Matrox™ **Display Wall Driver Release Notes**

For Matrox™ Mura™ IPX Series driver version 3.00.00
For Matrox™ C-Series and Mura™ IPX Series driver version 3.00.00

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Overview

This document describes the current release of the Matrox Mura drivers (v3.00.00) for Mura IPX Series and C-Series graphics for Microsoft® Windows® operating systems.

This driver holds for the following supported display wall configurations:

- Up to 2× C680/C900 cards

- Up to 2× C680/C900 + multiple Mura IPX Series 4K capture cards

- 4× NVIDIA® M4000 + NVIDIA sync card + multiple Mura IPX Series 4K capture cards

- NVIDIA® M6000 + multiple Mura IPX Series 4K capture cards

- Intel® HD Graphics 530 graphics hardware + multiple Mura IPX Series 4K capture cards

- Intel® HD Graphics 630 graphics hardware + multiple Mura IPX Series 4K capture cards

Matrox provides these notes to describe bug fixes and improvements to the software, API, and driver.

Operating system support

This release supports the following configurations and operating systems combinations.

- Up to 2 C-Series C900/C680 standalone and up to 2 C-Series C900/C680 + multiple Mura IPX Series capture card configurations:

  - All Professional, Standard, and Embedded versions of Windows 10 and Windows 7. We also support Windows Server 2008 R2 and Windows Server 2012 R2.

- Up to 4 NVIDIA M4000 + NVIDIA sync card, an NVIDIA M6000 card, Intel HD Graphics 530 graphics hardware, or Intel HD Graphics 630 graphics hardware + multiple Mura IPX Series 4K capture cards

  - All Professional, Standard, and Embedded versions of Windows 10 and Windows 7.

What's new in this release

This release of the Mura driver adds support for the following features and options:

- Ability to encode, stream, and record physical inputs, IP inputs, and ROI of the display wall with C680 and C900 based configurations. This functionality is only supported on systems that contain a Mura IPX Encode card (MURA-IPX-I4EF or MURA-IPX-I4EHF). Encoding, streaming, and recording functionalities are only supported in Windows 10.

- Encode of external buffer in VWLib – A Mura IPX encode card can receive data from the GPU or system memory for encoding purposes.

- Encode sample application in both Network API and VWLib.

- Support for variable frame rate cameras and streams.

- Performance and stability improvements.

- Performance optimizations which increase the number of SD streams that a card can decode.

- Support for NVIDIA NVS310 as a console in C-Series based configurations.

- Board ordering through DIP switches on Mura IPX Series cards.

- General bug fixes.

Notes and limitations

Known performance limitations

The following are known issues that may be fixed in a future release:

- Depending on where the streaming windows are located on the desktop, full frame rates may not be reached for certain stream windows.

- Applying a geometric rotation angle to a streaming window may cause a drop in rendering performance.

- The render rate may be affected if the outputs don't all use the same refresh rate.

- A Mura IPX Series card performance is limited to the following number of streams (or combination of):

  - Two (2) 4k60 streams

  - Four (4) 4k30 streams

  - Eight (8) 1080p60 streams

  - Sixteen (16) 1080p30 streams

  - Forty-eight (48) 4CIF streams

  Adding more streams may affect performance. Using DirectShow may exhibit different performance numbers.

- Using streaming windows that contain too many layers may affect rendering performance.

- Some systems may exhibit bus transfer performance issues that won't allow you to attain the suggested performances listed above.

Known limitations with Mura IPX Series cards

The following are known issues while using Mura IPX Series cards.

- Encoding, streaming, and recording functionalities of MURA-IPX-I4EF and MURA-IPX-I4EHF are only supported in Windows 10.

- Each MURA-IPX-I4EF and MURA-IPX-I4EHF is limited to five (5) desktop region encodes. This issue will be fixed in the upcoming release. For more information, contact Matrox.

- If static IP addressing is used, your network must have a time server (NTP) for the Mura IPX Series card to function properly.

- Interlaced video is currently unsupported on Mura IPX Series.

- Hardware dip switches are currently unsupported on the Mura IPX Series cards.

- Only RTSP protocol is currently supported for IP streams.

- Disconnecting a MURA-IPX-I4EF or MURA-IPX-I4EDF from the network can result in an InternalError if your Mura card is encoding.

- Changing the resolution of an input is unsupported while that input is used for an encoding.

- A desktop region can't contain content from two seperate GPUs at any given point in time.

- Power management isn't supported and should be disabled.

Known limitations with C-Series cards

- Only Matrox C900 and C680 graphics hardware can be paired with Mura IPX Series capture and decode cards and be used as display wall outputs.

- The following are supported console displays for C-Series based display walls:

  - Matrox M9148 LP PCIe x16

  - Matrox M9140 LP PCIe x16

  - Matrox M9138 LP PCIe x16

  - Matrox M9128 LP PCIe ×16

  - Matrox M9125 PCIe x16

  - Matrox M9120 Plus LP PCIe x16

  - Matrox M9120 Plus LP PCIe x1

  - Matrox M9120 PCIe x16

  - Intel® HD Graphics 530 (onboard)

  - Intel® HD Graphics 630 (onboard)

  - NVIDIA® NVS 510

  - NVIDIA® NVS 310

  Performance issues may exist when using M-Series cards as a console. These issues will be fixed in the upcoming release. For more information, contact Matrox.

- PowerDesk mode management can't be enabled when an M-Series product is used as a console in a C-Series based configuration.

Known limitations with third party graphics support

The following are known limitations while using third party graphics:

- Only the Intel HD Graphics 530, Intel HD Graphics 630, NVIDIA M4000 (4× NVIDIA M4000 + sync card), and NVIDIA M6000 can be paired with Mura IPX Series capture and decode cards and be used as display wall outputs. The list of supported third party brand and models will grow over time. If you have a specific request, contact us at DWCSupport@matrox.com.

- You won't be prompted to restart your system when installing the unified package. You need to manually restart your system for the changes to take effect after the installation.

Known issues and limitations with the Network API interface

The following are known issues and limitations when using the Network API interface:

- Not all Network API commands are supported in all supported display wall hardware configurations. For a complete list of supported commands, see the Capabilities functionality in the Network API.

- The following third party applications have been validated by Matrox:
  - VLC® – 2.2.6 in 64-bit
  - VNC® – 5.0.5
  - Internet Explorer – 9, 10, 11
  - Powerpoint Viewer – 2010 with SP1 for Powerpoint Viewer

- When the *Netinfo* command is called, only the host network adapter is listed. [26732]

- Changing the output resolution resets the rotation to landscape. [28506]

- The aspect ratio of a VLC stream isn't respected when the source is loaded to a layout for the first time. [28234]

- The Network API can only report modes common to all monitors.

- Borders aren't resized along with the window if the window position was changed using the transition function. [28984]

- Borders, text overlays, and image overlays aren't properly handled when using geometric rotation angles on streaming windows. [29197, 29198]

- The *ResumeAutoTransitionStart* command starts transitions right away even without the */restart* option. [29565]

- Text and image overlays aren't properly handled within Transitions. The size and transparency aren't adjusted properly.

- The same caption can be set on 2 different windows of the same layout.

- The *SetSourceImageOverlay* and *AddSourceTextOverlay* commands don't work with source applications running on the Host system.

- Microsoft .NET 4.5 needs to be installed for the Network API to function correctly.

- Using HTTPS communication with the Network API bypasses any passwords set using telnet communication.

- Shutting down the system while streams are up on the wall is unsupported.

- Windows Aero needs to be enabled for windows to be displayed correctly on a C-Series or third party based display wall controller.

- The *ClearDatabase /Images* command returns **InternalError** if an image is in use on the wall.

- Unable to restart Network API if your output configuration contains more than 12 independent displays.

Known limitations with PowerDesk software

The following are known limitations when using PowerDesk software:

- When starting PowerDesk immediately after a system restart, PowerDesk may not start. We recommend waiting a while, and then trying to restart PowerDesk.

- The horizontal resolution of your stretched mode layout can't be higher than 16384 pixels on a C-Series based system.

- The resolution per output, for C-Series cards, must be divisible by 8.

- PowerDesk configuration changes are unsupported while Network API is in use.

Known issues and limitations with the VWLib API and rendering engine

The following are known issues and limitations in the VWLib API that may be fixed in a future release:

- Running two display wall applications simultaneously is unsupported.

- Windows Aero needs to be enabled for windows to be displayed correctly.

- The Inactive Stream action may fail to display and cause an internal error.

- Shutting down the system while streams are up on the wall is not supported.

Known limitations with the DirectShow interface

The following are known issues and limitations in the DirectShow interface that may be fixed in a future release:

- DirectShow interface is only supported on C-Series based controllers.

- Performance going through DirectShow may not match performance when going through Matrox Mura libraries directly.

- Performance limitations may exist due to DirectShow rendering engine limitations.

- Performance limitations may be different depending on the rendering engine that is used.

- Stretching source across two GPUs isn't supported.

- Shutting down the system while streams are up on the wall isn't supported.

Driver installation

Before you begin

- Make sure the correct operating system is installed.

  - C-Series based controllers support all Professional, Standard and Embedded versions of Windows 10, and Windows 7. They also support Windows Server 2008 R2 and Windows Server 2012 R2

- Make sure all the latest hot fixes for Windows are installed on your system. For Windows 7, you must install Windows 7 SP1 and the Microsoft KB2670838 hot fix. For improved stability under Windows Server 2008 R2 (XDDM mode), you must install the Microsoft KB980731 hot fix.

- Make sure you have administrator rights on your system. You need administrator rights to install certain software and change certain settings.

- Make sure that the necessary exceptions are added to your firewall to allow network communications. The Network API uses port 23 for telnet and port 46272 for HTTPS and Preview Surfaces.

Setting up your C-Series-based controller (with or without Mura IPX Series capture cards)

1 Install and connect your C-Series C680/C900 and Mura IPX Series capture cards.

2 If you are using a C900, please complete firmware update on C900. Firmware update is available for download through our website.

3 Install the Matrox Mura Drivers for C-Series systems by running *Matrox.Setup.exe*. This will take several minutes. If a virus scan software is active during the installation process, the installation will take significantly longer to complete (up to two or three times longer than if it's disabled). Don't shut down or turn off your system until the installation is complete.

4 Install and connect your console card (optional). If you're using an NVIDIA NVS510, please install drivers versions 368.86 or 641.98. If you're using a Matrox M-Series card, please install drivers version 5.02.10.

5 Restart the system once the installation completed successfully.

6 Run PowerDesk to configure your desktop layout (multi-display setup). Make sure to use the same monitor brand/model on all C-Series outputs and the same brand/model active dongles.

7 We strongly recommend enabling EDID emulation on your C-Series outputs to disable HPD events and prevent an undesired output configuration change. To enable EDID emulation, follow these steps:

   a Open PowerDesk and go into **Multi-Display Setup**.

   b Click **EDID management** and accept the notice that appears.

   c Select **Apply EDID emulation for selected outputs**, then click **Select all** from the list.

   d Accept the changes and restart the system.

Supported C-Series consoles

The following are all the graphic cards currently supported as console displays when paired with the C-Series cards.

Graphic card	Graphic card driver version
Matrox M-Series	5.03.00
Intel HD Graphics 530	15.45.10.4542
Intel HD Graphics 630	21.20.16.4534
NVIDIA NVS 310	385.69
NIVIDIA NVS 510	368.39

Setting up your third party-based graphics card controller (with Mura IPX Series capture cards)

1   Install and connect your third party graphics card and Mura IPX Series capture cards.

2   For NVIDIA M4000 based controllers, please install the NVIDIA graphics drivers version 376.84.

    For NVIDIA M6000 based controllers, please install the NVIDIA graphics drivers version 377.35

    For Intel HD Graphics 530 based controllers, please install the Intel graphics drivers version 15.45.10.4542 or the ASUS drivers version 21.2016.4541.

    For Intel HD Graphics 630 based controllers, please install the Intel graphics drivers version 21.20.16.4524.

3   Install the Matrox Mura Display Wall drivers by running *Matrox.Setup.exe*. This will take several minutes. If a virus scan software is active during the installation process, the installation takes significantly longer to complete (up to 2 or 3 times longer than if it's disabled). Don't shut down or turn off your system until the installation is complete.

4   Restart the system after installation completed successfully.

5   Run the output management software (of Intel and/or NVIDIA) to configure your desktop layout (multi-display setup).

Contact us

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If you have any questions or comments about our products or solutions, contact us at www.matrox.com/graphics/contact.

You can get technical assistance by contacting Matrox technical support at dwcsupport@matrox.com.

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