Matrox™ **Display Wall Driver Release Notes**

For Matrox™ Mura™ MPX and IPX Series driver version 2.09.00
For Matrox™ C-Series and Mura™ IPX Series driver version 2.09.00

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Overview

This document describes the current release of the Matrox Mura drivers (v2.09.00) for Mura IPX Series, Mura MPX Series and C-Series graphics for Microsoft® Windows® operating systems.

This driver holds for the following supported display wall configurations:

- Multiple Mura MPX Series cards
- Multiple Mura MPX Series + multiple Mura IPX Series 4K capture cards
- 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
- Intel HD530 OnBoard 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.

- Multiple Mura MPX Series with or without multiple Mura IPX Series capture card configurations:
  - Windows Server 2008 R2
  - Windows Embedded Standard 7 64-bit
  - Windows Embedded Enterprise 7 64-bit
  - Windows 7 64-bit
- 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, Windows 8.1 and Windows 7. We also support Windows Server 2008 R2 and Windows Server 2012 R2.
- Up to 4 NVIDIA M4000 + NVIDIA sync card or Intel HD530 OnBoard graphics hardware + multiple Mura IPX Series 4K capture cards
  - All Professional, Standard, and Embedded versions of Windows 10, Windows 8.1 and Windows 7.

What's new in this release

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

- Support for third party graphics adapters when paired with Mura IPX Series capture cards. The following configurations are supported:
  - 4× NVIDIA M4000 + NVIDIA sync card + Mura IPX Series capture cards.
  - Intel HD 530 onboard graphics + Mura IPX Series capture cards .

  The list of supported third party brand and models will grow over time. If you have a specific request, please write an e-mail to DWCSupport@matrox.com.
- Support for 10 bit per component captures on Mura IPX Series and 10 bit per component outputs on C-Series-based controllers.
- Added support for more graphic adapters as console display when paired with the C-Series cards.
- Significant increase of performance on Windows 10 systems to match the performance seen on Windows 8.1 and 7.
- Added support for DMA functionality: Mura IPX Series capture cards now provide the ability to DMA into system memory or graphics memory for an application (written on top of our VWLib API) to obtain the captured (physical or IP input) video frames.
- IP decode performance improvements. Optimizations include the ability to decode 4× 4K30 4:2:0 streams per Mura IPX board (an improvement from 3 in the 2.08 drivers).
- 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

  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.

- If static IP addressing is used, your network must have a time server 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.

Known limitations with third party graphics support

The following are known limitations while using third party graphics:

- Only the Intel HD 530 and NVIDIA M4000 (4× NVIDIA M4000 + sync card) 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.
- The following are supported console displays for C-Series based display walls:
  - Matrox M9128 LP PCIe ×16
  - Intel HD 530
  - NVIDIA NVS 510
- You won't be prompted to restart your system when installing the unified package.

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 example, some commands supported on Mura MPX-based controllers aren't supported for C-Series-based controllers and vice versa. 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 – 2.2.4 in 64-bit
  - Real™ VNC – 5.0.5
  - Internet Explorer – 9, 10, 11
  - Powerpoint Viewer – 2010 with SP1 for Powerpoint Viewer
- On Mura MPX-based systems, the ***SetOutputLayout*** command may cause an internal error if the display wall is composed of monitors of different brands and models.
- 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.

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 32768 pixels on a Mura MPX Series based system and 16384 pixels on a C-Series based system.
- The resolution per output, for C-Series cards, must be divisible by 8.

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.

Known limitations with Millennium P690 support

The following are known limitations while using supported P690 products:

- Only Matrox Millennium P690 PCIe and P690 Plus LP PCIe are supported as consoles in your Matrox Mura MPX-based controller.

Known limitations with HDCP support

Note: By default, HDCP mode is disabled after the driver is installed.

The following are known limitations while using HDCP:

- HDCP is only supported on Mura MPX Series cards. For HDCP support on Mura IPX Series, please contact your Matrox representative.
- Enabling HDCP capture may cause a drop in rendering performance.
- HDCP is supported on a maximum of 10 cards.
- All monitors used in the current output desktop configuration must be HDCP compliant, turned on, and connected using HDCP compliant cables. If HDCP capture can't be properly enabled, you may experience problems such as corruption on your outputs, monitors blinking periodically, streaming windows turning blue, and system freezes.
- Using HDCP repeaters on the Mura output connectors os unsupported.
- The Preview surface functionality of the Display Wall library is unsupported on HDCP encrypted streams.
- Each HDCP encrypted stream can only be shown on a maximum of 11 downstream devices. Some source devices support less downstream devices.
- Moving a streaming window from one monitor to another while an HDCP encrypted stream is displayed will cause a monitor revalidation process (required for HDCP) and cause temporary image defects on the stream.

- When an HDCP input streaming window is rotated, the number of HDCP downstream devices required to be authenticated may increase due to the position of the underlying bounding rectangular window. [29070]
- HDCP sources won't stream protected content on a monitor currently on a revocation list.

Driver installation

Before you begin

- Make sure the correct operating system is installed.
  - Mura MPX Series based controllers support Windows 7 Professional Edition 64-bit, Windows Embedded Enterprise 7 64-bit, Windows Embedded Standard 7 64-bit, and Windows Server 2008 R2 64-bit.
  - C-Series based controllers support all Professional, Standard and Embedded versions of Windows 10, Windows 8.1 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 improved stability under Windows 7 and Windows Server 2008 R2 (XDDM mode), you must install the Microsoft KB980731 hot fix. For Windows 7, this hot fix is part of SP1.
- 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 Mura-MPX-based controller (with or without Mura IPX Series capture cards)

1. Remove any existing third party graphics hardware installed in your system. If graphics hardware is built into the motherboard of your computer, make sure it's disabled.
2. Install and connect your Mura MPX Series cards, Mura IPX Series capture cards, and P690 (optional for console purposes) cards. If you're using a P690 product as a console, make sure you uninstall any Matrox display drivers previously installed.
3. Install the Matrox Mura drivers for MPX systems by running *Setup.exe*. This may take several minutes. If virus scan software is active during the installation process, the installation will take 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. Restart the system once the installation completed successfully.
5. Run PowerDesk to configure your desktop layout (multi-display setup).

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 M9138 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 M9128	5.03.00
Intel HD 530	15.45.10.4542
NVidia 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.
3. For Intel HD530 based controllers, please install the Intel graphics drivers version 15.45.10.4542 or the ASUS drivers version 21.2016.4541.
4. 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.
5. Restart the system after installation completed successfully.
6. 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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