Matrox® Release Notes

Matrox® Mura™ IPX 4K Capture Series and D-Series

Software version 3.08.00

matrox®

Overview

This document describes the current release of the Matrox Mura drivers (v3.08.00) for Mura IPX 4K Capture Series and D- Series graphics cards.

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

What's new in this release

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

- NetAPI updates:
    - [MURADX-4055] Ability to select multiple audio output devices to playback audio.
    - [MURADX-4705] Support MPEG2-TS Captures using an External Streamer.
    - [MURADX-4735] Ability to select SRT caller/listener/rendezvous on Mura IPX encode streams.
    - [MURADX-4745] Ability to enter DNS suffixes/Domains on Mura IPX 4K Capture Series cards.
- [MURADX-4264] Ability to get Mura IPX card logs over PCIe bus.
- [MURADX-4642] Support Encrypted Extio3 streams with Mura IPX 4K Capture Series cards.
- [MURADX-4719] IPX Utility - Added Codec, CPU, and Memory usage for Mura IPX 4K Capture Series cards.
- [MURADX-1427] Improved performance when Native Windows overlap multiple GPUs while in No Background mode.
- Improvements on overall security and vulnerabilities.
- Bug Fixes:
    - [MURADX-3872] Fixed an issue with window sizes above 16k when using native Windows.
    - [MURADX-4129] Fixed the RTSP encode "InternalError" with multiple D-1450 cards.
    - [MURADX-4515] Improved error returns with Recordings.
    - [MURADX-4596] Fixed an issue where the IPV6 address changes every time IPMode is changed.

- [MURADX-4700] Fixed an audio glitch when re-encoding audio with IP Streamer.

- [MURADX-4773] Fixed a freeze issue with RTP streams after pause/play on a D-Series controller system.

- [MURADX-4785] Fixed monitor blink issues when applying a background color to the layout.

- [MURADX-4804] Fixed a NetAPI issue where ConnectionMode returns the wrong mode when using MPEG2-TS streams.

- [MURADX-4810] Fixed an issue with output hot-plugging while capturing HDCP sources.

Operating system support

This release supports the following configurations and operating system combinations.

- Up to four (4) D-Series standalone and up to four (4) D-Series + multiple Mura IPX 4K Capture Series cards configurations:

  - Windows® 10 64-bit (version 1809 and up)

  - Windows® 11 64-bit

  - Windows® Server 2019

  - Windows ® Server 2022

- Matrox has tested the following graphics cards under Windows® 10 64-bit. Matrox does not foresee any compatibility issues with other third-party graphics or drivers.

  - NVIDIA® RTX 4000, NVIDIA® RTX 5000, AMD® Vega 64, AMD® W 5100, AMD® WX 7100, AMD® WX 9100 Intel® HD Graphics 630, or Intel® UHD Graphics 630 graphics hardware + multiple Mura IPX 4K Capture Series cards.

  - Please contact Matrox for more details about supported configurations in Linux®.

Please note that OS support may vary depending on the GPU of the controller.

Notes and limitations

Known performance limitations

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

- A Mura IPX 4K Capture Series card supports the following number of streams, or a combination of streams, in YUV 4:2:0:

  - Two (2) 4k60 streams

  - Four (4) 4k30 streams

  - Eight (8) 1080p60 streams

  - Sixteen (16) 1080p30 streams

  - Forty-eight (48) D1@24Hz streams

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

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

- The maximum encoder frame size is 4K. To encode a larger portion of the desktop, the region can be set as a greater value, but the streamed value needs to be 4K. The encoding horizontal resolution must be a multiple of 16, and the vertical resolution must be a multiple of two (2).

- There may be audio-video synchronization issues with IP sources containing B-frames.

- There may be audio-video synchronization issues with encodings from IP Sources.

- 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.

- Changing the configuration on a multi-GPU video wall installation may take several minutes.

- Upon installing the Mura 3.08.00 package under Windows 10, Fast Boot will be disabled.

- [MURADX-4961] Performance may be affected when running the videowall in "nobackground" mode on Windows 11.

Notes and limitations with Mura IPX 4K Capture Series cards

The following are known issues while using Mura IPX 4K Capture Series cards.

- For audio, the following limitations exist:
    - No support for audio-only streams.
    - Support sampling rates from 32 KHz to 96 KHz.
    - Audio support may affect latency.

- Stream mode/resolution changes are not supported during encoding.

- Interlaced video is currently not supported on Mura IPX 4K Capture Series cards.

- A desktop encode region can't span more than one (1) display in PowerDesk.

- Power management is not supported and should be disabled.

- Regarding the synchronization of IPX physical inputs across multiple IPX cards:
    - In order to preserve input synchronization across multiple IPX cards, all signals being captured by the Mura IPX system must be framelocked, and the framelock cable (CAB-FL-F) must be connected to every IPX card within the system.
    - Cross IPX synchronization is currently possible if a system has a mix of Mura IPX SDI cards with Mura IPX HDMI or Mura IPX DisplayPort cards. Some restrictions apply. Please contact DWCSupport@matrox.com for more details.
    - *Note: Input synchronization is already guaranteed when inputs are captured on a single IPX even without using the sync cable.*
    - This functionality is enabled when in Background or noBackground NoWindowFrames mode.

- **MURA IPX 12G-SDI** – 12G-SDI is supported only on connectors 2 and 4. 6G-SDI isn't supported. Not all 12G-SDI and 3G-SDI standards/formats are supported. For more information, contact DWCSupport@matrox.com.

- Mura IPX Decode cards can decode multicast/unicast and unencrypted/encrypted video streams from Extio 3. Extio3 Encrypted stream is supported only when HDCP is disabled. Use latest Extio 3 driver 3.04.00 (audio streams are not supported). Please contact Matrox for more information regarding IPX and Extio 3 software and firmware version compatibility.

- [MURADX-4893] Encrypted Extio3 stream is unsupported with Mura IPX SDI Capture cards.

- [MURADX-1587] Starting RTSP streaming or recording on a system with multiple Mura IPX 4K capture series cards may result in an Encode error if a decode-only card is present in the mix.

- [MURADX-4671] Audio transcoding is not supported. If the encoded audio changes sampling rate, silence will be generated.

Notes and limitations with D-Series cards

- Matrox recommends using the preferred resolution of the monitors.

- When installing multiple cards in a system, mixing different types of D-Series cards is not supported.

- Installing the drivers for four (4) D-Series cards within one system can take up to 10 minutes.

- When installing a D-Series card, it is possible that the NVIDIA drivers are automatically installed by Windows. If this is the case, the Matrox installation can be re-launched to install Matrox drivers on the D-Series cards.

- Hot plug detection (HPD) will not work when in stretched configuration.

- Framelock with D-Series is possible if the following conditions are met:

  - The outputs of each GPU should be configured either in independent, or in a single stretch (no mix).

  - When there is a bezel adjustment or overlap, the outputs are not rotated at 90 or 180 degrees.

  - The first output of each GPU is connected to a monitor.

  - HPD events may cause loss of framelock. To recover, a system reboot or EDID overwrite can be performed.

- If problems are encountered when connecting the D1450 to HDMI 2.0 inputs of 4K panels, please connect to an HDMI 1.4 input of the monitor.

- Enabling joined mode will apply to all D1480 cards in the system (up to two cards). You may see a performance drop in joined mode when compared to independent or stretched mode.

- HDCP is not supported when D-Series cards are in joined mode.

- Edge Overlap is not supported when D-Series card are in joined mode.

- When encoding a desktop that spans multiple D-Series cards in joined mode, a black stream may occur.

- When using EDID emulation, outputs must initially be configured in independent mode.

- [DS-464] When a windows desktop configuration exceeds 16K, some displays will display a black screen. The desktop can be recovered manually by forcing a desktop refresh by pressing Windows +D.

- [MURADX-4727] Windows 11: The wall position of a web page **(IE)** cannot be controlled using Mura control for Windows. The source position can only be controlled from the D-Series controller system and not Mura control.

Notes and limitations with third party graphics support

The following are known limitations while using third-party graphics:

- Because Mura IPX 4K Capture Series cards leverage DirectX under Windows and OpenGL under Linux, Matrox doesn't foresee any compatibility issues with other third-party graphics brands and models not mentioned in the Configurations and OS support section above. Although Matrox strives to test a wide variety of setups and configurations of the most common use-cases, we are unable to test all possible setups and configurations. If you're having any issues with the setup of your third party graphics + Mura IPX Series configuration, we recommend removing all Mura IPX Series cards first to verify the stability of the isolated third-party graphics configuration. If you have any questions or a request for a specific brand and model to be tested, 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.

- Performance issues may exist when using Intel HD Graphics 630 in no background mode.

- When using Intel onboard graphics hardware as a console on a controller with third-party graphics hardware, the console display is part of the display wall layout.

- When using third-party graphics cards as the main video wall, set the desktop configuration with the accompanying third-party graphics-display-configuration utility software instead of PowerDesk.

- Linux is currently not supported with the 3.08.00 drivers. Please use 3.03 drivers under Linux with third-party based controllers. For more information contact us at DWCSupport@matrox.com

Notes and limitations with HDCP capture

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

- Enabling HDCP capture may cause a drop in rendering performance.

- All monitors and repeaters 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.

- Capture of HDCP content is only supported on controllers using Mura IPX HDMI capture cards and D-Series output cards together.

- A source device connected to the HDMI input connector of a Mura IPX Series card must support the number of downstream devices in your display wall, plus one (1).

- HDCP sources won't be displayed on a video wall which has a monitor currently on a revocation list.

- The following functions are not possible when HDCP is enabled on the video wall controller:

  - Desktop encoding

  - Print Screen

  - Remote desktop to the video wall controller

  - Input encoding of HDCP content
    Note: Input encoding of non-HDCP content remains possible

  - HDCP source previews

- HDCP is not supported when D-Series cards are in joined mode.

- [MURADX-4644] Streaming mix of HDCP 1.4 and 2.2 sources simultaneously on a single Mura IPX 4k Capture Series card is not supported.

Notes and limitations with the Network API interface

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

- Microsoft .NET 4.5.2 needs to be installed for the Network API to function correctly.

- 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 document.

- The following third-party applications have been validated by Matrox:
  - VLC® – 3.0.17 in 64-bit
  - VNC® – 5.05, 6.0
  - Google Chrome - 103.0.5060.114
  - PowerPoint Viewer – 2010 with SP1 for PowerPoint Viewer
  - PowerPoint 2016 – from Office 2016
- Z-order is not supported with third-party applications.
- The *ClearDatabase* command doesn't delete encoders, RTSP servers, or recordings.
- Size and transparency of text and image overlays may not be adjusted properly within transitions.
- The *SetSourceImageOverlay* and *AddSourceTextOverlay* commands aren't supported with source applications running on the host system.
- The Network API can only report modes common to all monitors.
- Borders, text overlays, and image overlays aren't properly handled when using geometric rotation angles on streaming windows.
- The *ResumeAutoTransitionStart* command starts transitions right away even without the */restart* option.
- The same caption can be set on two (2) different windows of the same layout.
- Shutting down the system while streams are up on the wall is not supported.
- Audio from a VLC source can only be played on the Windows default audio device.
- [MURADX-4775] On a Windows 11 system, you cannot connect via IPV4 after connecting via IPV6 until you remove or rename TelnetServer.conf.

Notes and limitations with the DirectShow interface

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

- DirectShow interface is only supported on certain Matrox based controllers. Please contact Matrox for more details.
- 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 used.

- Stretching source across multiple GPUs isn't supported.

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

- [MURADX-4446] Using Network API is not possible while using Directshow to display the captured baseband.

Notes and limitations with PowerDesk software

The following are known limitations when using PowerDesk software on a Windows system:

- 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 any Windows operating system.

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

- With a D-Series controller, when applying a vertical stretch configuration, the display wall will automatically zoom. The user must re-adjust the settings to 100% using Windows Display settings.

- It may be difficult to tell when the outputs are slightly misaligned when accessing the video wall via PowerDesk.

- [DS-367] When using a D-Series controller, in order to enable or disable EDID emulation, all outputs of the graphics card need to be in independent mode.

- [DS-261] You may encounter a problem with an onboard or add-in board as your main display using PowerDesk. The workaround is to use Windows display settings.

- [DS-256] While in join mode or in stretch, when connected to different monitors, only the common refresh rates between the monitors will be offered. If no common refresh rates are offered, then the user has to use EDID management to have monitors with common refresh rates.

- [DS-326] PowerDesk may experience strange behavior with consoles in clone mode.

- [DS-303] When using NVIDIA graphics as console along with D-series, you must install the NVIDIA display driver first, followed by a reboot, before installing the Matrox driver package.

- [DS-307] QuadHead2Go layout or resolution should not be changed when QuadHead2Go is part of a stretched source on a D-Series since it may result in unspecified PowerDesk behavior.

- [DS-401] Hotplug is not supported while in stretch mode. PowerDesk may be disconnected.

- [DS-492] PowerDesk for D-Series does not support monitors with Display Port Multi-Stream Transport (MST). MST must be disabled via the monitor's OSD menu. If MST is enabled on any monitor connected to D-Series, PowerDesk may not work properly.

- [MURADX-2364] A reboot is required after enabling onboard Intel HD Graphics as console before using the videowall controller.

Notes and limitations with Matrox Extio 3

- Mura IPX Decode cards can decode multicast/unicast and unencrypted/encrypted video streams from Extio 3. Extio3 Encrypted stream is supported only when HDCP is disabled. Use the latest Extio 3 driver 3.04.00 (audio streams are not supported). Please contact Matrox for more information regarding IPX and Extio 3 software and firmware version compatibility.

Driver installation on a Windows system

Before you begin

■ 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 D-Series controller (with or without Mura IPX Series 4K capture cards)

1   Install and connect your D-Series, and your Mura IPX Series 4K capture cards.

2   Install the Matrox Mura Drivers for D-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.

3   Restart the system once the installation is completed successfully.

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

5   We strongly recommend enabling EDID emulation on your D-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.

6   **Windows 10** – To avoid any issues, fast startup needs to be disabled. This is done automatically during driver installation.

Supported D-Series consoles

The following are all the graphic cards currently tested and supported as console displays when paired with the D-Series cards. Other graphic cards might work as console in your videowall system. Please contact support for more information.

Graphics card	Driver version of graphics card
Matrox M9120 Plus LP PCIe x16	Included in unified installer
Matrox M9120 PCIe x16	Included in unified installer
Matrox M9128 LP PCIe x16	Included in unified installer
Matrox M9138 LP PCIe x16	Included in unified installer
Matrox M9140 LP PCIe x16	Included in unified installer
Matrox M9148 LP PCIe x16	Included in unified installer
Intel 530	30.0.101.1994
Intel HD630	30.0.101.1994
Intel UHD630	30.0.101.1994
AMD Radeon HD 7700	27.20.1034.6 (22.6.1)
NVIDIA Quadro P400	511.09
NVIDIA Quadro P620	511.09
ASPEED 2500	1.06 (9.0.10.106)

Setting up your third-party-based graphics card controller (with Mura IPX Series 4K capture cards)

Make sure the fast startup option is disabled on the system running Windows 10. This setting can be found in the Control Panel under **Power Options**.

1 Install and connect your third-party graphics cards and Mura IPX Series 4K capture cards.

   For NVIDIA RTX 4000 and RTX 5000 based controllers, install the NVIDIA graphics driver version 516.59.

   For Intel HD Graphics 630 based controllers, install the Intel graphics driver version 30.0.101.1994.

   For AMD WX 7100 based controllers, install the AMD graphics driver version 18.01.

2 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 two or three times longer than if it's disabled). Don't shut down or turn off your system until the installation is complete.

3   Restart the system after installation is completed successfully.

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

5   **Windows 10** – To avoid any issues, fast startup needs to be disabled. This is done automatically during driver installation.

Contact us

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

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

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