ul style="list-style-type: none"> VCST.Scx.Common.dll Version: 5.2.180.0 VCST.Scx.EncodersLib.dll Version: 5.2.180.0 VCST.Utility.Diagnostics.dll Version: 1.0.0.2 VCST.Utility.SystemInfo.dll Version: 5.2.181.0 VCST.Scx.GoStream.Data.dll Version: 5.2.180.0 VCST.UtilityLib.dll Version: 5.2.180.0 	
Software Update History - None		

The *My Cisco Digital Media Encoder 2000* 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, there are two fields that allow modifications, as follows:

- Computer Name
- Admin password

Computer Name

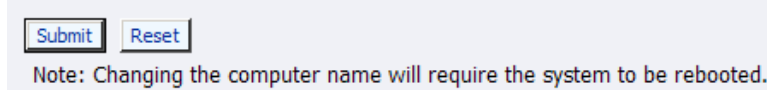
The *Computer Name field* contains the current network name for the Cisco Digital Media Encoder 2000. This is the same name you typed into a Web browser to access the *Niagara SCX Web Interface*. You can change the *Computer Name* by clicking the *Click to change name link* next to this field.

Computer Name:	<input type="text" value="NP073404"/>	Click to change name
Windows Version:	5.1.2600.131072	
Service Pack:	Service Pack 2	
	Reboot Now	

The screen will refresh and now the *Computer Name field* is an editable text field. Type in a new name for the Cisco Digital Media Encoder 2000.

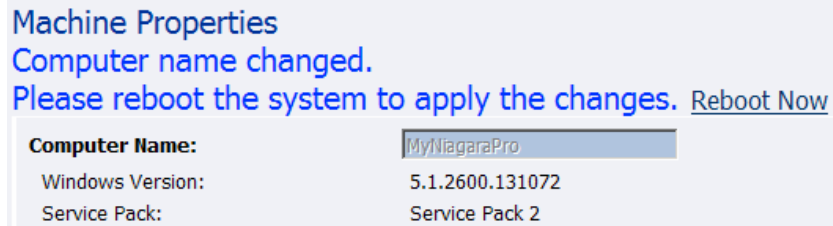
Computer Name:	<input type="text" value="MyNiagaraPro"/>
-----------------------	---

Click the **Submit button** at the bottom of the page.



The page will refresh, and you will be prompted to reboot the Cisco Digital Media Encoder 2000. 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 Cisco Digital Media Encoder 2000 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 **Friday, September 5, 2007, 6:00:42 p.m.**

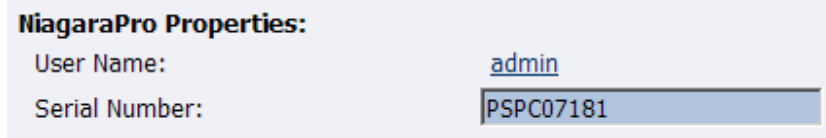
NOTE: The restart process takes approximately two minutes to complete.

When the Cisco Digital Media Encoder 2000 has restarted, you will be returned to the **Login screen**.

NOTE: If you close your Web browser and later want to log into the **SCX Web Interface**, you will need to use the new computer name you created to access the Cisco Digital Media Encoder 2000.

Cisco Digital Media Encoder 2000 Properties

The **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

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

NOTE: You cannot change the **User Name** for the **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 SCX Web Interface password* is case sensitive.

Change your password for the NiagaraPro web login.

Passwords are case sensitive

Change Your Password

User Name:

Password:

New Password:

Confirm New Password:

[Back to home page](#)

Then click the **Change Password button**. You will then be presented with the results, which are shown below.

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 Cisco Digital Media Encoder 2000 Factory Defaults option**. For more information, see **Restore Cisco Digital Media Encoder 2000 Factory Defaults** in the **System Configuration section** in the following sections.

Alerts

The representation below provides you with a representation of a page that allows you to control how the Cisco Digital Media Encoder 2000 handles application alerts that may occur during streaming or other operations. The Cisco Digital Media Encoder 2000 can optionally send an email to multiple recipients and light the alarm light on the front panel of the Cisco Digital Media Encoder 2000.

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 username, password, and server name**. For more information about configuring the Cisco Digital Media Encoder 2000 to send email alerts, see the **System Configuration section** in the following sections.

Alarm Light

Checking the **Light Alarm box** will instruct the Cisco Digital Media Encoder 2000 to light the front panel alarm light.

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.

Once you have made your modifications to the *alert settings*, click the *Update link* to enter your settings and return to the *Cisco Digital Media Encoder 2000 Alerts list*.

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	
Update Cancel	<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	

Network Properties

The *Network Properties page* provides detailed information on the Cisco Digital Media Encoder 2000's current network settings for the *Network Interface Card (NIC)*.


(TCP/IP) Network Properties

Network Card(s) Primary NIC
 Description: Broadcom NetXtreme Gigabit Ethernet #2 - Packet Scheduler Miniport

Obtain an IP address automatically
 Use the following IP information

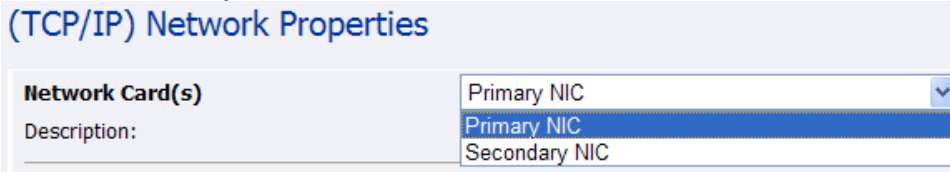
IP Address: 172.16.1.160
 Subnet Mask: 255.255.255.0
 Default Gateway: 172.16.1.251
 Preferred DNS Server: 172.16.1.3
 Alternate DNS Server: 172.16.2.3

Advanced Settings on NP073901

MAC Address: 00:E0:81:47:C0:DF
 Primary WINS Server: 0.0.0.0
 Secondary WINS Server: 0.0.0.0
 Active Network Link: 

Network Card(s)

The Cisco Digital Media Encoder 2000 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 *Cisco Digital Media Encoder 2000 network name*, *MAC Address* and server *IP address settings*.



The Cisco Digital Media Encoder 2000 network name is a link. If you click this link, you will be directed to the *My Cisco Digital Media Encoder 2000 page*. From this page you can change the Cisco Digital Media Encoder 2000's network name. For more information, see the preceding section entitled *Computer Name*.

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

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

System Configuration Settings

The *System Configuration Settings* page allows you to modify your Cisco Digital Media Encoder 2000 default system settings. You can configure email settings so the Cisco Digital Media Encoder 2000 can send an email to predefined email addresses whenever the Cisco Digital Media Encoder 2000 encounters an alert condition. You can also customize the information the Cisco Digital Media Encoder 2000 displays on its front panel when the system is idle.

This page also provides the ability to restore your Cisco Digital Media Encoder 2000 to its original factory disk image returning all of the system settings to their original state. Using the **Factory Restore option** will remove all custom settings and takes approximately ten 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 Cisco Digital Media Encoder 2000 Factory Defaults

Click the *Restore Cisco Digital Media Encoder 2000 Factory Defaults* link to start the process.

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 screen below provides details, as you would be provided, as to the process 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](#)

NOTE: Restore to Factory Defaults rebuilds the Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 restore process is completed.

NOTE: The default directory for saving your audio and video files is *D:\AV Files*. When using the **Restore to 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 the *Cisco Digital Media Encoder 2000 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:

Email From:

Subject:

SMTP (Mail) Settings:

User Name:

Password:

SMTP Host: [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 *Cisco Digital Media Encoder 2000 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. Please see the screenshot directly below.



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

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

Idle Screen Information

This section allows you to modify the information displayed in the Cisco Digital Media Encoder 2000 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 the *Cisco Digital Media Encoder 2000 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:
Note: Each line in the display is 20 characters.

<input type="text" value="System is Ready"/>	Line 1
<input type="text"/>	Line 2
<input type="text"/>	Line 3
<input type="text"/>	Line 4

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

**Default Directory Setting**

NOTE: It is strongly recommended 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 Cisco Digital Media Encoder 2000, these files could be deleted if you use the **Restore to Factory Defaults feature**.

NOTE: Only drive D on the Cisco Digital Media Encoder 2000 has available storage to save your files. This drive has approximately 85 Gigabytes of storage capacity.

NOTE: Drives C, E, and F are used strictly for the Cisco Digital Media Encoder 2000 operational programs. Any modifications to these drives can permanently damage your system and void your warranty.

The **Default AV Folder** is the directory the Cisco Digital Media Encoder 2000 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, Flash[®], Real, and Windows Media Encoder Properties sections** for information on setting an encoder profile to create an AV file.

*Default AV Folder:	<input type="text" value="D:\AVFiles"/>	<input type="button" value="..."/>
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High Temperature Alert

You can enable an alert if the Cisco Digital Media Encoder 2000 reaches a predefined maximum temperature level. To set the level, select the drop-down menu.








The **Alert Configuration** links to the **Cisco Digital Media Encoder 2000 Alerts page**. Refer to the previous sections for information on setting the **Cisco Digital Media Encoder 2000 Alerts**.

High Temperature Alert:	<input type="text" value="60"/>	<input type="button" value="v"/>	degrees Celsius. (view Alert Configuration)
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Cisco Digital Media Encoder 2000 EASE Menu (LCD Display)

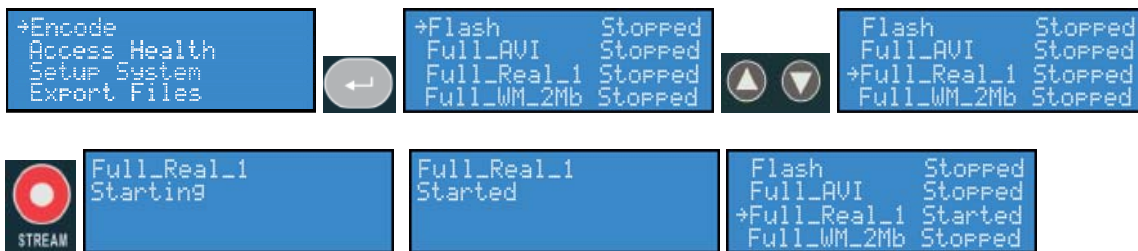
This section provides the detail of the *LCD menu tree*. It is intended to be a complete reference to all levels and functions accessible using the *Cisco Digital Media Encoder 2000 front panel LCD display*.

It is designed to be a visual reference of the LCD screen including the front panel button action to move to the next screen. This section utilizes these graphical icons for the various button actions.

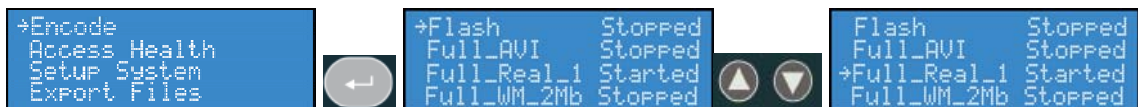
- Power On 
- Access Menu/Return to Previous 
- Enter/Execute Command 
- Move Pointer Up/Down 
- Start Encoder 
- Stop Encoder 
- Load Encoder 

Encode Menu

Encode Start



Encode Stop



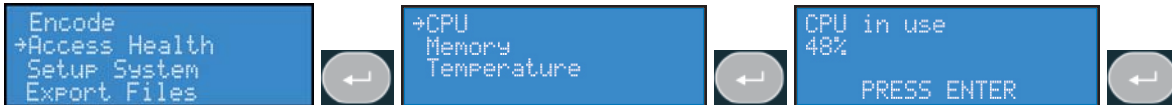


Encode Status



Access Health Menu

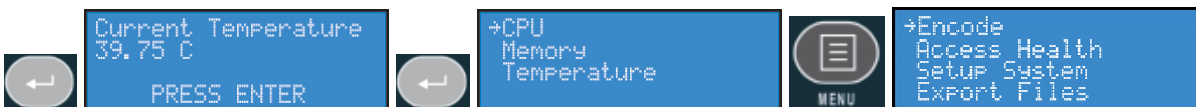
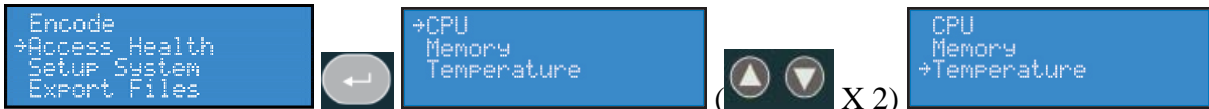
CPU Status



Memory Available

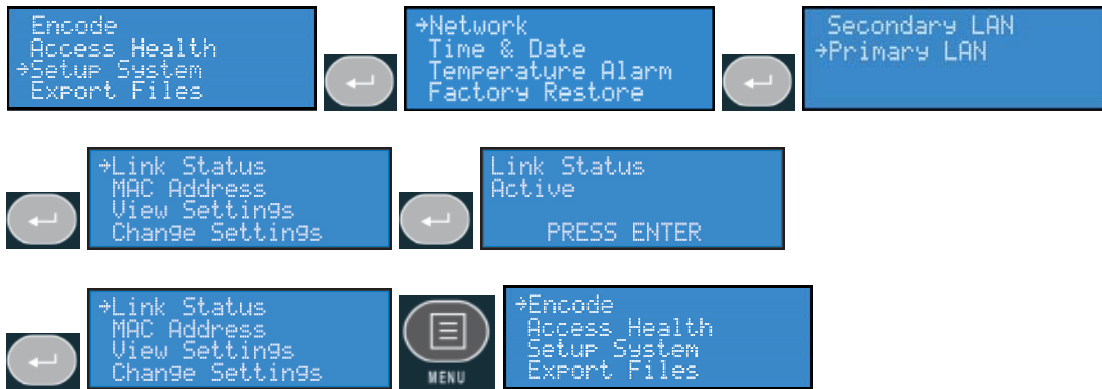


Temperature Status

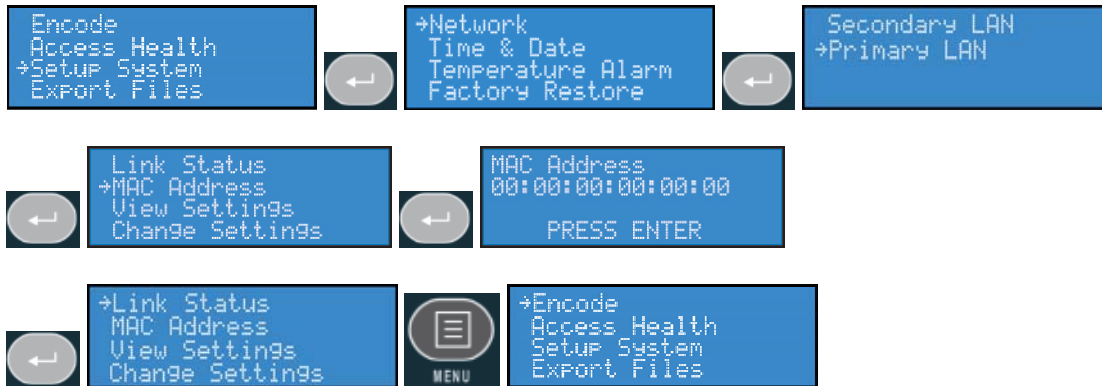


Setup Cisco Digital Media Encoder 2000 Menu

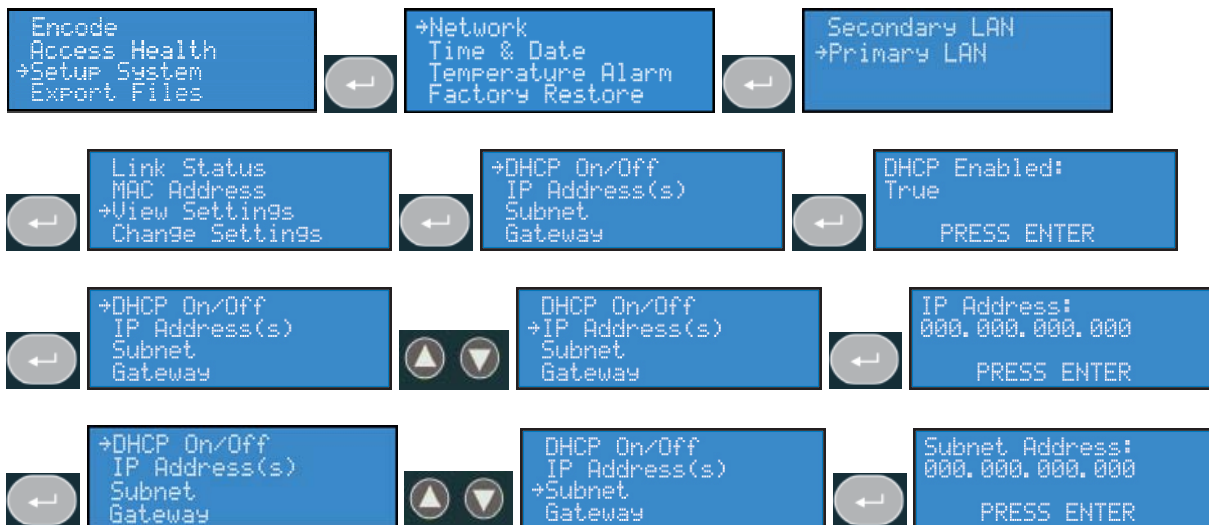
Network Link Status

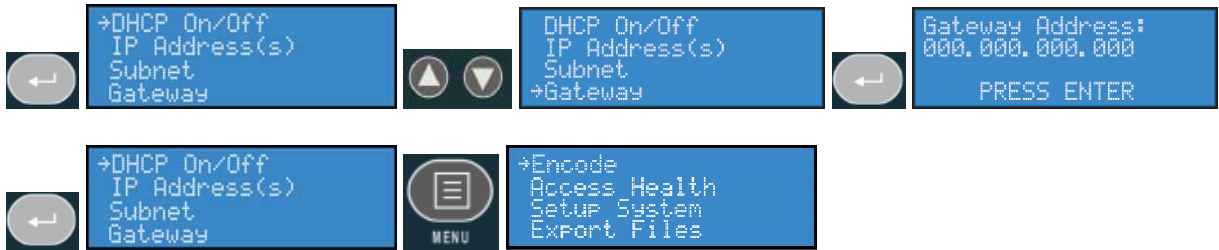


Network MAC Address

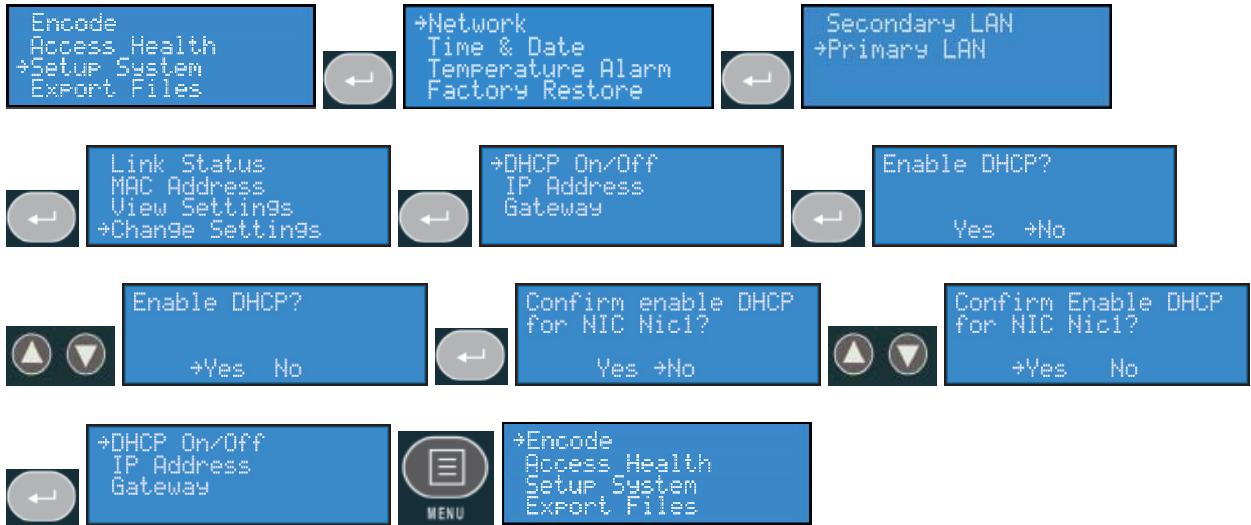


View Network Settings

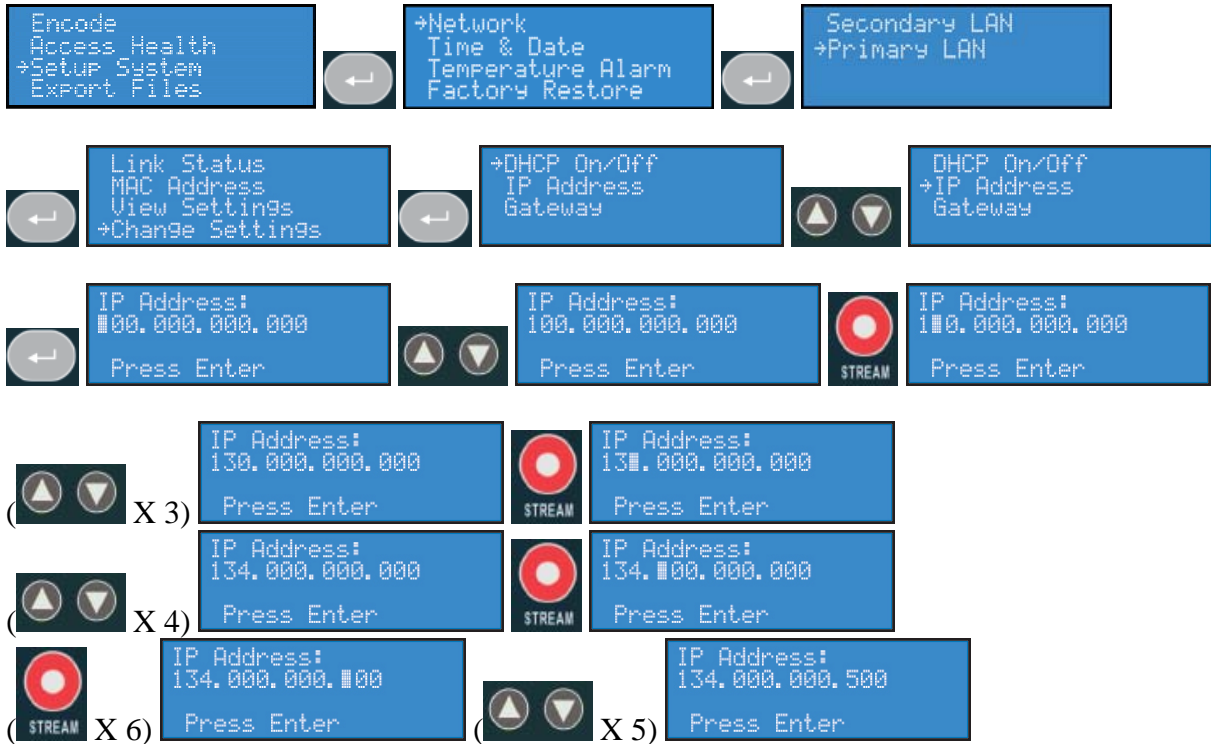




Enable DHCP

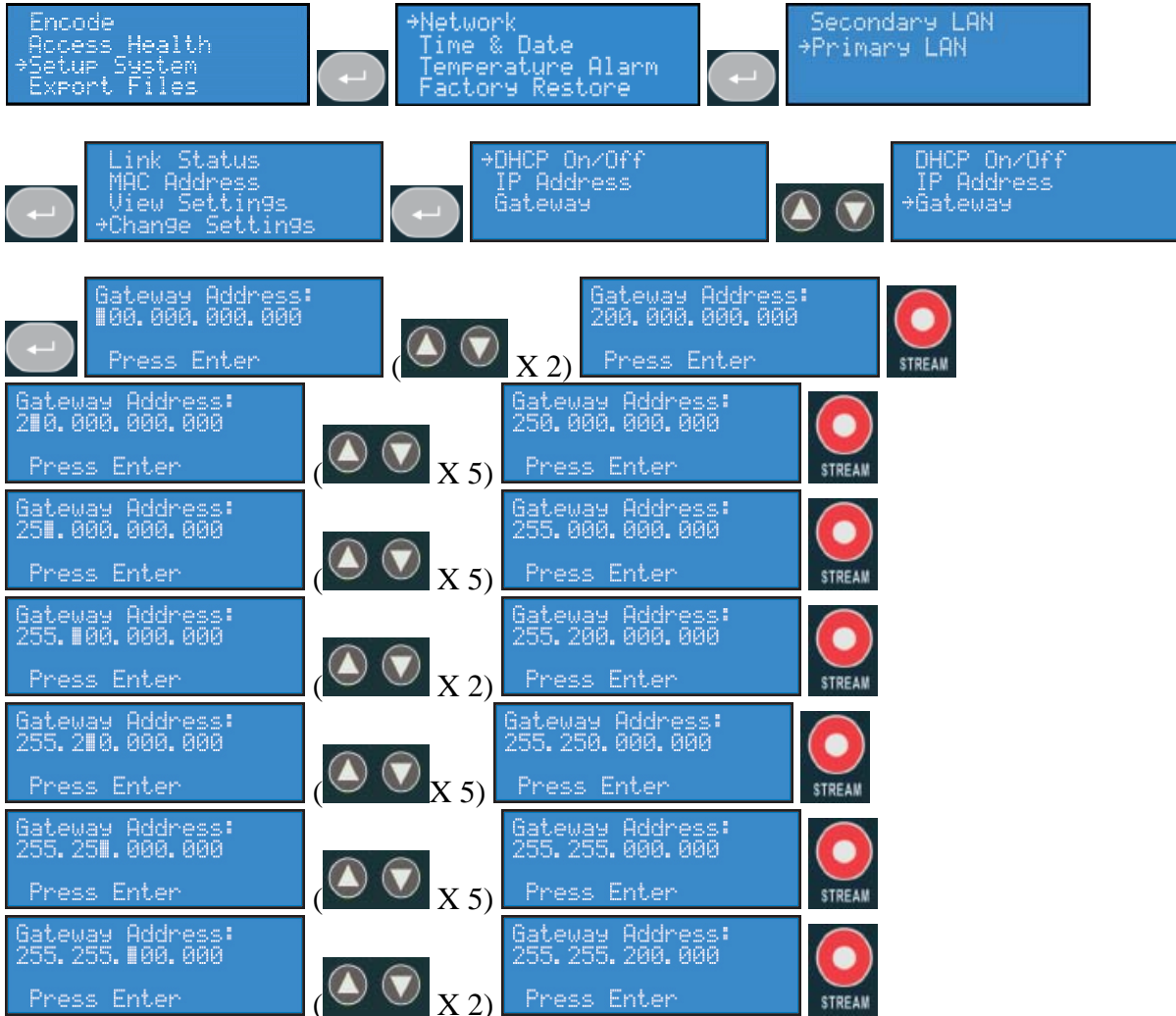


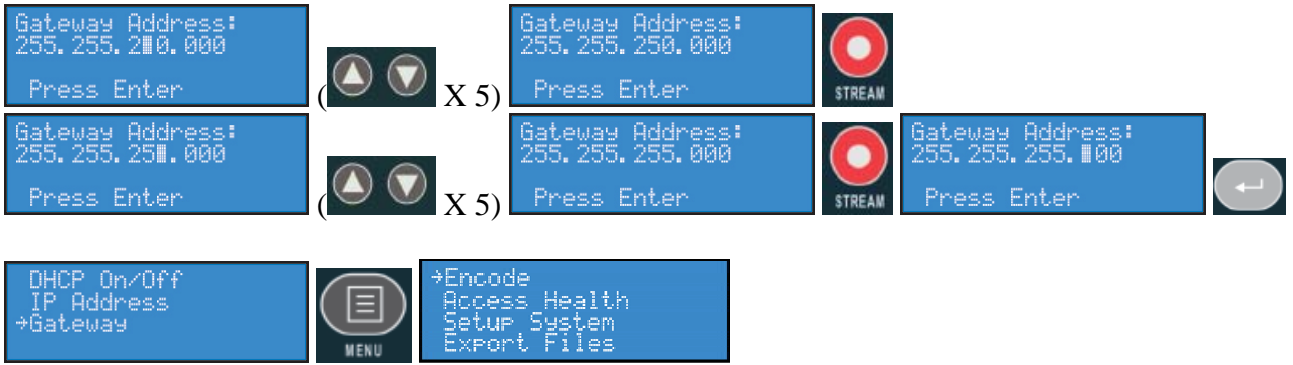
Set Static IP Addresses



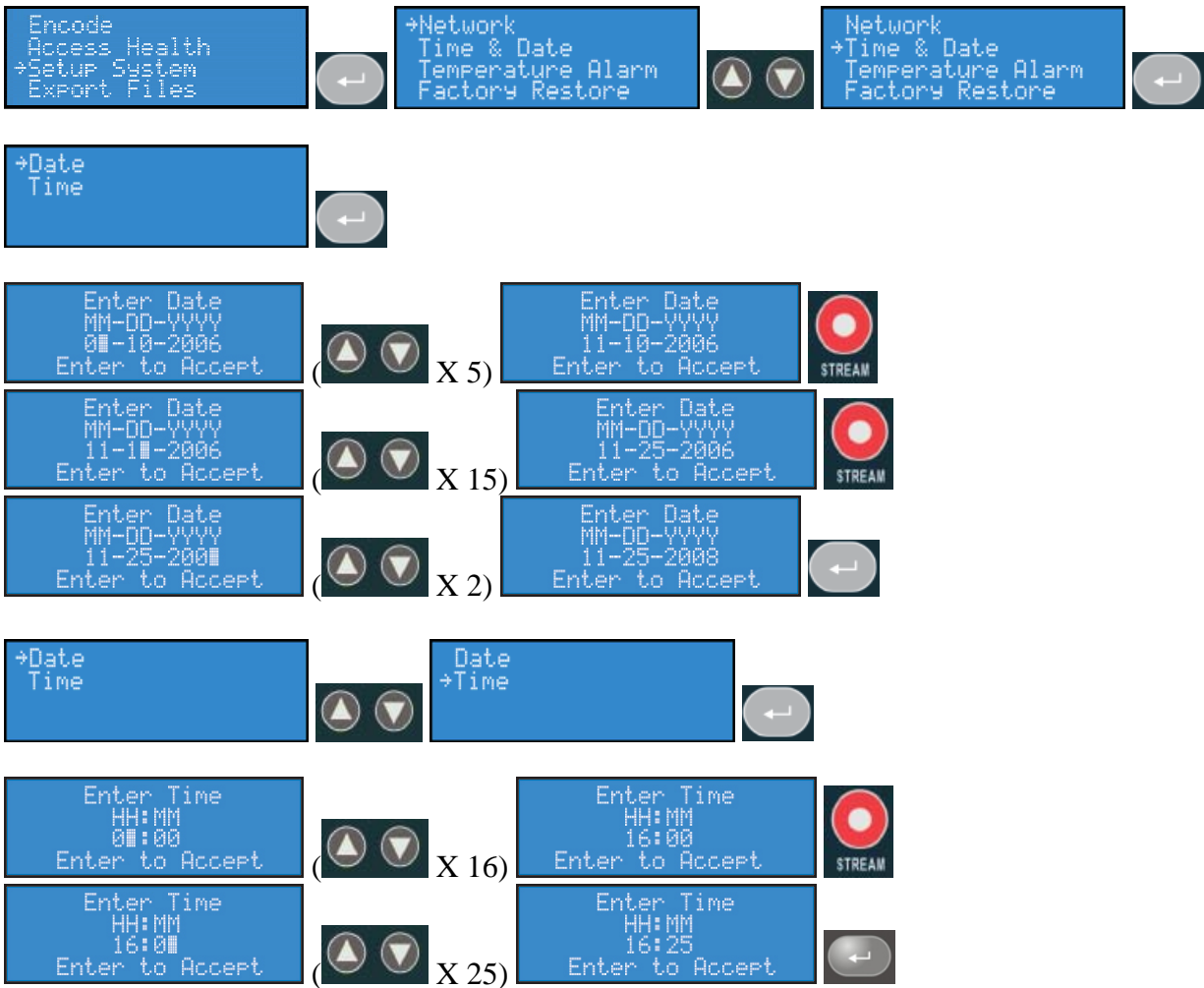


Set Gateway Address

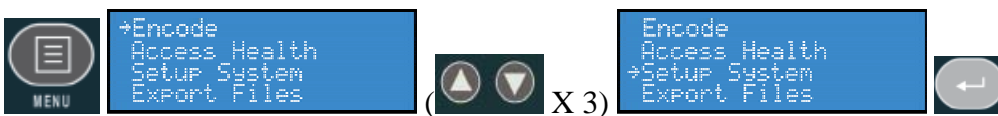


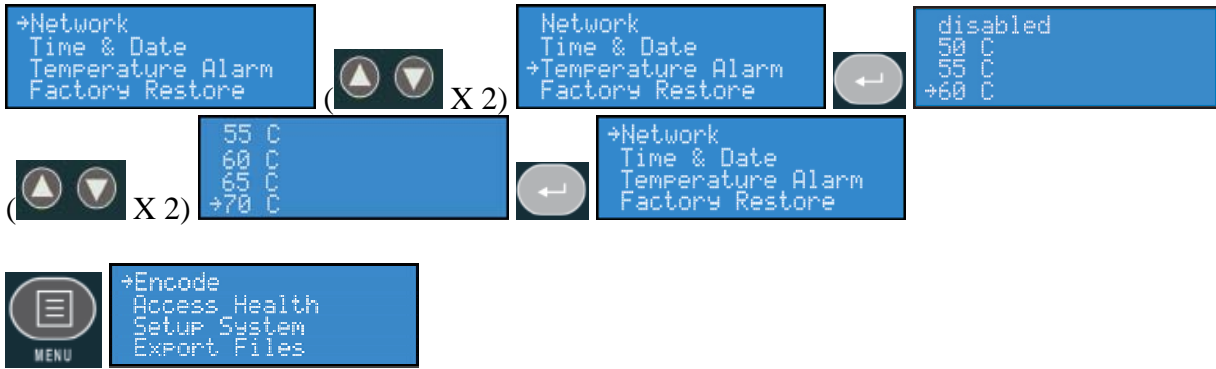


Set Date & Time



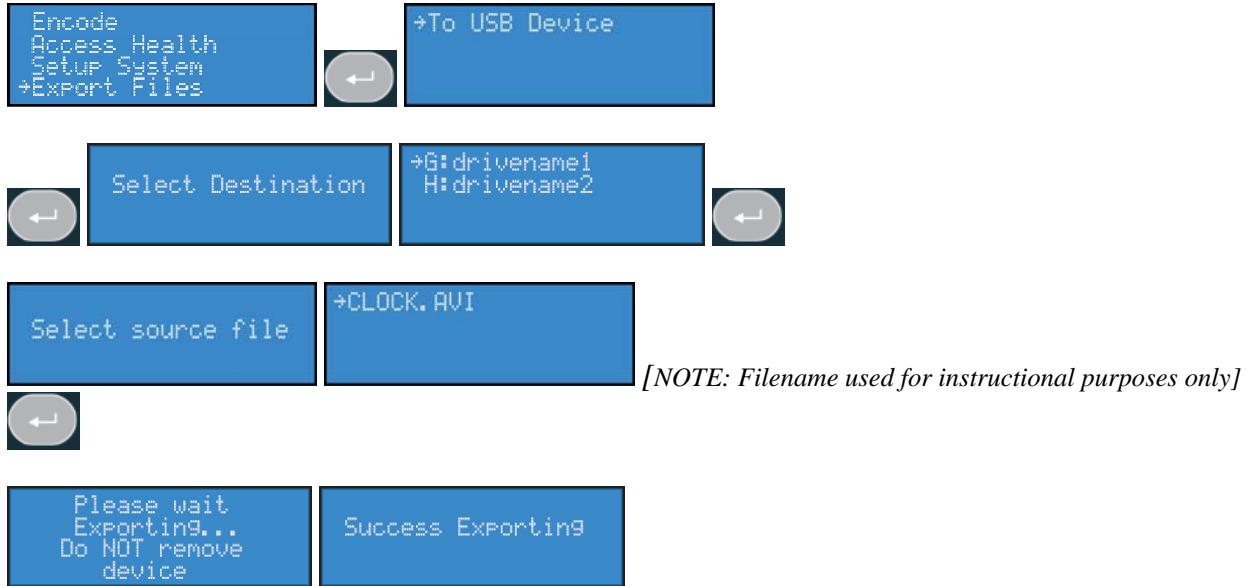
Setting Temperature Alarm



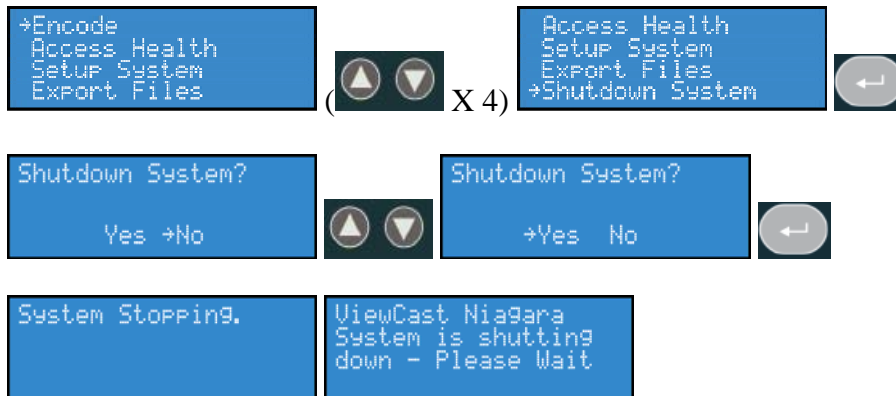


Export Files Menu

Export to USB Drive



Shutdown Cisco Digital Media Encoder 2000



Niagara SCX Web Interface

The Cisco Digital Media Encoder 2000 includes the *Niagara SCX Web Interface*, which allows you to access the advanced system settings. The *Web Interface* also provides detailed settings and control over the encoder profiles installed on the Cisco Digital Media Encoder 2000. This section details each setting and page of the *Niagara SCX Web Interface*.

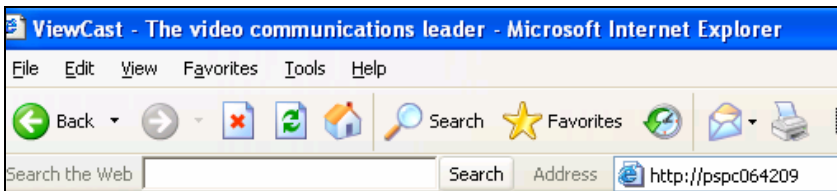
Log In

The *Niagara SCX Web Interface* does not require software and works with any computer that has a current Web browser and current operating software for Windows™, Macintosh™, and Linux™ machines. The Cisco Digital Media Encoder 2000 system must either reside on a shared IP network with the computer or can be directly connected to a Windows computer using an Ethernet cable (RJ45).

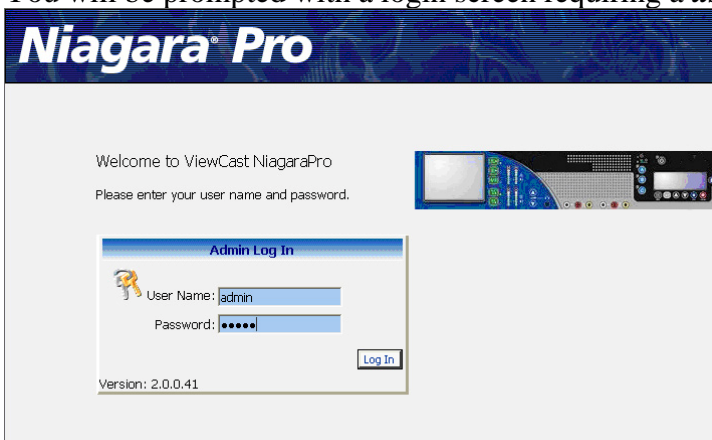
Open the Web browser on your computer and access the *Web Interface* by typing in the Cisco Digital Media Encoder 2000 network name. The network name of the Cisco Digital Media Encoder 2000 is also its serial number and can be obtained from the LCD readout during the power-up process.

The serial number is also located on the right side of the Cisco Digital Media Encoder 2000.

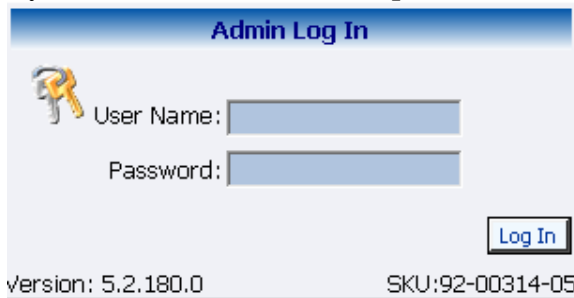
Enter the Cisco Digital Media Encoder 2000 name in the Web Browser, as shown below, and press *enter*.



You will be prompted with a login screen requiring a *username* and *password*.



By default, the *username* and *password* are *admin*.



NOTE: If you cannot browse to the Cisco Digital Media Encoder 2000 using its machine name, type in the Cisco Digital Media Encoder 2000 IP address instead. This information is available by accessing the LCD menus on the front panel of Cisco Digital Media Encoder 2000.

Home Page

The *Home Page* is the first page presented after you log into the *Niagara SCX Web Interface*. From this page, you can access the different pages for configuring, controlling, and monitoring the activities and alerts from Cisco Digital Media Encoder 2000.



Menu Bar

The menu bar at the top of the *Home Page* is consistent and available throughout the Web site.

With the exception of the *Home* and the *Log Out* menu options in the menu bar at the top of the *Home Page*, the other options in the menu bar have drop-down menus. These drop-down menus appear within *Encoders*, *Configuration*, and *Status*. Each drop-down menu provides a list of additional options available.

Home

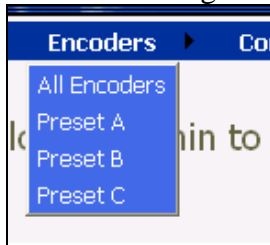
The **Home** title is an active link. Clicking this link will direct you to the **Home Page** of the **Web site**.



Encoders

The **Encoders** drop-down menu provides access to the following Web pages that provide the following information:

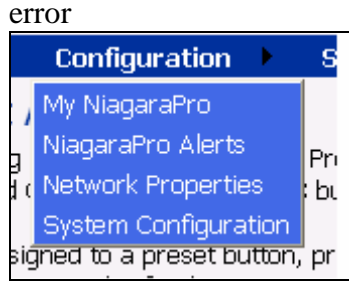
- **All Encoders** – Lists all of the encoding profiles loaded on the Cisco Digital Media Encoder 2000 and provides management of those profiles
- **Preset A** – Allows you to assign a loaded encoding profile to the **A button** on the front panel of the Cisco Digital Media Encoder 2000
- **Preset B** – Allows you to assign a loaded encoding profile to the **B button** on the front panel of the Cisco Digital Media Encoder 2000
- **Preset C** – Allows you to assign a loaded encoding profile to the **C button** on the front panel of the Cisco Digital Media Encoder 2000



Configuration

The **Configuration** drop-down menu provides access to the following:

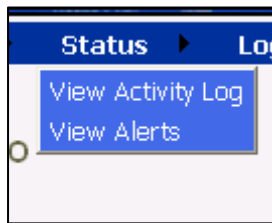
- **My Niagara Pro** – Provides details on the Machine Properties of the Cisco Digital Media Encoder 2000 including the Network Name, Serial Number, and all software versions installed
- **Alerts** – Allows modification of the settings for each application alert Cisco Digital Media Encoder 2000 could generate during normal operations
- **Network Properties** – Provides information on Cisco Digital Media Encoder 2000 network properties and addresses for both NIC ports and allows modification to these properties
- **System Configuration** – Allows modification of the system configuration including setup for email alerts from Cisco Digital Media Encoder 2000 whenever it encounters an operation



Status

The *Status* drop-down menu provides access to the following:

- **View Activity Log** – A list of all Cisco Digital Media Encoder 2000 activities with date and timestamp on each event
- **View Alert** – A list of Cisco Digital Media Encoder 2000 alerts with date and timestamp on each alert



Log Out

The *Log Out option* executes user log out from the Cisco Digital Media Encoder 2000 and returns you to the *Web site Log In screen*.



All Encoders

The *All Encoders Web page* provides a list of all of the encoder profiles loaded on the Cisco Digital Media Encoder 2000. On this page, you can do the following:

- **View** all of the loaded and available encoder profiles
- **Start** and **Stop** each encoder individually
- **Access** the *Editing page* for an encoder
- **Delete** an encoder profile
- **Create** an encoder profile

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

Auto refresh page [Add Encoder](#)

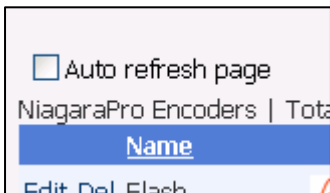
NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped	
Edit Del wme3	Windows Media Encoder	Stopped	Stopped	

The **Encoders** list has five titled columns, as follows:

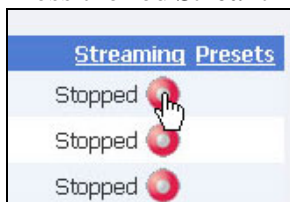
- **Name** – Provides the name of the encoder profile (this name is displayed in the Cisco Digital Media Encoder 2000 front panel LCD display)
- **Description** – Defines the type of encoder which are AVI, Flash, Helix Producer, and Windows Media
- **Last Status** – Provides the activity of the encoder when the information on this page was last refreshed (for example, **Encoder started** or **Encoder failed to start**)
- **Streaming** – Provides a column of buttons that allow you to start or stop an encoder
- **Presets** – Provides information on the **EZStream button** assignment for each encoder (if this field is blank then the encoder is not assigned to a **EZStream button**)

Enabling the **Auto Refresh Page check box** at the top of the page will execute a refresh of this page every 10 seconds. This is useful when you are monitoring the Cisco Digital Media Encoder 2000 while another user is operating it.

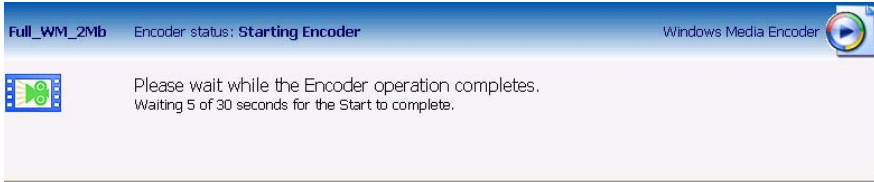


Start Encoder

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



The Web page will automatically update 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 *Started* mode.

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

Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped	
Edit Del wme3	Windows Media Encoder	Stopped	Stopped	

Stop Encoder

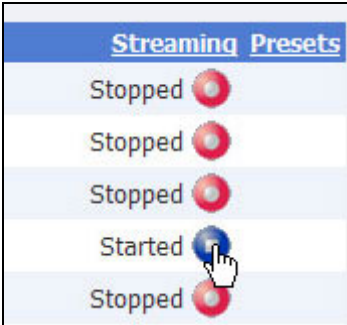
Encoders
This page allows you to perform encoder setup and removal.

Auto refresh page [Add Encoder](#)

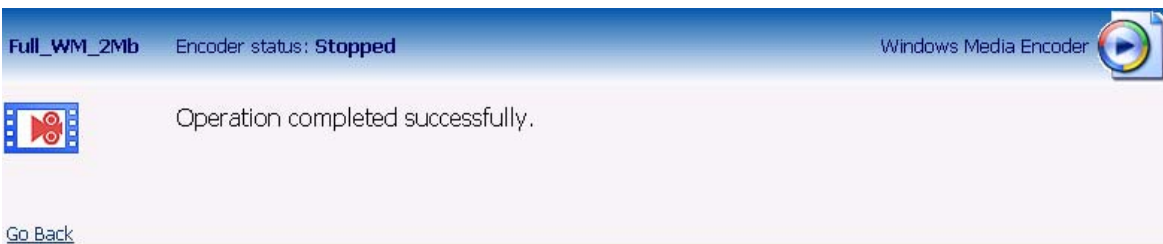
NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	Encoder stopped	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	
Edit Del WME	Windows Media Encoder	Encoder started	Started	
Edit Del WME2	Windows Media Encoder	Encoder stopped	Stopped	
Edit Del wme3	Windows Media Encoder	Stopped	Stopped	

Press the blue *Stop* icon located in the right column of the encoder you wish to stop.



The Web page will automatically update with messages detailing the encoder stop progress.



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

Edit Encoder

To edit an encoder, click the *Edit link* in the first column.

NiagaraPro Encoders Total records : 7			
Name	Description	Las	
Edit Del Flash	Flash Encoder	Encoder stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	
Edit Del WME	Windows Media Encoder	Encoder started	

The properties page for that encoder will be displayed.

Video & Audio Settings

The properties page for each encoder type uses the same *Video* and *Audio Settings* except for the added color space setting for AVI and Flash.



NOTE: The preceding image has an added color space in the form of a field entitled *Format*.

You enable or disable video and/or audio by clicking the check box next to *Source*. When enabled, the *Source*, *Input*, *Signal*, *Proportions*, *Size*, and *Input fields* can be edited.

Source: This field displays a drop-down list of devices available on the Cisco Digital Media Encoder 2000. The Cisco Digital Media Encoder 2000 is a two channel encoder, so there are two physical sets of audio and video inputs can be used at any one time. However, you can capture multiple streaming formats and resolutions simultaneously from this one set of video inputs. Video source is seen as multiple inputs denoted by incrementing decimal values. They appear in this manner:



Set **Input** for both video and audio to match the video and audio inputs on the back of the Cisco Digital Media Encoder 2000 to which you connected your video and audio source. This would be either **Composite**, **S-Video** or **SDI** for video input and **Unbalanced**, **XLR Balanced**, **XLR AES/EBU** or **SDI** for audio input.

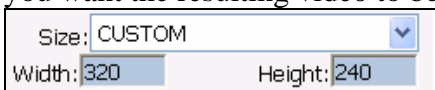
When you performed the **First Start Setup**, you determined if your video signal was NTSC or PAL. The **Signal field** adds granularity for regional NTSC, PAL, and SECAM settings. If you are uncertain which setting applies, refer to the owner’s manual for the video source you have connected to the Cisco Digital Media Encoder 2000.

The proportion setting uses the term **Standard**, which means square pixels for a VGA monitor and **CCIR-601**, which means elongated pixels for a television 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**. Selecting the incorrect setting can make the streaming video appear distorted.

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

- Full for full screen video
- CIF for video scaled from full size to ¼ size
- QCIF for video scaled from full size to ¼ 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: The Custom Setting is not available with the Flash video codec.

NOTE: If you specify a video size incompatible with the color space of your source video, the Cisco Digital Media Encoder 2000 will automatically correct the size to the closest compatible setting when you click the **Submit button**. The color space format setting is only available in AVI and Flash encoder properties, and appears as an additional field under the **Size setting** (see below).

The screenshot shows a 'Video Settings' form with the following fields:

- Source: Osprey-560 Video Device 1.1
- Input: Composite
- Signal: NTSC_M
- Proportions: Standard
- Size: CUSTOM
- Width: 400
- Height: 300
- Format: YUY2

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. As previously stated, these settings will vary according to the encoder type.

Advanced Streaming Settings

SimulStream and DirectShow Filters

Filters have two interrelated purposes, as follows:

- They allow applications to enumerate and list DirectShow 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 1 to 10 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.

Enable SimulStream Checkbox

Advanced Streaming Settings
SimulStream

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

Deinterlace **Motion Threshold**

Type: Smooth Sharp
 Value:

The checkbox at the top of the group, when checked, enables SimulStream to run for the currently selected device.

All Niagara appliances include a full SimulStream license installed for each A/V channel, and this checkbox controls full SimulStreaming.

When you change the *SimulStream Enable status* and click *Submit*, it is strongly recommended you restart the appliance. If you do not, SimulStream may become partially active, but the filters may be incorrectly named, and their pins may be incorrect.

Show filters per device

Show filters per device.

With this control, you can set the device driver to expose 1 to 10 filters per device for enumeration and selection by encoders. If, for example, 4 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, and 1.4.

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 up to 10 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 being done. 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 5, 6, or more 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, as follows:

- **Off** — Perform no deinterlacing of any kind.
- **Auto** — Apply inverse telecine deinterlacing to all telecine video. Apply motion adaptive deinterlacing to all video that is not telecine. Switch dynamically between the two modes as the content changes. Available for NTSC video only.
- **Inverse Telecine** — Apply inverse telecine deinterlacing to all telecine video. Perform no deinterlacing of video that is not telecine. Available for NTSC video only.
- **Motion Adaptive** — Apply 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, which portions are in motion, and then applies different processing to each scenario.

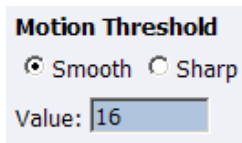
Telecine and Inverse Telecine

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 — it drops the redundant fields and reassembles the video in a 24 fps progressive format. Interlacing artifacts are 100% 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 buttons will be disabled when either PAL or SECAM is selected as the video standard.

Motion Threshold



Motion Threshold
 Smooth Sharp
Value:

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

Name: Stopped AVI Encoder Driver

Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: Osprey-560 Video Device 1.1	<input checked="" type="checkbox"/> Source: Osprey-560 Audio Device 1	None
Input: Composite	Input: Unbalanced	
Signal: NTSC_M		
Proportions: Standard		
Size: CUSTOM		
Width: 400 Height: 300		
Format: YUY2		

[Bottom](#)

Advanced Streaming Settings

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace	Motion Threshold
Type: Auto	<input checked="" type="radio"/> Smooth <input type="radio"/> Sharp
	Value: <input type="text" value="17"/>

Streaming to a File

Output to file

File Name: [...](#) [default folder](#)

AVI is an uncompressed audio and video storage format and, therefore, has only 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 Cisco Digital Media Encoder 2000. By default, the path is d:\AVFILES\.

NOTE: ViewCast does not recommend you store files in any other directory on the Cisco Digital Media Encoder 2000. This directory provides approximately 85 gigabytes of data storage, which is not available on any other internal hard drive on the Cisco Digital Media Encoder 2000.

Once you save your file to the Cisco Digital Media Encoder 2000 internal hard drive, ViewCast recommends you move it to another external storage device, such as a USB drive or a network drive.

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.



Flash Encoder Settings

Name:
Stopped ●
Flash Encoder

<p>Video Settings</p> <p><input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Video Device 1.1"/></p> <p>Input: <input type="text" value="Composite"/></p> <p>Signal: <input type="text" value="NTSC_M"/></p> <p>Proportions: <input type="text" value="Standard"/></p> <p>Size: <input type="text" value="FULL 640x480"/></p> <p>Advanced Flash Video Settings</p> <p>Frame Rate: <input type="text" value="29.9700898"/> fps</p> <p>Bitrate: <input type="text" value="768"/> kbps</p>	<p>Audio Settings</p> <p><input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Audio Device 1"/></p> <p>Input: <input type="text" value="Unbalanced"/></p> <p>Advanced Flash Audio Settings</p> <p>Format: <input type="text" value="44.100 kHz, 16 bit, Stereo"/></p> <p>Bitrate: <input type="text" value="128"/> kbps</p>	<p>Preset</p> <p>None</p>
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[Bottom](#)

Advanced Streaming Settings

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace	Motion Threshold
Type: <input type="text" value="Auto"/>	<input checked="" type="radio"/> Smooth <input type="radio"/> Sharp
	Value: <input type="text" value="17"/>

Streaming to a File

Output to file

File Name: [default folder](#)

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).

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

Name:
Stopped ●
MPEG4 Encoder Driver H.264

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Advanced MPEG Video Settings

MPEG Type:

Encoder Quality:

Frame Rate:

Bitrate (kbps):

Enable B-frames

Audio Settings

Source:

Input:

Advanced MPEG Audio Settings

Audio Format:

Audio Type:

Audio Encoder:

Bitrate:

Preset

None

[Bottom](#)

Streaming Properties

Enable Streaming

Destination IP:

Callback IP:

Video Port:

Audio Port:

Time to Live:

Stream Info:

Stream Title:

SDP File:

Portable Media

Enable Saving

Media Title:

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

Output to file

File Name: ... default folder

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

[Top](#)

NOTE: The preceding image is an example of saving to a file. MPEG files cannot be saved to a file and streamed simultaneously.

Encoder Settings Web Interface

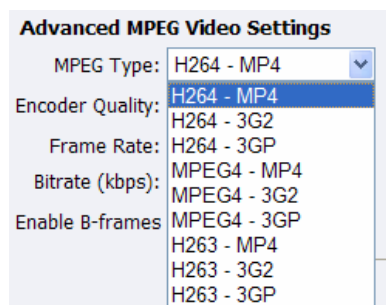
The GoStream software MPEG-4 compression engine provides H.263, MPEG-4 Part 2 SP/ASP, and H.264/MPEG-4 Part 10 Baseline encoding functionality. This product provides the capabilities to encode streams for Internet video, mobile phones, set top boxes and create media files for other MPEG-4 compatible 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 GoStream.

The figure below 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. As set forth in the figure and descriptions of the **MPEG Types** set forth below, these 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.

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 is the basic MP4 compression which can be used for Web (streaming media) and mobile devices. Use this compression setting if you are experiencing compatibility issues with your playback software or device when using H.263 or H.264.

MPEG4 – 3G2

This setting will create an MPEG-4 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.

There are two defined standards for this format which are:

- 1) 3GPP for GSM based mobile phones
- 2) 3GPP2 for CDMA based mobile phones

This setting will create an MPEG-4 stream stored in a 3GPP container.

H.263 – 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, 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.

H.263 – 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.

Also included under *Advanced MPG Video Settings* are drop-down boxes for *Encoder Quality*, ranging from *Real-time* to *Highest*, along with *Frame Rate* and the *Bitrate (kbps)*.

Advanced MPEG Video Settings

MPEG Type: H264 - MP4

Encoder Quality: Real-time

Frame Rate: Real-time

Bitrate (kbps): Low

Enable B-frames: Medium

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

Frame Rate: 29.9700000

Bitrate (kbps): 768

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: 128

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

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

Main – This format is the same as LC (above), but adds backward prediction.

Low Complexity (LC) – The simplest and most widely used and support AAC audio format.

The screenshot shows a configuration panel titled "Advanced MPEG Audio Settings". It contains four dropdown menus: "Audio Format" is set to "44.100 kHz, 16 bit, Stere"; "Audio Type" is set to "Low Complexity"; "Audio Encoder" is set to "Low Complexity" (with "Main" also visible in the list); and "Bitrate" is set to "128".

NOTE: Depending on the player on which the resulting stream will be heard, either choice 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** provide you with a drop-down box, which includes two choices, as follows:

AAC (Advanced Audio Coding) is 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 (Adaptive Multi-Rate Narrow-Band) is 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.

The screenshot shows a configuration panel titled "Advanced MPEG Audio Settings". It contains four dropdown menus: "Audio Format" is set to "44.100 kHz, 16 bit, Stere"; "Audio Type" is set to "Low Complexity"; "Audio Encoder" is set to "AAC"; and "Bitrate" is set to "AAC" (with "AMR-NB" also visible in the list).

NOTE: When you select AMR Encoder for audio, the audio will automatically be encoded using 8KHz mono for playback on cell phones.

The **Audio Bitrate** drop-down box provides you with several choices, as can be seen in the figure below.

Advanced MPEG Audio Settings

Audio Format: 44.100 kHz, 16 bit, Stereo

Audio Type: Low Complexity

Audio Encoder: AAC

Bitrate: 128

- 8
- 10
- 12
- 14
- 16
- 20
- 24
- 28
- 32
- 40
- 48
- 56
- 64
- 80
- 96
- 112
- 128
- 160
- 192
- 224
- 256
- 320

The Web interface for the GoStream 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 following section entitled *Real Encoder (Helix)* for a more detailed description of enabling pull. Another option provides you the abilities to *Save to Portable Media* and provide a *Media Title*.

<p>Streaming Properties</p> <p><input checked="" type="checkbox"/> Enable Streaming</p> <p>Destination IP: 239.1.1.1</p> <p>Callback IP: 172.16.1.177</p> <p>Video Port: 5050</p> <p>Audio Port: 5052</p> <p>Time to Live: 30</p> <p>Stream Info: Stream Info Here.</p> <p>Stream Title: Streaming Server</p> <p>SDP File: c:\capture.sdp</p> <p>Portable Media</p> <p><input type="checkbox"/> Enable Saving</p> <p>Media Title: Title</p>	<p>Advanced Streaming Settings</p> <p>SimulStream</p> <p><input checked="" type="checkbox"/> Enable SimulStream</p> <p><input checked="" type="checkbox"/> Enable multiple instances for each filter</p> <p>Show 5 filters per device.</p> <p>Deinterlace</p> <p>Type: Motion Adaptive</p> <p>Motion Threshold</p> <p><input checked="" type="radio"/> Smooth <input type="radio"/> Sharp</p> <p>Value: 17</p> <p>Streaming to a File</p> <p><input type="checkbox"/> Output to file</p> <p>File Name: D:\AVFiles\Out\capture.mp4 default folder</p>
---	---

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

Under the *Advanced Streaming Settings* feature, you have the options to output to a file or to stream content. For file creation, you must type in a unique name and location for this file.

Streaming to a File

Output to file

File Name:

D:\AVFiles\Out\capture.mp4 ... [default folder](#)

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 (e.g., [\\fileserv\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: 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 GoStream 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 Web interface page to save your settings.



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

Real Encoder Settings (Helix)

Name:
Stopped ●
Helix Producer Encoder

Video Settings

Source:

Input:

Signal:

Proportions:

Size:

Audio Settings

Source:

Input:

Preset

None

[Bottom](#)

Streaming Properties

Real Streaming properties

Enable Streaming

Broadcast Method:

Transport: UDP TCP

Server Address:

Port/Port Range:

Multicast Address:

Listen Address:

Stream Name:

Path(optional):

User Name:

Password:

Frame Rate:

Video Quality:

Audio Content:

Video Noise Filter:

De-Interlace filter

Inverse Telecine

Advanced Streaming Settings

Audience Selection Enable SureStream

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](#)

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace

Type:

Motion Threshold

Smooth Sharp

Value:

Streaming to a File

Output to file

File Name:

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

[Top](#)

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:

Broadcast Method: There are several different broadcast types for streaming Real format video to a Helix Server. They are 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, Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000.
- Push, Password-Only (Helix Server)
 - Unlike account-based broadcasting, password-only broadcasting does not establish a monitoring connection. It therefore incurs less network overhead, but it 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 the Helix Server documentation included with the Helix Server for details.
- Push, Multicast (Helix Server)
 - In a multicast, Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000. Refer to your Helix Server documentation for details.
- Pull (Helix Server)
 - In pull broadcasting, Cisco Digital Media Encoder 2000 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. Pull broadcasting saves bandwidth between Cisco Digital Media Encoder 2000 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. It does not use a monitoring connection to provide server feedback and statistics. However, it is not as robust a broadcast method as account-based push. Use this broadcast method only when sending a broadcast stream to a server predating 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 when delivering the broadcast stream to Helix Server. UDP is the preferred protocol because of the lower network overhead. But you may want to use TCP when delivering the broadcast over a lossy environment.

Transport: UDP TCP

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.

Server Address:

For the **Port/Port Range fields**, 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. GoStream and Helix Server negotiate the actual ports to use once the broadcast begins. The default range is 30001 to 30020.

Port/Port Range:

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

Multicast Address:

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.

Stream Name :

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/.

Path(optional):

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

User Name:
 Password:

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. ViewCast recommends you experiment with these settings and view the results on a test capture.

Video Quality:
 Audio Content:
 Video Noise Filter:
 De-Interlace filter
 Inverse Telecine

Advanced Streaming Settings

Enable SureStream

Audience Selection

<input type="checkbox"/> 100% Quality Download (VBR)	<input type="checkbox"/> 5M Download (VBR)
<input type="checkbox"/> 128k Dual ISDN	<input type="checkbox"/> 5M Multichannel (VBR)
<input type="checkbox"/> 12k Substream for 28k Dial-up	<input type="checkbox"/> 5M Surround Stereo (VBR)
<input type="checkbox"/> 150k LAN	<input type="checkbox"/> 64k Single ISDN
<input type="checkbox"/> 16k Substream for 28k Dial-up	<input type="checkbox"/> 70% Quality Download (VBR)
<input type="checkbox"/> 1M Download (VBR)	<input type="checkbox"/> 750k Download (VBR)

Select all [Unselect all](#)

The Cisco Digital Media Encoder 2000 features integrated de-interlacing and inverse telecine filters that automatically apply when needed. This allows the Cisco Digital Media Encoder 2000 to perform at maximum efficiency. ViewCast recommends 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. 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. In the **File Name field**, type in a unique name for the file.

The screenshot shows a web form titled "Streaming to a File". It contains a checked checkbox labeled "Output to file". Below this is a "File Name:" label followed by a text input field containing "D:\AVFiles\Out". To the right of the input field is a browse button (three dots) and a link labeled "default folder". A "Submit" button is positioned below the input field.

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 a storage format and a streaming format. Besides 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.

Name:
Stopped
Windows Media Encoder

Video Settings

Source: Osprey-560 Video Device 1.1

Input: Composite

Signal: NTSC_M

Proportions: Standard

Size: FULL 640x480

Audio Settings

Source: Osprey-560 Audio Device 1

Input: Unbalanced

Preset

None

[Bottom](#)

Streaming Properties

Windows Media Capture Profiles:

Windows Media 9 (2M)

30 of 56 Use this profile for high quality audio/video content intended for local playback or for download and playback.

Enable Pull

Pull from Port:

Enable Push

Push to Port:

Server:

Alias:

User Name:

Password:

Enable Scripting

Advanced Streaming Settings

SimulStream

Enable SimulStream

Enable multiple instances for each filter

Show filters per device.

Deinterlace

Type: Auto

Motion Threshold

Smooth Sharp

Value:

Streaming to a File

Output to file Index the file

File Name: default folder

Enable DRM

DRM Settings (Windows Media only)

Profile: None

Description: None

Key: N/A

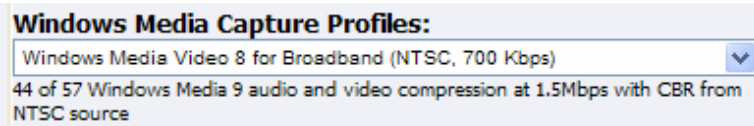
Note: Changing the capture profile may change the current video height/width settings as well as the audio/video input capture selection.

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

[Top](#)

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 your current video and audio settings have not been modified. If so, simply change these settings back to their previous selection and click the *Submit button*.



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

- **Pull:** Using this method, the Cisco Digital Media Encoder 2000 begins to generate broadcast packets as soon as you start the encoding. However, this method 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:** In this method, the Cisco Digital Media Encoder 2000 maintains a secure connection to Windows Media Server. This connection allows it to pass a user name and password to authenticate access to the server.

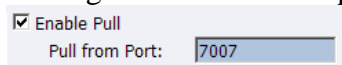
To enable clients to pull the stream from the Cisco Digital Media Encoder 2000, you simply set up a session and begin broadcasting directly from the Cisco Digital Media Encoder 2000. Clients (Windows Media servers or players) can connect to the stream at any time by using the following one of the following URL formats:

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

NOTE: The greater the numbers of direct connections to the Cisco Digital Media Encoder 2000, the more system resources are required. It is not recommend having players connect directly to the Cisco Digital Media Encoder 2000. Streaming servers should connect to the Cisco Digital Media Encoder 2000 and, in turn, players should connect to the servers.

Select the **Enable Pull** check box. Then enter a port number, which will be used by the server to pull the stream from the Cisco Digital Media Encoder 2000.

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



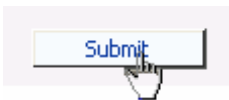
Select **Enable Push** and enter a **port number** not assigned to another encoder. Then enter the **server name** or **IP address**, **Alias** (optional), **user name**, and **password**.

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 Cisco Digital Media Encoder 2000 to reserve its system resource 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.



Digital Rights Management (DRM) for Windows Media

You can protect your content using a technology called **Digital Rights Management (DRM)**. Niagara SCX allows you to encrypt your content with DRM technology while you are encoding. You can apply DRM while encoding to a file and when broadcasting a stream. Users will be required to obtain a license to play the content. This license contains the key to unlock the content and the rights that govern its use.

NOTE: Licenses are issued by a third-party license provider, so you must set up an account with a third-party license provider to protect your content.

Niagara SCX automatically detects any available DRM profiles imported on the encoding system. If there are no DRM profiles installed, the DRM functions in Niagara SCX are disabled. In order to enable the DRM function in Niagara SCX, you must do the following:

- 1) Set up an account with a third-party license provider and create a DRM profile.

- 2) Import the DRM profile using the Windows Media Encoder application included with Niagara Streaming Systems or available as a free download from Microsoft Corporation (<http://www.microsoft.com>).
- 3) Restart the encoding system on which Niagara SCX is installed, allowing the software to auto-detect and enable its DRM functions.

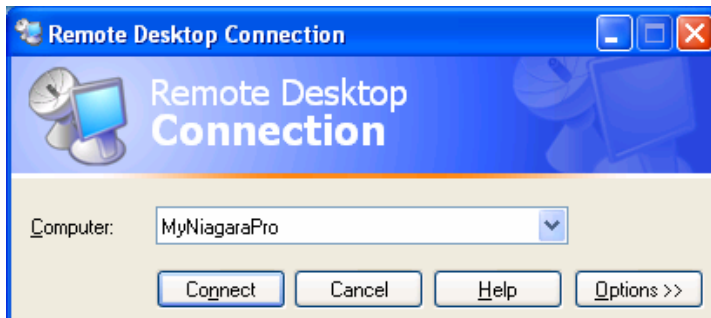
Importing a DRM Profile

If you have not already done so, set up an account with a licensed provider and **create a DRM profile**. Once the DRM profile is created, you must use **Windows Media Encoder** to import the profile on the encoding system.

Windows Media Encoder is included in Niagara Streaming Systems that have Niagara SCX version 5.0 or later installed. To access the desktop of the Cisco Digital Media Encoder 2000, use Windows Remote Desktop Connection on a computer that resides on the same network.

IMPORTANT: When connecting to a Cisco Digital Media Encoder 2000 using a **Remote Desktop Connection**, it is extremely important you set the **Local Resources** to **Leave at remote computer** before connecting to the system.

To set this appropriately, open **Remote Desktop Connection** and enter the machine IP address or hostname.



Click the **Options button** so the settings tabs are viewable. Click the **Local Resources** tab. Under the **Remote computer sound setting**, change the drop-down selection to the **Leave at remote computer option**.



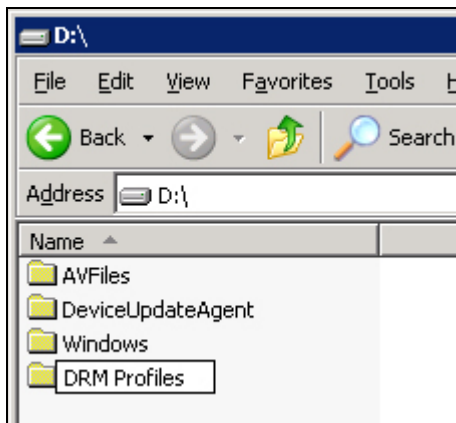
You may then enter the *username* and *password* to access the Cisco Digital Media Encoder 2000.

The username is **Niagara** and the password is **password** for connecting to the Cisco Digital Media Encoder 2000 using remote desktop.

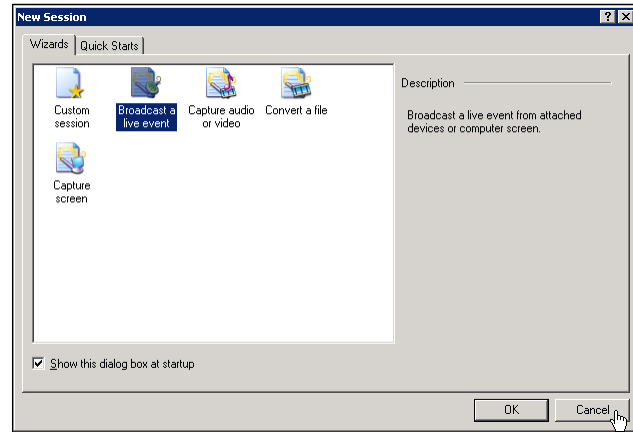
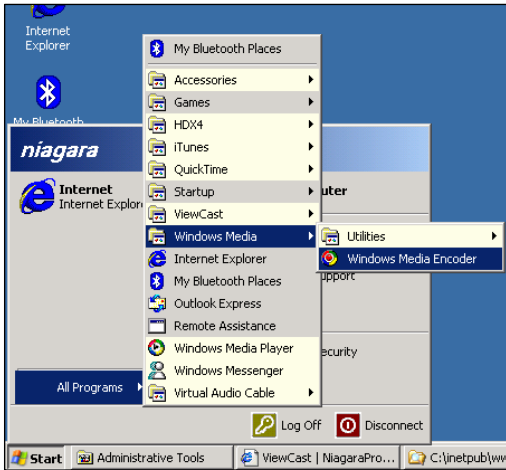
IMPORTANT: When exiting from *Remote Desktop Connection*, **DO NOT LOG OUT**. Instead, **DISCONNECT** from the Cisco Digital Media Encoder 2000. This allows its internal programs to continue running.

Next, complete the following steps:

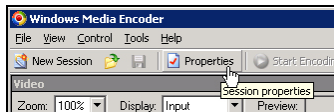
- Copy the DRM profiles to a protected location on the encoding system to ensure they will not be accidentally removed or erased. ViewCast recommends you create a new directory on the D drive on the Cisco Digital Media Encoder 2000 and use this directory to store your DRM profiles.



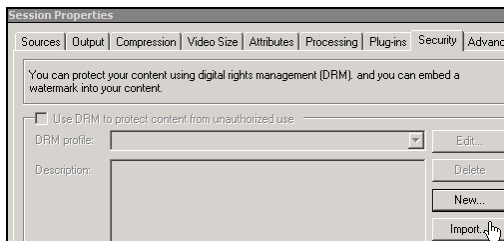
- Start the Windows Media Encoder application on the Cisco Digital Media Encoder 2000. When the New Session Wizard appears, click the Cancel button.



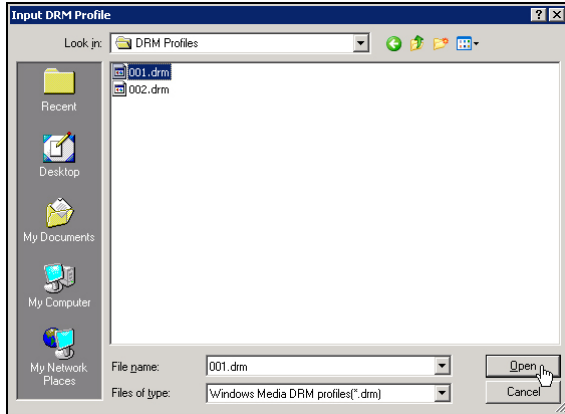
- Click the Properties button under the top menu bar.



- Click the *Security* tab.



- Click the *Import* button and browse to the location of the DRM profiles on the system's hard drive. Select the DRM profile you wish to import and click the *Open* option.



- Repeat this process for each DRM profile you wish to import.
- Exit from the Windows Media Encoder application when finished. If you are asked if you want to save your encoding session, select the *No option*.
- Disconnect Remote Desktop Connection from the Cisco Digital Media Encoder 2000. Do not log out.



- Restart Cisco Digital Media Encoder 2000.

Setting a DRM Profile in SCX Web Interface

To set the DRM Profile using the Cisco Digital Media Encoder 2000's SCX Web Interface, complete the following steps:

- Either add or edit an existing Windows Media Encoder from the *All Encoders page*.
- To enable DRM, select the *Enable check box* and select the *DRM profile* you wish to apply from the *DRM Settings* drop-down menu.

Streaming to a File

Output to file Index the file default folder

...

Enabled **DRM Settings** (Windows Media only)

Profile: ▼

Description: buy key for unlimited playback. 12.99

Key:

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

NOTE: When you enable DRM, Niagara SCX will automatically change the *Windows Media Capture Profile setting* to a *DRM-compatible Windows Media 9 setting*. You might need to adjust this setting after you enable DRM.

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.



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

Encoders

This page allows you to perform encoder setup and removal.



Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 7

Name	Description	Last Status	Streaming	Preset
Edit Del Flash	Flash Encoder	OK	Stopped	
Edit Del Full AVI	AVI Encoder Driver	OK	Stopped	C
Edit Del Full_Real_1Mb	Helix Producer Encoder	OK	Stopped	
Edit Del Full_WM_2Mb	Windows Media Encoder	OK	Stopped	A
Edit Del WME	Windows Media Encoder	OK	Stopped	B
Edit Del WME2	Windows Media Encoder	OK	Stopped	
Edit Del wme3	Windows Media Encoder	OK	Stopped	






Delete an Existing Encoder

To delete an existing encoder listed, click the **Del link** next to the name of the encoder you wish to remove. The encoder profile with its settings will be immediately removed from the Cisco Digital Media Encoder 2000.

Edit	Del	Full AVI	 AVI Encoder Driver	OK
Edit	Del	Full_Real_1Mb	 Helix Producer Encoder	OK
Edit	Del	Full_WM_2Mb	 Windows Media Encoder	OK

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

NiagaraPro Encoders | Total records : 7

Name	Description	Last
Edit Del Flash	 Flash Encoder	Encoder stopped
Edit Del Full AVI	 AVI Encoder Driver	OK
Edit Del Full_Real_1Mb	 Helix Producer Encoder	OK
Edit Del Full_WM_2Mb	 Windows Media Encoder	OK
Edit Del WME	 Windows Media Encoder	Encoder started

Name: Stopped  Windows Media Encoder 

<p>Video Settings</p> <p><input checked="" type="checkbox"/> Source: Osprey-560 Video Device 1.1</p> <p>Input: Composite</p> <p>Signal: NTSC_M</p> <p>Proportions: Standard</p> <p>Size: FULL 640x480</p>	<p>Audio Settings</p> <p><input checked="" type="checkbox"/> Source: Osprey-560 Audio Device 1</p> <p>Input: Unbalanced</p>	<p>Preset</p> <p>None</p>
--	--	----------------------------------

Bottom

Streaming Properties

Windows Media Capture Profiles:
 Windows Media 9 (2M)
 30 of 56 Use this profile for high quality audio/video content intended for local playback or for download and playback.

Enable Pull
 Pull from Port:

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

Enable Scripting

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

Output to file Index the file
 File Name: default folder

Enable DRM

DRM Settings (Windows Media only)

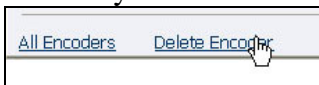
Profile:
 Description: None
 Key: N/A

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

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

[Top](#)

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



NOTE: You cannot restore a deleted encoder. You must recreate the encoder using the **Add Encoder link** at the top right-hand corner of the **All Encoders page**.

Create an Encoder

The Cisco Digital Media Encoder 2000 by default has encoding profiles loaded and ready for use. You can create a new encoder for your custom streaming requirements.

Click the **Add Encoder link** in the upper right corner of the screen.

Encoders
 This page allows you to perform encoder setup and removal.
 Last Updated **4:07:46 PM**

Auto refresh page [Add Encoder](#)

On the next screen, select the encoder type from the drop-down menu.

Add a new Encoder to the Niagara SCX Server. Select the type of encoder and enter the name.

Encoder Type:

Encoder Name:

- Flash Encoder Driver
- MPEG4 Encoder Driver
- Real Producer Encoder Driver
- Windows Media Encoder Driver

[All Encoders](#)

There are five different types of encoders installed in the Cisco Digital Media Encoder 2000, as follows:

- **AVI** – An uncompressed audio and video file format
- **Flash** – An audio and video file format typically embedded in Flash-authored interactive content
- **MPEG-4** – An audio and video file and streaming format
- **RealVideo** – An audio and video file and streaming format
- **Windows Media** – An audio and video file and streaming format

For example, after you have made your selection as to the type of encoder you want to create, give the encoder a unique name. Keep in mind only the first 11 characters of the encoder can be displayed on the Cisco Digital Media Encoder 2000 LCD display. Click the **Add Encoder button** when finished.

Add a new Encoder to the Niagara SCX Server. Select the type of encoder and enter the name.

Encoder Type:

Encoder Name:

[All Encoders](#)

You then see the Encoder Properties / New Encoder Added page.

Name: Stopped Windows Media Encoder

Video Settings	Audio Settings	Preset
<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Video Device 1.1"/>	<input checked="" type="checkbox"/> Source: <input type="text" value="Osprey-560 Audio Device 1"/>	None
Input: <input type="text" value="Composite"/>	Input: <input type="text" value="Unbalanced"/>	
Signal: <input type="text" value="NTSC_M"/>		
Proportions: <input type="text" value="Standard"/>		
Size: <input type="text" value="FULL 640x480"/>		

Bottom

Streaming Properties	Advanced Streaming Settings
<p>Windows Media Capture Profiles:</p> <p>Windows Media 9 (2M) ▼</p> <p>30 of 56 Use this profile for high quality audio/video content intended for local playback or for download and playback.</p>	
<p><input checked="" type="checkbox"/> Enable Pull</p> <p>Pull from Port: <input type="text" value="7007"/></p>	<p><input checked="" type="checkbox"/> Enable SimulStream</p> <p><input type="checkbox"/> Enable multiple instances for each filter</p> <p>Show <input type="text" value="5"/> filters per device.</p>
<p><input type="checkbox"/> Enable Push</p> <p>Push to Port: <input type="text" value="80"/></p> <p>Server : <input type="text"/></p> <p>Alias: <input type="text"/></p> <p>User Name: <input type="text"/></p> <p>Password: <input type="text"/></p>	<p>Deinterlace</p> <p>Type: <input type="text" value="Auto"/> ▼</p>
<p><input type="checkbox"/> Enable Scripting</p>	<p>Motion Threshold</p> <p><input checked="" type="radio"/> Smooth <input type="radio"/> Sharp</p> <p>Value: <input type="text" value="17"/></p>
	<p>Streaming to a File</p> <p><input type="checkbox"/> Output to file <input checked="" type="checkbox"/> Index the file</p> <p>File Name: <input type="text" value=""/> ... default folder</p>
	<p><input type="checkbox"/> Enable DRM</p> <p>DRM Settings (Windows Media only)</p> <p>Profile: <input type="text" value="None"/> ▼</p> <p>Description: None</p> <p>Key: N/A</p>
<p>Note: Changing the capture profile may change the current video height/width settings as well as the audio/video input capture selection.</p>	
<p>All Encoders Delete Encoder</p>	<p><input type="button" value="Submit"/> Top</p>

You can then return to the *All Encoders page*. The new encoder you created is added to the encoder list. You can then edit that encoder by clicking the *Edit link* next to the encoder name. Read previous section entitled the *Edit Encoder* for information on how to edit the encoder you just created.

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

Auto refresh page [Add Encoder](#)

NiagaraPro Encoders | Total records : 6

Name	Description	Last Status	Streaming	Preset
Edit Del AVI	AVI Encoder Driver	Encoder Stopped	Stopped	
Edit Del Flash	Flash Encoder	Stopped	Stopped	
Edit Del MPEG	MPEG4 Encoder Driver	Encoder Stopped	Stopped	A
Edit Del Real	Helix Producer Encoder	OK	Stopped	
Edit Del REAL PRODUCER	Helix Producer Encoder	OK	Stopped	
Edit Del WM Encoder	Windows Media Encoder	OK	Stopped	

Encoder Preset (A, B, & C)

The Cisco Digital Media Encoder 2000 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. The controls to configure these buttons are located in the *Encoder Preset A*, *Encoder Preset B*, and *Encoder Preset C* pages.

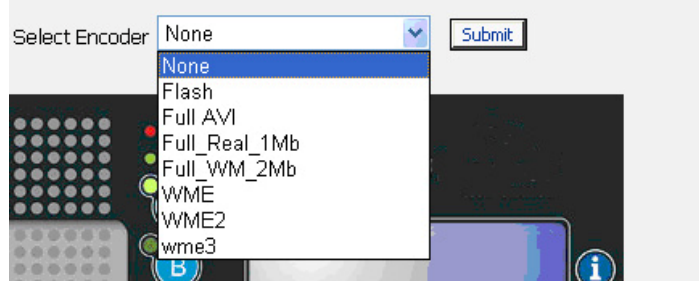
When you access the *Encoder Preset A page*, you are presented with the configuration option for the *EZStream A button*. On this page is a graphic representation of the front panel of the Cisco Digital Media Encoder 2000. The *A button* is highlighted on this graphic, which sets forth you are actively 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**.

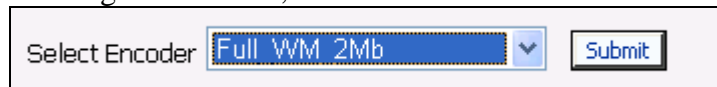
Select Encoder

The **Select Encoder field** provides a drop-down menu, which presents the complete list of all encoders available on the Cisco Digital Media Encoder 2000.

of the encoder. Select an Encoder for the preset or select 'None' to deactivate. If a selection is made, pressing the NiagaraPro button will show a message reminding you



To assign an encoder, select an encoder from the list and click the **Submit button**.



The Web page will update the **Preset A EZStream button** and report success in the form of a dialog box such as the one shown directly below.



By clicking on the **B** and **C** buttons on the Cisco Digital Media Encoder 2000 graphic, you can assign encoders to those **EZStream** buttons in the same way.



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, Cisco Digital Media Encoder 2000 will remove the association to the previous button in favor of the most current request.

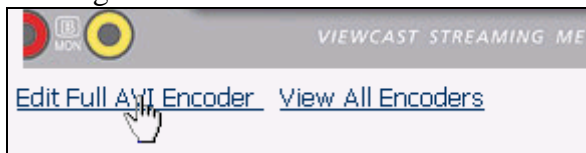
View All Encoders

After assigning encoders to the **A**, **B**, and **C** buttons, the **Presets** column on the **All Encoders** page is updated to reflect these changes. To view these changes, click the **All Encoders** link at the bottom of the page.



Edit Preset Encoder Profile

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



Machine Properties

Machine Properties

Computer Name:	<input type="text" value="NP073901"/>	Click to change name
Windows Version:	5.1.2600.131072	
Service Pack:	Service Pack 2	
	Reboot Now	
NiagaraPro Properties:		
User Name:	<input type="text" value="admin"/>	
Serial Number:	<input type="text" value="NP073901"/>	
Fixed Hard Drive:		
C:\	1,079.00 MB free out of 2,051.00 MB	
D:\	88,803.00 MB free out of 91,142.00 MB	
E:\	18.00 MB free out of 195.00 MB	
F:\	832.00 MB free out of 1,996.00 MB	
Memory:	607.00 MB bytes free out of 1,022.00 MB	
Software Versions:	Web 5.2.180.0	
	SKU#: 92-00314-05	
	<ul style="list-style-type: none"> • VCST.Scx.Common.dll Version: 5.2.180.0 • VCST.Scx.EncodersLib.dll Version: 5.2.180.0 • VCST.Utility.Diagnostics.dll Version: 1.0.0.2 • VCST.Utility.SystemInfo.dll Version: 5.2.181.0 • VCST.Scx.GoStream.Data.dll Version: 5.2.180.0 • VCST.UtilityLib.dll Version: 5.2.180.0 	
Software Update History - None		

The *Machine Properties* 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, there are two fields that allow modifications, as follows:

- Computer Name
- Admin password

Computer Name

The *Computer Name field* contains the current network name for the Cisco Digital Media Encoder 2000. This is the same name 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.

Computer Name:	<input type="text" value="NP073404"/>	Click to change name
Windows Version:	5.1.2600.131072	
Service Pack:	Service Pack 2	
	Reboot Now	

The screen will refresh and now the *Computer Name field* is an editable text field. Type in a new name for the Cisco Digital Media Encoder 2000.

Computer Name:	<input type="text" value="MyNiagaraPro"/>
-----------------------	---

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

<input type="button" value="Submit"/>	<input type="button" value="Reset"/>
Note: Changing the computer name will require the system to be rebooted.	

The page will refresh and you will be prompted to reboot the Cisco Digital Media Encoder 2000. 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.

Machine Properties
Computer name changed.
Please reboot the system to apply the changes. [Reboot Now](#)

Computer Name:	MyNiagaraPro
Windows Version:	5.1.2600.131072
Service Pack:	Service Pack 2

While the Cisco Digital Media Encoder 2000 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 **Friday, September 5, 2007, 6:00:42 p.m.**

NOTE: The restart process takes approximately two minutes to complete.

When the Cisco Digital Media Encoder 2000 has restarted, you will be returned to the ***Login screen***.

NOTE: If you close your Web browser and later want to log into the ***SCX Web Interface***, you will need to use the new computer name you created to access Cisco Digital Media Encoder 2000.

Cisco Digital Media Encoder 2000 Properties

The Cisco Digital Media Encoder 2000 ***Properties section*** has two fields, the ***User Name field*** and the ***Serial Number field***. Only the ***User Name field*** allows modification, which changes the ***User Password*** from the factory default.

NiagaraPro Properties:

User Name:	admin
Serial Number:	NP073404

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 ***SCX Web Interface***.

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

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

NOTE: The *SCX Web Interface password* is case sensitive.

Change your password for the NiagaraPro web login.

•

Passwords are case sensitive

Change Your Password

User Name:

Password:

New Password:

Confirm New Password:

[Back to home page](#)

Then click the **Change Password button**. You will then be presented with the results in the form of a dialog box such as the one shown directly below.

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 **Restore Factory Defaults** in the *System Configuration section* in the following sections.

Alerts

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	

This page allows you to control how the Cisco Digital Media Encoder 2000 handles application alerts that may occur during streaming or other operations. The Cisco Digital Media Encoder 2000 can optionally send an email to multiple recipients and light the alarm light on the front panel of the Cisco Digital Media Encoder 2000.

Email Alert

You can optionally send an email alert to a 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 to send, and your email server username, password, and server name. For more information about configuring the Cisco Digital Media Encoder 2000 to send email alerts, see the **System Configuration section** in the following sections.

Alarm Light

Checking the **Light Alarm box** will instruct the Cisco Digital Media Encoder 2000 to light the front panel alarm light.

Edit Alert Settings

To edit the settings for each alert listed, click the **Edit link** in the row of the alert you wish to modify.

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

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	
Update Cancel	<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	

Please see The Help, or “i” Button, the Niagara SCX Web Interface, and their Alert Settings later in this user guide.

Network Properties

The **Network Properties page** provides detailed information on the Cisco Digital Media Encoder 2000’s current network settings for the Network Interface Card (NIC).

(TCP/IP) Network Properties


Network Card(s) Primary NIC ▼

Description: Broadcom NetXtreme Gigabit Ethernet #2 - Packet Scheduler Miniport

Obtain an IP address automatically
 Use the following IP information

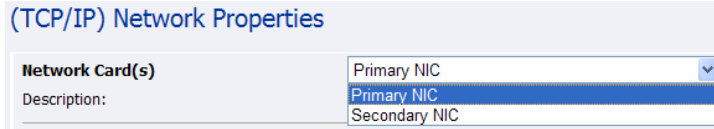
IP Address:
 Subnet Mask:
 Default Gateway:
 Preferred DNS Server:
 Alternate DNS Server:

Advanced Settings on [NP073901](#)

MAC Address: 00:E0:81:47:C0:DF
 Primary WINS Server: 0.0.0.0
 Secondary WINS Server: 0.0.0.0
 Active Network Link: 

Network Card(s)

The Cisco Digital Media Encoder 2000 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 Cisco Digital Media Encoder 2000 *network name*, *MAC Address* and *server IP address settings*.



The Cisco Digital Media Encoder 2000 network name is a link. If you click this link, you will be directed to the *My Cisco Digital Media Encoder 2000 page*. From this page you can change the Cisco Digital Media Encoder 2000's *network name*. For more information, see the preceding section entitled *Computer Name*.

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

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

System Configuration Settings

The *System Configuration Settings page* allows you to modify your Cisco Digital Media Encoder 2000 default system settings. You can configure email settings so the Cisco Digital Media Encoder 2000 can send an email to predefined email addresses whenever the Cisco Digital Media Encoder 2000 encounters an alert condition. You can also customize the information the Cisco Digital Media Encoder 2000 displays on its front panel when the system is idle.

This page also provides the ability to restore your Cisco Digital Media Encoder 2000 to its original factory disk image returning all of the system settings to their original states. Using the **Factory Restore option** will remove all custom settings and takes approximately 10 minutes to complete.

[Home](#) [Encoders](#) [Configuration](#) [Status](#) [Log Out](#)

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. [Restore NiagaraPro Factory Defaults](#)

System Configuration Settings

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 Cisco Digital Media Encoder 2000 Factory Defaults

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

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. [Restore NiagaraPro Factory Defaults](#)

[System Configuration Settings](#)

The next screen gives details of the process 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](#)

NOTE: Restore to Factory Defaults rebuilds the Cisco Digital Media Encoder 2000 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 but you can manually re-enter your custom settings once the Cisco Digital Media Encoder 2000 restore process is completed.

NOTE: The default directory for saving your audio and video files is D:\AV Files\. When using the **Restore to 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

Email Settings:	
Send Emails To:	<input type="text"/>
Email From:	<input type="text"/>
Subject:	<input type="text" value="System Status Report on PSPC07181"/>
SMTP (Mail) Settings:	
User Name:	<input type="text"/>
Password:	<input type="password"/>
SMTP Host:	<input type="text"/> Save and Send Test Email

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

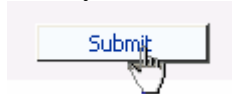
To configure the **email settings**, you will need to enter the following information:

- 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

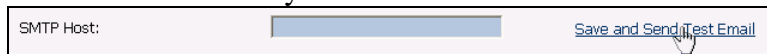
NOTE: For security purposes, the password for your account will not be displayed once it has been entered into the *settings*. Even though this field will appear blank after you click the **Submit button**, the password information has been retained.

NOTE: If you change any information on this page, 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 then test your settings by clicking the **Send Test Email link**. The page will report if the email was successfully sent or if it failed to send.



Idle Screen Information

This section allows you to modify the information displayed on the front panel display of the Cisco Digital Media Encoder 2000 LCD.

Check the boxes next to the various information you want 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. You can customize this message.

Idle Screen Information:

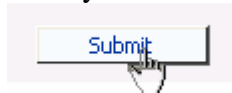
Cycle this information in the display when NiagaraPro is idle.

<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:
Note: Each line in the display is 20 characters.

<input type="text" value="System is Ready"/>	Line 1
<input type="text"/>	Line 2
<input type="text"/>	Line 3
<input type="text"/>	Line 4

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



Default Directory Setting

NOTE: It is strongly recommended you do not alter this default 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 Cisco Digital Media Encoder 2000, these files could be deleted if you use the **Restore to Factory Defaults feature**.

NOTE: Only drive (D:) on the Cisco Digital Media Encoder 2000 has available storage to save your files. This drive has approximately 85 Gigabytes of storage capacity.

NOTE: Drives (C:), (E:), and (F:) are used strictly for Cisco Digital Media Encoder 2000 operational programs. Any modifications to these drives can permanently damage your system and void your warranty.

The Default AV Folder is the directory on which the Cisco Digital Media Encoder 2000 stores AV files created whenever you select the *Save to File option* in an encoder profile. Refer to the *Save to File option* under *AVI, Flash, Real*, and the *Windows Media Encoder Properties section* for information on setting an encoder profile to create an AV file.

*Default AV Folder: 

High Temperature Alert

You can enable an alert if the Cisco Digital Media Encoder 2000 reaches a predefined maximum temperature level. To set the level, select the drop-down menu.

The *Alert Configuration links* to the *Cisco Digital Media Encoder 2000 Alerts page*. Refer to the previous sections for information on setting the *Cisco Digital Media Encoder 2000 Alerts*.

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

View Activity Log


The *Activity Log* records all operational activity such as general activities that include starting an encoder or stopping an encoder. The *Activity Log* includes activities that generate warnings and errors.


You can view these activities by filters showing only the *General activities*, the *Warning activities* or the *Error activities*.


Click the *Clear Activity Log button* to remove all entries.

NOTE: Once an activity has been cleared from the log, it cannot be retrieved.

Activity Log

View Activity Types: 

 [Clear Activity Log](#)

Activity Log | Total records : 29 

Created	Type	Description
11/9/2006 9:49:09 AM	General	Full_WM_2Mb Stopped
11/9/2006 9:49:07 AM	General	Encoder Stopped Encoder Full_WM_2Mb Stopped
11/9/2006 9:49:02 AM	General	Full_WM_2Mb Stopping
11/9/2006 9:48:14 AM	General	Full_WM_2Mb Started
11/9/2006 9:48:12 AM	General	Encoder Started Encoder Full_WM_2Mb Started

View Alerts

All alerts that are defined on the *Cisco Digital Media Encoder 2000 Alerts page* are logged on the *View Alerts page* when those alerts occur. Once a user has cleared the alert using the **Help, or i button**, on the front panel of the Cisco Digital Media Encoder 2000, the alert is cleared from the *View Alerts log page*.

Alerts | No NiagaraPro alerts at this time.

Alternatively, the Cisco Digital Media Encoder 2000 system informs you of an alert when the **Alarm Indicator Light** on the front panel of the system turns red. When this occurs on the Cisco Digital Media Encoder 2000, to determine what the alert is, you must press the **Help, or “i,” button**, which will cycle the alert occurring.

Please see the The Help, or “i,” button, the Niagara SCX Web Interface, and their Alert Settings section set forth later in this document.

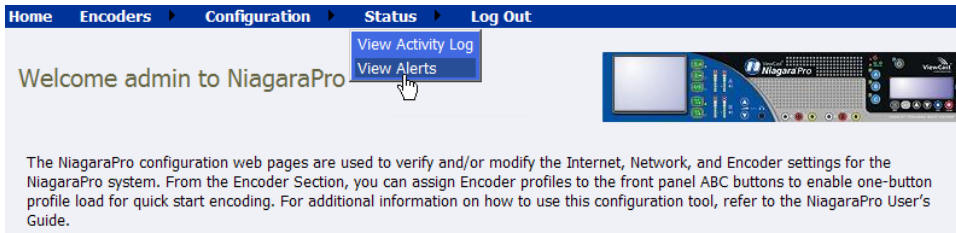
The Help, or “i” Button, the Niagara SCX Web Interface, and their Alert Settings

The **Help button, or “i,” button**, on the front panel of the Cisco Digital Media Encoder 2000, as stated above, allows you to view the alerts currently occurring in the Cisco Digital Media Encoder 2000. Directly below is a diagram of the **Help, or “i,” button**, which is located on the front panel of the Cisco Digital Media Encoder 2000. The **Help, or “i,” button** allows you to view alerts of many types that can occur on the Cisco Digital Media Encoder 2000 based on the types of alerts you request of the system to notify you.



NOTE: An alert is not necessarily an indication of a fault occurring. You might want to be made aware of changes in the system, which have nothing to do with errors that could occur on a Cisco Digital Media Encoder 2000. For example, you might want a notification set to signal you as to when an encoder has started or when as to when an encoder has stopped.

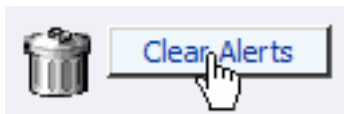
To view alerts occurring, you have a choice to view the alerts through use of the Cisco Digital Media Encoder 2000 or the Niagara SCX Web Interface. If you use the Web Interface, the following is the first page of the Niagara SCX Web Interface you will see to **View Alerts**.



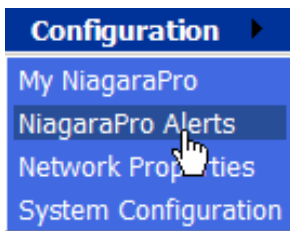
Any alerts will appear on the Niagara SCX Web Interface, as follows:



Alerts will be available for viewing on the Niagara SCX Web Interface until you clear them by clicking on the **Clear Alerts button**.



To see any alerts, you must have previously set the system to notify you of the alerts by choosing **NiagaraPro Alerts**.



This will bring you to the following screen. To set the alerts for which you want to be notified, you must click a notification method next to the type of alert. You can be notified of alerts, such as the ones indicated below, i.e., exceptions, encoder errors, encoders started, encoders stopped, alarm tests, SCX service stopped, SCX service started, and high temperature alerts, in addition to other alerts you set yourself.

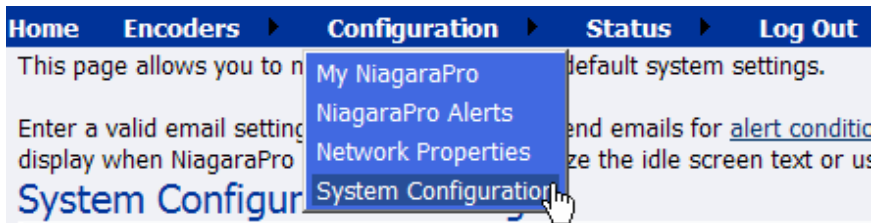
Alerts

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. 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!	

To set your *System Configuration Settings* as to how you want to receive your alerts, please see the figure below. Click on *System Configuration*.



See your Network Administrator to set your email configurations if you decide to receive email alerts.

Home Encoders Configuration Status Log Out

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

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

System Configuration Settings

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 GoStream is idle.

Active IP Computer Name CPU
 Memory Hard Drive Temperature

Idle screen text:
Note: Each line in the display is 20 characters.

Line 1
 Line 2
 Line 3
 Line 4

***Default AV Folder:** ...

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

Alternatively, the Cisco Digital Media Encoder 2000 informs you of an alert when the **Alarm Indicator Light** on the front panel of the system turns red. When this occurs on the Cisco Digital Media Encoder 2000 system, to determine what the alerts are, you must press the **Help, or “i,” button**, which will cycle the alerts occurring. The following screen showing an alert might look as follows:



Alerts will cycle the information in the display when the Cisco Digital Media Encoder 2000 is idle until all alerts have been identified, then the screen will return to its normal system cycling, and the alerts will not be shown again on the Cisco Digital Media Encoder 2000.

