

**DV STREAMING SERVER
IN THE CLOUD**

DVS-200

Instruction manual

www.datavideo.com

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Disclaimer of Product & Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Warnings and Precautions



1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
 - a. When the power cord is damaged or frayed;
 - b. When liquid has spilled into the unit;
 - c. When the product has been exposed to rain or water;

- d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
- e. When the product has been dropped or the cabinet has been damaged;
- f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

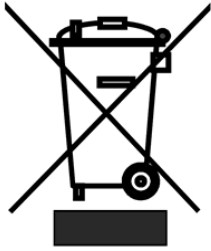
- Datavideo equipment is guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- All accessories including headphones, cables, batteries, metal parts, housing, cable reel and consumable parts are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 qualify for a free two years extension to the standard warranty, providing the product is registered with Datavideo **within 30** days of purchase.
- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Non-PCIe Card and third party provided PC components are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.



Disposal



For EU Customers only - WEEE Marking

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



CE Marking is the symbol as shown on the left of this page. The letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

DVS-100/200 Installation Guide

DVS-100/200 can be installed on any system running the **Ubuntu 14.04 64** bit Linux operating system, the guide below covers some common installation scenarios.

The installation procedure for DVS-100 and DVS-200 is the same. Once installed the software will be running in free mode (DVS-100) you must install a valid licence to enable DVS-200 features.

1. System resource recommendations

The guide below makes some recommendations on system specifications, please use these as guidelines only. We assume one 1Mbps video stream with 96Kbps audio, the max viewer count is per instance (per server).

1.1 On-Premise Installations

8GB of RAM and a SSD (Solid state drive) is recommended for larger audiences, approximate network limitations are as below.

| Network Speed | Viewers (Per Instance) |
|---------------|------------------------|
| 10 Mbps | 8 |
| 100 Mbps | 80 |
| 1000 Mbps | 800 |

Add more instances or additional network interfaces as audience size increases

For encoding / transcoding HD video we recommend a 4 core 7th generation i7 CPU and 8GB ram at minimum.

1.2 Cloud hosting installations

Digital Ocean

Digital Ocean is ideal for scenarios with low viewer counts.

All Digital Ocean instances share a 1Gbps connection to the internet, Digital Ocean recommend consistently not exceeding 300Mbps I/O.

| Hosting Plan | Viewers (Per Instance) |
|--------------|------------------------|
| \$5 USD PM | 50 |
| \$10 USD PM | 150 |

Add more instances as audience size increases

Amazon AWS

| Hosting Plan | Viewers (Per Instance) |
|--------------|------------------------|
| M1.small | 120 |
| M1.medium | 285 |
| m1.xlarge | 570 |

Add more instances as audience size increases

Massive Grid

Massive grid offer affordable dedicated servers with dedicated 1Gbps connectivity.

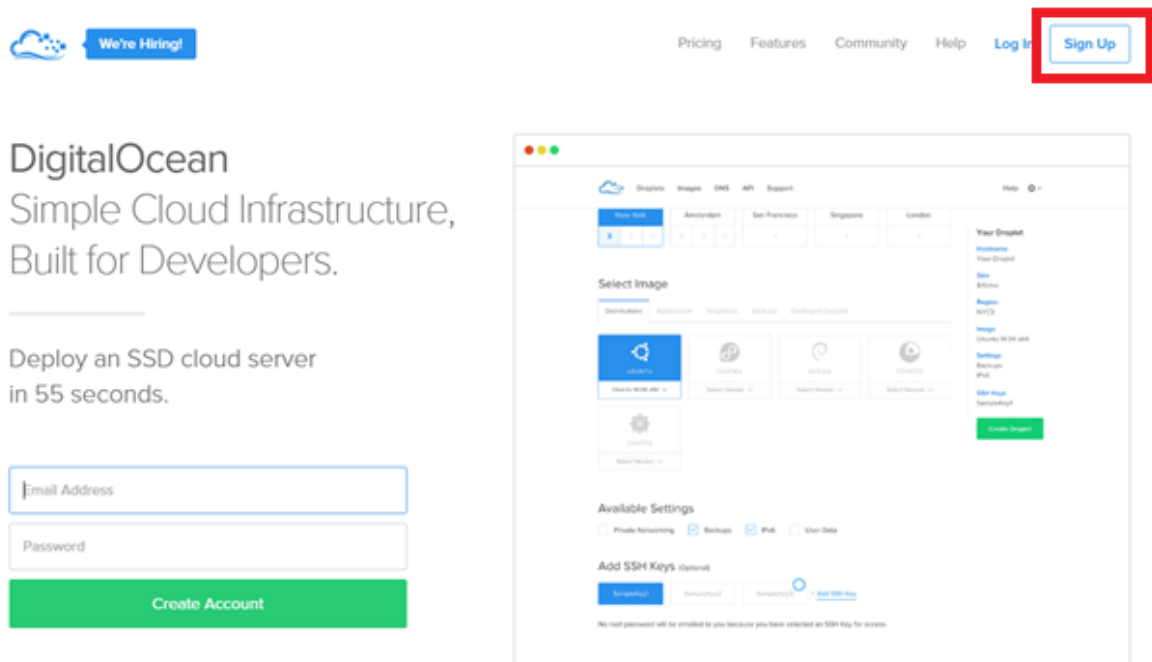
| Hosting Plan | Viewers (Per Instance) |
|---------------------|------------------------|
| Managed Dedicated I | 800 |

Add more instances as audience size increases

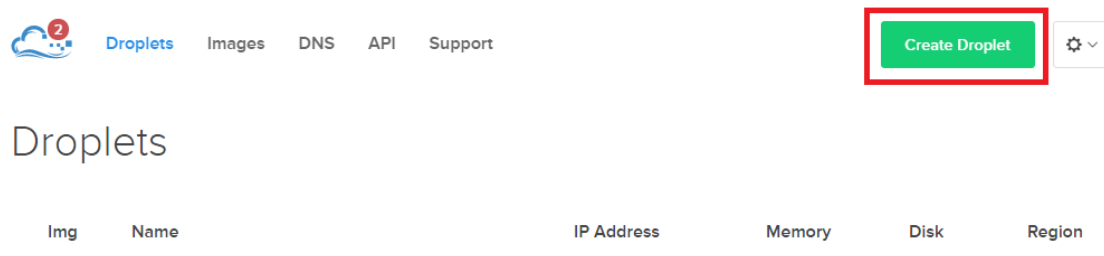
2. Installation Walkthroughs

2.1 Digital Ocean

Visit www.digitalocean.com and sign up for a new account



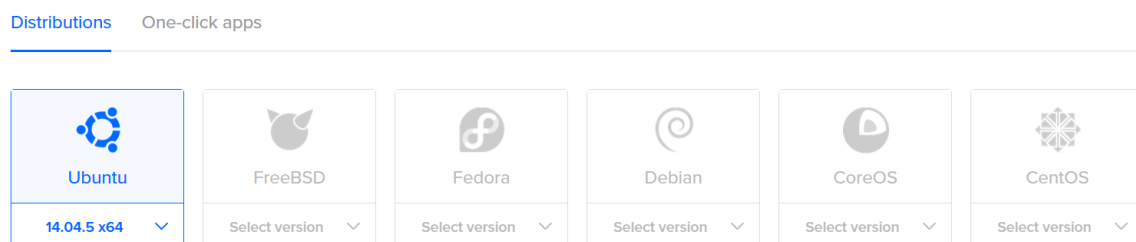
Once you have created your account click the 'Create Droplet' button



You will see the page below.

Finally you need to select an image, please choose **Ubuntu 14.04 x64**.

Choose an image ?








Next choose a size, the size required depends on how many users you need to serve. Use the guide at the beginning of this document to help with selection.

Select Size

| | | | | |
|--|---|---|---|---|
| \$5/mo \$0.007/hour 512 MB / 1 CPU 20 GB SSD Disk 1000 GB Transfer | \$10/mo \$0.015/hour 1 GB / 1 CPU 30 GB SSD Disk 2 TB Transfer | \$20/mo \$0.030/hour 2 GB / 2 CPUs 40 GB SSD Disk 3 TB Transfer | \$40/mo \$0.060/hour 4 GB / 2 CPUs 60 GB SSD Disk 4 TB Transfer | \$80/mo \$0.119/hour 8 GB / 4 CPUs 80 GB SSD Disk 5 TB Transfer |
| \$160/mo \$0.238/hour 16 GB / 8 CPUs 160 GB SSD Disk 6 TB Transfer | \$320/mo \$0.476/hour 32 GB / 12 CPUs 320 GB SSD Disk 7 TB Transfer | \$480/mo \$0.714/hour 48 GB / 16 CPUs 480 GB SSD Disk 8 TB Transfer | \$640/mo \$0.952/hour 64 GB / 20 CPUs 640 GB SSD Disk 9 TB Transfer | |

Next select the region closest to you for best performance.

Select Region

| | | | | |
|--|---|---|--|--|
|  New York 3 2 1 |  Amsterdam 3 2 1 |  San Francisco 1 |  Singapore 1 |  London 1 |
|--|---|---|--|--|

Now check the 'User data box' and copy the text below into the text box.

```
#cloud-config
```

```
runcmd:
```

- wget http://updates.datavideo.co.uk/install-dvss.sh
- bash install-dvss.sh

Please ensure it looks like the image below.

Select additional options ?

☐ Private networking ☐ Backups ☐ IPv6 ☒ User data ☐ Monitoring

```
#cloud-config
runcmd:
- wget http://updates.datavideo.co.uk/install-dvss.sh
- bash install-dvss.sh
```

Finally give your Droplet a hostname (here I have chosen DVSS) and Click create the droplet to finish.

Finalize and create

How many Droplets?

Deploy multiple Droplets with the same [configuration](#).

— 1 Droplet +

Choose a hostname

Give your Droplets an identifying name you will remember them by. Your Droplet name can only contain alphanumeric characters, dashes, and periods.

DVSS

[Add Tags](#)



Create

We are now creating your droplet



Approximately 58 seconds remaining

Once complete the IP address will be shown.

| Name | IP Address | Created ▲ | Tags |
|--|---|----------------|------------------------|
|  ubuntu-512mb-lon1-01 512 MB / 20 GB Disk / LON1 - Ubuntu 14.04.5 x64 | 138.68.169.  | 12 minutes ago | More ▼ |

Simply enter the Droplets IP address into a web browser to access the login page. **If the login page doesn't show please wait 60 seconds for the installation to complete.**

Enter Your Login Credentials

Login Screen

Login User

User Password

Login

The default credentials are:

- **User: admin**
- **Password: 000000**

After logging in you will see the software is running in free (DVS-100) mode, to enable DVS-200 features you need a valid licence. See [Section 5](#) for license installation.

datavideo

Live VOD Stats Users Groups Settings Logout (admin)

Create New Live Channel

Search

Any

| Name | Enabled | RTMP URL + Stream Key | HLS URL | Actions |
|------|---------|-----------------------|---------|---------|
|------|---------|-----------------------|---------|---------|

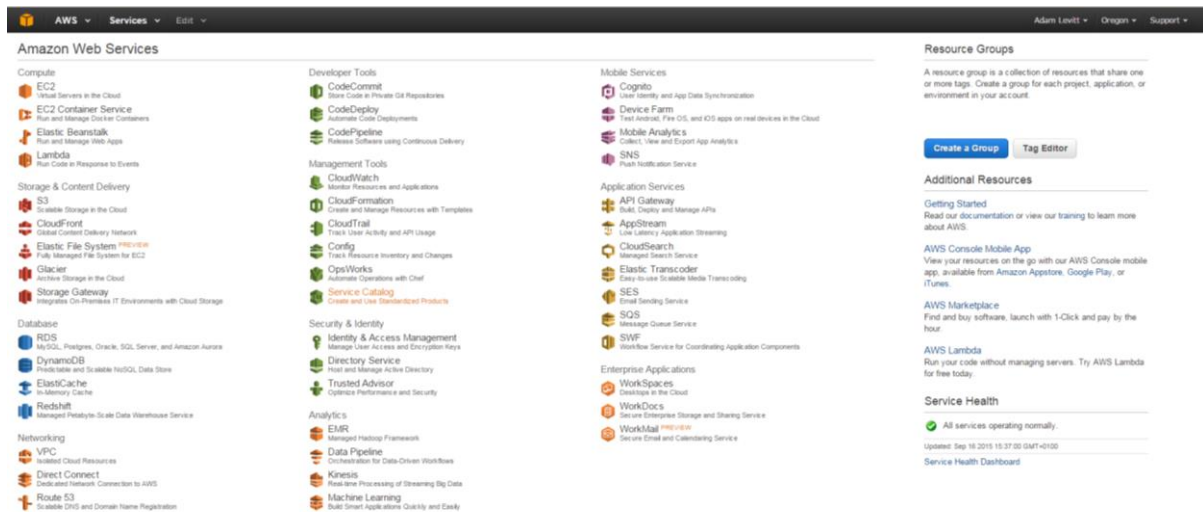
Upgrade to DVS-200

1.12ubuntu25 /free-r26

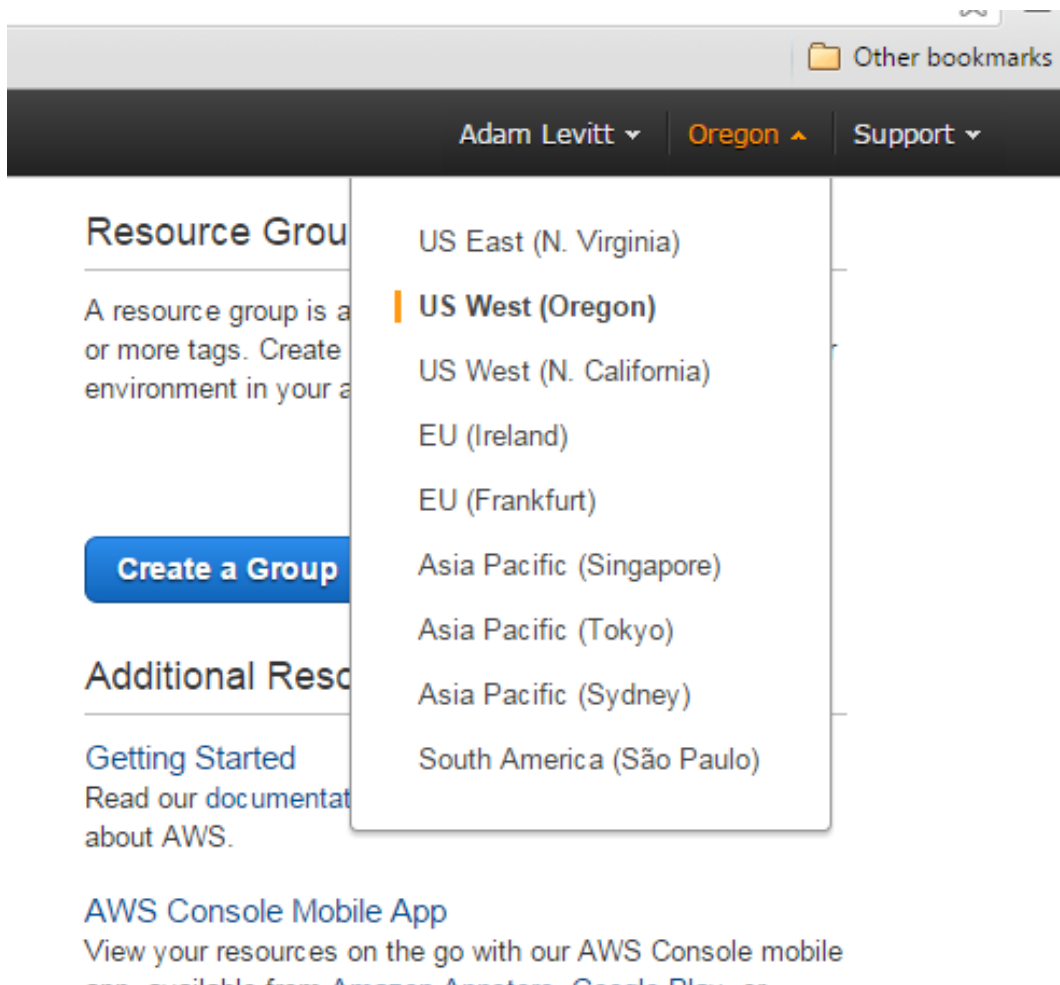
2.2 Installation on Amazon AWS Cloud

Visit <http://aws.amazon.com> and sign up for a new account

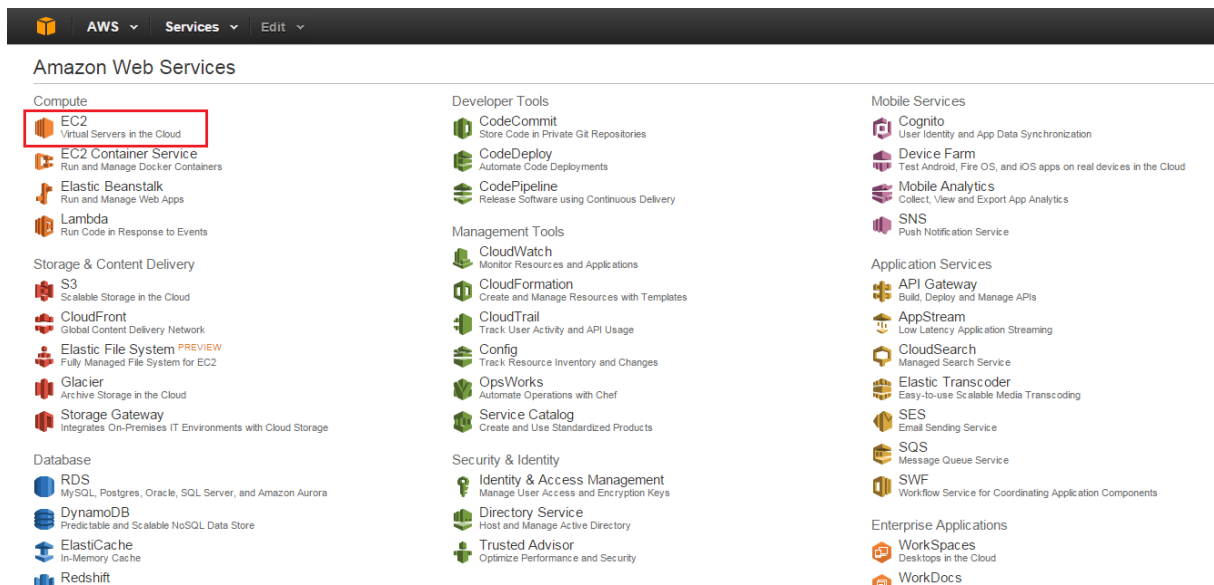
Once you have created your account sign in and you will see the page below



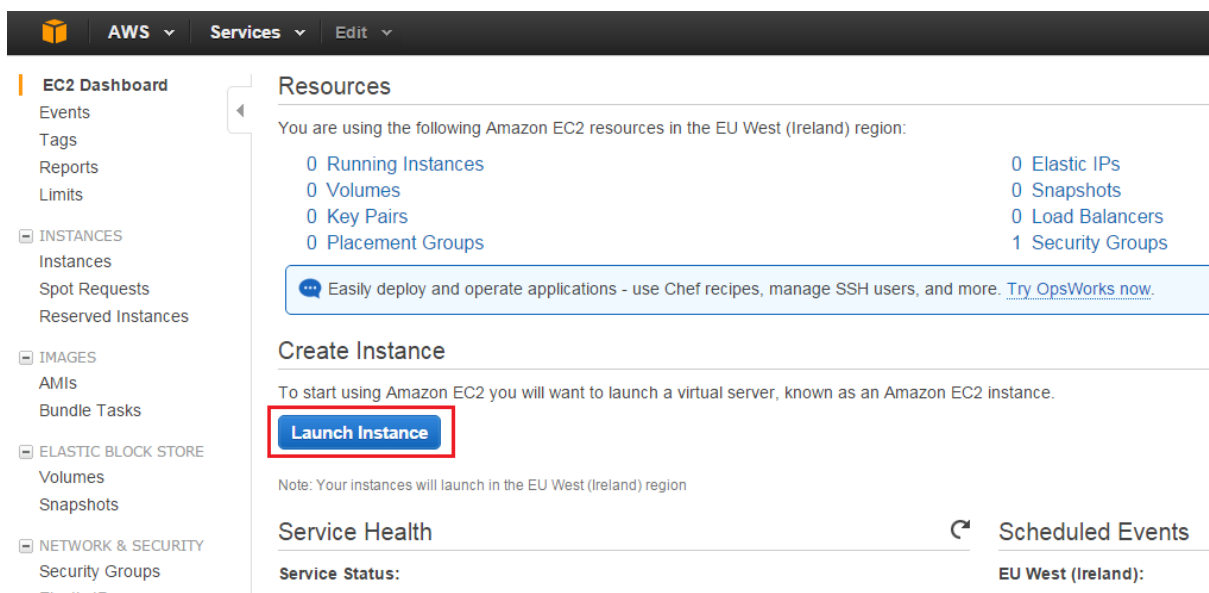
First change the region in the top right corner to the region where you would like to setup your cloud server



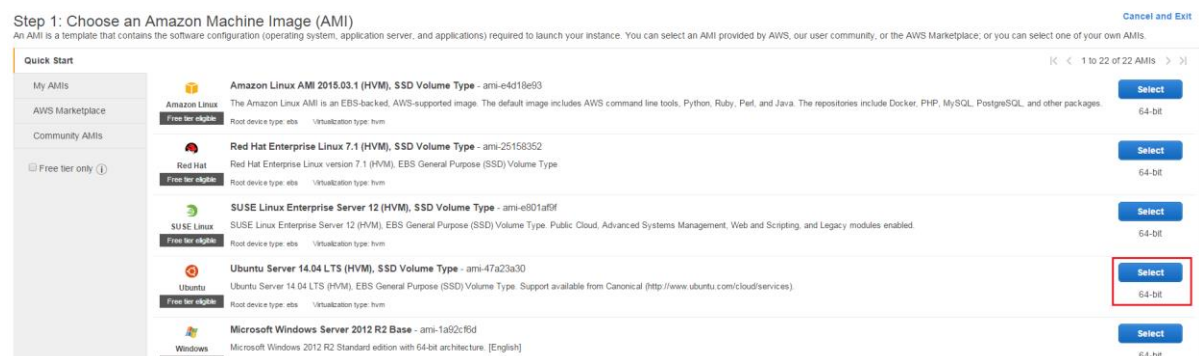
Now click the 'EC2' link under compute to the left of the page



Click the 'Launch Instance' button



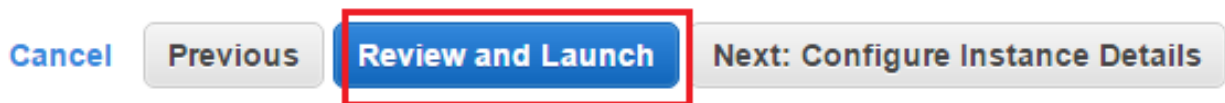
Select the **Ubuntu 14.04 64** bit image as shown below



Now select your instance type, the size required depends on how many users you need to serve. Use the guide at the beginning of this document to help with selection.

| | Family | Type | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|-------------------------------------|-----------------|---|-------|--------------|-----------------------|-------------------------|---------------------|
| <input checked="" type="checkbox"/> | General purpose | t2.micro <small>Free tier eligible</small> | 1 | 1 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | t2.small | 1 | 2 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | t2.large | 2 | 8 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | m4.large | 2 | 8 | EBS only | Yes | Moderate |
| <input type="checkbox"/> | General purpose | m4.xlarge | 4 | 16 | EBS only | Yes | High |
| <input type="checkbox"/> | General purpose | m4.2xlarge | 8 | 32 | EBS only | Yes | High |
| <input type="checkbox"/> | General purpose | m4.4xlarge | 16 | 64 | EBS only | Yes | High |
| <input type="checkbox"/> | General purpose | m4.10xlarge | 40 | 160 | EBS only | Yes | 10 Gigabit |
| <input type="checkbox"/> | General purpose | m3.medium | 1 | 3.75 | 1 x 4 (SSD) | - | Moderate |
| <input type="checkbox"/> | General purpose | m3.large | 2 | 7.5 | 1 x 32 (SSD) | - | Moderate |

Once you have selected an instance type and size proceed and click the 'Review and Launch' button.



Click the 'Edit security groups' link

Step 7: Review Instance Launch
Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

⚠️ Improve your instances' security. Your security group, launch-wizard-1, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

▼ **AMI Details** [Edit AMI](#)

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-47a23a30
Free tier eligible
 Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root Device Type: ebs Virtualization type: hvm

▼ **Instance Type** [Edit instance type](#)

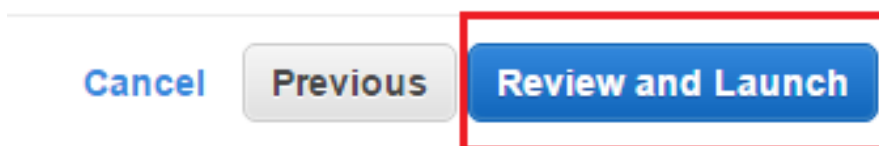
| Instance Type | ECUs | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|---------------|----------|-------|--------------|-----------------------|-------------------------|---------------------|
| t2.micro | Variable | 1 | 1 | EBS only | - | Low to Moderate |

▼ **Security Groups** [Edit security groups](#)

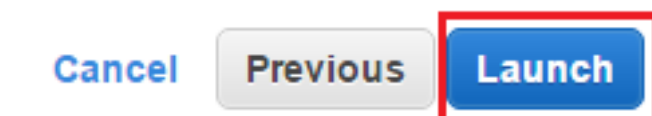
Add two new custom TCP rules for ports 80 and 1935 as shown below.

| Type | Protocol | Port Range | Source |
|-----------------|----------|------------|----------|
| SSH | TCP | 22 | Anywhere |
| Custom TCP Rule | TCP | 1935 | Anywhere |
| Custom TCP Rule | TCP | 80 | Anywhere |

Click the 'Review and launch' button again



Click the 'Launch' button



You will see the prompt below. Choose to create a new key pair and give the key pair a name.

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

DVS100

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. Store it in a **secure and accessible location**. You will not be able to download the file again after it's created.

Cancel Launch Instances

Click the 'Download Key Pair' button and save the file somewhere safe (you will need it later) before clicking the 'Launch Instance' button. You will see the page below, click the 'View Instances' button to proceed.

Launch Status

✓ Your instances are now launching

The following instance launches have been initiated: [i-7d0e2bdc](#) [View launch log](#)

Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

Here are some helpful resources to get you started:

How to connect to your Linux instance

Learn about AWS Free Usage Tier

Amazon EC2 User Guide

Amazon EC2 Discussion Forum

While your instances are launching you can also:

Create status check alarms to be notified when these instances fail status checks. (Additional charges may apply)

Create and attach additional EBS volumes (Additional charges may apply)

Manage security groups

View Instances

Select 'Connect' from the actions menu

Services Edit

Launch Instance Connect Actions

Filter by tags and attributes or search

Name

Instance ID

Availability

i-7d0e2bdc

us-east-1b

Connect

Get Windows Password

Launch More Like This

Instance State

Instance Settings

Image

Networking

CloudWatch Monitoring

9

You will see the prompt below. Follow the instructions to connect to your instance via SSH.

Connect To Your Instance

☐ A standalone SSH client

☒ A Java SSH Client directly from my browser (Java required)

Enter the required information in the fields below to connect to your instance. AWS automatically detects the key pair name, and Public IP for your instance. You need to enter the location and name of the .pem file containing your private key.

Public IP

54.72.253.137

User name

ubuntu

Key name

DVS100.pem

Private key path

eg. C:\KeyPairs\DVS100.pem

Save key location

☐ Store in browser cache

Launch SSH Client

Close

Once connected via SSH execute the following commands on the server.

```
wget http://updates.datavideo.co.uk/install-dvss.sh -O - | bash
```

Once installation is complete enter the instances public IP or public DNS into a web browser to connect to the DVS-200 web interface.

Enter Your Login Credentials

Login Screen

Login User


User Password

Login

The default credentials are:


- **User: admin**
- **Password: 000000**


After logging in you will see the software is running in free (DVS-100) mode, to enable DVS-200 features you need a valid licence. See [Section 5](#) for license installation.



[Live](#) [VOD](#) [Stats](#) [Users](#) [Groups](#) [Settings](#) [Logout \(admin\)](#)

[Create New Live Channel](#)





| Name | Enabled | RTMP URL + Stream Key | HLS URL | Actions |
|------|---------|-----------------------|---------|---------|
|------|---------|-----------------------|---------|---------|

Upgrade to DVS-200

1.12ubuntu25 /free-r26

2.3 Generic Installation Instructions (All Providers)

Automated Script

The following command can be executed on any system running the **Ubuntu 14.04 64** bit Linux operating system.

Ensure the system has internet access and execute the commands below as the root user to install DVS-200.

```
wget http://updates.datavideo.co.uk/install-dvss.sh -O - | bash
```

After a successful installation the stream server's web interface will be running on port 80.

Manual installation (Advanced Users)

Prerequisites

alsa-utils libv4lconvert0 libv4l-0 libv4l2rds0 v4l-utils libasound2 libyaml-0-2 libass4 libmp3lame0 libopencore-amrnb0 libopencore-amrwb0 libopus0 libpulse0 libstdl2-2.0-0 libsoxr0 libspeex1 libva-drm1 libva-x11-1 libva1 libvdpau1 libwavpack1 libx264-142 libxcb-shape0 libxcb-shm0 libxv1 libxvidcore4 libluajit-5.1-2 libluajit-5.1-common libdouble-conversion1 liblz4-1 libpq5 libsnappy1 php5-fpm php5-cli binutils ghostscript gsfonts imagemagick-common libavahi-client3 libavahi-common-data libavahi-common3 libboost-context1.54.0 libboost-filesystem1.54.0 libboost-program-options1.54.0 libboost-regex1.54.0 libboost-system1.54.0 libboost-thread1.54.0 libc-client2007e libcups2 libcupsfilters1 libcupsimage2 libfftw3-double3 libgd3 libgflags2 libgoogle-glog0 libgs9 libgs9-common libijs-0.35 libjasper1 libjbig0 libjbig2dec0 libjemalloc1 libjpeg-turbo8 libjpeg8 liblcms2-2 liblqr-1-0 libltdl7 libmagickcore5 libmagickwand5 libmcrypt4 libmemcached10 libmysqlclient18 libonig2 libpaper-utils libpaper1 libsqlcipher0 libtbb2 libtiff5 libunwind8 libvpx1 libxpm4 libxslt1.1 mlock mysql-common poppler-data php5-curl libgmp10 alsa alsa-tools alsa-utils

Packages

http://updates.datavideo.co.uk/updates/debian/hhvm_3.15.2~trusty_amd64.deb

http://updates.datavideo.co.uk/updates/debian/nginx-dvss_1.8.0-4ubuntu50_amd64.deb

http://updates.datavideo.co.uk/updates/debian/nginx-dvss-webui_1.12ubuntu35_all.deb

http://updates.datavideo.co.uk/updates/debian/ffmpeg_3.1.4+git1~trustyubuntu21_amd64.deb

Hardware I/O Card Support

Datavideo

Datavideo have a range of hardware encoding cards, all are supported by the driver package below.

http://updates.datavideo.co.uk/updates/debian/datavideo+h264+cards_1.1.0.101.637_amd64.deb

Blackmagic Design

We support all Decklink, Mini Monitor and Mini Recorder cards by Blackmagic Design. You must install Desktop Video version 10.8.4 or newer.

3. Web UI Overview

Once you login (Default credentials are User: admin / Password: 000000), there are five options available:.



- Live – Create and manage live streaming channels
- VOD – Create and manage on demand channels
- Stats – View live server statistics
- Users – Create and manage user accounts
- Groups – Create and manage user groups and channel tags
- Settings – Manage global server settings

3.1 Creating a live channel

When creating a new live channel you will be presented with the screen shown below.

Stream Key - __new__(new_channel)

Channel Name: new_channel

Channel Type: Streaming

Channel Description:

Player page title:

Stream Mode: Normal

HLS Streaming: Enabled

Inputs

Friendly Name: Friendly Name Pull URL: Autocomplete URL... Audio: Passthrough Video: Passthrough+ Enabled

Friendly Name: Friendly Name Decklink Source: Disabled Audio: 16 kbps Video: 250kbps/veryfast (baseline.3.1.keyint=250.gop=open) Enabled

Select No Pull Uri

Outputs

Decklink Output: Disabled Enabled

Push URL: Autocomplete URL... Audio: Passthrough Video: Passthrough+ Container: RTMP Action

Access Control

RTMP Publish: Whitelist IP/Subnet

RTMP Play: Whitelist IP/Subnet

Record

You have the following options:

Channel Name

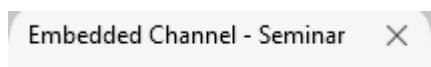
Here you must choose a name for your live channel. The channel name can contain uppercase and lowercase characters but no white space.

Channel Description

Here you can add a brief description of the channels content, this is used by the NVD-30/35 set top boxes.

Player Page title

Here you can change the text that is displayed at the top of the web player's page for this channel only.



HLS streaming

Here you can enable or disable HLS streaming, if HLS is disabled the inbuilt web player is also disabled.

HLS Playlist Type

Here you can select Live or Event, Live mode should be used in most cases. In Live mode the player will play from the end of the HLS playlist (live position) in Event mode the player will always start from the beginning of the Playlist (the start of streaming). When using Event mode you must ensure the HLS playlist length (On the settings page) is set to a value greater than the planned event time.

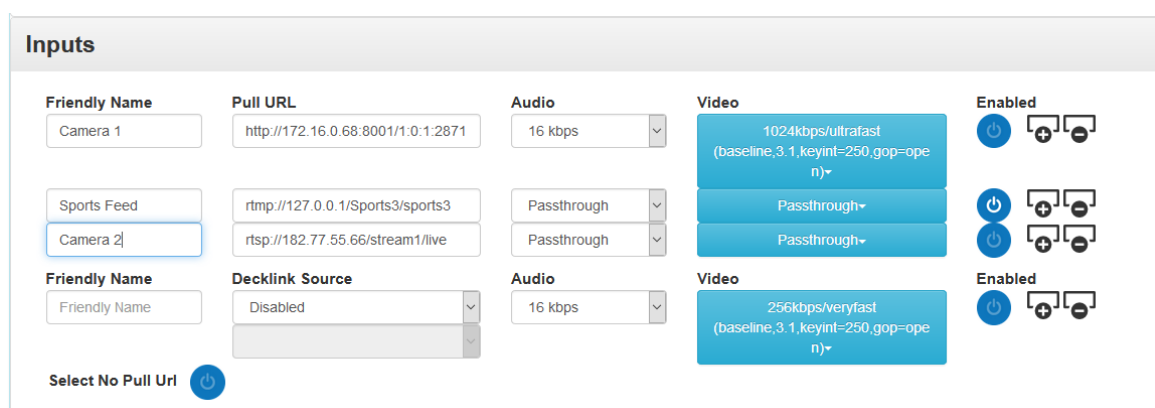
Please Note: Event mode is currently only supported by the NVD-3X in STB mode.

Inputs

Once you have created a live channel you will be given a RTMP URL that will allow any encoder to push live video to the channel. You can also feed your channel by pulling in an existing stream or using an input card from Black magic design.

Pull URL

Here you can pull any existing IP stream into the channel, RTMP, UDP, RTSP and HTTP streams are supported. You can setup multiple source streams and select the one you want to use using the enable/disable buttons on the far right. To stop pulling in any streams select 'Select No Pull URL'.



| Friendly Name | Pull URL | Audio | Video | Enabled |
|---------------|------------------------------------|-------------|---|-------------------------------------|
| Camera 1 | http://172.16.0.68:8001/1.0.1:2871 | 16 kbps | 1024kbps/ultrafast (baseline,3.1,keyint=250,gop=open) | <input checked="" type="checkbox"/> |
| Sports Feed | rtmp://127.0.0.1/Sports3/sports3 | Passthrough | Passthrough | <input checked="" type="checkbox"/> |
| Camera 2 | rtsp://182.77.55.66/stream1/live | Passthrough | Passthrough | <input checked="" type="checkbox"/> |
| Friendly Name | Decklink Source | Audio | Video | Enabled |
| Friendly Name | Disabled | 16 kbps | 256kbps/veryfast (baseline,3.1,keyint=250,gop=open) | <input checked="" type="checkbox"/> |

Select No Pull Url

By default, the audio and video will be set to 'passthrough' in this mode no transcoding is performed, alternatively you can choose to transcode the source audio and or video. Please note that if the source is MPEG2 you must transcode the video and audio.

Convert TS Audio – Should be used when the source has MPEG TS audio and audio is set to passthrough.

Live Stream ☒ **Low Latency** ☐

Video kbps 256 kbps **Bitrate** Variable(VBR)

Resolution Passthrough **Deinterlace** Disabled

h.264 Profile Baseline **h.264 Level** 3.1 (Upto 720p@30hz)

Compression Efficiency Default **h.264 Key Interval** 250

h.264 GOP Type Open GOP

For details of transcoding options please see the **transcoding and encoding** options section of this guide.

Decklink Source

Here you can use an input card from Blackmagic Design to feed the channel directly from HDMI or SDI sources. We currently support all Blackmagic Decklink, mini monitor and mini recorder cards using the Desktop video 10.8.4 or newer driver version.

Please Note: You must ensure you select the correct resolution and frame rate to match your input signal, failure to do so will result in colour bars being displayed as the live stream. If your card features HDMI and SDI inputs you must use the Blackmagic Desktop Video Utility to set the input type outside of the DVS-200 software.

☒ Convert TS Audio

Friendly Name Friendly Name

Decklink Source DeckLink Mini Recorder 4K

Audio 16 kbps

Video 256kbps/vbr/veryfast (baseline,3.1,keyint=250,gop=open)

Outputs

Decklink Output Disabled

Push URL Autocomplete URL...

Access Control

Container RTMP

Action

1920x1080 at 25.00 fps

720x486 at 29.97 fps (interlaced, lower field first)

720x576 at 25.00 fps (interlaced, upper field first)

1920x1080 at 23.98 fps

1920x1080 at 24.00 fps

1920x1080 at 29.97 fps

1920x1080 at 30.00 fps

1920x1080 at 25.00 fps (interlaced, upper field first)

1920x1080 at 29.97 fps (interlaced, upper field first)

1920x1080 at 30.00 fps (interlaced, upper field first)

1920x1080 at 50.00 fps

1920x1080 at 59.94 fps

1280x720 at 50.00 fps

1280x720 at 59.94 fps

1280x720 at 60.00 fps


2048x1080 at 23.98 fps

2048x1080 at 24.00 fps

2048x1080 at 25.00 fps

3840x2160 at 23.98 fps

As Blackmagic cards feed the system with uncompressed video you must set the H264 video and AAC audio encoding options as required.

| | | | | |
|-------------------------------|-------------------------------------|---------------------------|--------------------------|---|
| Live Stream | <input checked="" type="checkbox"/> | Low Latency | <input type="checkbox"/> |  |
| Video kbps | 256 kbps | Bitrate | Variable(VBR) | |
| Resolution | Passthrough | Deinterlace | Disabled | |
| h.264 Profile | Baseline | h.264 Level | 3.1 (Upto 720p@30hz) | |
| Compression Efficiency | Default | h.264 Key Interval | 250 | |
| | | h.264 GOP Type | Open GOP | |

You can setup multiple sources if your card has more than one input or you are using multiple cards. Select the source you want to use using the enable/disable buttons on the far right. To stop pulling in any source select 'Select No Pull URL'.


For details of the encoding options available for Blackmagic sources please see the **transcoding and encoding** options section of this guide.

Datavideo Source

Here you can use an input card from Datavideo to feed the channel directly from HDMI or SDI sources. The Datavideo cards use hardware video compression and software audio compression.

Datavideo input cards will automatically detect the source resolution a frame rate of the connected source.

Please Note: If the source resolution or frame rate is changed while the source is active you should disable and re-enable the source or restart all services from the settings menu, failure to do so may result in incorrect timestamps or aspect ratio in the output stream.

| | | | | |
|-----------------------|-------------------------------------|----------------------|--------------------------|---|
| Live Stream | <input checked="" type="checkbox"/> | Low Latency | <input type="checkbox"/> |  |
| CBR Video kbps | 3 mbps | Bitrate | Constant(CBR) | |
| Resolution | Passthrough | Deinterlace | Enabled | |
| VBR Quality | 1000 | h.264 Profile | Main | |
| h.264 GOP Size | 250 | | | |

You can setup multiple sources if your card has more than one input or you are using multiple cards. Select the source you want to use using the enable/disable buttons on the far right. To stop pulling in any source select 'Select No Pull URL'.

Please Note: Bitrate is used when in CBR mode and Quality is used when in VBR mode. 1000 is the lowest quality settings and 10000 is the highest.

Bitrate – Set the video bitrate when in CBR mode

Quality – Set the video quality when in VBR mode (1000 is the lowest quality settings and 10000 is the highest)

Video Kbps – Set the video bitrate when not set to passthrough

Resolution – Set the video resolution when not set to passthrough

Deinterlace – Deinterlace the source video. Please note this option can be used to disable the hardware de-interlacer, however the card will always output progressive frames even with a interlaced source and the deinterlacer disabled.

H264 Profile – Select Baseline, Main or High compression profiles

H264 GOP Size – Set the size of the GOP (group of pictures)

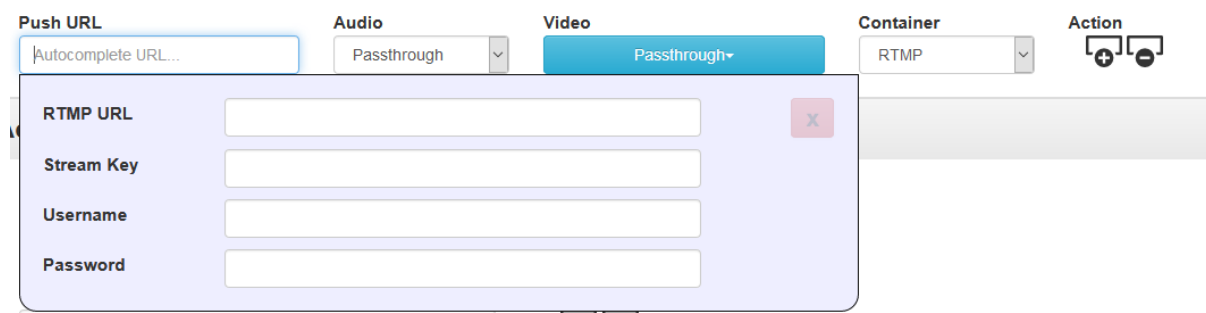
Outputs

Push URL's

Push URL's are optional. Here you can push the incoming stream on to one or more destinations simultaneously. We can push to destinations using RTMP or MPEG-TS protocols.

RTMP

Using RTMP you can push a single stream out to various streaming platforms such as YouTube, Facebook, Wowza etc.



Simply enter the RTMP URLs you would like the stream to be pushed to. By default, the audio and video will be set to 'passthrough' in this mode no transcoding is performed, alternatively you can choose to transcode the source audio and or video.

Please Note: Transcoding requires CPU power, please monitor your CPU usage.

MPEG-TS

Here you can send out a unicast or multicast MPEG-TS stream, examples below.

Unicast



Multicast

| | | | | |
|--|--|--|--|--|
| Push URL <input type="text" value="udp://224.0.0.1:9710"/> | Audio <input type="text" value="Passthrough"/> | Video <input type="text" value="Passthrough"/> | Container <input type="text" value="MPEG-TS"/> | Action  |
|--|--|--|--|--|

Decklink Output


Here you can use an output card from Blackmagic Design to decode the channel to HDMI or SDI. We currently support all Blackmagic Decklink, mini monitor and mini recorder cards using the Desktop video 10.8.4 or newer driver version.


You can setup multiple outputs if your card has more than one output or you are using multiple cards. If your card features HDMI and SDI inputs you must use the Blackmagic Desktop Video Utility to set the input type outside of the DVS-200 software.

Access Control

Here you can restrict what IP addresses can publish or playback using RTMP. In whitelist mode, only the listed IPs can publish or playback, in blacklist mode all but the listed IPs can publish or playback.

Access Control

RTMP Publish


RTMP Play


You must enter the IP address followed by its abbreviated subnet mask, for example 255.255.255.0 is a 24-bit mask so is represented as /24. Please consult your IT department if unsure about these settings.

Recording

Here we can enable recording, you have three options:

Always – Audio & Video

The software will record as soon as an input stream is detected and will stop recording when the stream is stopped. Audio and video are recorded together.

Always – Audio Only

The software will record as soon as an input stream is detected and will stop recording when the stream is stopped. Only audio is recorded.

Manually start/stop – Audio & Video

Recording will not happen automatically, the user must start and stop recording manually. When enabled button to start and stop recording will be displayed next to the channel name. Audio and video are recorded together.

Recorded files Suffix

By default, the recorded file is name after the channel name, this option allows you to add additional text into the file name.

Give each recording a unique time stamp

When checked a unique time stamp will be inserted into the file name of each recording. When this option is not checked the recorded file name will always be the same, this means subsequent recording will overwrite the previous file.

Append to recorded file

This option should only be used when 'Give each recording a unique time stamp' is not checked. When checked subsequent recording will be joined to the previous file creating one long recording.

Max. Recorded file size

Here we can limit the recorded file length by size, when this limit is reached a new file will be created. No limit is set by default.

Max. Recorded file interval

Here we can limit the recorded file length by time, when this limit is reached a new file will be created. No limit is set by default.

Auto publish recorded file when done

When enabled a recording will be published as soon as recording is stopped.

Include in group record

Any channel with this checked will start and stop recording together, this can only be used in manual recording mode.

Redirect to VOD if offline

When enabled the DVS-200 web player will redirect to the last published VOD content if the live stream is offline.

Delete recordings older than

Automatically delete recordings older than a certain age.

Delete Older Mode

Choose to delete the recording only or delete the source recording and unpublish the recording.

Managing recordings

Recordings are listed at the top of the channel settings page, a maximum of 10 files are listed per page.

**Channel Name**

new_channel4

Channel Type

Streaming

Channel Description**Player page title****Select Files to**

Publish

☐ **Select All**☐ new_channel4-1491996253-2017-04-12T12:24:13Z ↕☐ new_channel4-1491996274-2017-04-12T12:24:34Z ↕☐ new_channel4-1491996302-2017-04-12T12:25:02Z ↕☐ new_channel4-1491996404-2017-04-12T12:26:44Z ↕☐ new_channel4-1491996464-2017-04-12T12:27:44Z ↕☐ new_channel4-1491996478-2017-04-12T12:27:58Z ↕☐ new_channel4-1491996508-2017-04-12T12:28:28Z ↕☐ new_channel4-1491996535-2017-04-12T12:28:55Z ↕☐ new_channel4-1491996556-2017-04-12T12:29:16Z ↕☐ new_channel4-1491996568-2017-04-12T12:29:28Z ↕

1

2

You have the following options:

Publish

Will publish the selected files, this makes them available to playback and embed (Converts the original file to HLS).

Delete

Will delete the selected files but won't delete the published (HLS) files.

Unpublish (Delete)

Will delete the published (HLS) files but not the original uploaded files.

To publish a file, select its check box, ensure the option to 'Publish' is selected and save the channel. You will be redirected back to the main web interface and see the file is now available to play and embed.

Delete & Unpublish

Will delete the selected files and the published (HLS) files.

General

Visibility level

By default channels are visible to all users. To change this behaviour you should remove the 'All Users' marker and then select only the user accounts you wish to be able to see this channel.

Please Note: Administrators and Power Users can always view all channels; this option only affects viewer and contributor accounts.

Authentication required (Play)

By default, authentication is not required to view a player page or an embedded player. This means if a player was embedded in an external website or if the URL of a player page was sent to someone they would be able to view the channel without having to login. Checking this option will require that the user login with a valid account before the player loads.

Authentication required (Publish)

When enabled the currently logged in user's username and hashed password are added to the RTMP URL, these are required to be included in the RTMP URL to publish to the channel. Only Administrators, Power users and contributors can publish when this mode is enabled.

Random stream key

By default, the channel name is used for the stream key, when enabled and random hashed value is used instead. Optionally you can also set for this value to change daily.

Upload channel logo

Here you can upload a logo, this can be displayed as an overlay on the DVS-200s built in web player, it will also be used by the NVD-30/35 decodes when operating in set top box mode. You can select its position using the **Logo Position** dropdown, selecting **STB Only** will result in it not being shown on the web player.

Upload channel poster

The channel poster is the image shown by the web player before the user hits play. By default, the channel poster uses a snapshot from the live MJPEG preview, alternatively you can upload a static image.

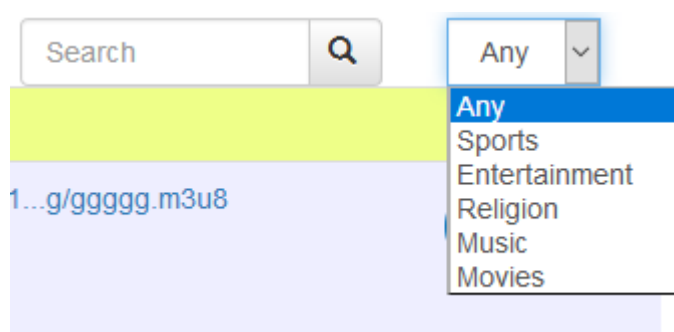
Browser Auto play

When enabled the web player will start playback as soon as the page is loaded.

Channel tag


Here you can assign a channel to a tag, tags are like groups that make it easier to find channels. Tags are used by the DVS-200 web interface and the NVD-30/35 decoders in set top box mode to group channels.

Once you assign channels tags you can quickly find all channels with that tag using the dropdown menu on the DVS-200 web interface.



Transcoding and encoding options

The following options are available when transcoding or encoding from Blackmagic Design sources. Encoding or transcoding is done in software and will use CPU resources.

| | | | | |
|-------------------------------|-------------------------------------|---------------------------|--------------------------|---|
| Live Stream | <input checked="" type="checkbox"/> | Low Latency | <input type="checkbox"/> |  |
| Video kbps | 256 kbps | Bitrate | Variable(VBR) | |
| Resolution | Passthrough | Deinterlace | Disabled | |
| h.264 Profile | Baseline | h.264 Level | 3.1 (Upto 720p@30hz) | |
| Compression Efficiency | Default | h.264 Key Interval | 250 | |
| | | h.264 GOP Type | Open GOP | |

Live Stream – Uncheck only if the source is a static video file

Low latency – Disables buffering to reduce delay

Video Kbps – Set the video bitrate when not set to passthrough

Resolution – Set the video resolution when not set to passthrough

Deinterlace – Deinterlace the source video and output progressive, only use with interlaced sources

H264 Profile – Select Baseline, Main or High compression profiles

H264 level – Select the H264 level

Compression efficiency – Faster compression uses less CPU resources but results in a larger average output bitrate, this setting does not affect visual quality.

H264 Key Interval – Set the frequency of a key frame (I frame)

H264 GOP Type – Select Open or Closed, if all b-frames from one GOP references only to I- and P-frames of the same GOP then it is commonly called a closed GOP (all frames can be decoded without the need of another GOP).

Applying changes

After you save channel settings you will be redirected back to the main web interface. Whenever you see this message across the top of the page you know that the service must be restarted to apply some of your settings.

Please Note: You should only restart the service when you are not live streaming.

You need to [Reload the service](#) for some changes to take effect

datavideo

Live VOD Stats Users Groups Settings Logout (admin)

Live channel list overview


datavideo

Live VOD Stats Users Groups Settings Logout (admin)

Create New Live Channel

Search

Any

| Name | Preview | Enabled | RTMP URL + Stream Key | HLS URL | Actions |
|--------------|---|---|-----------------------------|-----------------------------|-------------------------------------|
| new_channel4 |  | <div><div>⏻</div><div>🕒</div><div>⏹</div><div>📺</div></div> | rtmp://192.1...49dd5a330112 | http://192.1...hannel4.m3u8 | <div><div>▶</div><div>⏮</div></div> |



Enable and disable the channel.



Start recording (only visible when manual recording is enabled).



Stop recording (only visible when manual recording is enabled).



Setup scheduled recoding times (only visible when manual recording is enabled). You can setup as many schedules as you need. Please note that recoding will only commence if the channel is live when the recording is scheduled to start, expired schedules will be hidden after 30 minutes.

The screenshot shows a scheduling interface with the following elements:

- Start:** A text input field followed by a calendar icon.
- Stop:** A text input field followed by a calendar icon.
- Repeat:** A dropdown menu currently showing "Never" with a downward arrow.
- Action:** Two icons representing a plus sign and a minus sign.
- Save Schedule:** A large blue button with white text.

RTMP URL + Stream Key

`rtmp://46.101.5.207/new/new_channel`

The RTMP URL is used to configure your encoder, for most encoders the part after the last / should be used as the stream key. This URL can be decoded by Datavideo NVD decoders with low latency.

HLS URL

`http://46.101.5.207/hls/new_channel/new_channel.m3u8`

The HLS URL can also be decoded by Datavideo NVD decoders, HLS will perform better over poor internet connections but latency will be considerably higher.



Open a new tab with the web video player.



Generate the code required to embed the web video player in another website.

3.2 Creating a VOD channel

A VOD channel is automatically created for each live channel, this is where published recordings will appear.

To upload content, you must manually create a VOD channel.

Channel Name

Here you must choose a name for your VOD channel. The channel name can contain uppercase and lowercase characters but no white space.

Channel Description

Here you can add a brief description of the channels content, this is used by the NVD-30/35 set top boxes.

Player Page title

Here you can change the text that is displayed at the top of the web player's page for this channel only.

General

Visibility level

By default, channels are visible to all users. To change this behaviour, you should remove the 'All Users' marker and then select only the user accounts you wish to be able to see this channel.

Please Note: Administrators and Power Users can always view all channels; this option only affects viewer and contributor accounts.

Authentication required (Play)

By default, authentication is not required to view a player page or an embedded player. This means if a player was embedded in an external website or if the URL of a player page was sent to someone they would be able to view the channel without having to login. Checking this option will require that the user login with a valid account before the player loads.

Upload channel logo

Here you can upload a logo, this can be displayed as an overlay on the DVS-200s built in web player, it will also be used by the NVD-30/35 decodes when operating in set top box mode. You can select its position using the **Logo Position** dropdown, selecting **STB Only** will result in it not being shown on the web player.

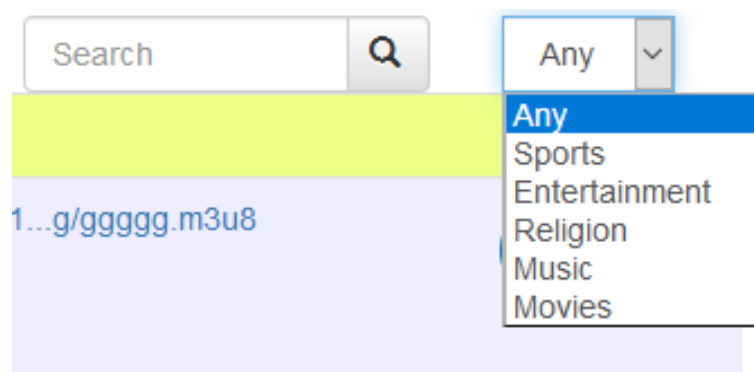
Browser Auto play

When enabled the web player will start playback as soon as the page is loaded.

Channel tag

Here you can assign a channel to a tag, tags are like groups that make it easier to find channels. Tags are used by the DVS-200 web interface and the NVD-30/35 decoders in set top box mode to group channels.

Once you assign channels tags you can quickly find all channels with that tag using the dropdown menu on the DVS-200 web interface.



After you save the channel you will be redirected back to the main web interface, to upload content select your newly created channel. You will see the screen below.

Channel Name

Channel Type

VOD(Video On Demand)

Channel Description

Player page title

Select Files to

☐ Select All

Publish

Upload File

Choose File...

General

Visibility Level

» All Users

Upload Channel Logo

Choose File...

Remove channel Logo

☐

Logo Position

Top Right

Browser Autoplay

Disabled

Authentication Required(Play)

☐

Channel Tag


Music

Click 'Browse' and select the video file to upload, save the channel to start the upload.

Uploading Data (10% complete)

Save Channel

Once the upload is complete the page will refresh, you will see the screen below.

Stream Key - test-vod(Test-VOD) 

Channel Name

Channel Type

VOD(Video On Demand)

Channel Description

Player page title

Select Files to

☐ Select All

Publish

☐ Madagascar

Upload File

Choose File...

You have the following options:

Publish

Will publish the selected files, this makes them available to playback and embed (Converts the original file to HLS).

To publish a file select its check box, ensure the option to 'Publish' is selected and save the channel. You will be redirected back to the main web interface and see the file is now available to play and embed.



Delete

Will delete the selected files but won't delete the published (HLS) files.

Unpublish (Delete)

Will delete the published (HLS) files but not the original uploaded files.

Delete & Unpublish

Will delete the selected files and the published (HLS) files.

3.3 Stats

The stats tab provides real time statistics relating to the server and streaming channels.



Server Statistics

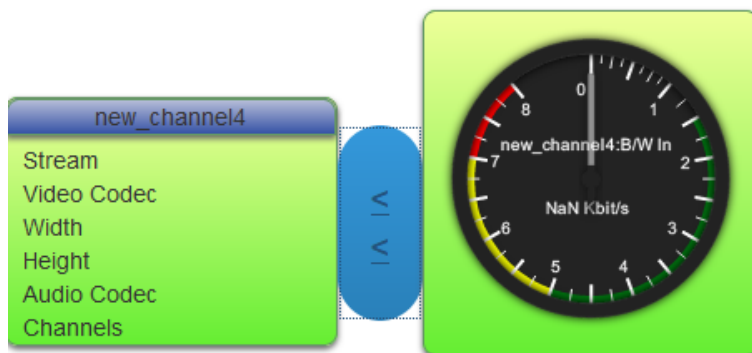
Shows global statistics.

- Incoming Bytes – Shows the amount of data that has been sent into the server
- Outgoing Bytes – Shows the amount of data that has been pulled out of the server
- In Bandwidth – Shows the incoming bandwidth usage for the entire server
- Out Bandwidth - Shows the outgoing bandwidth usage for the entire server
- Server Uptime – Shows the amount of time the server has been powered up
- CPU Usage – Shows the real-time CPU usage as a percentage out of 100
- RAM Usage – Shows the real-time RAM (memory) usage in MB
- Disk Free – Shows the amount of free disk space on the drive that is being used for media storage. By default, this will be the drive DVS-200 is installed on, the media directory can be changed under global settings.

Channel Statistics

Shows channel specific statistics.

Channel Statistics



- Stream – Displays the stream name
- Video codec – Displays the video codec used, usually H264
- Width – Displays the video width (if supported by the encoder)
- Height - Displays the video height (if supported by the encoder)
- Audio Codec - Displays the audio codec used, usually AAC or MP3
- Channels – Displays the number of audio channels, usually 2

3.4 Users - Creating and managing user accounts

To create a new user account click 'Create New User', you will see the screen below.

datavideo

[Live](#)
[VOD](#)
[Stats](#)
[Users](#)
[Groups](#)
[Settings](#)
[Logout \(admin\)](#)

User Credentials Management

admin

[Create New User](#)

Manage User - newuser

User

X

Login Role

Viewer

Concurrent IP's

Concurrent Connex per IP

Active Upto

Group Membership

Password

Confirm Pass.

Save Changes

User

Here you must choose a logon name for the user. The name can contain uppercase and lowercase characters but no white space.

Login Role

- Viewer – This role only allows the user to view streams and change their own password. Viewer accounts cannot view stream URLs, create or modify channels or change settings.
- Viewer Plus – This role has all viewer rights but can also download recordings and VOD content
- Admin - This role gives the user full control, users with admin rights cab view all channels even if they are not assigned to them.
- Power User – This role has the user the same rights as an admin however power users cannot change global server settings or change other user accounts.
- Contributor – This role has the same rights as a power user except they cannot create channels, change channel visibility, change global settings or view channels not assigned to them. Contributors also won't see system update or service restart messages so cant interrupt streaming.

Concurrent IP's

Limit the number of IP addresses than can use play content using the web player (HLS) simultaneously, default is no limit.

Concurrent Connex per IP

Limit the number of connections that can play content using the web player (HLS) from the same IP address. For example, you may have set concurrent IP's to a value of 1, this would still allow multiple connections from the same public IP address.

Active Upto

Allows you to set an expiry date for the account, if left blank the account will never expire.

Group Membership

Make the user a member of a user group, groups can be managed using the 'Groups' tab.

Password

Here you must choose a password for the user.

Confirm Pass

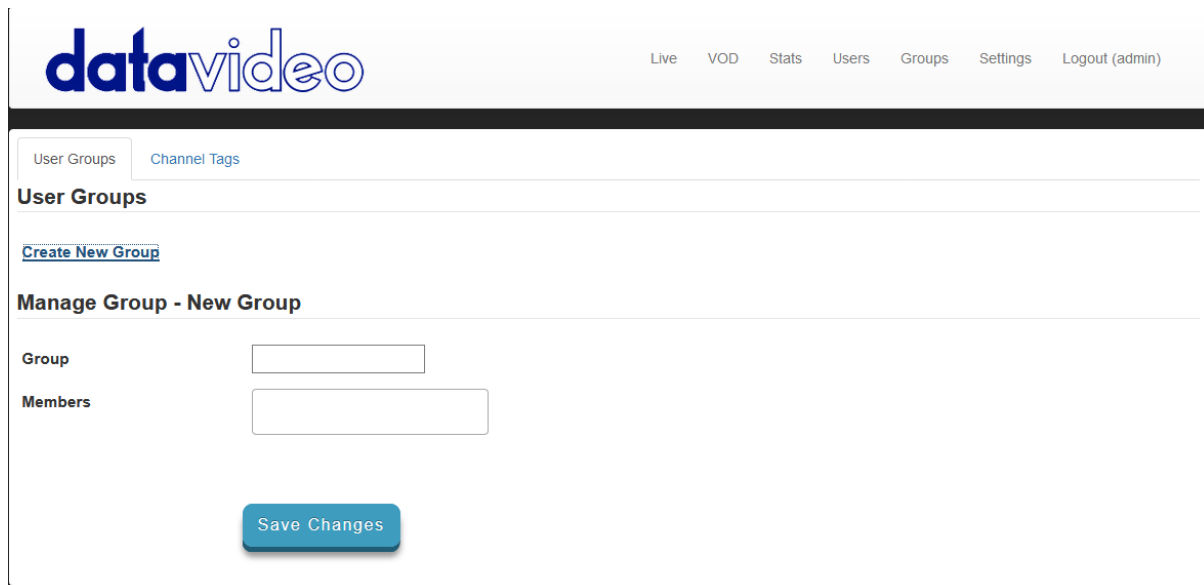
Here you must confirm the password.

3.5 Groups - Creating and managing user groups

User groups can be used to make managing users easy, you can manually create users and groups within the DVS-200 or you can link DVS-200 to active directory.

For active directory setup instructions please see the **Settings** section of this guide. To manually create a user group simply click the Create New Group link, enter a group name and add its members.

You can also add a user to a group from the user settings page.



The screenshot displays the DataVideo web application interface. At the top, the 'datavideo' logo is on the left, and navigation links for 'Live', 'VOD', 'Stats', 'Users', 'Groups', 'Settings', and 'Logout (admin)' are on the right. Below the navigation bar, there are two tabs: 'User Groups' (selected) and 'Channel Tags'. The main content area is titled 'User Groups' and contains a link for 'Create New Group'. Below this, a section titled 'Manage Group - New Group' contains two input fields: 'Group' and 'Members'. At the bottom of this section is a blue button labeled 'Save Changes'.

Once created you can add a group to any channels **Visibility Level**.

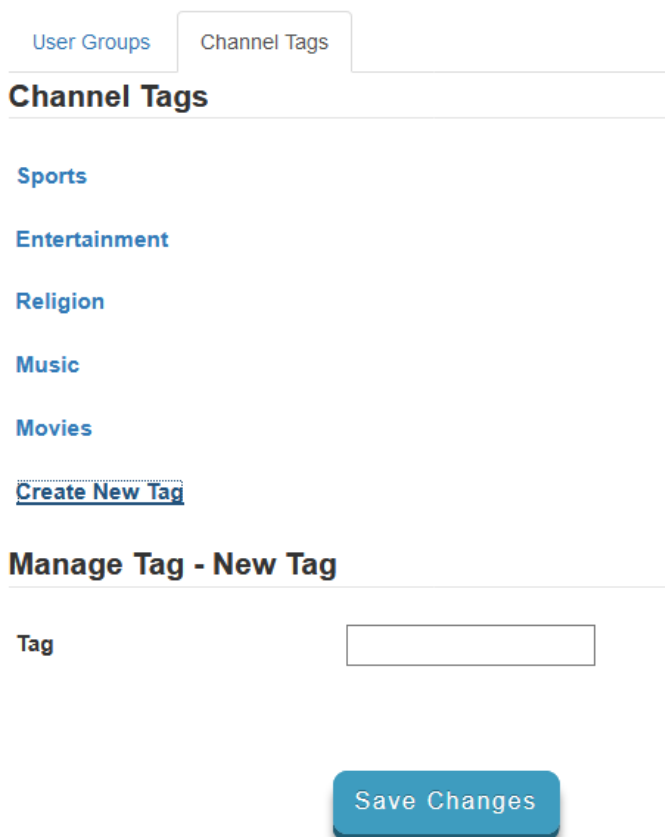


A screenshot of a web interface showing a dropdown menu for user selection. At the top, there are two tabs: 'x test' and 'x contri'. Below the tabs, the dropdown menu is open, displaying a list of users: 'All Users', 'admin', 'test', and 'contri'. The 'test' user is highlighted with a grey background. Below the user list, there is a section titled 'Groups' with a blue background, containing the text 'group(Group)'.

Creating channel tags

Tags are like groups that make it easier to find channels. Tags are used by the DVS-200 web interface and the NVD-30/35 decoders in set top box mode to group channels.

Tags can be created from the Groups tab as shown below.



A screenshot of the 'Channel Tags' management interface. At the top, there are two tabs: 'User Groups' and 'Channel Tags'. The 'Channel Tags' tab is selected. Below the tabs, the title 'Channel Tags' is displayed. Underneath, there is a list of tags: 'Sports', 'Entertainment', 'Religion', 'Music', and 'Movies'. A link 'Create New Tag' is also visible. Below the list, the title 'Manage Tag - New Tag' is displayed. Underneath, there is a form with a label 'Tag' and an empty text input field. At the bottom, there is a blue button labeled 'Save Changes'.

Once created you can assign any live or VOD channel to a tag.

Random Stream Key Disabled

Channel Tag Untagged

- Untagged
- Sports
- Entertainment
- Religion
- Music
- Movies

Save Channel

Once you assign channels tags you can quickly find all channels with that tag using the dropdown menu on the DVS-200 web interface.

Any

- Any
- Sports
- Entertainment
- Religion
- Music
- Movies

1...g/gggggg.m3u8

3.6 Settings

Live VOD Stats Users Groups Settings Logout (admin)

Restart All Services

UI Settings

Custom UI Title(Blank for default)

Reset UI to default Logo ☐

Upload Custom UI Logo

Server Settings

Max VOD file upload size 1 GB

Media storage directory(HLS & recordings)

HLS Access Whitelist

Poll for DVS Updates ☒

SSL/TLS Support ☐

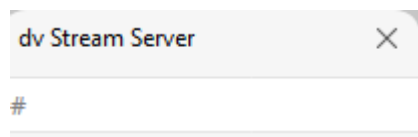
SSL Certificate File

SSL Chain File

UI Settings

Custom UI Title

Here you can change the title of the DVS-200 web page, the default is 'dv Stream Server'.

A screenshot of a web browser window showing a text input field with the text 'dv Stream Server' and a close button (X) to its right. Below the input field is a small '#' symbol and a horizontal line.

Upload Custom UI logo

Upload a custom logo to replace the default Datavideo logo

Server Settings

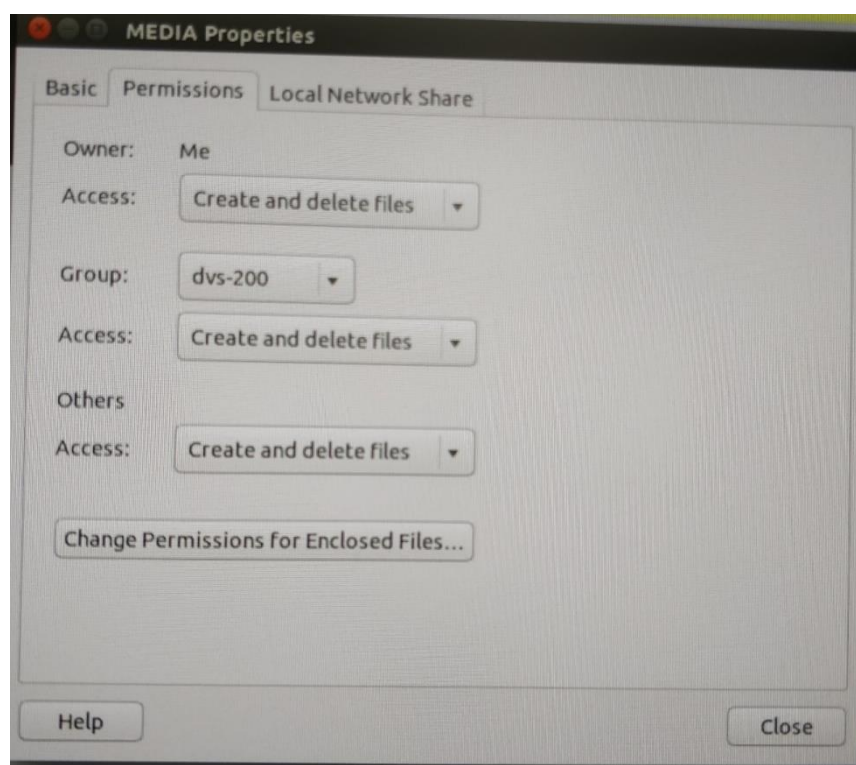
Max VOD file upload size

Set the maximum allowed file size for uploads

Media storage directory (HLS & recordings)

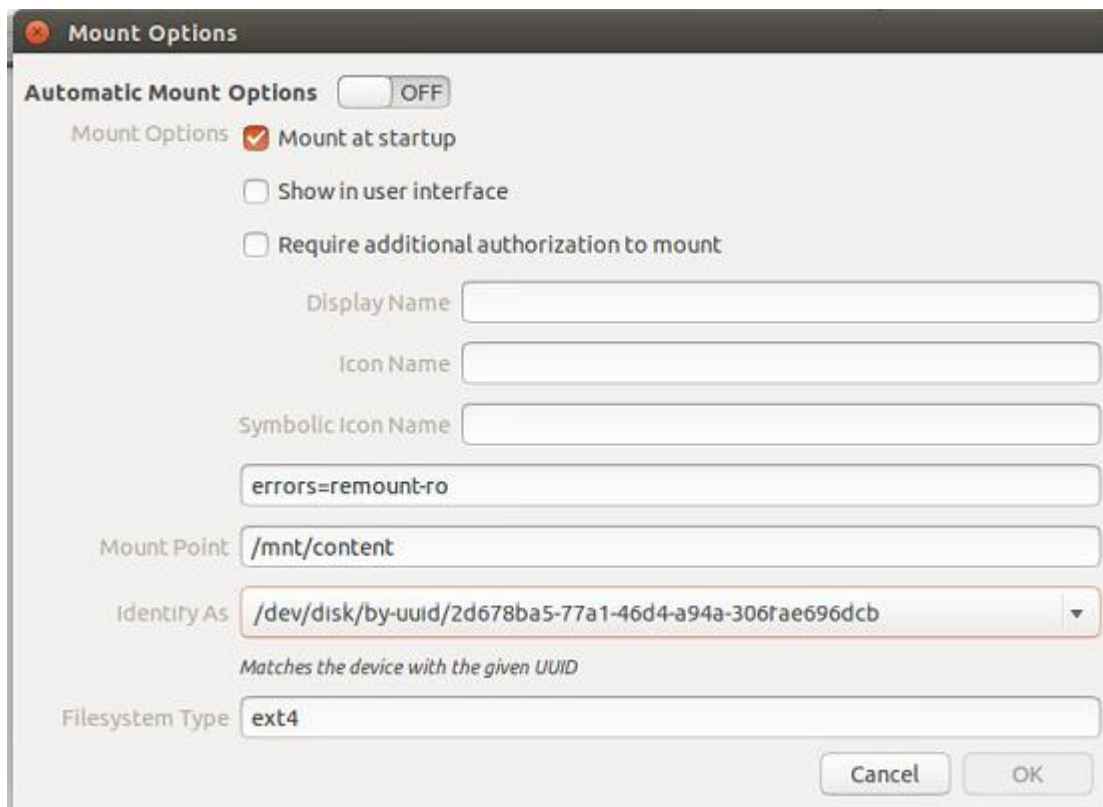
Change the directory used to store recordings, VOD content, HLS fragments and recording schedules.

Please Note: If you are going to use a folder on a second hard disk for media storage you must first set the permissions of the drive as below. These options can be found by right clicking the drive within the file manager and selecting properties.



You must also manually mount the drive as shown below, to do this first open the disks utility and choose to edit the mount options for the second hard drive,

The mount point can be customised for example /mnt/media could also be used, this mount point is the path that must be entered into the DVS-200 software as the media directory path.



Mount Options

Automatic Mount Options ☐ OFF

Mount Options ☒ Mount at startup

☐ Show in user interface

☐ Require additional authorization to mount

Display Name

Icon Name

Symbolic Icon Name

errors=remount-ro

Mount Point

Identify As

Matches the device with the given UUID

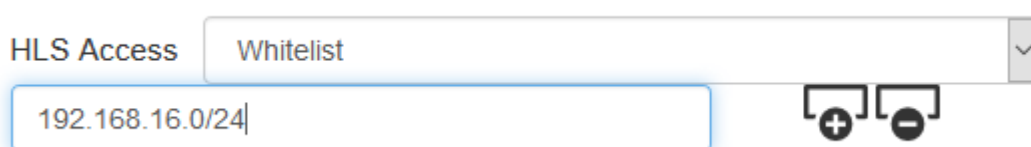
Filesystem Type

Cancel OK

After a reboot you can access the drive at /mnt/content but it will not show up as another drive in the Ubuntu file browser, you can however make a shortcut to this location on the desktop for example.

HLS Access

Here you can restrict what IP addresses can playback using HLS (The web player). In whitelist mode, only the listed IPs can playback, in blacklist mode all but the listed IPs can playback.



HLS Access Whitelist

192.168.16.0/24

+ -

You must enter the IP address followed by its abbreviated subnet mask, for example 255.255.255.0 is a 24-bit mask so is represented as /24. Please consult your IT department if unsure about these settings.

Poll for DVS Updates

By default, the system will check for updates every time you switch tabs, this can cause slow operation when operating offline. Unchecking this option will disable automatic updates.

SSL/TLS Support

When enabled you can upload a SSL certificate and access the DVS-200 using HTTPS. You must upload the certificate and key file at minimum, the chain file is optional.

External Users & Groups via Active Directory

When enabled active directory users and groups can be used for authentication.

To enable active directory:

1. Enter the **Active Directory DNS Domain for example yourdomain.local**.
2. Enter the **Active Directory Server Hostname for example ADSERVER**, you can also enter its IP address.
3. Select the **Active Directory Server Port**, this can be plaintext or SSL.
4. Enter the **Active Directory Username** and **Active Directory Password**.
5. Save the settings, click the prompt to reload the service at the top of the page.
6. You will now have option to map your AD groups to the DVS-200 Admin, Power User, Viewer Plus and Contributor groups. Any AD user not in these groups will automatically receive viewer only privileges.

| | |
|--|--|
| Active Directory Admins Group | <input type="text" value="None Selected"/> |
| Active Directory Power Group | <input type="text" value="None Selected"/> |
| Active Directory Contributors Group | <input type="text" value="None Selected"/> |

Please Note: Active directory users and groups are cached local and updated periodically, changes to AD user or Groups may take 15 minutes to take effect.

RTMP Settings

RTMP Port

The default port of 1935 should generally not be changed, for advanced users only.

Always start on key frame

When enabled clients that connect to the RTMP stream will always start playback on a key frame, this may increase delay.

Disable audio until first video frame is sent

When enabled no audio will be sent until after the first video frame (RTMP clients only).

AV Sync Interval

If the RTMP client's bandwidth is not enough to receive data at the publisher's (encoders) rate, some frames are dropped by server leading to a synchronization problem. When the timestamp difference exceeds the value specified as sync argument an absolute frame is sent fixing that.

Max message size

This setting relates to how much memory the RTMP server can use, the default 10MB should be fine for most cases but if you have issues with very high bitrate streams disconnecting this should be increased.

Idle Streams

If disabled, the server prevents subscribers from connecting to idle/non-existent live streams and disconnects all subscribers when stream publisher disconnects. Default is on.

HLS Settings

HLS fragment length

HLS works by creating multiple .TS video files (chunks) from the incoming RTMP stream, the player then downloads these chunks in order. This setting defines how long each chunk is, larger chunk sizes will increase delay.

HLS Playlist Length

This setting defines how many .TS chunks are stored on the server, longer playlists lengths means live streams can be paused for longer.

HLS AV Sync Interval

Sets the HLS timestamp synchronization threshold. This feature prevents crackling noises after conversion from low-resolution RTMP (1KHz) to high-resolution MPEG-TS (90KHz). Default is 2ms.

Global Player Settings

HTML5 Support

By default, the web player will use HTML5 extensions if the browser supports them, if not it will use FLASH extensions. This setting allows HTML5 extensions to be disabled for all or desktop only browsers.

Maximum Buffer Length

This setting defines how much video the web player can buffer (in seconds) locally, larger buffer sizes result in more delay but better stability on poor networks.

Maximum Buffer Size

This setting allows the buffer to be limited by size, this setting will override the buffer length option (the size can never be exceeded).

Display browser support

To be used to debugging only, when enabled the player will display a message to tell you if it is using FLASH or HTML5 extensions.

Minimum DVR Length

Sets the amount of HLS chunks that must be available on the server before the player displays the pause button, this must be set to a value less than the HLS playlist length for the pause button to be enabled.

4. Socket commands / API

Using third party applications, users can easily connect to the DVS-200 using Telnet. To establish a connection with the DVS-200 simply open a Telnet connection to the units IP address on port 23.

Please Note: Socket commands are disabled by default, to enable socket commands first ensure you have purchased the optional remote control license and then check the appropriate option in the 'Settings Tab'.

The DVS-200 has three responses to commands:

- **FAILED:** shows that the command could not be executed successfully.
- **OK:** shows that the command is executed without any problem.
- **Invalid Command:** shows that the command was not recognized.

The control commands are as follows:

Add and remove push and pull URLs

add [channel] [push/pull] [URL] – For example 'add mychannel push rtmp://test.com/test/stream or add pull mychannel rtsp://192.168.1.23/stream'

remove [channel] [push/pull] [URL] - For example 'remove mychannel push rtmp://test.com/test/stream or remove pull mychannel rtsp://192.168.1.23/stream'

Please note: Pull URLs will be set to enabled when added.

Enable pre-existing pull URLs

Enable [channel] pull [index number] – For example 'enable mychannel pull rtsp://192.168.1.123/stream'

Start and stop recording

Start [channel] – For example start mychannel

Stop [channel] – For example stop mychannel

start all – Starts all channels recording

stop all – Stops all channels recording

Enable and Disable Datavideo or Decklink hardware sources

Enable [channel] [datavideo/decklink] [index number] – For example 'enable mychannel datavideo #1' or 'enable mychannel decklink #1'

The index number tells the DVS-200 which datavideo or decklink source to enable, if you only have one the index will be #1.

To disable a decklink or datavideo source use the add or enable pull command to switch to another source, this can be a dummy source.

System control

restart – restarts all services

5. License Installation Guide

5.1 Licence Terms

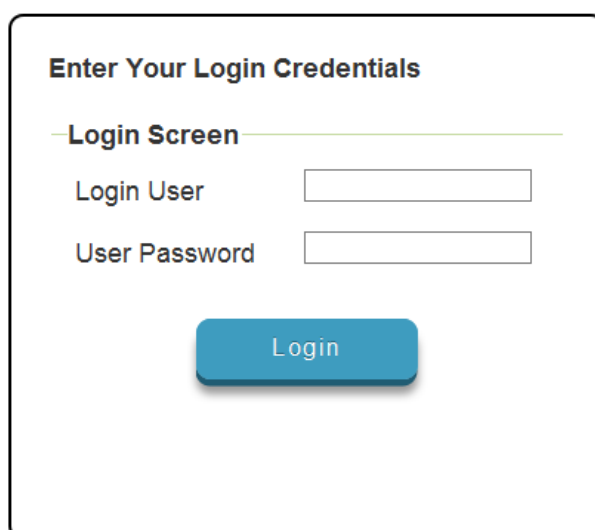
- Each licence can be installed on one computer/server only, the licence is locked to the first computer/server it is activated on.
- To move a licence from one computer/server to another the licence must first be deactivated. Please contact your local Datavideo office quoting your licence code to request this.
- As standard all licences issued are "Online", this means the DVS-200 software must be able to connect to the internet in order to verify its activation status, if you require the DVS-200 software to work without an internet connection an "Offline" licence can be issued after the initial online activation is successful. Please note that offline systems will not receive automatic updates.

5.2 Software Disclaimer

This SOFTWARE PRODUCT is provided by Datavideo "as is" and "with all faults." Datavideo makes no representations or warranties of any kind concerning the safety, suitability, lack of viruses, inaccuracies, typographical errors, or other harmful components of this SOFTWARE PRODUCT. In no event, unless required by applicable law or agreed to in writing, shall Datavideo, or any person be liable for any loss, expense or damage of any type or nature arising out of the use of or inability to use this software or program. You are solely responsible for the protection of your equipment and backup of your data, and Datavideo will not be liable for any damages you may suffer in connection with using, modifying, or distributing this SOFTWARE PRODUCT.

5.3 Licence installation

Once the DVS-200 software has been successfully installed you will be presented with the login page below.



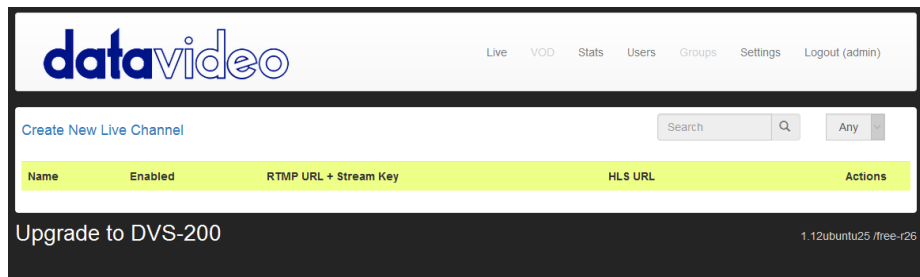
The image shows a login screen titled "Enter Your Login Credentials". Below the title is a horizontal line, and under that line is the text "Login Screen". There are two input fields: "Login User" and "User Password". Below these fields is a blue button with the text "Login".

The default credentials are:

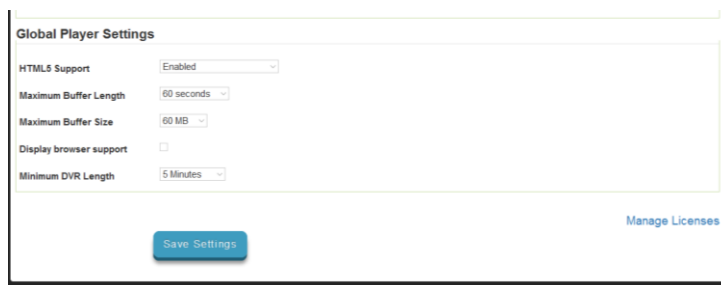
- **User: admin**
- **Password: 000000**

After logging in you will see the software is running in free (DVS-100) mode, to enable DVS-200 features you need to upload a valid licence. The DVS-200 software MUST be able to access the internet in order to complete the activation process.

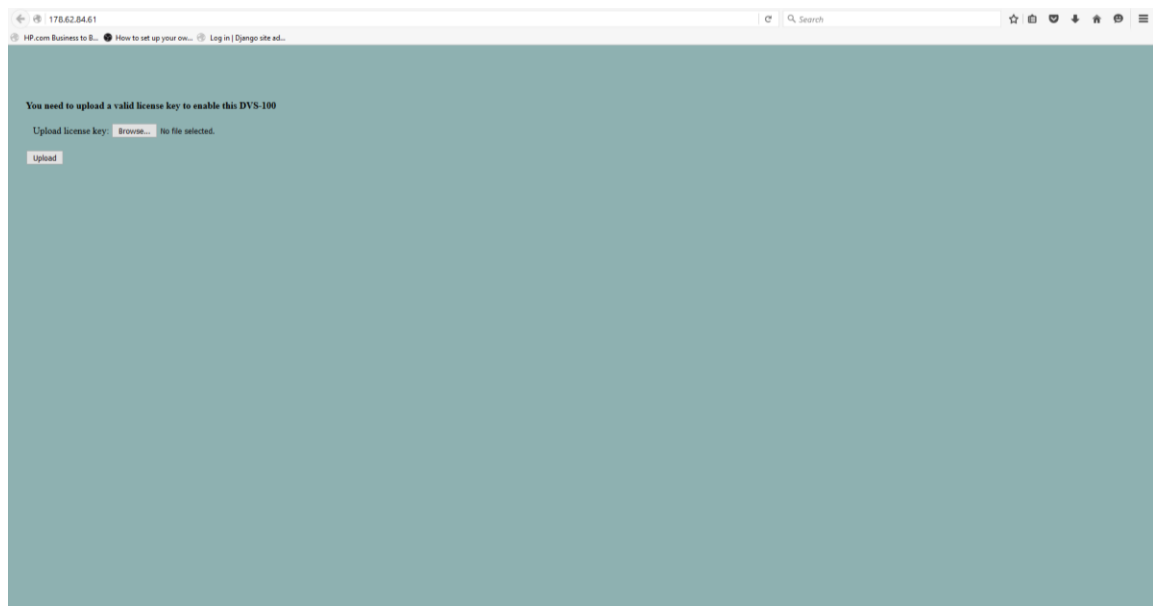
1. Click the 'Settings' link on the top menu



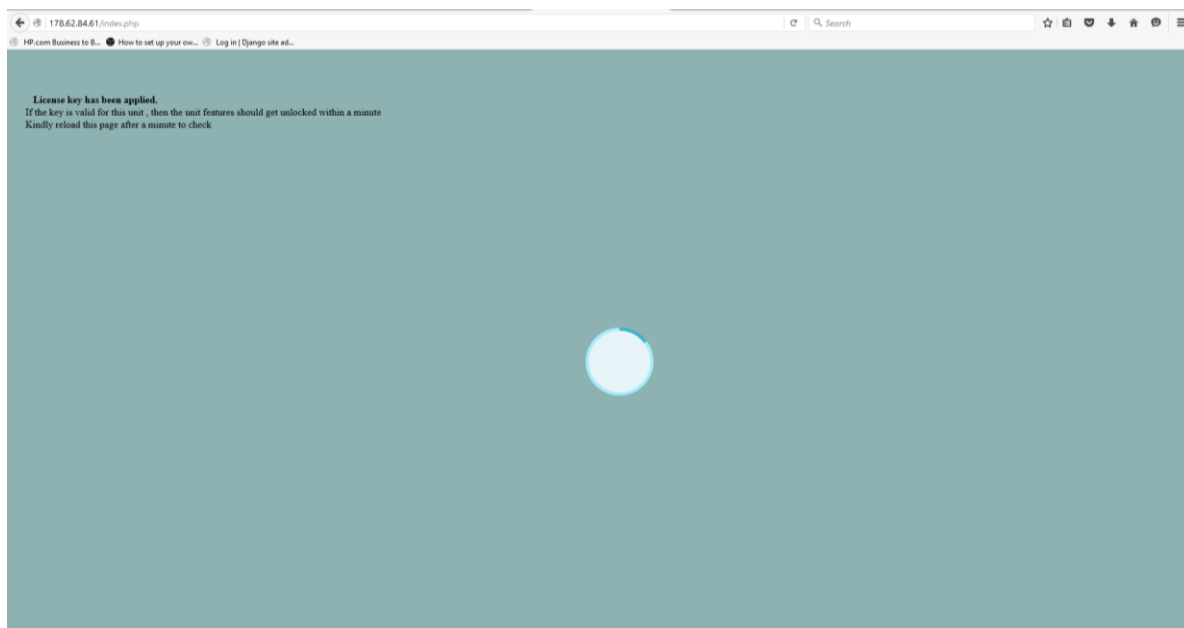
2. Scroll to the bottom of the page and click the 'Manage Licences' link



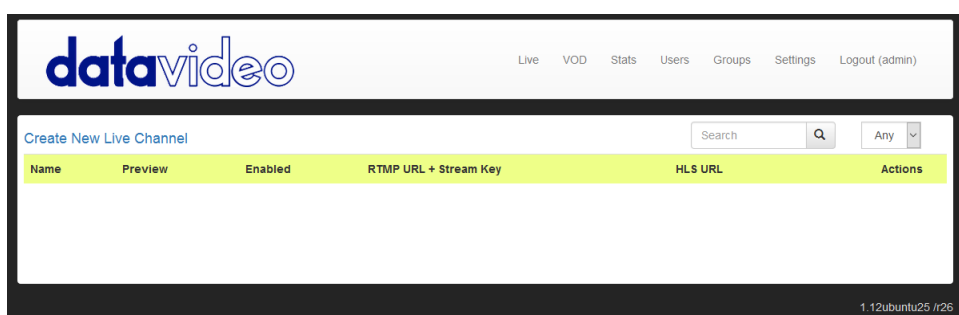
3. Click the 'Browse' button and select the digital licence (.lic) file you were sent via e-mail.



Now click the 'Upload' button, you will see the screen below while the software is activating. The activation process can take up to one minute depending on the speed of your internet connection.



Upon successful activation you will be presented with main DVS-200 control panel.



5.4 Troubleshooting

My DVS-200 software will not activate?

Please check:

1. The DVS-200 can access the internet?
2. The licence has not been used before? If the licence has already been activated on different hardware, you must contact your local Datavideo office to have it deactivated and a new licence issued.

My DVS-200 software was working but now displays the licensing page?

1. Was it a trial licence valid only for a set period of time?
2. Have you made any major changes to the hardware? The copy protection system will deactivate the software if it detects major hardware changes, you must contact your local Datavideo office to have it deactivated and a new licence issued.

Service & Support

It is our goal to make owning and using Datavideo products a satisfying experience. Our support staff is available to assist you to set up and operate your system. Contact your local office for specific support requests. Plus, please visit www.datavideo.com to access our FAQ section.

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www.datavideo.com/product/DVS-200

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