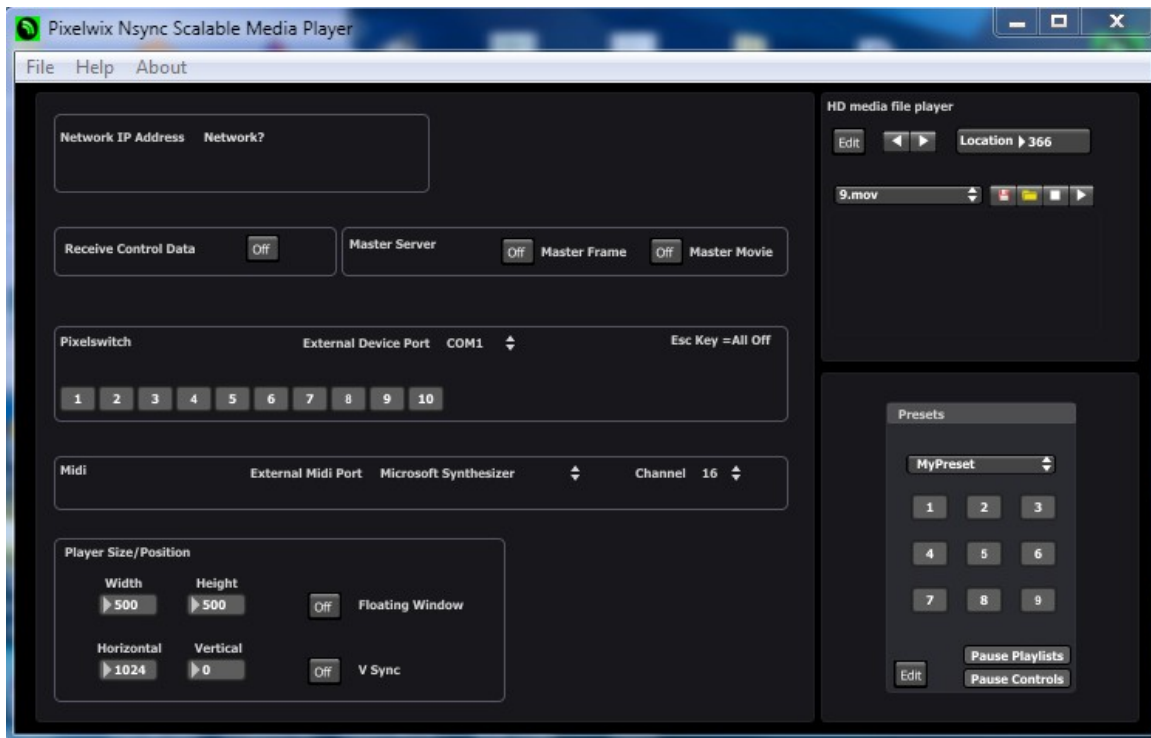


REFERENCE MANUAL

Pixelwix Nsync Scalable Network Media Player



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Welcome to Pixelwix Nsync

Installing Pixelwix NSync (software only)

1. Double-click on the installation file.

This will launch the Install-shield Wizard.

2. Follow the on-screen instructions.

3. If you already have some of the support software installed just exit the individual installer

4. When prompted with the Keylok security key installation select “USB dongle” and “Standalone”.

5. Once the installation is complete, click “Finish”. Pixelwix NSync software is now ready to be used.

6. Insert USB Key into spare USB socket

7. Run NSync

Notes

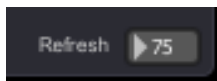
If you get an exemption from your **anti-virus** program you will have to add the software title to your safe program list or disable (recommended for non internet production server) your anti-virus software

If asked to allow NSync to connect to the internet select unblock if you intend to use network features of the software

Overview

Pixelwix NSync is a software tool for Large format Movie files with the ability to play portions of very large movies across multiple pc units or for left eye right eye playback on separate servers.

Numeric boxes

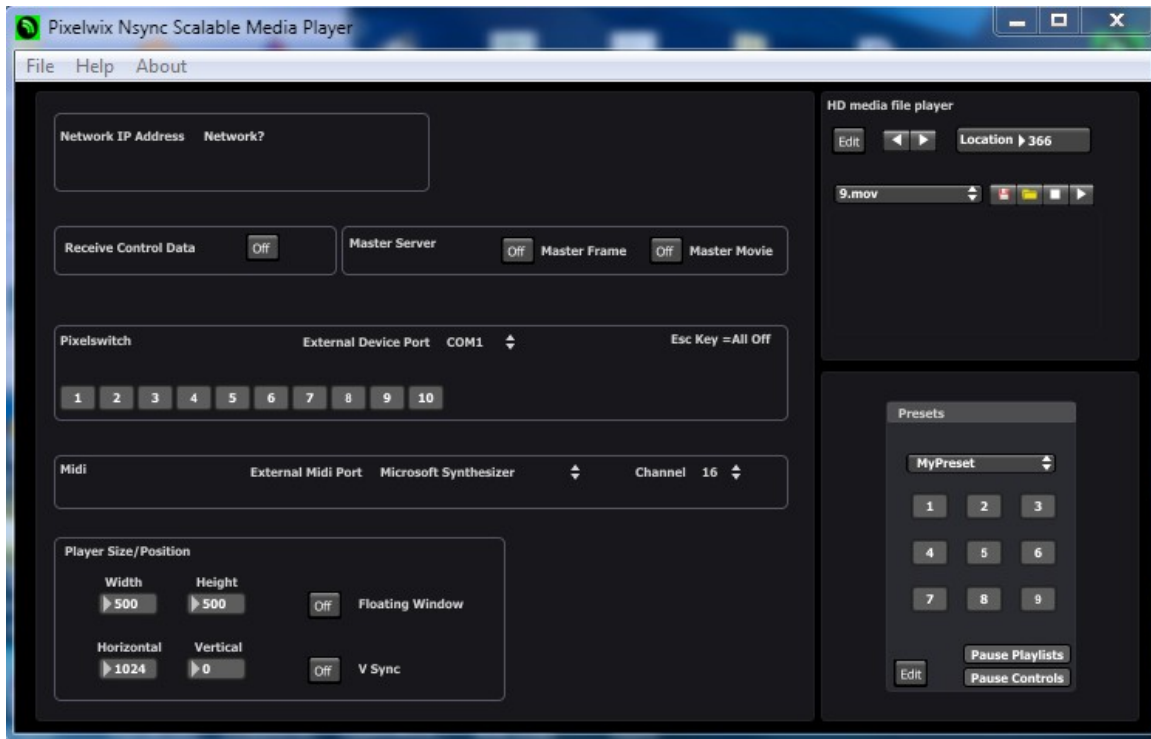


All numeric input boxes allow direct input of numbers, just click with a mouse and type using numeric keys to enter data.

You can also change the data by clicking on the box and while holding the left mouse button drag mouse up or down.

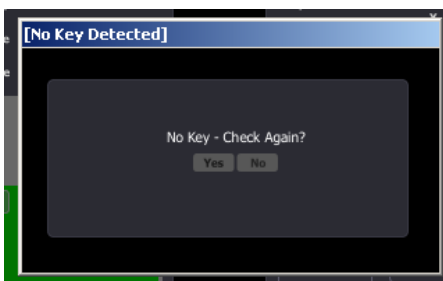
The box also responds to location click. i.e. if you click the right side of the box while dragging the mouse, this will cause the data to move in small amounts. The left side of the box will cause the data to move in large amounts.

This section describes the different application panels and their functionality
Below is a full screen-shot of the application:



If you are evaluating Pixelwix Products the first thing you will notice is the no key detection box. Just press "NO" on the panel and the words demo will appear on the output screen and stay running for approx 15 minutes and then the words "Time Out" will appear.

If you have a license USB dongle insert it and press "Yes"



Setting up the Output Display

Output Panel



The output window can be displayed on a second monitor or projectors or the same display as the Nsync player..

If your external display is 1920 x 1080 (HD) then that is the width and height you would set in the width and height box.

The horizontal position is where you wish your output to be in relationship to your monitor screen.

Example 1: I have two monitors, one has the Pixelwix NSync application on it at 1024 x 768 resolution, my output display is a projector at 1920 x 1080 so for this option I would need a output of 1920x1080 and a horizontal position 1024 and a vertical position of 0 (assuming my displays are setup to be side by side and the projector is on the right of my application display) .

Example 2: I have 3 projectors connected via a multy-head graphic card unit spanned Horizontally.

My 3 projectors are 1024 x 768 so for this option your output is 3072 (3 x 1024) x 768 and a horizontal position 1024 and a vertical position of 0 (assuming my displays are setup to be side by side and the projector array is on the right of my application display) .

Once you have entered your setting it would now be a good time to save the setting within a preset and save this to disc.

Floating

This allows the output window to stay over the top of all windows is activated (Ctrl F will deactivate)

Vsync

Switches of the vertical sync to the projectors if render tarring is visible.

HD Media File Player



The media file player is responsible for playing internal or external stored content. It can play large resolutions but at a performance cost (6800 x 2000 or more). Check the specs at the bottom of this reference for all file types.

On the front panel are some quick controls for common functions.



Read a single media file from drive.



Play the loaded media file



Stop playing media file.



Load a Media Folder.

You can also load media by dragging and dropping from your file browser to the media player. Any additional media will be added to the bottom of the list menu.

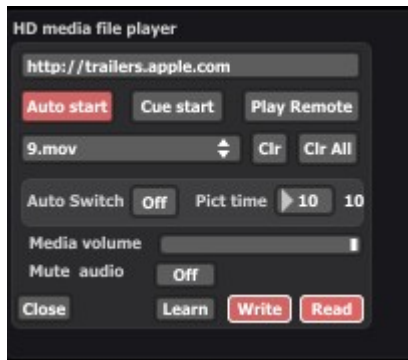
You can now select the media to play by clicking on the menu and selecting the name of the file item.

Another way of selecting through your media is to use the two small < > icons on the player. A good use for this is to cycle through static images like power-point.

The current position of the media file is shown by the position slider and the position box. It can be controlled by moving the slider or by changing the number in the position box. This can be adjusted even when the player is running. (Not used for static images)

The menu box shows the current loaded file name.

For more functions press “edit” to see the panel below



At the top of the edit panel we have the remote network media player. Just type in the ftp or HTTP address of the media and click “**Play Remote**” .

For some streaming media you may have to press the play remote a second time for all the content.

Auto Start

With this on, media will start to play as soon as it is selected from the menu or loaded.

Cue Start

This starts the media player's current selection as soon as one of the selectors is pressed

Clr

This will clear the currently selected media from the menu play-list

Clr All

This removes all the media files from memory and the player.

Auto-Switch

This allows media player to automatically run through each Mov/media in your play-list menu sequentially.

Auto-Switch with mixed media content

If your media play-list also contains static images (jpg bmp) as well as movie file types you need to tell NSync how to handle them. Select the picture timer's run time (up to 60 seconds). When the player finds a static image, it plays the images according to the time you have set in the picture image timer.

Audio from Media

Adjust the volume slider to your desired level. This slider adjusts all audio channels present in the media.

Mute

Select to mute the media sound and unselect to go back to the previous volume setting.

Write

Click “write” to save your current play-list to file.

Read

Click “read” to load a play-list from file into player. This will erase the current play-list but not currently playing media.

Tip

At program start a file called “blank-playlist” is recalled into the player.

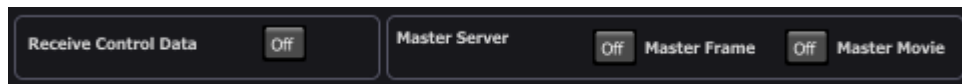
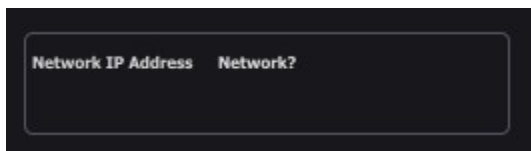
If you wish you can save a play-list with this same name to have your files loaded at startup

Learn

On the learn panel you will see small blue boxes showing the NSync control that can be controlled by an external source.

Select from the menu the control type you wish to use for the NSync object you wish to control. Press “learn” and move or switch the external control. At this point, the external control is registered and will now move or switch your NSync control.

Now you have finished setting up media player, press **close**

Network Sync

If you wish to span internal movies across multiple servers to increase projector count or for large pixel count media, you just need to connect a cat 5e cable between the servers. Make sure the movies with the same name and location are on both servers. **Do not use folder or media names with spaces.**

For large pixel count media, the movies are split between the servers with each server getting a piece of the movie. This technique allows for much larger pixel size than one server alone could manage.

Now decide which server is the master server by selecting “Master Frame”.
If you want the master server to select the media on the networked media server also select “Master Movie”

If the network connection is established, the words “connected to master server” will be displayed on the networked server.

Firewalls may block NSync's ability to connect. In this case switch off windows firewall or allow UDP packets through port 7474 (the default firewall in Windows blocks this port). You can change this in the Network Connections control panel, under the properties of your connection, using the Settings button in the advanced tab.)

If more than two servers are needed connect the servers via a hub or switch.

Presets

The panel below allows us to save the output positions and various control data . To recall presets we can use the pull-down menu and select the preset by name or use the numeral buttons to select it by number. You can also use qwerty keyboard keys 1 through 9.

Pause Play-list

This stops the play-lists from loading into the media players from presets.

Pause Controls



This stops external controls passing though Pixelwix NSync

Now press the edit button and you will see the panel below.

Once you have made your changes within your preset, you can save it to a number. You can save a total of 9 presets at one time to a single file. At the top of the panel, you can enter the current preset name for any preset number. The numeric buttons let you choose the memory location. Then click the save preset button .You have now saved one preset.

You can now save all nine presets to a single file by clicking the write button and then name the presets file for later re-call using the read button .

The factory preset file is located inside the folder called Pixelwix NSync in the programs folder and named “NSync presets”. This is the file NSync which loads at start-up.

NOTE

Preset file called “NSync presets” within the Pixelwix NSync folder will be the preset file recalled at start up and the preset in slot number 1 will be pre loaded.



List of Controls that presets will save.

Output Panel.

All output settings.
 Midi Port and Channel
 Pixelswitch device port.
 Receive network button

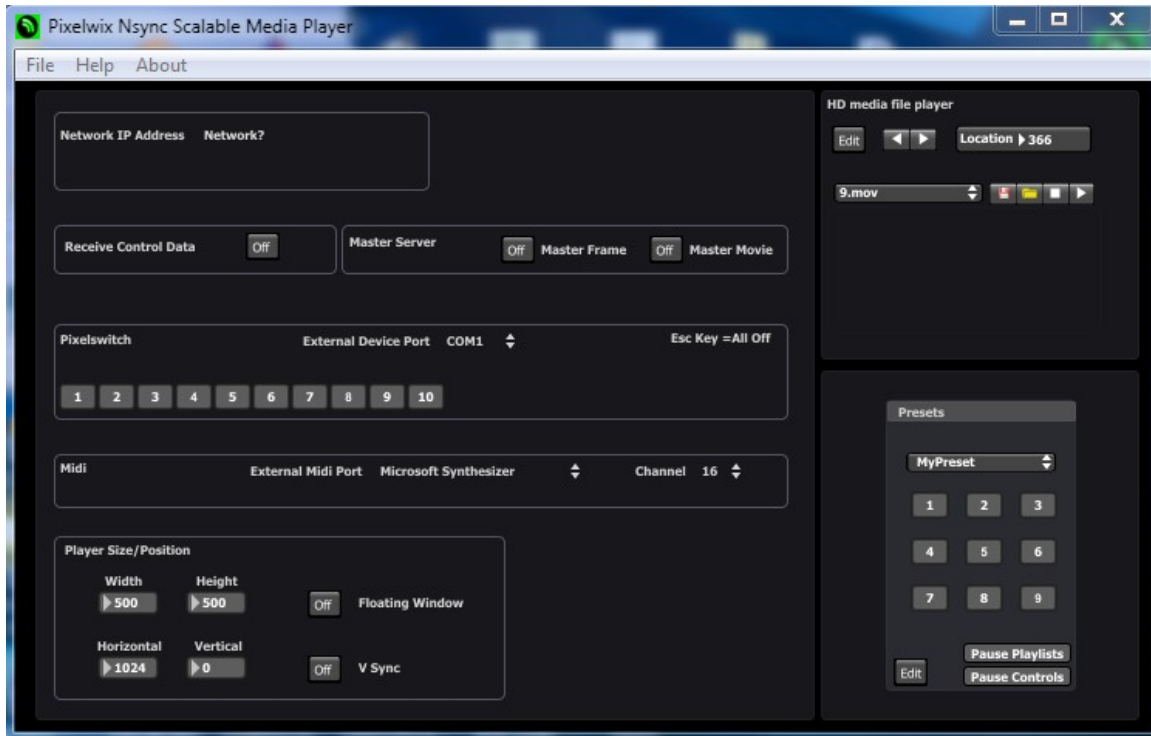
HD media player

Output on switch
 Auto start.
 Cue start.
 Picture time.
 Auto switch.
 Media volume.
 Mute volume.
 Play-lists (loading a new play-list will not overwrite current media playing within player)
 All learn buttons.
 Master frame and Master Movie

Presets

Pause Play-list and Pause Controls

Output Input Controls



NSync can be controlled and control objects from a growing list of external programs (sold separately).

Schedule

This product allows date/time scheduling of most of the controls on NSyncs panel as well as external data boxes like Pixelswitch or Midi devices.

If you don't want NSync to respond to this data you can turn off the receive button.

Schedule works both locally and over cat5 cables from an external PC.

Sequence

This product allows you to control the same events as schedule but by movie frames.

The master frame has to be selected on the media player for this to happen.

If you don't want NSync to respond to this data you can turn off the receive button.

Sequence works both locally and over cat5 cables from an external PC.

Pixelswitch

This product is a piece of external Usb hardware that allows 5v data communication on 10 outputs .

First insert Pixelswitch and then select the com channel (usually com3). If the device was plugged in after NSync was started, press the word "External Device" to rescan the system.

The numbered buttons from 1 to 10 give visual representation that data is being sent also allows you to manually send on/off data.

The escape key on your qwerty keyboard also acts as a panic switch to turn all outputs off and stop schedule or sequence events.

Powerail

This product communicates with Pixelswitch to control 110v ac or dc products at 10amps.

Just plug one end of Powertail into a 110v ac outlet and plug appliance in the outlet .
Now just connect a two small cables (one ground and one 5v dc outlets) from Pixelswitch box and you can switch power products manually from the panel or via Schedule or Sequence.

Note

**Data cables from Pixelswitch are isolated from high power components
But care should be taken when handling high voltage components as injury or even Death can occur.**

Midi

This product is a piece of USB hardware to communicate with other midi devices.
External midi port lets you select your connected midi device and channel is for one of the 16 midi channels available to use on the selected port.

Multiple Outputs Devices

Dual Head Graphic Card

If you only have a dual head graphic card and would like to achieve multiple outputs, you will need to use both adapters and, since you have no more monitors available , you will lose the interface display.

Dual Head Graphic Card + Single Head Graphic Card

Adding a supplementary graphic card to the setup described above, will allow you to use it with your desktop monitor to display the Pixelwix NSync Software interface and control the software while you use the dual head graphic card and its two outputs for the wide screen or multi-screen outputs.

Dual Head Graphic Card + Additional Hardware

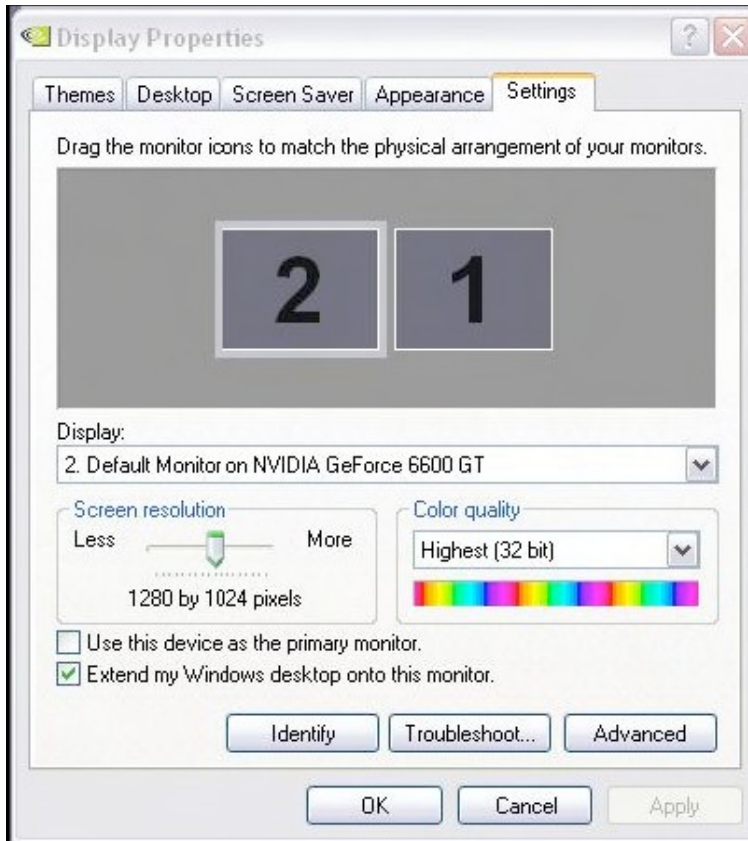
Using an external hardware such as the Matrox DualHead2Go allows splitting one video output into two separate signals. (The DualHead2Go is a palm-sized box that sits outside of your system and has one VGA input and two VGA outputs).

This system allows computers with a dual head graphic card to use one of the graphic card outputs for the software interface and it's second output to send the visuals that will be split across two different screens. This very affordable solution will also fit perfectly with most modern laptops.

Under windows, it is the graphic card that is responsible for spanning the big display across the various heads. In a sense, you create one “virtual display” covering two “physical displays”. In Windows terms, this is called Horizontal Span or Vertical Span, depending on the display orientation you will select.

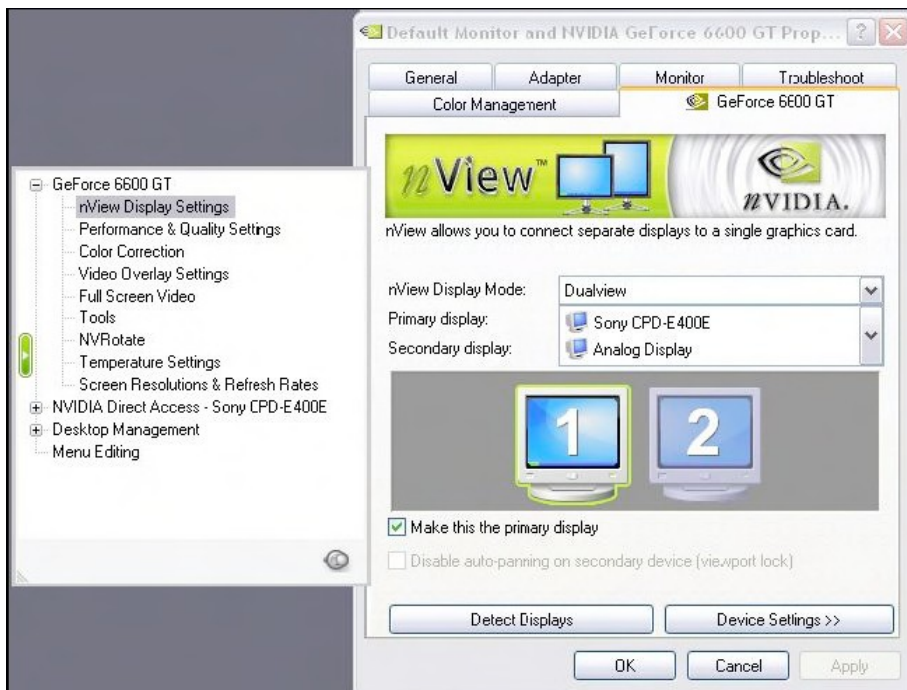
As an example, we will explain the different steps to configure a virtual display over multiple screens both with nVidia and ATI graphic cards. Other graphic cards may be capable of achieving such a setup and the configuration settings should not be too different from the ones explained below. In any case, please refer to your graphic card manufacturer’s documentation.

Finally, it is important to setup these options before launching Pixelwix since the application detects your displays upon start-up.

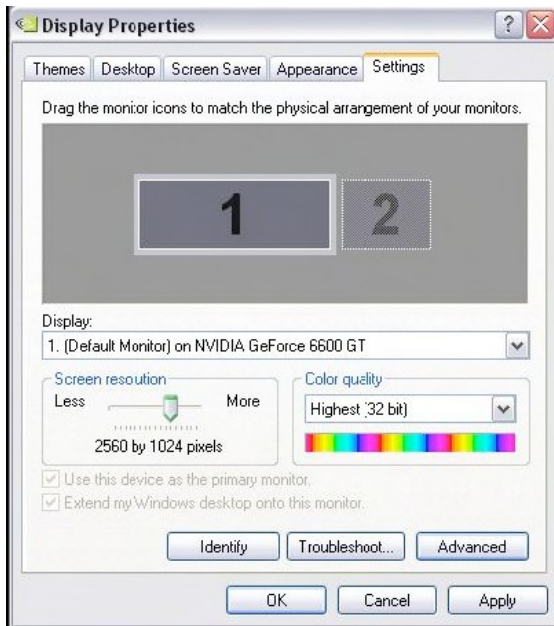


nVidia Graphic Cards

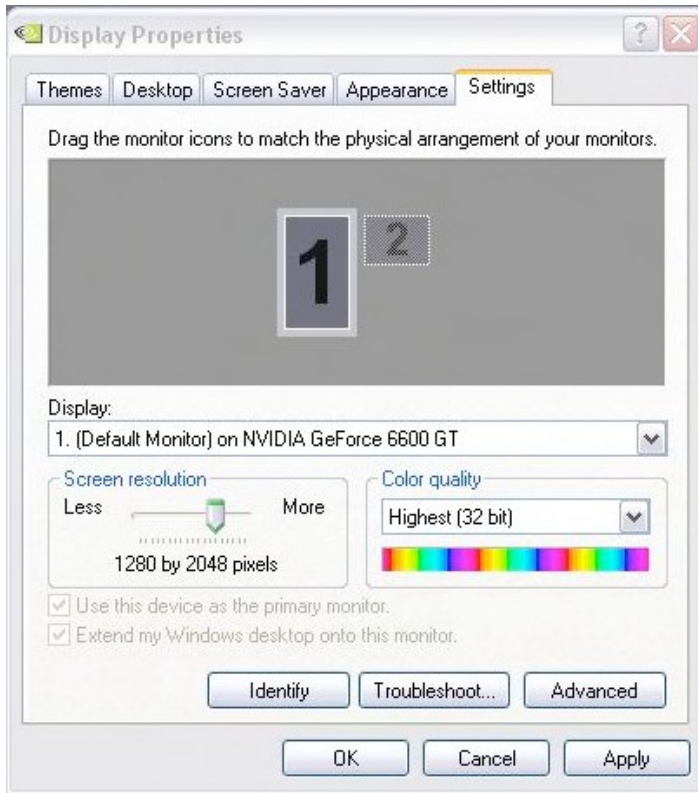
In the Windows Control Panel, open the “Display Properties” window and go to the “Settings” tab. You will see a classic dual monitor setup such as the one above. Click on the “Advanced” button and select the nVidia tab on the top right, this window will open:



In the menu next to “nView Display Mode”, select “Horizontal Span” or “Vertical Span” and click OK to apply. If you selected “Horizontal Span”, the two physical screens will be merged side by side in a single large display and the Windows display settings window will show a large screen.



In this case, the resolution is 2560x1024 because we used two 1280x1024 screens. If you selected “Vertical Span”, the two physical screens will be merged on top of each other in a single tall display and the Windows display settings window will show a tall screen

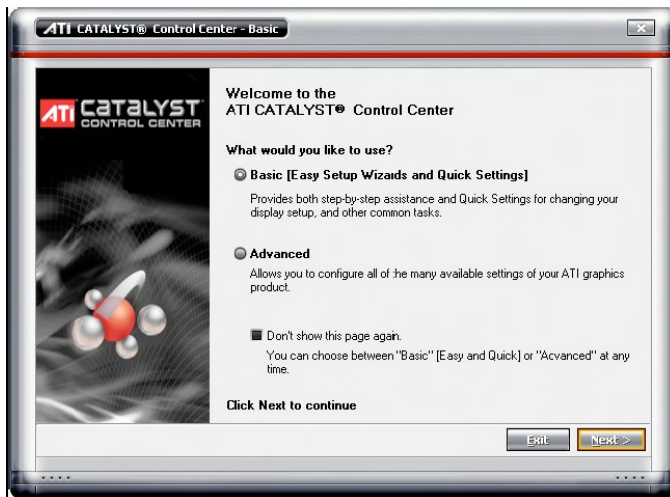


ATI Graphic Cards

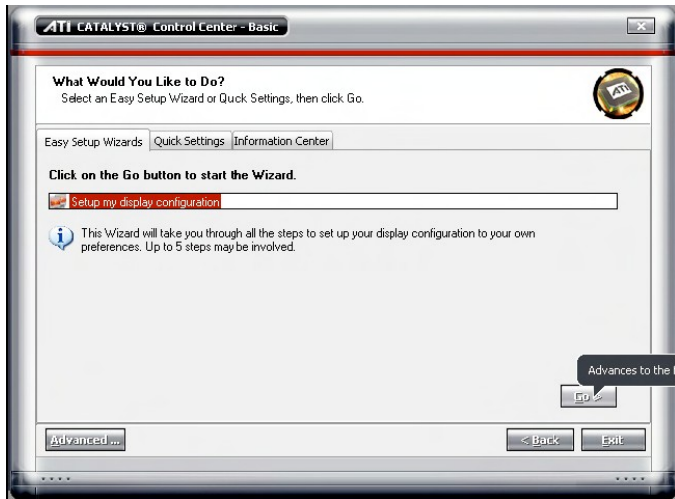
Setting up Horizontal or Vertical Span with ATI graphics cards is done through the "ATI Catalyst Control Center" which you can launch from Windows program menu or from the ATI icon in your system tray (next to the clock in the task bar).

Horizontal Span

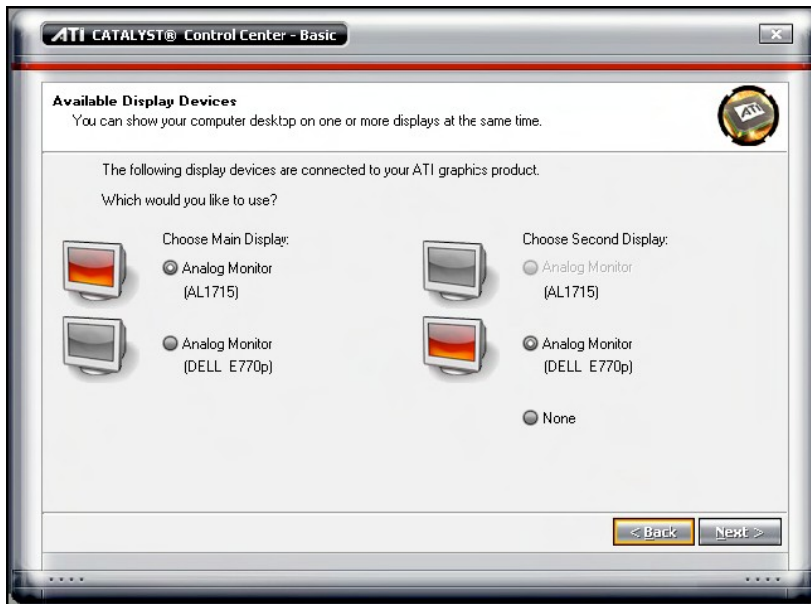
Once the "ATI Catalyst Control Center" window is open, to setup a simple Horizontal Span, select the Basic modes then click next.



The display configuration wizard will be displayed, click **Go** to start:

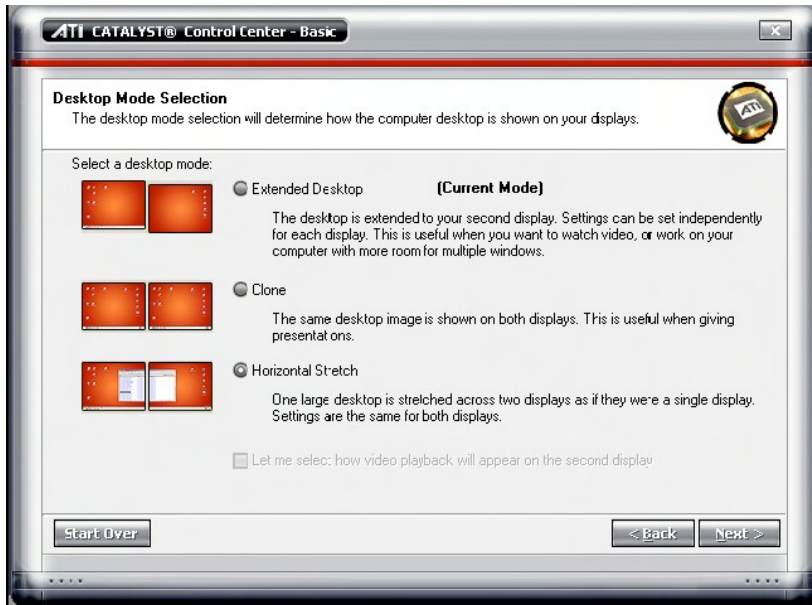


In the Available Display devices list, select which one is your primary monitor then click **Next**.



In the Desktop Mode Selection dialog, select the last option “Horizontal Stretch” Then click **Next**.

You will end up with a single display spanning horizontally over two monitors. You can now launch Pixelwix NSync and adjust your work space



Performance

Achieving good performance with video can be difficult because it depends on many different factors.

The most important factors are:

- CPU speed
- Disk speed
- RAM access speed
- Video card & video bus speed

Movie Compression

There is no easy way to give a definitive answer in terms of what is best for every computer. With PixelWix NSync, most of the graphic processing is done in the graphic chip of the video hardware, so the more powerful it is, the better performance you are going to get. The CPU is mainly used to decompress movie frames from the disk and send them to the video card. The faster your drives are, the faster frames will be loaded in the memory and the faster your CPU is, the faster it will decompress the frames.

NSync's video engine is also heavily multi-threaded. Having several cores will help decompress movie frames allowing a faster throughput.

To achieve a good frame rate with a given hardware, you can:

Use source material that is adapted to your hardware. If you have a slow disk or older generation of hardware, try working with smaller video sources to minimize the impact of loading and decompressing the movie. Since all calculations are done inside the graphic card, the automatic filtering applied when the images are scaled to the final resolution will minimize aliasing effects. It is very important to note that popular compression schemes such as mpeg, divx, DV and vobs, are very inefficient for fast switching playback. Video files using these compression schemes will behave correctly when used at nominal speed (100%). If you use these compression formats, you will get poor performance from the software.

Beside movie size, compression scheme has a huge impact both on the fluidity of the display and playability. The more complex the compression scheme, the more work the processor will have to do to recover specific frames, which often results in sluggish performance. In addition to the

compression method itself, there's the issue of key frames. Most widely spread compression mechanisms work using incremental methods, which means they construct a frame by storing the difference between a frame and the previous one. In order to keep the process from deriving too much from the original material, they store an original frame every now and then, and start coding incremental information from that frame on. These original frames are called key frames. Using sparse key frames will mean that for NSync to access a given frame, it will have to find the previous key frame and process all the intermediate frame differences until it reaches the desired one. As you can imagine, this process is rather slow and prevents fast access to frames, which is very important. That's why compression schemes like mpeg or DivX are not at all suited for video performance.

From our experience, the best compression scheme for video performance is QuickTime's Photo JPEG with a quality setting of about 80% or more. This will ensure smooth playback, effective performance and decent file size.

If you want to use high definition content (HD) you can also use the ProRes 422 or H264 codec, part of Apple QuickTime 7.x.

Technical Specifications

Quick Presets

Store up to 9 named output configurations for image splits or output sizing and location.

Supports Multiple Video Formats

Multi-Format video player with SDI and HD support to 1080p delivers enhanced efficiency and reliability with audio control and cross fading.

The Pixelwix NSync video presenter/switcher supports multiple image formats including HD (1080i and 720p) and SD video as well as still images. Regardless of the original format, Pixelwix outputs video from your video card in a variety of HD, or RGB formats.

Folder Playback

Plays a complete folders contents mixed format of stills and movies.

Movies playback in sequence , pictures have a timed display up to 60 seconds.

Folder content can be selected with a pull down menu or mouse click advanced for power point like changes.

Video Formats:

Support for MPEG-2.

Mov

. Mpg

. Mpeg

.vob

.vro

.m2v

.m2a

.m2s

Standard Formats:

Mov

Animated GIF

BMP

Cubic VR

GIF

JPEG/JFIF

MPEQuicktime 7G-1

MP3 (MPEG-1, Layer 3)

MPEG-4

MQV

M4A, M4B, M4P (iTunes 4 audio), M4V (iTunes video)
PICT
PNG
QuickTime Image File
QuickTime Movie
Avi

Audio Support

Full media playback with audio, can be individually muted and returned to it's previous position or continuously variable.
Ability to link with media selectors.

Pixelwix NSync Software Requirements

Minimum System (SD)

Intel or Amd Dual-core CPU 2.4ghz fast hd 7200rpm or above for performance (Slow drives = less media fps playback)

We recommend at least 2 GB of RAM for both SD and HD for Windows XP / XP Professional.

We recommend at least 4 GB of RAM for both SD and HD for Windows Vista / Vista 64 / Windows 7 / 8

Optimized windows system

Dual output fast video card supporting

Directx 9 or above

Opengl 2.0 or above

Quicktime 7 or above

The latest java runtime

Spare usb port for software key (**important keys not replaced if lost only if defective**)

Recommended System (HD)

8 core or more Intel i7or AMD 4.0ghz or better

Fast raid array system for max HD playback or SSD

Windows 7 / 8 64

16 gigs DDR 3 ram or better

Optimized windows system

6 output fast video card supporting

Directx 9 or above

Opengl 2.0 or above

Quicktime 7 or above

The latest java runtime

Spare usb port for software key (important keys not replaced if lost only if defective)

Recommended Graphics Cards

ATI Radeon 7 Series

Amd Firepro cards

nVIDIA Quadro series

Disk Storage

Recommended Disk Storage for SD and HD Uncompressed 4:2:2

CalDigit HD Pro

Ciprico MediaVault series

G-Technology Gspeed

Maxx Digital Evo2 HD

Medéa VideoRaid FCR2X

Medéa VideoRaid XTRM4

Promise VTrak series

Sonnet Technologies Fusion 500P. Use 1 unit for SD, or 2 units for HD, in conjunction with a Tempo SATA E4P or X4P.

Recommended Disk Storage for SD and HD Uncompressed 4:4:4 and 2K

CalDigit HD Pro

G-Technology Gspeed

Maxx Digital Evo2 HD (on 64-bit Windows)