



Avid | Stream IO User's Guide

Version 2024.2

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Footage

Ice Festival, London Zoo, Feng Shui - Courtesy of Reuters.

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Using This Guide

This guide is intended for all users of an Avid | Stream IO system. This guide describes product features and basic user procedures, as well as installation, configuration, and administrative information.

Important: See the following link on the [Avid Knowledge Base](https://avid.secure.force.com/pkb/articles/en_US/readme/Avid-Stream-IO-Documentation) for the latest updates to this guide and all related documentation:

https://avid.secure.force.com/pkb/articles/en_US/readme/Avid-Stream-IO-Documentation

Revision History

Date Revised	Changes Made
February 29, 2024	Initial release

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
<i>Italic font</i>	Italic font is used to emphasize certain words and to indicate variables. Variables are often enclosed in angled brackets: < >.
Courier Bold font	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.

If You Need Help

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published. You should always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available. To view these online versions, select ReadMe from the Help menu, or visit the Knowledge Base at https://avid.secure.force.com/pkb/articles/en_US/readme/Avid-Stream-IO-Documentation
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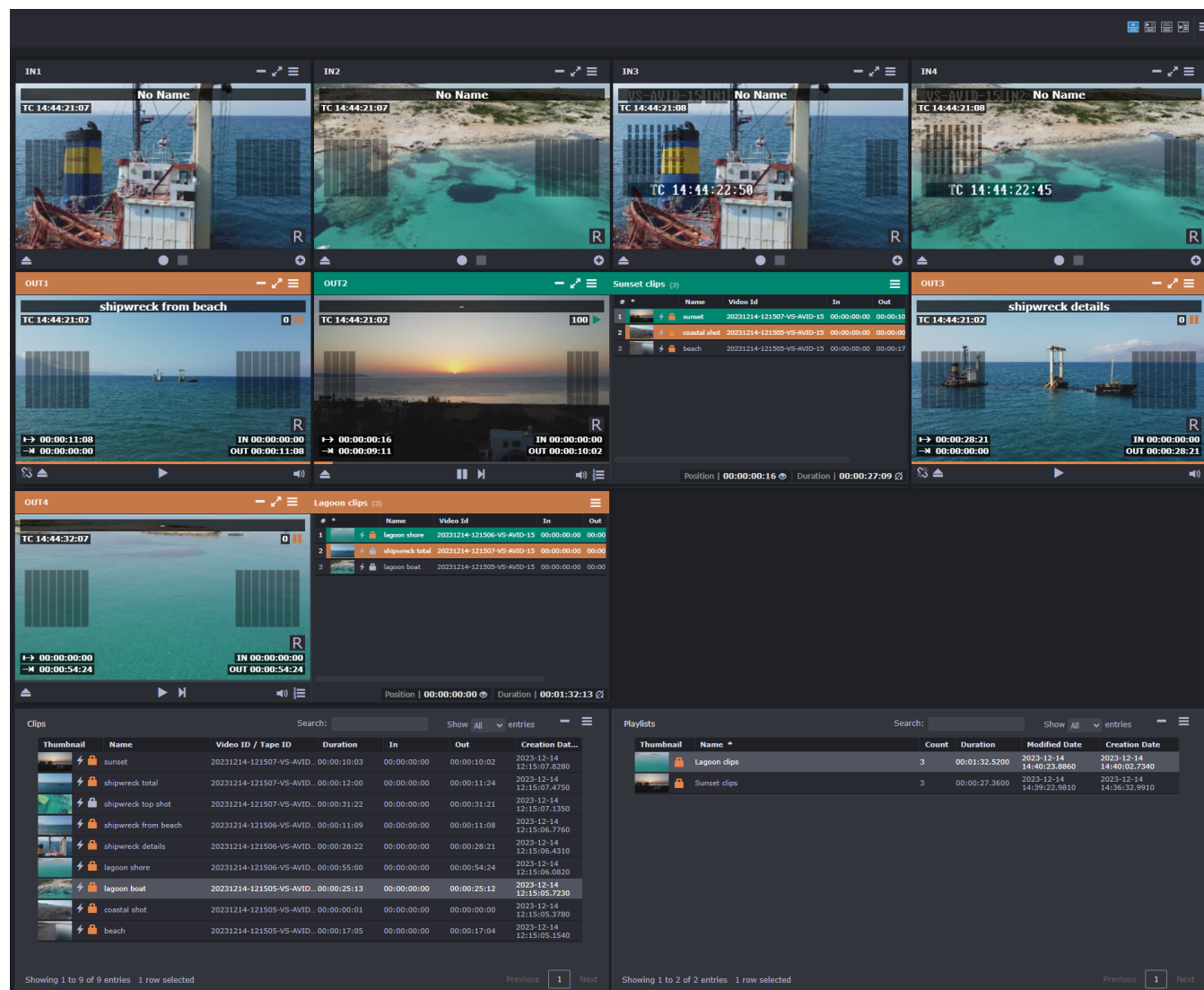
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1 Basics of Avid | Stream IO

Simplify workflows with a new, streamlined, single video ingest and playout server to meet the needs of the most demanding productions. Available through subscription for deployment on premises, Avid | Stream IO delivers multiple channels of ingest and playout for the most commonly used production formats, easily fitting into news, sports, live entertainment, and media production environments.



Increase ingest and playout efficiency with options tailored to meet your specific production needs by combining different ingest sources in a single server. It's easy to introduce Avid | Stream IO to the overall production workflow. Maximize your news, sports, and live entertainment workflows with tight integration with the familiar MediaCentral ecosystem (including support for MediaCentral | Capture, MediaCentral | Command and MediaCentral | Acquire).

Recommended Hardware Platforms

Avid performs specific and extensive testing on Dell and HPE servers during the qualification process. For a complete list of supported hardware platforms, see the [Avid | Stream IO Hardware Guide](#) on the [Avid Knowledge Base](#). The specifications listed there reflect the hardware options that were available at the time of purchase. Avid supports exceeding these specifications.

2 Hardware Related Information

When deploying Avid | Stream IO on a physical server (as opposed to virtualized deployments), you need to adjust certain settings in the system BIOS and other storage related options.

This section contains all hardware related information. It describes how to mount the Blackmagic DeckLink capture and playback card into Avid certified systems. It also covers all platform-specific procedures which are required before you can install the Avid | Stream IO software.

The following main topics are described in this chapter:

- "Electrostatic Discharge Precautions" below
- "Preparing Dell PowerEdge R6525 for Avid | Stream IO" on page 21
- "Preparing HPE ProLiant DL325 Gen10 for Avid | Stream IO" on page 26
- "Preparing Dell PowerEdge R6615 for Avid | Stream IO" below

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage disk drives, cards, and other parts. Avid recommends that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface) on your server when handling parts.

ESD and handling PCIe Cards

Always handle cards carefully. They can be extremely sensitive to ESD. Hold cards only by their edges. After removing a card from its protective wrapper or from the server, place the card component side up on a grounded, static free surface. Use a conductive foam pad if available but not the card wrapper. Do not slide the card over any surface.

Preparing Dell PowerEdge R6615 for Avid | Stream IO

The Dell PowerEdge R6615 server is ready for both traditional and emerging workloads with a 4th generation AMD EPYC™ processor, up to 3X PCIe Gen 5 slots and DDR5 memory.

Avid has qualified the Dell PowerEdge R6615 machine as the primary platform to suit all Avid | Stream IO deployments. The R6615 server can be equipped with one of the following CPU models:

- **AMD EPYC 9124:**
 - 4 channels HD base server with proxy,
 - AVC LongG : 4x1080i or 720p,
 - limited 1080p (without proxy or playout only),
 - limited 8 channels playout.
- **AMD EPYC 9454P:**
 - 8 channels HD/3G with proxy,
 - AVC LongG : 8x1080i or 720p



For 8 channels workflows with SDI dirty or loops, two Blackmagic DeckLink cards are required.

For more information about the R6615 hardware capabilities required to meet Avid | Stream IO's needs, see the [Avid | Stream IO Hardware Guide](#) on the [Avid Knowledge Base](#).

When preparing the Dell R6615 machine for Avid | Stream IO, you must complete the following processes:

- ["Installing Blackmagic Cards" below](#)
- ["Configuring BIOS and System Settings" on the next page](#)
- ["NVIDIA Mellanox ConnectX-6 Configuration" on page 17](#)

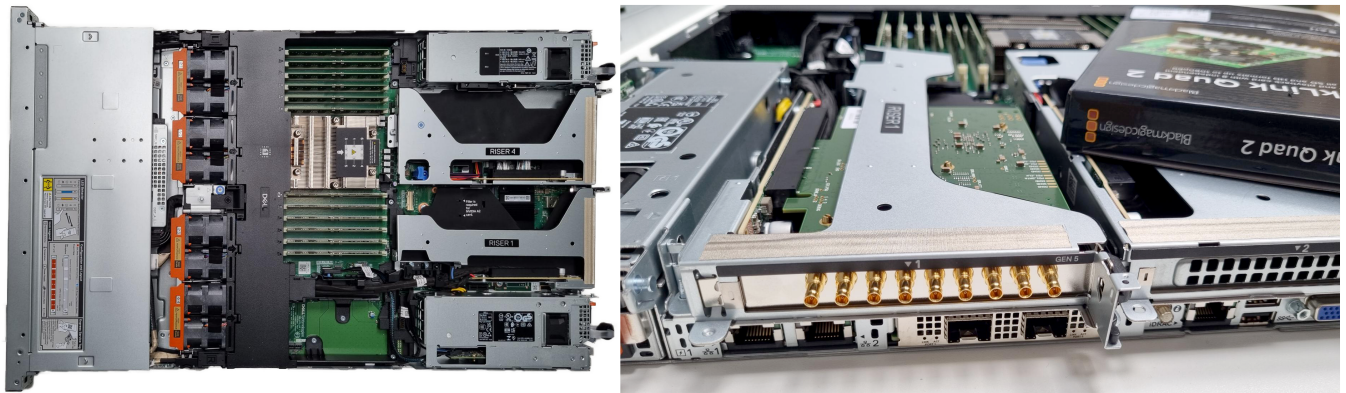
Installing Blackmagic Cards

The Avid | Stream IO system requires at least one Blackmagic Design DeckLink Quad 2 or DeckLink 8K Pro (in case of UHD workflows) card to be inserted into the Dell 6615 platform. For 8 channels workflows with SDI dirty or loops, two Blackmagic DeckLink Quad 2 cards are required.

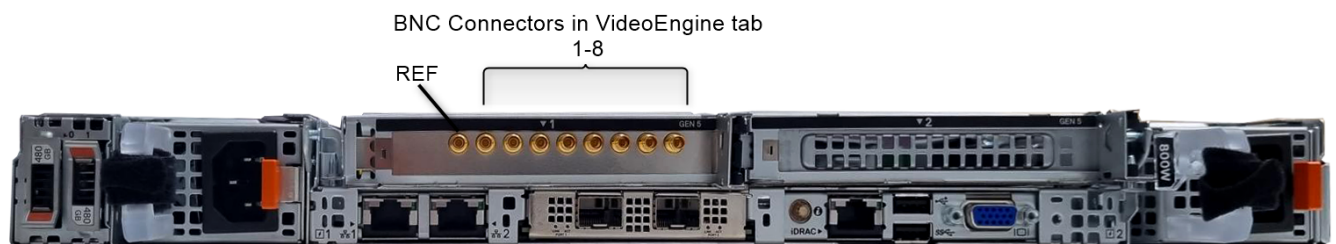
This topic briefly describes how to install this card into the Dell machine. For more detailed instructions, visit the [Blackmagic DeckLink](#) and [Dell PowerEdge R6615](#) official documentation.

For safety and to prevent any warranty infringement, always refer to the [Dell Installation and Service Manual](#) documentation before installing additional components. Make sure the server is powered down and all power cables are disconnected from the chassis.

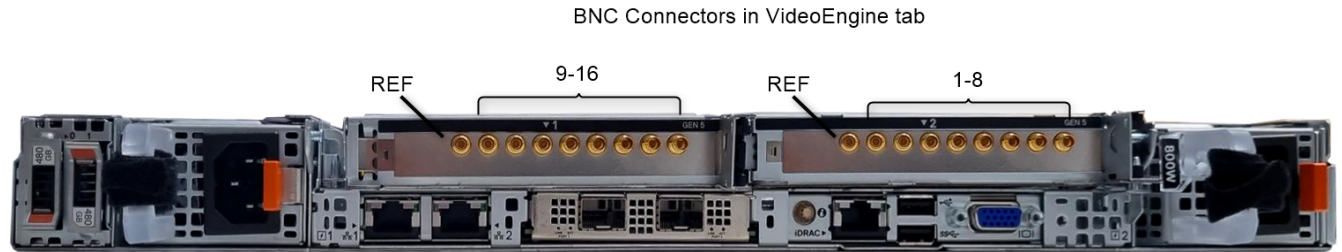
It is recommended to place the DeckLink Quad 2 cards in the **Riser Config 3, 2 x16 FH (Gen5)** slots.



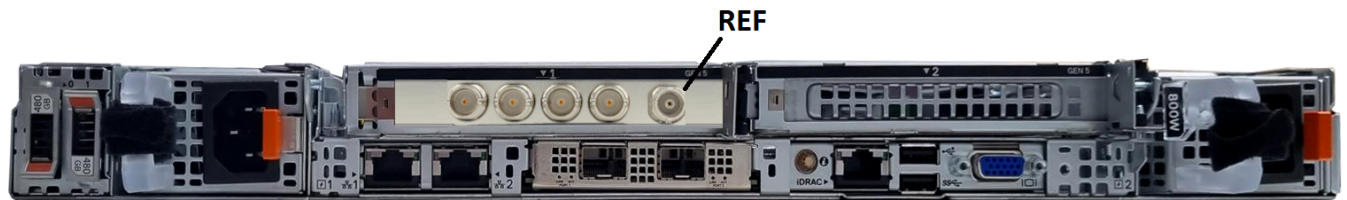
Back Panel of Example Server with One DeckLink Quad 2 Card



Back Panel of Example Server with Two DeckLink Quad 2 Cards



Back Panel of Example Server with One DeckLink 8K Pro Card



Configuring BIOS and System Settings

Before you can install the operating system and the Avid | Stream IO components on your Dell 6615 server, it is required to first configure the storage and upgrade the system to the latest BIOS version.

This topic discusses how to configure the storage and prepare the system for OS installation, as well as lists the BIOS settings to be changed on the machine

Storage Configuration

BOSS-N1 (Operating System drives) should be set as RAID-1 (Factory default) and the rest of the drives (Media drives) connected to PERC H355 controller should be set as Non-RAID. An example configuration is presented on the images below.

For detailed information on how to set up storage, refer to the [Integrated Dell Remote Access Controller 9 User's Guide](#).

Controllers

Rollup Status	Name	Device Description	PCI Slot	Firmware Version	Driver Version	Cache Memory Size	Actions
+ [x]	BOSS-N1 Monolithic (Embedded)	BOSS in SL 10	Not Applicable	2.1.13.2017	Information Not Available	0 MB	Actions
+ [x]	PERC H355 Front (Embedded)	RAID Controller in SL 1	Not Applicable	52.21.0-4606	--NA--	0 MB	Actions

Physical Disks

Status	Name	State	Slot Number	Size	Bus Protocol	Media Type	Hot Spare	Actions	Pending Actions
+ [x]	NVMe 0	Online	0	447.13 GB	PCIe	SSD	No	Action	
+ [x]	NVMe 1	Online	1	447.13 GB	PCIe	SSD	No	Action	
+ [x]	Solid State Disk 0:1:0	Non-RAID	0	1788.5 GB	SATA	SSD	No	Action	
+ [x]	Solid State Disk 0:1:1	Non-RAID	1	1788.5 GB	SATA	SSD	No	Action	
+ [x]	Solid State Disk 0:1:2	Non-RAID	2	1788.5 GB	SATA	SSD	No	Action	
+ [x]	Solid State Disk 0:1:3	Non-RAID	3	1788.5 GB	SATA	SSD	No	Action	

BIOS Settings

Avid recommends that you review and adjust the following settings in your system BIOS. The tables below only lists the settings which need to be changed from their default values.

A detailed description of the Dell System BIOS options is available on the [Dell Product Support](#) page.

Memory Settings

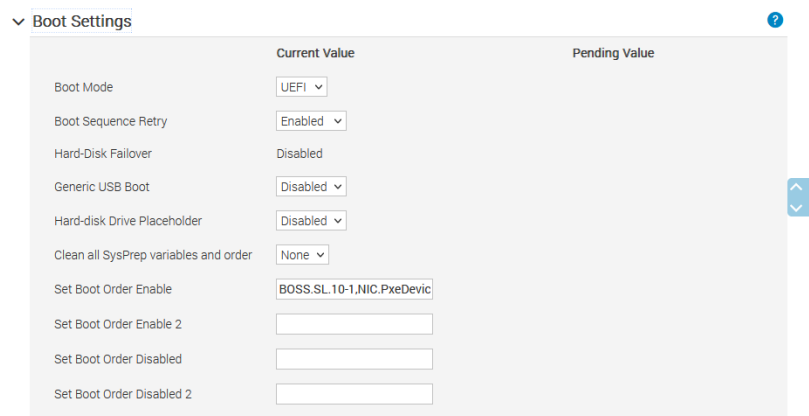
Setting	Value
System Memory Testing	Disabled
Dram Refresh Delay	Minimum
Correctable Memory ECC SMI	Enabled
DIMM Self Healing (Post Package Repair) on Uncorrectable Memory Error	Enabled
Correctable Error Logging	Disabled

Processor Settings

Setting	Value
Kernel DMA Protection	Disabled

Boot Settings

Setting	Value
Set Boot Order Enable	Set the BOSS NIC card, as illustrated below.



Integrated Devices

Setting	Value
User Accessible USB Ports	All Ports On
Integrated RAID Controller	Enabled
Embedded NIC1 and NIC2	Enabled

System Profile Settings

Setting	Value
System Profile	Performance
Workload Profile	Not Configured

NVIDIA Mellanox ConnectX-6 Configuration

NVIDIA® Mellanox® ConnectX®-6 Lx SmartNICs deliver scalability, high performance, advanced security capabilities and accelerated networking combined with the lowest total cost of ownership for 25GbE deployments.

This topic describes how to configure your Dell 6615 system to work with the NVIDIA Mellanox card for Avid | Stream IO workflows.



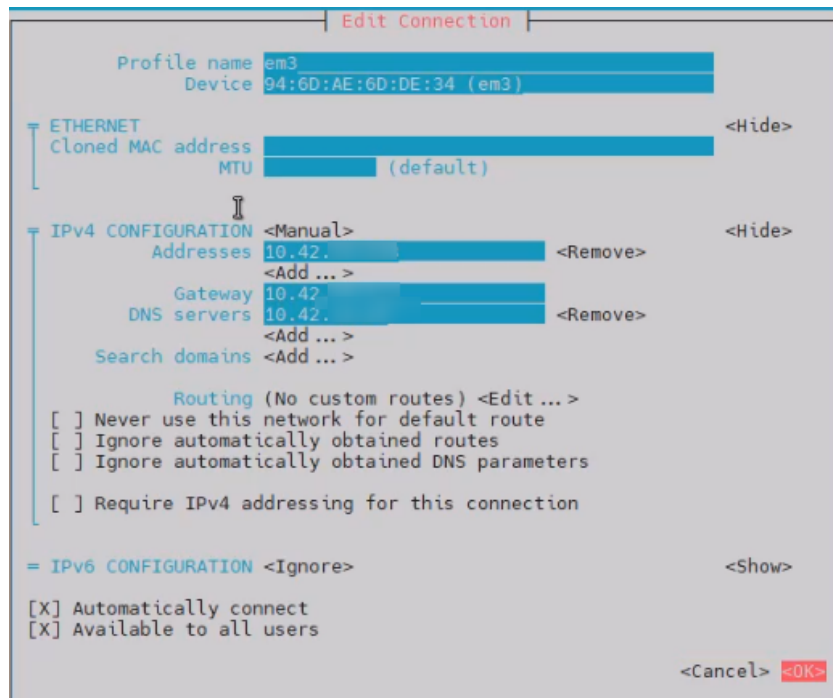
The following procedure can only be applied after the Avid | Stream IO PreInstaller was installed on the Dell 6615 machine, as described in "Installing Avid | Stream IO PreInstaller" on page 35.

To install the NVIDIA Mellanox driver:

1. Download the latest version of the driver from the [NVIDIA Networking resources page](#).
2. Connect to your Avid | Stream IO server and place the driver in the /data/public location.
3. Install the driver using the following commands:

```
mkdir /media/MellanoxCD
mount /data/public/mlnx-en-23.04-1.1.3.0-rhel7.9-x86_64.iso /media/MellanoxCD/
cd /media/MellanoxCD/
./install
```

4. (Option) Reboot the server.
5. Using nmtui (Network Manager Text User Interface), configure Mellanox Connect X6 interfaces.
 - a. Select **Edit a Connection**.
 - b. In the following window, select **Wired connection 1**.
 - c. Edit the connection by providing the required details of your network (IP address, Gateway, DNS servers).



d. Edit **Wired connection 2** as follows:

- IPv4 CONFIGURATION <Disabled>
- IPv6 CONFIGURATION <Ignore>
- Available to all users [x]

6. Edit the network interfaces parameters (ifcfg-em1, ifcfg-2, ifcfg-em3, ifcfg-em4) as follows:

! It is important to disable unused interfaces with ONBOOT=no flag. To have the interfaces names displayed correctly in the System tab, it is important to add "DEVICE=em[number]" in each ifcfg file.

! Each ifcfg file needs to have "BOOTPROTO=none" flag to avoid issues with the System tab restarting in a loop.

ifcfg-em1

```
vim /etc/sysconfig/network-scripts/ifcfg-em1
```

```
TYPE="Ethernet"
```

```
PROXY_METHOD="none"
```

```
BROWSER_ONLY="no"
```

```
BOOTPROTO="none"
```

```
DEFROUTE="yes"
```

```
IPV4_FAILURE_FATAL="no"
```

```
IPV6INIT="yes"
```

```
IPV6_AUTOCONF="yes"
```

```
IPV6_DEFROUTE="yes"
```

ifcfg-em1

IPV6_FAILURE_FATAL="no"
IPV6_ADDR_GEN_MODE="stable-privacy"
NAME="em1"
UUID="bef89668-72aa-4d80-9078-2c102d7da69b"
DEVICE="em1"
ONBOOT="no"
IPADDR="10.42.20.233"
PREFIX="24"
NETMASK=255.255.255.0
GATEWAY="10.42.20.1"
DNS1="10.42.10.20"
IPV6_PRIVACY="no"

ifcfg-em2

vim /etc/sysconfig/network-scripts/ifcfg-em2
TYPE=Ethernet
PROXY_METHOD=none
BROWSER_ONLY=no
BOOTPROTO=dhcp
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
IPV6INIT=yes
IPV6_AUTOCONF=yes
IPV6_DEFROUTE=yes
IPV6_FAILURE_FATAL=no
IPV6_ADDR_GEN_MODE=stable-privacy
NAME=em2
UUID=bd9330db-9c18-4d77-8c9e-fad107538fa1
DEVICE=em2
ONBOOT=no

ifcfg-em3

```
vim /etc/sysconfig/network-scripts/ifcfg-em3

HWADDR=94:6D:AE:6D:DE:34

TYPE=Ethernet

PROXY_METHOD=none

BROWSER_ONLY=no

BOOTPROTO=none

IPADDR=10.42.20.233

PREFIX=24

GATEWAY=10.42.20.1

DNS1=10.42.10.20

DEFROUTE=yes

IPV4_FAILURE_FATAL=no

IPV6INIT=no

NAME="em3"

DEVICE="em3"

UUID=f7674d06-c6e7-3d47-8d0c-b10ea415ac04

ONBOOT=yes

AUTOCONNECT_PRIORITY=-999
```

ifcfg-em4

```
vim /etc/sysconfig/network-scripts/ifcfg-em4

HWADDR=94:6D:AE:6D:DE:35

BOOTPROTO=none

TYPE=Ethernet

PROXY_METHOD=none

BROWSER_ONLY=no

IPV6INIT=no

NAME=em4

DEVICE=em4

UUID=65abc548-2fe9-31b6-8081-866343e401ed

ONBOOT=no

AUTOCONNECT_PRIORITY=-999
```

Preparing Dell PowerEdge R6525 for Avid | Stream IO

The Dell PowerEdge R6525 is a highly configurable, dual-socket 1U rack server that delivers outstanding balanced performance and innovation for dense compute environments.

Avid has qualified the Dell PowerEdge R6525 server for base workflows. When planning more resource-intensive workflows, the newer Dell PowerEdge R6615 platform is recommended. For more information about the hardware requirements, see the *Avid Stream | IO Hardware Guide* on the [Avid Knowledge Base](#).

When preparing the Dell R6525 machine for Avid | Stream IO, you must complete the following processes:

- ["Installing the Blackmagic DeckLink Cards" below](#)
- ["Configuring BIOS and System Settings" on the next page](#)

Installing the Blackmagic DeckLink Cards

The Avid | Stream IO system requires a Blackmagic Design DeckLink Quad 2 card to be inserted into the Dell platform. This topic briefly describes how to install this card into the Dell machine. For more detailed instructions, visit the [Blackmagic DeckLink](#) and [Dell PowerEdge R6525](#) official documentation.

For safety and to prevent any warranty infringement, always refer to the [Dell Installation and Service Manual](#) documentation before installing additional components. Make sure the server is powered down and all power cables are disconnected from the chassis.

The following table details all available expansion card slots supported on the Dell 6525 system board.

PCIe SLOT	RISERS	RISER WIDTH	SLOT HEIGHT	SLOT LENGTH	SLOT WIDTH
Slot 1	R2a	x32 PCIe	Low profile	Half length	x16
	(Riser 2)				
Slot 1	R1a	x16 PCIe	Full height	3/4th length	x16
	(Riser 1)				
Slot 2	R2a	x32 PCIe	Low profile	Half length	x16
	(Riser 2)				
Slot 2	R4c + R4d	x16 PCIe	Full height	3/4th length	x16
	(Riser 4)				
Slot 3	R3a	x16 PCIe	Low profile	Half length	x16
	(Riser 3)				

For more information, see the [Dell EMC PowerEdge R6525 Technical Specifications](#) document.

To learn about the numbering pattern for BNC connectors in the Video Engine tab of the Web Configurator, see the back panel pictures with Quad 2 card in the following topic: ["Installing Blackmagic Cards" on page 14](#).

Configuring BIOS and System Settings

Before you can install the operating system and the Avid | Stream IO components on your Dell 6525 server, it is required to first configure iDRAC access and upgrade the system to the latest BIOS version.

This topic discusses how to configure RAID and prepare the system for OS installation, as well as lists the BIOS settings to be changed on the machine.

RAID Configuration

Our example uses two SSD SAMSUNG MZ7LM240 drives dedicated for OS (Centos 7.9) and four SSD SAMSUNG MZ7LM1T9 drives for Media files.

To set up RAID:

1. Launch the Lifecycle Controller and select the Configure RAID option in the Home tab.
2. Select the appropriate RAID controller. This server is equipped with the PERC RAID controller.



Only the "Windows RAID" option can be selected in this window.

Click Next to continue.

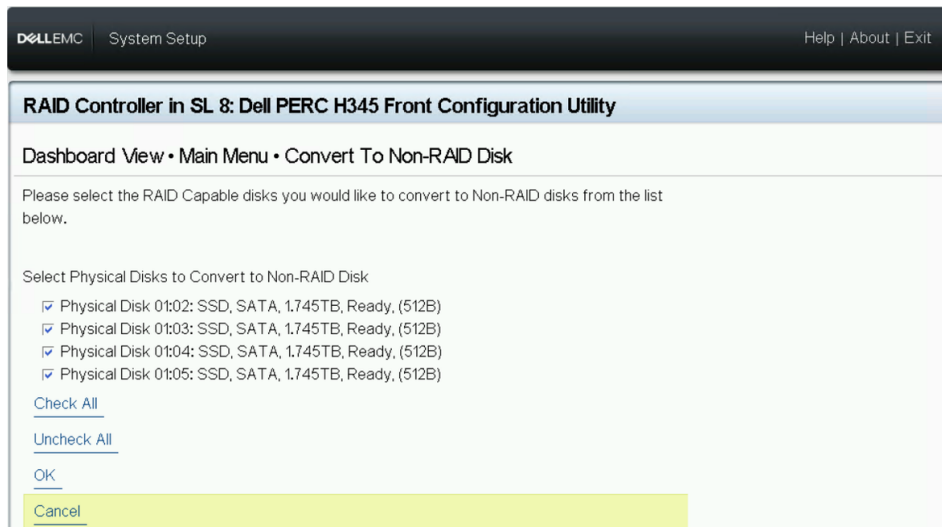
3. In the **Select RAID Level** window, select **RAID 1** and click Next.
4. In the **Protocol, Encryption, and Disk Block Size** windows leave the default options and click Next.
5. Select two SSDs dedicated for the system drive in the Select Physical Disks window. Click Next.

Disk Name	Size (GB)	Encryption Capability	T10 PI
☒ Solid State Disk 0:1:0	223.000	No	No
☒ Solid State Disk 0:1:1	223.000	No	No
☐ Solid State Disk 0:1:2	1787.875	No	No

6. In the **Virtual Disk Attributes** window:
 - a. Assign a unique **Virtual Disk Name**.
 - b. Disable the "Assign a Hot Spare Disk if available" option.

Click Next.

7. On the Summary page check if the entered information is correct and click on Finish.
8. Enter the System Setup (press F2 during bootup) to make other drives non-RAID drives for further use in ZFS mode.

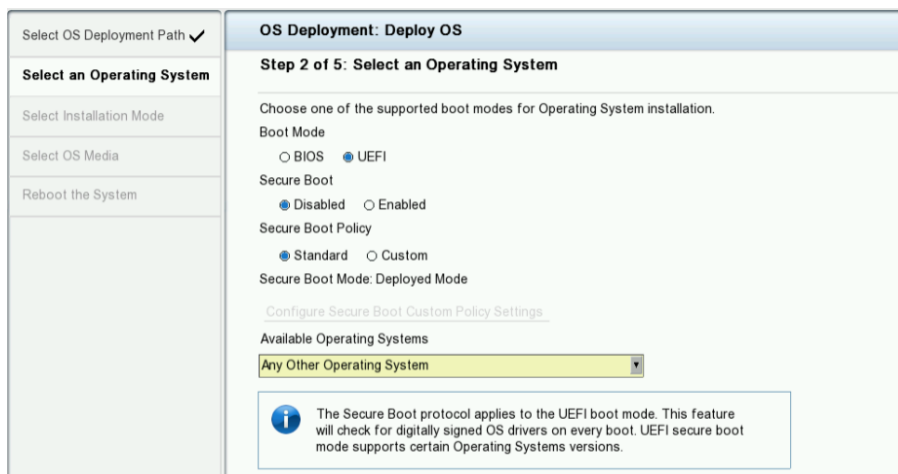


Operating System Deployment

After completing the RAID setup you can now prepare your Dell 6525 system for OS deployment.

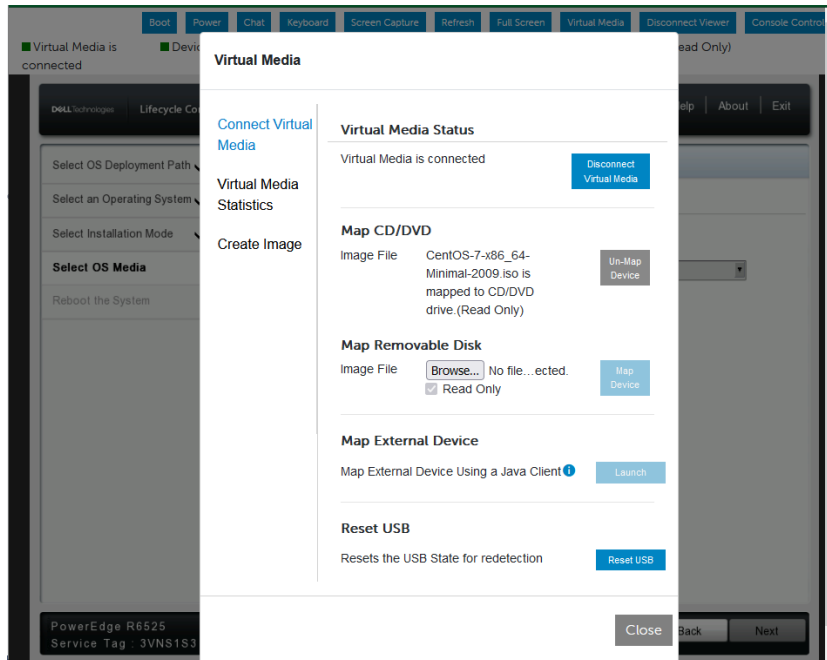
To deploy the operating system on Dell 6525:

1. Open the Lifecycle Controller and move to the **OS Deployment** tab on the left side.
2. In the Select Deployment path step, select the **Go Directly to OS Deployment** option. Click Next.
3. In the following window, select **Any Other Operating System** from the Available Operating Systems drop-down list. Click Next.



4. In the Select Installation Mode step, choose the **Manual Install** option. Click Next.
5. If you are using the iDRAC console, you can select Virtual media.

Mount CentOS-7-x86_64-Minimal-2009.iso to your Virtual CD.



In the Select Media box, select **CentOS (Virtual CD)**.

6. In the final window, review the entered information and click Finish to continue with installation.

BIOS Settings

Avid recommends that you review and adjust the following settings in your system BIOS. To access BIOS settings, log into iDRAC and go to **Configuration > BIOS Settings**.

 *The tables below only lists the settings which need to be changed from their default values.*

A detailed description of the Dell System BIOS options is available on the [Dell Product Support](#) page.

Memory Settings

Setting	Value
System Memory Testing	Disabled
Dram Refresh Delay	Minimum
Correctable Memory ECC SMI	Enabled
DIMM Self Healing (Post Package Repair) on Uncorrectable Memory Error	Enabled
Correctable Error Logging	Disabled

Processor Settings

Setting	Value
Fast Short REP MOVSB	Enabled
Enhanced REP MOVSB/STOSB	Enabled

SATA Settings

Setting	Value
Embedded SATA	AHCI Mode
Security Freeze Lock	Enabled
Write Cache	Disabled

NVMe Settings

Setting	Value
NVMe Mode	Non RAID
BIOS NVMe Driver	All Drives

Boot Settings

Setting	Value
Set Boot Order Enable	Set the BOSS NIC card, as illustrated below.

The screenshot shows the BIOS 'Boot Settings' menu. The 'Set Boot Order Enable' option is selected, displaying its current value as 'RAID.SL.8-2.NIC.PxeDevice.' and a pending value field.

Integrated Devices

Setting	Value
User Accessible USB Ports	All Ports On
Integrated RAID Controller	Enabled
Embedded NIC1 and NIC2	Enabled

System Profile Settings

Setting	Value
System Profile	Performance
Workload Profile	Not Configured

Preparing HPE ProLiant DL325 Gen10 for Avid | Stream IO

HPE ProLiant DL325 Gen10 Plus server supports industry standard technology utilizing the 2nd generation AMD EPYC 7000 series processor family with up to 64 cores, PCIe Gen4 capabilities, and HPE SmartMemory up to 3200 MT/s DDR4 memory.

Avid has qualified the HPE ProLiant DL325 Gen10 Plus server for base workflows. When planning more resource-intensive workflows, the newer Dell PowerEdge R6615 platform is recommended. For more information about the hardware requirements, see the *Avid Stream | IO Hardware Guide* on the [Avid Knowledge Base](#).

When preparing the HPE DL325 machine for Avid | Stream IO, you must complete the following processes:

- ["Installing the Blackmagic DeckLink Quad 2 Card" below](#)
- ["Configuring BIOS and System Settings" below](#)

Installing the Blackmagic DeckLink Quad 2 Card

The Avid | Stream IO system requires a Blackmagic Design DeckLink Quad 2 card to be inserted into the HPE platform. This topic briefly describes how to install this card into the HPE machine. For more detailed instructions, visit the [Blackmagic DeckLink](#) and [HPE ProLiant DL325](#) official documentation.

For safety and to prevent any warranty infringement, always refer to the [HPE Server Maintenance and Service Guide](#) before installing additional components. Make sure the server is powered down and all power cables are disconnected from the chassis.

It is recommended to place the DeckLink Quad 2 card in the **PCIe slot 1**.

The following table details all available PCIe expansion card slots supported on the HPE DL325 system board.

Slot number	Type	Form factor	Connector link width	Negotiable link width
Slot 1	PCIe 4.0	Full-height/full-length	x16	16, 8, 4, 1
Slot 2	PCIe 4.0	Half-height/half-length	x16	16, 8, 4, 1
Slot 3	PCIe 4.0	Half-height/half-length or Full-height/half-length	x16	16, 8, 4, 1

For more information, see the PCIe expansion slot definitions section of the [HPE ProLiant DL325 Gen10 Plus Server User Guide](#).

To learn about the numbering pattern for BNC connectors in the Video Engine tab of the Web Configurator, see the back panel pictures with Quad 2 card in the following topic: ["Installing Blackmagic Cards" on page 14](#).

Configuring BIOS and System Settings

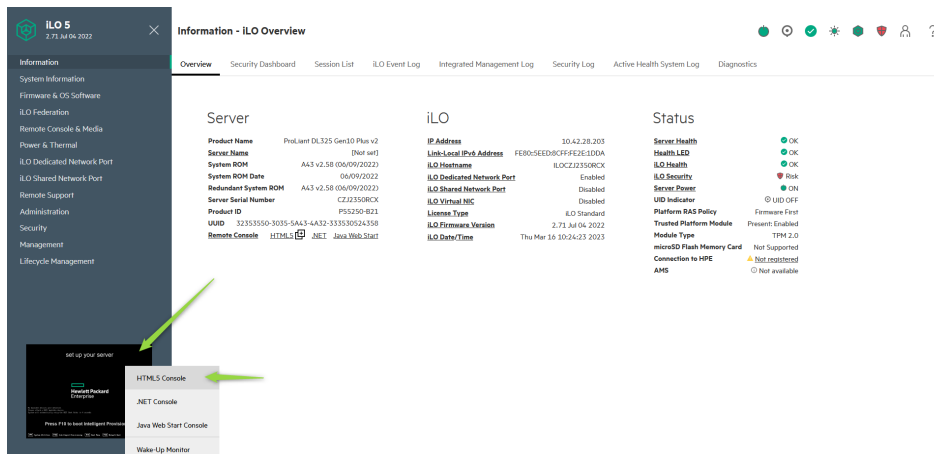
This topic discusses how to configure RAID and prepare the system for OS installation, as well as lists the BIOS settings to be changed on the machine.

OS Deployment

This topic discusses how to prepare the HPE DL325 system for the operating system deployment.

To deploy the operating system using HPE Integrated Lights-Out (iLO):

1. Log into the iLO console using the login credentials printed on the label on top cover of the server.
2. Click on the Remote Console preview screen at the bottom left corner of the screen, and select desired RC type. We will use HTML5 in our example.



3. Once the Remote Console opens, click on the Virtual Media icon in the top bar. Select **CD/DVD > Local *.iso** file from the menu.
4. Browse for the CentOS-7-x86_64-Minimal-2009.iso image. Once the **Media Inserted** message appears at the bottom of the console, you can move onto the next step.
5. In the main view of the Virtual CD/DVD image, select the Install CentOS 7 option and proceed with the installation.
6. (Optional) If this server already has an OS installed, a restart might be required to set up a new boot device. In the main view of the Remote Console, click first icon on the top bar, then select **Power > Reset**.

BIOS Settings

Avid recommends that you review and adjust the following settings in your system BIOS. The tables below only lists the settings which need to be changed from their default values.

To open the BIOS configuration settings:

1. Connect a monitor, keyboard and mouse to the server, or log into the iLO and launch the HTML5 console.
2. Press F9 when the server is booting up to access the System Utilities.
3. In the System Utilities window, select the first option "System Configuration". In the following window, go to **BIOS/Platform Configuration (RBSU)** and check if your settings match the ones listed

in the tables below.

System Configuration

BIOS/Platform Configuration (RBSU)

iLO 5 Configuration Utility

OCP Slot 10 Port 1 : Broadcom NetXtreme-E Dual 10Gb SFP+ OCP 3.0 Ethernet - E4:3D:1A:60:6C:D2 

OCP Slot 10 Port 2 : Broadcom NetXtreme-E Dual 10Gb SFP+ OCP 3.0 Ethernet - E4:3D:1A:60:6C:D3 

Storage Slot 12 : HPE MR416i-a Gen10+ 

A detailed description of the HPE System BIOS options is available on the [HPE Product Support](#) page.

Processor Options

Setting	Value
AMD SMT Option	Enabled
Enabled Cores per Processor	0
Determinism Control	Auto
Page Table Entry Speculative Look Scheduling	Enabled
Processor AES-NI Support	Enabled

Memory Options

Setting	Value
Memory Refresh Rate	1 x Refresh
Memory Interleaving Mode	Enabled
Memory Interleave Size	256 Bytes
PCIO Configuration MMIO (MCFG) Base at 3GB	Disabled
AMD Periodic Directory Rinse	Enabled
Maximum Memory Bus Frequency	Auto
Maximum Patrol Scrubbing	Enabled
Patrol Scrub Duration	24
DRAM Controller Power Down	Disabled
DRAM Burst Refresh Mode	Enabled
NUMA memory domains per socket	Auto

Memory Encryption Options

Setting	Value
Transparent Secure Memory Encryption	Disabled
AMD Secure Memory Encryption	Disabled

Virtualization Options

Setting	Value
AMD I/O Virtualization Technology	Enabled
Access Control Service	Enabled
SR-IOV	Enabled
Minimum SEV ASID	1
Maximum SEV ASID	509 ASID - Maximum 8 TB system memory
AMD DMA Remapping	Disabled

Boot Options

Setting	Value
Boot Mode	UEFI Mode
UEFI Optimized Boot	Enabled
Boot Order Policy	Retry Boot Order Indefinitely

Storage Options › SATA Controller Options

Setting	Value
SmartRAID SW RAID Support	Disabled
SATA Secure Erase	Disabled
SATA Sanitize	Disabled

Storage Options › NVM Express Options

Setting	Value
Embedded NVM Express Option ROM	Enabled

Storage Options › NVM Express Options › NVM Express SmartRAID SW RAID Options

Setting	Value
NVM Express SmartRAID SW RAID Support	Disabled

Power and Performance Options

Setting	Value
C-State Efficiency Mode	Disabled
AMD Fmax Boost Limit Control	Auto
Collaborative Power Control	Disabled

I/O Options

Setting	Value
ACPI Split	Enabled
Memory Proximity Reporting for I/O	Enabled
Preferred IO Bus	Disabled

Advanced Power Options

Setting	Value
Redundant Power Supply Mode	Balanced Mode
Package Power Limit Control Mode	Auto

3 Software Installation and Configuration

The purpose of this chapter is to assist you with the installation and configuration of CentOS 7.9 and the Avid | Stream IO software. Avid recommends that you read all the information in both this document and the Avid | Stream IO ReadMe thoroughly before installing or using the corresponding software release.

Topics in this chapter include:

- "Installation Prerequisites" below
- "Obtaining the Installation Packages" below
- "Installing CentOS 7.9 on the Workstation" on the next page
- "Installing Blackmagic Design Desktop Video" on page 35
- "Installing Avid | Stream IO Components" on page 36
- "Activating the License" on page 40
- "Configuration Scenarios" on page 41

Installation Prerequisites

A successful Avid | Stream IO installation starts with careful planning. Before you begin the installation process, you should verify that you have identified answers for each of the following data points.

Before You Begin

- Make sure that the hardware platform is prepared as described in the the *Avid | Stream IO Hardware Guide* on the [Avid Knowledge Base](#).
- Check your studio requirements before the installation.
- Define a static IP address for each of your Avid | Stream IO servers.

Operating System

Avid | Stream IO is installed on a community-driven, command-line based operating system called **CentOS™** (Community Enterprise Operating System).

Obtaining the Installation Packages

Avid | Stream IO software packages are available from My Avid and the Avid Download Center. To access the Download Center, log into your Avid Master Account at my.avid.com and click "Sign in" in the upper right corner of the avid.com main page. Then, click on the Download Center icon, or go to **My Products > Avid Download Center**. Avid might provide additional packages during the system commissioning process.

After you have logged into the Download Center, download the following:

- CentOS Operating System
File name: `CentOS-7-x86_64-Minimal-2009.iso`
- Avid | Stream IO Pre-Installer, which installs the System and Updater tabs of the Web Configurator.
Example file name: `PreInstaller-2023.11.0.2.tgz`
- Avid | Stream IO Installer, which contains the Remote Console and the remaining system components (VideoEngine, Commander, etc).
Example file name: `AvidStreamIO-2024.02.0.668.tgz`

Additional software:

- Blackmagic Desktop Video 12.8

This software is not available on the Avid Download Center but can be downloaded from the [Blackmagic Support](#) website.

Installing CentOS 7.9 on the Workstation

This section details the process for installing CentOS from the Avid provided ISO file on the hardware platform.

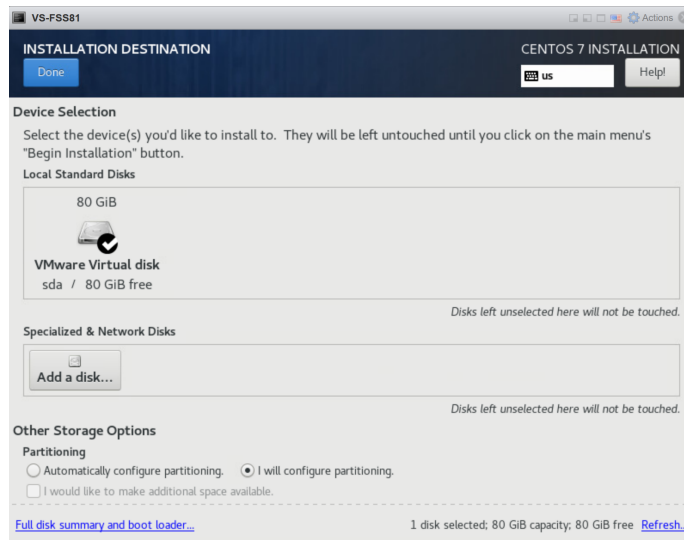
To begin the installation:

1. Download the CentOS Operating System image and create a bootable drive, as described in the topic ["Hardware Related Information" on page 13](#).
2. In the "WELCOME TO CENTOS 7" window, **English** is automatically selected as the preferred language. Click on Continue.

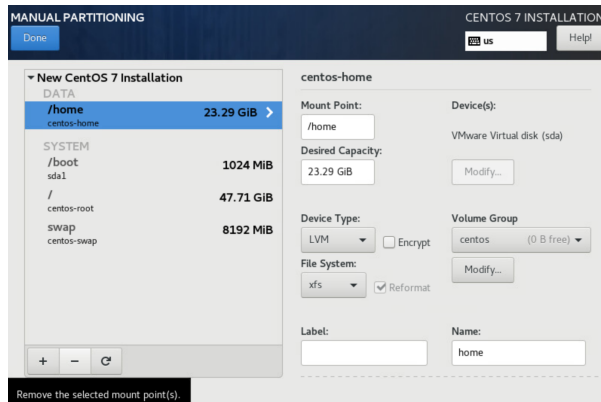


It is recommended not to change the default installation language.

3. The "Installation Summary" window appears next.
 - a. Click on the INSTALLATION DESTINATION option to configure where to install CentOS.



- The Virtual Disk option is already selected. To change partitioning options, select the "I will configure partitioning" button.
- In the "Manual Partitioning" window, select the **"Click here to create them automatically"** option.
- After the partitions list is created, select the **/home** and **swap** partitions and remove them by clicking on the "-" button.

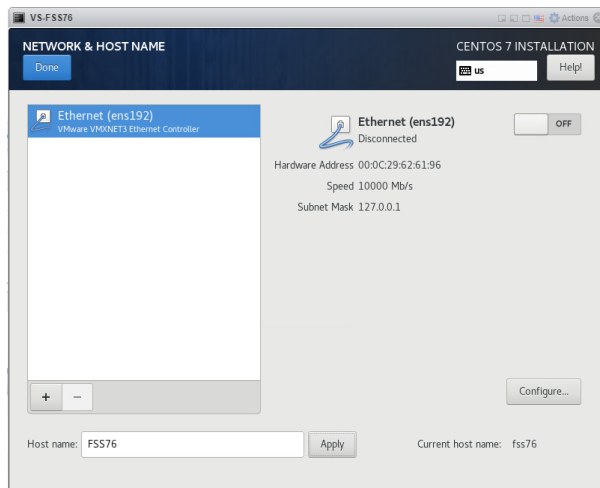


- Select the / (**centos-root**) partition and change the Desired Capacity to 79 GiB in case of an 80GiB disk.
- Click on the Done button in the upper left corner of the window.
- In the Summary of changes window, review the configuration and press on Accept Changes.

b. Click on the NETWORK & HOST NAME option to configure the networking parameters.



You might need to use the scroll bar on the right-side of the CentOS installation window to reveal this menu option.



Enter the host name of your machine in the Host Name field and click Apply. Click the **Configure** button to begin adjusting the network parameters.

Editing ens192

Connection name: ens192

General Ethernet 802.1X Security DCB Proxy **IPv4 Settings** IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
10.42.20.76	255.255.255.0	10.42.20.1

DNS servers: 10.42.10.15

Search domains:

DHCP client ID:

☒ Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

Select the **Manual** method to configure the network settings. Click the **Add** button and enter the following information:

- Address: Enter the static IP address that you want to assign to the server.
- Netmask: Enter your network netmask.
- Gateway: Enter the IP address of your network gateway.
- Additional DNS servers: Enter the IP address of one or more DNS servers. If you plan to enter more than one IP address, separate each entry with a comma.

Click on **Save** to save the settings and return to the previous window.

Verify the status of the OFF/ON toggle switch in the upper-right corner of the NETWORK & HOST NAME screen. It must be set to the **ON** position.

Click the **Done** button in the upper-left corner of the screen to move to the next window.

VS-FSS76

NETWORK & HOST NAME

Done

CENTOS 7 INSTALLATION

us Help

Ethernet (ens192) VMware VMXNET3 Ethernet Controller

Ethernet (ens192) Connected

ON

- c. Back in the Installation Summary window, click on DATE & TIME to set your current time zone and verify or configure the current date and time.

VS-FSS67

DATE & TIME

Done

CENTOS 7 INSTALLATION

us Help

Region: Europe City: Warsaw Network Time ON

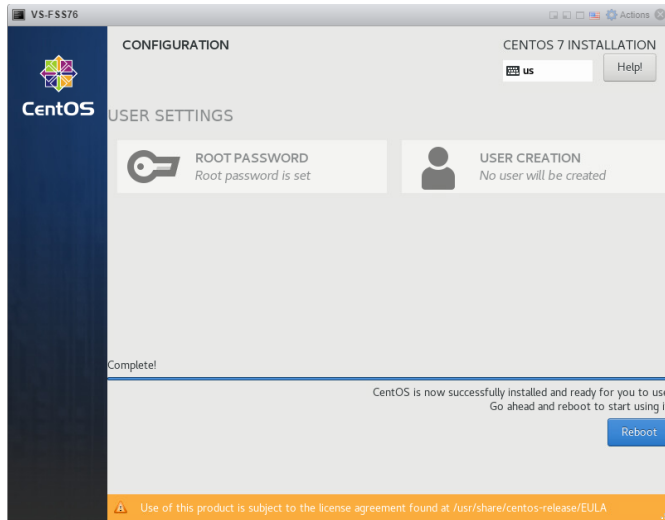
10:51 PM 24-hour AM/PM

11 17 2020

You have no working NTP server configured

It is recommended to configure a local NTP source, as described below:

- Click the  button to the right of the Network Time option.
 - Enter the of your NTP server in the field at the top of the NTP servers window and press the plus “+” button to add the server to the list.
 - Click OK to save the changes.
- d. In the Installation Summary window, check that no problems are highlighted. If everything is configured correctly, click on the **Begin Installation** button.
4. When the installation process is complete, the CentOS Wizard exits and the screen is replaced with a terminal window that displays the following text:



Click on Reboot to restart the virtual machine.

Installing Avid | Stream IO PreInstaller

The preinstaller package installs vital Avid | Stream IO components (such as the Web Configurator), prerequisites and security packages.

To run the preinstaller:

1. Upload the Avid | Stream IO preinstaller package to the workstation and copy it to the /data/public location.
2. Create an installation folder for the preinstaller (our example uses the 2023.11.0.2 version, but update your version number accordingly). Run the pre-installer using the following commands:

```
mkdir -p /data/public/PreInstaller/2023.11.0.2/
tar -xvzf PreInstaller-2023.11.0.2.tgz -C /data/public/PreInstaller/2023.11.0.2/
cd /data/public/PreInstaller/2023.11.0.2/
./installer.sh
```

3. Wait until the installation finishes. This packages installs many important components and unlocks important ports.

Installing Blackmagic Design Desktop Video

Blackmagic Desktop Video Setup provides a central location for configuring hardware settings, plus a real time status display showing the video connected to your hardware’s inputs and outputs.

To install the Blackmagic DeckLink driver:

1. Download the latest version of BlackMagic Desktop Video Setup.
 - a. Go to the official [BlackMagic support page](#), select Capture and Playback and in the Latest Downloads section, select the 12.8 version of BlackMagic Desktop Video and press on the Linux button.
 - b. In the following window, select Download Only at the bottom of the window to get the software, or enter your details and product information and click on Register & Download.
2. Copy the installer to your server's /data/public folder. Install the driver:

```
lspci | grep -i black
```

```
rpm -Uvh /data/public/desktopvideo-12.8a19.x86_64.rpm
```

You should see a similar result:

```
[root@VS-AVS-223 ~]# rpm -Uvh /data/public/desktopvideo-12.4.1a15.x86_64.rpm
Preparing ... ##### [100%]
Updating / installing ...
  1:desktopvideo-12.4.1-a15 ##### [100%]
Preparing new blackmagic driver for 3.10.0-1160.88.1.el7.x86_64 kernel ...
Adding to DKMS
Building
Installing
Preparing new blackmagic-io driver for 3.10.0-1160.88.1.el7.x86_64 kernel ...
Adding to DKMS
Building
Installing
Loading modules ...
blackmagic
blackmagic_io (failed)
Enabling systemd services ...
DesktopVideoHelper
Starting systemd services ...
DesktopVideoHelper

*****
Reboot required to reload driver!

The driver failed to load. The most likely cause is that the driver is
in use. Please try rebooting to load the new driver
*****
```

3. Reboot your server.

Installing Avid | Stream IO Components

When installing Avid | Stream IO, you must first install the base preinstaller software, configure the administrator account, create a "Clips" ZFS pool, and then finally install the main Avid | Stream IO package.

Configuring Administrator's Account

Before you can install the main Avid | Stream IO package, you need to set up the required administrative privileges for the default "admin" account.

To configure the administrator's account:

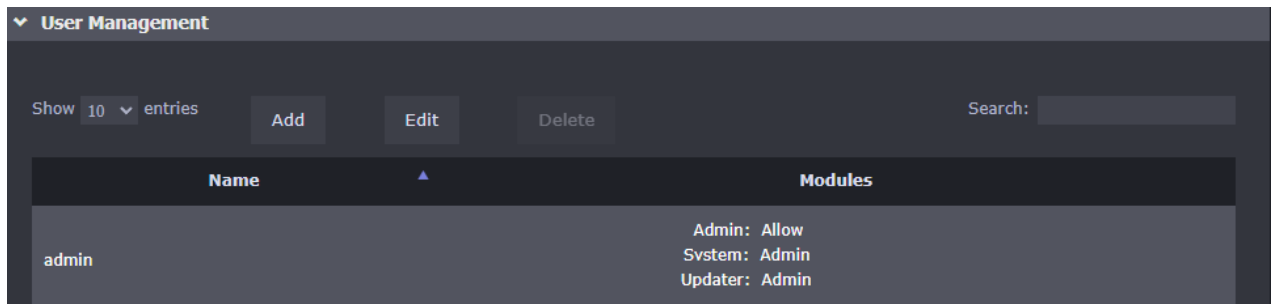
1. Open the Avid | Stream IO Web Configurator by launching a web browser and entering the server's IP address or the host name, with the suffix :8080.

The default user name is "admin", and the corresponding password is "Avid123".

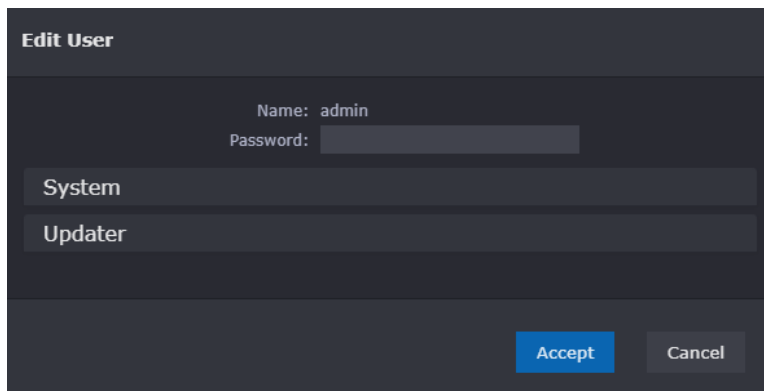


It is strongly recommended to change the default login credentials upon first successful login!

- Open the **Admin** tab and navigate to the **User Management** section.



- Select the admin user account and press on **Edit**.
- In the Edit User window, expand each section and make sure that all permissions are selected and set to "Allow" or "Admin".



- Click on Accept to close the Edit User window.
- Log out of the Web Configurator, and then log back in using the "admin" account to perform the procedures described in the following sections.

Creating a ZFS Pool

ZFS uses the concept of storage pools to manage physical storage. The storage pool describes the physical characteristics of the storage (device layout, data redundancy, and so on) and acts as an arbitrary data store from which file systems can be created.

Creating and destroying pools in the Avid | Stream IO Web Configurator is fast and easy. The below procedure presents the creation of a basic pool. You can create the final pool here or leave it for later stage. To learn about more complex configurations of ZFS Pools, see ["The ZFS Settings" on page 73](#).

To create a ZFS pool:

1. In the Web Configurator, navigate to the **System** tab and expand the **ZFS** section.
2. In the ZFS section, click on the **Create new pool** option.

 **The storage pool must be named "Clips" for the system to work properly!**

3. Select the drives which will belong to the pool and click on **Create**.
4. The newly created pool appears in the ZFS section.

You can now navigate to the Updater tab to install the Avid | Stream IO package.

Installing the Avid | Stream IO Package

The main Avid | Stream IO package is installed through the **Updater** tab in the Avid | Stream IO Web Configurator.

To install Avid | Stream IO:

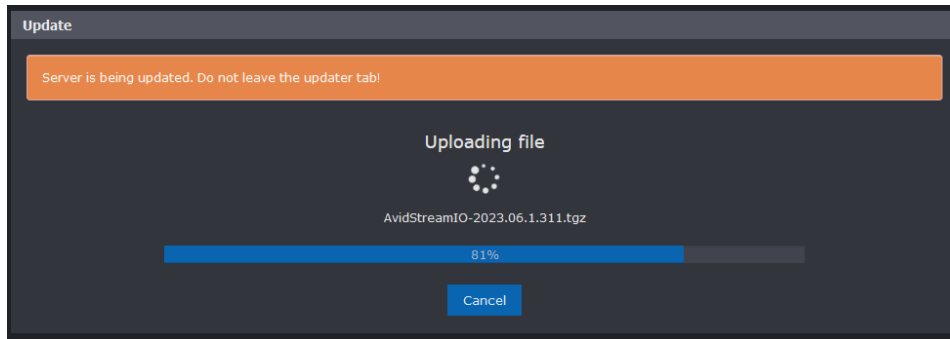
1. Open the Updater tab to upload the Avid | Stream IO installation package.

2. Click on the Upload file button.
3. Browse for the `AvidStreamIO-<version>.tgz` package and click on Open.

Wait until the installation package is fully uploaded.

 Occasionally, after pressing "Upload file", the progress wheel is rotating but the progress bar is not moving. Refresh the page and try uploading the file again.

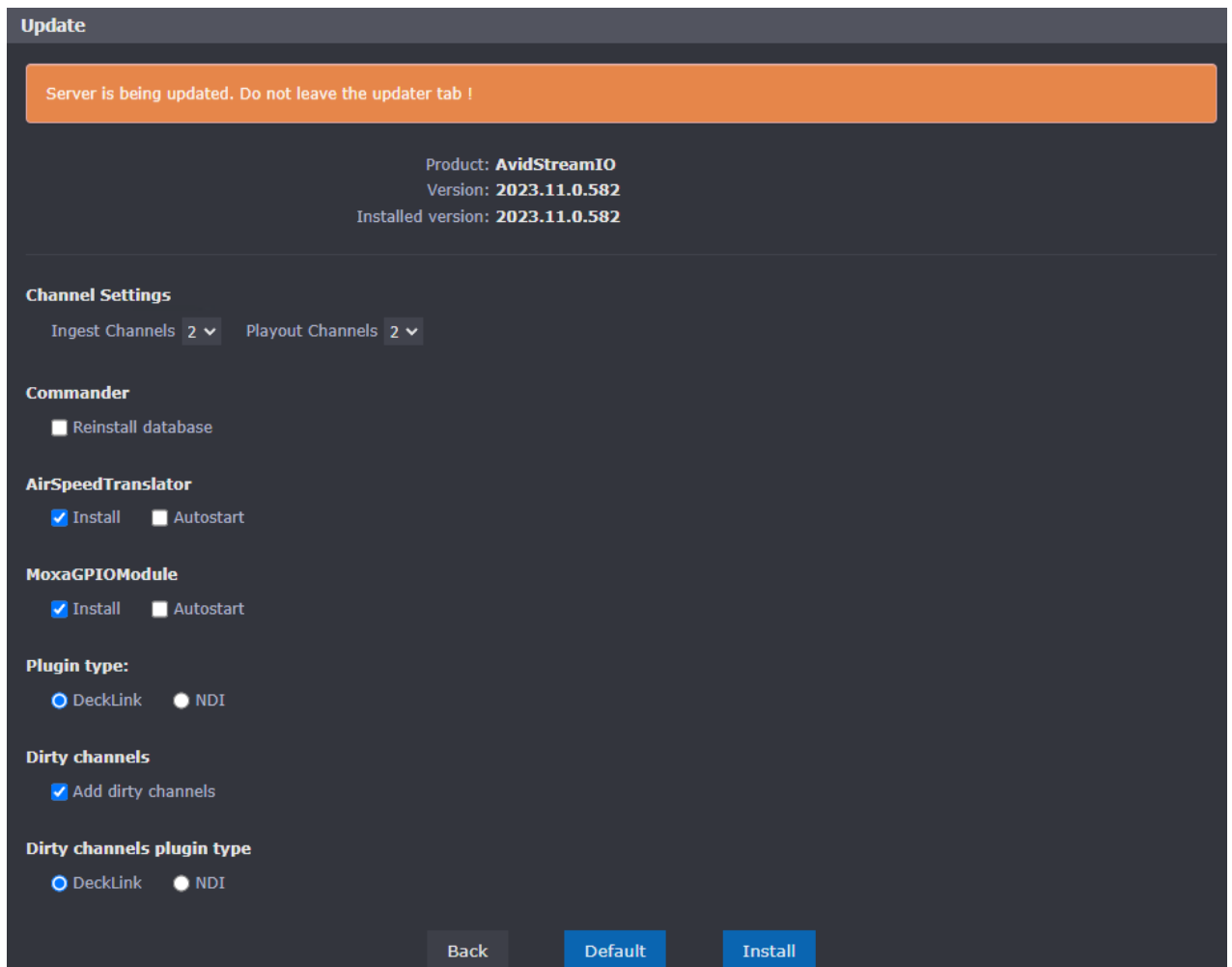
 **Do not close or leave the Updater tab while the installer files are being uploaded!**



4. Once the upload is complete, the Installation Wizard displays the configuration settings and the components to be installed.

Select a configuration of ingest and playout channels. This can also be changed at a later stage. For more information, see ["Configuration Scenarios" on page 41](#).

 *The AvidStreamIO installer offers only a limited selection of ingest and playout configurations, but they can easily be configured differently (e.g.: to 8 channels ingest, or 4 IN & 4 OUT) using the VideoEngine page of the Web Configurator. For more information, see ["The VideoEngine Page" on page 47](#).*



- Reinstall database - this option can be selected when performing maintenance procedures, as it removes the internal database and creates a new and empty one.



The Reinstall database option also removes certain configuration parameters, such as : ingest templates or stored MediaCentral | Production Management configuration.

- AirSpeedTranslator - this component is responsible for communication with MediaCentral | Capture. Make sure to select both check boxes when working with Capture.
- MoxaGPIOModule - install the Moxa module to configure Moxa devices.
- Plugin type - select whether inputs/outputs will work over SDI (DeckLink) or NDI.



NDI ingest / playout is not yet available in the 2024.2 release, but you can use NDI for dirty preview.

- Dirty channels - select this check box if OSD channels should be added to the configuration.
- Dirty channels plugin type - select the plugin for the OSD channel information (SDI DeckLink or NDI).

5. Press on **Install**.

The system will automatically reboot and you will temporarily loose connection to the Web Configurator.

6. Once the Avid | Stream IO system is fully installed, log back into the Web Configurator to activate your license and further set up your system.



Currently there is no option to easily downgrade the current Avid | Stream IO version. Please contact the Avid Support when a downgrade is required, and Avid personnel will manually remove the components and perform a cleanup of various settings.

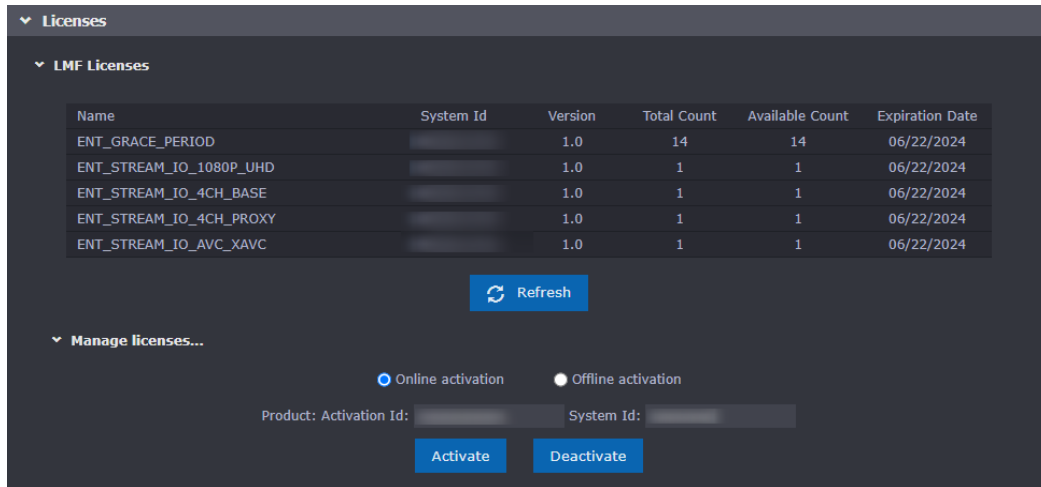
Activating the License

After you have installed the complete Avid | Stream IO system, you need to activate your license.

Avid | Stream IO offers a software-only subscription license that offers regular software updates. Because the Avid | Stream IO system needs to periodically communicate with Avid's license server, organizations are encouraged to maintain a connection between their AVS system and the public internet. If a subscription-based Avid | Stream IO system cannot connect to the license server, license usage is stored on the local system and transmitted to the license server when the connection is restored. If the system cannot connect to the license server, it will not be able to receive license updates or be able to extended the subscription past the active subscription period. Whenever connecting a system to the internet, Avid recommends that you follow your organization's best practices to ensure a safe and secure connection.

To activate a subscription license:

1. In the Web Configurator, open the System tab and expand the Licenses section.
2. In the Manage licenses section, enter the **Activation ID** of the ENT_STREAM_IO license and the **System ID** of the into appropriate fields.



The Activation ID and System ID are provided by Avid after you have purchased your Avid | Stream IO system. The System ID is a unique identifier that Avid uses to track both features related to your system and support cases created through Avid Customer Care.

3. Click on Activate to initialize the license.

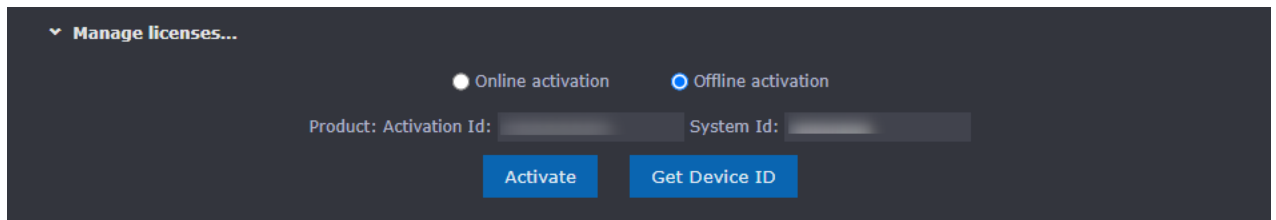
To deactivate all licenses:

- In the Manage Licenses section, enter an Activation ID and the System ID and press on Deactivate.

To activate licenses while offline:

- In cases where licenses need to be activated when Avid | Stream IO is offline and without access to the internet, enable the **Offline activation** button.

The **Get Device ID** button becomes active.



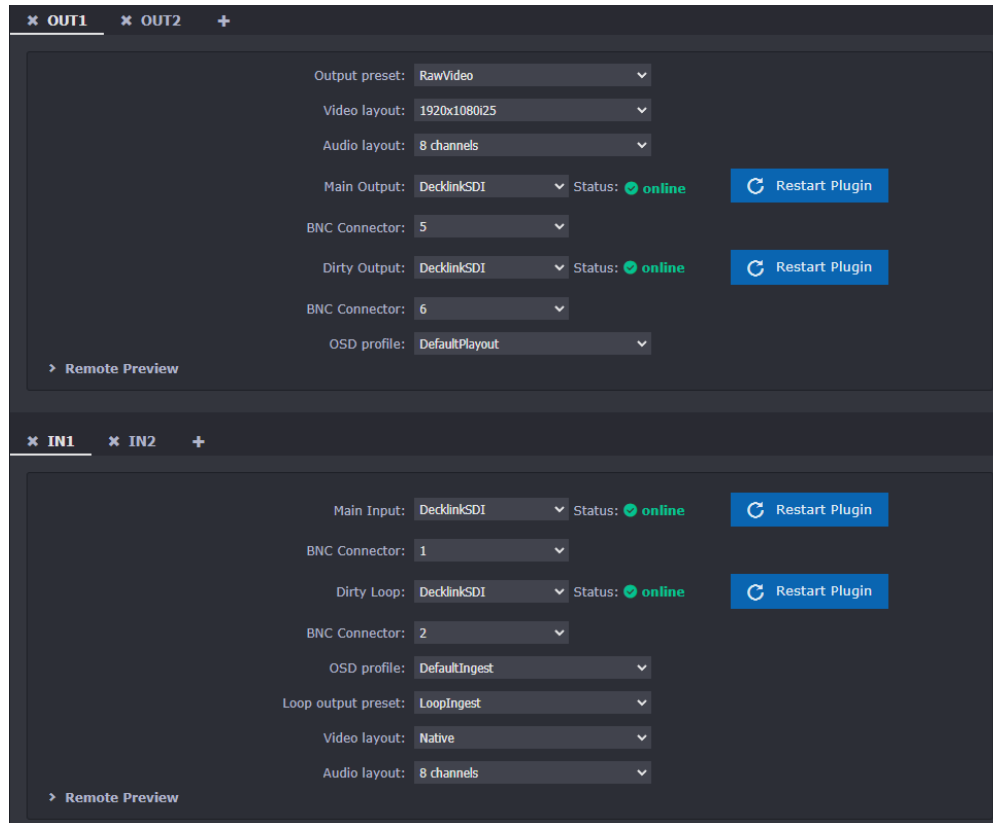
Clicking on the Get Device ID button opens a pop up window containing the device identification number. Copy this number and enter it on the Avid Indirect Activation web page:

<https://my.avid.com/products/indirectactivation>.

For more information about the available license types, see "[Avid | Stream IO Licensing](#)" on page 142.

Configuration Scenarios

Avid | Stream IO offers a flexible channel configuration. Using the intuitive Web Configurator, you can easily change the configurations and assignments of your inputs and outputs.

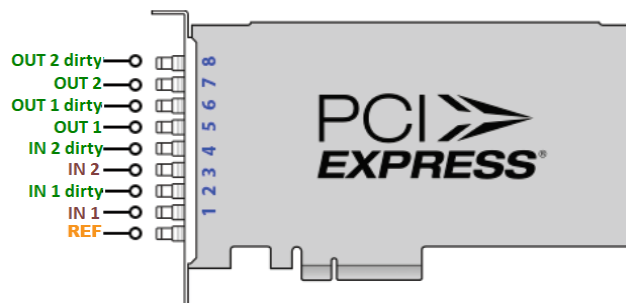


By default, the Avid | Stream IO installer assigns logical channels to certain SDI connectors. OSD channels are sometimes referred to as “dirty channels”, and they can either come from the SDI connectors (via the Blackmagic DeckLink card) or sent over NDI. There are multiple configuration options with OSD, such as OUT channels with dirty, while the IN channels are setup without it. You can also have just one OSD channel and the remaining channels clean.

The tables and illustrations below provide examples of possible I/O configurations. However, they can easily be changed using the VideoEngine page of the Avid | Stream IO Web Configurator.

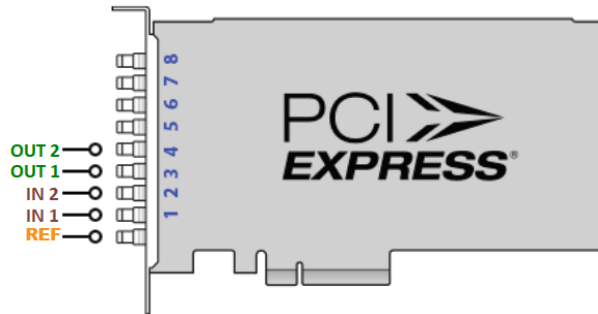
2 x IN + OSD / 2 x OUT + OSD

Connector	Reference 1	2	3	4	5	6	7	8	
Signal	Ref	IN 1	IN 1 dirty	IN 2	IN 2 dirty	OUT 1	OUT 1 dirty	OUT 2	OUT 2 dirty
Mode		ingest	playout	ingest	playout	playout	playout	playout	playout

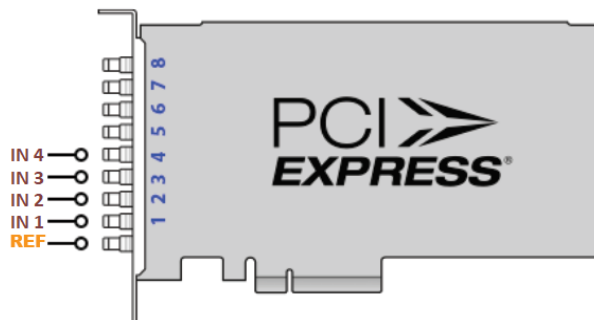


2 x IN / 2 x OUT

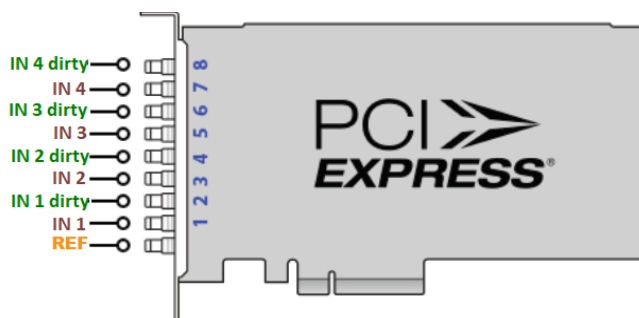
Connector	Reference 1	2	3	4	5	6	7	8
Signal	Ref	IN 1	IN 2	OUT 1	OUT 2			
Mode		ingest	ingest	playout	playout			

**4 x IN**

Connector	Reference 1	2	3	4	5	6	7	8
Signal	Ref	IN 1	IN 2	IN 3	IN 4			
Mode		ingest	ingest	ingest	ingest			

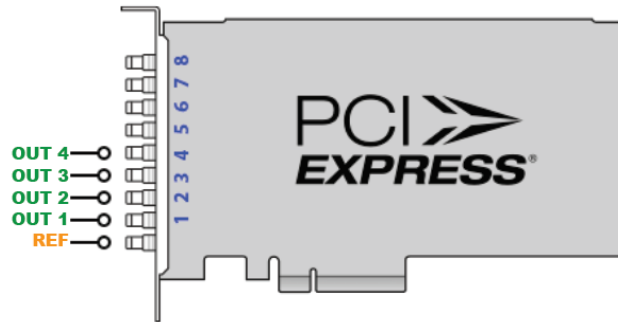
**4 x IN + OSD**

Connector	Reference 1	2	3	4	5	6	7	8	
Signal	Ref	IN 1	IN 1 dirty	IN 2	IN 2 dirty	IN 3	IN 3 dirty	IN 4	IN 4 dirty
Mode		ingest	playout	ingest	playout	ingest	playout	ingest	playout



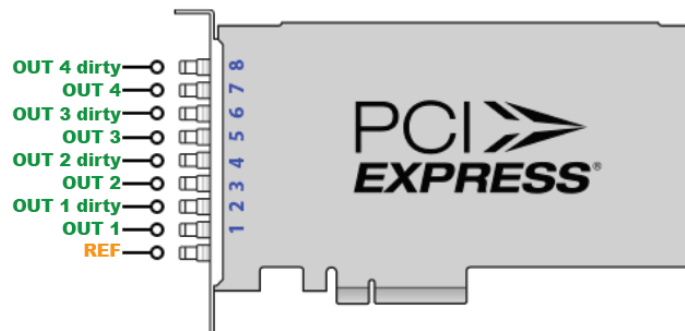
4 x OUT

Connector	Reference 1	2	3	4	5	6	7	8
Signal	Ref	OUT 1	OUT 2	OUT 3	OUT 4			
Mode		playout	playout	playout	playout			

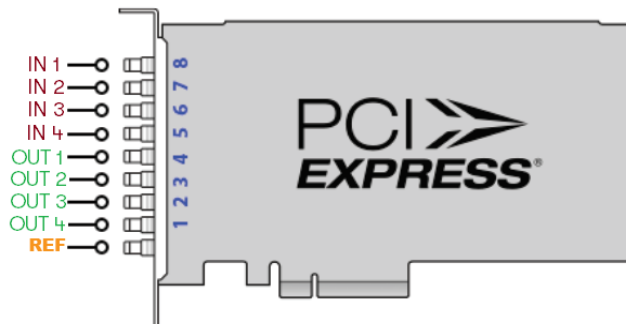


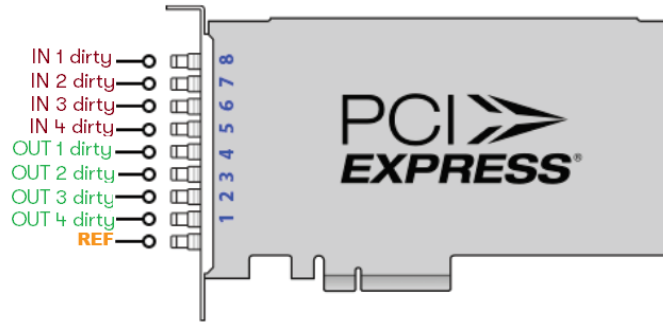
4 x OUT + OSD

Connector	Reference 1	2	3	4	5	6	7	8	
Signal	Ref	OUT 1	OUT 1 dirty	OUT 2	OUT 2 dirty	OUT 3	OUT 3 dirty	OUT 4	OUT 4 dirty
Mode		playout	playout	playout	playout	playout	playout	playout	playout

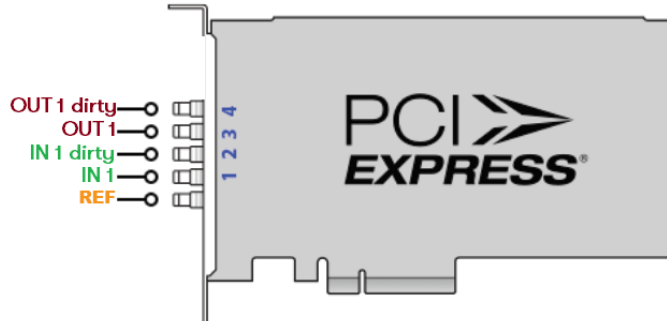


8 channels with dirty (with 2 DeckLink cards)





1 x IN + OSD / 1 x OUT + OSD (Blackmagic DeckLink 8K Pro)



4 Working with the Avid | Stream IO Web Configurator

The Avid | Stream IO Web Configurator is a web-based interface that you will use to configure and maintain your Stream IO system.



Avid | Stream IO is tested using Google Chrome and Microsoft Edge as the portals to the user interface. The user interface is designed with a 100% zoom display in mind, and there might be display issues if the browser's zoom value is decreased.

Prior to proceeding with the configuration, please ensure that your Avid | Stream IO server is installed and connected using the information from ["Software Installation and Configuration" on page 31](#).

The following main topics describe how to use the Web Configurator to set up and administer your Avid | Stream IO system:

- ["The Login Page" below](#)
- ["The VideoEngine Page" on the next page](#)
- ["The Commander Page" on page 53](#)
- ["The WatchFolder Page" on page 67](#)
- ["The System Page" on page 69](#)
- ["The Updater Page" on page 80](#)
- ["The Admin Page" on page 81](#)

The Login Page

The Login page provides you with the controls you need to navigate to and log in to the Avid | Stream IO Web Configurator.

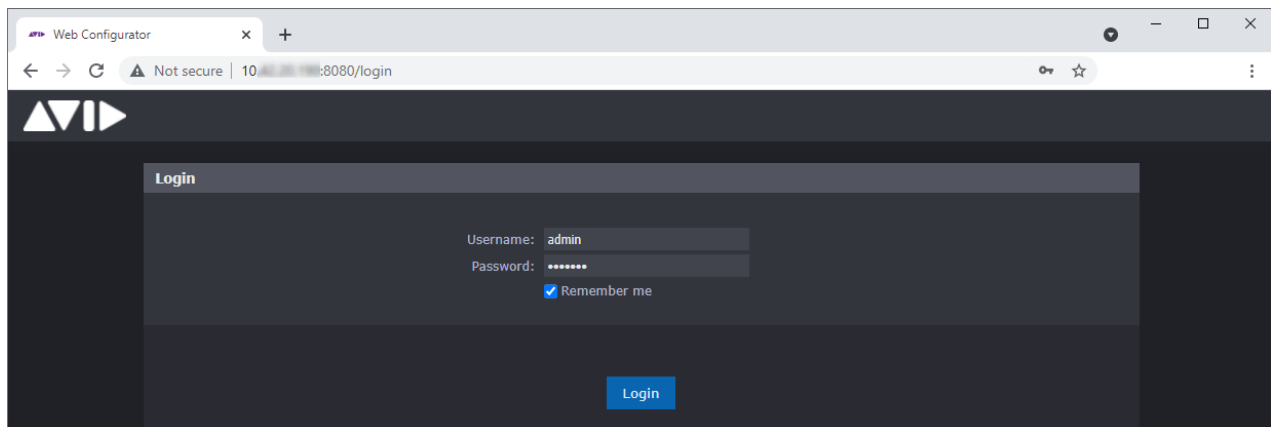
Logging In

This topic contains information on how to log into the Web Configurator.

To sign into Avid | Stream IO:

1. Launch a web browser and enter the Stream IO IP address or the host name, with the suffix :8080.

The Web Configurator sign-in page appears.



2. Enter your user name and password and click the "Login" button.



The default user name is “admin” and the corresponding password is “Avid123”. It is highly recommended to change the default credentials upon first login.

If one or more users has signed in before on this workstation, a list of users might appear when you click on the user name field.

3. The Avid | Stream IO Web Configurator opens.



Depending on the entitlements assigned by administrators through the Admin tab, the front page can vary. It can be the VideoEngine or any of the configuration tabs (System, Remote Console, etc.).

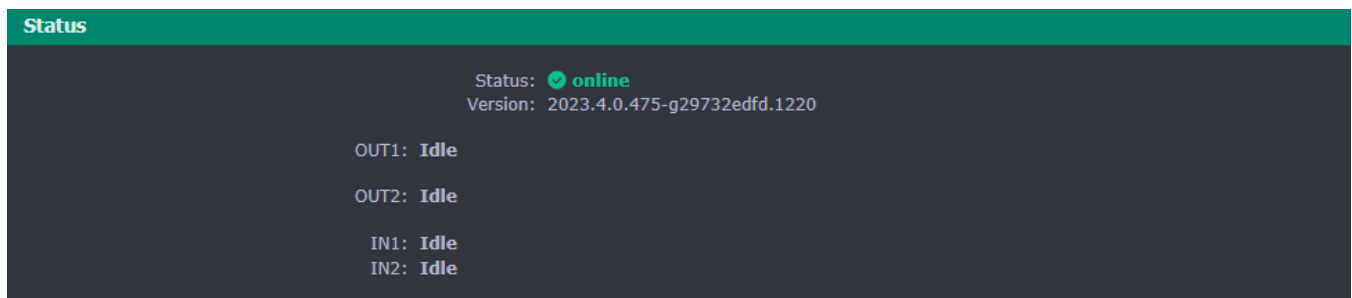
The VideoEngine Page

The VideoEngine page displays the following sections:

- Status - this section displays information about the communication status, version, and the state of the configured channels.
- IN and OUT sections to configure Avid | Stream IO inputs and outputs.
- CPU - configure CPU cores and affinity settings.
- AAF settings - enable or disable the option to keep or store AAF files.
- ANC settings - enable or disable ancillary data.
- Playout settings - configure further playout options, such as the background pattern.
- Video Converter - various parameters of clips might need to be adjusted to achieve a proper playout. The Video Converter settings control the conversion process when playing clips in the VideoEngine.
- Debug - this section allows to set the logging preferences.

The Status Section

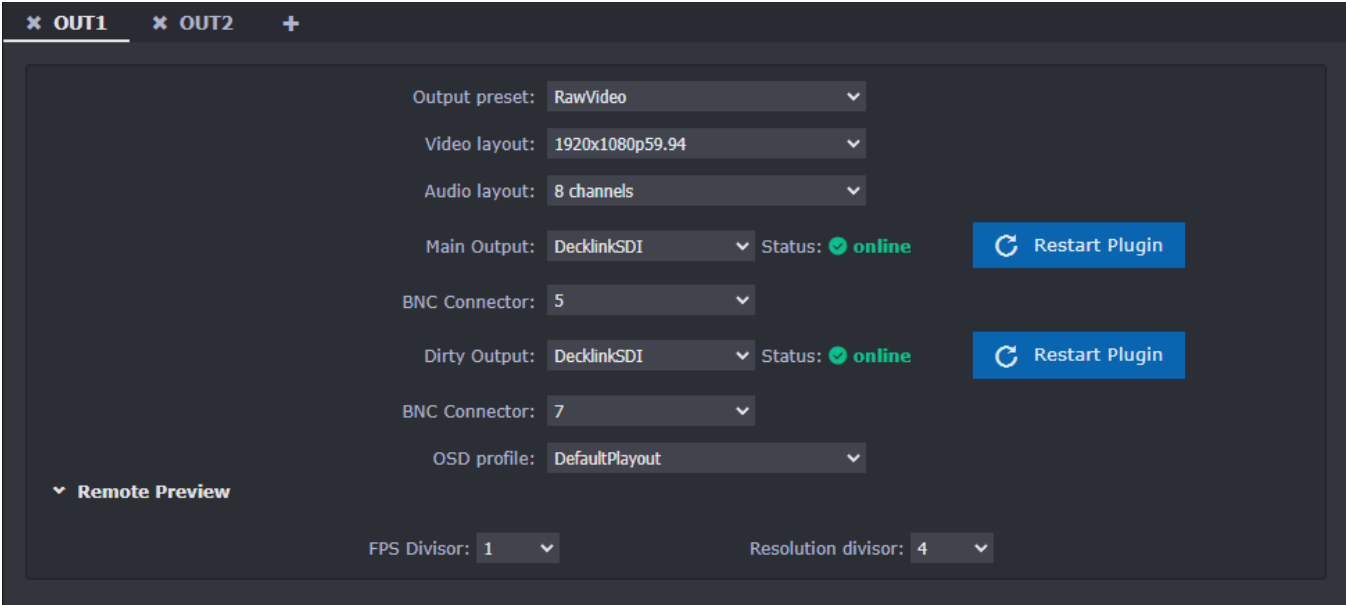
The Status section provides you with basic information about the current status of the server, version of the VideoEngine component and the configured Playout or Ingest channels.



The OUT Settings

In the OUT section you can configure the required settings of your playout channels. Each channel has its own set of settings, which means that you can use a different preset or layout on each channel.

Playout over SDI (DeckLink)



The following table describes the fields used on the OUT settings section.

For more information about possible output configurations, see ["Configuration Scenarios" on page 41](#).

Field	Description
Output preset	Set the video format output mode.
Video layout	Select the layout of the video.
Hover over the Video and Audio layout fields to view further details.	
Audio layout	Select the audio settings.
Main output	Information about the plugin used for playout settings. In our example the DeckLink SDI plugin is used. You can also restart this plugin here.
BNC Connector	Select the BNC Connector used for this particular output.
Dirty output	Select the plugin to be used for the dirty output. You can select between DeckLink SDI, NDI or None (disable the dirty playout).

Field	Description
	 The dirty output allows to preview the host name of server, channel name, speed of playout (0% or 100%), name of the currently loaded clip, current TC, Duration, IN & OUT points and audio indicators.
BNC Connector	Select the BNC connector used for OSD playout.
OSD profile	Select the default template for OSD settings. It is set automatically to DefaultPlayout for output channels.
Remote Preview	If the FPS Divisor is set to 1, then no change will be applied to the FPS of the Remote Console preview. If the divisor is changed, to then only a portion of frames will be displayed. If you change it to 4, then only the quarter of the frames will be displayed (e.g. 50p/4). In the Resolution Divisor field, set the size of the generated JPEG files for the preview (4 by default).

Playout over NDI



NDI playout is not yet available in the 2024.2 release, but you can use NDI for dirty preview.

The IN Settings

In the IN section you can configure the required settings of your ingest channels. Each channel has its own set of settings, which means that you can use a different preset or layout on each channel.

Ingest over SDI

×

IN1

×

IN2

+

Main Input: DecklinkSDI
Status: online
Restart Plugin

BNC Connector: 1

Dirty Loop: DecklinkSDI
Status: online
Restart Plugin

BNC Connector: 3

OSD profile: DefaultIngest

Loop output preset: LoopIngest

Video layout: Native

Audio layout: 8 channels

Remote Preview

FPS Divisor: 1
Resolution divisor: 4

The following table describes the fields used on the IN settings section.

Field	Description
Main input	Information about the plugin used for ingest settings (DecklinkSDI, NDI, TestSource). In our example the DeckLink SDI plugin is used. You can also restart this plugin here.
BNC Connector	Select the BNC Connector used for this particular input.  <i>For more information on BNC connector numbering when two Blackmagic DeckLink cards are inserted, see "Installing Blackmagic Cards" on page 14.</i>
Dirty loop	Select the plugin type for the dirty loop output.
BNC Connector	Select the BNC connector used for the dirty loop.
OSD profile	Select the default template for OSD settings. Set it to DefaultIngest for ingest channels. 
Loop output preset	Select the loop output preset between "LoopIngest" and "RawVideo".
Video layout	The "native" layout automatically sets the channel to incoming signal. The resolution or the FPS of the recording can be defined later using the ingest templates.
Audio layout	Set the number of audio channels (2, 8 or 16).
Remote Preview	If the FPS Divisor is set to 1, then no change will be applied to the FPS of the Remote Console preview. If the divisor is changed, to then only a portion of frames will be displayed. If you change it to 4, then only the quarter of the frames will be displayed (e.g. 50p/4). In the Resolution Divisor field, set the size of the generated JPEG files for the preview (4 by default).

For more information about possible output configurations, see ["Configuration Scenarios" on page 41](#).

Ingest over NDI



NDI ingest is not yet available in the 2024.2 release, but you can use NDI for dirty preview.

The CPU Settings

Select the **Use all available CPU cores** option to automatically select and enable all cores. With this check box disabled, the **"Use affinity with selected cores"** section becomes available and you can choose which CPU cores are used by the VideoEngine. The number of cores is detected automatically.

▼

CPU

Use all available CPU cores: ☒

☒ 1

☒ 2

☒ 3

☒ 4

☒ 5

☒ 6

☒ 7

☒ 8

☒ 9

☒ 10

☒ 11

☒ 12

☒ 13

Use affinity with selected cores:

☒ 14

☒ 15

☒ 16

☒ 17

☒ 18

☒ 19

☒ 20

☒ 21

☒ 22

☒ 23

☒ 24

☒ 25

☒ 26

☒ 27

☒ 28

☒ 29

☒ 30

☒ 31

☒ 32

The AAF Settings

Advanced Authoring Format (AAF) is a technology designed specifically for digital nonlinear post production and authoring and to help address the problem of multi-vendor, cross-platform interoperability for computer-based digital video production.

Field	Description
Keep AAF File	Enable this option to keep the AAF file on the server for additional use, or disable it to prevent overloading of files in the shared folder.
Store AAF to	Select a location on the mounted storage where the AAF files should be stored. If no mounted storage is selected, the AAF files are saved to the /tmp folder on the system disk.
Update AAF while growing	Select this option to store AAF files which are updated while the clip is growing.

The ANC Settings

Ancillary data packets are used to transmit non-video information (such as closed captioning). In this section you can enable or disable ancillary data on ingest. This setting does not affect ANC data on playout, where data is always transmitted if an .mxf file is present.

The Playout Settings

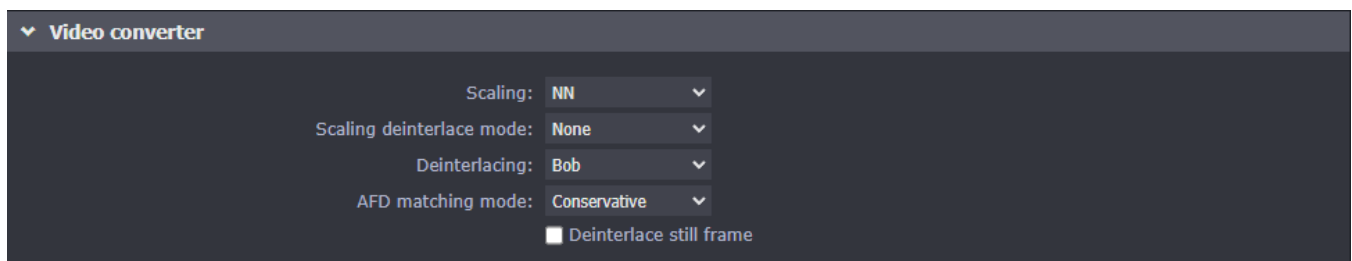
In this section you can configure how the VideoEngine responds if the playout freezes and additional audio options.

Field	Description
On drop frame	Set how the VideoEngine responds if playout freezes.

Field	Description
	- Repeat is recommended for on air productions. It repeats the last played frame. - Green is for debugging purposes and will display a pattern defined in the “Background pattern” setting.
Playout audio converter mode	Set the algorithms for audio filtering.
Background pattern	Set the background pattern for the video preview channel, displayed when no clip is playing or loaded (Bars or Black).

The Video Converter Settings

The Video Converter section allows you to control the conversion process when playing clips in the VideoEngine.



The following table describes the fields used on the Video Converter section.

Field	Description
Scaling	Set or disable the scaling preferences to use when the clip resolution does not match the resolution set in the VideoEngine.
Scaling deinterlace mode	(Enabled when Scaling is selected). - Simple adaptive - applied before scaling (good for static scenes, mediocre for dynamic). - Three tap filter derives a new value for a pixel by mixing upper, old and lower pixels.
Deinterlacing	Generate missing field rows by duplicating the upper/lower fields for progressive or the first second for interlace frames. - Bob - generates missing field rows by copying the available rows. - Adaptive - generates missing field rows based on motion calculation.
AFD matching mode	Active Format Description. - Aggressive mode - cuts out black areas in letterbox format. - Conservative mode - leaves black areas unchanged in letterbox format.
Deinterlace still frame	Select this option if deinterlacing algorithm should be applied when the video is paused.

The Debug Settings

The Debug section allows you to configure logging options.

▼ Debug

VE Logging priority: Info ▼

SMIO Logging priority: Info ▼

Log filename: ve.log

☐ Enable statistics

Statistics filename: statistics.csv

Download log: ve.log ▼

The following table describes the fields used on the Debug section.

Field	Description
VE Logging Priority	Set the threshold of message priority that will be written to the log file.
SMIO Logging Priority	
Log filename	Set the name of the log file. <i>It is recommended to leave the default filename as ve.log.</i>
Enable statistics	Select this check box to gather information about real-time ingest and ingest time. <i>It is recommended not to change the default file name.</i>
Download log	From the drop down list, download either the current log file or one of the previously created VE log files in the zip format.

When downloading logs or support archives, you cannot leave, close or refresh the current page!

The Commander Page

The options in the Commander tab determine the VE preview settings such as database maintenance, automation communication protocols, folder mapping, and log file access.

The Status Section

Displays the communication status and version of the Commander component.

Status

Status: ● online

Version: 2023.2.1.188-g8ce8b0850

DB_NAME = VIDEO_ENGINE

DB_HOST = localhost

The OUT Settings

The OUT section allows you to configure output channel options.

The following table describes the fields used on the OUT section.

Field	Description
Auto eject	Select to unload clips from the channel after playout. Clear to leave the clip displayed on the last frame after playout.
Auto uncue	Select to remove clips from the cue after playout. Clear to leave the clip in the cue after playout.
Auto still	Select to automatically load the first clip in the cue to its first frame (if the channel is empty). When cleared, cued clips are not loaded (a clip is displayed upon Play).
Max cued	Set the maximal number of clips to be cued, per channel. When the limit is reached, oldest cued clips are removed from the cue.

The IN Settings

The IN section allows you to configure output channel options.

The following table describes the fields used on the IN section.

Field	Description
Max cued	Set the maximum number of cued clips.
Color profile	Select metadata information which will be stored in the recording to interpret the pixels value. No pixel manipulation is performed.

The General Settings

The General section allows you to add the **Default Recording Path** for clips.

To set the default recording path:

- ▶ Enter the UNC path of the location you wish to use as your Default recording location. This path is later used by the Remote Console when configuring Ingest Templates.

 The "Clips" storage is the default recording location for the local storage.

To set up or view already existing NEXIS mounts, go to the ["The Mounts Settings" on page 70](#).

 The value of the House TC parameter must be set to InternalTC and it cannot be changed.

The **Auto validate on cue** option is related to the "Cue" command. Before Cue is sent, the physical clip on the storage is checked - and if there is a discrepancy between the data in the database and the physical clip – the clip is re-registered.

Example scenario:

A clip named "A" was present in the inventory (named A.mxf in the storage). At a certain point it was removed from the physical storage but the entry in database remained. Some time later, a different clip with the same clip name (A.mxf) was copied but it had different Duration.

With the **Auto validate on cue** option enabled, this clip will be checked first. When this mismatch between data is discovered – it will be registered again with new values. This will allow to correctly play the new physical clip under the same entry in the database. This mechanism costs more time and results in a longer execution of the Cue command.

With the **Auto validate on cue** option disabled, the additional check will be skipped. This clip (A.mxf) will be loaded and played according to the old values saved in the storage. In reality, this clip has a different duration than the database entry and the playout might end abruptly in the middle of the clip while on-air.

The **Delete local ingested media after remote transfer completes** option deletes the local storage recordings as soon as the transfer to external storage is complete. This mechanism helps to manage used storage space and is especially useful when local copies are not required.

The External Sources Settings

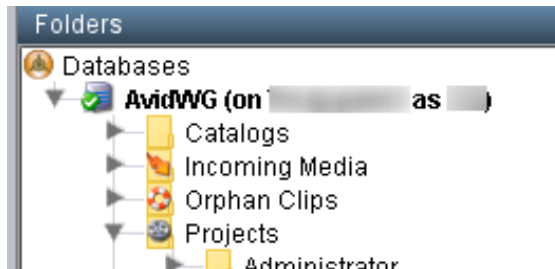
This section allows you to add new MediaCentral | Production Management connections, edit or remove existing sources.

External sources						
	Name	Address	Workgroup/Database	Default path	Mapping src	Mapping dest
 	PAM3	http://10.	AvidWG	/		
 	PAM6	http://10.	AvidWG	/		
+ Add new external source...						

To add a new external source:

1. Click on the **Add new external source** button to open a new dialog box.

2. Enter a unique **Name** for the Production system.
3. Specify the **Address** of the MediaCentral | Production engine.
4. In the **Workgroup/Database** field, enter the name of the Production database to which the Avid | Stream IO users will check-in assets. You can check the name of this database in Interplay Access:



5. The **Default path** is set to “/” and it is recommended not to change this setting.
6. In the **Username** and **Password** fields, enter the credentials used to log into MediaCentral | Production.
7. The Mapping src and Mapping dest options are not applicable to Avid | Stream IO and should be left blank.
8. Click on Add to close the dialog window.

To edit an existing MediaCentral | Production source:

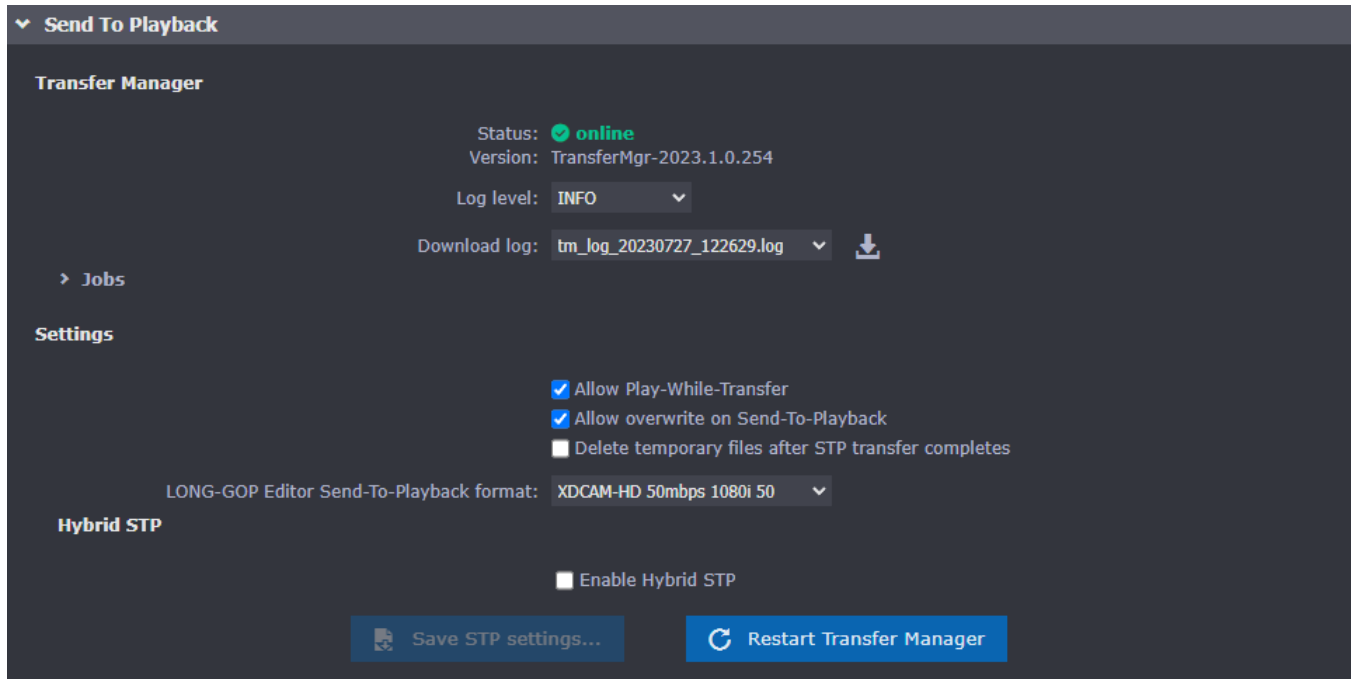
- Click on the Edit button next to the source Name to open the Edit external source dialog window. Change the required parameters and press on Add to close the window.

To remove a MediaCentral | Production source:

- Select the source to be removed, and press on the X button.

The Send-to-Playback Settings

This section allows to set up the “Send to Playback” functionality and the FastServe™ (FastServe Transfer Manager) configuration file.



The following table describes the fields used in the Send to Playback section:

Field

Description

Transfer Manager

Log level

Set the level of logging for the Transfer Manager. The most detailed log level is FINEST, and the least detailed is SEVERE. The log is located here: /data/FastServeTM/logs/.

Download log

Select which file you want to download and press on the download button.

Jobs

Jobs

Tape Id	Media Name	PWT	Start	Finish	Status	
my_clips_6.001	MySTPClip2		2021-06-17 11:08:23	55%	RUNNING	✕
1080i59_HD50_new	MySTPClip1.transfer	✓	2021-06-17 11:07:29	1%	RUNNING	✕
1080i59_HD50_2h_2	MySTPClip1	✓		2021-06-17 11:06:05	Error: Item is protected	

This section shows the transfer progress of STP jobs. You can monitor the progress of all tasks, monitor errors (e.g. when a clip is protected and cannot be overwritten) or cancel jobs here.

Settings

Allow Play-while-Transfer

This option is referred to as PWT and it is also available in Media Composer. Enable this option to play the clip while it is still being transferred.

Make sure that the controller supports the PWT functionality. To support it, the controlling application must send the PlayInit command without an OUT point or DURATION parameters. Then, when the playout reaches temporary end-of-file, pressing PLAY will continue playing the clip. Temporary end-of-file may be reached if the rendering process is slower than the playout speed.

Field	Description
Allow overwrite on Send to Playback	Enable this option to control the overwrite behavior. When this option is disabled, it will not be possible to overwrite a clip that exists on the Avid Stream IO server even when the “overwrite” flag in the Send to Playback dialog of the editor is selected. This is to prevent unexpected or unauthorized overwriting of assets on the server. If this is attempted, the transfer will fail with an error saying “Error: item already exists”.
Delete temporary files after STP transfer completes	Select this option to delete temporary files after the Send to Playback transfer is completed. Enabling this option can prevent overloading of temporary files storage.
Auto delete temporary STP files after every	When the option to delete temporary files is enabled, you can configure additional options and define the frequency of the automatic file deletion on the NEXIS server. For this functionality to work, provide the UNC paths to the temp STP files on Avid NEXIS.
LONG-GOP Editor Send to Playback format	Choose the format from the drop-down list which contains all formats currently supported by the Send to Playback functionality. This setting must match the Project settings in Media Composer. Example: if your Media Composer Project is set to 1080i59,94 then the preset in the Web Configurator must be of the same resolution and frame rate.
Save STP Settings	Pressing this button saves the current configuration and updates the STP configuration files. No reboots are required.

Hybrid STP

Enable Hybrid STP	Enable or disable the secured remote Send to Playback process.
CloudUX IP	Enter the IP address or the host name of the MediaCentral Cloud UX server, where the feature dedicated to remote STP is running.
CloudUX port	Enter the port number of the HTTPS authentication (default: 443).
AppRecord alias	Enter the alias that defines identifies the Transfer Manager application.  <i>Instructions on how to obtain the AppRecord alias are described in documents for Identity and Access Management Service (IAMS) available for Avid’s Customer Support. Contact your Avid Sales or Avid Professional Services representative for assistance.</i>
AppRecord ID	Enter the authentication string generated with IAMS.

Field	Description
and Secret	 <i>Instructions on how to obtain the AppRecord alias are described in documents for Identity and Access Management Service (IAMS) available for Avid's Customer Support. Contact your Avid Sales or Avid Professional Services representative for assistance.</i>
Login to CloudUX	After entering all the information required for authentication, click on the Login to CloudUX button. A separate window opens where you need to authenticate your server.
Refresh token obtained	This label displays the status of the authentication token obtainment from Cloud UX.
Refresh token valid	Information if the obtained token is still valid.

Requirements for the Send to Playback Functionality

The following requirements need to be considered when planning to use the Send-to-Playback functionality:

- Avid shared storage environment - it is necessary to work in an Avid shared storage environment while performing Send to Playback. This means that the Avid | Stream IO machine must have an active mount to Avid NEXIS storage, the same as Media Composer has. The temporary STP files are stored in a NEXIS workspace under the “Temp” directory.
- FastServe™ (Linux application responsible for Send to Playback capabilities) connects to Commander on port 10004. This means that in the Web Configurator > Commander Tab > Automation protocols section, port 10004 must be enabled.

Delaying Clip Register

Sometimes, a clip transferred with STP is registered in the inventory very quickly and the part of video available for playout is short (for example 2-3 seconds). When such clip is triggered on-air, there is a risk of reaching the end-of-file point before new chunks of video are registered. To avoid this risk, it is recommended to delay the clip register process.

To delay the “register” command:

1. Using an SSH client connect to your Avid | Stream IO server.
2. Navigate to the following location:

```
cd /data/FastServeTM
```

3. Open the TransferManager's configuration file for editing:

```
vim TMServer.xml
```

4. Add the following line to the TransferManager configuration file:

```
<OcipRegDelaySec>X</OcipRegDelaySec>
```

where X is a number of seconds for the delayed registration. For example, if x equals 120 then a clip is registered when there is already 2 minutes of video available for playout.

 *The new OcipRegDelaySec line must be within the <TMConfigs> tags.*

5. Save and close the TransferManager's configuration file.
6. Restart the TransferManager or reboot your Avid | Stream IO server.

Custom Device Name

There is a possibility to replace the default Avid | Stream IO device name displayed in the STP workflows in Media Composer. For example, when choosing “Send to Playback” > “stream1-hd”, you can use your own descriptive name for the server.



The Stream IO device name must only consist of basic letters. No special characters, ICS or spaces are allowed.

To change the Stream IO device name:

1. Using an SSH client, such as PuTTY, connect to your Avid | Stream IO server.
2. Navigate to the following location:

```
cd /data/FastServeTM
```

3. Open the TransferManager’s configuration file for editing:

```
vim TMServer.xml
```

4. Add the following line to the file:

```
<CustomName>newName</CustomName>
```



The new CustomName line must be within the <TMConfigs> tags.

5. Save and close the TransferManager’s configuration file.
6. Restart the TransferManager or reboot your Avid | Stream IO server.

The DB Cleaner Settings

In the DB Cleaner section, you can configure a scheduled cleanup of the database, where Avid | Stream IO stores information about the recorded media (recording name, duration, location, etc).

The screenshot shows the 'DB Cleaner' configuration page. Under the 'Automatic' section, there are two main configuration blocks. The first block has a 'Run every' setting of '1 Days' at '12 : 0 o'clock' and a 'Run now' button. It contains several options: 'Clean items created more than 1 days ago' (checked), 'Erase local media file(s)' (checked), 'Erase remote media file(s)' (checked), 'Clean media created more than 30 days ago' (unchecked), 'Erase local media file(s)' (unchecked), 'Erase remote media file(s)' (unchecked), 'Clean items last used more than 30 days ago' (unchecked), 'Erase local media file(s)' (unchecked), 'Erase remote media file(s)' (unchecked), 'Clean media last used more than 30 days ago' (unchecked), 'Erase local media file(s)' (unchecked), 'Erase remote media file(s)' (unchecked), 'Clean media with missing files, check each media every 30 days' (unchecked), 'Delete related items' (unchecked), and 'Clean all media' (unchecked). The second block has a 'Run every' setting of '30 Days' at '3 : 0 o'clock' and a 'Run now' button. It contains 'Erase media when storage capacity is used in 90 %' (unchecked) and 'Delete until used space reaches 80 %' (unchecked). A 'Save settings' button is located between the two blocks. At the bottom, there are 'Clean Media' and 'Clean DB' buttons.

In the **Run every** section, you can specify the cadence of running for the cleaner. You can choose between the following intervals: Hours, Days or Week. When you select the Week option, you can specify at which days of the week and at what time the cleaning should occur.

This screenshot shows the 'DB Cleaner' configuration page with the 'Automatic' section expanded. The 'Run every' setting is now set to 'Week'. Below this, there are checkboxes for the days of the week: MON, TUE, WED, THU, FRI, SAT, and SUN. The 'at' time is set to '4 : 35 o'clock'.

The **Erase local media file(s)** option removes clips stored on the local RAID (in the /Clips location). The **Erase remote media file(s)** option deletes clips / assets stored on Avid NEXIS or other external storage.

Difference between "item" and "media"

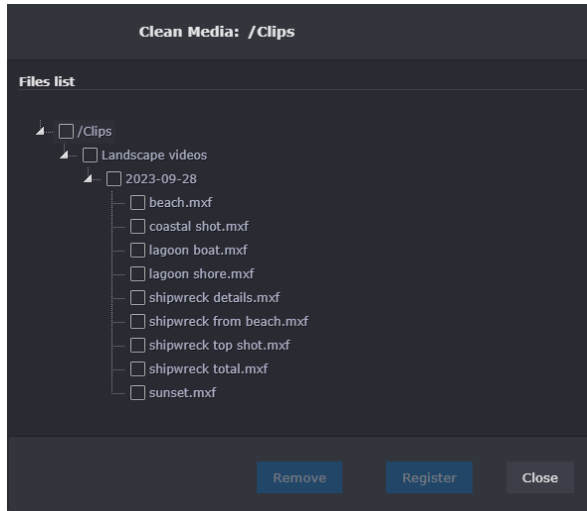
Media is always created in the background together with items. An item is an asset that may contain multiple media, for example an item may be comprised of database references to a recording and auxiliary media (hires and proxy). Media is not directly exposed in the inventory.

When exporting an item from the inventory, the database entry of the “exported” asset is stored there as media with additional data, such as reference paths, file name, etc . So, when you export this asset again to a different location – a new media is created in the database.

Manual Database Cleaning

The Manual database cleaning section should only be used for sporadic maintenance purposes. It is recommended to configure and run automatic cleanups on your Avid | Stream IO server.

The **Clean Media** button allows to access a list of unregistered media files. In certain situations (such as using the "Reinstall DB" option during system update), media files can fail to be registered in the database.



The Files list only presents clips which are not registered in the database. You can either select clips to be Registered into the database or Removed from the physical storage.

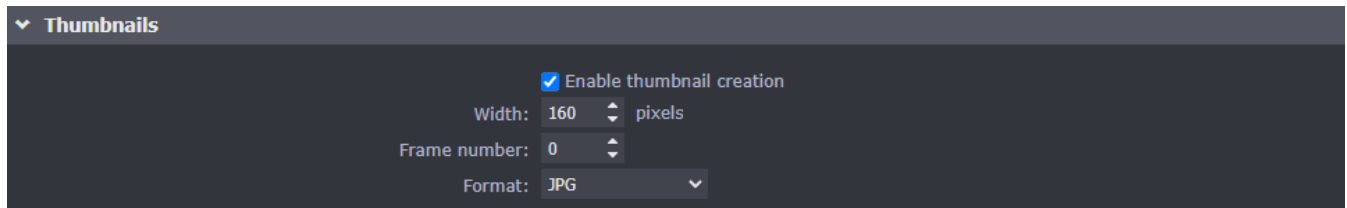


The removal process is irreversible, so make sure you have a backup of the files before you delete them.

The “**Clean DB**” button is to be used for maintenance only and removes ALL items and media entries from VIDEO_ENGINE.DB.

The Thumbnails Settings

The Thumbnail section allows to set default options for thumbnail creation.



The following table describes the fields used in the Thumbnails section:

Field	Description
Enable thumbnail creation	Select to create a thumbnail for the recordings. When cleared, no thumbnail is created.
Width	Set the thumbnail Width; the height is set according to the clip aspect ratio.
Frame number	Frame number indicates which frame to use as the thumbnail.
Format	Select the file format of the created thumbnails.

The Automation Protocols Settings

The Automation protocols section allows to define and configure automation protocols like the VDCP, or specify the connection type (TCP/IP interface, port, etc.).



Currently, Avid | Stream IO can be controlled by VDCP using only the TCP/IP interface. Serial connection is not supported.

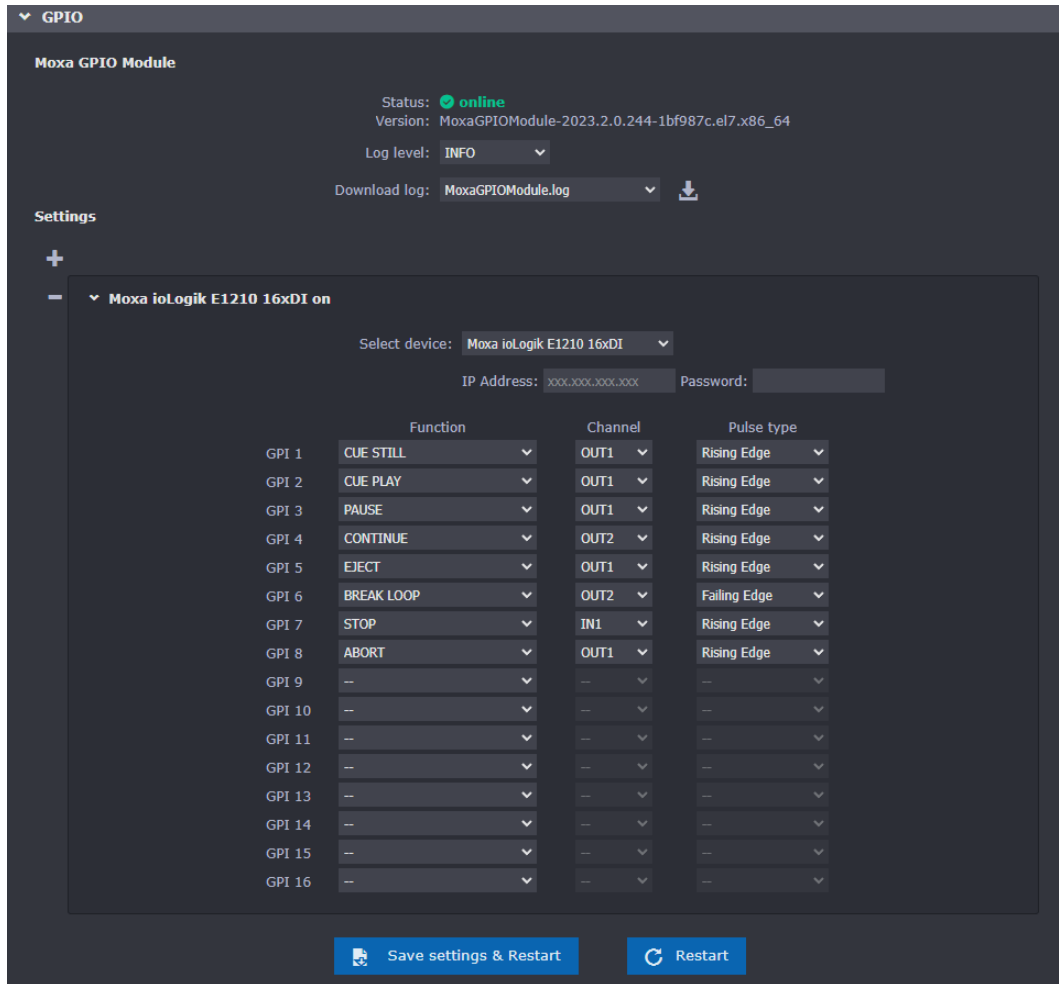
Automation protocols								
+								
—	☒ Enabled	Protocol: OCIP	Device: TCP/IP	Port: 10001	Channel: IN1	Time format: Default		
—	☒ Enabled	Protocol: OCIP	Device: TCP/IP	Port: 10002	Channel: IN2	Time format: Default		
—	☒ Enabled	Protocol: OCIP	Device: TCP/IP	Port: 10003	Channel: OUT1	Time format: Default		
—	☒ Enabled	Protocol: OCIP	Device: TCP/IP	Port: 10004	Channel: OUT2	Time format: Default		
—	☒ Enabled	Protocol: VDCP	Device: TCP/IP	Port: 11001	Channel: IN1	☐ Auto open	☐ Auto still	
—	☒ Enabled	Protocol: VDCP	Device: TCP/IP	Port: 11002	Channel: IN2	☐ Auto open	☐ Auto still	
—	☒ Enabled	Protocol: VDCP	Device: TCP/IP	Port: 11003	Channel: OUT1	☐ Auto open	☐ Auto still	
—	☒ Enabled	Protocol: VDCP	Device: TCP/IP	Port: 11004	Channel: OUT2	☐ Auto open	☐ Auto still	

The following table describes the fields used in the Automation Protocols section:

Field	Description
Enabled	Select the check box to enable the channel.
Protocol	Select the required automation protocol.
Device	Available when the VDCP protocol is selected. Set the device type as required.
Port	Set the communication port.
Channel	Set the channel type.
Time format	Select the channel time format: - For OCIP protocol, set the Time Format to Default. - For VDCP protocol, enable or disable the Auto Open option as required. When Auto Open is selected, communication with automation port is enabled by default, when cleared, communication must be established.

The GPIO Settings

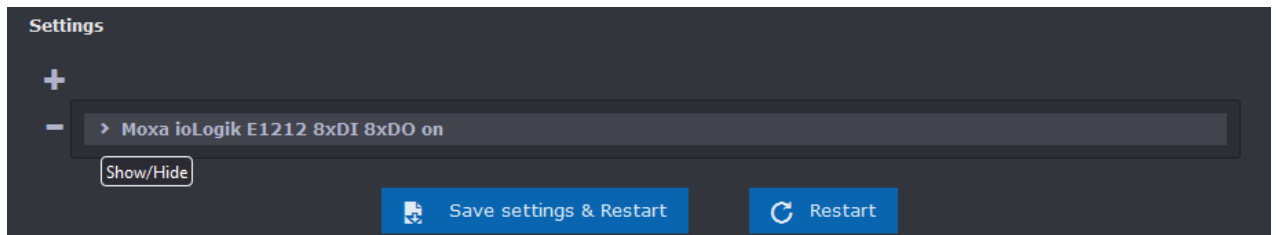
The GPIO page provides you with the basic controls you need to set up GPI inputs and outputs on the server. It also allows to add a GPI Moxa device and configure its behavior. You can define a function, assign a channel and a moment of triggering (pulse type).



To configure a Moxa device:

1. In the Moxa GPIO Module, click on the **+** (Add new item) button in the Settings section.

A new **Moxa ioLogik E1212 8xDI 8xDO on** section appears. Click on the Show/Hide (>) button to configure further options.



2. Select the required Moxa device. The following options are available:

- Moxa ioLogik E1210 16 x DI
- Moxa ioLogik E1211 16 x DO
- Moxa ioLogik E1212 8xDI 8xDO

3. Enter the IP address of the Moxa device, and the password (if required).
4. Configure the required options:

Function	Description
CUE STILL	Load an existing cued clip to the channel output on the predefined IN point with 0% speed.
CUE PLAY	Load an existing cued clip to the channel output on the predefined IN point with 100% speed.
PAUSE	Pause any currently played item. This command changes the playout speed on the target channel to 0%.
CONTINUE	Set the currently played item's speed to 100%. Effectively, it will continue playing any paused item.
EJECT	Remove the currently played item from the target channel. For this command to succeed, the target channel must be in the "Playing" mode (contain loaded clip). After this command is executed, the channel changes its state to "Idle".
ABORT	Eject the currently played or recorded item from the target channel and delete all existing cued items. After executing this command, the channel changes its state to "Idle".
BREAK LOOP	Break the currently played loop on the target channel. After executing this command, the current loop will finish properly. This command has no effect on items which do not contain a loop.
STOP	Stop the currently played or recorded item from the target channel.
CRASH RECORD	Start a recording and instantly capture to the target channel, without a predetermined end time.
Available for Moxa ioLogik E1211 16xDO	
TALLY ON PLAY	A tally light is triggered on when a channel is playing. – TALLY ON PLAY (any speed) – TALLY ON PLAY (speed 100%) - <i>activated only when a playout channel is playing some media and the playout speed is exactly at 100%.</i> – TALLY ON PLAY (speed != 0) - <i>activated only when a channel is playing some media and the image is not still (normal speed, FF, FW, varispeed, etc).</i>
TALLY ON EJECT	A tally light is triggered on when a channel is ejected (idle).
TALLY ON REC	A tally light is triggered on when a channel is recording.

5. Once the configuration is complete, press the **Save settings & Restart** button.

The Folder Mappings Settings

This section provides you with options to map Windows-based folders from the controller to Linux-based folders in the Avid | Stream IO system. Specify the Windows Source folder together with the Linux Destination directory. (Click + to add mappings.).



The 2024.2 version of Avid | Stream IO does not support folder mappings.

▼ Folder mappings

+

-

Source: /

Destination: /

☒ Use system mounts in mapping

▼ System mounts mapping

Source	Destination
\\FSP-Nexis-E4\FSP-tests	/mnt/nexisFSP
\\VS-Nexis3\N3-MB	/mnt/nexis5/N3-MB
\\VS-Nexis3\N3-TSO	/mnt/nexis5/N3-TSO

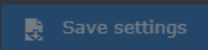
The MCUX Service Settings

When integrating Avid | Stream IO with MediaCentral | Acquire, you need to **Enable the MCUX service** and provide an IP address of the ACS gateway host.

▼ MCUX service

☒ Enable MCUX service

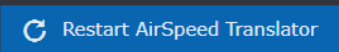
ACS Gateway host:

 Save settings

The AirSpeed Translator Settings

The AirSpeed Translator component is responsible for communication between Avid | Stream IO and MediaCentral | Capture. This section allows you to restart this plugin if you encounter any issues communicating with Capture.

▼ AirSpeed Translator

 Restart AirSpeed Translator

The Debug Settings

The Debug section provides you with options to configure the Commander logging options.

▼ Debug

Commander Logging priority: Info ▼

CORE Logging priority: Info ▼

SQL Logging priority: Info ▼

OCIP Logging priority: Info ▼

TP Logging priority: Info ▼

TP VE Logging priority: Info ▼

Log filename: commander.log

Download log: commander.log ▼ 

The following table describes the fields used in the Debug section:

Field	Description
Commander Logging Priority,	Set the log mode for the various VECOMMANDER components to gather helpful information used to analyze any future problems:
CORE Logging Priority,	Trace low Trace Trace high Debug low Debug Debug high Info Notice Warning low Warning Warning high Error low Error Error high Critical
SQL Logging Priority	
Log filename	Set the name of the Commander log file name.  <i>It is recommended not to change the default file name.</i>
Download log	Download the required Commander log file.



When downloading logs or support archives, you cannot leave, close or refresh the current page!

The WatchFolder Page

The options in the WatchFolder page allow to configure the WatchFolder parameters.

The Status Section

Displays the communication status and version of the Commander component.

Status

Status: online
Version: 2022.6.1.1.1008-52f12a47

The General Settings

The General section allows you to configure main WatchFolder parameters.

General

☒ Autostart

Clip destination path:

Clip mount point:

Accepted extensions:

The following table describes the fields used in the General section:

Field	Description
Autostart	When this check box is selected, the watched folder is examined automatically when Avid Stream IO is started. When cleared, the WatchFolder functionality is not activated, and the folder is not checked. To start WatchFolder surveillance when Autostart is cleared, you must restart the WatchFolder (using Restart at the bottom of the screen).
Clip destination path	Set the clip storage location.
Clip mount point	Set the virtual file system WatchFolder, visible only when the WatchFolder process is running. Once the files are placed here they are registered in the VE database with the selected audio mapping.
Accepted extensions	List the file types that are acknowledged by the WatchFolder.

The Autoregister Settings

Use this section to enable the autoregister functionality.

The following table describes the fields used in the Autoregister section:

Field	Description
Enable Autoregister	When autoregister is enabled, media files are automatically registered in the VE database. Clear this option when working with network storage (since media is registered to the VE database upon playout). Auto-register works with the OCIP protocol only.
Use Media Mapper	 <i>Audio mapping is not supported by Avid Stream IO.</i>
OCIP port	Set the OCIP communication port.

The FTP Settings

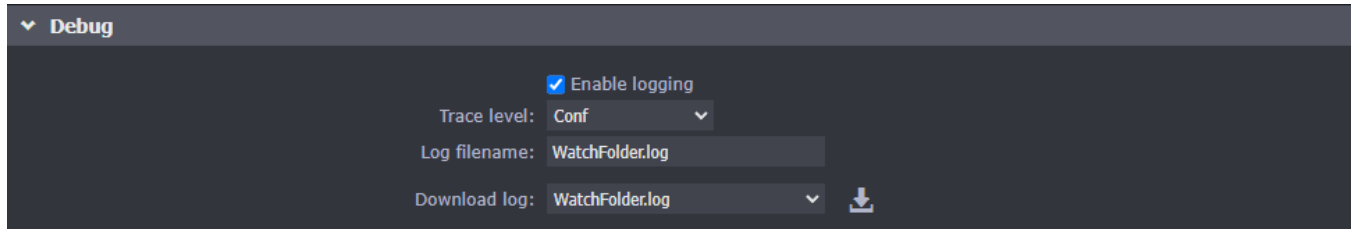
Enable the FTP server to allow for the FTP access to the Watchfolder.

This section enables users to transfer video clips over FTP directly to the WatchFolder directory. This results in automatic registration of clips in the local inventory.

To use the FTP access, you need to create login credentials in the **System > FTP & Samba users' accounts** section of the Web Configurator. When you log in to FTP using your newly created user name and password, you are taken directly to the Clips>WF location and you can copy the files registered in the inventory.

The Debug Settings

The Debug section provides you with options to configure the WatchFolder logging options.



The following table describes the fields used in the Debug section:

Field	Description
Enable logging	Select this check box to enable logging of debug messages.
Trace Level	Set the level of debug messages to be written to the log file.
Log filename	The WatchFolder log file name.
	 <i>It is recommended not to change the default file name.</i>
Download log	Download the last WatchFolder log file from the list of created log files.

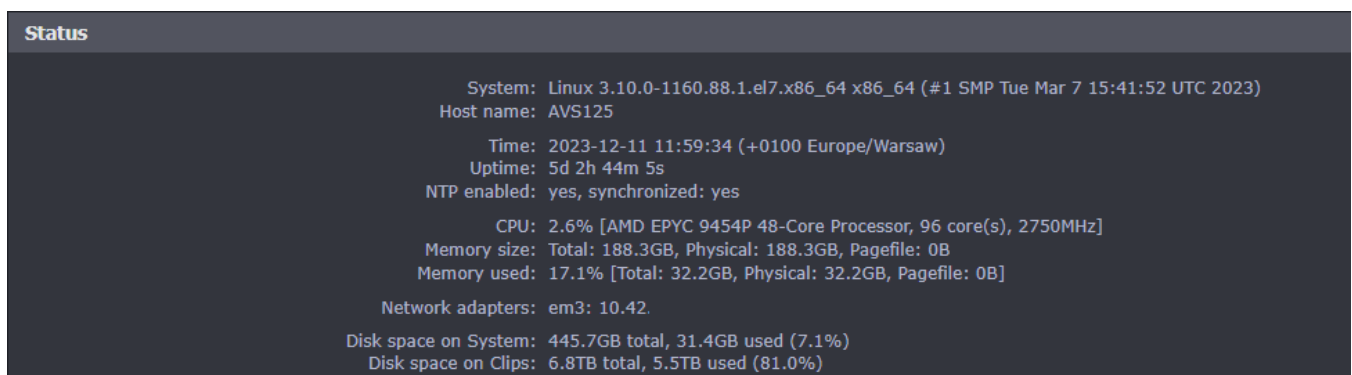
 When downloading logs or support archives, you cannot leave, close or refresh the current page!

The System Page

The System page allows to monitor and define system options, that in many cases apply to the whole server's operating system. Here, the CPU/memory usage can be monitored, licenses applied and verified, NTP server defined, IP configuration completed, logs downloaded etc.

The Status Section

The Status section displays various system parameters. The image below provides an example, but various parameters may vary depending on the used machine.



The Licenses Settings

The LMF Licenses section displays the currently installed licenses and their status.

LMF Licenses

Name	System Id	Version	Total Count	Available Count	Expiration Date
ENT_GRACE_PERIOD		1.0	14	14	06/22/2024
ENT_STREAM_IO_1080P_UHD		1.0	1	1	06/22/2024
ENT_STREAM_IO_4CH_BASE		1.0	1	1	06/22/2024
ENT_STREAM_IO_4CH_PROXY		1.0	1	1	06/22/2024
ENT_STREAM_IO_AVC_XAVC		1.0	1	1	06/22/2024

Manage licenses...

☒ Online activation
 ☐ Offline activation

Product: Activation Id: System Id:

For information how to add a license, see ["Activating the License" on page 40](#)

The Mounts Settings

The Mount section provides the options to add mount points to the Avid | Stream IO server.

 Check if the configured mounts are working correctly after each reboot of the machine. If any of the mounts are not restored, mount them again to prevent export failures. It is recommended to have the AvidFos mount point set in the /mnt/ directory and called differently than the NEXIS hostname.

The Mounts section is split into two separate parts. One part refers to AvidFos mounts only, that is Avid NEXIS mounts. The other one is dedicated to cifs and nfs mounts.

Mounts

AvidFos

> Client Management

+ 1 2 3

▼ FSP-Nexis-E4 on /mnt/nexisFSP/

Other (cifs, nfs)

+ 1

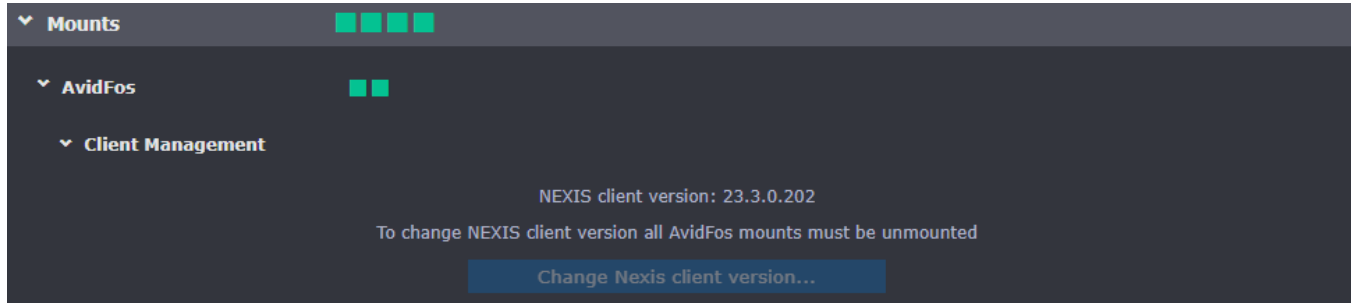
▼ 10.42.20.190 on /mnt/190/

The status and host information about the mount are displayed in the following order:

1. Status of the mount: green (**mounted**), red (**unmounted**), yellow (**errors**),
2. Host name, usually the name of the NEXIS share,
3. Linux mount point (direct file system path to the mounted location).

Client Management

In the AvidFOS area, open the **Client Management** section to update the Avid NEXIS Client version directly from the Stream IO Web Configurator.

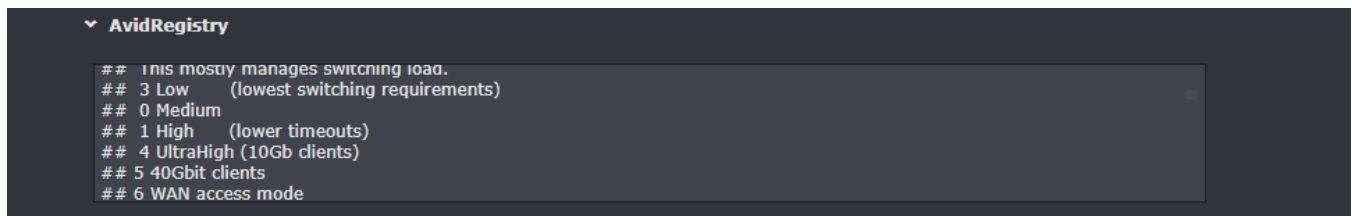


Make sure all AvidFOS shares are unmounted, and click on **Change Nexis client version**. In the next window, point to the NEXIS installer on your local storage and click **Next**.

Expand the **Client Management** section further to view and edit the content of the **AvidRegistry** file. You can define various parameters here, such as the default eth port used for NEXIS mounts.



Before performing an upgrade or downgrade, please backup the Avid Registry file (/etc/AvidRegistry). After upgrading or downgrading the Avid NEXIS Client, please verify if the Avid Registry file is correct or if it requires any adjustments



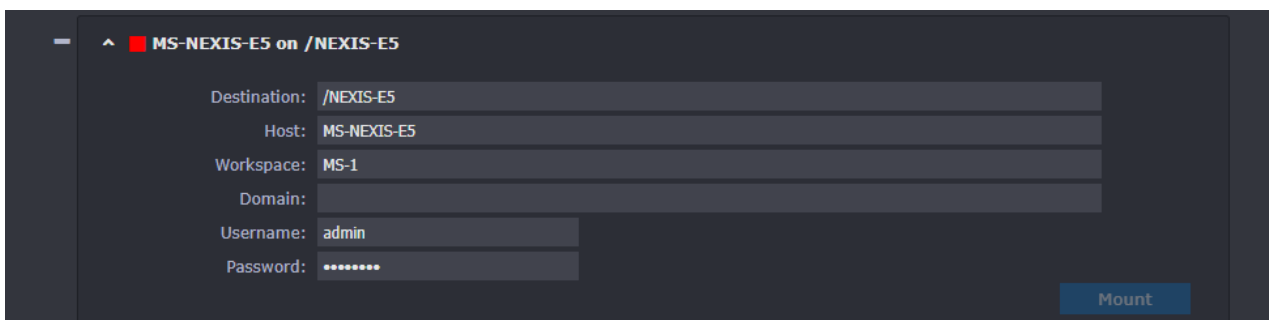
Adding Mounts

You can add multiple workspaces (AvidFos or Other) using the Mounts section.

To add a new AvidFos mount:

1. In the Mounts > AvidFos section, press the + button.

A new section appears where you can define the details of your new mount.



2. Enter the parameters as described below. The Destination and Host fields are mandatory.

Field	Description
Destination	Enter the path under which the NEXIS will be visible from Linux. It can be /mnt/NexisSystemName or /Nexis.
Host	Enter the NEXIS host name.
Workspace	Specify the workspace from your Shared storage where the ingested media should be stored.
Domain	Enter the domain name, when there is a domain name in use.
Username	Enter the user name for the appropriate NEXIS share.
Password	Enter the password for the appropriate NEXIS share.

3. When all the required fields are entered, the **Save Settings** button becomes active. Press the **Save Settings** button to apply the new mount.

To add a new cifs or nfs mount:

1. In the Mounts > Other (cifs, nfs) section, press the + button.

A new section appears where you can define the details of your new mount.

^ 10.42.20.39 on /mnt/nas39

Destination: /mnt/nas39

Host: 10.4...

Shared folder: FastServe Ingest

Domain:

Filesystem: CIFS ☐ Use local cache

Samba Version: 3.0

Username: root

Password:

Mount

2. Enter the parameters as described below. The Destination and Host fields are mandatory.

Field	Description
Destination	Enter the path under which the share will be visible from Linux.
Host	Enter the host name or IP address.
Shared Folder	Enter the name of the shared directory for exporting clips. A folder with this name must exist on the remote computer with permissions for the relevant user name.
Domain	Enter the domain name, when there is a domain name in use.
Filesystem	Select the file system type: CIFS or NFS.
Use local cache	When enabled, all exported files are stored in the Avid Stream IO local cache memory until the export is complete.

 *It is highly recommended to disable this option when planning to export multiple large files simultaneously, to avoid the risk of consuming the entire physical memory.*

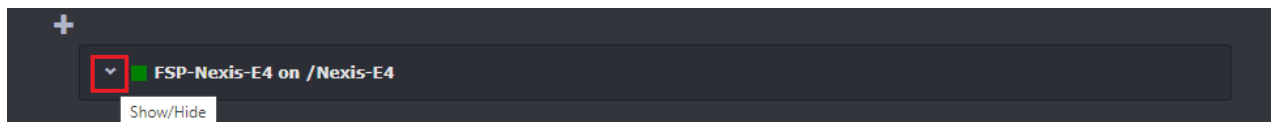
3. When the required fields are entered, the **Save Settings** button becomes active. Press the **Save Settings** button to apply the new mount.

Editing Mounts

To edit the parameters of an existing and active mount, you need to unmount it first.

To edit an existing mount:

1. Select the mount for which you wish to change the parameters (change the login information, update the shared folder path) and show its details.



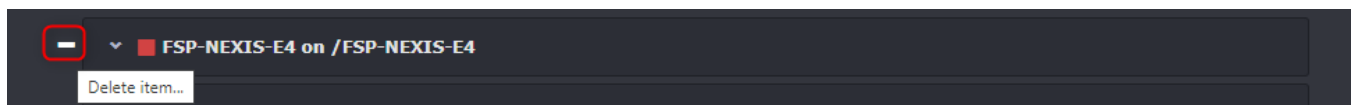
2. Press the **Unmount** button to enable editing.
3. Change the required parameters.
4. Click on **Save Settings** at the bottom panel to save the configuration.



5. Mount the share using the dedicated button.

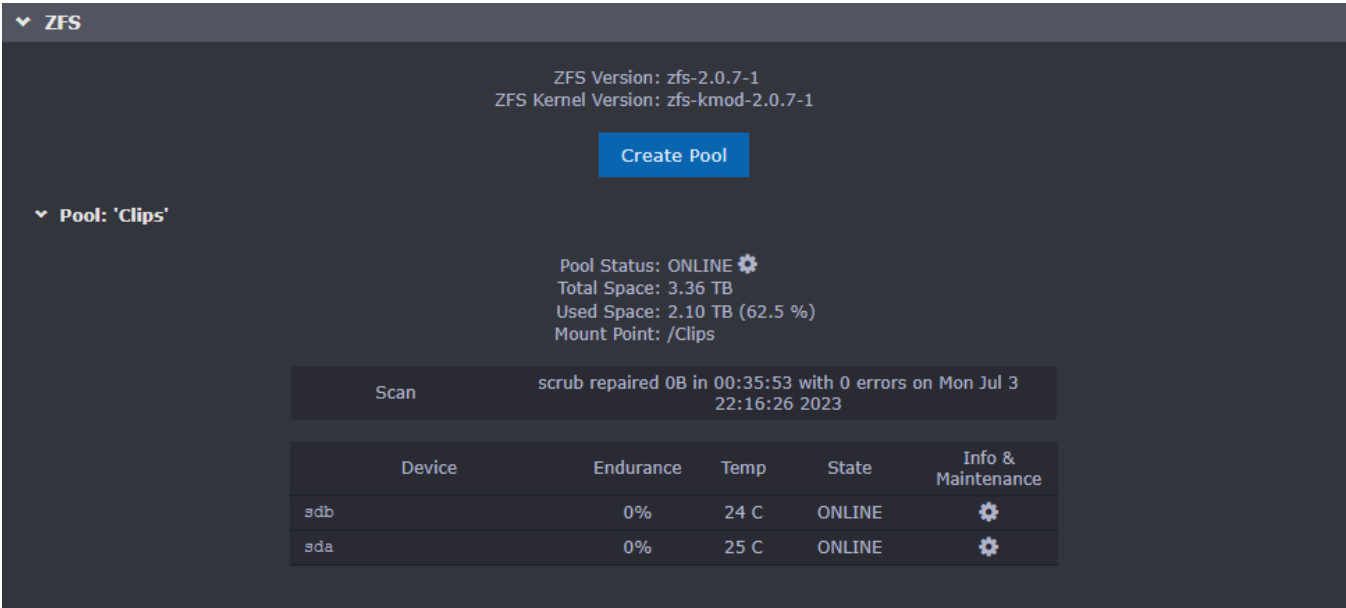
Removing Mounts

To remove a mount from the system, unmount it first, and then simply press on the - button and click on **Save Settings** to save the new system configuration.



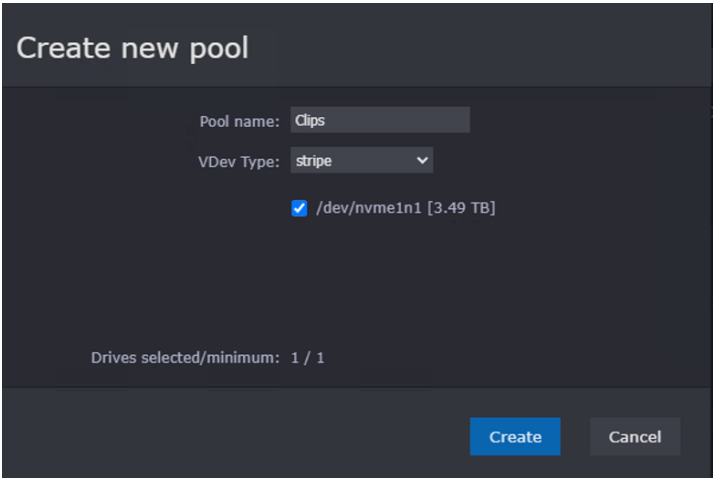
The ZFS Settings

Avid | Stream IO utilizes the ZFS file system for the media drive (RAID).

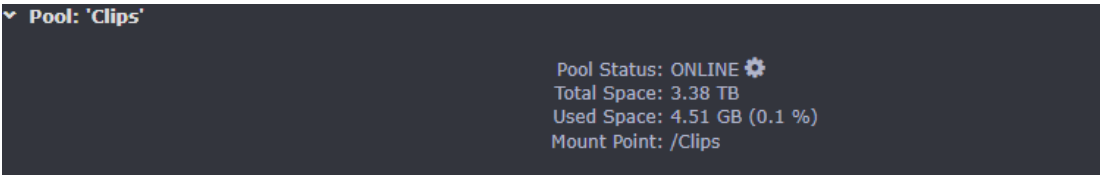


The following table describes the fields used in the Debug section:

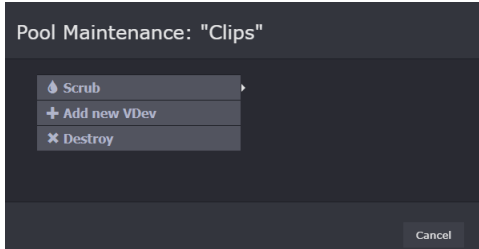
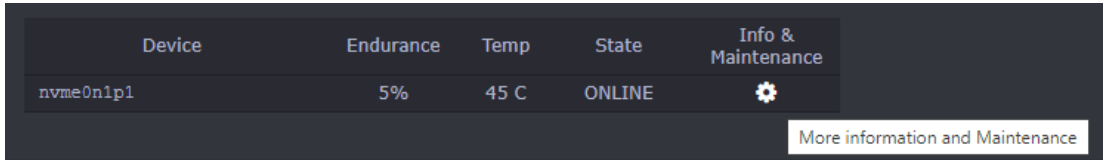
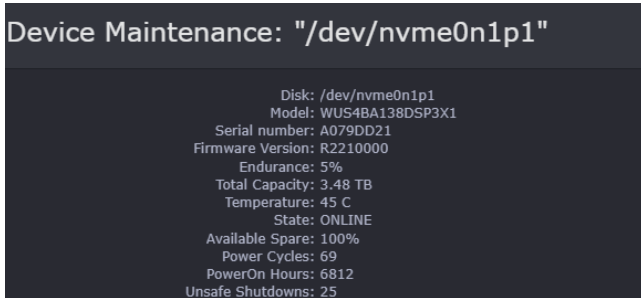
Field	Description
ZFS Version	This section displays the ZFS version and the ZFS Kernel information.
ZFS Kernel Version	
Create Pool	Create a new pool using the available drives. In the Create new pool dialog window, enter a name for the new pool and select the drives to be included.



Pools List Once a pool is created, it has its own section in the ZFS settings.



You can view the status of the pool and other important information here.

Field	Description
	Clicking on the gear button next to the Pool Status label opens the Pool Maintenance dialog window.  The following options are available: Scrub - examine the integrity of data stored in the ZFS pool. For replicated virtual devices, ZFS automatically repairs errors. Pressing on the Scrub button brings up additional options: Start Scrub, Pause Active Scrub, Cancel Active Scrub. When the Scrub operation is started, the Pool Maintenance window closes and the status of the scan is shown in the main ZFS settings. Add new VDev - extend the storage pool with additional virtual device. Destroy - dismantle the ZFS pool. This operation destroys all data stored in the pool.
Media Drive	This section provides information about the given media drive.  Press on the gear icon in the Info & Maintenance column to open the Device Maintenance window, where detailed information about the drive is listed. 

Storage Pool Configurations

Depending on the number of drives dedicated for storage, various pool configurations are possible:

- **Stripe (RAID 0)** - the data is stored in stripes across all drives.
- **Mirror + Stripe** - offers the benefits of striping to spread data across multiple disks, and mirroring provides redundancy of data.
- **RAIDZ 1** - data and parity is striped across all disks within a raidz group.

Example ZFS configurations:

Stripe from 4 drives

Pool Status: ONLINE 					
Total Space: 6.81 TB					
Used Space: 432.00 KB (0.0 %)					
Mount Point: /Clips					
Device	Endurance	Temp	State	Info & Maintenance	
sda	0%	23 C	ONLINE		
sdb	0%	23 C	ONLINE		
sdc	0%	21 C	ONLINE		
sdd	1%	20 C	ONLINE		

Stripe + Mirror

4 drives

Pool Status: ONLINE 					
Total Space: 3.36 TB					
Used Space: 924.00 KB (0.0 %)					
Mount Point: /Clips					
Scan	resilvered 1.98M in 00:00:00 with 0 errors on Wed Jan 10 15:28:10 2024				
Remove	Removal of vdev 5 copied 320K in 0h0m, completed on Wed Jan 10 15:27:50 2024; 1.64K memory used for removed device mappings				
Device	Endurance	Temp	State	Info & Maintenance	
mirror-2			ONLINE		
sdc	0%	21 C	ONLINE		
sdh	3%	20 C	ONLINE		
mirror-6			ONLINE		
sdd	1%	20 C	ONLINE		
sde	1%	21 C	ONLINE		

8 drives

Pool Status: ONLINE 					
Total Space: 3.36 TB					
Used Space: 960.00 KB (0.0 %)					
Mount Point: /Clips					
Scan	resilvered 1.98M in 00:00:00 with 0 errors on Wed Jan 10 15:28:10 2024				
Remove	Removal of vdev 5 copied 320K in 0h0m, completed on Wed Jan 10 15:27:50 2024; 1.64K memory used for removed device mappings				
Device	Endurance	Temp	State	Info & Maintenance	
mirror-2			ONLINE		
sdc	0%	21 C	ONLINE		
sdh	3%	20 C	ONLINE		
sda	0%	23 C	ONLINE		
sdb	0%	23 C	ONLINE		
mirror-6			ONLINE		
sdd	1%	20 C	ONLINE		
sde	1%	21 C	ONLINE		
sdf	1%	20 C	ONLINE		
sdg	3%	20 C	ONLINE		

RAIDZ 1 from 8 Drives

Pool Status: ONLINE 					
Total Space: 11.63 TB					
Used Space: 646.50 KB (0.0 %)					
Mount Point: /Clips					
Device	Endurance	Temp	State	Info & Maintenance	
raidz1-0			ONLINE		
sda	0%	23 C	ONLINE		
sdb	0%	23 C	ONLINE		
sdc	0%	21 C	ONLINE		
sdd	1%	20 C	ONLINE		
sde	1%	21 C	ONLINE		
sdf	1%	21 C	ONLINE		
sdg	3%	20 C	ONLINE		
sdh	3%	20 C	ONLINE		



In Raidz1 configuration, if one drive fails, the system is still operable. If more than one drive fail, the pool will go into “suspended” mode. Replace the faulty drives, reboot the system and re-create the pool.

The Network Configuration Settings

The Network Configuration section displays all available network adapters in your system. Select the adapter used for network communication, verify and /or change its parameters such as IP, DNS, host name.

You can restart your network from here too.

Network configuration

Host name: VS-AVS-DELL-223

> em1

> em2

< em3

em3: ☒ Active

IP Address: ☒ Static ☐ DHCP

IP: 10.4

Prefix: 24

Default gateway: 10.42.20.1 (optional)

Primary DNS: 10.42.10.20 (optional)

Secondary DNS: xxx.xxx.xxx.xxx (optional)

> em4

< idrac

idrac: ☐ Active

IP Address: ☐ Static ☒ DHCP

IP: xxx.xxx.xxx.xxx

Subnet mask: xxx.xxx.xxx.xxx

Default gateway: xxx.xxx.xxx.xxx (optional)

Primary DNS: xxx.xxx.xxx.xxx (optional)

Secondary DNS: xxx.xxx.xxx.xxx (optional)

Restart network system

The Time & NTP Settings

This section provides the options to select the time zone in which the system clock will operate, manually set the date & time, and enable the Network Time Protocol service.

Time & NTP

Time Zone

Time Zone: Europe/Warsaw

Update Time Zone

Time

NTP service: Enabled

Synchronize time

Chrony

Name	Np	Nr	Span	Frequency	Freq Skew	Offset	Std Dev
s.complex.net.pl	42	20	259m	+0.014	0.054	+66us	462us
0.ntp.beyond.pl	32	13	237m	+0.003	0.082	+1892us	486us
ntp3.orange.pl	20	9	219m	+0.060	0.160	-249us	721us
ntp2.tp.pl	31	16	179m	-0.093	0.106	-854us	397us

> Config

Time Zone

In the Time Zone section, you can select the required time zone for the system clock to operate. Afterward, press the **Update Time Zone** button to apply the change.

Time Zone

Time Zone: Europe/Warsaw

Update Time Zone

Time

The Time section allows to enable or disable NTP. When NTP is disabled, you can change the system time in two different ways:

- set the date & time using the dedicated controls,
- or synchronize the date & time settings with the PC where the Web Configurator is opened.

Time

NTP service: Disabled

Manual

Time: 12 : 15 : 33

Date: 2021-06-15

From PC

Update time

Click on **Update time** to apply the changes.

Chrony (NTP service)

Enable the **NTP service** in the Time section by clicking on the **Change state** button, to view further configuration options in the NTP section.

When a specific NTP provider is required, login to the Web Configurator using an account with administrative privileges.

The **Config** section contains a few predefined servers which can be removed or amended according to your requirements.

The screenshot shows the 'Config' section of the Chrony configuration interface. It contains a list of four predefined NTP servers, each with its own set of configuration options. The servers are:

- 0.centos.pool.ntp.org
- 1.centos.pool.ntp.org
- 2.centos.pool.ntp.org
- 3.centos.pool.ntp.org

Each server entry includes fields for Address, Type (set to 'Server'), MinPoll (6), MaxPoll (10), Version (4), and a Key (1). There are also checkboxes for 'Prefer', 'Burst', 'IBurst' (checked), 'Require', 'Trust', 'Xleave', and 'NoSelect'.

The parameters used in the default servers are common for NTP communication. Refer to the [NTP documentation](#) to find the most optimal configuration for your infrastructure.

The FTP & Samba User Accounts

It is possible to access the Avid | Stream IO database via FTP or through a server with Samba installed. In the “FTP & Samba user accounts” section, you can secure that access by creating login credentials which will be required when trying to access the server. Enable the Use Samba Users check box to protect access via Samba by asking for login details, which are created by clicking on the Add new user button. The same credentials will be used for FTP access.

The screenshot shows the 'Ftp & Samba users' accounts' section. It features a checkbox labeled 'Use Samba Users'. Below this is a table with two columns: 'Name' and 'Password'. The table contains two entries: 'adm' and 'bin', each with a lock icon and a settings icon. At the bottom of the section is a blue button labeled '+ Add new user...'.

Debug

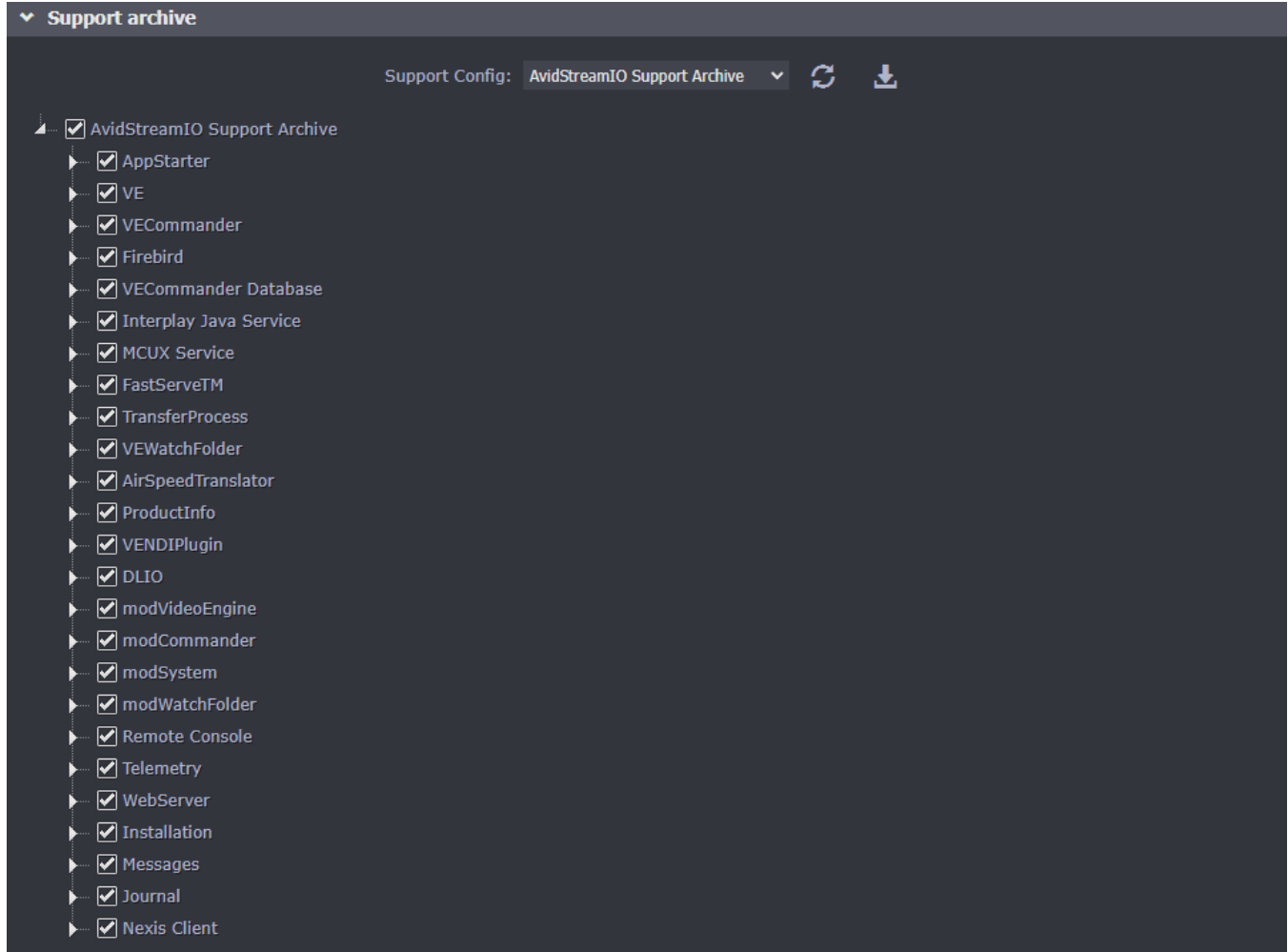
The Debug section provides the option to set logging priority and download the system log file.

The screenshot shows the 'Debug' section. It contains a dropdown menu labeled 'Download log:' with the value 'server.log' selected. To the right of the dropdown is a download icon.

The Support Archive Settings

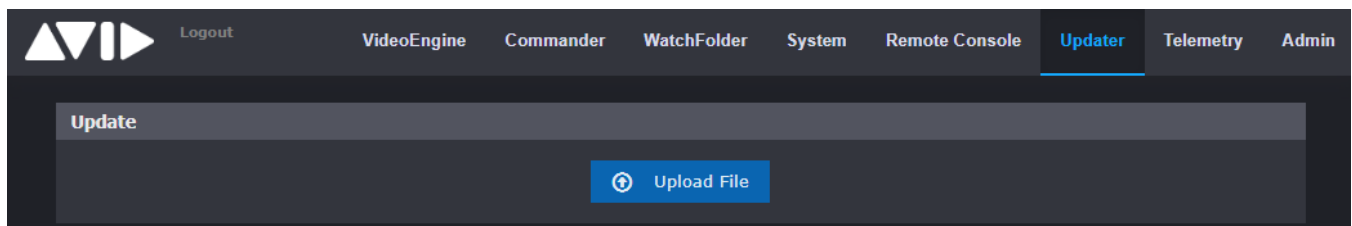
The Support Archive section allows to collect and download all the necessary logs required by the Avid support personnel for troubleshooting purposes. Select the configuration file and enable the check boxes of the required logs. Press on the download button  to get them on your PC.

 When downloading logs or support archives, you cannot leave, close or refresh the current page!



The Updater Page

The Updater Page allows to install and update the main Avid | Stream IO system components.

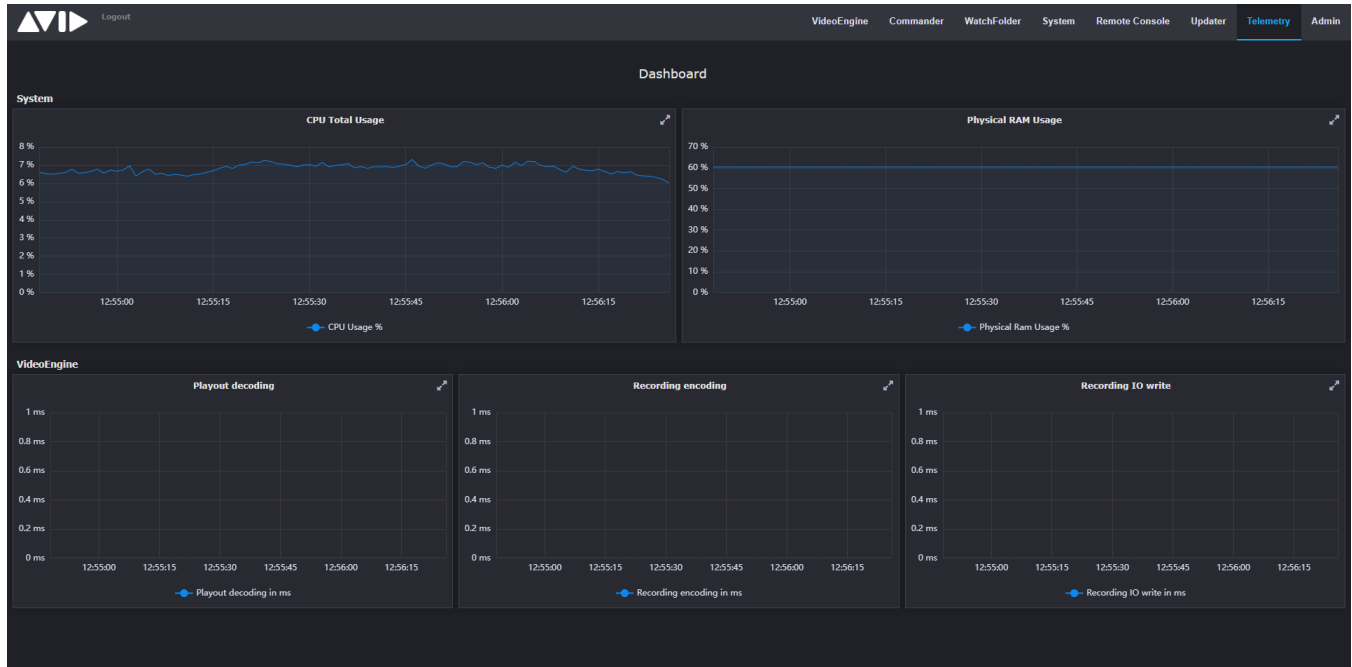


For more information, see ["Installing Avid | Stream IO Components" on page 36.](#)

The Telemetry Page

The Telemetry tab allows to observe the performance and the status of the Avid | Stream IO system. You can view the state of the following parameters:

- CPU Total Usage
- Physical RAM Usage
- Playout Decoding
- Recording Encoding
- Recording IO Write



The Admin Page

The Admin page is for configuring user access for Avid | Stream IO components. You can also upload certificate files here or view the versions of the installed components.

The Info Settings

The Info section displays the version numbers and the UUID's of the installed Web Configurator modules. You can also check if all components are currently online.

Info

Logged as: admin

WebSettings modules

Name	Version	Online	UUID
Core	2023.7.0	Yes	CE0350B6-AD54-4442-A879-9D4E37319576
Commander	2023.7.0	Yes	34CD38F9-A9C4-4E99-BA92-09EA6EAD3102
RemoteConsole	2023.7.12	Yes	2EF18098-917E-4B2A-9D4D-73B806DCA54C
System	2023.7.3	Yes	788BB417-936C-453E-B042-89F2E556FD89
modTelemetry	2021.6.0	Yes	57E226AA-4F35-4E08-A523-EC3856C4A028
Updater	2022.4.0.56	Yes	BF393456-6F25-AEB3-2D4A-78D5854573DA
VideoEngine	2023.7.0	Yes	73B9AB29-4B53-4A86-BA69-F3AC73F51792
WatchFolder	2023.7.0	Yes	9EB0BB3B-4EF4-4D2A-AA7F-E4E29C496140

Product components

The User Credentials Settings

In the User Credentials section you can change the password of the currently logged in user.

User Credentials

User name: admin

New password:

Save

The Configuration Settings

In the Configuration section, an administrator can enable or disable HTTPS access and upload proper certificate files.

Configuration

Upload Certificate files

Download Server Certificate file

Use Secure Connection: ☐

Certificate file:

Certificate Key file:

Certificate Authority:

Apply

After uploading valid certificate files and enabling secure access, the VideoEngine component needs to be restarted in the VideoEngine tab to propagate the security rules to the preview in the Remote Console.

The User Management Settings

In the User Management section you can view and edit access levels for all existing users of the Avid | Stream IO system, create new users or remove them.

User Management	
Show 10 entries	Add Edit Delete
	Search:
Name	Modules
admin	Admin: Allow Commander: Admin Remote Console: Allow System: Admin Telemetry: Admin Updater: Admin VideoEngine: Admin WatchFolder: Admin
RC_Operator	Admin: No access Commander: No access Remote Console: Allow System: No access Telemetry: No access Updater: No access VideoEngine: No access WatchFolder: No access

To add a new user:

1. In the User Management section, click on the **Add** button.

The **Add User** dialog box opens.

Add User

Name: RC_Operator

Password:

Modules

Admin

Commander

Remote Console

System

Telemetry

Updater

VideoEngine

WatchFolder

Add

Cancel

2. Enter a **Name** of the new user and create a **Password** for the account.
3. In the **Modules** section, select access rights for each module and decide whether the user should be assigned Read Only, User or Admin permissions. You can also decide about access to individual

Remote Console options, as illustrated below.

4. Click on **Add** to create the new user.

To edit an existing user:

- Select a user from the list and click on **Edit**.

You can now change the password of the selected user or update the access rights.

To remove a user from the system:

- Select the user to be removed from the list and click on **Delete**.

In the confirmation dialog window, click on **Yes** to complete the removal.

To search for a user:

- Enter the name of the user in the Search box. The view will adjust automatically as you type.

To sort the results list:

1. Click on a column header to reorder the results list.

An up arrow ▲ appears to the right of the column name to indicate that this column is used to sort the results in ascending order.

2. (optional) When you click on a column header, the column is sorted in ascending order. If you need to sort the list in descending order, simply click on the column header again to reverse the order of the list.

A down arrow ▼ appears to the right of the column name to indicate that this column is used to sort the results in descending order.

5 Working with the Avid | Stream IO Remote Console

The Remote Console is a Web Configurator module that allows you to control the ingest and playout channels and provides basic inventory management options.



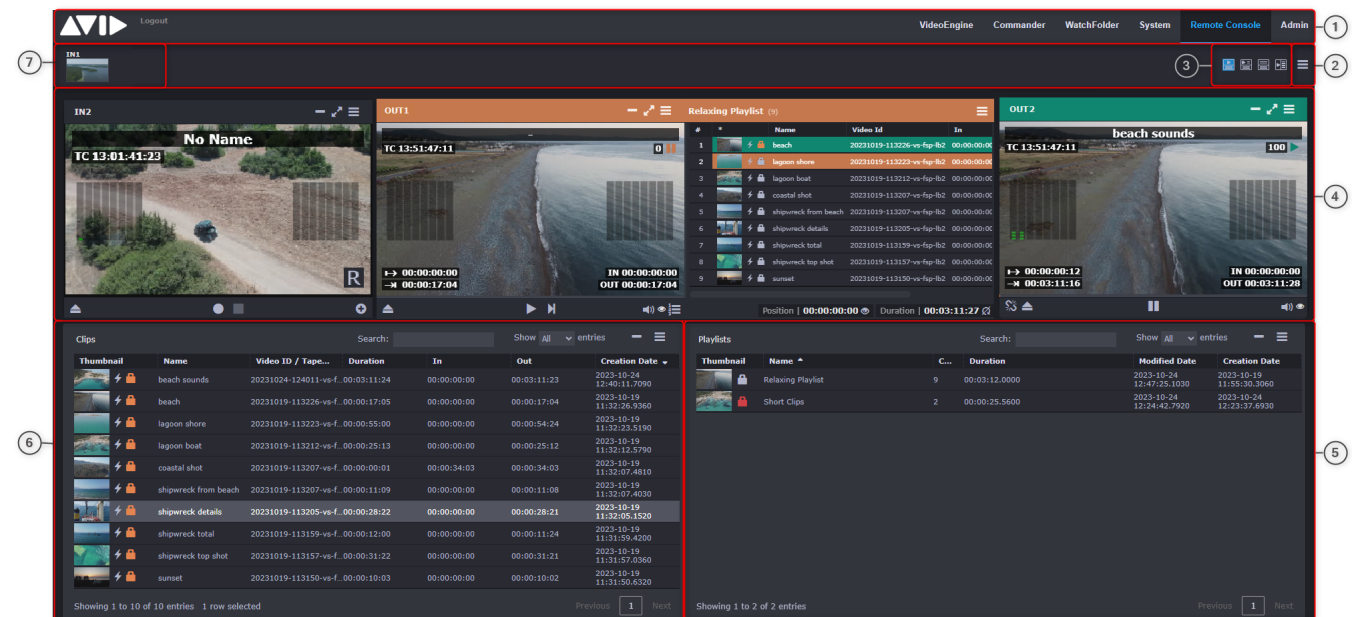
To enable access to the Remote Console for each user and set up additional permissions, go to **Admin > User Management**.

The following main topics describe how to use the Avid | Stream IO Remote Console:

- "About the Remote Console" below
- "The Channel Preview Window" on page 95
- "Creating Recordings" on page 99
- "The Clips Inventory Panel" on page 100
- "The Playlists Inventory Panel" on page 105

About the Remote Console

The Remote Console is installed by default together with the Avid | Stream IO Web Configurator and automatically detects the available channel configuration.



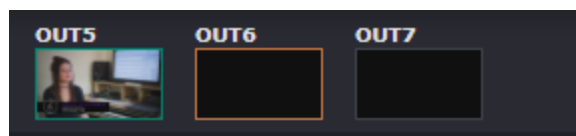
	Area	Description
1	Top Bar	The top bar of the Avid Stream IO Web Configurator window displays the tabs available for the currently logged-in user.
2	Options Menu	The Remote Console Options Menu button opens the following list of items: • In the Edit Ingest Templates window you can configure the required media recording options, such as the video format and layout, the path to your Avid NEXIS storage and enable check-in to MediaCentral Production Management. For more information, see "Configuring Ingest Templates" on page 89.

	Area	Description
		- When your Avid Stream IO server is configured to support media transmission over NDI, the Remote Console Configuration Menu also has an additional option to Edit Routing Templates. For more information, see "Configuring Routing Templates" on page 92. - Open the Crash Record Settings to assign defined ingest templates to individual input channel preview windows. For more information, see "Crash Record Settings" on page 95. - The Import Templates and Export Templates windows give you the option to export or import the ingest settings. For more information, see "Exporting and Importing Templates" on page 94. - Click on View Errors to open the list of current errors.
3	Channels View Mode	The Remote Console channels view can be configured in one of four (4) modes: - the Normal view allows you to fully monitor and control all channels. - the Compact view allows to view a reduced channels preview and inventory together by decreasing the size of the preview windows. - the Small mode reduces the size of the preview windows even more. - the Columns view enables a side-by-side view by moving the channel windows to the right side and the inventory to left. For more information, see "Channels View Options" on the next page.
4	Playout/ Ingest Channels Preview	The channel preview windows allow to view and control the individual channels. For more information, see the "The Channel Preview Window" topic.
5	Playlists Inventory	This panel allows to create playlists of your clips inventory items and send them directly to the playout channels. For more information, see "The Playlists Inventory Panel" on page 105.
6	Clips Inventory	The Remote Console also provides a basic clip inventory management options. You can display up to a portion of items at once or all in one view, together with a thumbnail. For more information, see "The Clips Inventory Panel" on page 100.
7	Minimized Channels	You can minimize the playout preview windows, the clips inventory or the playlist panel to save space in the main channels view. Click on the "Minimize" button:



Click on a minimized channel to maximize it again.

It is still possible to send clips to minimized playout channels.

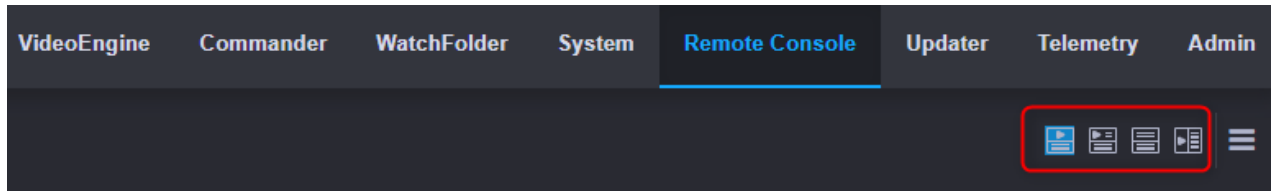


Channels View Options

Using the Preview Mode buttons, you can select the appearance of the channels view.

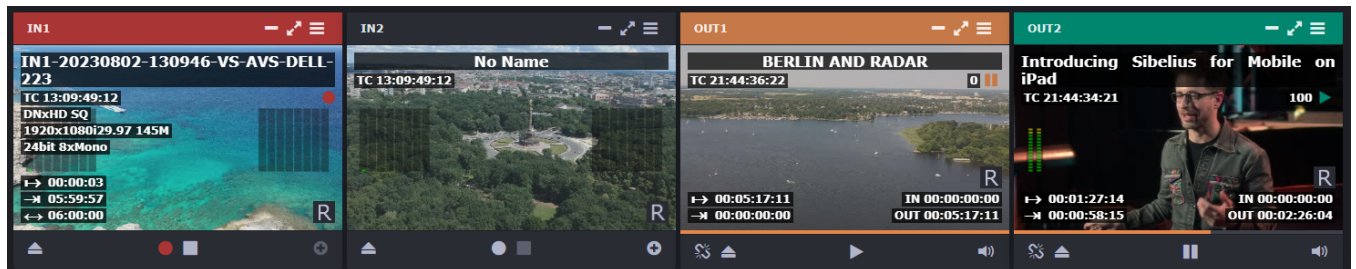
To change the layout of the preview windows:

- Click on the button representing the preferred layout:

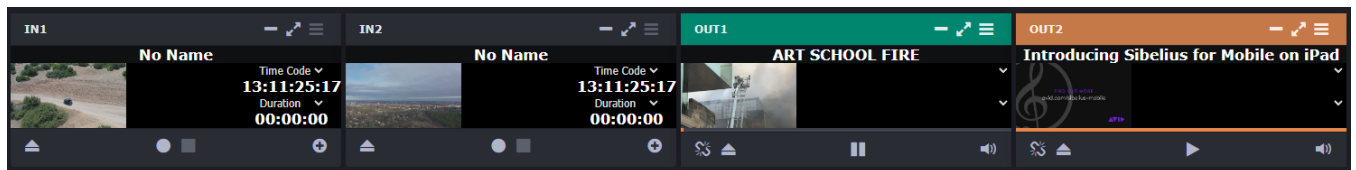


The following options are available:

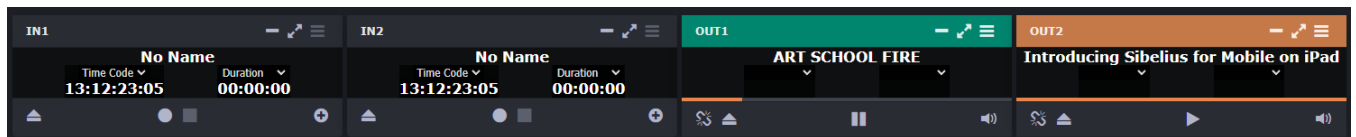
Normal View



Compact View



Small View



Columns View

The Columns View displays a grid of video preview windows. The top row shows three windows labeled IN1, IN2, and IN3, each displaying a video clip with a 'No Name' title and a timecode of TC 14:53:53:48. The bottom row shows three windows labeled OUT1, OUT2, and OUT3, each displaying a video clip with a title and timecode. The OUT1 window shows 'shipwreck from beach' with TC 14:53:53:18. The OUT2 window shows 'shipwreck top shot' with TC 14:53:53:19. The OUT3 window shows 'shipwreck details' with TC 14:53:53:19. The OUT4 window shows 'lagoon boat' with TC 14:53:53:19. The right side of the interface shows a 'Clips' list with columns for Thumbnail, Name, Video ID / Tape ID, Duration, In, Out, and Creation Date. The list contains 9 entries, with the first three selected. Below the clips list is a 'Playlists' section showing a list of 3 entries, with the first one selected. The bottom right corner shows the total duration of the selected clips: 00:00:27.3600.

Thumbnail	Name	Video ID / Tape ID	Duration	In	Out	Creation Date...
	🔒 sunset	20231214-121507-VS-AVID	00:00:10:03	00:00:00:00	00:00:10:02	2023-12-14 12:15:07.8280
	🔒 shipwreck total	20231214-121507-VS-AVID	00:00:12:00	00:00:00:00	00:00:11:24	2023-12-14 12:15:07.4750
	🔒 shipwreck top shot	20231214-121507-VS-AVID	00:00:31:22	00:00:00:00	00:00:31:21	2023-12-14 12:15:07.1350
	🔒 shipwreck from beach	20231214-121506-VS-AVID	00:00:11:09	00:00:00:00	00:00:11:08	2023-12-14 12:15:06.7760
	🔒 shipwreck details	20231214-121506-VS-AVID	00:00:28:22	00:00:00:00	00:00:28:21	2023-12-14 12:15:06.4310
	🔒 lagoon shore	20231214-121505-VS-AVID	00:00:55:00	00:00:00:00	00:00:54:24	2023-12-14 12:15:06.0820
	🔒 lagoon boat	20231214-121505-VS-AVID	00:00:25:13	00:00:00:00	00:00:25:12	2023-12-14 12:15:05.7230
	🔒 coastal shot	20231214-121505-VS-AVID	00:00:00:01	00:00:00:00	00:00:00:00	2023-12-14 12:15:05.3780
	🔒 beach	20231214-121505-VS-AVID	00:00:17:05	00:00:00:00	00:00:17:04	2023-12-14 12:15:05.1540

You can also maximize a single preview window clicking on the button.

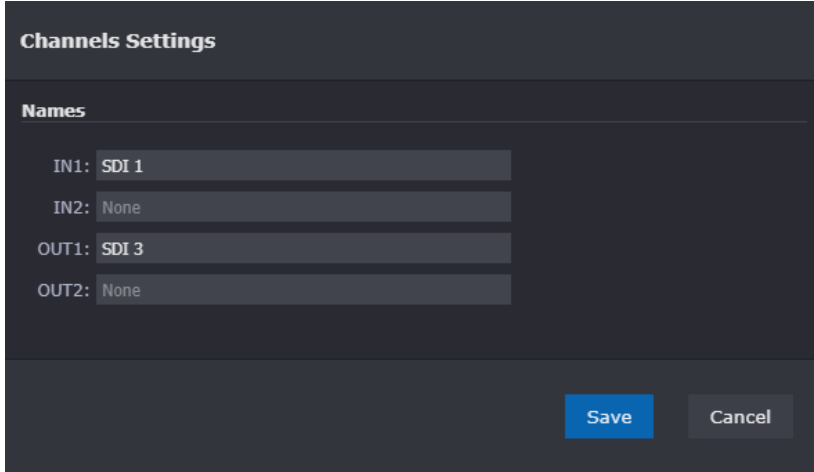
The Maximized View displays a single large preview window. The window shows a video clip with a title 'Introducing Sibelius for Mobile on iPad' and a timecode of TC 22:03:10:04. The video content features a large musical staff with a treble clef and the text 'THE WORLD'S LEADING Music Notation Software'. The bottom right corner of the window shows the Avid logo and the timecode 'IN 00:00:00:00 OUT 00:02:26:04'.

Renaming Windows in the Channels Settings

In the Channels Settings window, you can rename the preview windows.

To rename input preview windows:

1. Click on the  button to access the Remote Console **Options Menu** and click on the Channel Settings option.



The **Channels Settings** dialog box has a title bar with the same name. Below the title bar is a section labeled **Names**. It contains four input fields: **IN1:** with the text "SDI 1", **IN2:** with the text "None", **OUT1:** with the text "SDI 3", and **OUT2:** with the text "None". At the bottom right of the dialog are two buttons: **Save** (highlighted in blue) and **Cancel**.

2. In the Names section, enter the preferred names of the ingest channels windows and click on Save.

Configuring Ingest Templates

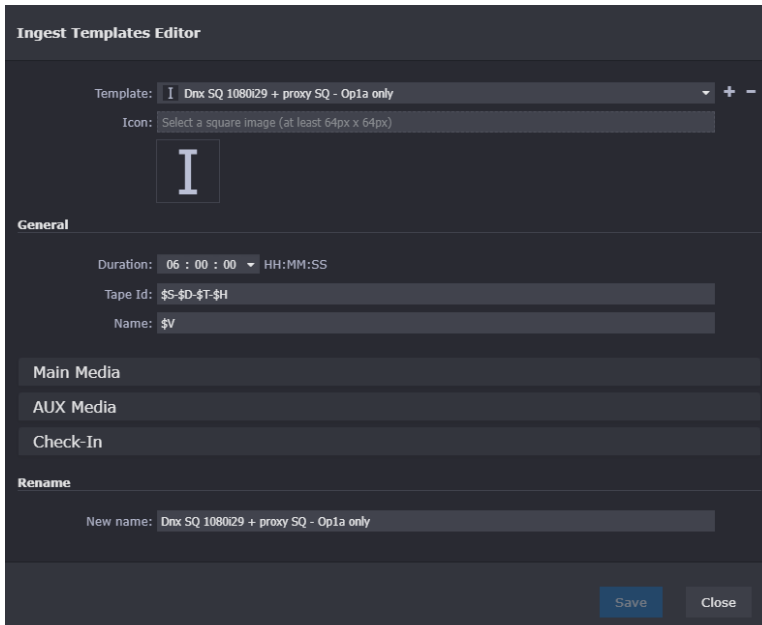
Ingest templates provide the options to configure your media recordings. You can select the default duration of your clips, the video codec and layout as well specify to which NEXIS storage your recordings should be saved. You can also enable MediaCentral | Production check-in here to make your recordings available across the entire MediaCentral environment. You can edit the incoming streams in Cloud UX or Media Composer as they are being ingested—without waiting for the recordings to finish.

The following procedure provides more details for these steps.

To create an ingest template:

1. Open the Remote Console **Options Menu** and click on the Edit Ingest Templates option.

The **Ingest Templates Editor** dialog box opens.



The **Ingest Templates Editor** dialog box has a title bar with the same name. It contains several sections:

- Template:** A dropdown menu showing "I Dnx SQ 1080i29 + proxy SQ - Op1a only" with a plus and minus button to its right.
- Icon:** A text label "Select a square image (at least 64px x 64px)" above a square icon placeholder containing a large letter "I".
- General:** A section with three input fields:
 - Duration:** A dropdown menu showing "06 : 00 : 00" with a unit selector "HH:MM:SS".
 - Tape Id:** An input field with the placeholder text "\$S-\$D-\$T-\$H".
 - Name:** An input field with the placeholder text "\$V".
- Main Media:** An input field.
- AUX Media:** An input field.
- Check-In:** An input field.
- Rename:** A section with one input field:
 - New name:** An input field with the placeholder text "Dnx SQ 1080i29 + proxy SQ - Op1a only".

 At the bottom right of the dialog are two buttons: **Save** (highlighted in blue) and **Close**.

2. Click on the + button to create a new template.

Enter a name for the new template and click on Create.

3. (Optional) You can upload an image from the hard drive and use it as a unique thumbnail for the new ingest template, which can help identify it on a long list of templates. Click on the Icon button and browse for an image, then click **Open**.
4. (Optional) Specify the **duration** of your recording. You can select one of the predefined values from the drop-down menu or enter it manually.
5. Expand the **Main Media** section to set and view all options for the high resolution recording.
 - a. (Optional) In the **Description** text box, enter relevant metadata.



The Description metadata is not supported yet.

- b. Select one of the defined storage options from the Path drop-down menu. You can record the main video to the local RAID ("Clips") or to an external storage, such as a NEXIS workspace. Mount points are specified by your administrator in the System tab of the Avid | Stream IO system. For more information, see ["The Mounts Settings" on page 70](#).
 - c. (If required) Enter a subfolder name. If you plan to check in your recordings into MediaCentral | Production (formerly Avid Interplay | Production), enable the "Use default storage" option to automatically add Avid MediaFiles/MXF into your subfolder name.
 - d. Enter the filename for your recording manually or use one of the tokens. The available tokens along with a short description are displayed when hovering the cursor over the Filename field:

```

$$ - $ symbol
$t - current time, format HHMMSS (e.g. 145525)
$d - current date, format YYYYMMDD (e.g. 20200630)
$c - input channel Id (long UUID, e.g. b0468ae21dce4de99bc1de15482cfef8)
$s - input channel ShortId (e.g. IN1)
$h - system hostname
$N - global Name
$V - global TapeId
$Y - current year in 4 digits, format YYYY(e.g. 2023)
$y - current year in 2 digits, format YY(e.g. 23)
$M - current month number, format MM(01 - 12)(e.g. 08)
$d - current day of month number, format DD(01 - 31)(e.g. 09)
$w - current week number of year(00 - 53)(e.g. 36), Monday as first day of week
$W - current day of week in text(Mon / Tue / Wed / Thu / Fri / Sat / Sun)
$u - current day of week(1 - 7), 1 is Monday
$h - current hour(00 - 23)(e.g. 06)
$m - current minute(00 - 59)(e.g. 09)
$s - current second(00 - 59)(e.g. 03)
$U - guarantee unique name by adding random, 10 characters long
    string at the end of name (0-9, A-Z, a-z) (e.g. VaU7Thr9B3)
  
```

Enter the file name without an extension. It is not recommended to add dots in the file names.

- e. In the Media copy section, configure file export options. The ingested material is wrapped and transferred in real time to external storage, making it instantly available for post-production

work.

6. In the AUX Media section, specify the configuration details of auxiliary media generated in parallel to high resolution clips.

You can also save a media copy of the proxy file external storage.

7. In the Check-In section, you can enable the option to register your recordings directly into MediaCentral | Production Management. If growing is disabled, your file will be checked-in when the recording is stopped.

 *When working with MediaCentral | Capture, make sure to check into the same MediaCentral | Production Management instance that is configured in the Capture environment.*

Enable additional options required for your PAM workflow, as described below.

Option	Description
External source	Select one of the defined MediaCentral Production systems. For more information on how to configure them, see "The External Sources Settings" on page 55 .
PAM folder	Enter the name of the folder in MediaCentral Production Management to register the ingested files. Make sure that this folder already exists in the Production structure. The /Projects/ prefix is added automatically.
Create thumbnail on position X	Check this box to check-in the clip thumbnails alongside the recording. Specify at which point of the recording the thumbnail should be created.

Option	Description
seconds	
Enable growing with initial offset X seconds	Select this option to have the recording checked-in at least twice to Production Management. Specify the time point for the initial check-in of a growing file. The final check-in happens after the recording is finished.
	If you enable the interval check-in, you can decide how often more check-ins should occur.
Enable interval check-in every X minutes	Specify the time interval, in which check-ins to Production Management should take place.

8. Save your new ingest template by clicking on the **Save** button.
9. Close the Ingest Templates Editor window.

To rename an ingest template:

1. Click on the Settings ellipsis to access the Remote Console **Options Menu** and click on the Edit Ingest Templates option.
The **Ingest Templates Editor** dialog box opens.
2. Select the required ingest template from the drop-down list and in the **Rename** section at the bottom of the window, enter the new name of the template.
3. Click **Save** to apply the change and **Close** to exit the Ingest Templates Editor.

To remove an ingest template:

1. Click on the Settings ellipsis to access the Remote Console **Options Menu** and click on the Edit Ingest Templates option.
The **Ingest Templates Editor** dialog box opens.
2. Select the required ingest template from the drop-down list and click on the  “Delete current template” button.
3. Click **Save** to apply the change and **Close** to exit the Ingest Templates Editor.

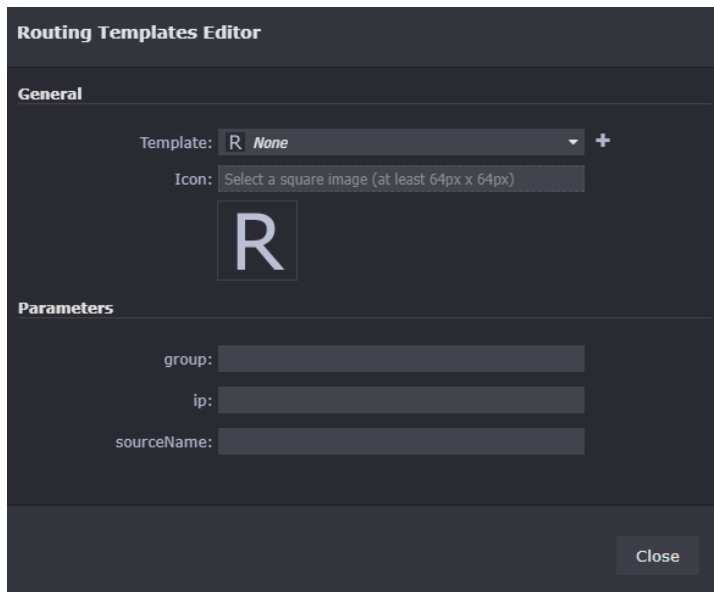
Configuring Routing Templates

When your Avid | Stream IO server is configured to support media transmission over NDI, the Remote Console Configuration Menu also has an additional option to Edit Routing Templates.

To create a new routing template:

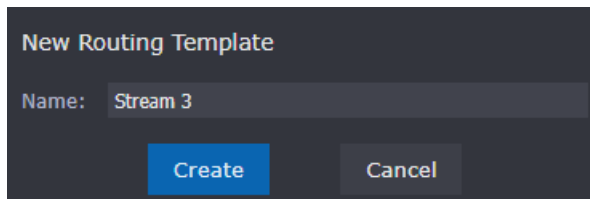
1. Open the Remote Console Options Menu and select the Edit Routing Templates option.

The **Routing Templates Editor** dialog box opens.



2. In the **General** section, click on the **+** button to create a new template.

Enter a name for the new template and click on **Create**.



3. (Optional) You can upload an image from the hard drive and use it as a unique thumbnail for the new routing template, which can help identify it on a long list of templates. Click on the **Icon** button and browse for an image, then click **Open**.
4. Enter the required parameters of your NDI stream:
 - (Optional) If the source is a part of a group, enter the group name(s) here.
 - Enter the IP address of the NDI source.
 - Enter the source name of the source stream to use.

As an example, a stream name coming out from another Avid | Stream IO is named as follows: hostname(OUTX), e.g.: “VS-AVS1 (OUT0)”.

5. Save your new routing template by clicking on the **Save** button.
6. Close the Routing Templates Editor window.

To remove a routing template:

1. Click on the Settings button to access the Remote Console **Options Menu** and click on the Edit Routing Templates option.
2. Select the required routing template from the drop-down list and click on the  “Delete current template” button.
3. Click **Save** to apply the change and **Close** to exit the Routing Templates Editor.

Exporting and Importing Templates

The **Export Templates** window lets you export the list of currently configured Ingest and Routing templates. You can download selected templates to a .json file and then, using the **Import Templates** option, upload these settings at a different Avid | Stream IO instance.

To export ingest templates:

1. Open the Remote Console **Options Menu** and select the Export Templates option.

The **Export Templates** dialog box opens.

	Name	Id
☒	23fps_export	7b226a19-f064-48ef-9bf8-5854c53d0860
☒	basic_check_in	986f87e2-1368-4889-b0a0-68fc5a8134ad
☒	Dnx SQ 1080i29 + proxy SQ - Op1a only	9a1090bd-bfd0-4f7e-9484-f960d7685f17
☒	test1	d1c7f6f4-74dc-4a5a-a9b4-a1607ae5b3af
☒	local_for_export	ee992a7f-4bcf-46c5-8332-e0347e13d9de

2. Enter a **Name** for the JSON file which will contain the selected **Templates to export**.
3. Click on **Export**.

The file is automatically saved to the default download location set in your Web Browser settings.

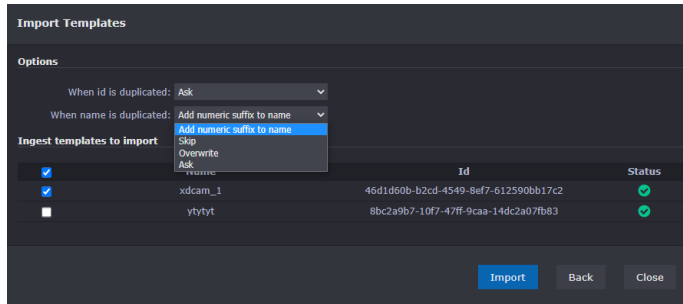
To import ingest templates:

1. Open the Remote Console **Options Menu** and select the Import Templates option.

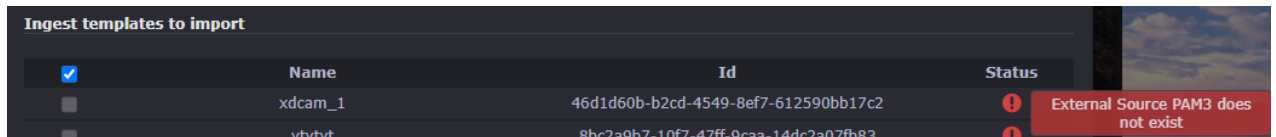
The **Import Templates** dialog box opens.

2. Click on the **Select a JSON file** icon to browse for a file containing the ingest or routing templates, or drag & drop the file directly into the Import Templates window.
3. Once the file is uploaded, click on Next.

- In the following window, you can decide what the system will do in case duplicate files are discovered. You can also select which ingest or routing templates to import.



 If the templates contain any configuration issues (such as an unknown External Source), an error is displayed in the Status column and importing will not be possible.



- Click on Import to begin the upload process.

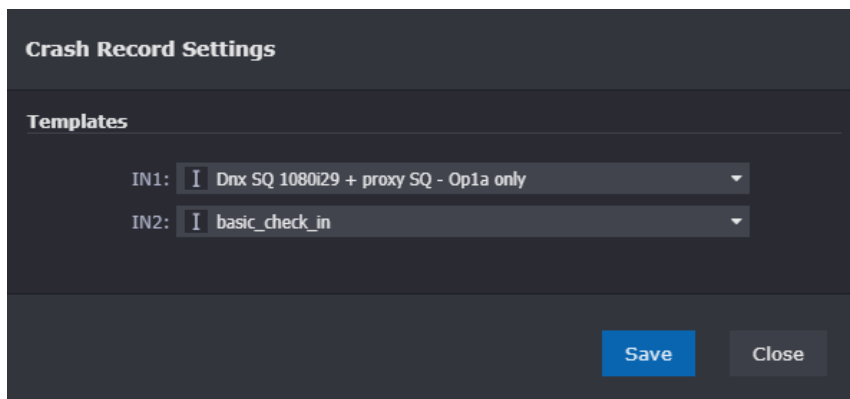
If you selected “Ask” for any of the options, you will be prompted to decide whether duplicate files should be replaced.

Crash Record Settings

The **Crash Recording** functionality allows to quickly start recording of your media using defined templates. The following procedure describes how to assign existing Ingest Templates to available input channels.

To configure crash recording settings:

- Open the Remote Console **Options Menu** and click on the Crash Recording Settings option. The **Crash Recording Settings** dialog box opens.



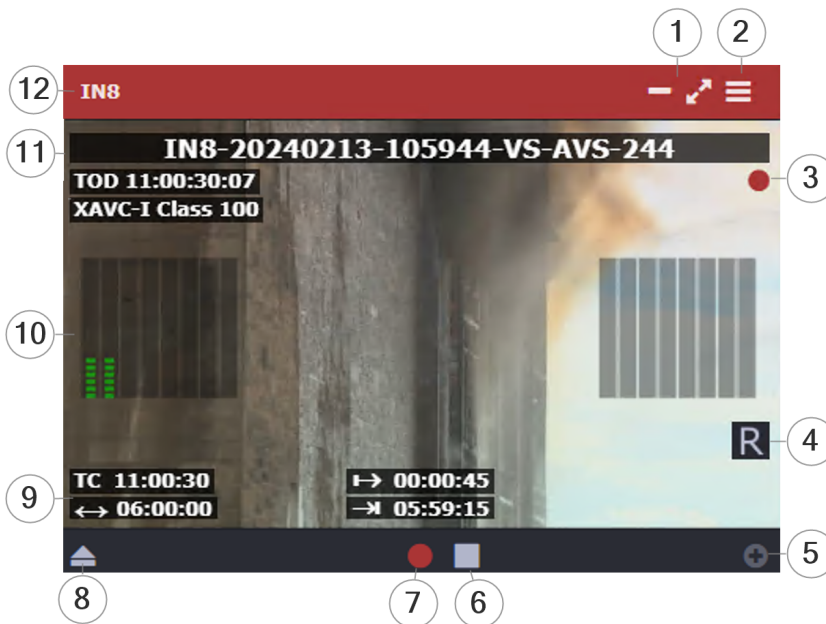
- For each input channel preview, select an ingest template from the drop-down box. If no selection is made, a Default ingest template will be applied to your recording.
- Click on **Save** and close the dialog box.

The Channel Preview Window

The Avid | Stream IO Remote Console automatically detects the number of available playout and ingest channels and displays an adequate number of preview windows.

Ingest Channel Preview

Each ingest channel preview window has the following menu options and buttons:

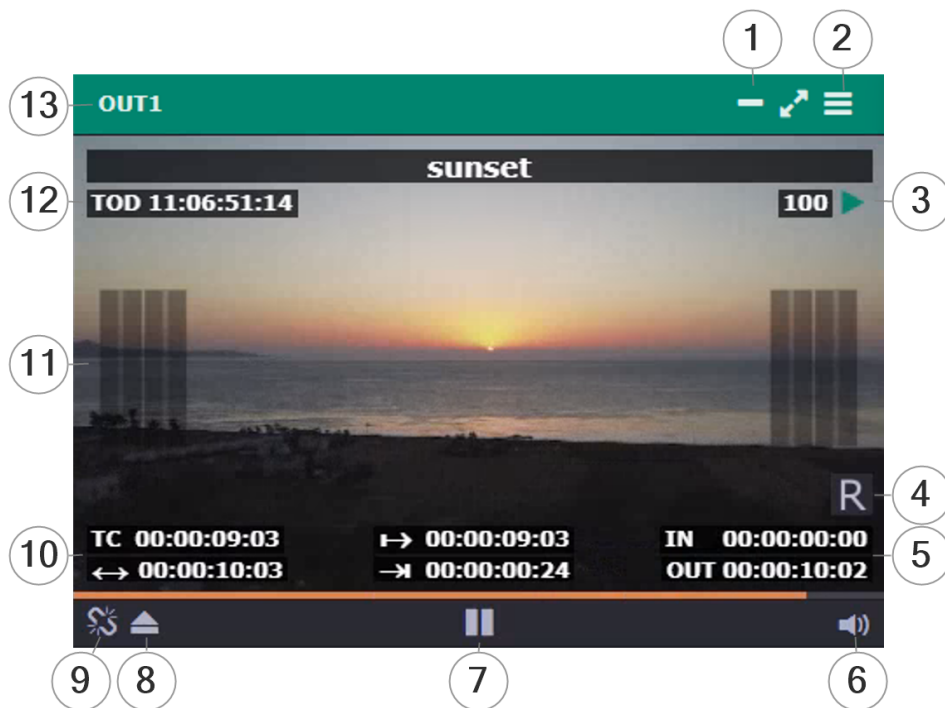


	Option	Description
1	Minimize & Maximize	Minimize the channel preview window to the minimized view, or maximize the window.
2	Options Menu	The Options Menu has the following entries: • Modify Recording (available when recording is in progress), which allows to change the duration of the recording after it was started. • The OSD Settings. • Route (in case of NDI ingest), where you can select the routing template.
3	Recording Icon	The Recording Icon indicates that this input channel is currently being recorded.
4	I/O Device	Hover your mouse over the R icon to view information about the I/O device.
5	New Recording	Click on this button to create a new recording.
6	Stop Recording	Use this button to stop an ongoing recording.
7	Start Recording	Start recording using the Crash Record settings. For more information, see "Crash Record Settings" on the previous page .

	Option	Description
8	Abort	The Abort button stops the ongoing recording and cleans the channel cache. In case of NDI ingest, it will disconnect the routing.
9	Duration	This indicator displays the current duration of the recording. You can select what type of duration timecode to display in the OSD settings.
10	Audio Meters	You can set how many audio meters to display and how to visualize audio peaks in the OSD settings.
11	Recording Name	The recording name.
12	Input Channel Name	The top bar displays the input channel name and if the channel is currently recording, the color of the bar changes to red. Hover your mouse over the Input Channel Name to view additional information about the channel and the loaded item.

Playout Channel Preview

Each playout channel preview window has the following menu options and buttons:



	Option	Description
1	Minimize & Maximize	Minimize the channel preview window to the minimized view, or maximize the window.
2	Options Menu	The Options Menu has the following entries: • Playout Settings where you can configure the behavior of the clip once it is loaded to the playout window. • OSD Settings

	Option	Description
		When a clip is loaded to the channel, you can also select to Create Thumbnail, Set IN Point or Set OUT Point.
3	Playback Status Icon	This icon indicates whether the clip loaded to the playout channel is currently being played or paused, as well as the speed of the playout. You can disable this indicator in the OSD Settings window.
4	I/O Device	Hover your mouse over the R icon to view information about the I/O device.
5	IN and OUT Information	This indicator displays the IN and OUT settings of the clip. You can disable this indicator in the OSD Settings window.
6	Mute Audio	Mute the audio of the playing clip.
7	Play / Pause Button	Play or Pause the clip currently loaded into the playout channel.
8	Abort	Stop the ongoing playback and remove the current clip from the playout channel.
9	Break Loop	Use this button to break a loop playback. To play a clip in a loop, drag it from the inventory into a playout channel preview window while holding the left CTRL key on your keyboard. This will create an infinite loop for the selected clip. You can see whether a clip is looped in the Tooltip window which appears when hovering over the Playout Channel Name.
10	Duration	This indicator displays the current duration of the recording. You can select what type of duration timecode to display in the OSD settings.
11	Audio Meters	You can set how many audio meters to display and how to visualize audio peaks in the OSD settings.
12	TOD indicator	Time-of-Day indicator label.
13	Playout Channel Name	The top bar displays the playout channel name. When the channel is playing a clip, the color of the bar changes to green. When a clip is paused or cued, the color changes to orange. Hover your mouse over the Playout Channel Name to view information about the channel and the loaded item.

The OSD Settings

You can specify which elements to display on each channel preview window in the Remote Console. Open the Options Menu of the chosen preview channel and select **OSD Settings** from the list of options.

You can also enable the display of Audio meters on the channel preview window. Select Auto to add the required number of audio meters based on the current clip, or choose between displaying 2, 4, 8 or 16 audio meters. The Peak duration option allows to add a delay to the top meters to better visualize the audio peaks.

Select the required OSD indicators and click on **Save**.

Input Channel Preview OSD Settings

OSD Settings (IN2)

General

Enabled: ☒

Indicators

☒ Record icon ☐ Cues number

☒ TOD/House TC ☒ Position TC

☒ Elapsed TC ☒ Target length TC

☒ Remaining TC ☒ Preset

☒ Layout ☒ Audio layout

☒ Routing icon

Audio meters

Enabled: ☒

Channels:

Peak duration: seconds

Playback Channel Preview OSD Settings

When a clip contains an embedded timecode, select the **Use absolute TC option** to display it in the preview window.

OSD Settings (OUT1)

General

Enabled: ☒

Indicators

☒ Status icon ☐ Cues number

☒ Speed ☒ TOD/House TC

☒ Position TC ☒ Duration TC

☒ Elapsed TC ☒ Remaining length TC

☒ In TC ☒ Out TC

☒ Routing icon

Audio meters

Enabled: ☒

Channels:

Peak duration: seconds

You can hide OSD data from the channel preview by clearing the “Enabled” option and pressing **Save**.

Creating Recordings

You can initiate media recording on the input channel in one of two ways:

- by using the New Recording dialog box,
- clicking on the Crash Recording button.

The procedure below describes how to start recording using the New Recording option.

To create a new recording:

1. In the input channel preview window, click on the "+" **New Recording** button.

The **New Recording** (input_channel_name) dialog window opens.

2. Select one of the defined **Ingest Templates** from the drop-down menu.



*You can enter a **Tape Id** for your recording to allow for easier identification of your clip in the MediaCentral | Production environment.*

3. In the **Basic** view, you can preview the configured ingest options and change the file name. Open the **Advanced** tab to change the ingesting options.



You can change the ingest options in the New Recording window, but the applied changes will not be saved to the selected ingest template.

4. Click on **Record** to begin the recording.

To stop a recording:

- ▶ Press the **Stop Record** button.

To modify a recording:

- ▶ Click on the  button to access the input preview window's **Options Menu** and click on the Modify Recording option.

In the Modify Recording window, enter the new duration of the recording and click on Apply.

The Clips Inventory Panel

The Clips Inventory panel shows a list of items, a search bar, and the configuration menu button.

Clips

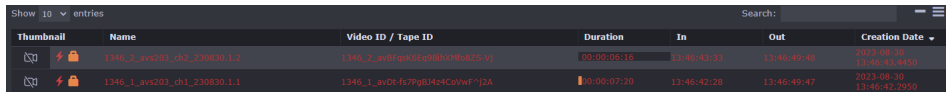
Search: Show: **All** entries

Thumbnail	Name	Video ID / Tape ID	Duration	In	Out	Creation ...
	CYPRUS CAR AND BUGGY	20230731-124617-VS-AVS-DELL-223	00:03:15:01	00:00:00:00	00:03:15:00	2023-07-31 12:46:17.4130
	BHDNL_3 Scott memorial Narcan-SOTVO_GRAY5a35_174	20230731-124617-VS-AVS-DELL-223	00:01:23:45	00:00:00:00	00:01:06:08	2023-07-31 12:46:17.2970
	BERLIN AND RADAR	20230731-124617-VS-AVS-DELL-223	00:05:17:12	00:00:00:00	00:05:17:11	2023-07-31 12:46:17.1350
	Introducing Sibelius for Mobile on iPad	20230731-124617-VS-AVS-DELL-223	00:02:26:06	00:00:00:00	00:02:26:05	2023-07-31 12:46:17.0140
	CYPRUS CAR AND BUGGY short	20230731-124616-VS-AVS-DELL-223	00:00:30:04	00:00:00:00	00:00:30:03	2023-07-31 12:46:16.9790
	Chris McCaleb	20230801-134756-VS-AVS-DELL-223	00:05:32:00	00:00:00:00	00:05:31:23	2023-07-31 12:46:16.8780
	CARS	20230731-124616-VS-AVS-DELL-223	00:03:53:23	00:00:00:00	00:03:53:22	2023-07-31 12:46:16.7630
	ART SCHOOL FIRE	20230731-124616-VS-AVS-DELL-223	00:05:31:13	00:00:00:00	00:05:31:12	2023-07-31 12:46:16.6610
	Planet.Earth1080p	20230727-153807-VS-AVS-DELL-223	00:50:50:16	00:00:00:00	00:50:50:15	2023-07-27 15:38:07.4470

Showing 51 to 59 of 59 entries

Previous 1 2 3 4 5 6 Next

	Option	Description
1	Search Bar	You can search for inventory entries using the Name property. Enter the name of the searched item and press Enter.
2	Show Entries	Select the number of entries to be displayed on a single page: 10, 25, 50, 100, 1000, All.
3	Minimize	You can minimize the Remote Console Clips inventory to a dedicated panel.
		Click on the Clips button to maximize the inventory window.
4	Options Menu	The Options Menu contains the following entries: • Register - use this option to register clips directly into the database. • Select All / Deselect All - use this option to select or deselect all inventory entries. • Lock Selected / Unlock Selected - use this option to lock or unlock selected items. • Delete Selected - remove the selected item(s) from the inventory. The physical clip will still remain on the storage. • Erase Selected - remove the selected item(s) from the inventory and the physical clip from the storage. • Export Selected - you can export a recording stored on the local storage to an external location.
5	Clips Inventory entries	You can click on a column header to sort the contents of the inventory. The Name property is selected by default. You can also resize the column width to suit your needs. The Video ID / Tape ID is assigned by an external program.
6	Next Page	Navigate to the next or previous page of inventory entries.
7	Growing and Lock indicators	When a clip listed in the inventory is growing, then the icon becomes green.

Option	Description
	When a clip is loaded into a playout channel, it gets locked automatically. The  icon then becomes orange. When a clip is locked by the user (using the Configuration Menu or by right-clicking on an item and selecting Lock from the pop up menu), the color of the Lock icon changes to red.  <i>Until a growing clip reaches a 10 seconds duration, it cannot be used for playout. The lightning icon is displayed in red, but once it becomes green you can send the clip to a playout channel.</i> 
8	Thumbnail A thumbnail is automatically created for each item after 15-20 seconds if this option is enabled in the Commander > Thumbnails settings. You can also manually create a thumbnail for inventory entries. Right-click on an item and select Edit from the list of options. You can then generate a thumbnail for the selected clip in the Edit Item window. For more information, see "Editing Items" on the next page.

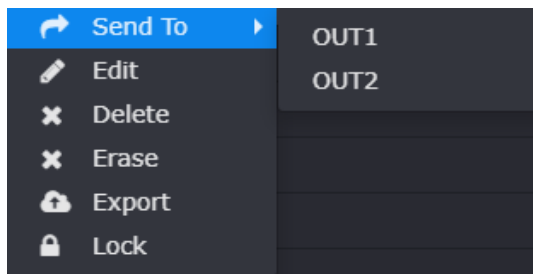
Context Menu Options

The Remote Console inventory also allows to perform certain operations on its items.

To open the context menu:

1. In the inventory panel, right-click on an item.

A pop up menu appears.



2. The following options are available:

Option	Description
Send to	Send the selected item(s) to a playout channel.
Edit	Edit the recording .
Delete	Remove the selected item(s) from the inventory.
Erase	Remove the selected item(s) from the inventory and the internal storage.
Export	Export the selected item(s) to a selected external storage. You will be asked to provide the workspace details in the following window.
Lock / Unlock	Lock (or unlock) the selected item(s) to prevent accidental deletion.



When a clip is locked or autolocked (i.e. used in a playlist), the following options are available: Send To, Delete, Erase, Export, Lock. When a clip is growing, you can only Delete, Erase or Lock it.

Editing Items

The Remote Console inventory also allows to edit certain properties of the entries.

To edit an inventory entry:

1. In the inventory panel, right-click on an item.
A pop up menu appears.
2. Select the **Edit** option from the list. The Edit Item window opens.

The following options are available:

- Rename the item using the **Name** text field.
 - The **Video ID** field cannot be edited and it is filled automatically when a clip comes with an assigned Video ID.
 - Create a thumbnail for the item by selecting the frame number and pressing the **Generate** button.
 - The **Range** section provides information about the clip's length.
 - Edit the IN and OUT points of the clip by entering the required values in the boxes.
3. Press **Save** to apply the changes or **Close** to exit the window without saving.

Exporting Items

You also have an option to export a local recording to an external storage, and choose various parameters for that media.



Only clips recorded directly by Avid | Stream IO can be exported. Items registered over the WatchFolder or not generated by Avid | Stream IO cannot be exported.

To export a clips inventory item:

1. Select the required clip, open the inventory's Options Menu, and press on **Export**.
Or, right-click on a clip and select Export from the context menu.
2. In the Export Item window, select the preferred parameters for the exported recording. You can change the wrapper, the location of the export and if check-in to PAM should be added.

3. Use the **Import settings from ingest template** button to copy some of the parameters, such as the Path, Wrapper and Check-in details defined in the template.

Click on Import Settings to apply these parameters to your export.

4. Once you have set all the required options, click on Export and Close to exit the window.
You can monitor the progress of the export in the Inventory panel. Once the export is started, a progress bar appears in the Duration column.

 *You can export a single recording multiple times and view the progress of all exports in the*

Inventory panel.

Video ID / Tape ID	Duration	In	Out
20230614-131446-IN1-20230614T131446w6ud3g2aVX.mxf	00:02:39:10 59 79	00:00:00:00	00:02:39:09

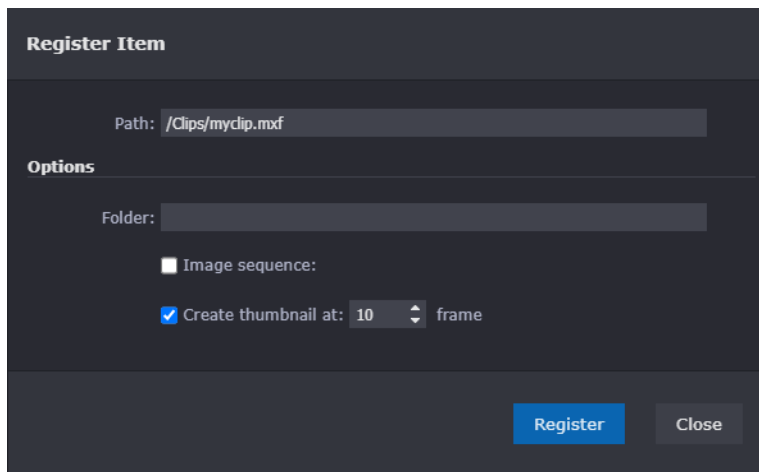
Registering Items

The Remote Console provides the option to register clips directly in the database, as an alternative to the automatic registration via WatchFolder or through send-to-playback.

To register clips in the database:

1. Select the required clip, open the inventory's Options Menu, and press on **Register**.

The Register Item window opens.

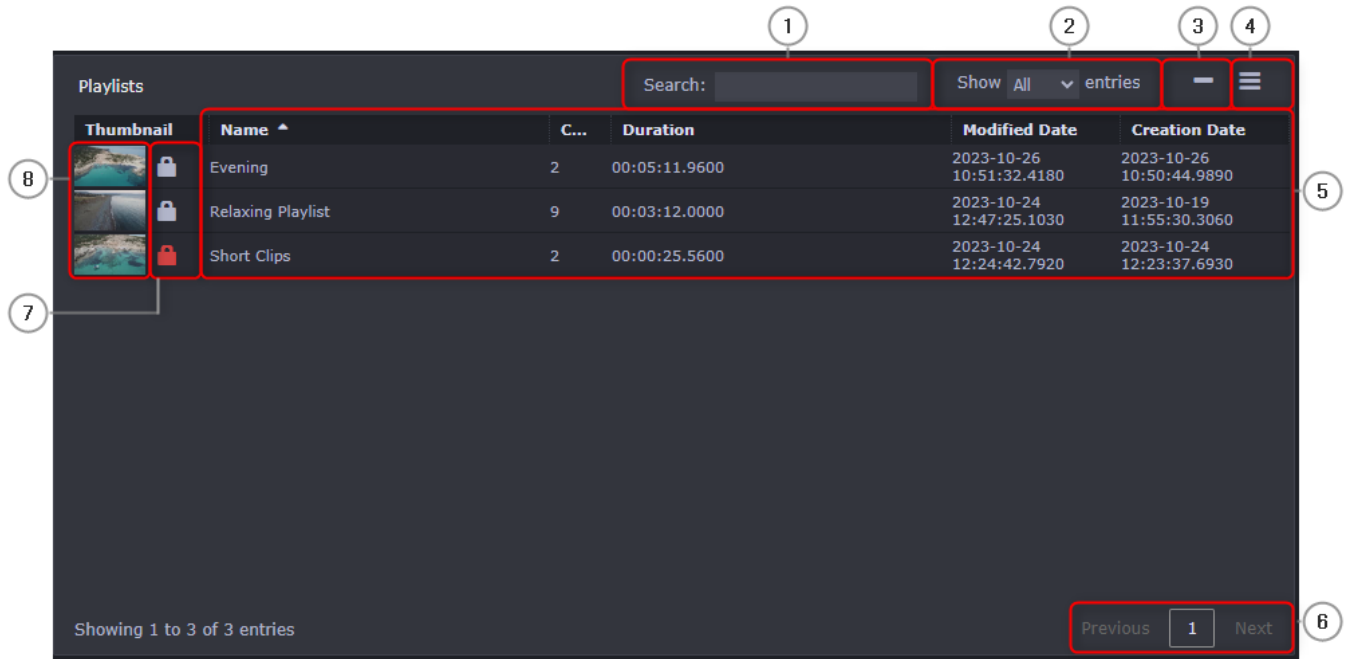


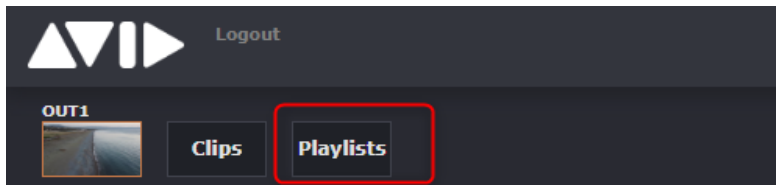
The 'Register Item' dialog box is shown. It has a title bar 'Register Item'. Below it, there is a 'Path:' label followed by a text field containing '/Clips/myclip.mxf'. Underneath is an 'Options' section. It contains a 'Folder:' label followed by a text field. Below that is a checkbox labeled 'Image sequence:' which is currently unchecked. Below the checkbox is a checked checkbox labeled 'Create thumbnail at:' followed by a spinner box set to '10' and the word 'frame'. At the bottom right of the dialog are two buttons: 'Register' (highlighted in blue) and 'Close'.

2. Enter the direct **Path** to the item on the physical storage.
3. If the item is of the **Image sequence** type, select the check box.
4. Select whether a thumbnail should be created for the item and at which frame it should be generated.
5. Press **Save** to apply the changes or **Close** to exit the window without saving.

The Playlists Inventory Panel

The Playlists Inventory panel allows to organize your Clips inventory items into thematic playlists.



	Option	Description
1	Search Bar	You can search for playlists using the Name property. Enter the name of the searched item and press Enter.
2	Show Entries	Select the number of entries to be displayed on a single page: All, 10, 25, 50, 100, 1000.
3	Minimize	You can minimize the Playlists view to a dedicated panel.
		
		Click on the Playlists button to maximize the inventory window.
4	Options	The Options Menu contains the following entries: • New playlist- use this option to create a new Remote Console playlist. • Select All / Deselect All - use this option to select or deselect all playlists. • Lock Selected / Unlock Selected - use this option to lock or unlock selected items. • Delete Selected- delete the selected playlist(s).
5	Playlists	You can click on a column header to sort the playlists view. The Name property is selected by default. You can also resize the column width to suit your needs. The Count column displays the number of items on the playlist. The Duration value represents the total duration of the entire playlist in format: HH:MM:SS:milliseconds.
6	Next Page	Navigate to the next or the previous page.

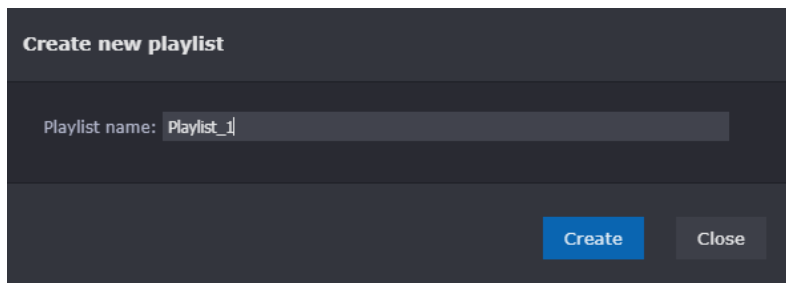
	Option	Description
7	Lock & growing files indicators	When a playlist is loaded into a playout channel, it gets locked automatically. The  icon then becomes orange . When a playlist is locked by the user (using the Options Menu or by right-clicking on an item and selecting Lock from the pop up menu), the color of the Lock icon changes to red .
8	Thumbnail	The thumbnail for your playlist is created automatically from the first item on the list.

Creating Playlists

This topic contains information on how to create Playlists in the Remote Console.

To create a new playlist:

1. In the Playlists Inventory panel , click on the **Options Menu** and select the **New playlist** option.
2. In the following window, enter the playlist name and click on **Create**.



The playlist now appears in the panel.

Editing Playlists

This topic discusses how to rename your playlists and what options are available in the right-click context menu.

To rename a playlist:

- Right-click on a playlist in the panel, and select the **Rename** option from the menu.
- You can rename the playlist in the following window.

Playlist Context Menu

The following options are available when right-clicking on a playlist in the Playlists Inventory panel :

Option	Description
Send to	Send the selected playlist to a playout channel preview.
Edit	Open the single playlist view and edit the items. A playlist and its list of items can also be accessed with a double-click.
Delete	Delete the selected playlist.
Lock	Lock the playlist to protect it from renaming or deletion.
Duplicate	Create a duplicate playlist.
Rename	Enter a new name for the playlist.

Loading Playlists to Playout Channels

There are multiple ways to send a playlist to a playout channel preview:

1. From the main Playlists Inventory panel view:
 - drag and drop the playlist to a playout channel preview window.
 - right-click on the playlist and select **Send To > [Channel]**.
2. In the single playlist view (clips view):
 - open the Options Menu and select **Send To > [Channel]**.
 - highlight the clip to be used as the first playout item and drag and drop the playlist into a playout channel preview window.
 - right-click on the clip in the playlist to be used as first playout item and select **Send To > [Channel]**.



Loading an empty playlist to a playout channel is not possible and will result in an error message.

Once a playlist is sent to a playout channel, a dedicated editor appears in the main channel preview area. You can also drag and drop items from the Clips Inventory directly into the Playlist Editor in the preview area. For more information, see ["The Playlist Editor" on page 110](#).



The behavior of the first loaded clip of the playlist depends on the Playout Settings of the given channel.



To load a playlist with Loop enabled, press the CTRL button when dragging and dropping it to the playout channel preview window.

Single Playlist View

This topic contains all the tasks that you can perform when working with clips in the Playlist.

Single Playlist Clips View

#...	*	Name	Video Id	In	Out	Duration
1		beach	20231019-113226-vs-fsp-lb2	00:00:00:00	00:00:17:04	00:00:17:05
2		lagoon shore	20231019-113223-vs-fsp-lb2	00:00:00:00	00:00:54:24	00:00:55:00
3		shipwreck top shot	20231019-113157-vs-fsp-lb2	00:00:00:00	00:00:31:21	00:00:31:22
4		lagoon boat	20231019-113212-vs-fsp-lb2	00:00:00:00	00:00:25:12	00:00:25:13
5		coastal shot	20231019-113207-vs-fsp-lb2	00:00:00:00	00:00:00:00	00:00:00:01
6		shipwreck from beach	20231019-113207-vs-fsp-lb2	00:00:00:00	00:00:11:08	00:00:11:09
7		shipwreck total	20231019-113159-vs-fsp-lb2	00:00:00:00	00:00:11:24	00:00:12:00
8		shipwreck details	20231019-113205-vs-fsp-lb2	00:00:00:00	00:00:28:21	00:00:28:22
9		sunset	20231019-113150-vs-fsp-lb2	00:00:00:00	00:00:10:02	00:00:10:03

Showing 1 to 9 of 9 entries

Duration | 00:03:12.0000

#	Description
1	Options Menu, which contains the following items:

#	Description
	• Lock playlist • Rename playlist • Send playlist to • Select All/ Deselect All • Follow / Unfollow • Delete Selected
2	Clip thumbnail
3	Growing indicator and lock status
4	Clip name
5	Video Id, which is assigned by an external program during Send to Playback
6	In and Out points of the clip
7	Duration of the clip
8	Duration of the entire playlist

Adding Clips to the Playlist

Drag and drop clips from the Clips Inventory panel to the Playlist area. You can select multiple items in the Inventory panel using the SHIFT or CTRL buttons. To position your clip(s) in the Playlist, drag the selected clips to the desired location (before or after) any other clips in the Playlist.



Once a clip is added to a playlist, its lock icon in the Clips Inventory becomes orange. The Edit option is no longer available, which means that it is not possible to rename it, change the thumbnail or set the In/Out points in the Clips Inventory panel.

Clearing the Playlist

You can remove all clips from the playlist by using the SHIFT button to select all items and pressing the DELETE button. Or open the Options Menu > Select All , and then Delete Selected.

Clips Context Menu

The following options are available when right-clicking on a clip in a single playlist view.

- **Send to** - send the playlist to a playout channel and use the selected clip as the first playout item.
- **Edit** - open the Edit playlist item window, where you can assign an **In** and **Out** point.

- **Unfollow** - when a clip is unfollowed, a red line appears above it and the playout will automatically stop after the preceding item finishes playing. The playout needs to be then manually restarted.
For more information, see [Playing Clips in a Playlist](#).
- **Delete** - remove the clip from the playlist.



This operation does not remove the clip from the Clips Inventory.

Reordering Clips Within the Playlist

Changing the order of your playlist clips is quick and simple.

To reorder playlist items:

- Select a clip that you want to reorder in the playlist (a blue line appears above it), and drag it from one location and then drop it into the new location in the playlist.

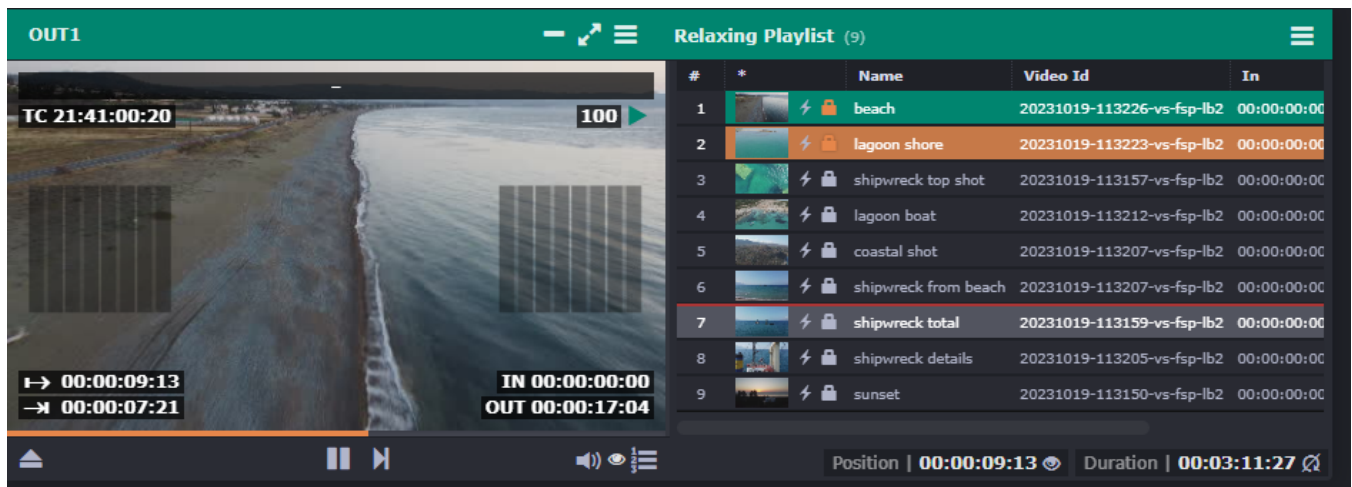


Once the currently playing clip and the next one have an orange lock (are locked), you can no longer drag and drop another item between them.

The Playlist Editor

Once a playlist is loaded to a playout channel, a dedicated playlist editor appears next to the preview window, and additional icons are available in the playout channel preview window.

You can show or hide the Playlist Editor using the  toggle.



The screenshot shows the Avid playout interface. On the left is a video preview window labeled 'OUT1' showing a beach scene. It includes a timecode 'TC 21:41:00:20' and a level indicator '100'. Below the video are in/out points: 'I→ 00:00:09:13', '→N 00:00:07:21', 'IN 00:00:00:00', and 'OUT 00:00:17:04'. On the right is the 'Relaxing Playlist (9)' editor. It contains a table with 9 items:

#	*	Name	Video Id	In
1		beach	20231019-113226-vs-fsp-lb2	00:00:00:00
2		lagoon shore	20231019-113223-vs-fsp-lb2	00:00:00:00
3		shipwreck top shot	20231019-113157-vs-fsp-lb2	00:00:00:00
4		lagoon boat	20231019-113212-vs-fsp-lb2	00:00:00:00
5		coastal shot	20231019-113207-vs-fsp-lb2	00:00:00:00
6		shipwreck from beach	20231019-113207-vs-fsp-lb2	00:00:00:00
7		shipwreck total	20231019-113159-vs-fsp-lb2	00:00:00:00
8		shipwreck details	20231019-113205-vs-fsp-lb2	00:00:00:00
9		sunset	20231019-113150-vs-fsp-lb2	00:00:00:00

At the bottom of the interface, there are playback controls (play, stop, next, previous, volume, and a menu icon) and a status bar showing 'Position | 00:00:09:13' and 'Duration | 00:03:11:27'.

The Abort  button ejects the entire playlist from the playout channel, not just the currently loaded clip.

You can advance to the following playlist item using the  button.

Playlist Editor View

#	Name	Video Id	In	Out	Duration
1	beach	20231019-113226-vs-fsp-lb2	00:00:00:00	00:00:17:04	00:00:17:05
2	lagoon shore	20231019-113223-vs-fsp-lb2	00:00:00:00	00:00:54:24	00:00:55:00
3	shipwreck top shot	20231019-113157-vs-fsp-lb2	00:00:00:00	00:00:31:21	00:00:31:22
4	lagoon boat	20231019-113212-vs-fsp-lb2	00:00:00:00	00:00:25:12	00:00:25:13
5	coastal shot	20231019-113207-vs-fsp-lb2	00:00:00:00	00:00:00:00	00:00:00:01
6	shipwreck from beach	20231019-113207-vs-fsp-lb2	00:00:00:00	00:00:11:08	00:00:11:09
7	shipwreck total	20231019-113159-vs-fsp-lb2	00:00:00:00	00:00:11:24	00:00:12:00
8	shipwreck details	20231019-113205-vs-fsp-lb2	00:00:00:00	00:00:28:21	00:00:28:22
9	sunset	20231019-113150-vs-fsp-lb2	00:00:00:00	00:00:10:02	00:00:10:03

Position | 00:00:00:00 | Duration | 00:03:11:27

Description

1 Options Menu, which contains the following items:

- Lock playlist
- Rename playlist
- Send playlist to
- Select All/ Deselect All
- Follow / Unfollow
- Delete Selected

2 Playlist Items.

- You can advance to next playlist items by using the Next button in the playout preview window. You can also double-click on a clip on the list, and the playout settings of the channel determine whether the clip will be immediately played, or cued, or paused on the first frame. To change the playout behavior on the spot, right-click on a clip and select **Play > Still on first frame** or **Play immediately** or **Cue and play next**.
- You can **rearrange** the playlist items using drag & drop, in the same way as described in "[Single Playlist View](#)" on page 108.
- Assign an **In** and **Out** point of the playlist item by right-clicking on it and selecting **Edit** from the list of options.
- Set the **follow** behavior for the clip by right-clicking and selecting Unfollow or Follow. If the Follow option is selected for this clip, the clip will automatically play if it is the next clip cued. If Unfollow is enabled, the playlist will stop playing when it gets to this clip. You need to manually press the Next button, or right-click on a clip and select **Play > Still on first frame / Play immediately / Cue and play next** to resume playback.
- You can send the same playlist to an additional playout channel by selecting **Send to** from the clip context menu.

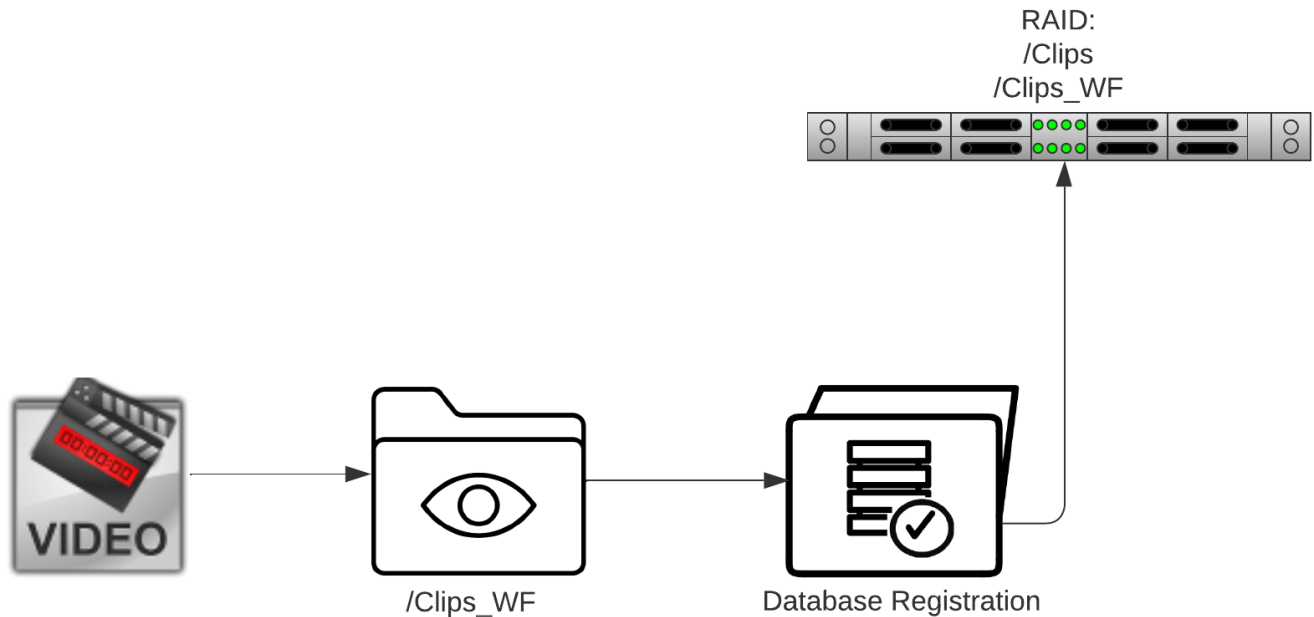
Any changes made to a playlist instance will be replicated to all playout channel preview windows where the playlist is currently loaded.

- You can add more items by dragging and dropping them directly into the Playlist Editor from the Clips Inventory.

#	Description
3	Duration label and Loop toggle. • The Duration label displays the total duration of the entire playlist. • The Loop toggle allows to enable or disable the looping of the entire playlist. By default, the Loop option is disabled.  <i>To load a playlist with Loop enabled automatically, press the CTRL button when dragging and dropping the playlist to a playout channel.</i>
4	Position and Keep Current Item Visible toggles. • The Position label displays the current position timecode. To view the remaining timecode, click on the timecode label. • The Keep Current Item Visible option enables an auto-scroll which allows to always keep the currently playing item in the display area. This option is especially useful when a playlist has a large number of items.

6 Working with the WatchFolder

The Avid | Stream IO package contains the WatchFolder installer. The WatchFolder is designed to allow controlling applications to connect directly to the Avid | Stream IO database and operate only on records which exist there. It is used in playout scenarios to register clips in the database or to limit the copying transfer to the machine's RAID.



WatchFolder Configuration

The WatchFolder parameters are configured in the Web Configurator, as described in ["The WatchFolder Page" on page 67](#).

▼ General

☒ Autostart

Clip destination path:

Clip mount point:

Accepted extensions:

▼ Autoregister

☒ Enable autoregister

☐ Scan on start

Use media mapper:

OCIP port:

Registered extensions:

When the **Enable autoregister** option is checked, the clips that are copied to the WatchFolder destination, will also be registered in the VideoEngine_DB. The following requirements need to be noted when preparing clips for the WatchFolder workflow:

- the clip extension needs to be listed in the Accepted extension field,
- the clip needs to be supported by ffmpeg.

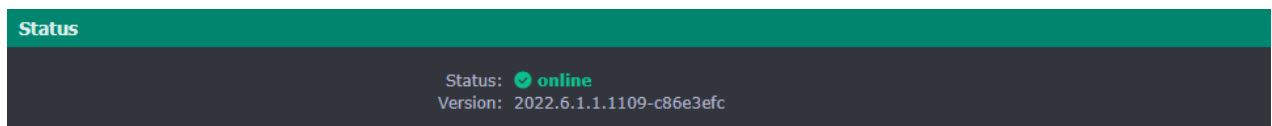
If the clip extension does not match any of the accepted extensions, a warning will be displayed and the copying of the clip will be prohibited. In case the chosen clip is not supported by ffmpeg - it will not be registered in the DB.

Inventory Management

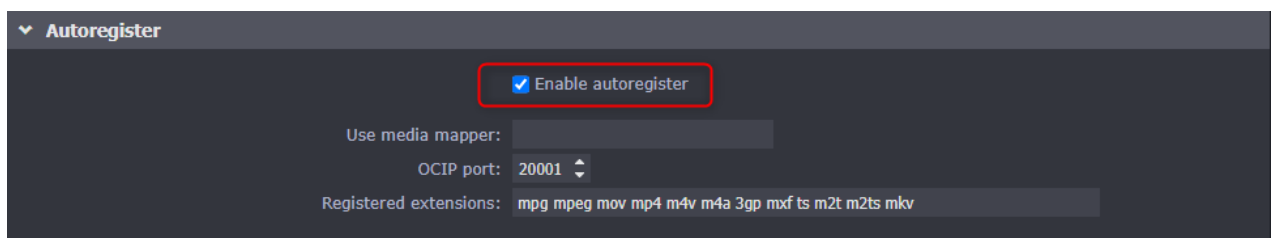
This topic describes the steps required to configure and manage your WatchFolder inventory and how to add clips to the Avid | Stream IO (VIDEO_ENGINE.fdb) inventory.

To set up the WatchFolder inventory:

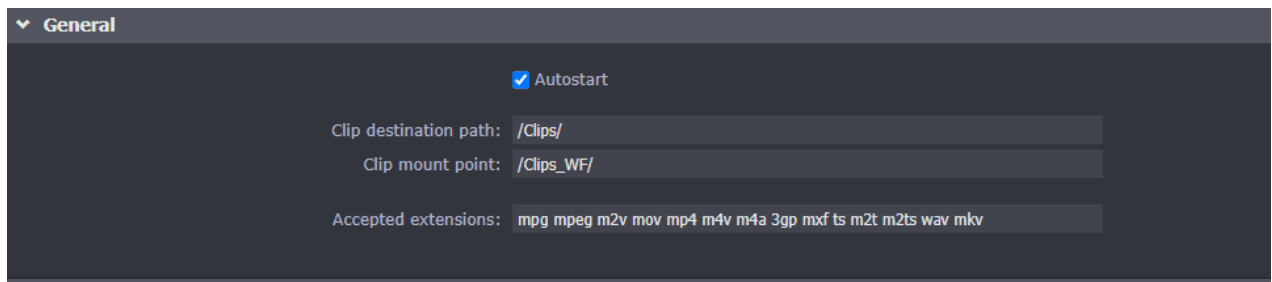
1. Login to the Avid | Stream IO Web Configurator and open the WatchFolder page. In the Status section, make sure that the WatchFolder is up and running.



2. Expand the Autoregister section and make sure that the **Enable autoregister** option is active.

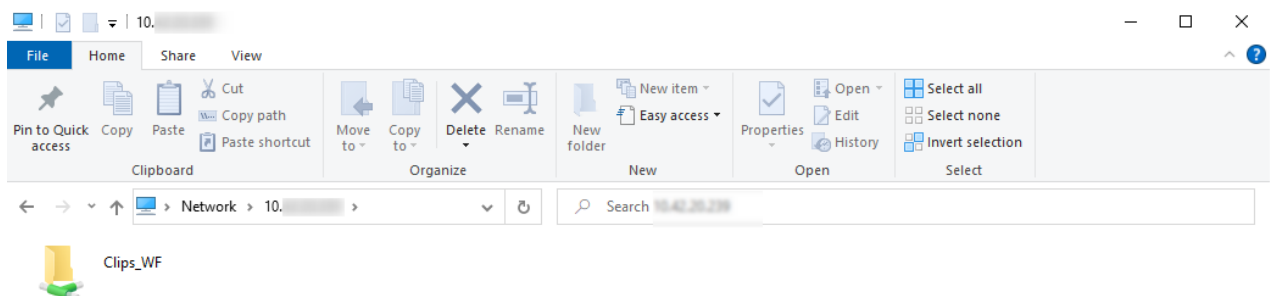


3. Check the destination mapping in the General section.



To add clips to the database:

1. Open the Clips_WF directory, which is the WatchFolder gate exposed on a server with Samba. You can access it using the Windows explorer.





Access to the *Clips_WF* directory can also be achieved over FTP. For more information, see ["The FTP & Samba User Accounts"](#) on page 79.

2. Open the *Clips_WF* directory. You can see the content of the folder which is mapped in the Web Configurator > WatchFolder > Clip Destination Path field.
3. To add a clip, simply drag it and drop into the *Clips_WF* folder.

Renaming Clips

To rename clips in the directory, open the *Clip_WF* folder using the Windows explorer as described above. Right-click on the selected clip and select Rename. You can also select the clip and press F2 on your keyboard.

Deleting Clips

To remove clips from the directory, open the *Clip_WF* folder using the Windows explorer as described above. Right-click on the selected clip and select Delete. You can also select the clip and press the Delete button on your keyboard.

7 Media Workflows using Avid Solutions

It's easy to introduce Avid | Stream IO to the overall production workflow. Maximize your news, sports, and live entertainment workflows with tight integration with the familiar MediaCentral ecosystem (including support for MediaCentral | Capture, MediaCentral | Acquire, MediaCentral | Command).

The following chapters contain information on how to configure your Avid | Stream IO server to work with various Avid environments.

- ["Send-To-Playback with Avid Media Composer" below](#)
- ["Recording with MediaCentral | Capture" on page 120](#)
- ["Newsroom Rundown Playout with MediaCentral | Command" on page 131](#)

Send-To-Playback with Avid Media Composer

Avid's Send to Playback engine is also available for Avid | Stream IO workflows.

There are two types of workflows, which you can use to perform STP:

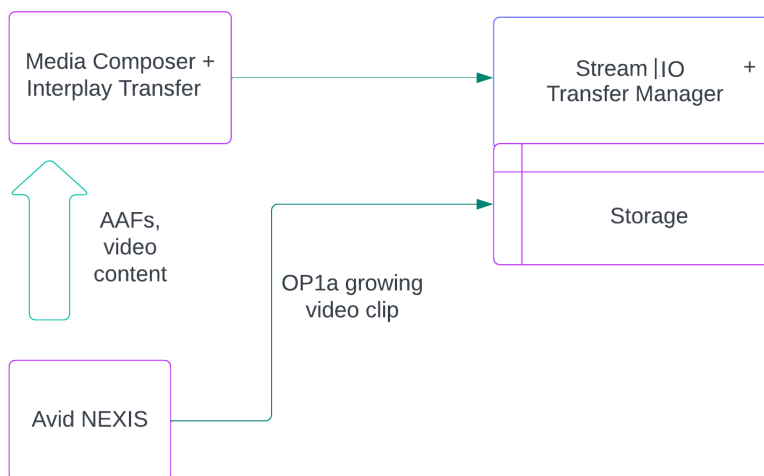
- ["Intra-frame Workflow" below](#)
- ["Long GOP Workflow" below](#)



*When performing Send-to-Playback from Media Composer or MediaCentral | Cloud UX, it is prohibited to use these symbols as clip names/IDs: \ / : * ? " < > |, and a white space.*

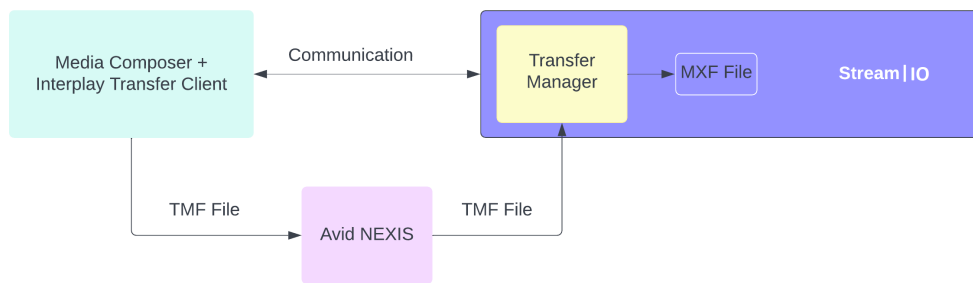
Intra-frame Workflow

When working with an Intra-frame STP, there is no need to select a required format in the Stream IO Web Configurator. The destination file, which is in OP1a pattern, will be generated in the same format as the input file. Thus, the input sequence must be of one of the supported formats by the Transfer Manager.



Long GOP Workflow

The Long GOP workflow and architecture is completely different than the Intra-frame example above. It is based on the creation of a temporary media file (TMF file) inside the NEXIS/Temp storage.



This file can be either deleted after the STP process completes or it can be kept for future actions. As a result, the availability of the clip for playout is a bit longer in case of Long GOP codecs than in the case of intra-frame codecs.

When Send-to-Playback is executed from Media Composer, the TMF file (Temporary Media File) is created (mixed down, rendered, transcoded) by Media Composer to the Avid Shared Storage (NEXIS).

Transfer Manager grabs the TMF file (which is still being transferred by Media Composer) and converts it into an MXF growing file format while transferring it to the internal storage.

As soon as the clip appears in the internal storage, it is registered in the database by the Transfer Manager. The video's duration is constantly updated in the database to make it available for the controlling application. Consequently, the video can be played on-air by an appropriate controller.

There is a minimum duration limit for clips that are going to be STPed to Avid | Stream IO. For DNX files and all other intra frames, the duration limit is 2 seconds.

Compatible Formats

Avid Media Composer and MediaCentral | Cloud UX allow to perform Send-to-Playback to Avid | Stream IO in the following formats.



Send-to-Playback (STP) + Play-while-Transfer (PWT)



Not supported

HD Formats

	720p25	720p29,97	720p50	720p59	1080i25	1080i29,97	1080p23,98	1080p25	1080p29,97	1080p50	1080p59,94
AVC Intra Class 50	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗
AVC Intra Class 100	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗
AVC LongG 12	✗	✗	✗	✓	✓	✓	✗	✓	✓	✗	✗
AVC LongG 25	✗	✗	✗	✓	✓	✓	✗	✓	✓	✗	✗
DNxHD HQ	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
DNxHD HQX	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
DNxHD SQ	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
DNxHR LB	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
XAVC-I Class 100	✗	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓
XDCAM EX 35	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗
XDCAM HD 50	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗

UHD Formats

	3840x2160p50	3840x2160p59
DNxHR UHD SQ	✓	✓
DNxHR UHD HQ	✓	✓
DNxHR UHD HQX	✓	✓
XAVC-I UHD Class 300	✓	✓

Executing Send-to-Playback

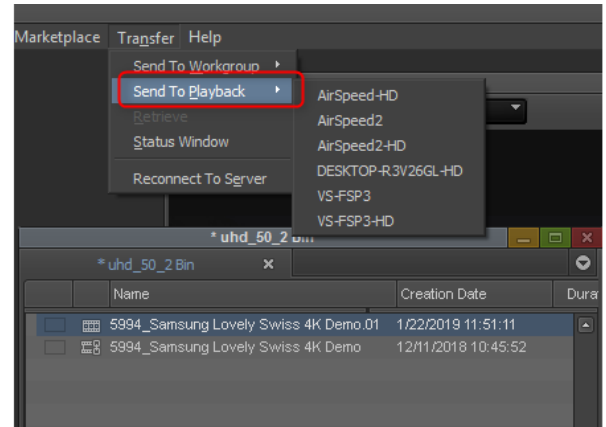
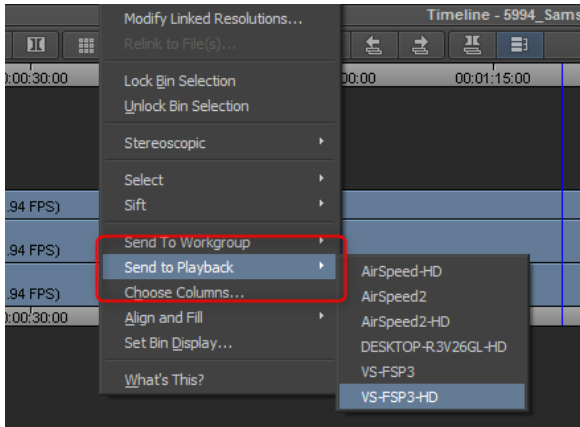
When all your edits and cuts are complete and the final sequence (or its components) are already transcoded to the desired codec, framerate and resolution, then the STP process can be started in one of two ways, as described below.

To execute Send-to-Playback:

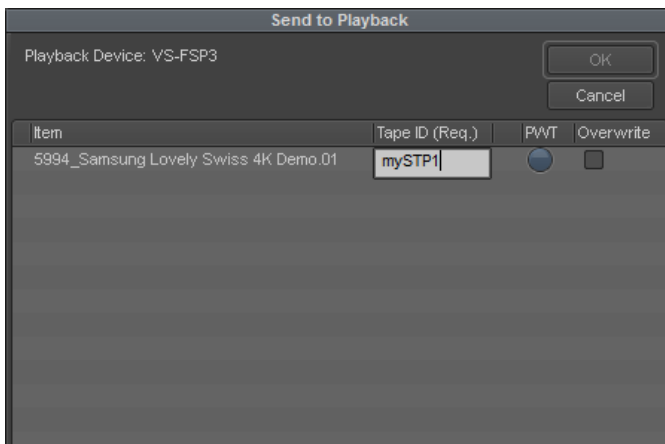
1. In Media Composer's bin, right-click on a sequence, select the **Send To Playback** option and choose the server to which the sequence should be sent.

- or -

In Media Composer's Clip Bin, highlight the sequence, then go to **Transfer > Send To Playback** and choose the server to which the selected sequence should be sent.



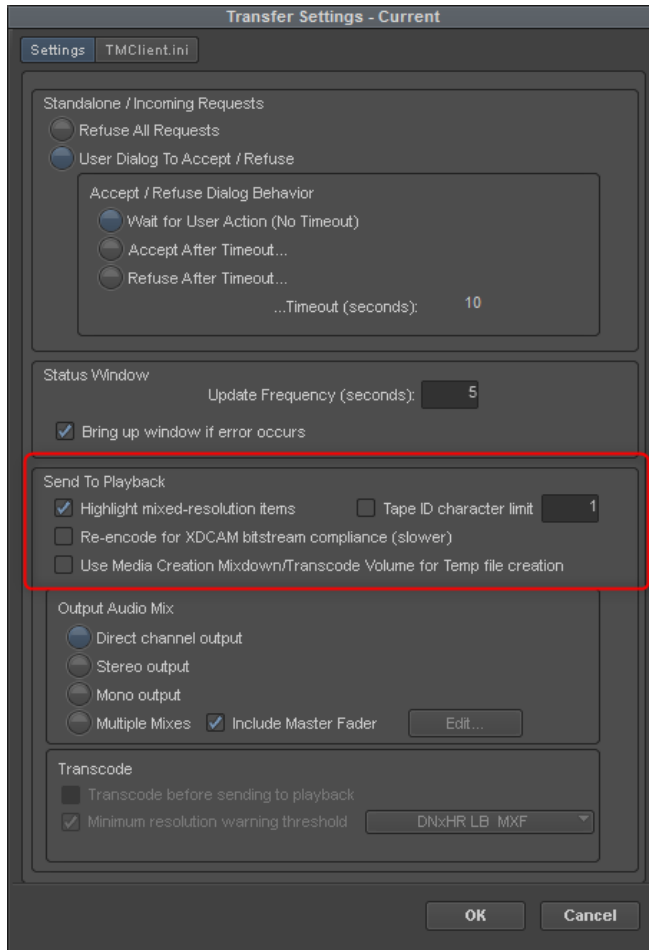
2. After selecting the profile for the server to which you want to send the sequence, the Send to Playback dialog box opens.



3. In the Send to Playback dialog box, do the following:
 - a. Type a tape ID name, which will be used as the final clip name in your playout device.
 - b. (Option) Select PWT (Play While Transferring), if you want to play this clip while it is still growing.
 - c. (Option) Select Overwrite, to overwrite the tape ID name in Interplay Transfer if the same name exists.

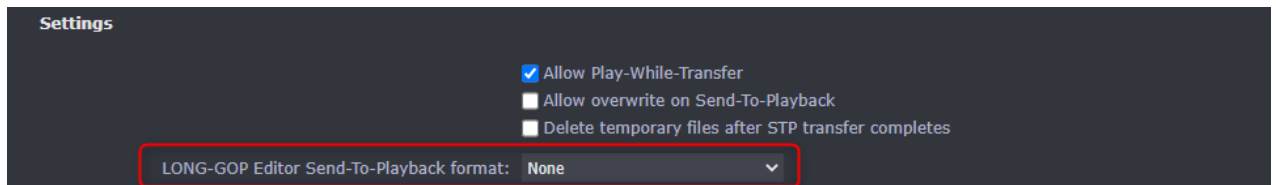
Press OK to confirm. The system immediately starts the send to playback operation.

4. Sometimes, there will be a mixdown of audio done before the transfer starts. Check the **Media Creation Mixdown & Transcode** settings in your Media Composer, as well as the **Transfer Settings** and the **Send to Playback** section:



- When working with Long GOP codecs, Media Composer will now start the TMF file generation and the Transfer Manager on the Avid | Stream IO side will start transferring it to its internal storage, along with checking-in to the local inventory. The check-in will be repeated every 2 seconds to update the current duration.

When LongGOP transfers are not required, and there is no need to have Long-gop device displayed in Media Composer, you can change the LongGOP format to **None** in WebSettings > Commander tab:



As a result, Media Composer users will only see the Intra frame device for STP (without the -HD suffix).

In case of Intra-frame codecs, the footage will be transferred directly to storage with its details based on AAF information, without TMF file generation.

Recording with MediaCentral | Capture

MediaCentral | Capture is a newsroom ingest tool that enables automated recordings. It contains individual applications, which allow you to schedule and monitor recordings. MediaCentral | Capture stores its schedule and other metadata in the Interplay database, which allows for easy access to the captured material within the Interplay work environment.

The Interplay Capture broadcast news workflow starts with the ability to control the capture of ingest feeds from any source. MediaCentral | Capture also provides user rights management for ingest. The Capture system includes channel pools and dynamic channel allocation, which helps automate some resource management tasks, and adds another layer of fault tolerance.

Configuring Avid | Stream IO for MediaCentral | Capture Workflows

This topic discusses how to set up the integration between the Avid | Stream IO server and the MediaCentral | Capture system.



When integrating with MediaCentral | Capture, make sure the same format is used across the entire environment.

To prepare Avid | Stream IO for MediaCentral | Capture integration:

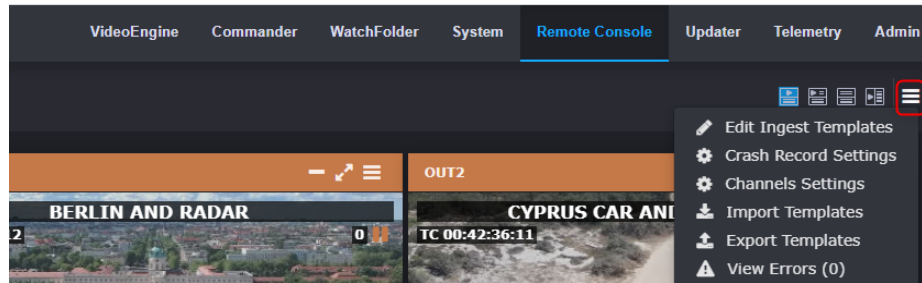
1. Avid | Stream IO communicates with MediaCentral | Capture via **AirSpeedTranslator**. It is an additional component which can be installed together with the main Avid | Stream IO package.

During the Stream IO installation, make sure that the "Install" and "Autostart" options are selected for the AirSpeedTranslator.

The screenshot shows the 'Update' page of the Avid Stream IO Web Configurator. At the top, it displays 'Product: AvidStreamIO', 'Version: 2023.06.1.264', and 'Installed version: 2023.06.1.263'. Below this, the 'Channel Settings' section shows 'Ingest Channels' and 'Playout Channels' both set to '2'. The 'Commander' section has a 'Reinstall database' checkbox. The 'AirSpeedTranslator' section, highlighted with a red box, contains two checked checkboxes: 'Install' and 'Autostart'. Below this, the 'Plugin type' section shows 'DeckLink' and 'NDI' radio buttons, with 'NDI' selected. The 'Dirty channels' section has a checked 'Add dirty channels' checkbox. The 'Dirty channels plugin type' section also shows 'DeckLink' and 'NDI' radio buttons, with 'NDI' selected. At the bottom, there are three buttons: 'Back', 'Default', and 'Install'.

2. Once your Avid | Stream IO system is fully configured, log into the Web Configurator to configure the required ingest templates in the **Remote Console**.

- a. In the Avid | Stream IO Remote Console, click on the ellipsis (hamburger menu) on the right side to bring up the Configuration Menu.

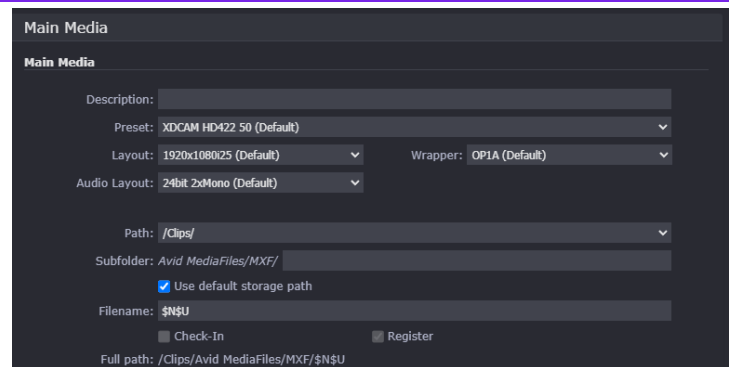


- b. Select the **Edit Ingest Templates** option.
- c. In the Ingest Templates Editor, click on the + button to add a new template. Type in a descriptive name for the new template and click Create.
- d. In the Main Media section, make sure the following options are selected:

Wrapper: OP1A (Default)

Path: /Clips/

Register: enabled

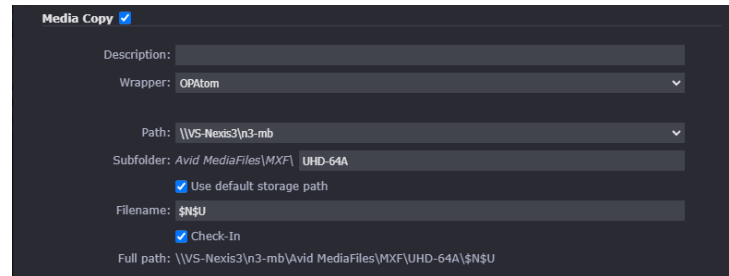


- e. Configure a Media Copy to shared storage using the following settings:

Wrapper: OPAtom

Path: NEXIS workspace

Check-In: enabled



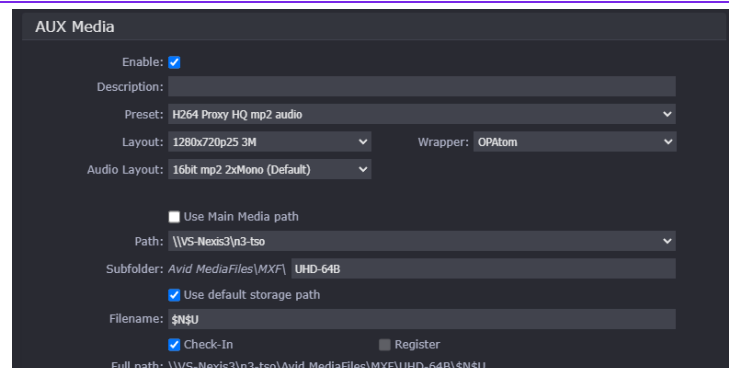
- f. You can also select to record a proxy file using these parameters:

Preset: mp2

Wrapper: OPAtom

Path: NEXIS workspace

Check-in: enabled



- g. In the Check-In section, make sure to select the same MediaCentral | Production system (External source) that is used as Asset Management in the Capture environment.

Check-In

External source: **PAM3**

PAM folder: **/Projects/ /AVS-64**

☐ Create thumbnail on position: **0.0** seconds

☐ Enable growing with initial offset: **1** seconds

☐ Enable interval check-in every: **1** minutes

- h. Click on Save and then close the Ingest Templates Editor.
3. Open the Remote Console Configuration Menu again and select **Crash Record Settings**.

Set the newly created Ingest Template for the crash recording of ingest channels. You can use a different template for each of the inputs.

Crash Record Settings

Templates

IN1: **I Capture1**

IN2: **I Capture2**

Save **Close**

4. When ingesting over NDI, select the required routing templates in the ingest windows.
- Your Avid | Stream IO server is now ready to work with MediaCentral | Capture.

Configuring the MediaCentral | Capture Environment

To enable communication between Capture and Stream IO, you need to add Avid | Stream IO in the **Avid Service Configuration Application**.

To establish a connection between Avid | Stream IO and MediaCentral | Capture:

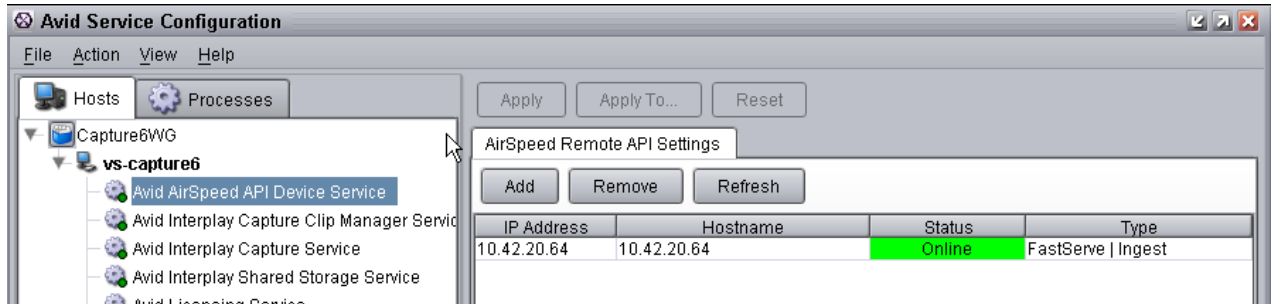
1. Open the Avid Service Configuration application. Choose the required Workgroup from the list and click Select.
2. In the main Service Configuration window, expand the list of services of the selected workgroup. Select the Avid AirSpeed API Device Service.



Default configuration of this service does not have a password. Leave the Administrator password field blank and click OK.

3. In the “AirSpeed Remote API Settings” window, click on Add.
4. In the following window, enter the IP address of your Avid | Stream IO server and click OK.
5. Your Stream IO server appears in the Avid AirSpeed API Device Service window and if the connection has been established, the Status of the machine is Online.

 *Avid | Stream IO devices are labeled as "FastServe | Ingest" in the Capture environment.*

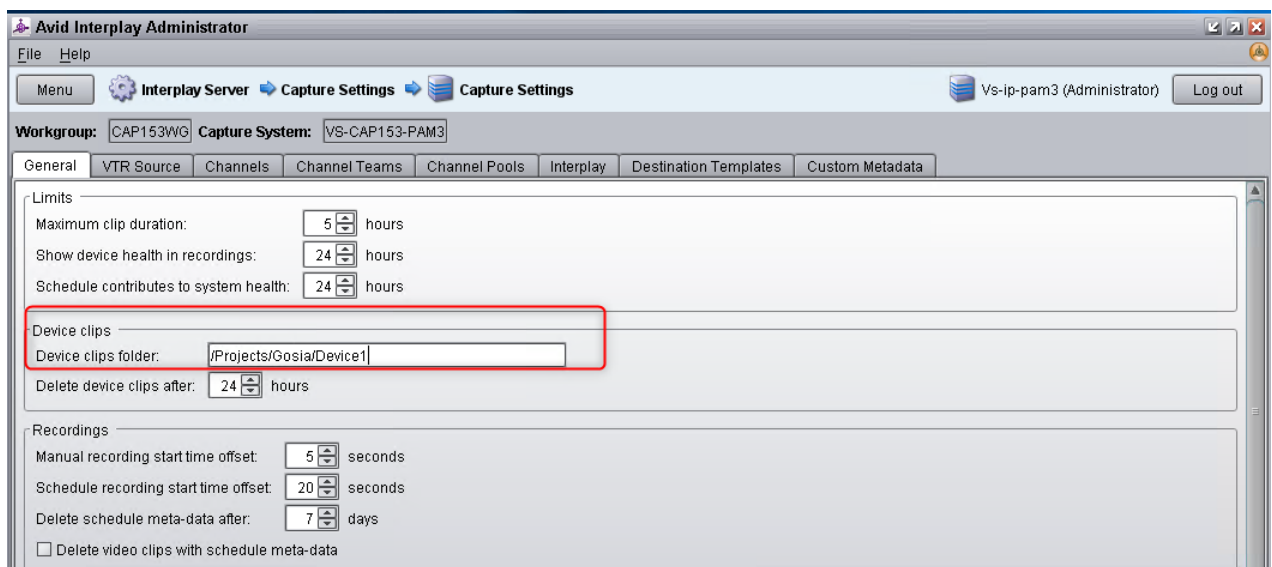


Press the Apply button.

After establishing a connection between Capture and Stream IO, you can now move onto the Avid Interplay Administrator to configure the channels.

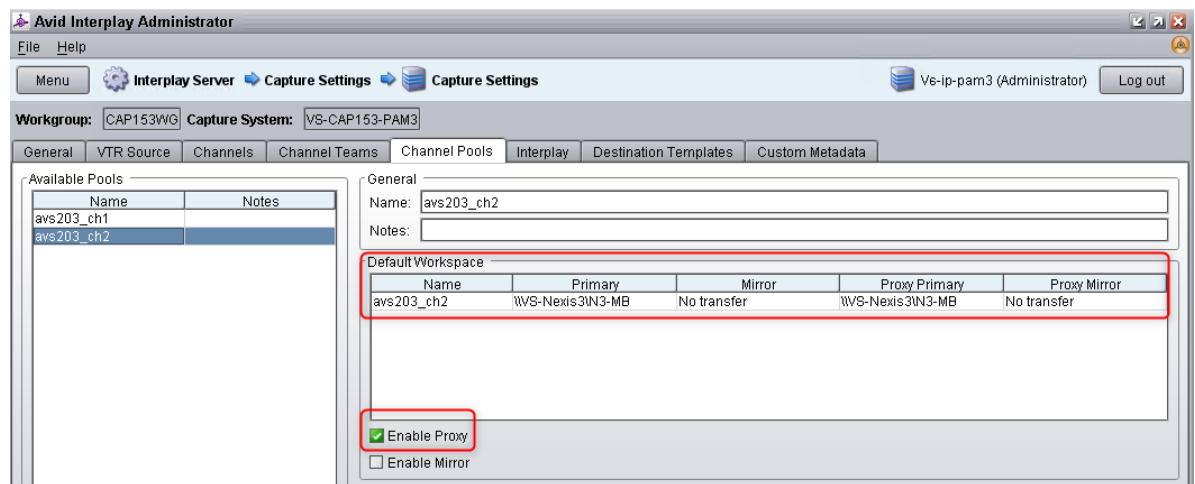
To configure MediaCentral | Capture in Interplay Administrator:

1. From the Start menu select All Programs > Avid > Avid Interplay Access Utilities > Avid Interplay Administrator.
2. Navigate through the menu options to find the **Capture Settings** section and the Capture Settings icon.
3. In the **General** tab, set the **Device Clips Folder** and Recordings options:



4. In the **Channels** tab you can add Avid | Stream IO device channels to the Capture system.
 - a. Click the Search button located at the bottom of the tab to Search the workgroup for all available channels which Capture can use. Select the required channels (select multiple channels with the SHIFT button).
 - b. After the Channels are added, most fields to the right of the Channels table populate with data about that channel.
 - c. Click Apply to move to the next tab.
5. In the **Channels Pools** tab you can administer the channel pool settings for the Capture system.

- a. To create a new channel pool, click the Add button located at the bottom of the tab.
 - b. Enter the following information:
 - In the Name text box, enter the name for this new channel pool. This is the name users see displayed in the Capture UI.
 - In the Notes text box, enter any notes about this channel pool that you want to display in the Capture UI.
 - In the Default Workspace text box, enter the workspace assigned to a recording when this channel pool is selected. This is the default workspace, but this workspace can be changed on a per recording basis.
 - c. Click the Add button located on the right side of the Channel Pool tab.
- The Add Channels To Pool dialog box appears containing all the channels configured for the Capture system. This includes the channels listed on the Channels tab.
- d. Select the channels to include in the channel pool, and click the OK button.
 - e. In the **Default Workspace** section, select the Primary workspace from the drop-down list. You can also enable proxy recording and select the storage for auxiliary files.



 *Make sure the selected Avid NEXIS workspaces are also mounted and are available on the Avid | Stream IO server.*

6. Click Apply and close Avid Interplay Administrator.

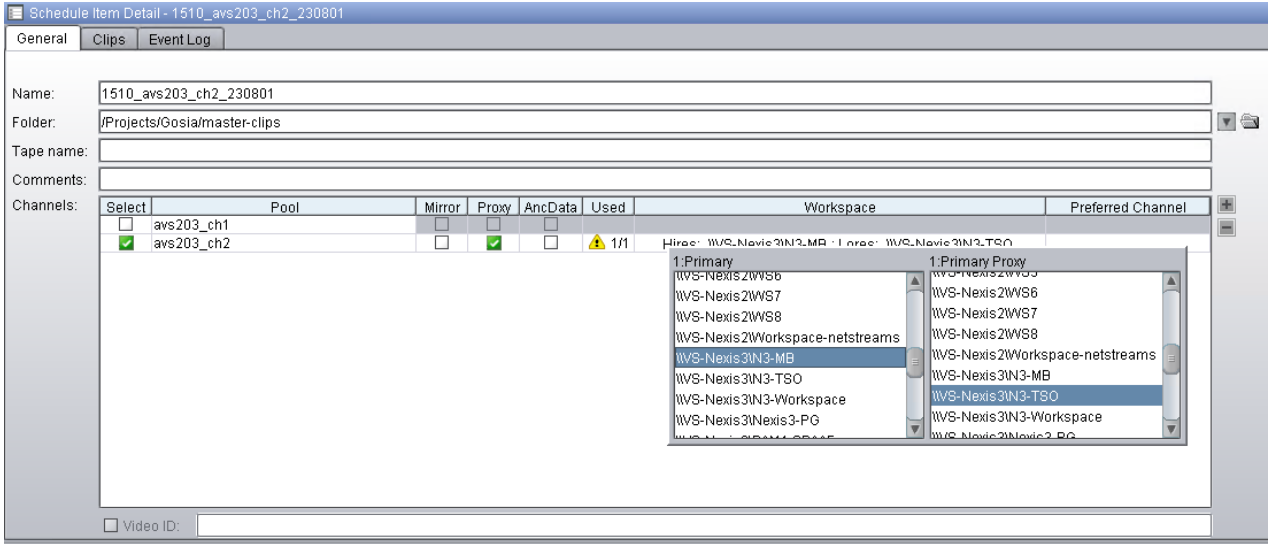
Scheduling Recordings in the MediaCentral | Capture Client

This topic describes how to schedule recordings with the Interplay Capture Schedule application.

To schedule recordings:

1. Click the Start button and select: Start > All Programs > Avid > Avid Interplay Capture > Avid Interplay Capture Schedule. The Interplay Capture login dialog box opens.
2. Log into the application.
3. Do one of the following:
 - Press Ctrl+N to schedule a new recording.
 - Press Ctrl+Shift+N, to skip the Choose Template dialog box.
 - Double-click anywhere on the Schedule panel and later, in the Schedule Item Details panel, you can add the date and time you want the recording to occur.
4. In the “**Schedule Item Detail**” window, set the required parameters of your recording:

- Enter a name for this recording. You can also right-click and use the text field helper to add information in this field.
- Pick a master clip folder location, from the Interplay directory tree, where Capture checks the clip into Interplay. You can access a list of recently used folders by clicking the down arrow next to the folder field. You can enter the folder information manually.
- Add one or more channel pools to this recording.
- Specify the start date, time, duration, segments time, and recurrence information that applies to this recording using the schedule tool on the right-hand side of the General tab.
- Enable the Proxy check button, if proxy is required.
- Click Save to save the recording.



- After creating a new recording, the recording is displayed on the timeline in the Schedule panel. A scheduled recording has a white box.

Status of Stream IO Recordings in MediaCentral | Capture

It is possible to monitor the status of Avid | Stream IO recordings triggered from Capture. The following statuses are currently displayed.

Transfer Status Icons

Transfer status icons appear with a recording on the timeline so the user can tell at a glance the transfer status of recordings. The following table shows the transfer status icons available for Stream IO recordings:

Transfer Status Icon	Description
	Retransfer has been requested.
	Transferring.
	Transferring but not yet checked in to Interplay.
	Done transferring.
	Done but not yet checked in to Interplay.
	Unknown transfer status.
	Failed Transfer.

Event Logs

The MediaCentral | Capture Schedule Event Log tab allows you to view a list of event logs for a recording. The following table shows the event log messages available for Stream IO recordings:

Event Logs	Description
Begin scheduled recording	A scheduled recording is starting.
Cued	An ingest channel for the recording has been cued.
Recording	An ingest channel for the recording has started recording.
Stop	A scheduled recording is stopping.
Eject	An ingest channel for the recording ejected the recording channel.
Transfer started	Transfer Manager on the ingesting device indicated that the transfer has started.
Transfer complete	Transfer Manager on the ingesting device indicated that the transfer has finished successfully.
Master Clip created	The Interplay Capture Clip Manager service has indicated that device clips have been found and a master clip has been created.
Retransfer succeeded	Transfer manager on the ingesting device indicated that the retransfer has finished successfully.
Health: Channel health was restored to NORMAL	
TRANSITION_TIMEOUT_ON_STOP_RECORD	Interplay Capture was unable to stop the recording because Interplay Capture timed out waiting for the ingest channel to return a stopped status.
TRANSITION_TIMEOUT_ON_EJECT	Interplay Capture was unable to eject the recording because Interplay Capture timed out waiting for the ingest channel to return a ejected status

Removing an Avid | Stream IO Server from a Capture Environment

This topic describes how to remove an Avid | Stream IO server machine from a MediaCentral | Capture environment.

To remove a Stream IO server from Capture environment:

1. Delete all channel pools and all channels within these pools.
 - a. Go to the Channel Pools tab: **Avid Interplay Administrator > Capture Settings > Channel Pools.**
 - b. Delete all channels from the pool and press Apply.
 - c. Delete the channel pool and press Apply.
 - d. Repeat the steps above for all channel pools.
2. Delete all channels connected to the machine.
 - a. Go to the Channels tab: **Avid Interplay Administrator > Capture Settings > Channels.**
 - b. Delete all channels and press Apply.
3. Remove your Stream IO machine from the system.

- a. Go to Avid Service Configuration.
- b. Select the Avid | Stream IO instance to be deleted and click on the Remove button.
- c. Press Apply and exit the Avid Service Configuration.

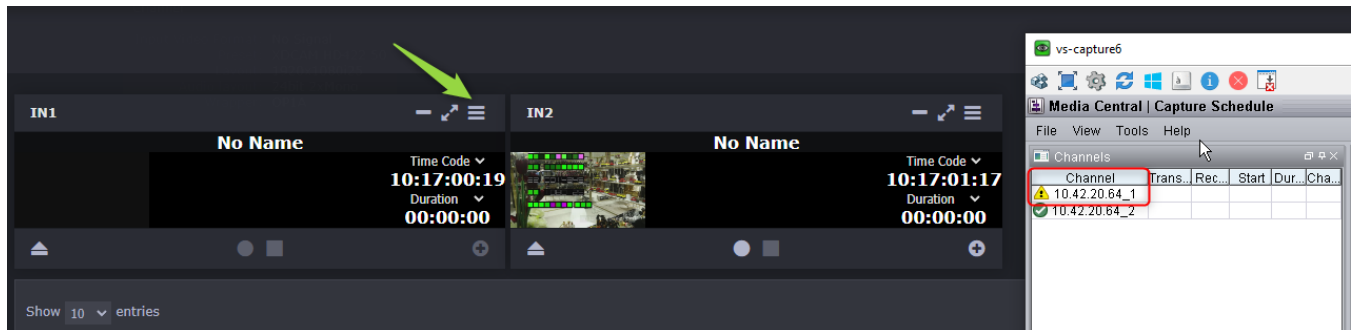
The selected Avid | Stream IO has now been removed from the MediaCentral | Capture environment.

MediaCentral | Capture Tips & Tricks

The purpose of this topic is to provide information on tools and processes that can be used to identify and resolve issues when working with MediaCentral | Capture and Avid | Stream IO.

Input Channel Not Routed

When the input channel does not display any media or an input appears to be disconnected, check if the source channel is online in the MediaCentral | Capture Scheduler.



The Check-In Button Not Available in the Ingest Template Editor

In cases where the "Check-IN" button appears grayed-out in the Ingest Template Editor, check if MediaCentral | Production is configured correctly in the **External Sources** section on the **Commander** page.

Proxy Recording in OPAtom

If you want to record your auxiliary files in the OPAtom wrapper, you need to select an "mp2" Preset and make sure Avid NEXIS storage is selected in the Path field. The "Use Main Media path" option needs to be disabled.

AUX Media

Enable: ☒

Description:

1 Preset: H264 Proxy HQ mp2 audio

Layout: 1280x720p25 3M

3 Wrapper: OPAtom

Audio Layout: 16bit mp2 2xMono (Default)

☐ Use Main Media path

2 Path: \\VS-Nexis3\n3-tso

Subfolder: Avid MediaFiles\MXF\ UHD-64B

☒ Use default storage path

Filename: \$N\$U

☒ Check-In ☐ Register

Full path: \\VS-Nexis3\n3-tso\Avid MediaFiles\MXF\UHD-64B\N\$U

MXF File Destinations

The Avid NEXIS workspaces are set in MediaCentral | Capture. You can choose different locations for the primary recording and its proxy.

Select	Pool	Mirror	Proxy	AncData	Used	Workspace	Preferred ...
☐	215_ch1	☐	☐	☐			
☒	avs-81-ch2	☐	☒	☐	1/1	Hire: 1:Primary	
☐	avs81-ch1	☐	☐	☐			

1:Primary
WVS-Nexis2\WS8
WVS-Nexis2\Workspace-netstreams
WVS-Nexis2\test_hemi
WVS-Nexis3\Capture-Workspace-Nexis3
WVS-Nexis3\N3-MB
WVS-Nexis3\N3-TSO
WVS-Nexis3\N3-Workspace
WVS-Nexis3\PAM4-SPAFA

1:Primary Proxy
WFS-P-Nexis-E4\FSP-tests
WFS-P-Nexis-E4\PAM3-SPAFA
WVS-Nexis2\Capture-Workspace
WVS-Nexis2\NoMI
WVS-Nexis2\PAM1-workspace-nexis
WVS-Nexis2\WS1
WVS-Nexis2\WS2
WVS-Nexis2\WS3

Set the subfolder in the Avid | Stream IO ingest template, as illustrated below.

Subfolder: Avid MediaFiles\MXF\ UHD64

☒ Use default storage path

Filename: \$N\$U

☐ Check-In ☒ Register

Full path: /Clips/Avid MediaFiles\MXF/UHD64\N\$U

Recording with MediaCentral | Acquire

MediaCentral | Acquire offers simple solutions for recording media. Available as an app in MediaCentral | Cloud UX, Acquire enhances your workflow by providing instant access to recorded media. Schedule media ingest in real time, record, and preview incoming feeds. Securely control more ingest sources remotely from anywhere. And with integrated router control, Acquire increases efficiency and remote collaboration for a more effective story-centric workflow.

This topic discusses how to set up the integration between the Avid | Stream IO server and the MediaCentral | Acquire system.

To configure ingest templates for MediaCentral | Acquire:

- 1. In the Commander tab of the Avid | Stream IO Web Configurator, open the **MCUX Service** section. Select the **Enable MCUX service** option, and enter an IP address of the ACS gateway host.
- 2. In the Remote Console, create a new ingest template in the Edit Ingest Templates window available from the Configuration Menu.
- 3. Enter the following parameters for the MediaCentral | Acquire ingest template:
 - a. In the Main Media section, make sure the following options are selected:

Wrapper: OP1A (Default)
Path: /Clips/
Register: enabled

Main Media

Description:

Preset: **XAVC-I Class 100**

Layout: **1920x1080/29.97 100M** Wrapper: **OP1A (Default)**

Audio Layout: **24bit 2xMono (Default)**

Path: **/Clips/**

Subfolder: **AVS-244**

☐ Use default storage path

Filename: **1080i59_\$\$U**

☐ Check-In ☒ Register

Full path: /Clips/AVS-244/1080i59_\$\$U

- b. Configure a Media Copy to shared storage using the following settings:

Wrapper: OPAtom
Path: NEXIS workspace
Check-In: disabled

Media Copy ☒

Description:

Wrapper: **OPAtom**

Path: **\\VS-Nexis3\\n3-mb**

Subfolder: **Avid MediaFiles\\MXF\\ AVS-244**

☒ Use default storage path

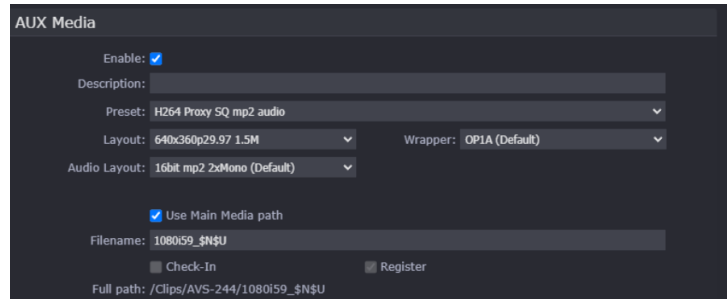
Filename: **1080i59_\$\$U**

☐ Check-In ☒ Register

Full path: \\VS-Nexis3\\n3-mb\\Avid MediaFiles\\MXF\\AVS-244\\1080i59_\$\$U

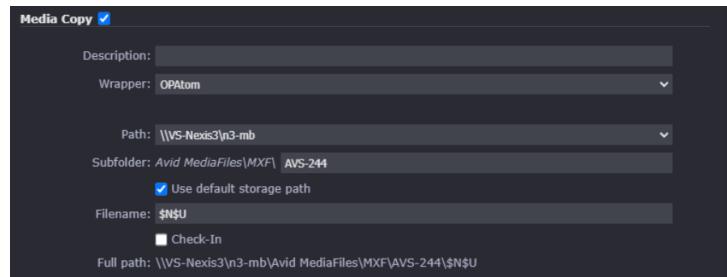
- c. You can also select to record a proxy file using these parameters:

Preset: mp2
Wrapper: OP1A (Default)
Path: /Clips
Check-in: disabled



- d. Set up a media copy for auxiliary files as illustrated below:

Wrapper: OPAtom
Path: NEXIS workspace
Check-in: disabled



4. Click on Save and then close the Ingest Templates Editor.

Once you have configured the required ingest templates for MediaCentral | Acquire, configure the ingest channels in MediaCentral | Cloud UX, as described in the Adding New Channels topic on page 243 of the [MediaCentral | Cloud UX Installation Guide](#).

Newsroom Rundown Payout with MediaCentral | Command

MediaCentral | Command is a device automation system that integrates with any Newsroom Mgmt. or MOS-enabled newsroom computer system (NRCS) and provides broadcasters precise control over a range of payout devices, including video servers, still stores, and character generators in a broadcast news environment. Backup services and mirrored payout make this system reliable while the user interface allows you to control multiple production devices. Command also works with Avid Service Framework applications and services to ensure you always have the best system performance.

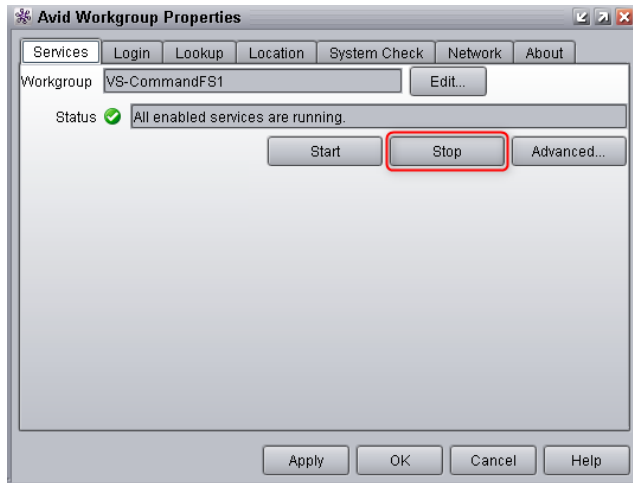
FastServe Payout Plugin for Command

Avid MediaCentral | Command requires a prior installation of the FastServe Payout Plugin for Command. Download the appropriate version from the Avid Download Center or contact your system administrator.



To find out about any changes to the FastServe Payout Plugin for Command, please refer to the [Avid FastServe Plugin for Command ReadMe document on the Avid Knowledge Base](#).

The FastServe Payout Plugin needs to be installed on the same machine as MediaCentral | Command. Before the installation, launch the Avid Workgroup Properties and stop all services:



Then, double-click the FastServe Playout Plugin installer and complete the installation. After the installation is complete, launch the Avid Workgroup Properties and restart all services.

To verify the version of the FastServe Playout Plugin:

1. To verify if the correct version of the plugin is installed, navigate to the following folder:
C:\Program Files (x86)\Avid\iNEWS Command\device\avidvideodeviceservice\lib
2. Right-click on VideoTestPlugin.dll, select “Properties” and in the “Details” tab confirm the version number.

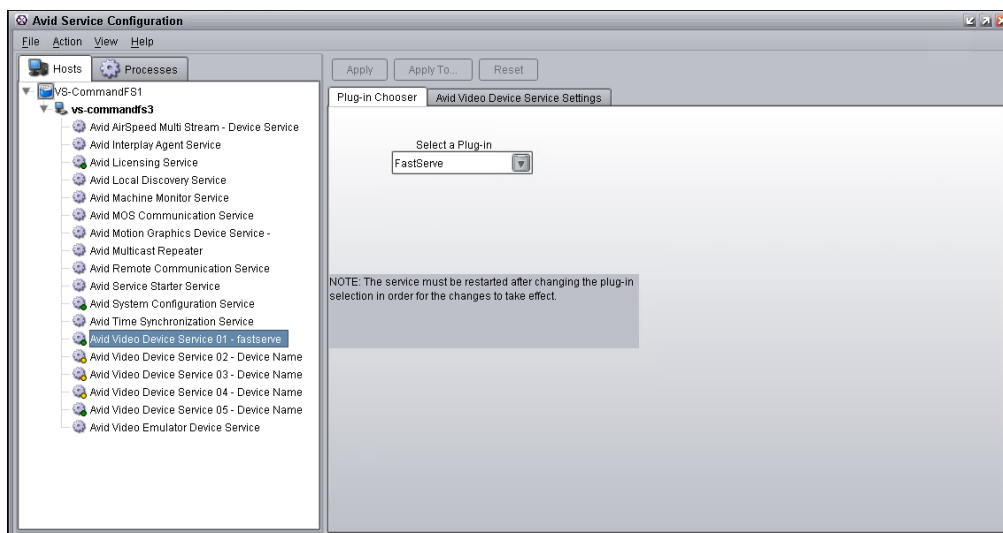


All logs for the plugin are stored in the following location: C:\ProgramData\Avid\iNEWS Command\FastServePlugin\Logs.

The next step is the configuration of MediaCentral | Command to work with the specific Avid | Stream IO server.

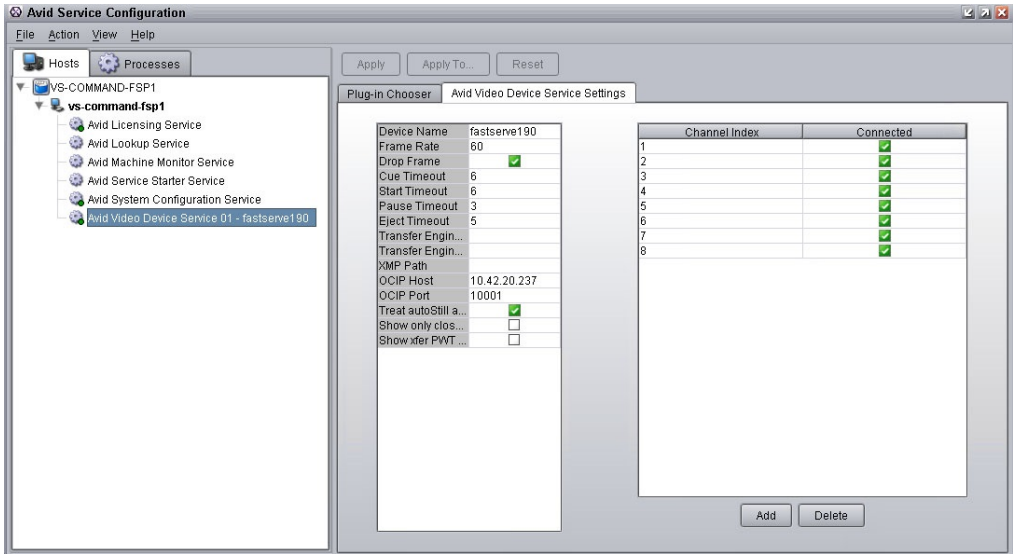
To configure FastServe Playout Plugin for Command:

1. Open the Avid Service Configuration tool, expand the tree of available services and choose Avid Video Device:



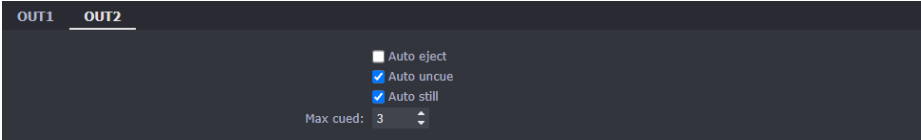
2. If prompted for a password, press OK.

3. In the Plug-in Chooser tab, select FastServe from the drop-down list and press OK. All services will be restarted.
4. When all services are back online, go to the Avid Video Device Service Settings tab:



Configure the necessary fields:

Field	Description
Device Name	Enter the name of the device, which must match the name used for the device channel in the Command system settings.
Frame rate	Set the required frame rate and make sure the Drop Frame option is selected.
Timeout	Set the required Cue/Start/Pause/Eject timeout values. The default values (in seconds) are: – Cue Timeout: 6-10 – Start Timeout: 6-10 – Pause Timeout: 3-10 – Eject Timeout: 5-10
OCIP Host	Enter the IP address of the Avid Stream IO server.
OCIP Port	Set the OCIP port (10001 by default, but it can be changed in the Avid Stream IO Web Configurator). In a configuration with redundancy Command systems, the OCIP port should be 10001 for one system, 10002 for the next system, 10003 if there is a third system, etc. If there are 2 plugins in a redundant setup using the same OCIP port, then the system will not function properly.
Treat autoStill as Cue	This setting needs to match the Avid Stream IO setting in the Web Configurator > Commander tab.



It allows to display (play with speed = 0) the first frame of the video after sending Cue.

Field	Description
Show only closed files	When enabled, only transfer-complete files will be visible in the Command inventory. All clips that are “in progress”, or are “still transferring” will not appear in the inventory. This option can be used to prevent the playout of growing, unfinished content on air.
Show xfer PWT only	Enabling this option results in showing transfer-complete clips in the inventory, as well as growing clips, but only the ones with the “Allow PWT” option enabled in Media Composer. The clips without the PWT flag in Media Composer, will appear in the inventory only after the transfer is complete.

- Click Apply and then click Yes when asked to restart the device service. You can then close the Avid Service Configuration application.
- The plugin is now configured.

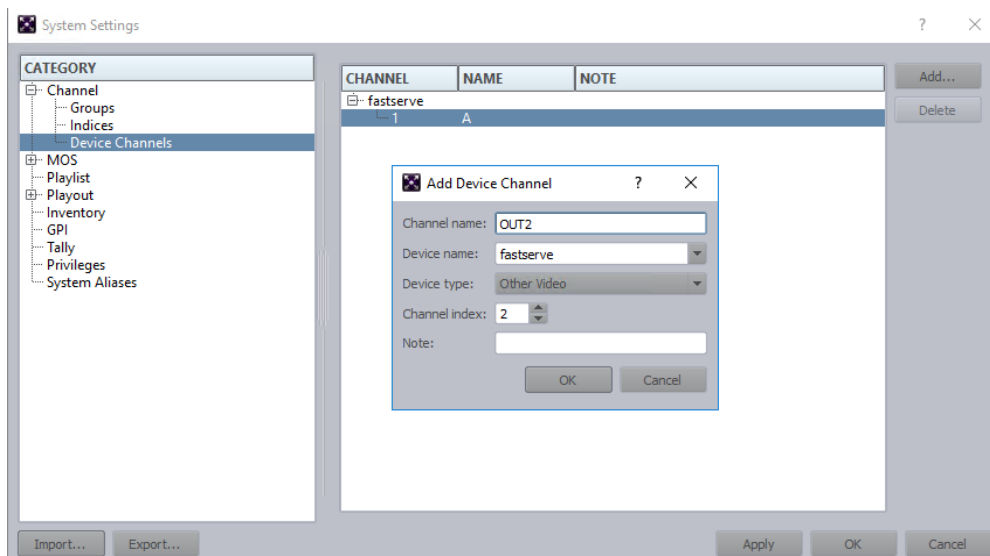
After the FastServePlugin is setup, the following step is to configure the MediaCentral | Command application.

MediaCentral | Command Configuration

This procedure lists all steps required to configure MediaCentral | Command for Avid | Stream IO workflows.

To configure MediaCentral | Command:

- Launch the MediaCentral | Command application and navigate to Tools > System Settings.
- From the tree, expand **Channel** and choose **Device Channels**. Then, press the Add button to add channels in your MediaCentral | Command application.



Enter the required information:

Field	Description
Channel name	Set the name of the channel, e.g. OUT2.
Device name	Choose fastserve from the drop-down list.
Device type	Select Other video from the list.
Channel	Set the channel index. The number needs to be higher than 0 (e.g. select 1 for channel

Field	Description
index	name OUT1).
	 Leaving the default value “0” prevents the channel from working.
Note	Add a note about the device.

- Click Apply.
- Then, go to **Channel > Groups** and click on Add to create a new group to which all configured channels are to be added.

Set a **Name** for the channel and select **Standard** in the **Channel type** section.

- Click Apply.

The inventory is now visible in the MediaCentral | Command application.

Managing Avid | Stream IO Inventory with MediaCentral | Command

Open the MediaCentral | Command inventory window, and right-click on an item to view further options:

- Delete** - removes the clip from inventory, and physically from the internal Avid | Stream IO storage.
- Protect** - locks the clip and prevents it from being deleted directly from the Command interface.
- Remove protection** - removes the lock option and enables the Delete field back in the menu.
- Rename** - renames the selected clip (ID and Slug). Prohibited symbols for clip's ID are:

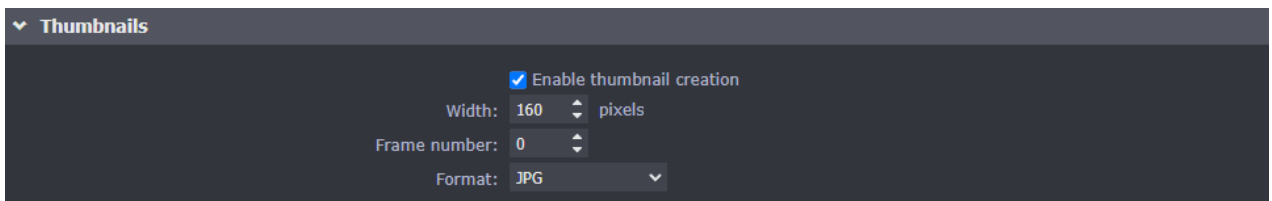
\ / : * ? " < > | ,

Thumbnails in Playlist View

In MediaCentral | Command, it is possible to display thumbnails of items present in the inventory (assuming, that the generation of thumbnails was enabled when these items where registered to the database).

To enable thumbnail registration:

- Open the Avid | Stream IO Web Configurator and go to Commander > Thumbnails.



For MediaCentral | Command, the required Format is JPG.

8 Troubleshooting & Maintenance

This chapter contains information on how to perform preventative maintenance on your Avid | Stream IO system, as well as how to troubleshoot your server when problems or failures occur.

For more information see the following sections:

- "Upgrading the Avid | Stream IO System" below
- "Managing ZFS Storage Pools" on page 138

Upgrading the Avid | Stream IO System

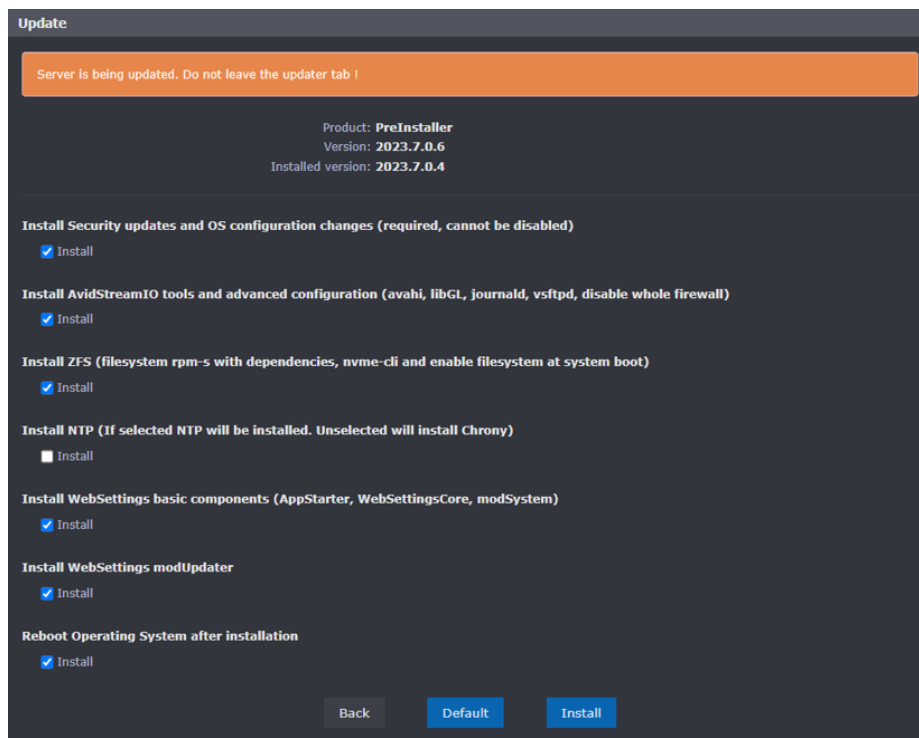
This topic describes the process of upgrading the Avid | Stream IO system to a newer version.

The Avid | Stream IO Preinstaller

New releases of the Avid | Stream IO Preinstaller usually contain security patches, upgrades of low-level components and fixes to basic operational issues. Before installing a newer version of the main Avid | Stream IO application, you need to upgrade the Preinstaller first.

To upgrade the preinstaller:

1. Log into the Avid | Stream IO Web Configurator and open the **Updater** tab.
2. In the Updater tab, click on the Upload File button.
3. Browse for the preinstaller package on your system and click Open.
4. Wait till the package is fully uploaded. Do not leave the Updater tab or close the browser when the upgrade is in progress!
5. In the following window you can view which components will be updated and which processes will take place.





It is highly recommended to install the preinstaller using the default options! Changing some of the parameters can have a negative impact on the system.

6. Press Install to finalize the preinstaller installation.

The server will now reboot.

Upgrading Blackmagic Desktop Video

Certain releases of Avid | Stream IO require an upgrade of the Blackmagic Desktop Video driver. Please refer to the appropriate ReadMe document of your Avid | Stream IO server's version to learn if such update is required.



If the Blackmagic Desktop Video driver needs to be updated for your Avid | Stream IO version, make sure to install it before the main Avid | Stream IO package.

To update the Blackmagic Desktop Video driver:

1. Obtain the required version of the Blackmagic Desktop Video driver. For the 2024.2 version of Stream IO, the **desktopvideo-12.8a19.x86_64.rpm** installer is required.
2. Log into your 2023.8 or 2023.11 Avid | Stream IO server using an SSH client and complete the following steps:

- a. Copy the downloaded desktopvideo-12.8a19.x86_64.rpm installer to the `/data/public` location of your server.

- b. Remove the Decklink IO processes from the server:

```
rpm -e dllo
```

- c. Remove the previous version of Desktop Video:

```
rpm -e desktopvideo
```

- d. Navigate to `/data/public` and install the new Desktop Video:

```
cd /data/public
```

```
rpm -Uvh ./desktopvideo-12.8a19.x86_64.rpm
```

```
reboot
```

```
DesktopVideoUpdateTool --all --update
```

```
reboot #better power cycle
```

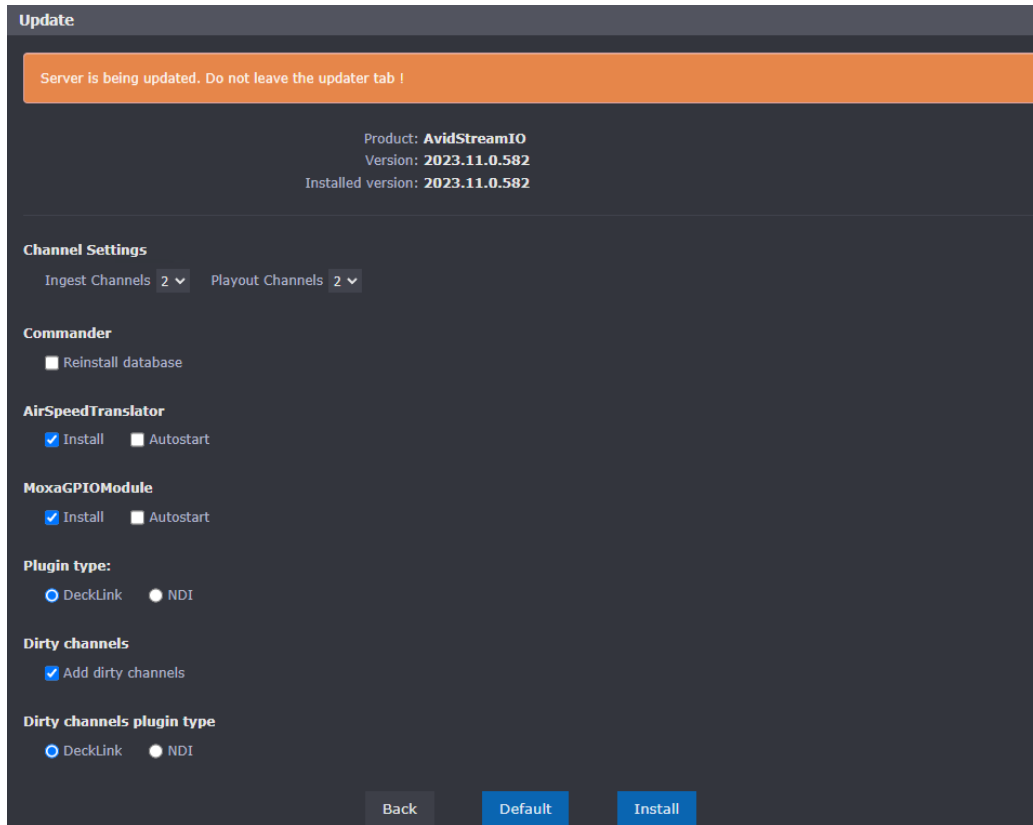
3. When the server is back online, update the main Avid | Stream IO package as described below.

The Avid | Stream IO Package

After upgrading the preinstaller, you can now update the main Avid | Stream IO package.

To upgrade the Avid | Stream IO package:

1. When the system is back online after the preinstaller upgrade, log back into the Web Configurator. Navigate to the Updater tab.
2. In the Updater tab, click on the Upload File button and browse for the AvidStreamIO package. Click Open.
3. In the configuration window, select the required options.



You can configure the ingest and playout channels server directly from the VideoEngine tab. For more information, see ["The VideoEngine Page"](#) on page 47.

4. After pressing Install, the upgrade procedure is identical to a new installation. For more information, see ["Installing Avid | Stream IO Components"](#) on page 36.

Managing ZFS Storage Pools

The following chapters contain information on how to enable ZFS RAID-Z options on your Avid | Stream IO server, configure ZFS storage pools and describes replication features of ZFS storage, such as mirrored storage pool configuration.

Creating and Destroying ZFS Storage Pools

ZFS uses the concept of storage pools to manage physical storage. The storage pool describes the physical characteristics of the storage (device layout, data redundancy, and so on) and acts as an arbitrary data store from which file systems can be created.



Avid recommends to always check if you have a valid backup of your data before attempting to make any changes to storage pools.

To create a simple storage pool, go to the ZFS section of the System tab, and click on the Create Pool button. For more information, see ["The ZFS Settings"](#) on page 73.

Creating a Mirrored Storage Pool

A mirrored storage pool configuration requires at least two disks.

To create a mirrored storage pool:

1. To create a storage pool, go to the ZFS section of the System tab, and click on the Create Pool button.
2. In the "Create new pool" window, type a name for the pool, set **mirror** as the type, and select half of the devices to be used in this pool. (Our RAIDZ-1 configuration will consist of four drives).

3. Click on Create.
4. In the ZFS section of the System tab, expand the settings of the Storage pool created in the previous step and click on the gear icon representing Pool Maintenance.
5. In the Pool Maintenance:"pool_name" window, select the **Add new VDev** option.

In the following window, select the remaining drives to be included in the pool configuration, and press Add.

Adds a new VDev to existing pool

VDev Type: **mirror**

- ☒ /dev/sdc [1.75 TB]
- ☒ /dev/sdd [1.75 TB]
- ☐ /dev/sde [1.75 TB]
- ☐ /dev/sdf [1.75 TB]
- ☐ /dev/sdg [1.75 TB]
- ☐ /dev/sdh [1.75 TB]
- ☐ /dev/sdi [1.75 TB]
- ☐ /dev/sdj [1.75 TB]

Drives selected/minimum: 2 / 2

Add **Cancel**

6. The mirror configuration is now ready and visible in the ZFS settings.

Pool Status: ONLINE

Total Space: 3.36 TB

Used Space: 468.00 KB (0.0 %)

Mount Point: /Clips

Device	Endurance	Temp	State	Info & Maintenance
mirror-0			ONLINE	
sda	0%	23 C	ONLINE	
sdb	0%	23 C	ONLINE	
mirror-1			ONLINE	
sdc	0%	22 C	ONLINE	
sdd	0%	22 C	ONLINE	

Creating a Stripe Configuration

To create a simple stripe storage pool, go to the ZFS section of the System tab, and click on the Create Pool button. Create a new pool using the available drives. In the Create new pool dialog window, enter a name for the new pool, set **stripe** as the type, and select the drives to be included. Click Create.

Create new pool

Pool name: **Clips**

VDev Type: **stripe**

- ☒ /dev/sda [1.75 TB]
- ☒ /dev/sdb [1.75 TB]
- ☒ /dev/sdc [1.75 TB]
- ☒ /dev/sdd [1.75 TB]
- ☒ /dev/sde [1.75 TB]
- ☒ /dev/sdf [1.75 TB]
- ☒ /dev/sdg [1.75 TB]
- ☒ /dev/sdh [1.75 TB]
- ☐ /dev/sdi [1.75 TB]
- ☐ /dev/sdj [1.75 TB]

Drives selected/minimum: 8 / 1

Create **Cancel**

A Avid | Stream IO Port Usage Guide

This topic provides a list of network ports used by Avid | Stream IO systems.

Component	Port Number	Transport
Avid Stream IO FTP	21	TCP
Avid Stream IO SSH	22	TCP
NTP	123	UDP
Avid NEXIS Benchmark Agent	5013	TCP
Avid NEXIS Storage Manager	5015	TCP
Avid NEXIS Storage Manager	5015	UDP
Avid Stream IO Web Configurator	8080	TCP
Transfer Manager (for STP)	6539	TCP
OCIP ports (for control with MediaCentral Command) [<i>configurable</i>]	10001-10004	TCP
AirSpeed API (for control with MediaCentral Capture)	59451-59458	TCP

B Avid | Stream IO Best Practices

The following topic highlights important information you should keep in mind when working in an Avid | Stream IO environment.

The following topics are discussed:

- ["Avid | Stream IO Licensing" below](#)
- ["Avid | Stream IO Ingest Capabilities" on the next page](#)
- ["Avid | Stream IO Limitations and Useful Tips" on page 144](#)

Avid | Stream IO Licensing

Avid | Stream IO is offered with a software-only subscription that allows for regular software updates. When you purchase a license from Avid, you have the ability to customize the contents of that license.

The following table describe the available features of each license type.

License Type	Available Features
Avid Stream I/O Software, 2 Channel HD	This is the base license which has the following options and limitations: • ingest on max. 2, 4 or 8 channels in parallel in 720p, 1080i or 1080p25 or 1080p29 or 1080p23,98
Avid Stream I/O Software, 4 Channel HD	• limited to XDCAM and DNx codecs (no XAVC, no AVC) • no possibility to ingest proxy • no possibility to set OUT channels to 1080p50 or 1080p59
Avid Stream I/O Software, 8 Channel HD	 <i>A single UHD channel consumes 2 HD channels. If two UHD channels are required, you need to purchase a 4 channel license.</i>
Avid Stream I/O Software, 2 or 4 or 8 Channel HQ Proxy Add-on	This additional license extends the possibilities of the base license with the option to record with proxy.
Avid Stream I/O, 1080p/ UHD Add-on	This additional license extends the possibilities of the base license with the following options: • ingest in 3G formats: 1080p50, 1080p59 • set OUT channels to 3G format: 1080p50 or 1080p59
Avid Stream I/O, AVC/XAVC Add-on	This add-on extends the codec list with all flavor of AVC and XAVC-I for ingest.

Avid | Stream IO Ingest Capabilities

Avid | Stream IO is a single video ingest and playout server. This table discusses the ingest capabilities and best practices to keep in mind when setting up your ingest templates.

Wrapper	Every ingest can be wrapped either as OP1a or OPAtom file. Every OP1a ingest can be stored on the local storage or on an external one. OPAtom media can only be stored on Avid NEXIS.
Storage	Every ingest can be stored on the local storage (the "Clips" pool) or on an external storage. Other types of external storage can be also mounted after the transfer speed is fully checked and certified to avoid any corruptions to the final recordings caused by slow drives. When ingesting to the local storage, then the only available wrapper is OP1a and check-in to MediaCentral Production is not available. Only recordings stored to Avid NEXIS can also be checked-in to MediaCentral Production.
Registration in the inventory	If OP1a is stored locally (on the internal RAID), then it is also Registered to the internal Inventory (a local database managed by Commander). In all other cases, the Register functionality is not supported.
Check-in to MediaCentral Production (PAM)	If an OPAtom file is stored on NEXIS, it can also be checked-in to PAM, as long as MediaCentral Production Management is correctly configured in the External Sources section on the Commander page.
Proxy (AUX Media)	For each ingest, regardless if it is wrapped as OP1a or OPAtom, additional proxy files (referred to as AUX Media) can be created on the fly. The proxy files can be also be stored locally or on an Avid NEXIS (or any other external storage assuming the same conditions as for the high-resolution clip). Proxy files cannot be registered to the internal Inventory.
Media Copy	Ingested media can have its copy saved in parallel to the ingest itself. Examples of such workflow are presented below: - High resolution video plus its proxy are ingested to local storage. Media Copy is enabled for both assets (high-res and proxy), thus the copies of both of these recordings are simultaneously stored to Avid NEXIS. - Media Copy can be triggered for both: high-res and proxy, just for one of them or completely disabled. You can define the name of the copied media, its location or if it is checked-in to Production Management. If check-in of main media is enabled, then the copy (Media copy) will also be checked-in to the same Production Management instance. There is no option to define a different PAM location for Media Copy.
ANC	When the signal is coming from SDI (through the Blackmagic DeckLink board), it is possible to record Closed Captions as ANC data. It is available in both: OP1a as additional track visible in certain OP1a editors. OPAtom users will see an additional D-track in Interplay Access which can be read by Media Composer. All ingested formats support closed captions. Please refer to the Media Composer documentation to make sure that the editor can work with the CC in the given format. For NDI ingest, ANC data is not supported in NDI protocol.  <i>ANC recording and playout is available and supported only when there is no cross-</i>

conversion between the fps and resolution of clip format and ingest signal or output channel.

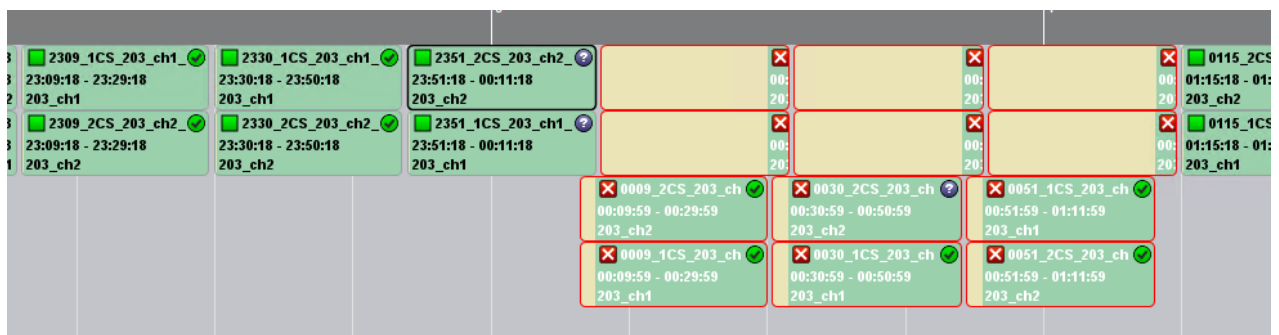
Check in to PAM of Proxy (AUX Media)	If the high-resolution clip is checked-in to Production Management and the proxy is wrapped in OPAtom, then it will also be checked-in to PAM. Check-in is supported to only one PAM instance.
Edit-while-capture (EWC)	All media recorded by Avid Stream IO are regarded as growing files. It means that a growing OP1a can be registered in the local inventory and played on-air. Also, OPAtom media can be checked-in to PAM as growings, to be then edited while growing in the Avid Media Composer. When you are working in an environment without MediaCentral Production Management, then a growing AAF file can be generated along the OPAtom media, and used within Media Composer.
Play-while-transfer (PWT)	
Play-while-recording (PWR)	

Avid | Stream IO Limitations and Useful Tips

For best results, Avid recommends that you take the following points into consideration when planning and configuring your Avid | Stream IO environment.

MediaCentral | Capture

- When integrating with MediaCentral | Capture, make sure the same format is used across the entire environment (such as 1080i50). As an example, it is not possible to use Capture to control one channel in 1080i50 and a second channel in 1080i59.
- MediaCentral | Capture needs to be restarted after each change of the Avid | Stream IO ingest template.
- On very rare occasions, when scheduling Avid | Stream IO ingest with MediaCentral | Capture, users may observe missing transfer statuses.
- Sporadically, when a break between scheduled recordings on a channel in MediaCentral | Capture is too short, users may see an “Undefined transfer status” in Capture. This can also happen when recordings slightly overlap each other on channel:



- When unexpected events, errors or warning appear in the Capture application, it is recommended to use the Avid | Stream IO Remote Console as backup or recovery measure. If a retransfer from Capture fails, users can retry directly from the Remote Console using an ingest template for export. Whenever users observe issues with a certain Avid | Stream IO channel in Capture, this channel should be aborted from the Remote Console.

Recording

1. When a recording is ongoing, the thunderbolt icon in the Clips Inventory is green. This means that the clip is growing and the physical file is open. In cases when there is a power failure during the recording or some disaster happens to the server, the thunderbolt may remain green. It is possible that this file may still appear open but it has not been recorded properly. It is recommended to check such files and re-encode them in post production, if required. You can export these files from the server using FTP or through Samba share (Clips_WF) for re-encoding.
2. After creating a new recording template, it is recommended to perform a test recording to ensure that the environment is fully operational.
3. When the signal is unstable, the black filler is automatically enabled. Thus, when there are many resiliency events when a recording is ongoing, there might be a slight audio-video desynchronization in the produced recording. For that reason, it is advised to always make sure that the cabling is properly set up and if possible, stop the recording before changing the input source. In extreme situations where multiple instances would lose signal while recording, the final clip might not be playable and may need manual re-encoding in external editors.
4. Occasionally, some proxy video recordings experience a minor drop of quality for one or two frames. This issue will be addressed in the next release.
5. It is not possible to export recordings with proxy in the Op1a format. You need to re-wrap the proxy to OPAAtom when configuring export options, or disable proxy completely.
6. The export functionality may behave incorrectly for external clips. The export procedure, driven by the TransferProcess engine, is designed to export local Avid | Stream IO recordings out from the Clips storage. Certain codecs may cause various issues (unsupported format errors, audio problems, TransferProcess bar frozen) when trying to export external clips (i.e.: those arrived through STP).

Play-while-Transfer & Send-to-Playback

1. Growing clips are not immediately available for playout, because a safe buffer of frames needs to be recorded first to avoid reaching end-of-file problems which may pause the playout.
2. It is not recommended to use ICS for STP naming convention or re-transfers. Using basic lettering is recommended for the 2024.2 version.
3. For intra-frame clips transferred via Send-to-Playback from Media Composer, it is currently not possible to export them from Avid | Stream IO in the OPAAtom pattern. You can only export them using the OP1a wrapper.
4. Export of growing clips is not possible. As an example, when you start recording to local storage, or STP is in progress, the file can be exported only after the recording or the STP process is complete.

Playout

1. The "dirty" NDI preview might be shaky and unstable when there is a mismatch between the channel format and the video clip format. Sporadically, single frames can also be dropped on the dirty channels.
2. This document lists all codecs supported and available for ingest scenarios (listed in ["Supported Media Formats" on page 148](#)). It can be assumed that these codecs will also be supported for playout. Codecs not mentioned on this list may sporadically be played incorrectly.
3. Clips or images with alpha are currently not supported.
4. Sporadically, users may observe that data visible in the MediaCentral | Command inventory does not match the Avid | Stream IO Remote Console. It is recommended to restart the FastServe | Playout Plugin for Command to reload the inventory list.

Other

1. It is advisable not to change the zoom value of the web browser window. The default - 100% preview is expected and the Web Configurator layout was designed with a 100 % zoom value in mind.
2. The 3G SDI output signal is produced in Level A SDI standard.
3. When downloading logs or support archives, it is not possible to navigate out of the current page. You cannot leave, close or refresh the current page until all files are downloaded.
4. When you encounter a license activation error, retry in a couple of minutes. This issue may be caused because of connection issues to the licensing server.
5. It is highly recommended to perform regular database and internal storage cleanup using the DB Cleaner section in the Commander tab of the Web Configurator. These cleanup operations should not be scheduled during prime time, as they might cause interruptions to on-air playout or ongoing recordings. It is a known issue, that when performing a big system cleanup communication issues with the database might occur.

Remote Console Useful Tips

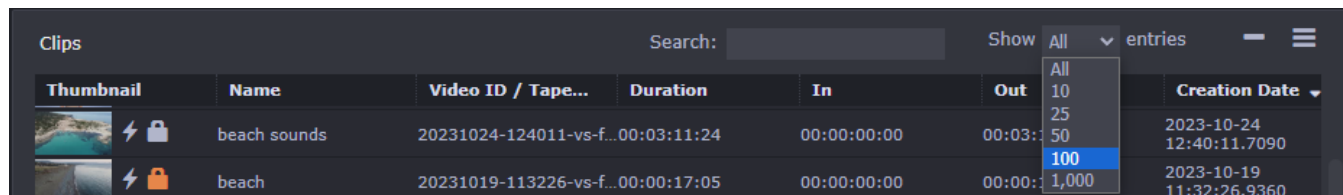
The Avid | Stream IO Remote Console allows to easily monitor the playout channels and inventory on the server. With the recent addition of the Playlists Inventory panel , you can also create numerous playlists and send them directly to your playout channels.

This topic contains useful information about the Remote Console capabilities.

Refreshing of the Remote Console

When the clips inventory contains a large amount of items (i.e. over 5000), the overall performance of the Remote Console will be affected. Reading the inventory list will be slower and some of the items might not be read at all. The thumbnails are loaded in the background and it is possible that the inventory list appears to be complete but the thumbnails are missing. It is recommended to wait till all thumbnails are loaded. The remote preview might also experience minor glitches when the inventory is large. When this issue occurs, restart the Video Engine and Commander components in the Web Configurator.

Please note that the bigger the number of clips in the Clips Inventory, the slower the refresh rate and the overall performance of the Remote Console. If your Clips Inventory contains a large number of items (above 100), it is generally not recommended to use the "All" value for the **Show Entries** parameters. To maintain a good Remote Console performance, limit the number of items displayed on one page to "100".



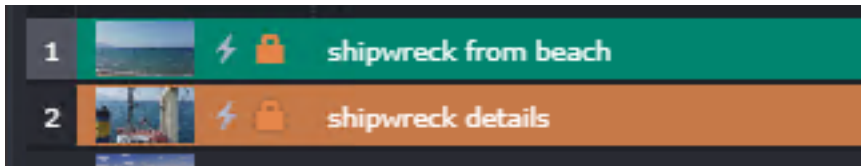
Thumbnail	Name	Video ID / Tape...	Duration	In	Out	Creation Date
	beach sounds	20231024-124011-vs-f...	00:03:11:24	00:00:00:00	00:03:11:24	2023-10-24 12:40:11.7090
	beach	20231019-113226-vs-f...	00:00:17:05	00:00:00:00	00:00:17:05	2023-10-19 11:32:26.9360

Working with the Playlists Inventory Panel

The list below details certain workflows elements which should be considered when working with the Playlists Inventory panel :

1. **Auto lock of playlist items** - whenever a clip is added to a playlist, it automatically receives a lock status (indicated by an orange lock icon in the Clips Inventory panel) to prevent accidental deletion. However, this lock also prohibits the users from editing certain parameters of the clip (such as the thumbnail or the clip name). Thus, if these parameters need to be changed, the clip must be removed from all playlists.

2. **Images on playlists** - it is not allowed to use image items on the playlists. Although it is technically possible to add such entries, such action may introduce unwanted consequences in cueing and playout of subsequent clips.
3. **Cue of next playlist item** - the Cue of subsequent playlist item is started 10 seconds before the current clip finishes playout. This means, that if the clips are shorter than 10 seconds, then more than one clip may be cued and prepared for going on-air.



In the picture above, both clips are marked with an orange lock. At this moment, it is not possible to insert a new clip in between, because it is less than 10s for clip number two to go on-air.

4. **Editing on air** - because of the cueing mechanism described in the point above, it is recommended to be very mindful when editing a playlist which is currently on-air.
5. **Loop a playlist** - you can loop an entire playlist either by using a dedicated Loop button in the Playlist Editor, or by dragging a playlist from the Playlists Inventory panel into a playout channel preview window while holding down the CTRL key.
6. **Number of items** - a single playlist can contain up to 100 items.

C Supported Media Formats

Avid supports a variety of media and container formats. As long as your ingest or playout is in a supported media format and is wrapped in a supported container format, you should be able to play that asset through the Avid | Stream IO Remote Console.

Avid | Stream IO Ingest

Avid | Stream IO is capable of recording video over SDI through the Blackmagic card. Available configurations are 1,2,4 or 8 parallel ingest / playout channels for HD formats, or up to 2 parallel UHD channels.

 *NDI ingest is not yet available in the 2024.2 release, but you can use NDI for dirty preview.*

The following codecs are supported for ingest in the v2024.2 release:

- AVC Intra Class 50
- AVC Intra Class 100
- AVC LongG 12
- AVC LongG 25
- DNxHD HQ
- DNxHD HQX
- DNxHD SQ
- DNxHR LB
- XAVC-I Class 100
- XDCAM EX 35
- XDCAM HD422 50
- DNxHR UHD HQ
- DNxHR UHD HQX
- DNxHR UHD SQ
- XAVC-I UHD Class 300

Various codecs have different frame layout capabilities (frame resolution and FPS). The tables below illustrate the capabilities of each codec.

-  supported as OP1a and OPAtom
-  Not supported

HD Formats

	720p25	720p29,97	720p50	720p59	1080i25	1080i29,97	1080p23,98	1080p25	1080p29,97	1080p50	1080p59,94
AVC Intra Class 50	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
AVC Intra Class 100	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
AVC LongG 12	✗	✗	✗	✓	✓	✓	✗	✓	✓	✗	✗
AVC LongG 25	✗	✗	✗	✓	✓	✓	✗	✓	✓	✗	✗
DNxHD HQ	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗
DNxHD HQX	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗
DNxHD SQ	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗
DNxHR LB	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓
XAVC-I Class 100	✗	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓
XDCAM EX 35	✗	✗	✓	✓	✓	✓	✗	✓	✓	✗	✗
XDCAM HD 50	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗



Although Avid | Stream IO can record in DNxHR LB, it is not possible to use it in STP workflows.

UHD Formats

	3840x2160p50	3840x2160p59
DNxHR UHD SQ	✓	✓
DNxHR UHD HQ	✓	✓
DNxHR UHD HQX	✓	✓
XAVC-I UHD Class 300	✓	✓



Please refer to the official documentation of your Blackmagic DeckLink card to learn more about supported standards.

Proxy is available in the H.264 AVC codec. For each frame layout and bitrate, there is a certain set of supported proxy resolutions and bitrates . Please note that FPS for proxy remains the same as for high-res.

High-res layout	Available proxy	Proxy layouts
720p25	H264 Proxy LB	640x360 0.8Mbps
720p29,97		960x540 0.8Mbps
1080i25	H264 Proxy SQ	640x360 1.5Mbps
1080i29,97		960x540 1.5Mbps
1080p23,98	H264 Proxy HQ	640x360 3Mbps
1080p25		1280x720 3Mbps
1080p29,97		1920x1080 3Mbps
720p50	H264 Proxy LB	640x360 0.8Mbps
720p59		960x540 0.8Mbps
1080p50	H264 Proxy SQ	640x360 1.5Mbps
1080p59		960x540 1.5Mbps
2160p50; 2160p59	H264 Proxy HQ	1920x1080p 6M
	H264 Proxy LB	960x540p 1.5M
		640x360p 1.5M
	H264 Proxy SQ	960x540p 3M
		640x360p 3M