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digital media services

MIP Admin Guide 8.0



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1 INTRODUCTION

1.1 Purpose and Scope

Welcome to the Volicon, a division of Verizon Digital Media Services Media Intelligence Platform™ (MIP) Admin Guide. This document will provide the details and instructions necessary to guide you through the configuration and operation of the MIP, addressing specific system and network administrator functions, in the Volicon, a division of Verizon Digital Media Services environment. These areas include setting up...

- Inputs from video networks and set top boxes
- Channel Encoders
- IP network configuration
- Alerting thresholds
- User accounts
- Other system related parameters in the MIP

It is also useful for advanced users to gain further understanding of the system.

1.2 About the Media Intelligence Platform™

The Media Intelligence Platform™ suite of applications transforms content creation, sharing, and monitoring of broadcast products. It allows you to create and distribute high-quality content faster while immediately enabling response to the competition, advertisers and regulatory entities. Most importantly though, the Media Intelligence Platform™ enables you to provide an improved broadcast product that will increase approval from all audiences.

What if you had a Super DVR?

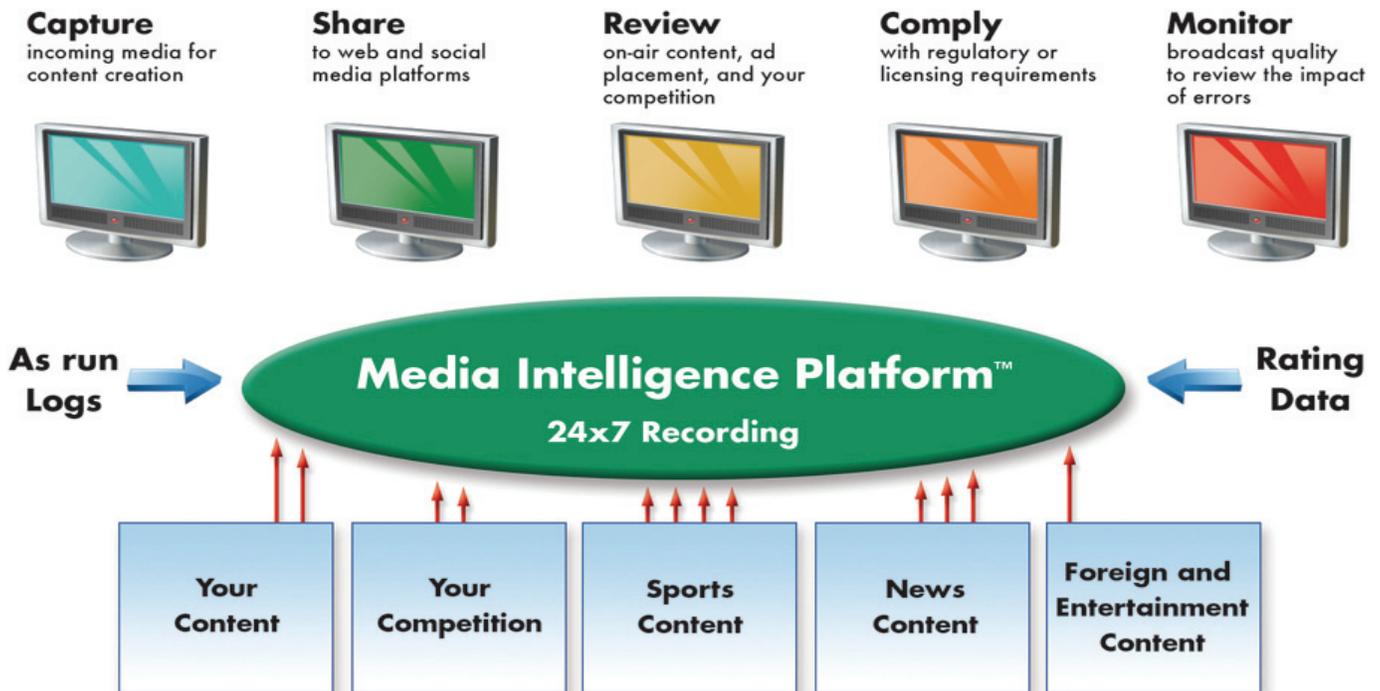


Figure: MIP Functional Diagram

The MIP continuously ingests the video and audio from multiple sources. MIP works with networks of all sizes. The system is preconfigured with default settings so that small installations can work right out of the box. For larger installations, you can define as many Probe servers and their streams in the Central Server as you need to completely monitor your network.

1.3 Conventions Used in this Manual

Type	Classification
Boldface	Denote names and labels in the Graphical User Interface (GUI)
Capitalization	Denotes key words module names, components and signal labels
<Boldface>	Denotes push buttons and other similar user input devices
@Hyperlink	Automatic links to other sections in the document, denoted by boldface and the “@” prefix

1.4 Definitions and Acronyms

8VSB	8-level vestigial sideband modulation - used for ATSC over the air broadcast
AC3	Dolby Digital Audio Codec 3 - compression used by ATSC
AFD	Active Format Description - metadata describing format i.e. 4:3 or 16:9
ARL	As Run Logs - use customer extracted program schedules
ASI	Asynchronous Serial Interface - used to carry MPEG-TS
ATSC	Advanced Television System Committee – set of standards for US digital television
Bookmark	Short program segments marked on the MIP server to facilitate auditing and sharing
CALM Act	Commercial Advertisement Loudness Mitigation – FCC requirement for audio loudness levels
CC/TT	Closed Captioning/ SMPTE Timed Text - Protocols used to add text description of the audio
CDN	Content Delivery Network – distributed servers used to source programs as close to the customer as possible.
CEM	Content Export Module – optional software package to export program clips to social media sites.
Clear QAM	Clear Quadrature Amplitude Modulation – non encrypted Cable video distribution
Component Video	Analog video with separate Red, Green, Blue channels using three RCA connectors
Composite Video	Analog video over a single RCA connector
Cron	Time based job scheduler.
Dialnorm	AC3 metadata used to control playback gain
DPI	Digital Program Insertion – Metadata that allows downstream insertion of commercial or short programs.
DVB	Digital Video Broadcasting - international suite of digital television standards

Encoder	MIP module that receives and processes media signals
Fault Clips	Portions of audio or video stream that fails to meet predetermined MIP quality thresholds
GPI	General Purpose Interface - Metadata used for broadcast automation
HDCP	High Bandwidth Digital Content Protection - the digital copy protection protocol built into HDMI
HDMI	High Definition Multimedia Interface - digital interface used to transport audio and video short distances
Hot Folder	Used to temporally store Asrun files
Maximum Time Accuracy	Provides frame-by-frame timing accuracy
Metadata	Additional information carried by the program used to describe program details
MIB	Management Information Base - database used by Simple Network Management Protocol (SNMP)
MIP	Media Intelligence Platform
MPEG	Motion Picture Expert Group - international organization that sets audio and video compression and transmission standards
MPEG-TS	MPEG Transport Stream - a standard container for audio, video and Program and System Information Protocol (PSIP)
Multiview	MIP feature that allows you to configure multiple channels and monitoring widgets into a single display screen
NAVE	Nielsen audio video encoder - psychoacoustic symbols inserted in programs to facilitate automatic viewer tracking
NTP	Network Time Protocol - Internet standard used to synchronize computer real time clocks.
IP	Internet Protocol - the method used to send data from one computer to another
Probe	Ingest server housing one or more Encoders
GPI	General Purpose Interface - Metadata used for broadcast automation

HDCP	High Bandwidth Digital Content Protection - the digital copy protection protocol built into HDMI
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NTP	Network Time Protocol – Internet standard used to synchronize computer real time clocks.
IP	Internet Protocol – the method used to send data from one computer to another
Probe	Ingest server housing one or more Encoders
Probe Manager	Windows application used to directly manage Probe functionality
PSIP	Program and System Information Protocol – method used to transport program metadata such as: sub channels, program guide, and content ratings.

S-Video	Separate Video – Variation of analog composite video that separates luminance (black and white) from chrominance (color) to enhance video quality
SDI	Uncompressed standard (SD) or high definition (HD) digital video serial data interface
Services	A/V program content with associated metadata
SMPTE	Society of Motion Picture and Television Engineers – industry group that creates numerous technical standards
Storyboard	Sequence of video frames to assist visualization
W3C	World Wide Web Consortium - sets standards to advance use of the world wide web
XDS	Extended Data Services – analog NTSC metadata

2 MIP PLATFORMS

Volicon, a division of Verizon Digital Media Services has numerous platforms optimized to meet the needs of a wide variety of customers. Systems are customized per customer requirements. Below is an overview of different system classes.

Enterprise

The Enterprise platform offers the highest degree of scalability with enterprise reliability, and the maximum amount of storage. Enterprise systems use RAID 6 for increased reliability.

Professional

The Professional platform provides a cost-effective, system for content monitoring, logging and compliance workflows. It serves as a cross-browser and cross-platform solution that offers greater portability, scalability, and redundancy, with ease of use and extensibility. A Professional class system is equipped with RAID 5 and typically a 2U chassis form factor.

Scout

Scout is a cost-effective yet powerful video network monitoring device. It enables Broadcasters, Networks, as well as Cable and IPTV operators to proactively perform quality checks at audio/video service handoffs, to ensure the highest quality experience for their customers. Scout is the smallest server, using a 1U chassis which supports a single capture card.

3 SERVERS

Volicon, a division of Verizon Digital Media Services offers a number of different rack mounted servers to meet customer requirements.



Figure: Typical MIP Server

3.1 Server Dimensions and Power Requirements

Server	Hard Drive Storage Capacity	Power Requirements All supplies 50/60Hz	Height is multiple 1U, (1.74 inch, 44.45 mm)	Weight
Scout Observer	1 bay	Single 200W 100-240V 4.2A	1U x 14.0" (346mm) deep	12.8lbs (6.8kg)
Enterprise Observer TS	4 RAID hot swap 1 aux bay	Redundant Supplies 700W 100-140V 8.5-6.0A 750W 180-240V 5.0-3.8A per supply	1U x 25.6" (650mm) deep	36 lbs. (16.3kg)
Enterprise Observer TS	8 RAID hot swap 1 aux bay	Redundant 700W Supplies 100-240V 10.0-4.0A per supply	2U x 25.5" (648mm)	52lbs (26.6kg)
Observer	8 RAID hot swap 1 aux bay	Redundant 800W Supplies 100-240V 10.0-4.0A per supply	3U x 25.5" (648mm) deep	72lbs (32.7kg)
Observer	16 RAID hot swap 2 aux bays	Redundant 800W Supplies 100-240V 10.0-4.0A per supply	3U x 25.5" (648mm) deep	72 lbs. (32.7kg)
Observer TS	24 RAID Hot swap 2 aux bays	Redundant 900W Supplies 100- 240V 11.0-4.5A per supply	4U x 26.0" (660mm) deep	75lbs (34.0kg)

Table: Server Space and Power requirements

3.2 Mounting, Power, Basic Connections

Servers mount in standard 19-inch racks. Follow your rack manufacturer's mounting instructions for safe and stable mounting. If the server power supply has a 110/240 switch, make sure to set it to the proper voltage 120/240VAC, 50/60 Hz.

Plan for your rack space and cooling requirements by creating a table similar to the one shown above. List your servers, set top boxes, and related equipment. If possible, include a PC or laptop dedicated for use with the MIP servers.

Access and peripherals

- ← It is recommended to attach a dedicated display, keyboard, and mouse so that during urgent service there is no delay in logging into the server.
- ← Attach LAN and video cables as needed per application.

3.2.1 Power Distribution

Servers should preferably be on dedicated circuits so that if one trips, it will not affect more than one power supply module per server.

MIP systems should be connected to a UPS or a similar high availability power supply.

3.2.2 Total Power

Add the power requirements of all other onsite equipment to obtain total system power consumption.

3.2.3 HVAC

Ensure your HVAC has sufficient cooling capacity to handle the total power (Watts) of heat dissipated by the servers, as well as your other onsite equipment.

3.2.4 STB Shelves

If you use Set Top Boxes (STBs), Volicon, a division of Verizon Digital Media Services recommends mounting these in 19 inch racks (482.6 mm) for solid installation. Locate the shelves close to the respective Probe server to reduce cable lengths. As an example see the STB shelf shown below. It fits in a 19 inch 2U high rack.

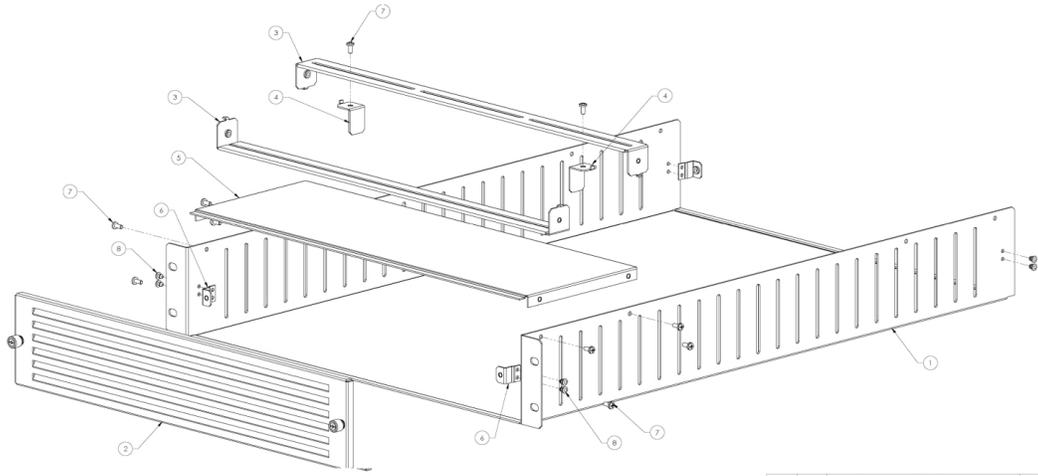


Figure: Set Top Box Mounting Shelf

3.2.5 Typical Rack Layout with Set Top Boxes

This section describes rack layout and interconnections scenarios. Typical deployment will have a Central Server; one or more Probe Servers w/capture cards, and optionally, set top boxes. Small installation configurations may be able to combine the Central Server and Probe functionality on a single hardware server.

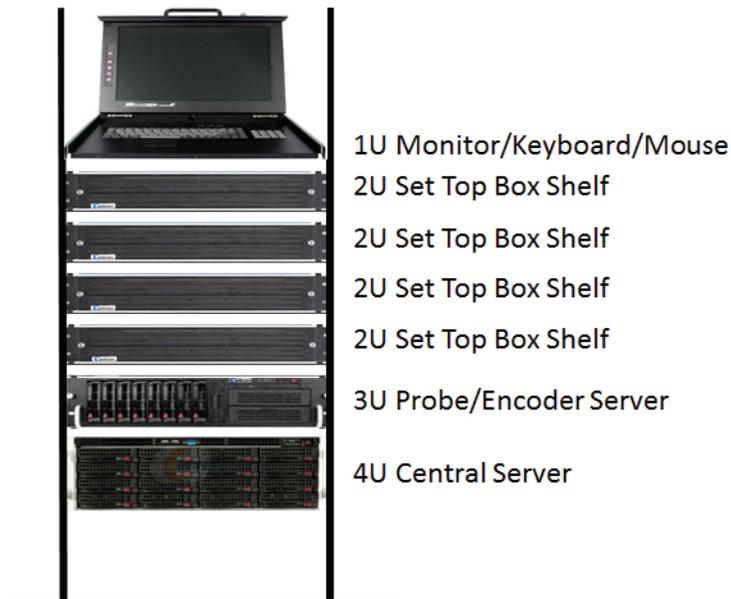


Figure: Typical MIP Equipment Rack

3.3 Server Front Panel Indicators and Controls

For security purposes a locking front cover prevents access to drive bays, auxiliary drives, and the power and reset buttons. With the security panel installed, only the system level status LEDs are visible.

Note: there may be minor differences in Panel Indicators depending on the specific server and configuration.

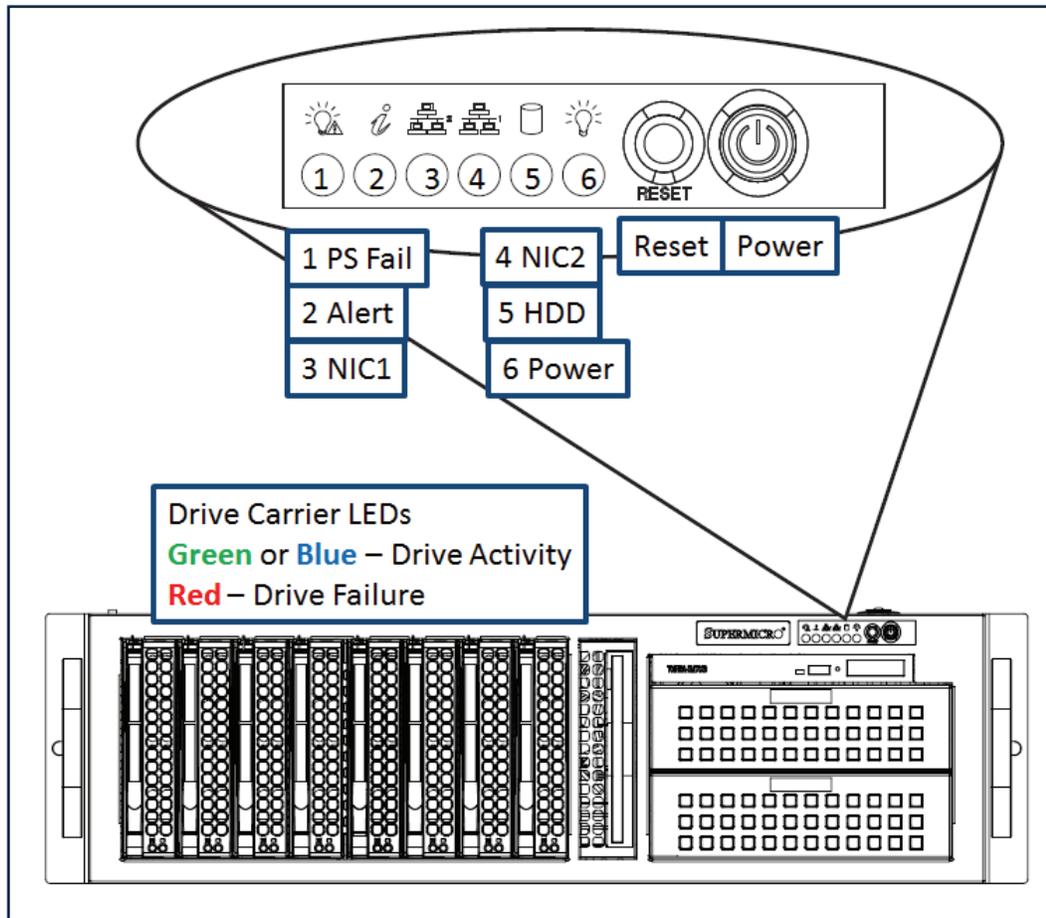


Figure: Typical Server Indicators and Controls (Security Panel Removed)

3.3.1 Power On and Shutdown

To power up the server remove the locking front panel security cover and press the Power switch.

After powering up the MIP server, wait for the login screen to appear. If you are logging into the system for the first time, consult the "Read Me First" guide or contact the Volicon, a division of Verizon Digital Media Services support team.

Note: MIP runs as a service (configured by default) and *does not* require a user/admin log in to operate.

To shut down MIP, from the console use the MS Windows **<Start>**□**<Shutdown>** sequence. To restart the server, use the **<Start>**□**<Restart>** menu.

CAUTION

DO NOT remove power or press the Reset button to reboot the server. This uncontrolled shutdown can corrupt the application database, and require re-indexing by a MIP support engineer).

If the Windows UI is not accessible, use the front panel **<Power>** button to perform an orderly server shutdown.

3.3.2 Server Front Panel Indicators

There are several LED indicators on the control panel and others on the drive carriers, to keep you informed of overall system status and the activity and health of specific components. This section explains the meanings of the LED indicators and the appropriate responses.

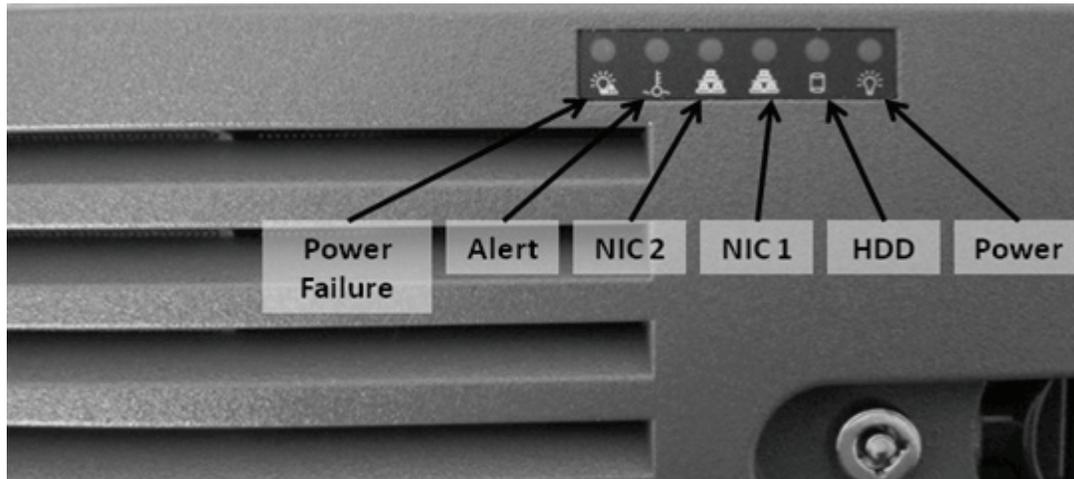


Figure: MIP Front Panel Indicators (Security Panel in Place)

Indicators:



- Power Failure:** When this LED flashes, it indicates one of the power supplies has failed.
- Alert:** This LED is illuminated when an alert condition occurs. See the table below for details.



Alert Status	Description
Constant red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.

Constant blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

Table: Chassis Indicators



- NIC2:** Indicates network activity on LAN2 when flashing.
- NIC1:** Indicates network activity on LAN1 when flashing.
- HDD:** Indicates IDE channel activity. SAS/SATA drive and/or DVD-ROM drive activity when flashing



- Power:** Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

3.3.3 Drive Carrier Indicators

Each drive carrier has two status LEDs. They are normally hidden behind the security panel. Remove the panel to access the drive bays.

Green or Blue: Drive activity. Flashes when drive is accessed.

Red: Drive Failure.

3.4 Server Rear Panel Connections

Power and video inputs are located on the back panel.

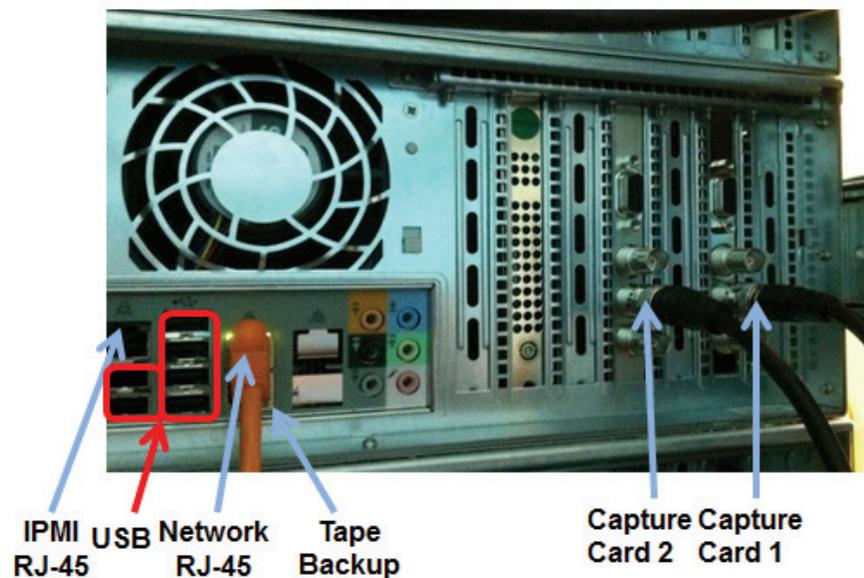


Figure: Typical Server Rear Panel

3.5 Capture Cards

MIP supports a wide range of RF, analog, baseband, and digital video capture cards to meet customer requirements. Capture cards are described in more detail in [Section 7](#).

- BlackMagic: Decklink Duo, Decklink Quad, Decklink SDI 4K, Extreme 4K, Intensity PRO 4K, Mini Recorder, Mini Monitor, Studio 4K
- Dektec: DTA-2136, DTA-2137C, DTA-2138B, DTA-2144B, DTA-2145, DTA-2160
- Hauppauge: WinTV-HVR-2255
- Osprey: 160e, 460e

4 SOFTWARE INSTALLATION

MIP Central Server and Probe Server software is preinstalled by Volicon, a division of Verizon Digital Media Services.

4.1 Central and Probe Server Operating Systems

The MIP Central Server can be installed on 64-bit computers running any of the following Microsoft operating systems:

- Windows 7
- Windows 8.1 (for OTT device direct Probe server only)
- Windows 10
- Windows Server 2012 R2

4.1.1 Additional Microsoft Software

Central Server utilizes the following additional MS software packages:

- Microsoft .NET Framework 3.5 SP1
- Microsoft Message Queuing (MSMQ)
- Windows Installer 4.5 Redistributable
- Microsoft Visual C++ 2005 SP1 Redistributable
- Microsoft Updates – Turned off during normal MIP operation

4.1.2 Third Party Software

MIP makes use of several third-party software packages. The following software packages are preinstalled when the system is ordered.

- [Apache](#) – web server
- [Hmailserver](#) Outgoing mail server
- [Redis](#) – object cache
- [MariaDB](#) – Database
- [PHP](#) - Scripting

4.2 Client Workstation

PC client may be either 32 or 64-bit computers running the following operating systems:

- Microsoft Windows 7
- Microsoft Windows 10
- Apple Mac

4.2.1 Client Side Browsers

MIP supports the following browsers:

- Chrome - Uses [HTML5](#)
- Edge - Uses [HTML5](#)
- Firefox - Uses [Silverlight V5](#)
- Internet Explorer 10 & 11 - Uses [ActiveX](#)
- Safari - Uses [HTML5](#) (Mac O/S only)

4.3 Initial MIP Deployment

Volicon, a division of Verizon Digital Media Services installs and tests the customer configuration prior to shipping. Onsite installation consists of integrating the servers into your corporate network, and connecting the Encoders to ingest the appropriate channels. Once the system is up and running, the MIP administrator needs to configure social media publishing profiles and create the user accounts.

In general the default admin account username/password is Admin/pass but check with Support to make sure.

4.4 Optional MIP Modules

- Content Export Module (CEM) – allows users to save clips to their computer and push clips to social media sites. It is also required to enable clip export when using non-IE browsers.
- Active Directory integration
- Thumbnail Server
- Indexing Server

4.5 Managing MIP Software Updates

Volicon, a division of Verizon Digital Media Services, Support is responsible for installing CS and Probe software updates.

Updates to the Active-X viewer, a component of the CS, are automatically pushed to the client when the user logs in. Installing the ActiveX viewer requires admin privileges on the client.

4.6 Upgrading from Previous Versions of Observer

There are significant differences between previous versions of Observer and MIP. Please contact Volicon, a division of Verizon Digital Media Services, for additional information about upgrading.

5 ADDING MIP SERVERS TO YOUR NETWORK

Assign each server a static IP address. If you are using the Internet for your connections, place firewalls between your MIP Encoder servers and their Internet connection, and between the Central Server and its Internet connection. As a minimum, assign a DNS entry to the Central Server to facilitate client access. Currently the MIP suite is IPv4 only.

5.1 IP Port Utilization

Numerous TCP/UDP ports are used for intra application communication and to provide MIP client access.

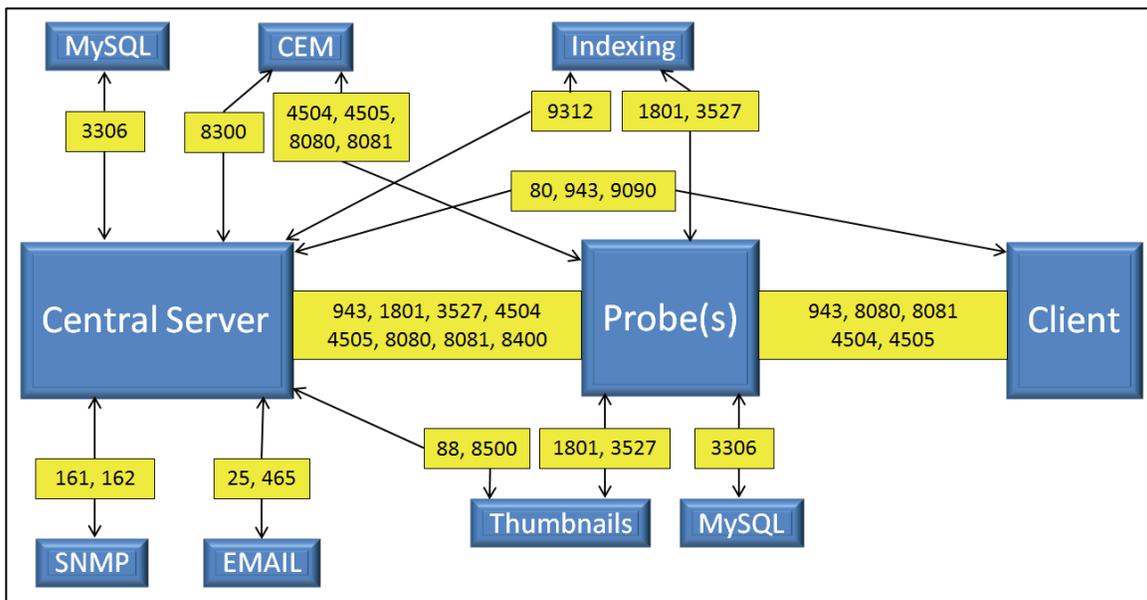


Figure: Communication Ports

5.1.1 Central Server

- 25 SMTP for Hmailserver outgoing email alerts
- 80 client HTTP web server
- 88 NGIX streamer
- 161, 162 SNMP
- 943, 4504, 4505 Silverlight
- 1801, 3527 MSMQ (MS Message Queue)
- 3306 MYSQL
- 8001 Encoder

- 8080, 8081 Mediahub
- 8400 Volicon updater
- 8220 Listener
- 8300 CEM (Content Export Module)
- 8500 Thumbnails
- 9090 Web Socket
- 9312 Sphinx search engine

5.1.2 Probe Server

- 943, 4504, 4505, 4506 Silverlight
- 1801, 3527 MSMQ (MS Message Queue)
- 8220
- 8400 Volicon updater

5.1.3 Client

- 80 HTTP
- 943, 4504, 4505 Silverlight
- 8080, 8081 Mediahub
- 9090 Web Socket

5.2 Network Bandwidth

Provide sufficient bandwidth between server and the monitoring facility. Size the bandwidth to be 1.2-1.5 times the sum of the viewed stream's bandwidth, with a minimum connection speed of 10 Mbps.

6 INITIAL O/S LEVEL SETUP

MIP servers run different versions of Microsoft Operating System and come with the MIP suite preinstalled. The administrative task is to integrate the servers into your network.

6.1 Active Directory (AD) Integration

Active Directory integration is an optional MIP module. A Volicon, a division of Verizon Digital Media Services, Support Engineer will need to be involved in the process of implementation.

6.1.1 Prerequisites

The following prerequisites need to be met for the AD integration to proceed:

- The Support Engineer needs to know the IP address or the Fully Qualified Domain Name (FQDN) of the AD server. The FQDN is more flexible and is preferred.
- Add the MIP Web server to the AD domain.
- Create a simple domain user with a non-expiring password and notify Support.
- Provide the Support engineer with your Organizational Units (OUs) and their basic structure.
- Upgrade all the MIP servers to the latest qualified build prior to integration.
- Configure all your client browsers to have the Web server address in their Intranet Zone or IE trusted zone.

6.1.2 AD Operation

- After all prerequisites are met, you must define several groups in the MIP. To do so, you can access the system with a non-AD password through the URL <http://<server>/admin/>. When using AD integration, the user's set of permissions (including accessible channels and maximum number of concurrent channels played) is defined on the MIP groups (User Management section).
- You must also create identical group names as defined in MIP in the AD. Once completed, the administration of users' access to MIP and their privileges will only be administered through the AD by adding or removing users as members of the different groups. Note: One exception is the number of concurrent channels. By default there is no limit; if defined, the MIP settings will be used. Furthermore, if multiple groups define the number of concurrent channels, the highest number will be used even if it is set to unlimited.
- Initially, the user accesses the MIP system through a browser with only an IP address or a Domain Name. Access to the MIP system is provided automatically according to the user's assigned group(s) in AD, matching the user by group name to the defined MIP groups. If the user is a member of several groups, their effective permissions will be the sum of all permissions of those groups.
- The user's name is automatically created internally within the MIP upon first logon. It is then associated with the user generated content in the MIP - clips, programs etc.

6.2 Antivirus Excluded Storage Areas

Ensure that any installed antivirus program does not interfere with the MIP Programs/services. Antivirus programs can use system resources needed by MIP services, causing them to hang or crash.

- Turn off all "on-access" scanning.
- Schedule virus definition updates and system scans to occur during low usage times and when technicians are available to verify that restarts (if any) have completed to run and have not hung up the system.
- Certain directories need to be open and free for continuous system access. Ensure that the following folders are removed from scans:

C:\ProgramData\Redis	Object cache
C:\program files\MariaDB 10.0	Database
C:\program files\Volicon \	Volicon software
C:\thumbnails	Media thumbnail storage
C:\video\	Content Storage

Table: Antivirus Exclude Configuration

6.3 Remote Server Access

MIP administration management access uses the same web based user interface as other users. As an administrator (with admin privileges) you have access to system level configuration features that provide the ability to add and delete user accounts.

From time to time, direct access to the Windows server may be required. If the particular server is not equipped with local user access capabilities, the built in Microsoft RDP remote desktop features is handy. There are several precautions to keep in mind when using MS remote desktop to prevent interfering with MIP audio and video processing.

6.3.1 Server Side Microsoft RDP

Each server that requires remote access will first need to have the feature enabled. Then select which accounts are able to remotely access the computer. The Windows administrator account is automatically granted access when remote desktop is set up.

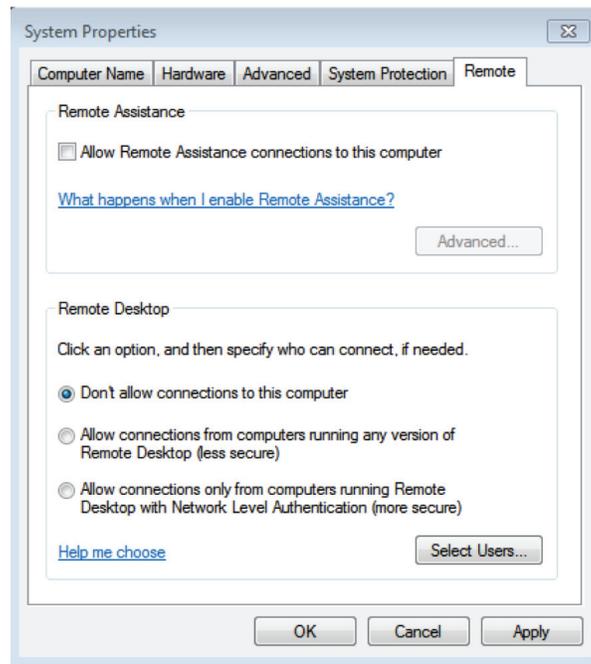


Figure: Sever Side Remote Desktop

6.3.2 RDP Client

Configure your settings by the following steps when you are using a Remote Desktop Connection (MSTSC- Microsoft Terminal Services Client).

1. From the Start menu find **<Remote Desktop Connection>**.
2. Open Remote Desktop Connection.
3. Click on the **<Local Resources>** Tab.

- Note: If you are setting up remote access from Windows XP (no longer supported by Microsoft) change the “**Remote computer sound**” setting to “**Leave at remote computer,**” as this is required to ensure that the system remains working correctly.
 - If you are setting up remote access from Windows 7 or later use the defaults for Remote Audio.
4. Uncheck “Printers” under **Local devices and resources**. Otherwise, the system will generate errors while trying to find and install printer drivers that do not exist on the server.
 5. Optionally, select the clipboard to enable file copy operations between the server and the Client PC. To save your changes, go to the **General** tab and press <Save>.

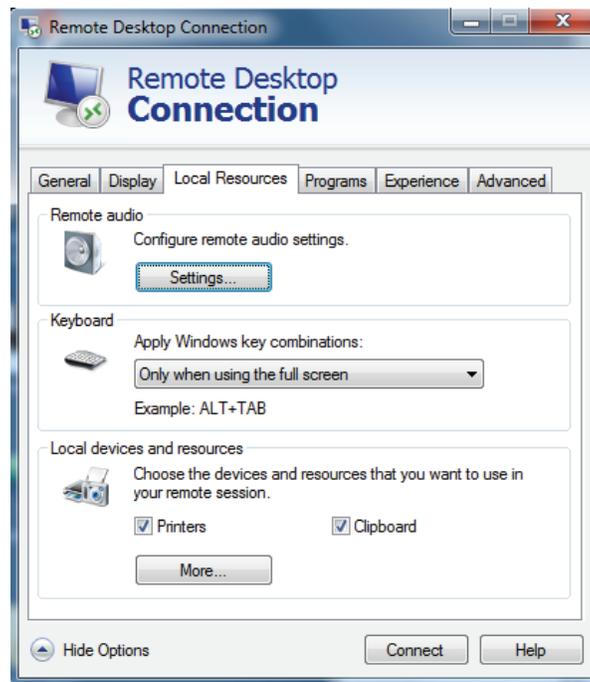


Figure: Windows 7 Remote Desktop Local Resources

6.3.3 Login

1. Open Remote Desktop Connection.

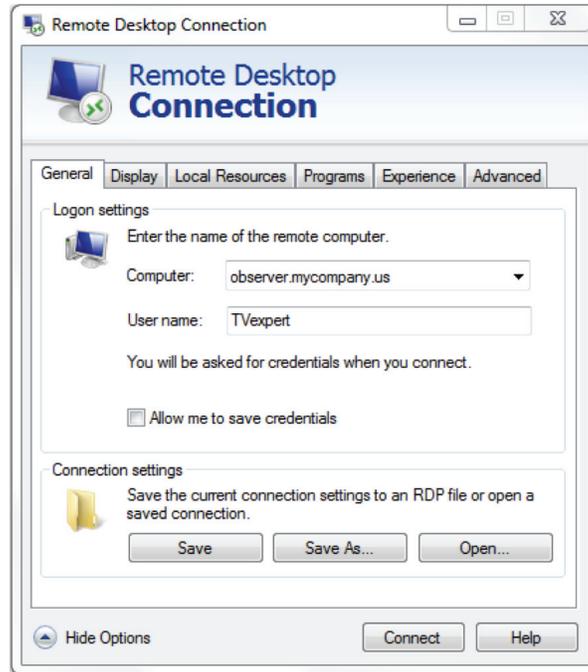


Figure: Remote Desktop Login

2. Enter the URL or IP address of the server.
3. Enter your User name.
4. If you check **“Allow me to save credentials”** Windows will save your log in information. Do this only on a secure PC you control.
5. Press: **<Connect>**.

If Windows is able to successfully connect to the remote machine you will be prompted for a password, unless you have saved your credentials. If you enter incorrect credentials, you will be prompted to enter them again.

Note: Only one person can be logged in at a time. A successful login will terminate an existing session.

If your computer is unable to connect to the remote server it throws this error message.

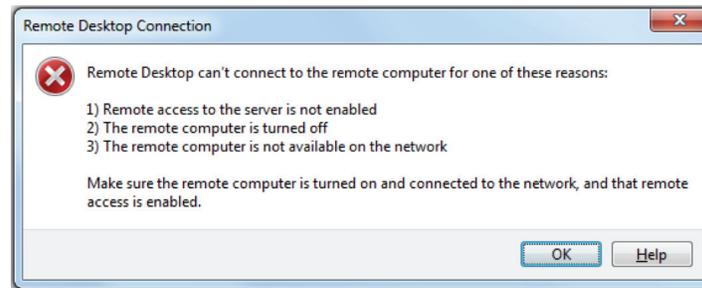


Figure: Remote Desktop Unable to Connect to Remote Server

6.3.4 Terminate Remote Session

Closing the window in Windows 7 and later will automatically terminate the session. If you are still using Windows XP (no longer supported by Microsoft), you need to explicitly terminate the session, not just close the window. Just closing the window will leave you logged in.

7 RAID DISK DRIVE ARRAY

RAID, an acronym for "Redundant Array of Independent Disks," is a storage technology that combines multiple hard drives so that data can be stored on them as if they were one logical unit. RAID takes multiple physical disks and makes them appear and function as a single hard disk drive.

Most RAID configurations support write caching. Write caching improves write performance by caching write data in memory and then copying data to the disk array. These systems include battery backup of controller memory to prevent data loss or corruption in the event of a power failure.

Except for the smallest system types (Scout), all MIP servers use some form of RAID to insure data integrity. Depending on configuration three RAID variants: 1, 5, and 6, are used.

Volicon, a division of Verizon Digital Media Services uses Enterprise class SATA drives for maximum performance and reliability.

7.1 RAID Variants

RAID 1

RAID 1, or disk mirroring, is the process of replicating the data to more than one disk. Both the disks are operational at the same time, so the system can read data from both simultaneously. This enhances the speed of read operations. However, the write operations are slower as the system executes each write operation twice, once on each disk. A minimum of 2 disks are required for a RAID 1 array.

RAID 5

RAID 5 can tolerate failure of *any* drive in the array without losing a single byte of stored data. RAID 5 is block-level striping with distributed parity. Striping and data are distributed by independent read and write operations. In a "write" operation, data to be recorded is striped across all array members interspersed with a parity block and distributed so as to place one segment containing the parity checksum on a different drive within each striping cycle. Sometimes defined as rotating parity, this scheme is the reason why it doesn't matter which drive in the array fails. A minimum of 3 disks are required for a RAID 5 array.

RAID 6

RAID-6 can tolerate the concurrent failure of two hard drives while precluding data loss and system downtime. RAID 6 provides a second layer of redundancy by means of two separate, independent parity blocks within each stripe written to the data storage subsystem array, distributed among each of the active members in the array. Thus, another moniker for RAID-6 is "double-parity RAID".

RAID 6 requires a minimum of four drives, but will typically have a significantly larger number of array members since performance, fault tolerance, and cost efficiency are improved with a larger population.

7.2 RAID Controllers

MIP uses [Broadcom](#) 9271-4i or 9271-8i RAID controllers. The 4i has 4 6 Gb/s SATA or SAS ports, the 8i has 8 6 Gb/s SATA or SAS drives. Except for the number of ports the controllers are identical. The 4i is used with the 4, 16, 24 HDD chassis. The 8i is used with the 8 HDD chassis.

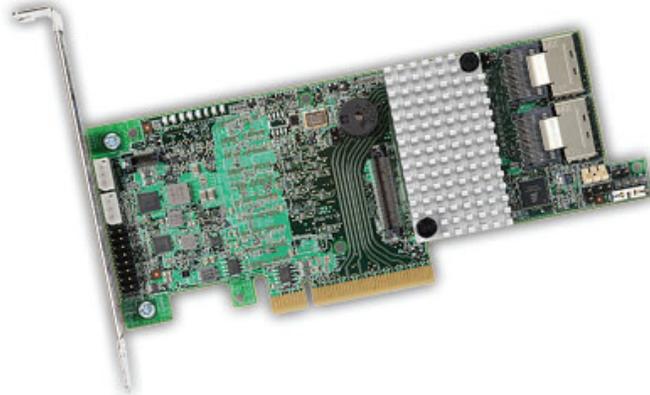


Figure: 9271-8i Controller

7.3 Accessing the RAID Controller

As part of the initial build, Volicon, a division of Verizon Digital Media Services installs the appropriate RAID controller. To access the controller, click the **MegaRAID** icon located on the server desktop.



Figure: RAID Controller Desktop Icon

The controllers will be automatically discovered in most cases; the controller on the local server will be found, but in some cases may include other networked server's RAID controller.

Note the Health column in the figure below. It indicates if the array is working correctly without the need to log in.

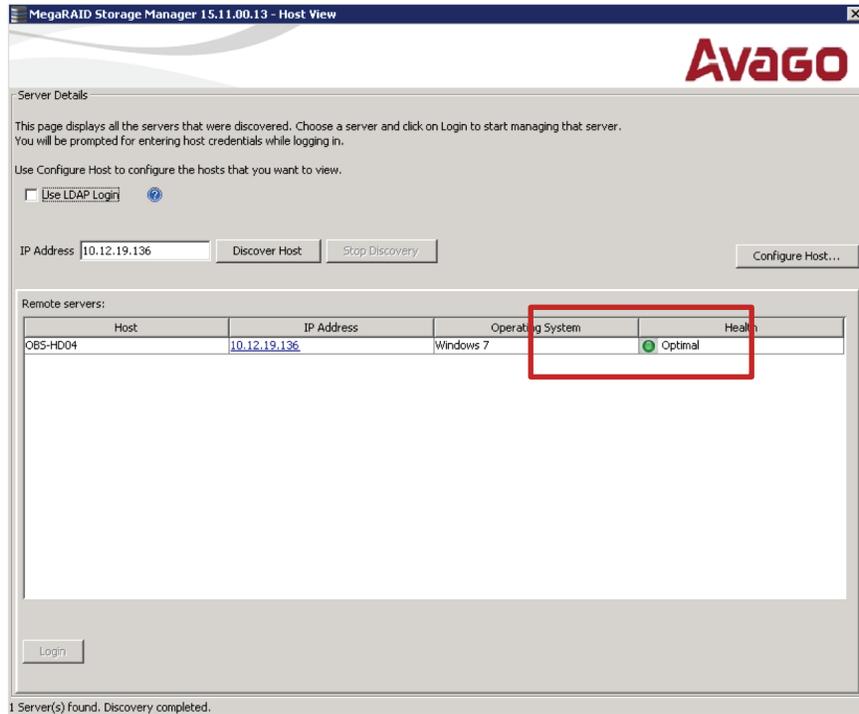


Figure: RAID Controller Automatic Discovery

Double click to access the desired controller and log in to the controller. The controller uses the same credentials as the Windows login.



Figure: RAID Controller Login

7.4 Main MegaRAID Screen

The main screen presents overall health status and details about individual drives. At the bottom of the screen, not shown, is a scrolling log file displaying real time RAID information.

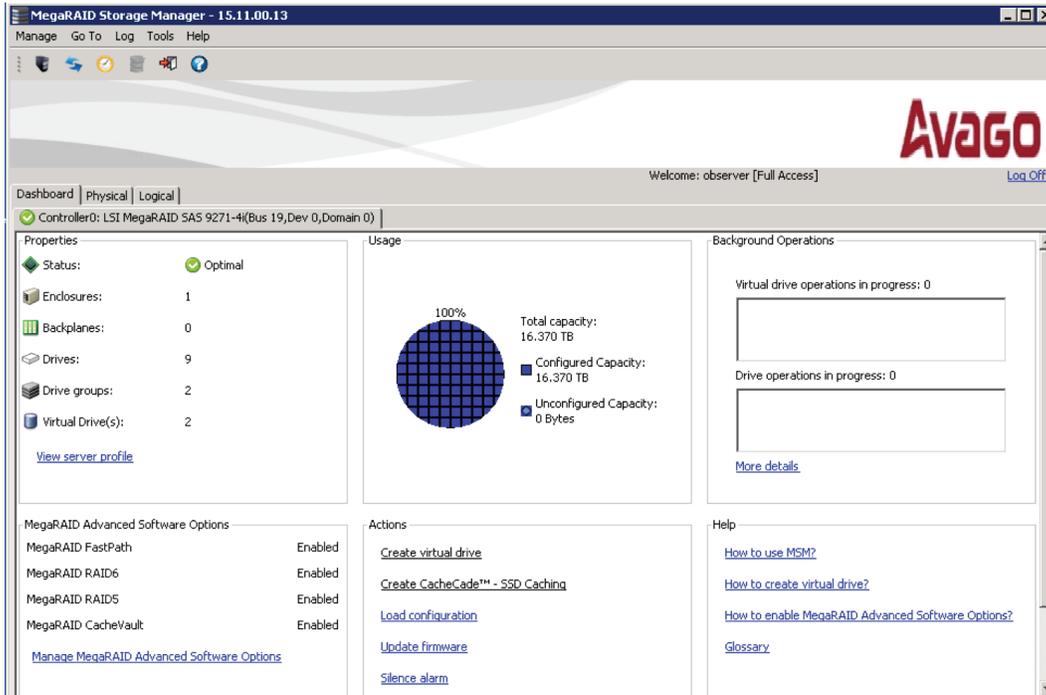


Figure: RAID System Main Screen

Click the **<Physical>** Tab to display information about each drive in the system.

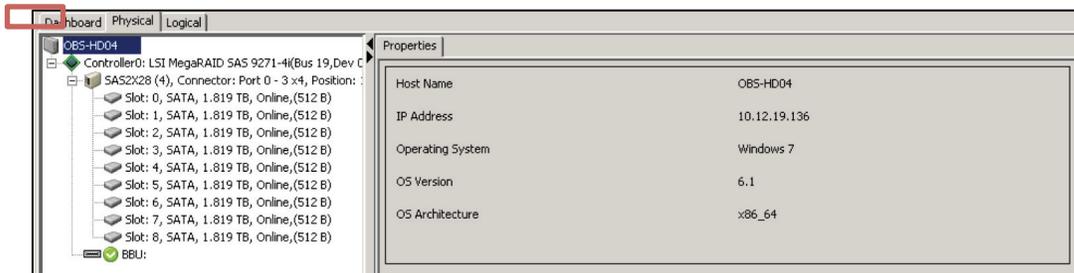


FIGURE: Individual Drive Status

7.4.1 Silencing RAID Alarm

In addition to email notification, the controller sounds an audible alert. To silence the alarm press the **<Silence Alarm>** link in the center pane towards the bottom of the Dashboard.

7.5 Email Alerts

The RAID controller can be set to send out email alerts. Click on **<Tools>**→**<Monitor Configure Alerts>**. Volicon, a division of Verizon Digital Media Services recommends limiting emails to the most Critical and Fatal, to minimize the number of emails sent by the system.

Click the **<Mail Server>** tab to setup the outgoing mail server and the **<Email>** tab to enter one or more recipient email addresses.

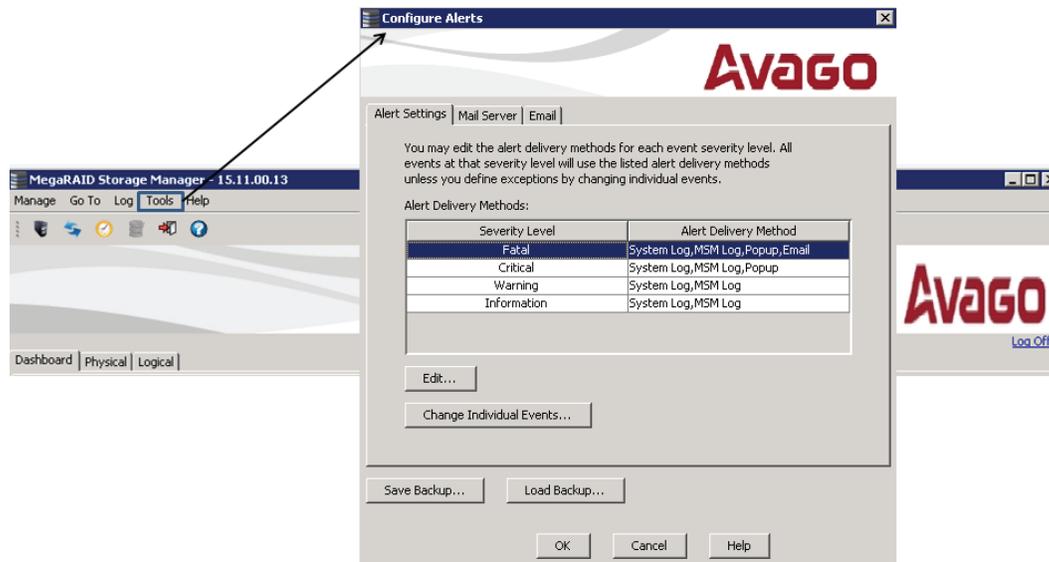


Figure: RAID Email Alerts

7.6 Hard Disk Drive (HDD) Replacement

To replace an HDD on the hot swappable disk array, first remove the faulty bad drive and then insert a new replacement HDD. The RAID controller will automatically start rebuilding the array.

If the controller is reporting multiple drive failures, try reseating the hot swappable drives first.

8 CAPTURE CARDS AND BREAKOUT CABLES

MIP supports multiple A/V formats and associated capture cards. The capture card converts the analog or digital source for MIP processing, evaluation and storage. Unlike other Observer applications, MIP continuously ingests and records each channel. As such, you need to dedicate a capture card port per channel. If you are using set-top-boxes, they also will need to be configured on a per monitored channel basis.

Input	Output	Chan	Mfg.	Card Name
RF-8VSB/QAM	n/a	1	Hauppauge	HVR-2255
RF-DVB-C	ASI	2	Dektec	DTA-2136
RF-DVB-S2	ASI	2	Dektec	DTA-2137C
RF-DVB-T2	n/a	1	Dektec	DTA-2138B
Analog	Yes	1	BlackMagic	Intensity Pro 4K
Analog	Yes	1	BlackMagic	Studio 4k
Analog	n/a	1	Osprey	260e
Analog	n/a	4	Osprey	450e
Analog	n/a	4	Osprey	460e
HDMI	Yes	1	BlackMagic	Intensity Pro 4K
HDMI	Yes	2	BlackMagic	Extreme 4k
HDMI	Yes	1	BlackMagic	Studio 4k
HDMI	n/a	1	BlackMagic	Mini Recorder
n/a	HDMI	1	BlackMagic	Mini Monitor
SD/HD-SDI	Yes	2	BlackMagic	Decklink Duo
SD/HD-SDI	Yes	4	BlackMagic	Decklink Quad
3G-SDI	n/a	1	BlackMagic	Mini Recorder
n/a	3G-SDI	1	BlackMagic	Mini Monitor
6G-SDI	Yes	2	BlackMagic	Extreme 4k
6G-SDI	Yes	1	BlackMagic	Decklink SDI 4K
6G-SDI	Yes	1	BlackMagic	Studio 4k
ASI/SD-SDI	Yes	4	Dektec	DTA-2144B
ASI/SD-SDI	Yes	1	Dektec	DTA-2145
ASI/SD-SDI	Yes	3	Dektec	DTA-2160
Ethernet	n/a	1	Dektec	DTA-2160

Table: Capture Cards

TECH TIP

In instances where the video card supports direct video output the output feed may be used to directly drive a video monitor. This capability must be configured using Probe Manager.

8.1 BlackMagic

MIP supports multiple [BlackMagic](#) acquisition cards up to a maximum of 6.

8.1.1 Intensity PRO 4K

The Intensity Pro is a high definition capture card. The card and breakout cable are shown below. The card supports HDMI and Component, S-Video and Composite analog inputs.

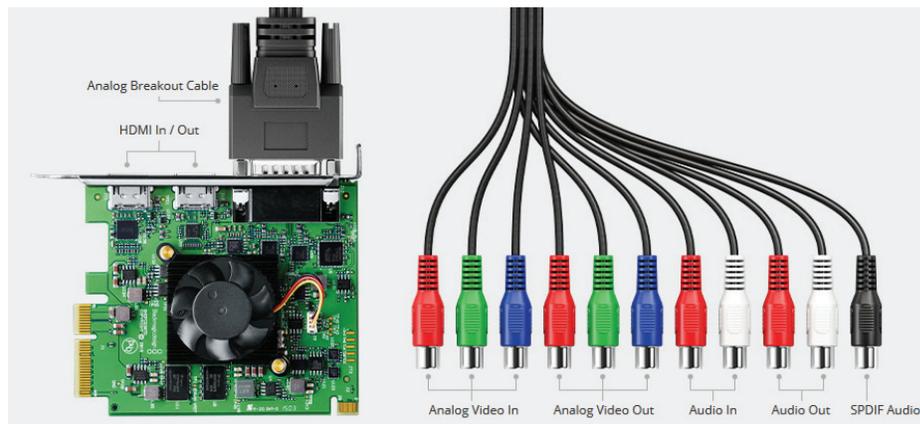


Figure: Intensity Pro & Breakout Cable

The breakout cable supports Component video using the R, G, B connectors; S-Video using the G, B connectors, and an external adapter and Composite video using the B connector. Analog audio connects to the Red (left) White (right) audio connectors.

Source Type	Intensity Pro (Connector color)	Label
Component RGB (Red)	Red	R-Y input
Component RGB (Green)	Green	Y input
Component RGB (Blue)	Blue	B-Y input
S-Video (Mini-DIN)	Green	Y input
Requires adapter	Blue	B-Y input
Composite video (Yellow)	Green	Y input
Stereo Audio (White)	White	Right input
Stereo audio (Red)	Red	Left input

Table: Intensity Pro Input Connections

8.1.2 Decklink Extreme 4K

Extreme 4K supports 2 SDI audio and video, 1 analog audio and video and 1 HDMI input.



Figure: Decklink Extreme 4 K Card

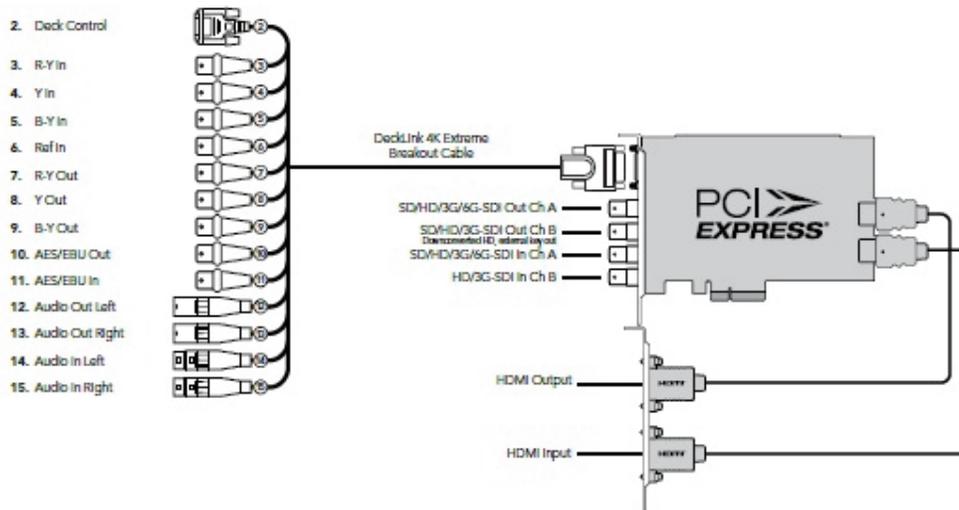


Figure: Decklink Extreme & Breakout Cable

8.1.3 Decklink SDI 4K

BlackMagic Decklink SDI 4K supports a single SDI input.



Figure: Decklink SDI Card

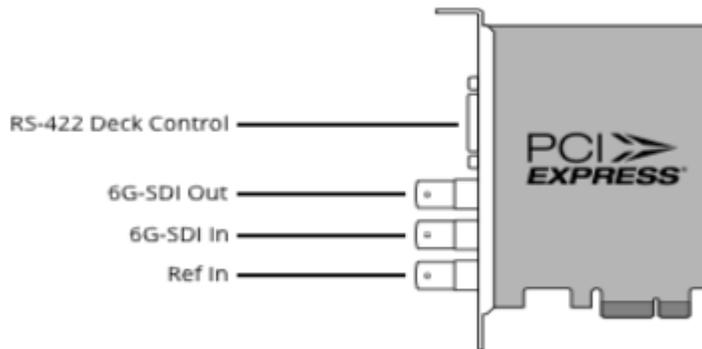


Figure: Decklink SDI Connector Connections

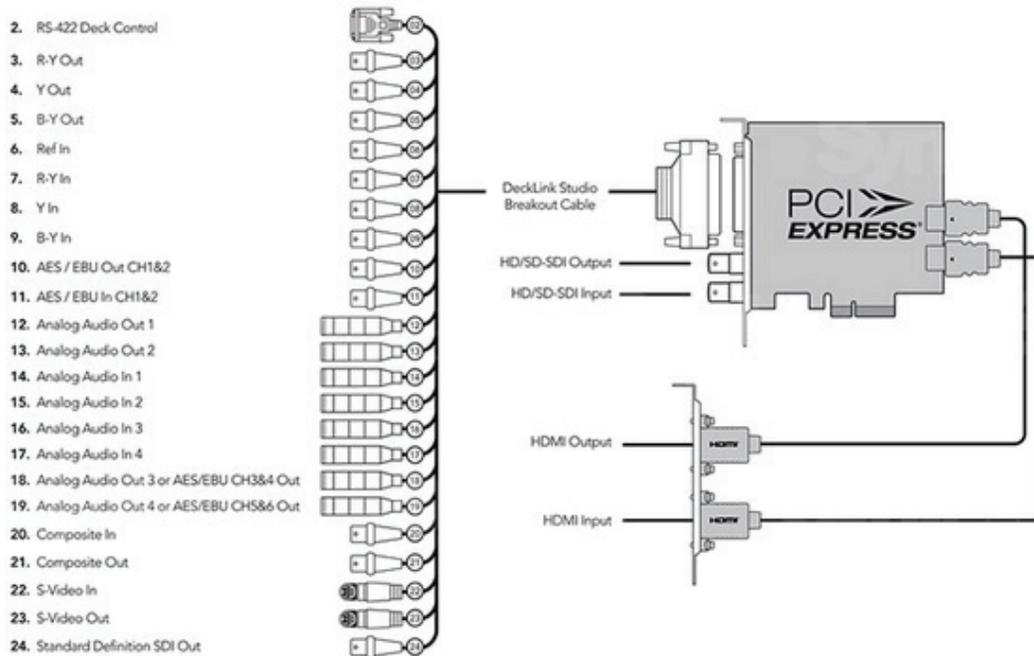
Connect the SDI Source (from deck) with coax M to the BlackMagic Decklink SDI card's BNC connector Input.

8.1.4 Decklink Studio 4K

Decklink Studio 4K has a single SDI audio/video, analog audio/video and HDMI inputs.



Figure: Decklink Studio 4K



Decklink Studio Connections

8.1.5 Decklink Duo

The Decklink Duo adapter supports dual HD/SD inputs/outputs via two SDI interface connections.

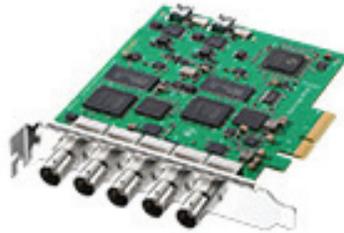


Figure: Decklink Duo

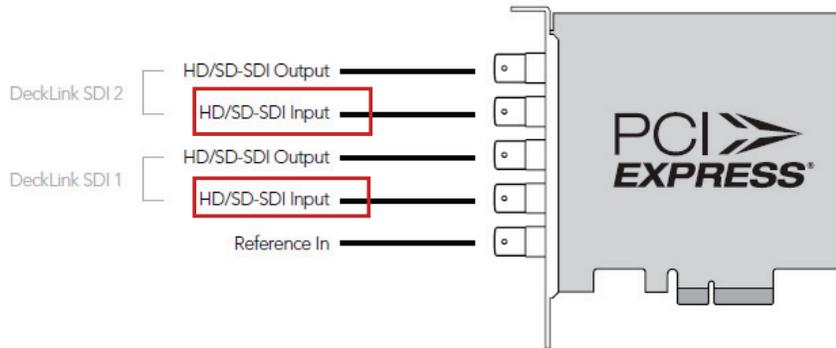


Figure: Decklink Duo SDI/HD adapter

8.1.6 Decklink Quad SDI

MIP supports the BlackMagic Decklink Quad SDI card. As the name implies it supports up to four inputs. The card has Mini BNC SDI connectors. An adapter cable is used to connect to standard BNC connectors.



Figure: BlackMagic Decklink Quad SDI-SD/HD

8.1.6.1 Decklink Quad SDI-SD/HD Connector Diagram

Connections are made to the SDI inputs as shown.

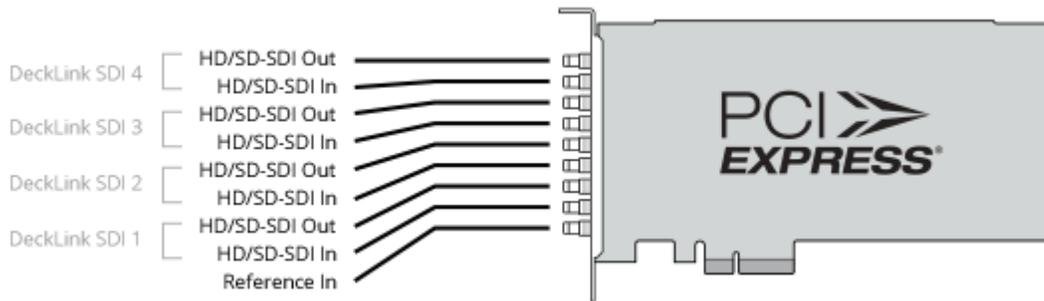


Figure: Decklink Quad SDI-SD/HD Connector Diagram

8.1.6.2 Breakout Cable BNC to Mini BNC Adapter

You will need the BNC to Mini BNC Connector breakout cable to use the Decklink Quad SDI-SD/HD card. The cable is pictured below.



Figure: BNC to Mini BNC Adapter Cable

8.1.7 Decklink Mini Recorder

Decklink Mini Recorder has a single SDI and HDMI input.



Figure: Decklink Mini Recorder Card

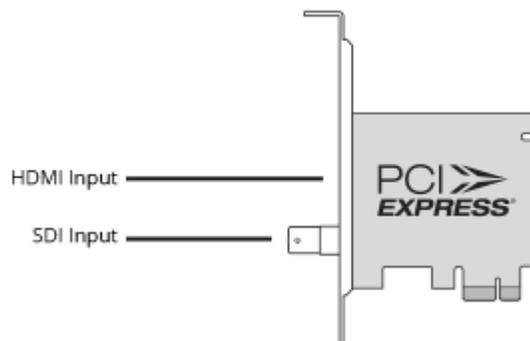


Figure: Decklink Mini Recorder Connections

8.1.8 Decklink Mini Monitor

Decklink Mini Monitor has a single SDI and HDMI output to drive an external monitor.



Figure: Decklink Mini Monitor Output Card

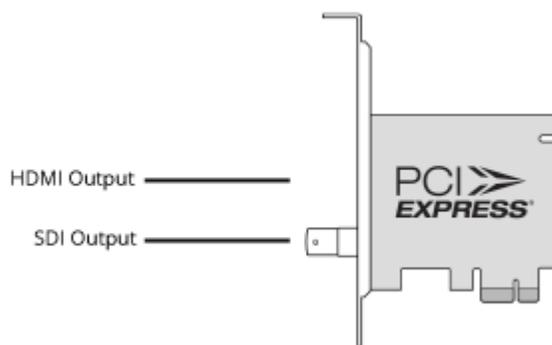


Figure: Decklink Mini Monitor Connection

8.2 Dektec

MIP supports multiple [Dektec](#) cards: Driver is common to all cards: Dektec DTA-xxxx cards ver 4.10.0.144 (dated 10/29/2014).

8.2.1 DTA-2136

The DTA-2136 has a 2-channel DVB-C receiver. The card includes an ASI output port for each channel for local monitoring.

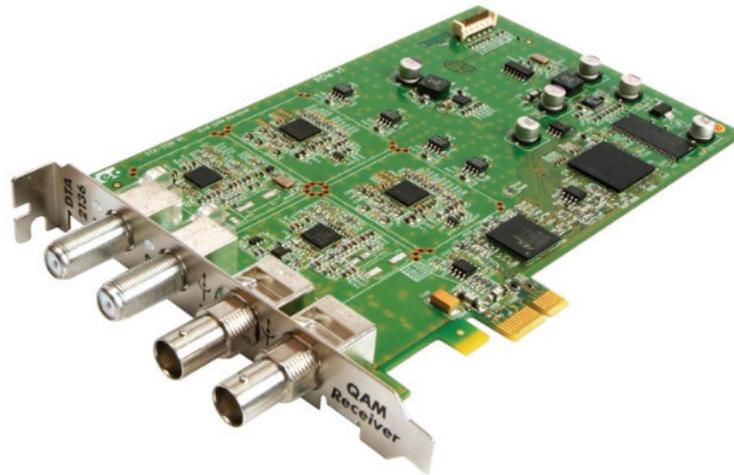


Figure: Dektec DTA-2136

8.2.2 DTA-2137C

The DTA-2137 is a 2-channel satellite receiver card. Each input has a corresponding output for local monitoring.



Figure: DTA-2137C1

8.2.3 DTA-2138B

The 2138B has a single channel DVB terrestrial receiver.



Figure: DTA-2138B Terrestrial Receiver

8.2.4 DTA-2144B

The DTA-2144B has 4 software programmable ports. Each port may be configured as an input or output and ADI or SD-SDI mode.

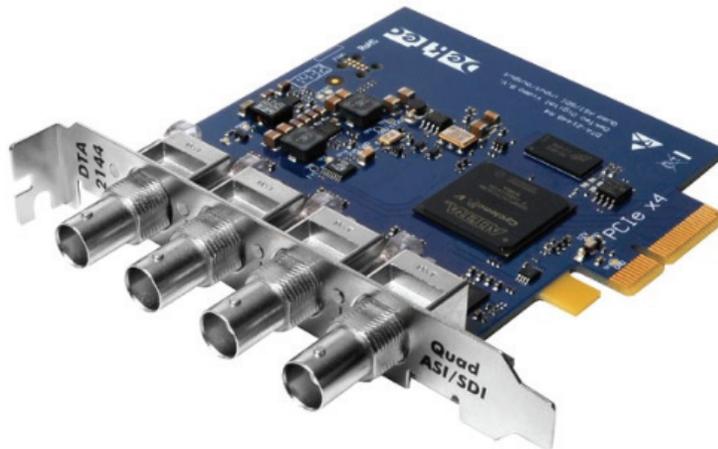


Figure: DTA-2144B

8.2.5 DTA-2145

The DTA-2145 has input and output port configurable as ASI or SDI.

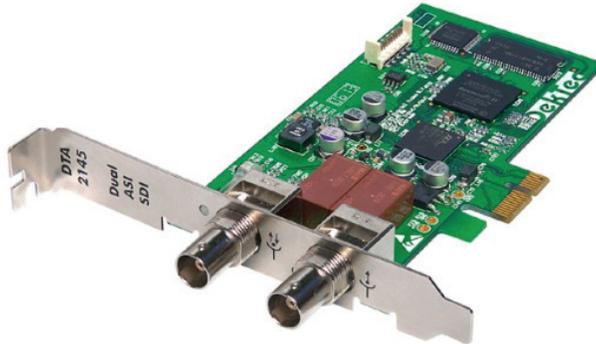


Figure: DTA-2145

8.2.5.1 Dektec DTA-2160

The Dektec DTA-2160 has connector ports for 1- Gig E and 3-ASI interfaces:

Physical location from top	Port type	Logical port number
1	Gig E	Port 4
2	ASI 1	Port 1
3	ASI 2	Port 2
4	ASI 3	Port 3

Table: Dektec TDA-2160 Connector Ports

The top connector is the Gig E connector, called port 4, followed by the ASI port 1; ASI port 2 and ASI port 3 interfaces.

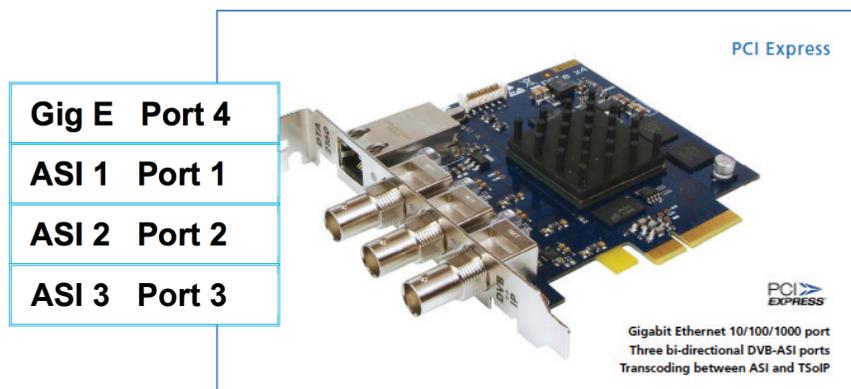


Figure: Dektec Card

8.3 Hauppauge

MIP supports the Hauppauge HVR-2255, replaced the earlier HVR-2250.

8.3.1 HVR-2255

The [Hauppauge](#) WinTV-HVR-2255 is used to ingest a single over the air (8VSB) or unencrypted Cable (QAM) channel. The FM tuner and analog video/audio baseband inputs are not supported in MIP.

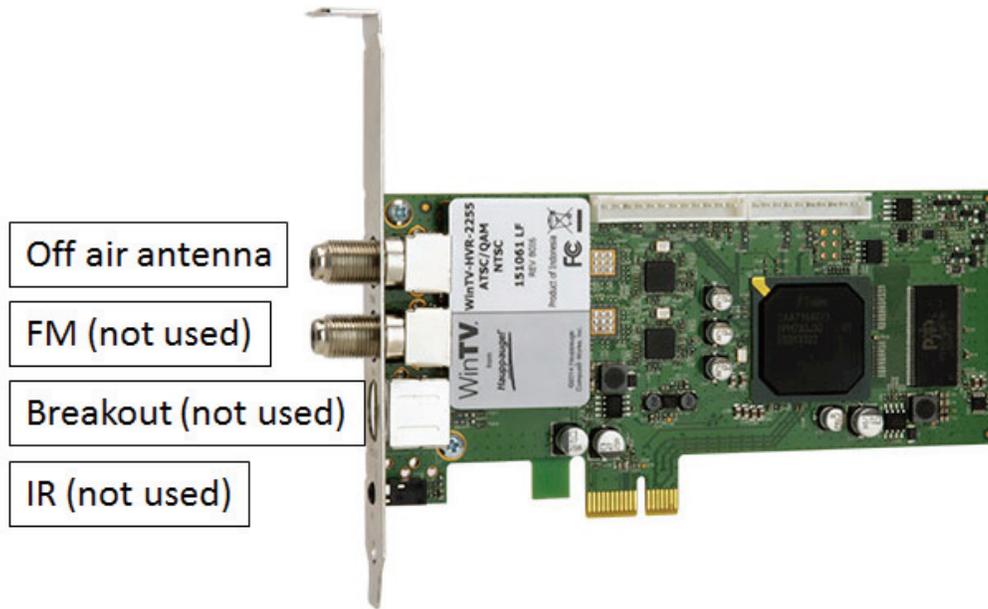


Figure: Hauppauge HVR-2255

8.4 Osprey

MIP supports multiple [Osprey](#) capture cards. Osprey cards are used to ingest up to a maximum of 4 analog channels per card.

8.4.1 260e

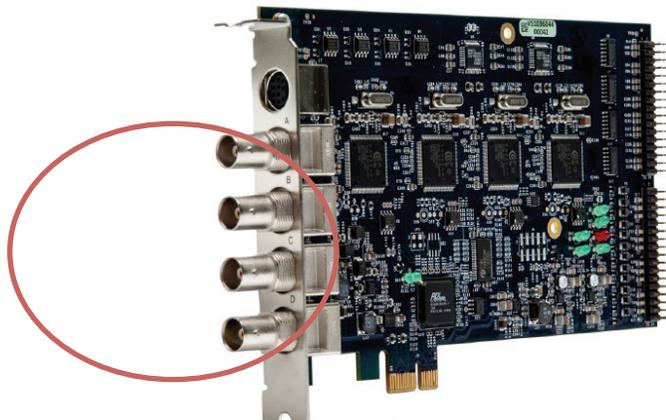
The 260e supports component, S-Video and composite video and balanced or unbalanced stereo inputs.



Figure: Osprey 260e Capture Card

8.4.2 460e

The Osprey-460e supports 4 composite video inputs. It supports four BNC composite video inputs. A breakout cable is used to connect 4 stereo audio channels. The 460e replaces the earlier 450e.



Input Video Connectors

Figure: Osprey 460e Capture Card

The breakout connector provided with the Osprey card has 4 left/right, unbalanced audio inputs.



Figure: Osprey Breakout Cable

MIP Encoder channels are configured as follows:

- Video Input A and Audio Left 1 / Right 1
- Video Input B and Audio Left 2 / Right 2
- Video Input C and Audio Left 3 / Right 3
- Video Input D and Audio Left 4 / Right 4

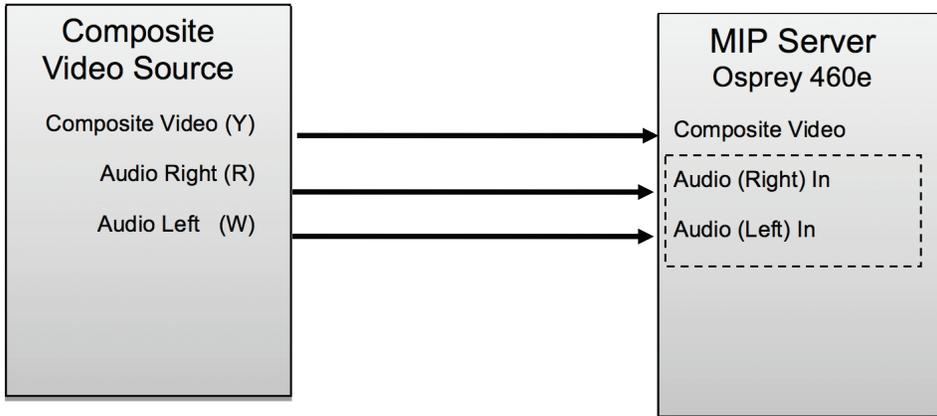
8.4.2.1 Audio breakout Cable 9 pin Mini-Din

The pin assignment for the Osprey 450e and 460e audio break out is as follows:

1. Audio input	Left 1
2. Audio input	Right 1
3. Audio input	Left 2
4. Audio input	Right 2
5. Audio input	Left 3
6. Audio input	Right 3
7. Audio input	Left 4
8. Audio input	Right 4
9. Ground	Ground

Table: Osprey Audio breakout

8.4.2.2 Composite Video Interconnect diagram



8.4.2.3 460e Rack Mount Breakout panels

The 460e capture card support rack mounted breakout panels. These can be used to facilitate cabling or support balanced audio using industry standard XLR connectors.



Figure: Composite Video and Stereo Audio

Provides rack connection to the 4 composite video and stereo audio. This is identical to the flying lead breakout cable.



Figure: Video Breakout Panel

Provides rack connection to the 4 video channels configured individually as: Component, S-Video, and Composite.



Figure: Balanced Audio Breakout Panel

Provides rack connection to 4 balanced stereo channels.

8.5 Set Top Box interconnect

If you are using a Set Top Box (STB) as an input source, assign one STB per Encoder input and connect the output of each STB to the associated capture card input connector. Composite, Component, and HDMI interfaces are currently supported. Currently the MIP only supports set top box programming using the set top box remote control. Integrated Remote control capability within the MIP is planned for a future software release.

TECH TIP

MIP is recording and logging content, as such it is only able to support HDMI without HDCP.



Figure: Typical STB Rear Panel

9 WHAT NOT TO DO ON THE SERVER SIDE

This section lists events and configurations that should not be applied to any of the MIP servers.

- Do not run a Web client application on the MIP Encoder or central server*
- Install Antivirus software with caution see section "**Antivirus Excluded Storage Areas**"*
- Do not load/execute any additional applications on the server*

10 MIP LOGIN

1. Enter the IP address or URL provided of the MIP Central Server.
2. You will then be prompted for your log in credentials (Username/Password).

TECH TIP

Add the IP address or the MIP domain name to the "Trusted Sites" list in Internet Explorer.

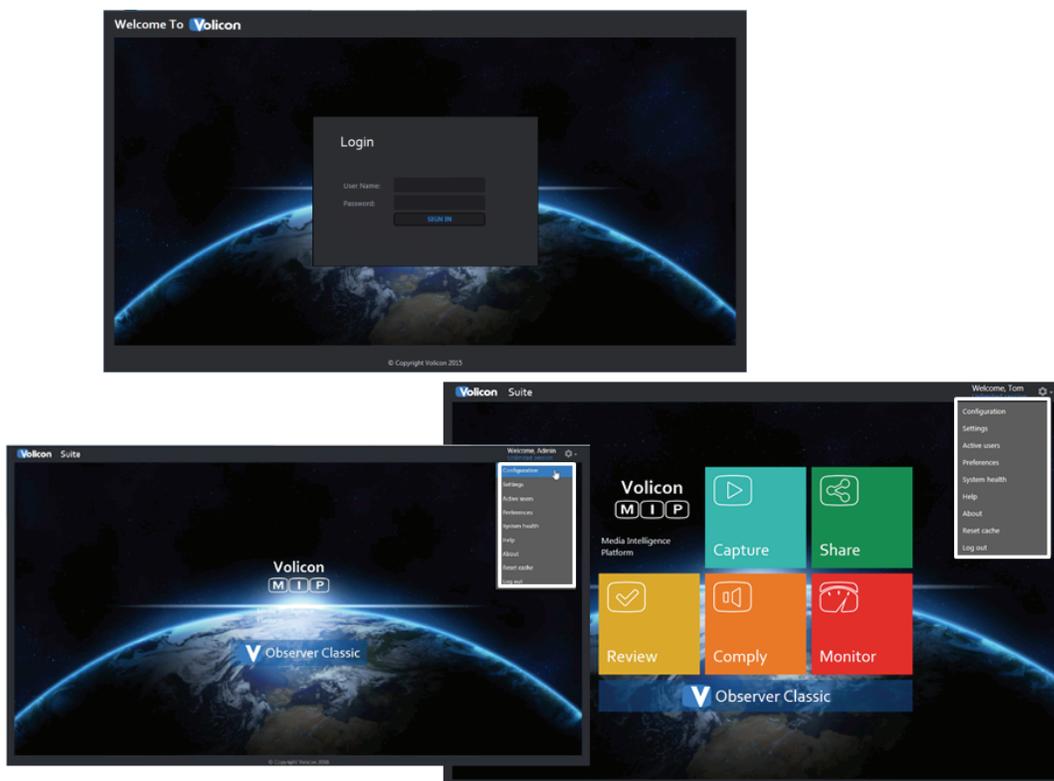


Figure: MIP Home Page with Tools Pulldown

Assuming you entered your account credentials correctly, you will be greeted with the MIP home page. The specific icons displayed depend on your account settings and the installed MIP options. Depending on the specific configuration of a new build you may not see any MIP feature icons during the initial log in. Regardless of configuration the **<Tools>** menu in the upper right corner is always available.

TECH TIP

If you log into the server running the previous version of Observer you will be greeted by the Observer Classic welcome screen.

10.2 Logging Out

To log out, click the **Gear** icon at the upper right corner of any MIP page. The **Gear** icon appears on all pages so you don't have to go back to the home page to log out. This opens another menu; click on **Log Out** at the bottom. MIP asks you to confirm that you really want to log out. As with the home page the specific options you see are dependent on your account settings.

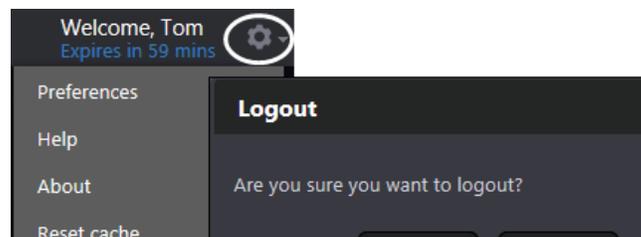


Figure: MIP Logout

10.3 Internet Explorer Settings

For full functionality, the MIP currently supports Internet Explorer versions 10 and higher in both 32-bit and 64-bit. When using Internet Explorer you must set "Compatibility mode".

1. After you log into MIP left click the **Gear** symbol at the upper right of IE and then choose **Compatibility View Settings**. Note: this is the IE tools icon, not the lower tool icon for MIP

- The URL or IP address of the MIP server should automatically populate under “Add this website:” Click on **Add** to set IE to access the MIP web site in compatibility mode.

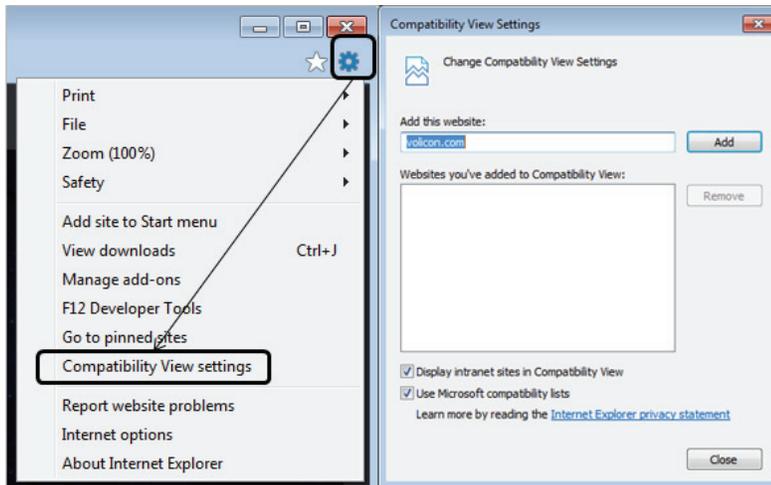


Figure: Setting IE Compatibility View

- Next set the location of the MIP server as a trusted site. This enables the player to use ActiveX even if other IE settings restrict its use.
- From the same **Tool** icon used to set compatibility mode, select **Internet Options**. Select the **Security** Tab and click on **Trusted Sites**. Then click the **Sites** button. The MIP web site URL should be under “**Add this website to the zone:**” In our example it is `http://observer2.Volicon.com`. The IE default policy to allow placing a server in trusted zone is that it must use SSL/TLS security (HTTPS). If the MIP server does not use SSL/TLS you need to uncheck the “**Require server verification**” check box. Press **Add** to update the trusted site list then **Close**.
- To verify you successfully added MIP click **Trusted Sites** again, then **Sites**. The MIP server URL should show in the **Websites:** box.

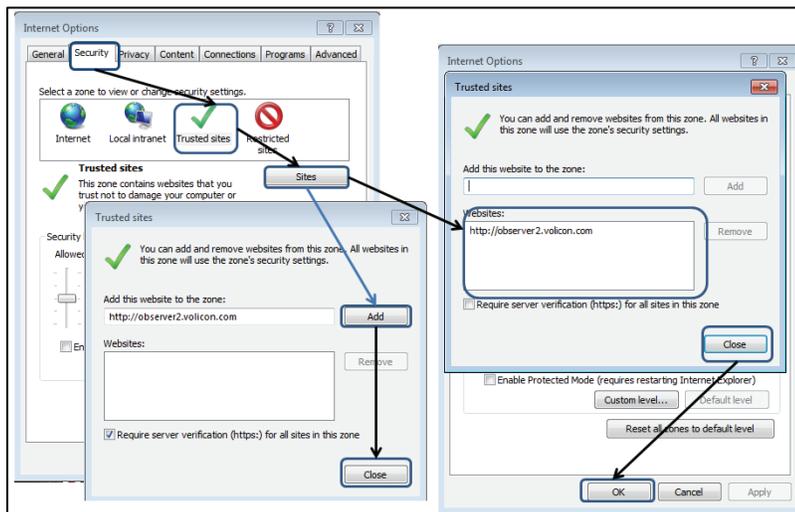


Figure: Add MIP to IE Trusted Sites

10.4 Non-IE Browsers Support, Clientless Mode

MIP supports a clientless mode for use with Firefox, Chrome, Edge, and Safari browsers. Clientless mode allows you to avoid installing the Active-X player. MIP uses the Silverlight player when you use Firefox and HTML5 with Chrome/Edge/Safari. Note that MIP support for the Safari browser only when using Safari on the Mac OS. MIP does not support Safari on Windows.

10.5 MIP ActiveX Media Player

When using IE to access MIP a customized ActiveX media player is required.

10.5.1 Installing the Media Player

When using IE, the first time your computer connects to MIP you will be asked to install the ActiveX media player. This should take approximately 30 seconds.

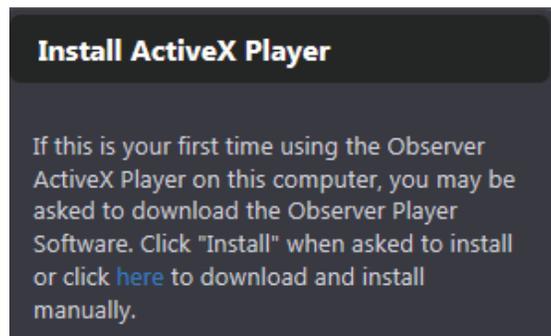


Figure: Request to Install Media Player

TECH TIP

Media Player installation requires Administrator Rights on your PC

Accept the warning by clicking Allow. MIP will launch the Observer Media Player Setup Wizard.



Figure: Observer Media Player Setup Wizard

If an older version of the Observer media player has been installed it will be removed automatically. Click **Next** to continue. Accept the terms of the License Agreement and click **Next** to continue.



Figure: License Agreement

You have the option of choosing into which folder MIP will install the Media Player. Unless a Support engineer has instructed you otherwise, accept the default folder and click **Install**.

Internet Explorer must be shut down to install the Media Player. Log out of MIP and shut down IE, then click **OK** to proceed.

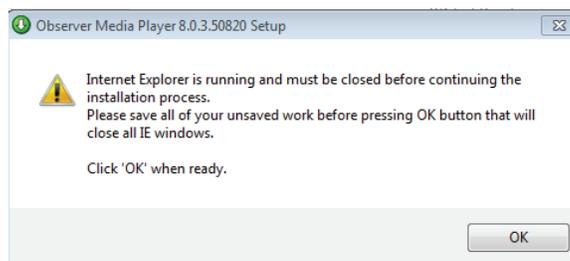


Figure: Shut IE Down to Install

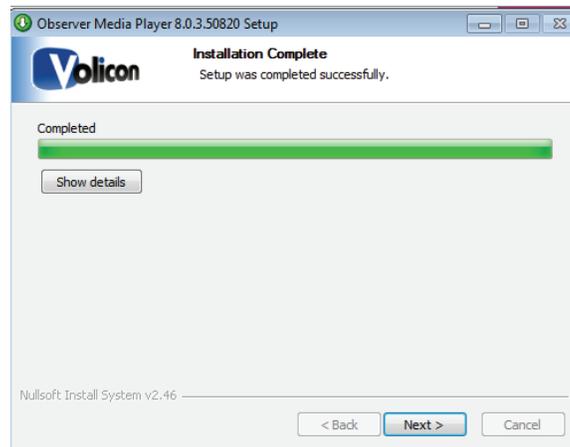


Figure: Player Installation Progress

10.5.1.1 Optional Settings

Observer will present you with the Optional Settings window.



Figure: Optional Settings Window

Optional Setting/Selection: Internet Explorer shortcut

If you want to add a quick connect button to your Internet Explorer tool bar, enter the URL or the IP address of the MIP server in the field provided. Leave the field empty if you do not want MIP on your tool bar.

Optional Setting/Selection: Intel video adapter workaround

Volicon, a division of Verizon Digital Media Services recommends that if your computer has an older Intel video card, or a video card with an Intel chipset, that you enable the Intel “flickering video” workaround checkbox as a precaution. Enabling the checkbox will not affect the performance of the Intel chip sets that do not have issues with multiple video streams, and will protect you in the event that your chipset is one of those with known issues.

Optional Settings/Selection: Favor Quantity over Quality

Volicon, a division of Verizon Digital Media Services also recommends that you check the **Enable “Favor Quantity over Quality”** checkbox for the best experience using Internet Explorer to run multiple players.

Make your choices, and click **<Next>**.

Observer presents you with the “Completing the Observer Media Player Setup Wizard” window.

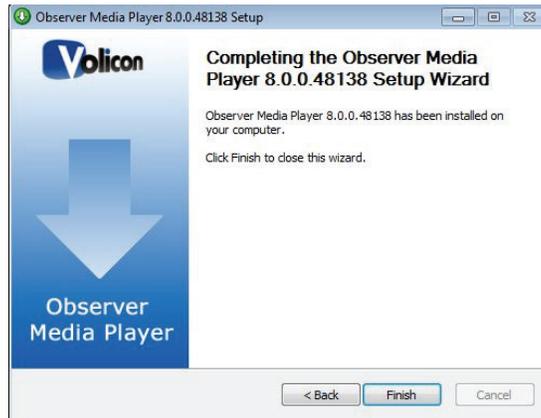
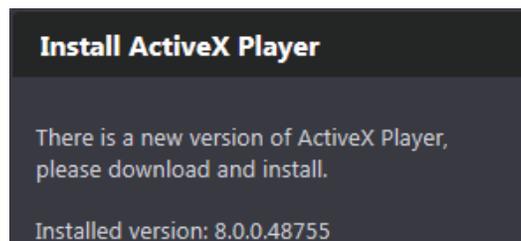


Figure: Completing the Observer Media Setup Wizard Window

Click **<Finish>** to exit setup.

10.5.2 Updating the Media Player

From time to time you may receive notification there is a new version of the player available. Follow the prompts and install the upgrade. You will be prompted to shutdown IE to perform the install.



TECH TIP

Upgrading the player requires Administrator Rights, just like the initial installation.

10.5.3 Removing the Media Player

To remove the Observer media player go to <Control Panel> > <Programs and Features> (Windows 7), then remove the "Observer Media Player".

Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Organize ▾

Name	Publisher	Installed On	Size	Version
Observer Media Player 8.0.0.49519	Volicon, Inc.	9/3/2015		8.0.0.49519

Figure: Removing the Media Player

10.6 MIP Welcome Page

The main action buttons are in the center of the screen.

- Your account name is displayed in the upper right corner along with the session expiration time.

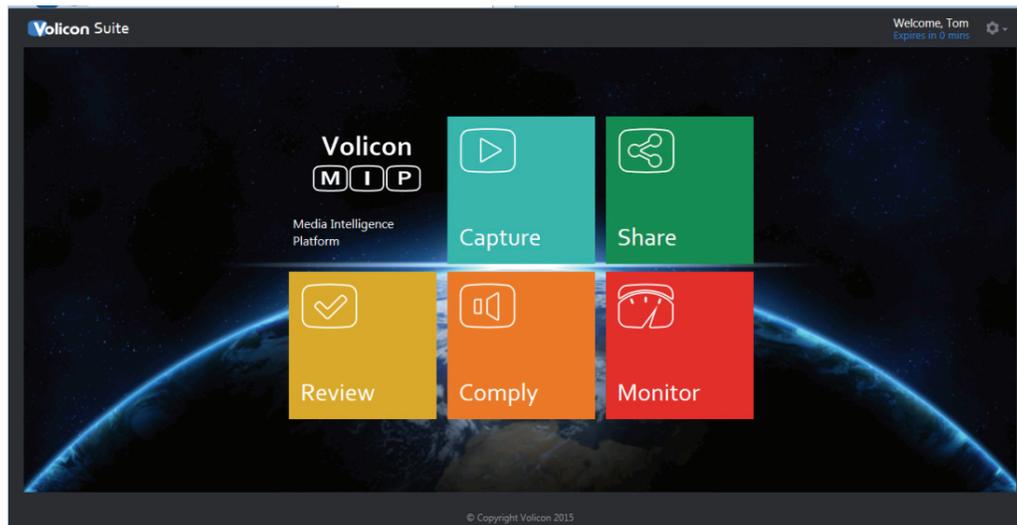


Figure: MIP Top Level Menu

- If MIP detects an idle session it will timeout and close the session.
- Click on the gear icon in the upper right to log out or access MIP management features.
- The Main Menu gives you access to the Media Intelligence Platform. As a MIP administrator you are primarily concerned with the tool icon in the upper right of the screen.

11 MIP WEB BASED CONFIGURATION AND MONITORING

MIP configuration is web based, except for a few specific exceptions. Your admin tools are a superset of the user tools. As a MIP administrator you have the ability to set which aspects of MIP each user account is able to access.

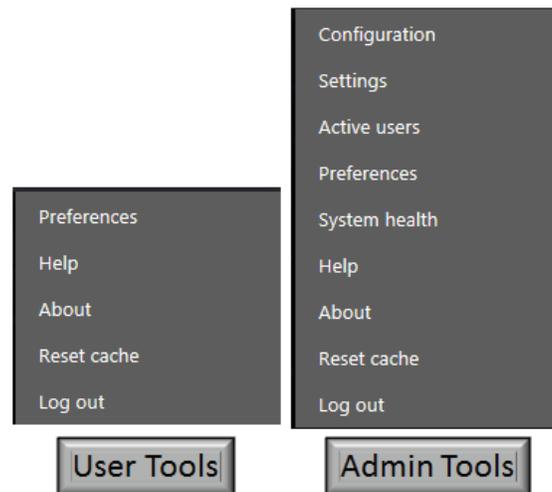


Figure: User vs Admin Tools

- ← **Configuration** – configure Probe groups, Probes and Encoders
- ← **Settings** – configure the Central Server
- ← **Active Users** – displays list of currently logged in users
- ← **Preferences** – user specific setting and time zone
- ← **System Health** – displays status of various MIP components
- ← **Help** – link to the customer support page
- ← **About** – displays MIP and Observer ActiveX player version
- ← **Reset Cache** – clears all application caches, such as selected channels
- ← **Log Out** – terminate user session

11.1 System Architecture

The Central Server that is the heart of the MIP. It has overarching responsibility for all aspects of the system. Depending on size, the MIP will utilize one or more Probe servers. The responsibility of the Probe is to ingest and store programs. The Probe utilizes capture cards to enable MIP to interface with various program sources.

The MIP Probe ecosystem is organized in a hierarchal manner. There are several layers which make up the entire system: Groups, Probes, and Encoders.

- ← **Group(s)** – This level associates multiple Probes under one unified heading. Groups can be created by input source, geography, network capture location, etc.
- ← **Probe(s)** - Each server, as a whole unit, contains anywhere from 1 to 16 video, audio, and metadata capturing inputs/channels. It stores all the recorded content locally and streams out the recorded content to end users. A Probe server contains one or more Encoder-streams or channels.

- ← **Encoder(s)** - This is the proxy copy created for each item of video content recorded on the system. In the case of MIP, it is a direct one-to-one relationship of each physical video input on the Probe to the proxy stored on the Probe.

You must assign each Probe server in the system to a Probe Group. Use groups to help you organize your streams and manage alerts, since a Probe Group often shares a geographical territory or a specific service area.

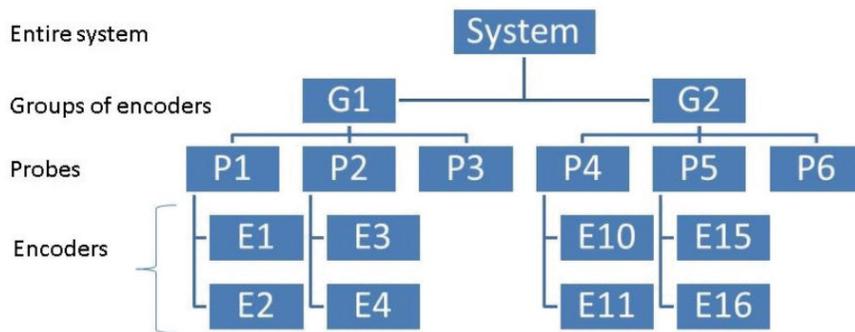


Figure: Probe Architecture

11.2 Configuration – Probes and Encoders

The Probe configuration page contains two sections. The left hand pane is called the dashboard and it allows you to select the desired group. The right hand pane provides a hierarchal view of the group, Probes and individual Encoders. In the Dashboard to the right of each group, is a number indicating how many Probes and Encoders are in the group.

At the top of the dashboard are three icons that allow you to  create a new Group,  rename a Group and  delete a Group. Below that is a text search bar in case there are a large number of Groups.

Selecting a Group displays all the Probes and Encoders within each Group. The description under each Encoder lists its status. The color coded check mark makes it easy to quickly determine the status of each Encoder. Clicking on the Encoders associated with each Probe toggles the Encoder details display on/off. The triangle at the upper left corner of each Probe line changes from **blue** and pointing up (Encoder display on), to **grey** and pointing down (Encoder display off).

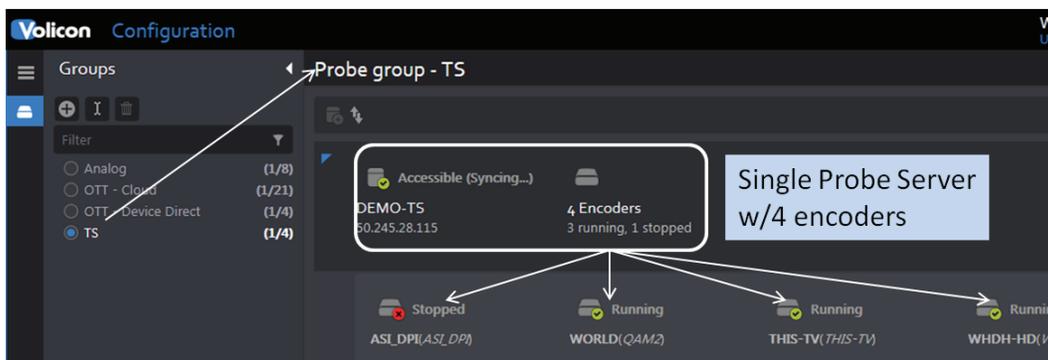


Figure: Probe Groups

The status of each Probe and Encoder is displayed in text to the right of the name next to a color coded icon, **green** checkmark – all is well, **red** X Stopped or not accessible.

Hovering anywhere on the Probe line turns the background **blue** and display three icons in the upper right corner: **Sync**, **Edit** and **Delete**.

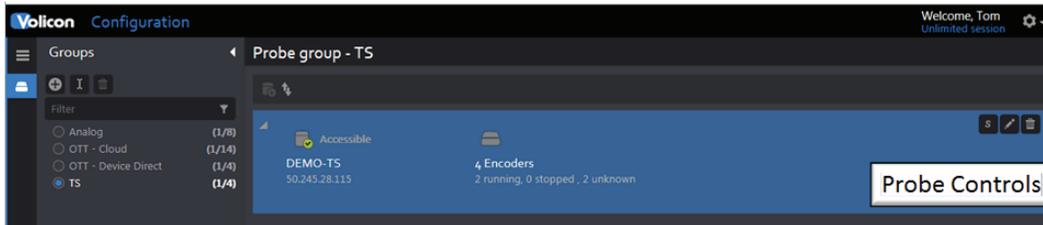


Figure: Probe Controls



Sync – synchronizes the Probe. A pop up asks if you want to sync with **Current** or **Previous**. Selecting **<Current>** updates the Probe with the changes you just made to its configuration. Selecting **<Previous>** allows you to revert to the old Probe configuration. This comes in handy if the changes you made did not yield the desired results.

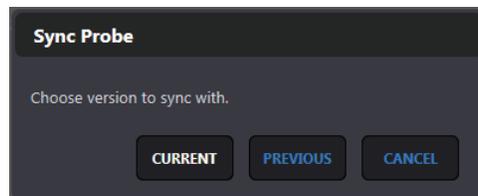


Figure: Probe Sync



Edit Probe – same as clicking on the Probe name. This opens the Probe Edit window.



Delete – Removes entire Probe. This only applies to empty Groups when no Probes have been assigned.

11.2.1 Create a Probe Group

The top of the **Groups** dashboard has three icons: **Add**, **Rename** and **Delete**. Selecting **<Add>** allows you to create and name an empty group. Once created the next step is to assign one or more **Probe** servers to the group.

To create a new Probe Group press the **<Add>** icon to open the Create Probe Group dialog box. Type the desired name and press **<OK>**. MIP will display confirmation at the top of the page once the Probe Group has been saved.

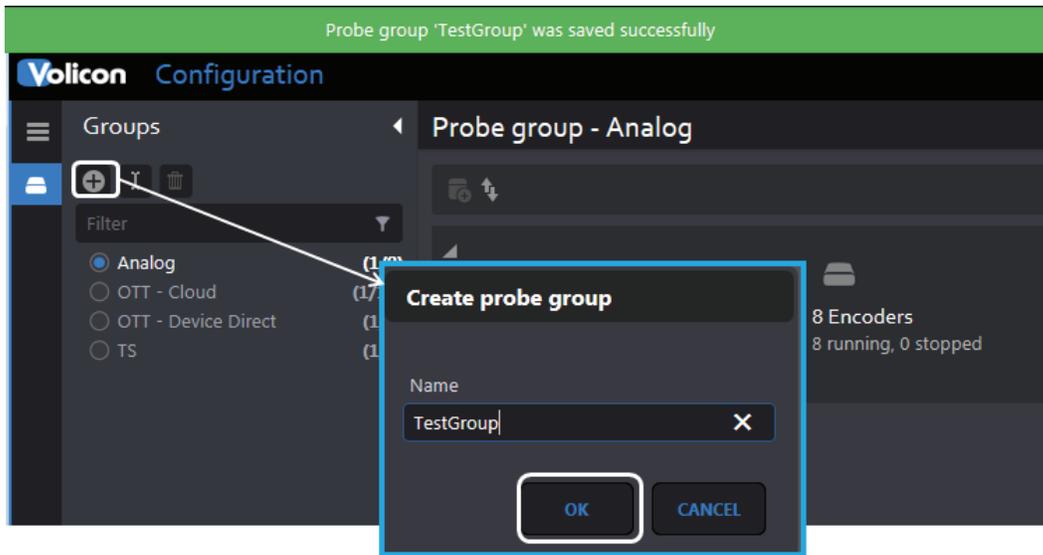


Figure: Create a Probe Group

To add Probes to a Probe Group select the desired Group (in this example the new TestGroup we just created) and press the **<Add>** Icon at the top of the page. Enter the IP address of the Probe in the right hand pane and press **<Save>** at the bottom of the page. Do this for each Probe you want to add to the Probe Group.

The **Profile** entry is a planned future feature intended to simplify management of multiple **Probes**.

Note: A Probe may only be associated with a single Probe Group.

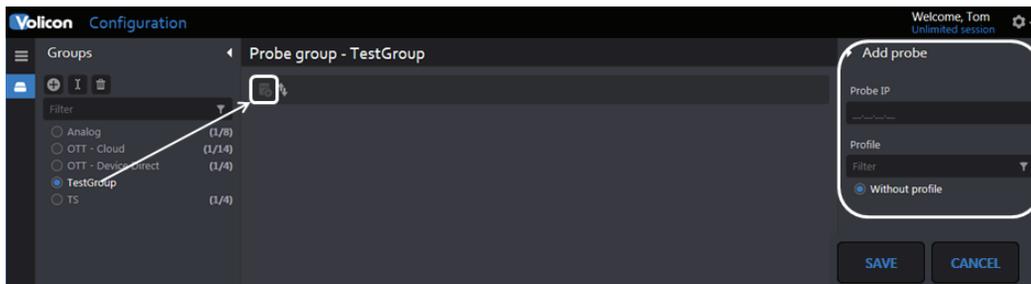


Figure: Assign Probe to a Probe Group

11.2.2 Rename a Probe Group

This lets you rename the **Group**. Select the group you want to rename and press the **<Rename>** icon at the top of the dashboard. A new dialog box will appear. Enter the new name and press **<OK>** to effect the change, or **<Cancel>** to keep the existing name. A message indicating the change was completed momentarily appears at the top of the screen.

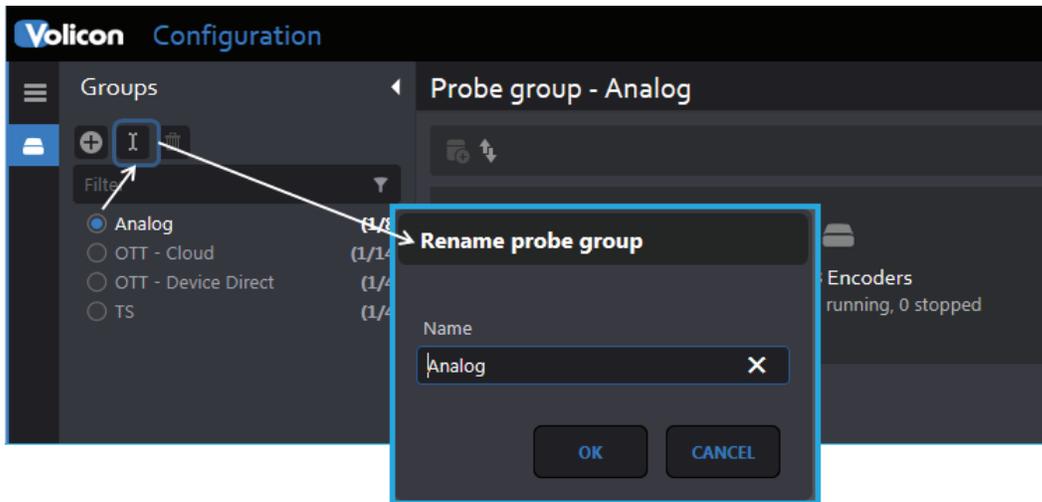


Figure: Rename a Group

11.2.3 Delete a Probe Group

To remove a **Probe Group** select the Group to be removed, and press the <trashcan> icon. A dialog box opens to confirm the action. Press <Delete> to remove the group. Note: this simply removes the Probe Group; it does not affect the physical Probe servers.

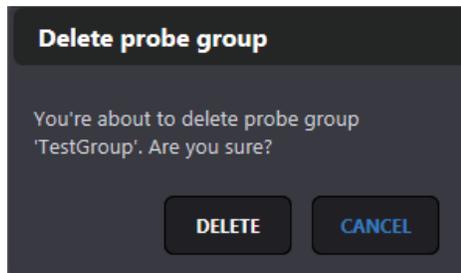


Figure: Delete Probe Group

11.2.4 Adding a Probe

At the top of the page to the right of the dashboard are the **Add Probe** and **expand/collapse** icons. Volicon, a division of Verizon Digital Media Services support is responsible for adding **Probes** and **Encoders** to the system.

11.2.5 Editing a Probe

The **Probe <Edit>** icon opens page with four options: **Probe**, **Streamer**, **NTPService** and **License**.

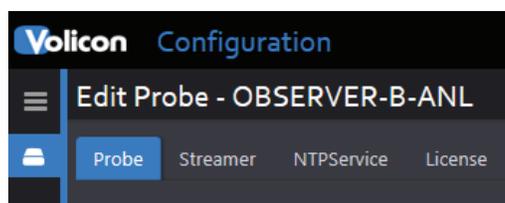


Figure: Edit Probe

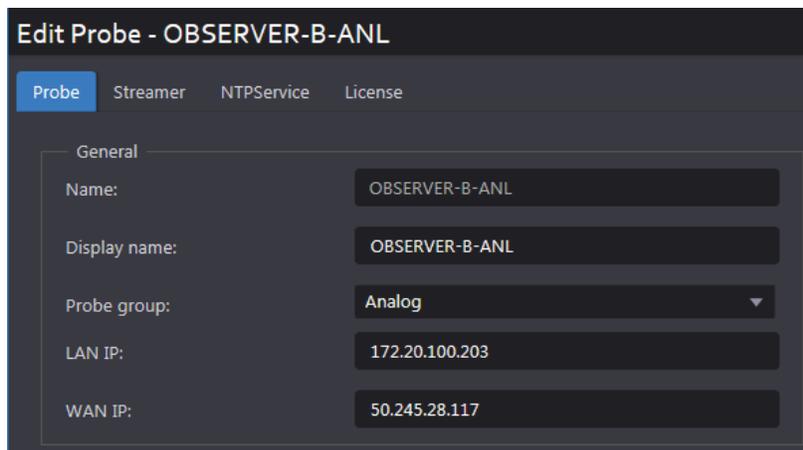
11.2.5.1 Edit Probe - Probe Section

The Probe section is divided into three subsections: **General**, **License Information** and **Probe information**.

General - Configurable Probe Fields

This subsection allows you to rename the Probe, assign it to a different **Group** and specify the LAN and WAN IP addresses of the Probe Server. Use the Probe Group pulldown to assign the Probe to a different group. If you want to assign the Probe to a new group you must first create an empty Group using the Dashboard.

The Probe name was created by Volicon, a division of Verizon Digital Media Services, support when the Probe was initially created and cannot be changed by the customer. To change the Probe name seen by users edit the **<Display name>** entry.



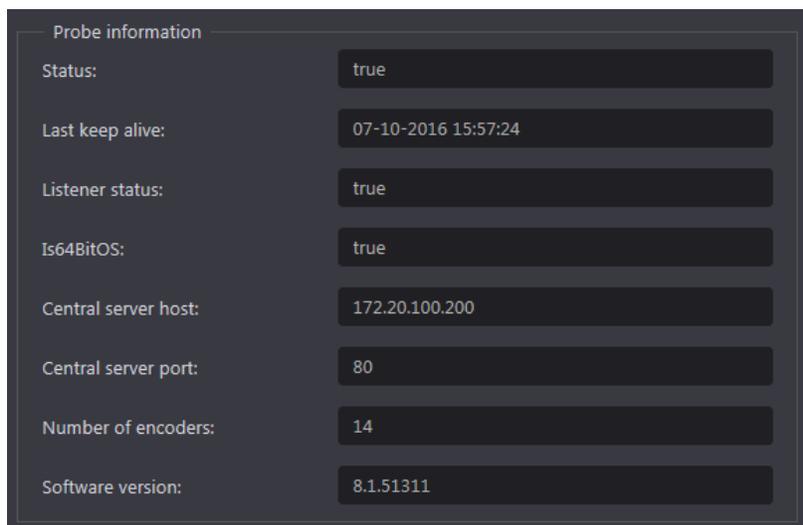
The screenshot shows a web interface titled "Edit Probe - OBSERVER-B-ANL". At the top, there are four tabs: "Probe" (selected), "Streamer", "NTPService", and "License". Below the tabs is a "General" section containing the following fields:

Field	Value
Name:	OBSERVER-B-ANL
Display name:	OBSERVER-B-ANL
Probe group:	Analog
LAN IP:	172.20.100.203
WAN IP:	50.245.28.117

Figure: Configurable Probe Fields

Probe Status Information

This is a read only Probe status display.



The screenshot shows a web interface titled "Probe information" with the following fields:

Field	Value
Status:	true
Last keep alive:	07-10-2016 15:57:24
Listener status:	true
Is64BitOS:	true
Central server host:	172.20.100.200
Central server port:	80
Number of encoders:	14
Software version:	8.1.51311

Figure: Probe Information Display

High Level License Info

The bottommost section is also read only and displays licensing information.

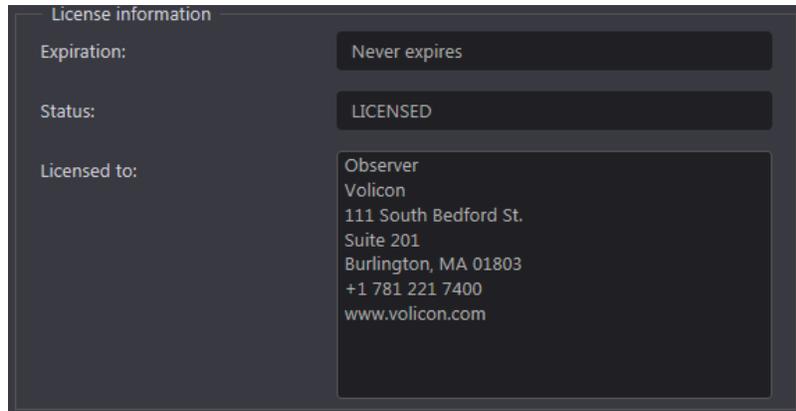


Figure: High Level License Information

11.2.5.2 Edit Probe – Streamer Section

The **Streamer** section allows you to change the IP port values used to stream video. These settings normally be left in their default settings.

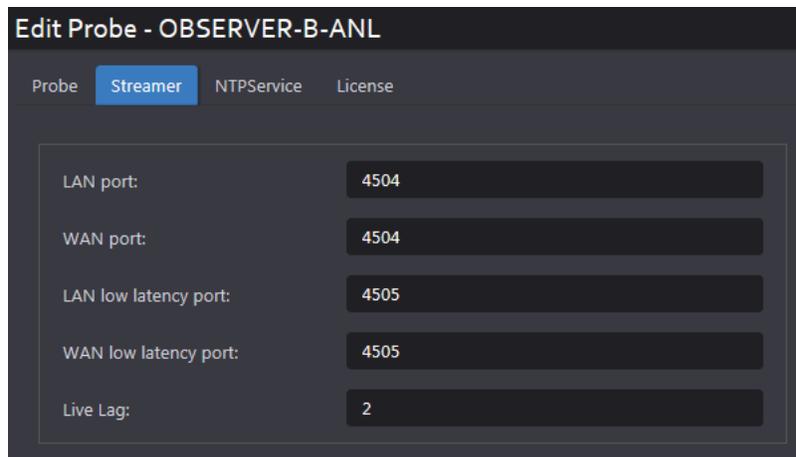


Figure: Streamer Ports

11.2.5.3 Edit Probe – NTPService Section

Accurate time is critical for successful MIP operation. Many aspects of MIP require millisecond timing accuracy. This section allows you to change which network time protocol (NTP) time server MIP uses and how often it is polled. MIP defaults to the Microsoft NTP server defined in Windows.

1. If you run an internal corporate time server, change the configuration to point to it.
2. Another option is to use a NTP server pool. This has the advantage of redundancy, in which you can select geographically nearby servers to minimize transit time latency. The NTP Pool Project is popular and can be found at <http://www.pool.ntp.org/en/>.
3. A third option is to use the Windows operating system as preconfigured, pointing to the public Microsoft NTP server: time.windows.com.

Poll interval: This setting is only active if the SpecialInterval flag is set.

Set Polling interval value to an integer and units from the **<Interval>** Collection. Volicon recommends setting the **Polling Interval** to 3600 seconds.

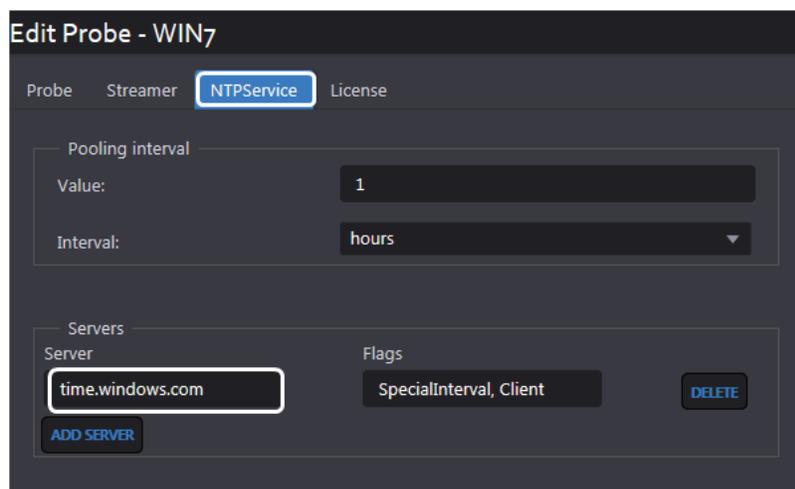


Figure: NTP Time Service

NTP Server

By default MIP uses the MS NTP server. To change simply enter the URL of the desired NTP server. If desired, add additional servers for redundancy. If the active server throws an error or does not respond, MIP will automatically switch to the next server on the list.

NTP Flags

SpecialInterval	Normally W32Time (Windows Time service) will poll the remote NTP server on a floating interval based on the quality of the time samples being returned. Setting the SpecialInterval flag changes this behavior to a fixed static interval. Use the Polling Interval section to select the desired interval.
UseAsFallbackOnly	Setting this flag tells the time service to try the other time servers before using this one.
SymmatricActive	
Client	

Table: NTP Flags

Once the server and flags are selected use the **<Add Server>** button to add the new NTP server. To delete a server use the **<Delete>** button.

11.2.5.4 Edit Probe - License Section

This section displays each licensable feature and, where applicable, how many instances are allowed. Each feature consists of three entries: **Allowed Configured** and **Running**.

- Allowed** indicates the maximum quantity authorized by the license. In instances where the feature is selectable to be either enabled or disabled, its corresponding value will be displayed as **YES** or **NO**.
- Configured** indicates how many instances are currently configured.
- Running** is a real time display of the status of each feature.

AC3	Dolby AC3 audio channels
Automatic Format Detection	Active Format Description (AFD)
Closed Caption Indexing	Closed Captioning monitoring
Detectors	Specifies how many encoder detectors (Video/Audio/Metadata) are allowed to run
DolbyE	How many encoders can be configured with DolbyE
Extra Audio Streams	Number of additional audio streams that can be configured in addition to main audio
Full Res Channels	# Native uncompressed channels – counts to total limit

HD Channels	# of HD channels – counts toward Total Channel Limit
Interactive Services	Scripting module for Interactive Services
Long Term Storage	LTS option not subject to automatic purge
Loudness Measurement	Monitor audio to insure it complies with FCC guidelines
Nave	Nielsen Audio Video Encoder logging
OTT channels	# of over the top channels – counts toward total limit
TS channels	# of transport streams – counts toward total limit
Total Channels	Absolute # of monitoring channels

Table: License Details

11.2.6 Creating and Editing Encoders

Hovering over an Encoder highlights the Encoder in blue and displays two icons: **<Sync>** and **<Edit>**.

Sync –updates the Encoder with the latest configuration. As with Probes, you have an option to sync to changes or revert to the previous configuration.

Edit – access Encoder specific configuration details.

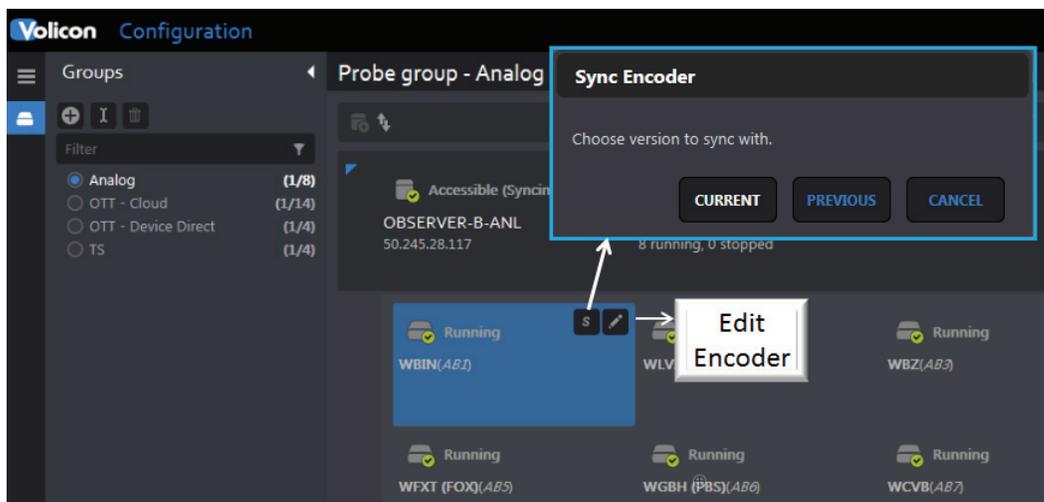


Figure: Syncing and Editing an Encoder

11.2.7 Adding an Encoder

Volicon, a division of Verizon Digital Media Services support is responsible for installing Probes and Encoders.

11.2.8 Encoder Configuration

Press the **<Edit>** icon to access details about the Encoder.

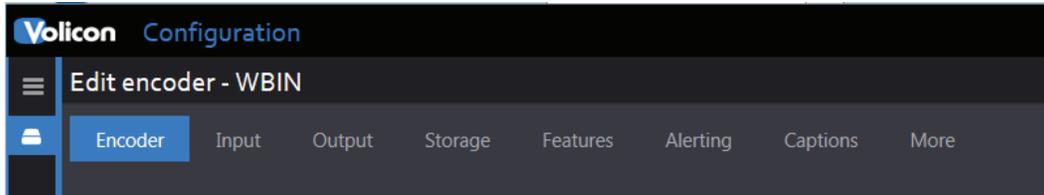


Figure: Encoder Sections

Each Encoder has 8 configuration subsections.

- ← **Encoder** – specifies name and display icons
- ← **Input** – program ingest settings
- ← **Output** – specifics how MIP stores each channel and sub-encoders
- ← **Storage** – storage location and duration
- ← **Features** – enable loudness, thumbnails, NAVE
- ← **Alerting** – set error detection thresholds
- ← **Captions** – Closed Captions and subtitles
- ← **More** – miscellaneous settings

At the bottom of each page is a **<Save>** button. MIP will prompt you to save changes if you attempt to leave the section without saving changes.

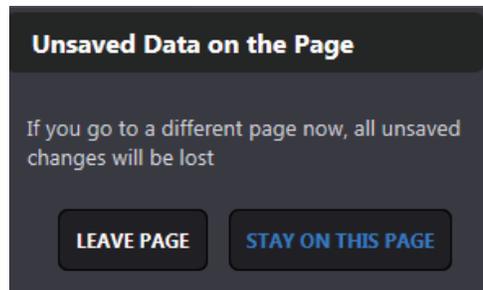


Figure: Unsaved Change Warning

11.2.8.1 Encoder

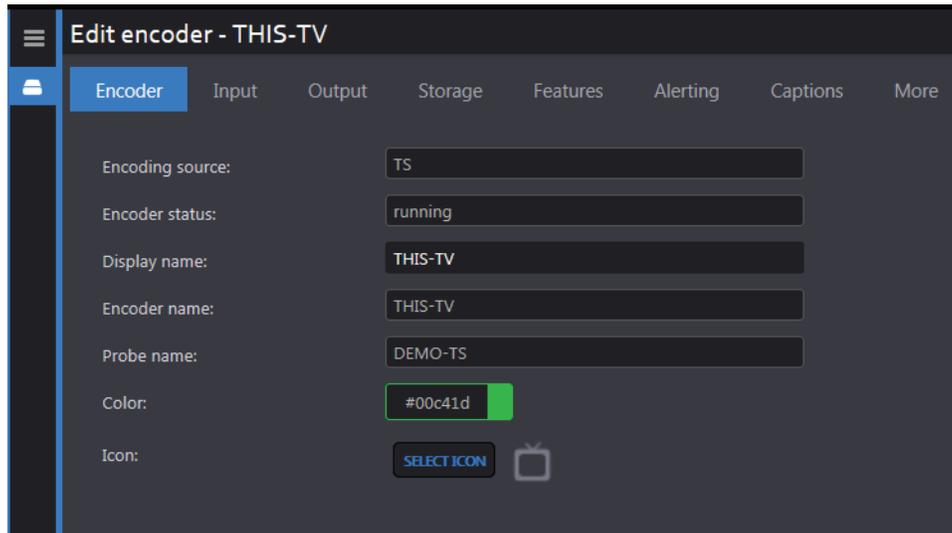


Figure: Encoder Settings

Encoder source	Indicates which of the four possible input types is used: Video capture card, Transport Stream, Cloud, or Device Direct.
Encoder status	Real time encoder status: running or stopped.
Display name	Encoder name presented to Users. Use this field to create a user friendly name for the channel.
Encoder name	Read only name created by Volicon.
Probe Name	Probe server the Encoder is installed.
Color	Pulldown to color code the player.
Icon	Used to add an icon to channel name. Pressing <SELECT ICON> accesses your workstation to upload the desired icon; typically the channel logo but it may be any JPG or PNG image.

Table: Encoder Information

11.2.8.2 Encoder - Input

This section is dependent on how the program is ingested by the MIP. MIP currently supports four types of video acquisition.

- ← **Video Input** – capture card used to interface MIP to program source
- ← **Transport Stream (TS)** – IP based direct program access
- ← **Cloud** – IP based CDN streaming
- ← **Device Direct** – tethered cell phone acquisition

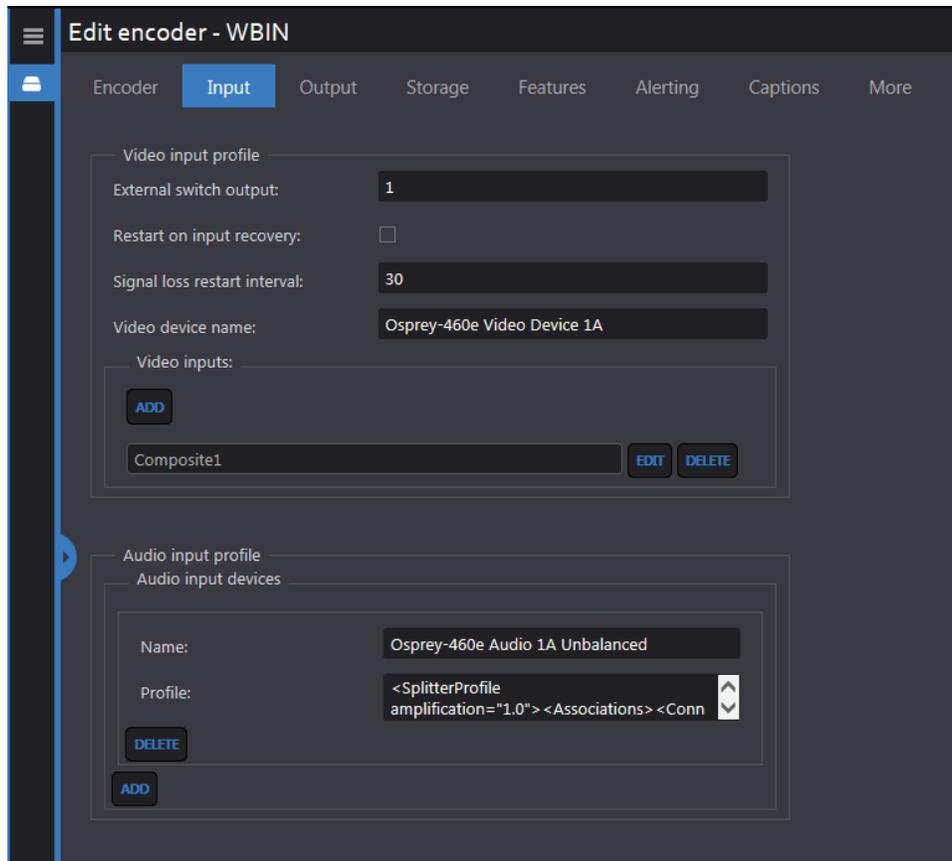


Figure: Encoder Capture Card and Transport Stream Input

External switch output	If an external A/V switcher is used this entry specifies which switcher output port feeds the associated Encoder input (assuming the switcher has more than one output port). Set value to 1 if an external input switch is not used.
Restart on input recovery	Automatically restart encoder when its input is recovered. Relevant for BlackMagic cards only. This is done to avoid time stamp issues.
Signal loss restart interval:	During periods of no input the encoder will automatically restart at the specified interval. This is done to avoid time stamp issues.
Video device name:	Text string with card name and channel ID if the card supports multiple channels.
ADD/DELETE	Define video input parameters. If card supports multiple input channels each needs to be defined. Clicking add opens another submenu. Volicon, a division of Verizon Digital Media Services, support is responsible for adding and deleting channels.
Video Input Misc	
Connector Type	Pulldown to select video connector
Format	Pulldown to select type: i.e. PAL-B 1080i, frame rate and resolution.
Add Format	Click to open dialog to create another format.
Video Input External Switch	Note: not yet implemented in MIP
Remote Control	Not implemented, only supported in STB/RPM systems.

Table: Video Input Profile (Capture Card and Transport Stream)

Name:	Card name and additional information about audio input type.
Profile	Audio profile in XML format.
Add/Delete	Add audio profiles in addition to the main audio profile.

Table: Audio Input Profile (Capture Card & Transport Stream)

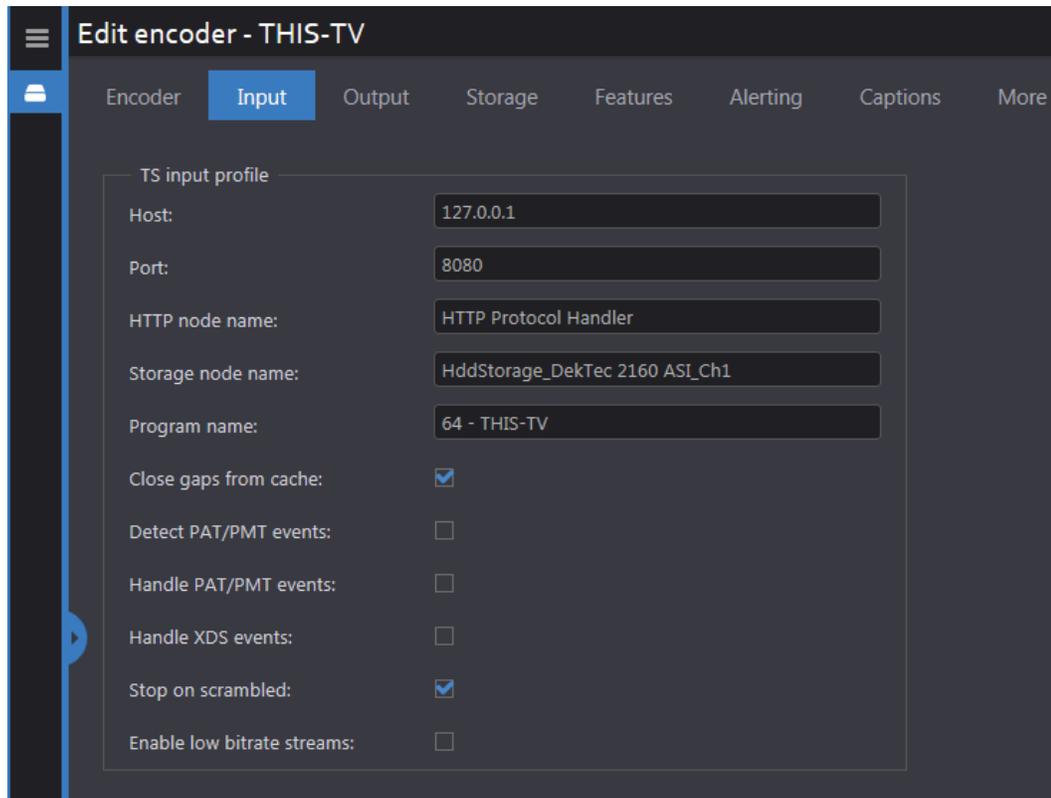


Figure: Encoder Transport Stream IP Ingest Section

Host:	IP address or URL of the program source.
Port	IP Port address to access the program.
HTTP node name	The name of the HTTP node as configured in the Mediahub, for streaming data of the required PID.
Storage node name	The name of the Storage node as configured in the Mediahub where data for the required PID is stored.
Program name	The name of the program to encode the TS stream.
Close Gaps from cache:	If the encoder losses the feed it keeps recording a black screen, until the feed comes back. In this way downtime is represented in the recorded data.
Detect PAT/PMT events	Depreciated, no longer used.
Handle PAT/PMT events:	Depreciated, no longer used.
Handle XDS events:	The system will process Extended Data Services events and log them.
Stop on scrambled:	Ignore encrypted streams so MIP does not generate erroneous alerts.
Enable low bitrate streams:	Enable/Disable handling of low bitrate streams. This is normally disabled because it may slow down recovery in the event of connection loss. When there is almost no payload (black video for example) this should be enabled.

Table: Transport Stream Input Profile (IP Ingest Section)

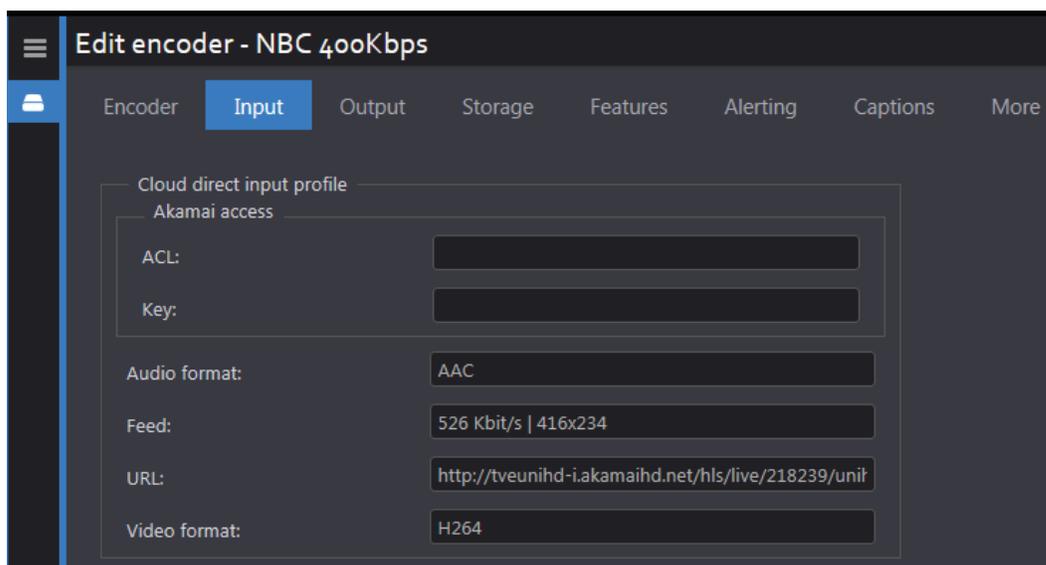


Figure: Encoder Cloud Input

Akamai access ACL:	Optional access control list (ACL) to access the server.
Key:	Preshared key (PSK) to access the Akamai server.
Audio format:	Normally set automatically based on the input feed, but may be sent manually.
Feed	Bitrate and resolution.
URL:	Channel specific URL on the CDN server.
Video format:	Normally set automatically based on the input feed, but may be sent manually.

Table: Cloud Direct Input Profile

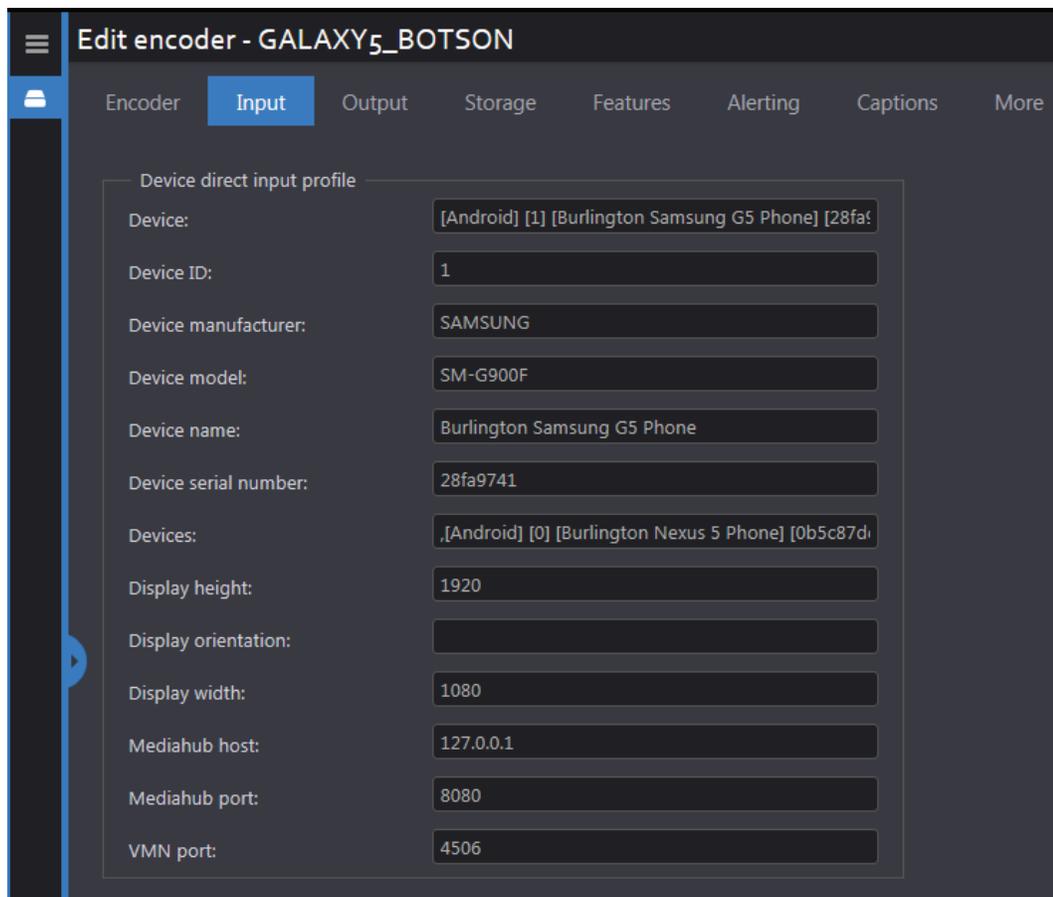


Figure: Encoder Device Direct Input

Devices:	Smart phone used to capture the program.
Device ID:	ID of the device as the MediaHub configured it.
Device manufacturer:	Smart phone manufacturer.
Device model:	Smart phone model name.
Device name:	The name of the device to be shown in MediaHub.
Device serial number:	The hardcoded serial number of the device. This is automatically detected.
Devices:	A list of all devices connected to the server.
Display height:	Height in pixels.
Display orientation:	Landscape or Portrait. If left blank defaults to Portrait.
Display width:	Width in pixels.
Mediahub host:	Mediahub IP address typically: localhost.
Mediahub port:	IP port typically: 8080 so it does not conflict with other web servers.
VMN port:	Port use to stream content from the device.

Table: Device Direct Input Profile

11.2.8.3 Encoder - Output

Unlike inputs, the output settings are the same for all Encoders, regardless of how the program was ingested into MIP.

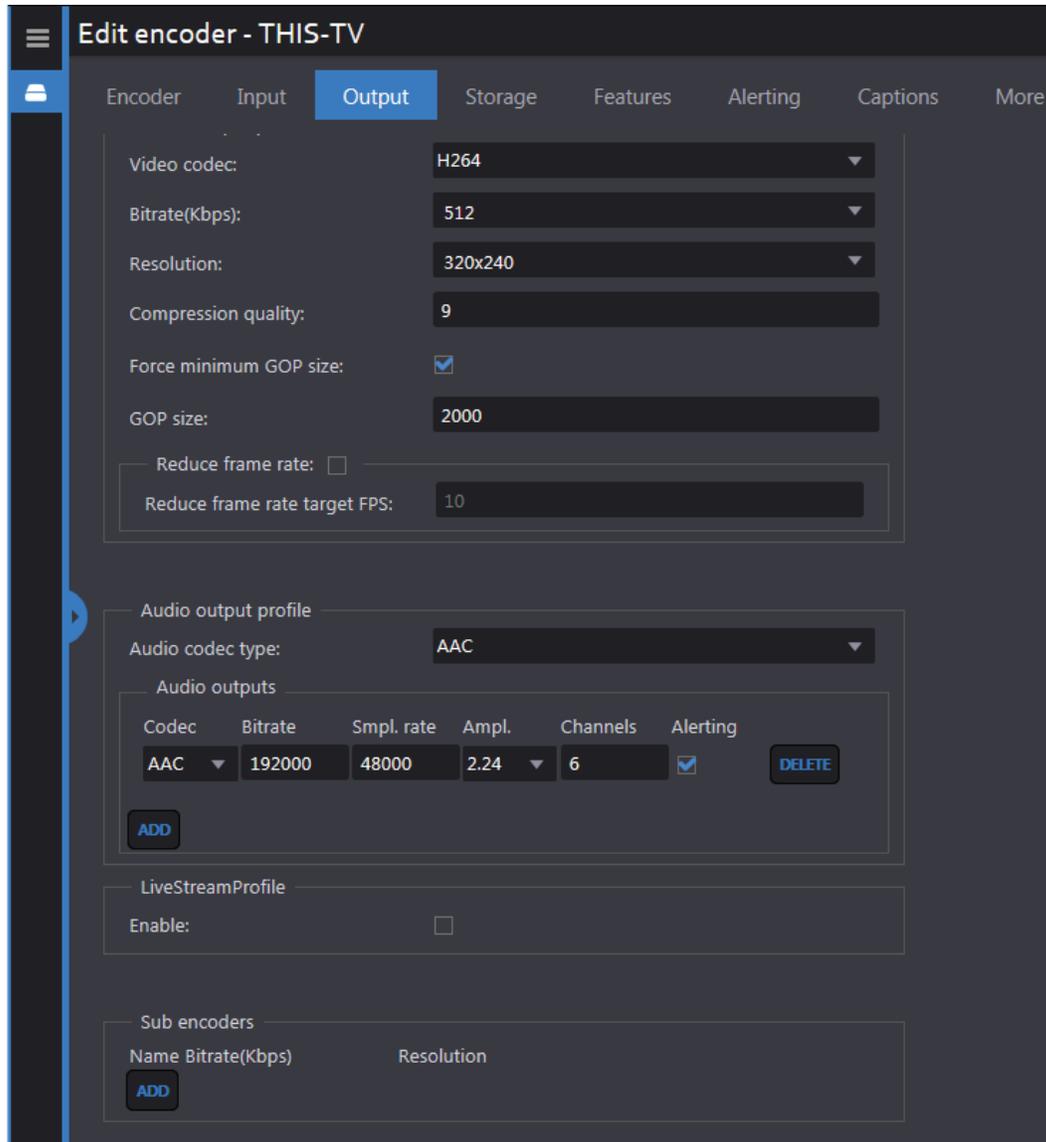


Figure: Encoder Output

Video codec:	Pulldown to specify how MIP encodes the program for storage. MIP supports: H264, WMV3, WMVA, and WVC1.
Bitrate (Kbps):	Pulldown to specify program bitrate for storage.
Resolution	Pulldown to specify screen resolution for storage.
Compression Quality	
Force minimum GOP size:	Optional field to set MPEG Group of Picture structure. The setting defines how many frames are dependent on the preceding frame before another I frame. MPEG not only removes redundancy, spatially within a frame, but temporally among frames. I frames, known as the key frame, is the only frame that can be decompressed without reference to other frames.
Reduce frame rate	Reduces frame rate to reduce output bandwidth consumption.
Reduce frame rate target FPS:	Output frame rate value.

Table: Video Output Profile

Audio codec type:	Pulldown to specify how MIP encodes audio for storage: AAC, WMA and WMApro. When configuring the Audio CODEC type which describes the audio CODEC used by this encoder it will change the COCEC for each of the audio streams in the feed.
ADD/DELETE	Allows you to create multiple audio outputs.
Codec	Pulldown to select output type: AAC, WMA9, WMA9pro.
Bitrate	Audio is encoded as variable bit rate VBR). This field sets the upper limit even if the source material results in a higher instantaneous value.
Sample. rate	This field accepts values from 8,000 – 96,000, recommend value is 48,000 samples per second.
Amplitude	Scales the resulting output, normalized to 1 dB.
Channels	Number of audio channels to encode the output, typically 2 channels stereo. Maximum is 48.
Alerting	When alerting is checked for a specific audio stream it enables alerts for that stream if Alerts are configured for the encoder. Unchecking this option inhibits alerts for this stream. This is typically used if the audio stream does not actually contain audio.

Table: Audio Output Profile

Enable	Live stream is used to view low latency video on a monitor page. Note: this feature is CPU intensive.
--------	---

Table: Live Stream Profile

Sub Encoders

Each Encoder has a primary video codec that creates the channel stream digital multimedia archive. If desired, additional sub encoders may be configured. Sub-encoders are typically set for lower resolution and bit rate, in comparison to the primary codec that serves specific monitoring or file exchange requirements.

Sub-encoders have the same server requirements as the identical setting for the primary codec sequentially; CPU cycles are needed for the compression engine and disk storage for the resulting file.

ADD/DELETE	Adds or deletes a sub encoder.
Name	System created name derived from bitrate and resolution.
Bitrate(Kbps)	Pulldown selection of bitrates.
Resolution	Pulldown selection of screen resolution.

Table: Sub Encoders

11.2.8.4 Encoder - Storage

This section defines where video is stored, how long it is saved and the disk threshold.

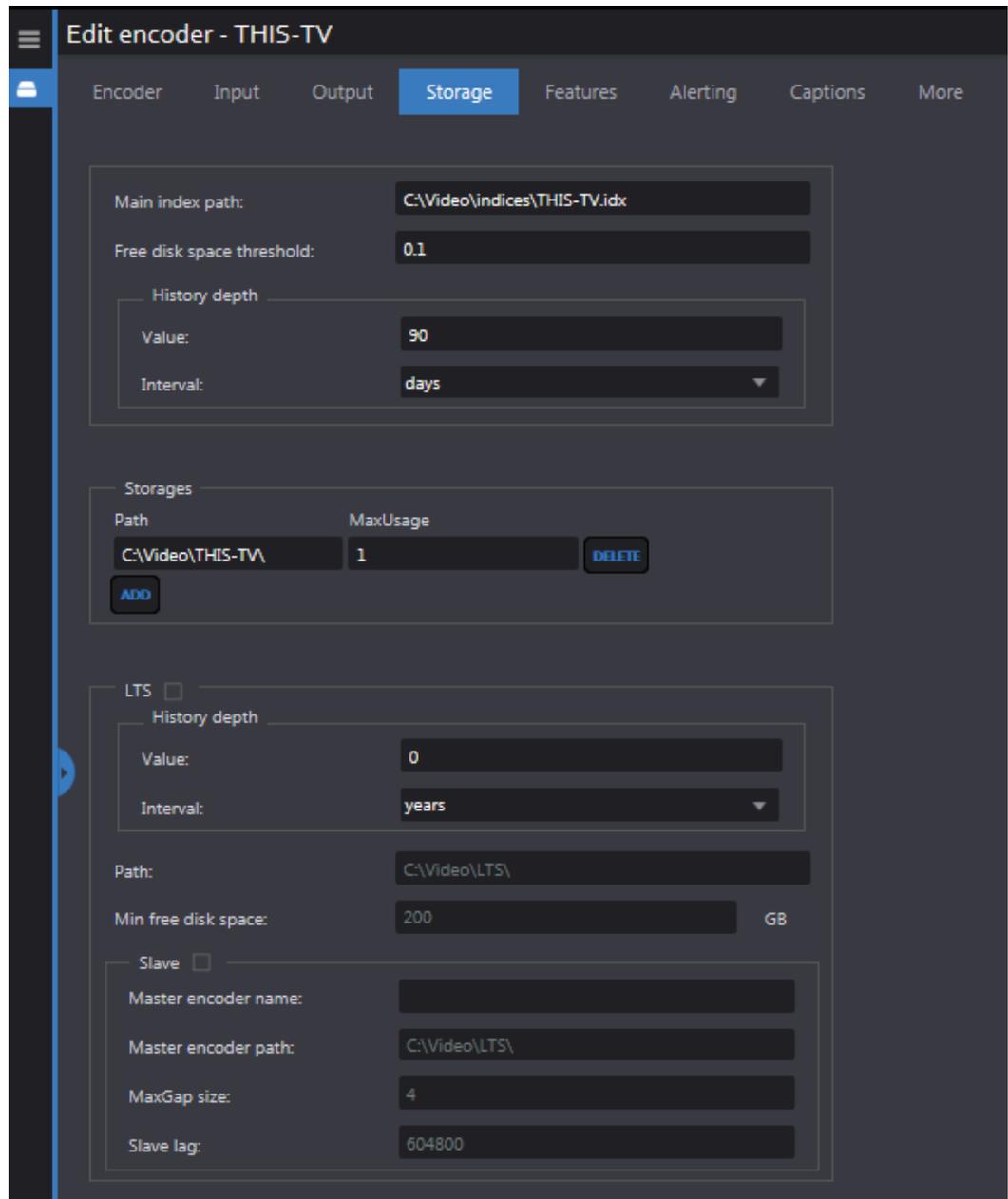


Figure: Encoder Storage

Main index path:	Example: C:\Video\indices\AB1.idx. Normally set by Volicon to default path on the main HDD.
Free disk space threshold	This amount of space will not be used by MIP and kept free for other use. Value should be between 0 and 0.9 where 0 means no free space is reserved and 0.9 means 90% of storage location is kept free.
History depth	Specifies how long programs are stored.
Value:	Numeric value specifying how many unit intervals video will be stored. Example a Value of 30 and an Interval of days will store video for 30 days.
Interval:	Pulldown specifying: minutes, hours, days, weeks, months years.

Table: Storage Information

Path	Absolute path to the storage location.
MaxUsage	The maximum percentage of the total size of the storage location used by the channel.
ADD/DELETE	Add/remove storages.

Table: Storages

History depth	Specifies how long programs are stored. Normally streams are stored in the local storage. However, in a case where that is not adequate, Volicon support can configure LTS.
Value:	Numeric value specifying how many unit intervals video will be stored. Setting this value to 0 means data is not saved.
Interval	Pulldown specifying: minutes, hours, days, weeks, months years.
Path:	LTS storage location, typically C:\Video\LTS\ if LTS is running on the same computer.
Min free disk space:	Minimum disk space available on Archive machine before archiving. Value is in Gigabytes.
Slave	Specify if this encoder is a backup encoder for another system.
Master encoder name:	The name of the master encoder (only relevant when backup encoder is used).
Master encoder path:	Absolute path to the storage location of the master encoder (only relevant when backup encoder is used).
MaxGap size:	The maximum gap size between files.
Slave lag:	Specifies how long slave will wait before starting to archive its content. Setting this to less than 1 week is not recommended and may cause both master and slave to archive needlessly.

Table: Long Term Storage (LTS)

11.2.8.5 Encoder - Features

This section specifies audio loudness monitoring, DPI and AFD metadata processing, Thumbnails and NAVE.

11.2.8.6 Loudness Monitoring

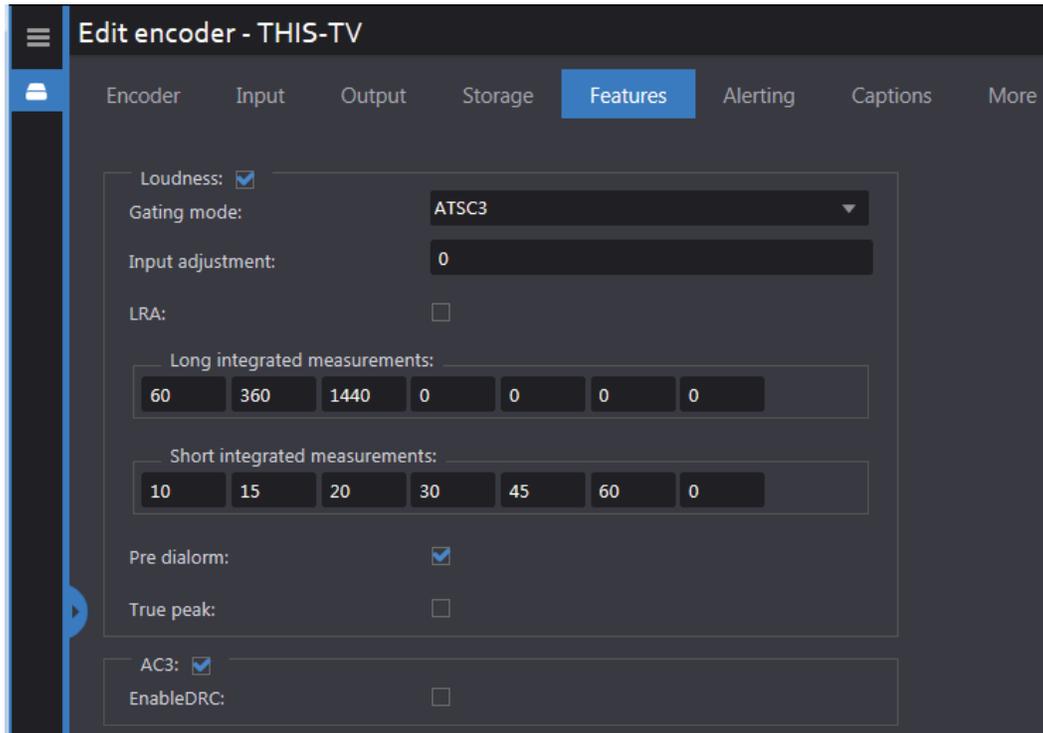


Figure: Encoder Features - Loudness

Loudness	With the optional loudness module enabled, the MIP performs loudness meter measurements to meet the following standards: EBU R 128, BS-1770-1, BS-1770-3, ATSC A/85 and EBU Tech 3341/2/3. MIP loudness module is accurate per each frame of video and takes a measurement every 100 milliseconds. Measurements can be done with or without gating windows (-10 dB but adjustable).
Gating mode:	Pulldown to select: ATSC1, ATSC3 or EBU.
Input adjustment	Adjustment to input level for fine tuning. A floating point value will be added to the input measurement.

LRA	Loudness Range Measurement (LRA) quantifies the variation in a time-varying loudness measurement. Loudness Range is supplementary to the main audio measure, Program Loudness, of EBU R 128. Loudness Range measures the variation of loudness on a macroscopic time-scale, in units of LU (Loudness Units). The computation of Loudness Range is based on a measurement of loudness level as specified in ITU-R BS.1770, albeit with a different gating threshold. Loudness Range should not be confused with other measures of dynamic range.
Long integrated measurements:	Long Form Integrated measurements greater than two minutes. There are a total of 7 user defined, configurable measurements - e.g. 1 hour, 6 hour, 1 day, 5 day intervals. By default MIPsets the long term values as follows: 60, 360, 1440, 0 , 0 , 0, 0.
Short integrated measurements:	Short Form integrated are measurements which are two minutes or shorter. There are a total of 7 user defined, configurable measurements - e.g. 10s, 30s, 60s. By default MIP sets the short term values as follows: 10, 15, 20, 30, 60, 120, 0.
Pre Dialnorm	DialNorm indicates the level of average spoken dialogue within the encoded audio program. Typical values for short and long term are factory preset. DialNorm should be enabled whenever an Encoder is ingesting a digital audio stream such as optical, s/pdif, or Dolby AC-3.
True peak:	Enables monitoring the value of the audio signal waveform of a program in the continuous time domain; detects peak loudness that otherwise would escape the sampling process.

Table: Loudness Monitoring

AC3	Dolby - Adaptive Transform Acoustic Coding 3 enable/disable.
EnableDRC:	Dolby - Dynamic Range Compression.

Table: AC3

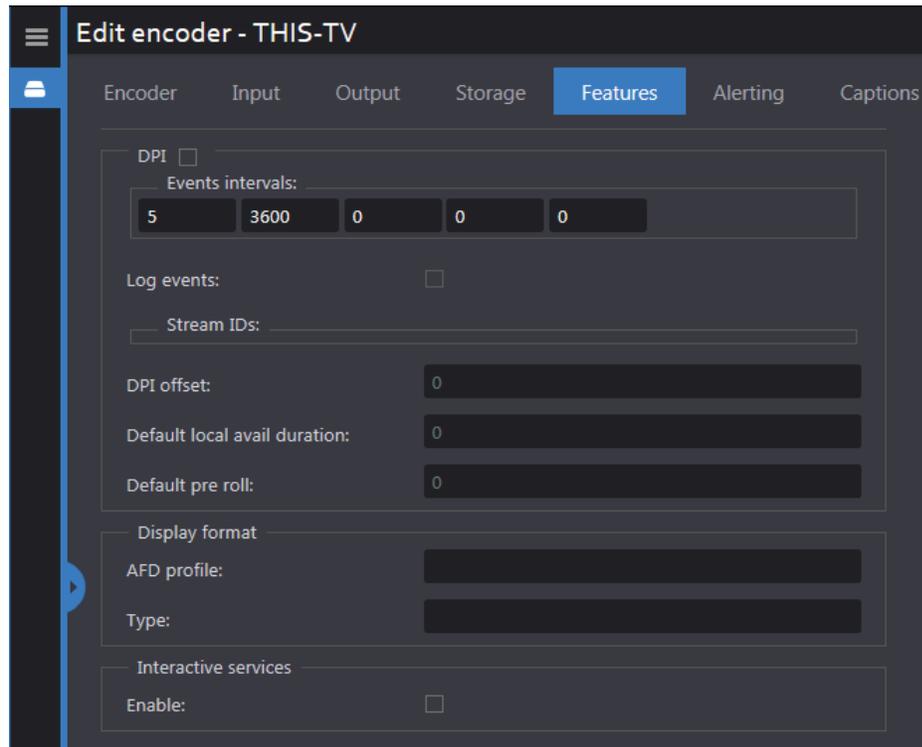


Figure: Encoder Features - DPI and AFD

DPI	Digital Program Insertion.
Events interval:	List of intervals to be monitored for in/out DPI events.
Log events:	Enable/disable logging of DPI event to a database.
Stream IDs:	List of DPI streams to be monitored.
DPI offset:	Offset of DPI event relative to A/V (in milliseconds).
Default local avail durations:	Default location available duration to use (in milliseconds).
Default pre roll:	Default preroll time before local avail (in milliseconds).

Table: Digital Program Insertion (DPI)

AFD profile:	AFD profile in XML format.
Type	Not used in MIP.

Table: Active Format Description (AFD)

Enable	Only applies to RPM systems – identify objects and images on screen. Used for channel change verification.
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Table: Interactive Services

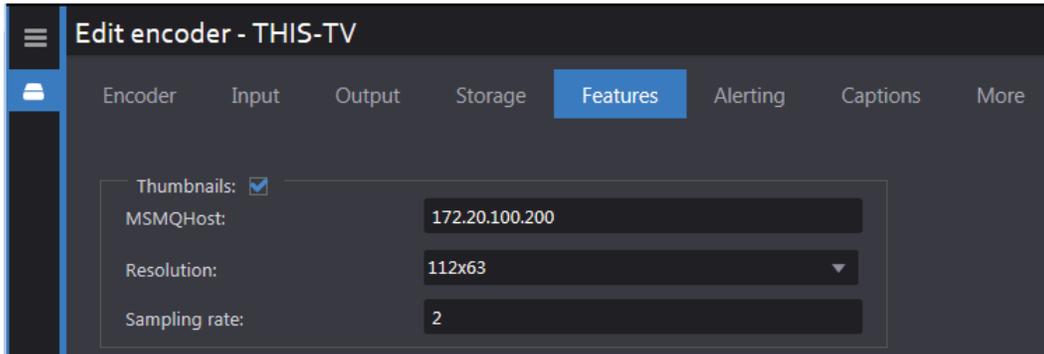
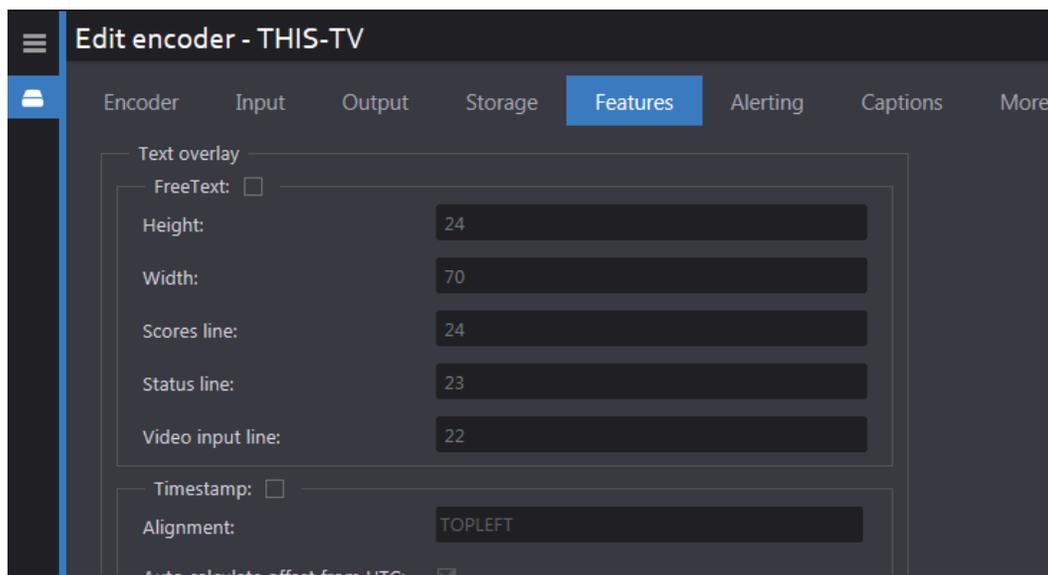


Figure: Encoder Features - Thumbnails

Thumbnails Enable	Checkbox to enable/disable thumbnails.
MSMQHost	IP address or URL of Microsoft Message Queuing used to access video clip thumbnails.
Resolution	Pulldown used to specify thumbnail image resolution.
Sampling Rate	Every x seconds save an image to the storage.

Table: Thumbnails



FreeText	Enable/display of embedded text.
Height	Number of free text lines.
Width	Number of characters in a free text line.
Score line:	The line on which the scores will be burnt in a 1 based index system.
Status line:	The line on which the scores will be burnt in a 1 based index system (so if using the default height this is the line before last).
Video input line:	Setting for the video input line burnt into the video.

Table: Text Overlay

Timestamp Enable	Turn on timestamp overlay for this Encoder channel.
Alignment	Pulldown to position the info on player screen.
Auto calculate offset from UTC:	Based on Probe's time setting.
Format:	Specifies how time is displayed. %month%-%day%-%year%%hour%:%minutes%:%second%/frame%
Offset from UTC:	Manually set a time zone offset – this setting overrides the Probe O/S time zone setting. MIP uses this value instead of the offset in the Probe.

Table: Timestamp

11.2.8.7 NAVE

Encoding of television signals such as in the Nielsen system is used for audience measurement; e.g., to accurately identify television distributors (including broadcast stations or cable networks). The Nielsen Media approach installs metering devices at the user's premises. This device identifies stations and networks tuned into by the end user. By encoding content with a NAVE unit, ratings data for programming can be provided, whether it is received in a digital, analog, or combined viewing environment. Reading the aforementioned watermarks or other codes inserted into the television signal at the distribution source through the NAVE unit captures this end user data.

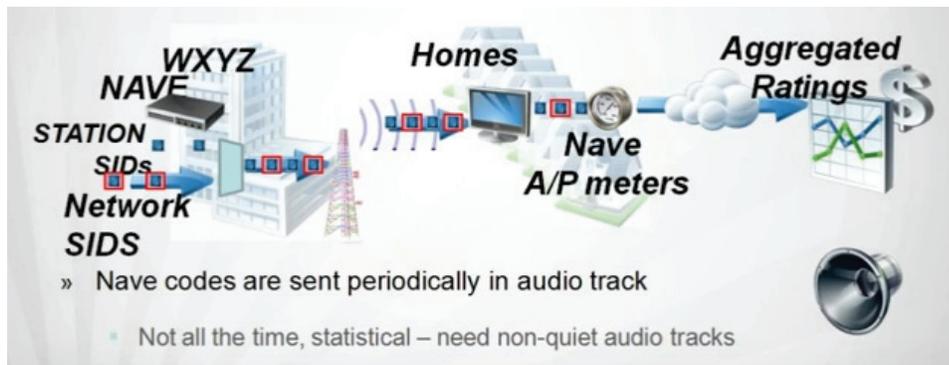


Figure: NAVE Watermarking

The Nielsen Audio Video Encoder (NAVE) is a system capable of inserting Nielsen Media Research proprietary NAVE source identification watermarking directly into the audio portion of compressed digital ATSC transport streams prior to broadcast. NAVE devices can simultaneously insert watermarking data on multiple independent digital television programs being broadcast whether they are standard definition (SDTV) or high definition (HDTV). The watermark is capable of identifying the Provider Content (PC), the network the content was distributed (NT), and the final distributor (FD), say in the case of local broadcast station or cable channel. The watermarks include a timestamp so if the content is viewed time shifted (VOD) within a reasonable time frame that usage data is also captured.

If any station's NAVE encoder is interrupted, the meter device installed in Nielsen sample premises collects and stores passive signatures for all non-encoded programming viewed. These signatures are downloaded each night to Nielsen's operations center. To identify viewing, the passive signatures collected from the meter device in the premises are matched against the signatures in the library.

The feature allows you to define the watermarks to be accepted and the faults/recoveries to occur by configuring the watermark's creation time and the number of good watermarks that should be received per period.

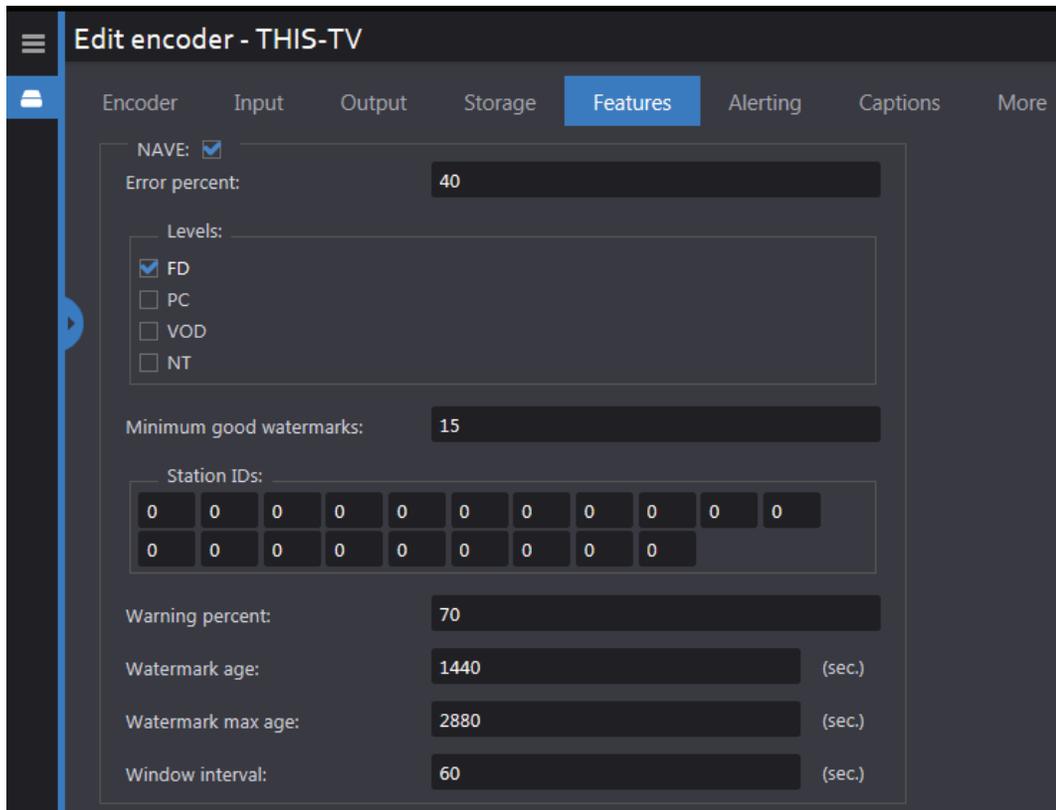


Figure: Encoder Features - NAVE

Enable	Enable/disable Nielsen Audio Video Encoder monitoring. This feature requires a subscription to Nielsen service.
Score Line	Percentage of good watermarks in the monitored window. Note: is been labeled "Error Percent" in early versions of MIP.
Levels	Filters watermarks by their levels.
FD	Final Distributor – entity that delivered content to customer.
PC	Provider Content – entity that originated content.
VOD	Video on Demand – time shifted viewing.
NT	Network that delivered the content.
Minimum good watermarks:	If the number of good watermarks during the sliding window is lower than the minimum value, a fault is detected.
Station IDs:	A list of good watermarks you intend to accept. If the field is left empty, all watermarks will be detected. Some channels support more than one Station ID (SID). In this case, insert into the SID array of all the IDs you intend to accept. A single SID is sufficient to satisfy the <i>Minimum Good Watermarks</i> and <i>Watermark Percentage recovery</i> variables to avoid faults and stay recovered.
Warning percent:	If the value is greater than Score Line but less then Warning Percent, a warning message will be sent. Any other case results in recovery.
Watermark age:	The watermark's time from its creation.
Watermark max age:	Filters out watermarks older than this threshold and reports no faults on these. If left at 0, variable watermark age is taken. For example, if this watermark is 10 ignored. If the watermark's age is less than this threshold it will be processed as a regular watermark.
Window interval:	Faults are detected and recoveries enabled during the sliding window interval. For example, if you define a 30 second window, for each second the 30 second window will be checked (0-30, 1-31, 2-32...) against the various parameters used.

Table: NAVE

11.2.8.8 Encoder - Alerting

The alerting feature configures MIP to constantly monitor program streams. If the stream does not meet the monitoring criterion for the duration specified an alert is generated. A single alert is dispatched for each event. If the stream returns to normal in excess of the recovery time a new alert is generated if the stream once again falls outside monitoring parameters.

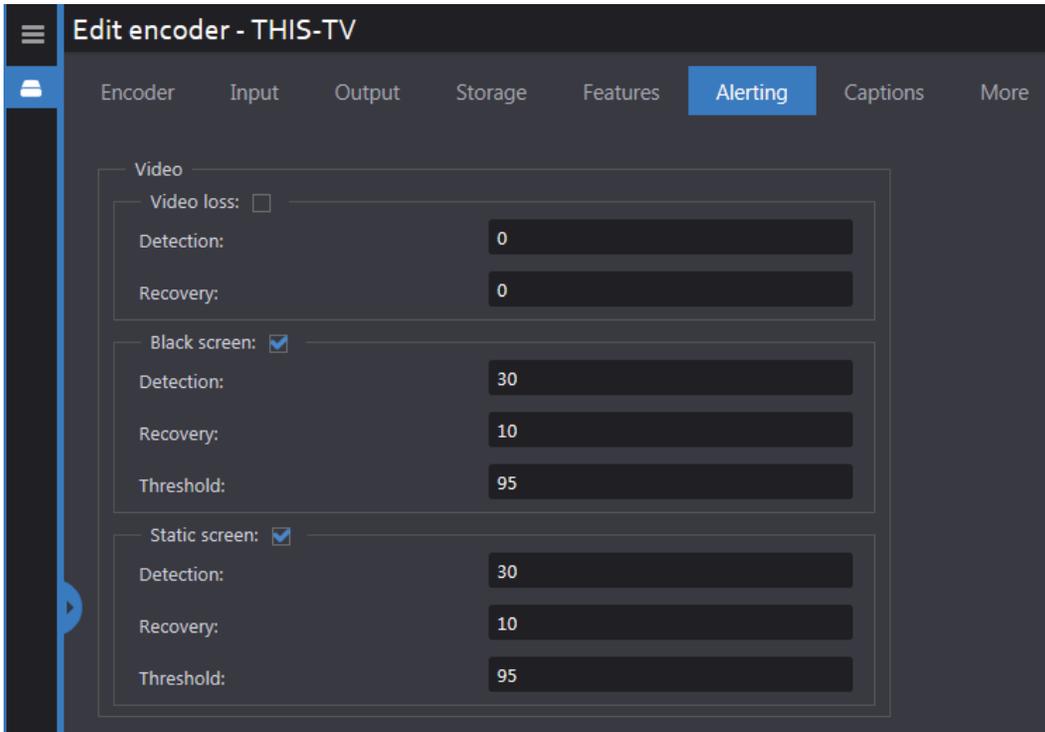


Figure: Encoder Alerting Video

Video loss:	<p>When video framing loss, commonly known as “sync”, is detected by the hardware and persists over the Video Duration threshold, then a VIDEOLOST Alert is generated. Only the Duration threshold is configurable; the level threshold is not configurable.</p> <p>Example: Video lost signal = TRUE over duration of 31 sec exceeding cycle time and duration threshold.</p> <p>When notification is enabled, SNMP trap and email messages are sent if configured by the admin.</p>
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Black screen:	<p>When the percentage of black pixels (BS) in video frames of incoming video signal exceeds the certainty threshold and persists over the duration threshold.</p> <p>When notification is enabled, SNMP trap and email messages are sent if configured by the admin.</p>
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Threshold	Default: 95%
Static screen:	<p>Detected when video frame pixels at the same frame location are compared for color and luminosity between pairs of consecutive video frames and the percentage of pixels that match exceeds the static screen (SS) threshold while also exceeding the duration threshold.</p> <p>When the pixel color, luminance and locations matching between pairs of consecutive video frames exceed 95% of all video frame pixels for longer than 30 seconds, a Video static alert is declared.</p> <p>When notification is enabled, SNMP trap and email messages are sent if configured by the admin.</p>
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Threshold	Default: 95%

Table: Video Alerting

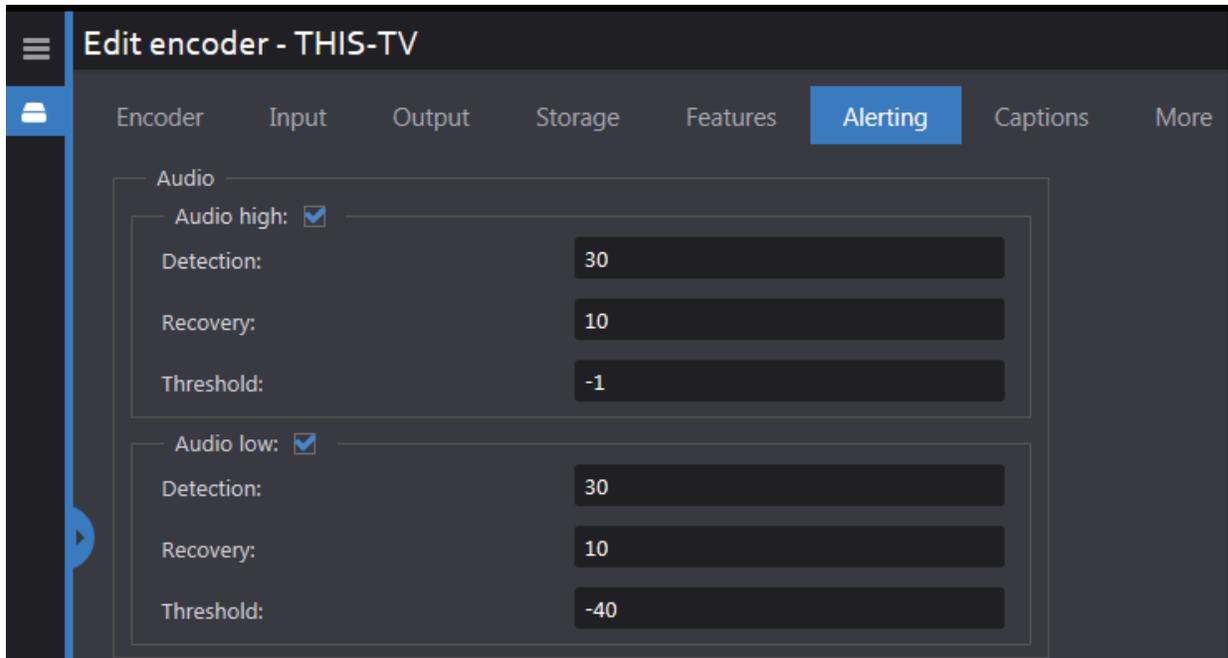


Figure: Encoder Alerting Audio

Audio high:	<p>Audio high fault is detected when the incoming audio stays above the high level threshold for sufficient duration to exceed the audio duration threshold.</p> <p>AUDIOHIGH Alert Example: Audio alert is configured on a channel. Certainty threshold = -1 dB; Duration set to default of 30 sec. Audio input signal detected = 2 dB (above Certainty) for 6 minutes (exceeding the cycle time for the lineup plus the Duration threshold). A media fault therefore is detected, generating an audio alert and automatically creating a fault clip, which is stored under the Clips --- Fault Clips section on the MIP Media Player.</p> <p>When notification is enabled, SNMP trap and email messages are sent if configured by the admin.</p> <p>If you wish to change any Certainty, Duration, or Recovery levels, please contact MIP Support.</p>
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Threshold	-1dB.
Audio low:	<p>Low audio fault is detected when the incoming audio stays below the low level threshold and the duration of the fault exceeds the duration threshold. Disable audio alert detection on channels with frequent silence.</p> <p>When notification is enabled, SNMP trap and email messages are sent if configured by the admin.</p>
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Threshold	Default: -40dB.

Table: Audio Alerting

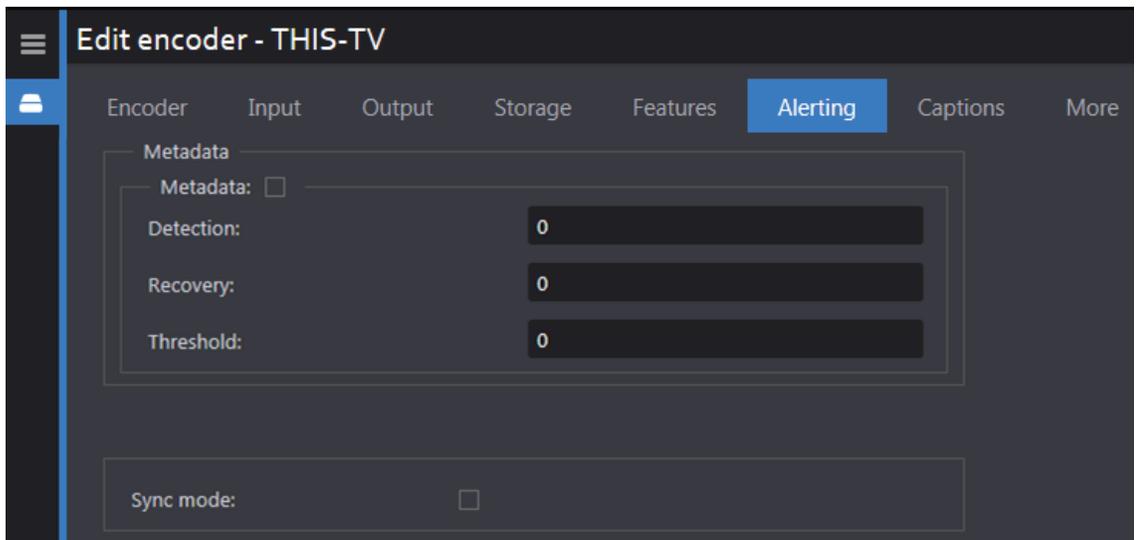


Figure: Encoder Alerting Metadata

Metadata	Monitors embedded channel metadata.
Detection	Default: 30 seconds.
Recovery	Default: 10 seconds.
Threshold	Defines the number of metadata instances missed in the detection threshold duration. Example: if threshold is set to 5, if more than 5 instances are missed during the 30 second window an alert is generated.

Table: Metadata Alerting

Sync mode:	Determines how quickly NTP sync will compensate for real time clock drift.
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Table: Sync

11.2.8.9 Encoder Captions – Closed Captioning

This section determines how MIP processes Closed Captioning and Subtitles.

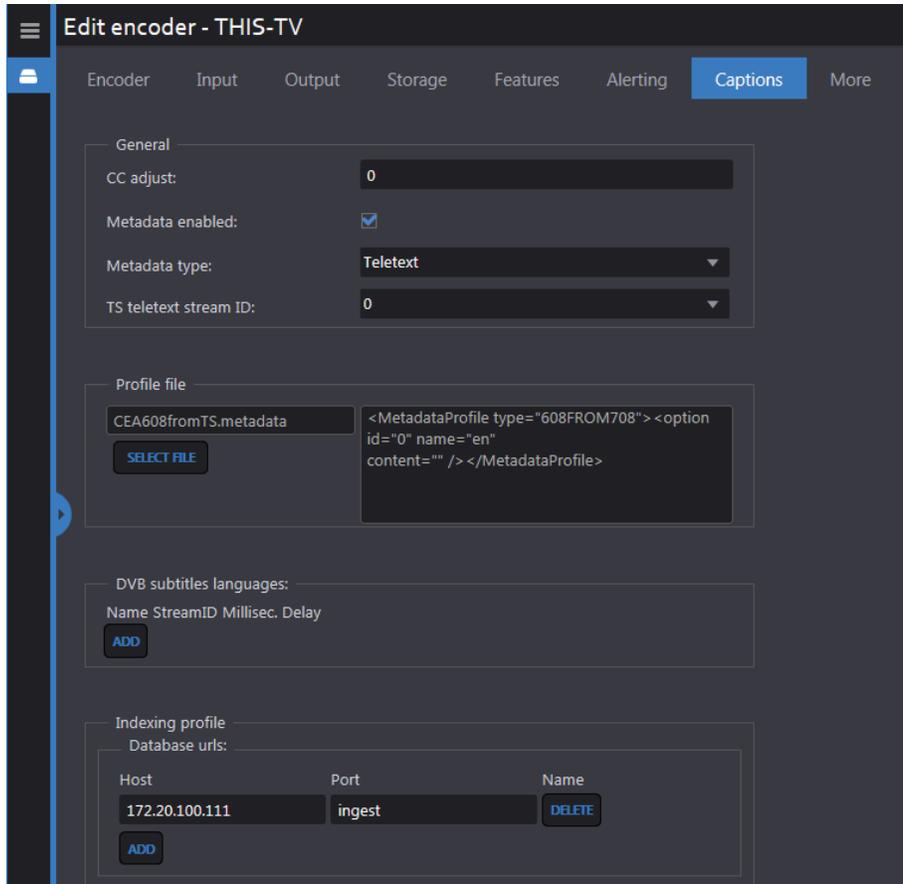


Figure: Encoder Captions

CC Adjust:	Not currently relevant to MIP
Metadata enabled:	Enable/disable Close Captioning monitor.
Metadata type:	Pulldown to specify which data format channel is using.
TS teletext stream ID:	The ID of the Teletext stream inside the transport stream program.

Table: Closed Captioning

File name	
-----------	--

Table: Profile File

ADD/DELETE	Add or remove subtitle language.
Name	Name of the language.
StreamID	Stream ID of the subtitle language.
Millisec. Delay	The delay of subtitles in relation to the video. Used to synchronize subtitles to video.

Table: DVB Subtitles Language

ADD/DELETE	Add or remove metadata database URLs.
Host	Database IP or Hostname.
Port	Not used.
Name	The Database name.

Table: Indexing Profile

11.2.8.10 Encoder - More

This section configures MIP to recover from Encoder errors and hibernates the encoder.

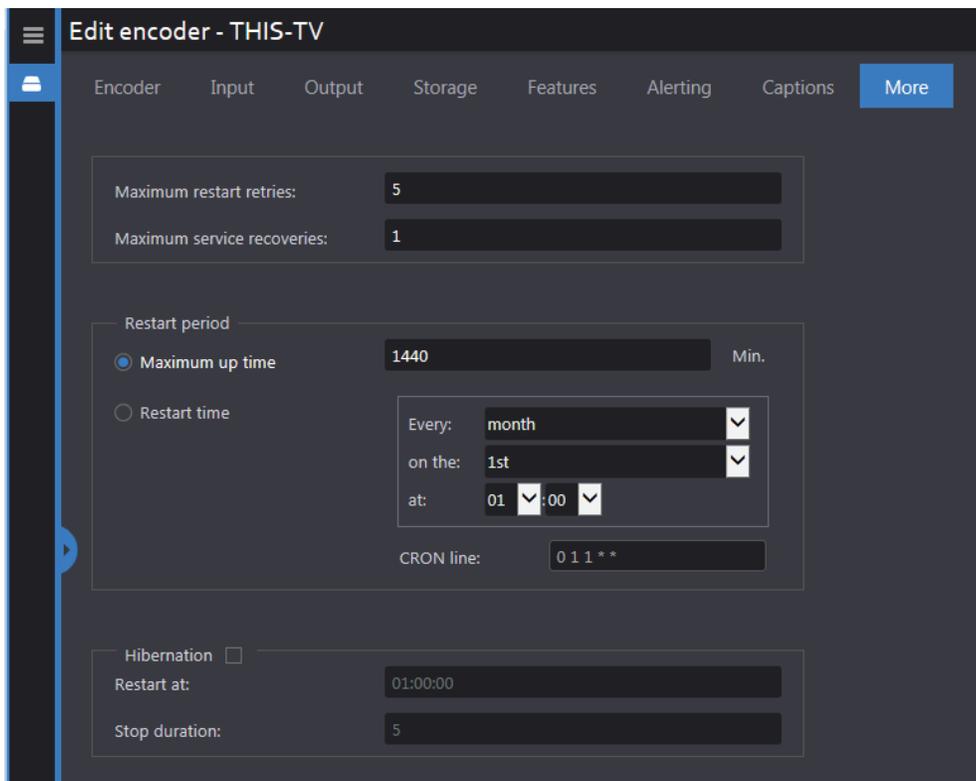


Figure: Encoder More Section

Maximum restart retries:	The maximum number of times the watchdog will attempt to restart the encoder.
Maximum service recoveries:	The maximum number of times the watchdog is allowed to restart the entire service.

Table: Error Recovery

Restart period can be used to force the encoder to restart either based on uptime or at a specific date and time.

Maximum up time	Restarts encoder when elapsed run time is exceeded.
Restart time	Force restart at specific date and time.
CRON line:	Selected schedule in Cron format.

Table: Restart Period

Enable/Disable	Hibernation schedules a period when the encoder is not recording video.
Restart at:	Specifies restart time.
Stop duration:	Specifies how long the encoder is not recording.

Table: Hibernation

11.3 Settings – Central Server

The Setting section is used to configure Central Server behavior: channels, profiles, user accounts, etc.

This section is broken down into six subsections:

- ← **System** – overall settings
- ← **SNMP receivers** – listening ports to receive SNMP messages
- ← **Channel Set** – logical channel grouping independent of physical encoder
- ← **Distribution Profiles** – specify how clips are exported
- ← **Roles** – specify which aspects of MIP each user role is able to access and lastly user accounts
- ← **Users** - list of all user accounts

11.3.1 System

Use this page to configure system wide global settings.

11.3.1.1 System - General

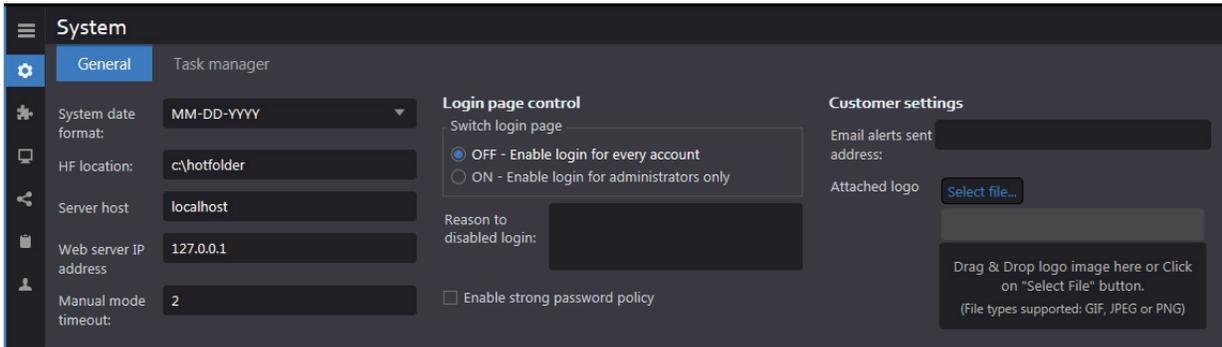


Figure: System General

System date:	Pulldown to select desired Year-month-day format.
HF location:	Hot Folder path, default: C:\hotfolder.
Server host	Central Server IP address on LAN.
Web server IP address	Central Server Web IP address.
Manual mode timeout	Not yet implemented. Feature will allow UIRT remote control of the STB.
Switch Login page	Allows you to substitute a different welcome page when user access is disabled.
Enable login for every account	Normal login page – all users are able to access the system.
Enable login for administrators only	Display alternative login page when a user attempts to log into the system. Does not affect Administrator account.
Reason to disabled login:	Text message displayed when users are prevented from accessing the system. Example: <i>“System maintenance underway – system will be back online by 5AM Tuesday.”</i>

<p>Enable strong password policy</p>	<p>Enabling this option requires users to periodically reset passphrase and use a combination of characters to create strong passwords. The system will refuse to accept a passphrase change if it does not meet the requirements and will prompt the user with the requirements.</p> <p>The criterion for password acceptance is:</p> <ol style="list-style-type: none"> 1. Minimum of eight characters 2. One Upper case letter 3. One lower case letter 4. One number 5. One symbol character 6. NO REPEATING characters <p>(This feature is not currently implemented)</p>
<p>Email alerts sent address</p>	<p>From email address used for email sent by Central Server.</p>
<p>Attached logo</p>	<p>Attach company logo to the alert email. Permissible file types: JPG, GIF, PNG.</p>

Table: Central Server - General Settings

11.3.2 Settings - SNMP Receivers

This section configures MIP to accept polling requests from the “Network Management Systems” (NMS). The MIP SNMP implementation is read-only. The management console is able to query MIP for status but not change settings via SNMP. MIP issues traps reporting unusual events to the management console.

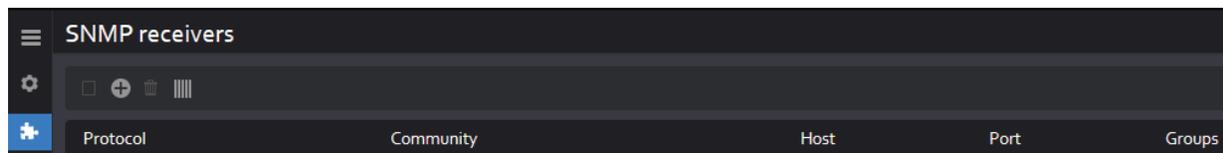


Figure: SNMP Receivers

<p>Protocol</p>	<p>Enter the version your NMS uses. MIP supports SNMP v1 and SNMP v2.</p>
<p>Community:</p>	<p>Password to establish connectivity with the SNMP receiver. This is public by default (unrestricted access).</p>

Host:	URL or IP of destination where the trap is to be sent. Set to localhost if all requests originate on the same machine as CS.
Port	Enter the port used for SNMP traffic with the host. Well-Known SNMP is port 162.
Groups	List of Active Directory Groups.

Table: SNMP Receiver Settings

11.3.2.1 Add/Edit SNMP Receiver Settings

To create a new SNMP Receiver, click the **<Add>** button at the top of the page. To edit an existing Receiver, hover over the Receiver name and right click on the **<Edit>** icon on the right hand side. Enter the appropriate values and press **<Save>**.

Figure: Add New SNMP Receiver Window

11.3.3 Settings - Channel Set

This page is used to define channel sets. Using channel sets enables the administrator to create a logical channel grouping independent of which probes the specific Encoder is located. If Channel Sets are not used individual Encoders are displayed under their associated Probe.

11.3.3.1 Add/Edit Channel Set

To add a **Channel Set** click the **<Add New Channel Set>** icon at the top of the page. If your system has a large number of **Encoders**, use the **Encoder Filter** field to restrict which encoders are displayed. To edit an existing **Channel Set**, hover over the **Channel Set** and click the **<Edit>** icon. Enter or change the name of the **Channel Set** and select the desired Encoders. Press **<Save>** when you are finished.

Example: Let's say we have "AJN" set which includes 4 Encoders from Probe DEMO-TS and 6 Encoders from Probe WIN7. The number of Encoders assigned to a specific Channel Set is displayed in parenthesis to the right of the Set name.

Channel	Display name	Assigned sets	Status	Probe
- AJN (10)				
QAM2	WORLD	AJN, DEMO, TS	running	DEMO-TS
WHDH-HD	WHDH-HD	AJN, DEMO, Share Channels, TS	running	DEMO-TS
THIS-TV	THIS-TV	AJN, DEMO, TS	stopped	DEMO-TS
OTT10	AJN_Balkans_915	AJN, DEMO, OTT CLOUD	running	WIN7
OTT11	AJN_Documentary_399	AJN, DEMO, OTT CLOUD	running	WIN7
OTT12	AJN_Documentary_915	AJN, DEMO, OTT CLOUD	running	WIN7
OTT13	AJN_English_255	AJN, DEMO, OTT CLOUD	running	WIN7
OTT8	AJN_Balkans_255	AJN, DEMO, OTT CLOUD	running	WIN7
OTT9	AJN_Balkans_399	AJN, DEMO, OTT CLOUD	running	WIN7
ASL_DPI	ASL_DPI	AJN, DEMO, TS	running	DEMO-TS

Figure: Settings Channel Set

11.3.3.2 Delete a Channel Set

Hover over the desired Channel Set and press the <Trash Can> icon.

11.3.4 Distribution Profiles

The Distribution profiles specify how clips exit the MIP environment. **Export** defines how the clip is formatted. **Export** settings apply to both saving clips on the user’s workstation and publishing them to social media sites. Publishing requires two additional profiles: **Destination** defines where the clip will be sent along with any required account credentials and **Publish** defines in what format the clip should be encoded.

Profile name	Created by	Created at
<input type="checkbox"/> Andrew test	andrew	09-28-2015 11:21:53
<input type="checkbox"/> GTxcel	ari	10-21-2015 10:49:01

Figure: Settings Distribution Profiles

11.3.4.1 Export

To create a new **Export Profile** click the **<add>** icon at the top of the page. To edit an existing profile hover over the profile name and click the **<edit>** icon at the far right.

The **Video Profile** opens on the right side of the page. For a new Profile type the name into the **Profile name** line. Above that field is an encoder pulldown. The default is independent of the Encoder. Optionally you are able to restrict the Profile to a specific Encoder by using the pulldown.

Below the Profile Name **Streams** is checked by default. This exports both audio and video. You are able to restrict the export to solely audio or video if desired.

Closed Captions enables Closed Captioning – if you try to select this option and the Encoder does not support CC an error message appears at the top of the screen. Select the CC language if more than one exists. The default setting **Burn to video** includes the CC as part of the video clip. The other option **Export to file** saves only the CC portion in the file type specified.

When Metadata is checked and Metadata included in the clip it will be exported with the clip, otherwise it is suppressed.

Resolution and **Target** Bitrate allow you to set both those parameters using the pulldowns.

Timestamp includes a timestamp of when the video was initially broadcast.

Banner allows you to superimpose an image from your workstation. The permissible file formats are: JPG, PNG, GIF, TIF, BMP and WEBP. The MIP controls allow flexible placement and size.

Split into chunks limits contiguous size of a clip. If clip exceeds the maximum duration it is exported in multiple parts.

Maximum Time Accuracy provides frame by frame timing accuracy.

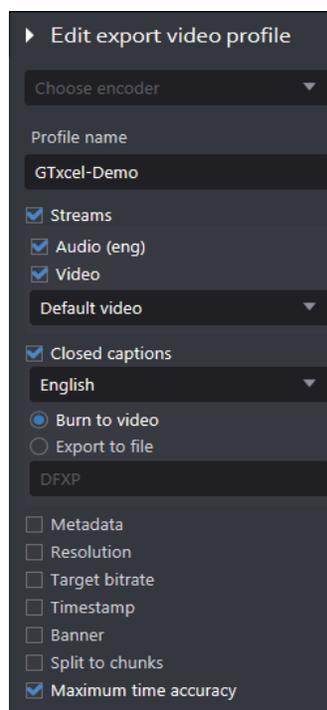


Figure: Export Profile

11.3.4.2 Destination

To create a new **Destination** click the **<add>** icon at the top of the page. To edit an existing Destination profile hover over the **Destination** name and click the **<edit>** icon at the far right.

A list of available destinations appears in the right side pane. Click on the desired destination. A new panel will open asking for additional information. In some cases you will need to log into the remote site and manually fill out some of the text fields. The account name you used to log in will be automatically displayed to the right of the destination name. This allows you to create multiple Destination Profiles going to the same social media site.

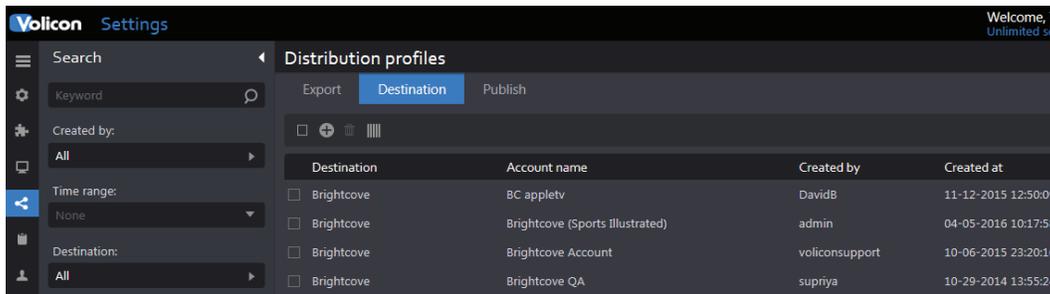


Figure: Settings Distribution Profiles

11.3.4.3 Publish Profile

To create a new **Publish Profile** click the **<add>** icon at the top of the page. To edit an existing profile hover over the Profile name and click the **<edit>** icon at the far right. Once this is complete, it is possible to publish video clips to multiple destinations simultaneously.

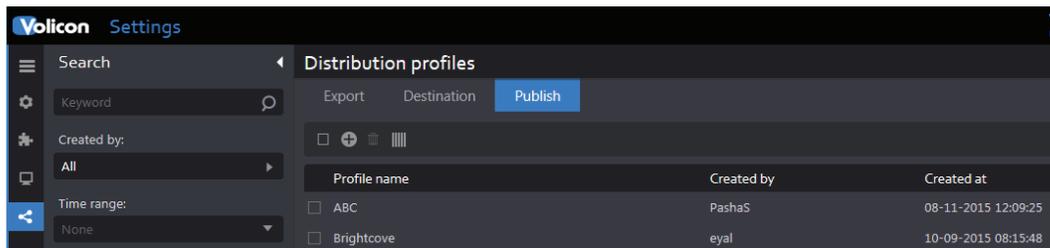


Figure: Settings Publish Profile

A new page pops up with four sections:

Profile Name	Type the new name or edit the old one.
Video Export Profile	Check one of the existing Export Profiles. The Export Profile specifies if output is video/audio or both and configures various video options. If none of the existing Export Profiles is appropriate you need to create a new one.
Transcoding Commands	Select one of the transcoding options if you want to use a different compression scheme, not the one specified in the Export Profile.
Destination	Select one or more of the previously configured Destination Profiles.

Table: Publish Profile

11.3.5 Roles

This section enables you to create named **Roles** with specific access permissions. When an account is generated it is associated with one or more **Role**. The Administrator account is unique in that it has permissions to all MIP features and cannot be deleted.

Example: looking at the **USERS** role we note it has access to all MIP features except Admin Screens and Observer classic.

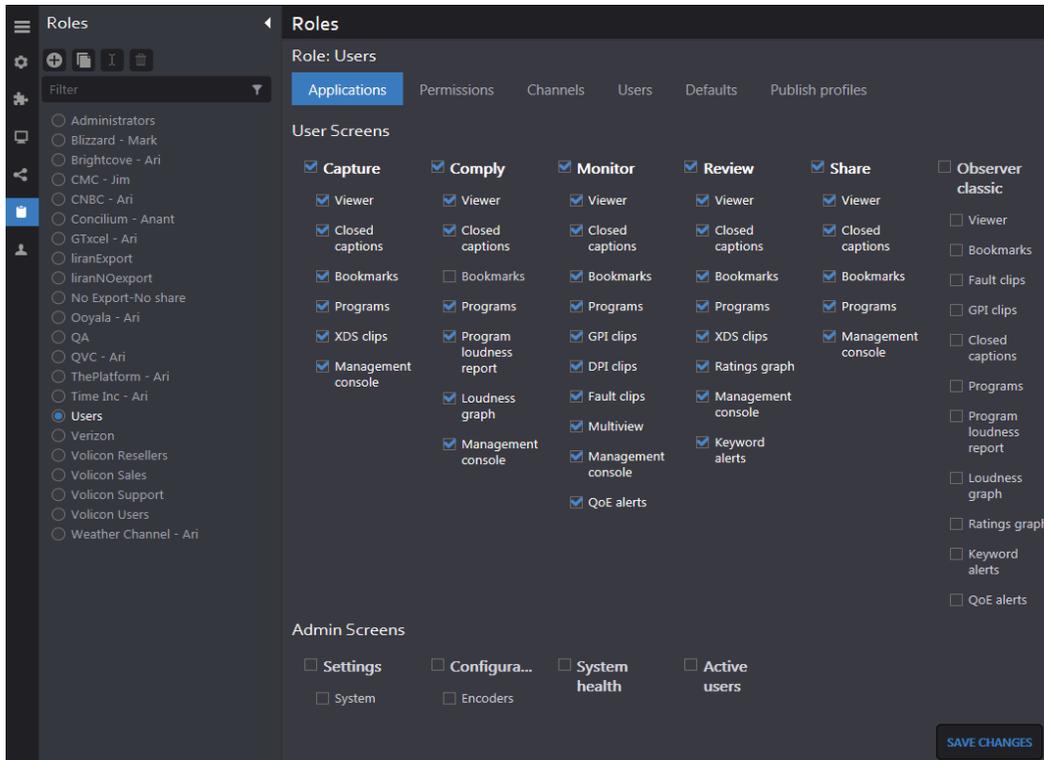


Figure: Settings Roles

Applications	Grants user access to: Capture, Comply, Monitor, Review, Share, Observer Classic, Admin Screens. Checking to top level function automatically selects all features for that function. If you want to restrict access to a subset uncheck specific features.
Permissions	Defines how the account is able to utilize MIP.
Channels	Sets which channels are accessible. Each entry consists of one or more Channel Set .
Users	Displays all user accounts associated with the Role.
Defaults	Sets session timeout and maximum # for concurrent videos.
Publish Profile	Selects the list of Social Media sites clips are allowed to be exported. The list is based on user role profiles.

Table: User Roles

11.3.5.1 Adding a New Role

To add a new Role click the **<Add>** icon at the top of the **Dashboard**. This opens an empty **Role**. Since Roles can be complex, and often times there are only small differences between **Roles**, use the **Duplicate** feature to simplify the task. Highlight an existing **Role** that is as similar to the new one as possible, then click on the **<Duplicate>** icon, Type in the new name and click **<OK>**. Then access that **Role** and make any necessary changes.

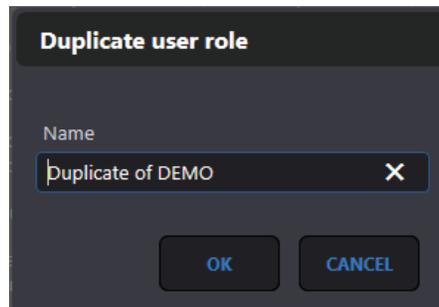
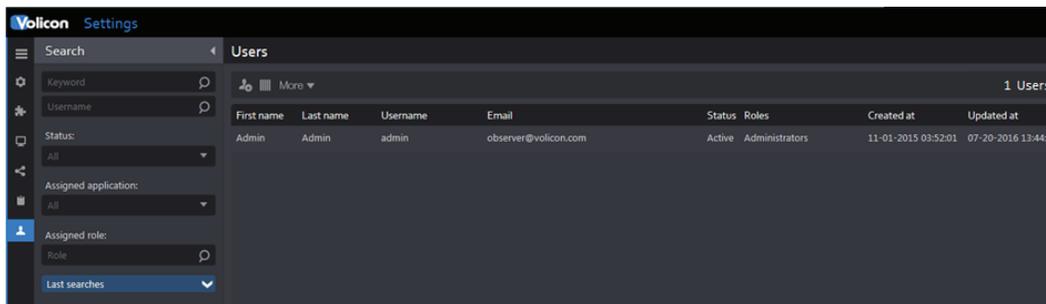


Figure: Creating a Duplicate Roll

11.3.6 Users

This page displays all user accounts. If your system has a large number of users use the Dashboard Search feature to restrict how many accounts are displayed. The Admin account is built into MIP and cannot be deleted.



First name	Last name	Username	Email	Status	Roles	Created at	Updated at
Admin	Admin	admin	observer@volicon.com	Active	Administrators	11-01-2015 03:52:01	07-20-2016 13:44:19

Figure: Settings Users

11.3.6.1 Adding/Modifying Account

Click the **<Add New User>** to create a new account or hover over an existing account and press the **<Edit>** icon at the extreme right of the entry. The Edit User panel at the right of the page lets you modify account features. The **<Roles>** section toward the bottom of the page allows you to specify which aspects of MIP the account is able to access.

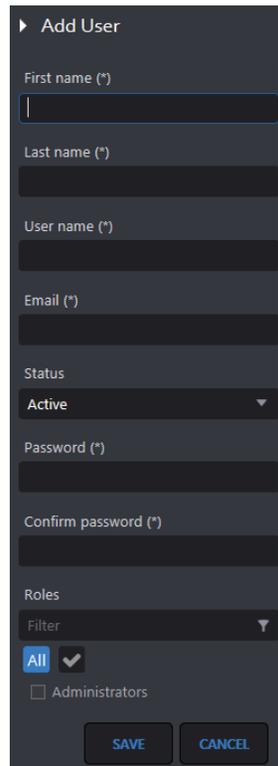


Figure: Add New User

11.3.6.2 Change Password

From time to time it may be necessary for the MIP administrator to change a user's password. Use the **<Edit>** feature and enter the new password twice.

11.3.6.3 Suspend Account

If you need to temporarily prevent a user from accessing MIP, use the **<Edit>** feature to change **Status** from **Active** to **Inactive**. This prevents the user from logging into the system but does not delete the account.

11.3.6.4 Delete Account

To delete an account hover over the name and click on the **<Trash Can>** icon at the extreme right of the account name.

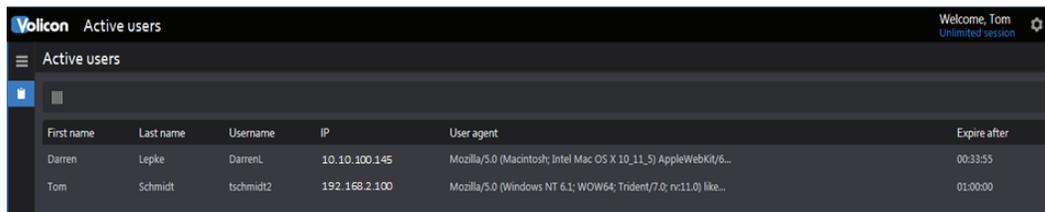
11.3.6.5 Export Account List

MIP allows you to create an Account Excel spreadsheet. Click **the <More>** icon at the top of the page and press **<Export List>**. A dialog box opens allowing you to view the file or save it to your workstation.

11.4 Active Users

This page displays a list of currently logged in users and provides a method to disconnect individual users.

The screenshot shows all possible columnar information. Use the  icon to enable/disable which columns MIP displays. MIP automatically logs out inactive users. The far right hand column indicates how much time is left until forced logout. The timeout value is configured for each **Role** in [<Settings>](#)→[<Role>](#)→[<Defaults>](#)→[<Session>](#) so you can set different times depending on the **Role**.



First name	Last name	Username	IP	User agent	Expire after
Darren	Lepke	DarrenL	10.10.100.145	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_5) AppleWebKit/6...	00:33:55
Tom	Schmidt	tschmid2	192.168.2.100	Mozilla/5.0 (Windows NT 6.1; WOW64; Trident/7.0; rv:11.0) like...	01:00:00

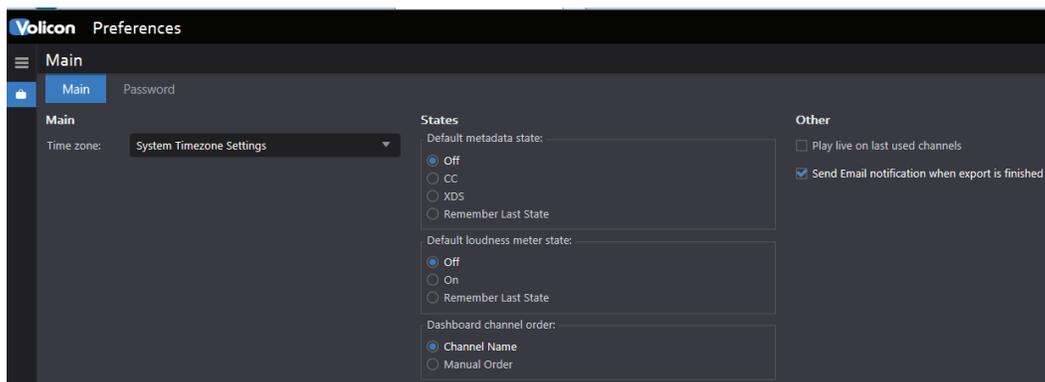
Figure: Active Users

11.4.1 Force User Logout

To logout a user hover over the account name and press the **<Logout>** icon at the extreme right. The user is logged out and will need to log back in. If you want to prevent the user from logging back into MIP, change the account status to Suspend in the [<Setting>](#) [<User>](#) section.

11.5 Preferences

This section allows you to customize the way MIP displays information for your account.



Main

Time zone: System Timezone Settings

States

Default metadata state:

- Off
- CC
- XDS
- Remember Last State

Default loudness meter state:

- Off
- On
- Remember Last State

Dashboard channel order:

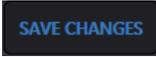
- Channel Name
- Manual Order

Other

- Play live on last used channels
- Send Email notification when export is finished

Figure: Preferences

11.5.1 Main

If you make changes to any of the Main sections press the  icon at the bottom of the page. If MIP is able to successfully save your changes it displays a banner at the top of the page.

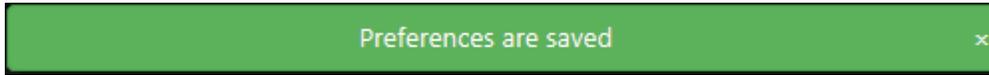


Figure: Preferences Successfully Updated

11.5.1.1 Time Zone

MIP defaults to the same time zone as your computer. If you want to override that setting and select a different time zone, use the Time Zone pulldown.

11.5.1.2 States

The **Default Metadata State** and **Default Loudness Meter State** controls viewer behavior. For example if CC (Closed Captioning) is selected and the channel is Closed Captioned, it will be displayed by default whenever the channel is opened. To override the default behaviors turn off closed captioning.

Dashboard Channel Order allows you to customize how channels are displayed (not yet implemented).

11.5.1.3 Other

When **Play live on last used channel** is checked the channel viewer automatically plays the channel in real time.

When the option **Send Email notification when export is finished** is checked MIP sends an email to the address associated with your login.

11.5.2 Password

MIP allows users to change their own passwords.

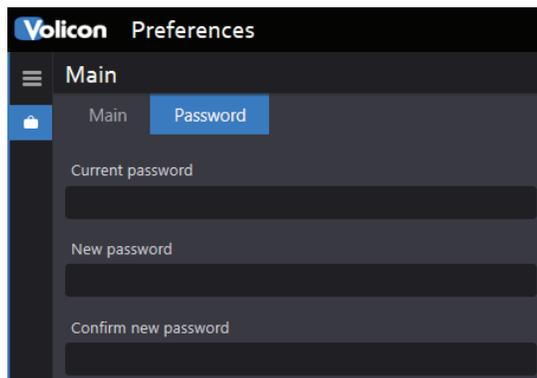


Figure: Preferences Password

The system requires the new password to be entered twice. If they do not match when you attempt to update your password, MIP displays an error message and your old password continues to be in force.

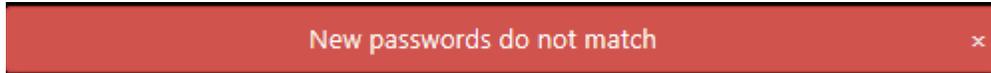


Figure: New Password Does Not Match

11.6 System Health

System Health is composed of three sections: Displays Alerts, Users Activity, and Event Viewer. Each of the Health section has provisions to export the data to an Excel spreadsheet.

Development of this feature is still a work in progress.

11.6.1 Alerts

This section displays channel faults. It can be rather lengthy so use the dashboard search feature to restrict view to items of interest.

IP	Channel	Description	Date time
127.0.0.1	NBC_1500_KBPS	Clip AudioLow Updated	2016-02-21 17:56:42
172.20.150.151	OTT5	AudioCleared	2016-02-21 17:56:42
127.0.0.1	NBC_826_KBPS	Clip AudioLow Updated	2016-02-21 17:56:41
172.20.150.151	OTT3	AudioCleared	2016-02-21 17:56:41
127.0.0.1	OTT6	Clip AudioLow Updated	2016-02-21 17:56:36

Figure: System Alerts

11.6.2 User Activity

This page displays all activity initiated by users: like logging in and out and creating various clips. For purposes of this page the System is considered a user, so System initiated events are also displayed on this page.

User name	IP	Probe	Channel	Action	Description	Date time
system	127.0.0.1	WIN7	NBC_1500_KBPS	Clip Updated	Clip AudioLow Updated	2016-02-21 17:56:42
system	172.20.150.151	WIN7	OTT5	Service	AudioCleared	2016-02-21 17:56:42
system	127.0.0.1	WIN7	NBC_826_KBPS	Clip Updated	Clip AudioLow Updated	2016-02-21 17:56:41
system	172.20.150.151	WIN7	OTT3	Service	AudioCleared	2016-02-21 17:56:41
system	127.0.0.1	WIN7	OTT6	Clip Updated	Clip AudioLow Updated	2016-02-21 17:56:36

Figure: User Activity

11.6.3 Event Viewer

This page displays internal system messages between the various MIP subsystems.

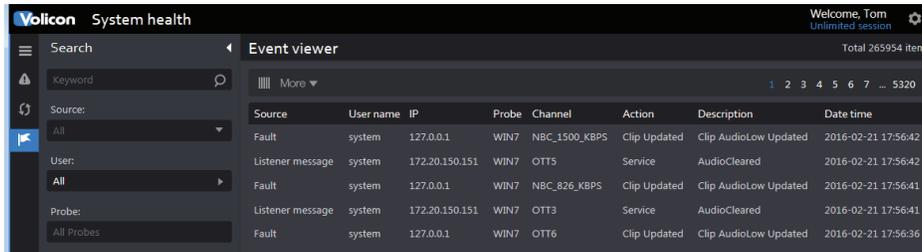


Figure: Event Viewer

11.7 Help

Pressing **Help** displays the URL for Volicon, a division of Verizon Digital Media Services, Customer Service and the user name and password to submit a request.

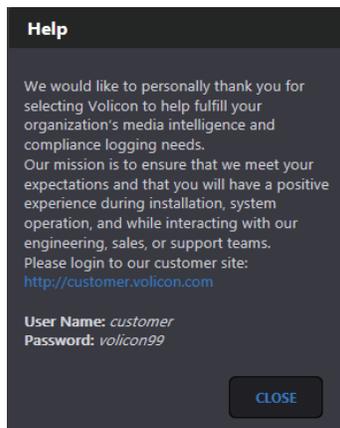


Figure: Customer Support Help Request

11.8 About

Press **About** to view MIP software versions.

Each time a new version of the player is released it is automatically pushed to end users if they are using Internet Explorer to access MIP. The first time users log in after a new player is released; they are required to install it before using MIP.

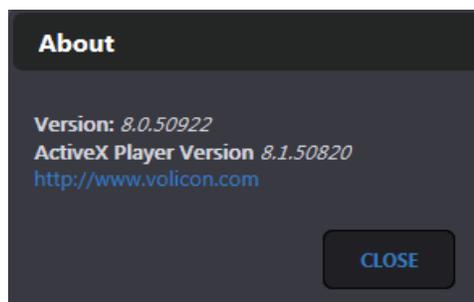


Figure: About Display

11.9 Reset Cache

Use the Reset Cache option to clear all application caches, such as selected channels.

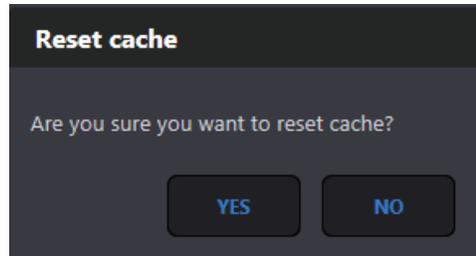


Figure: Reset Cache

11.10 Log out

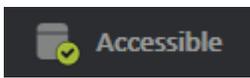
When you attempt to log out, you will be prompted to confirm the request as shown in the Log in section. If you have any unsaved changes a warning message asks if you want to save them or they will be lost. The same warning occurs whenever you attempt to change pages if there are unsaved changes on the page.

12 SYSTEM MONITORING PROCEDURE

The following system procedures are intended for system administrators as a guide to monitor the MIP system health periodically. Network logging issues might be caused by a variety of causes such as missing media streams, configuration issues, environmental changes or unexpected scenarios encountered by the system.

12.1 Checking Probe Status

Access Probe and Encoder status by clicking **<Tools><Configuration>** and select a **<Probe Group>** to open the respective **Group** page. Probes and Encoder status is denoted by a color coded icon to the left of the name.



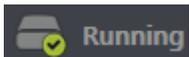
If the Probe is accessible the status icon is green.



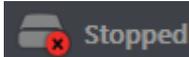
If not it is red. Green simply indicates the Probe server is accessible, not necessarily that all encoders are working normally. To check on individual encoders expand the display to show encoders.

12.2 Encoder Status

Encoder status is a Green, Red or Amber ball to the left of the item name.



Probe or Encoder is operating normally.



Probe or Encoder has stopped and needs to restart.



Probe or Encoder is rebooting.

Hibernation – Probe is down as scheduled.

Dummy Mode – Source is not available.

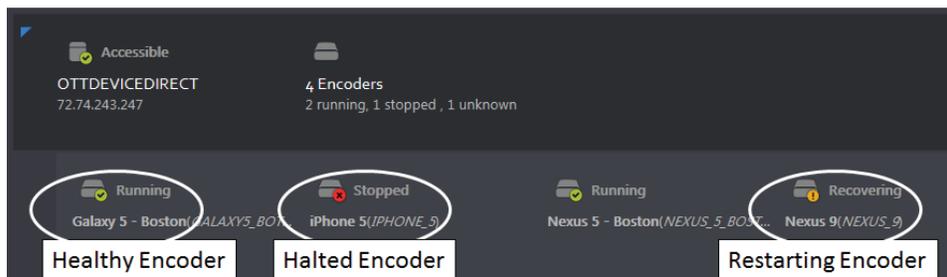


Figure: Group, Probe and Encoder Status

12.2.1 Encoder Fault Corrective Actions

If the issue is due to the source media not being present, try to resolve it with the responsible party. (Note the corresponding Probe server name and address through Central Config Encoders).

Otherwise, if the Encoder still is in red status, it could be a stopped Encoder. Probe must be restarted using Probe Manager.

12.2.2 Monitor Live Media Streams

To verify encoder status open the channel viewer in **<Live>** mode. If the encoder is operating normally the real time program will be displayed. If not, MIP will pop up an error message at the top of the viewer.

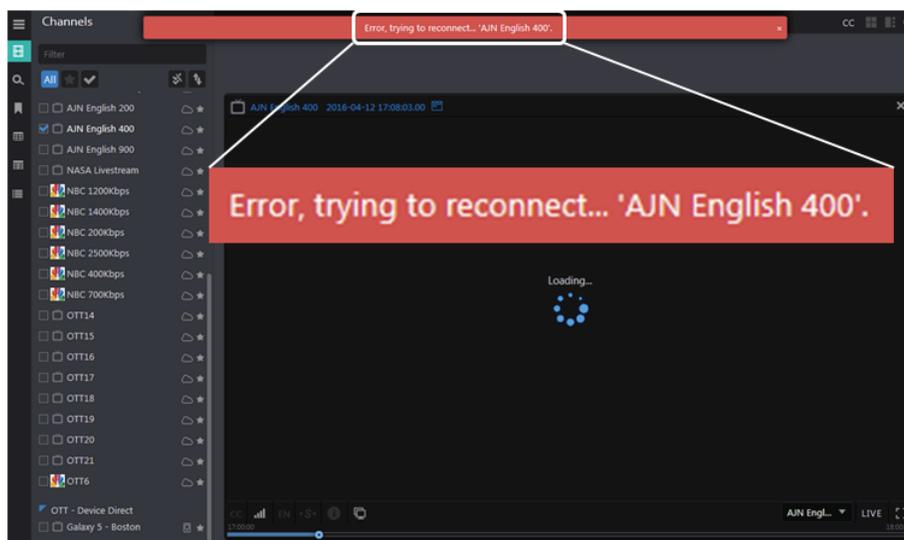


Figure: Playing Live Stream

12.2.3 Checking Memory and CPU Utilization

To check memory and CPU utilization, Log into the server. Open the system "Task manager" by right clicking on the task bar of a server desktop. Select the "**Performance**" tab and examine the "**CPU Usage**" and the "**Physical Memory**" usage. These values should be under control, but if for some rare reason the CPU usage or memory usage is too high, contact MIP Customer Support to report it and for suggestions on how to proceed.

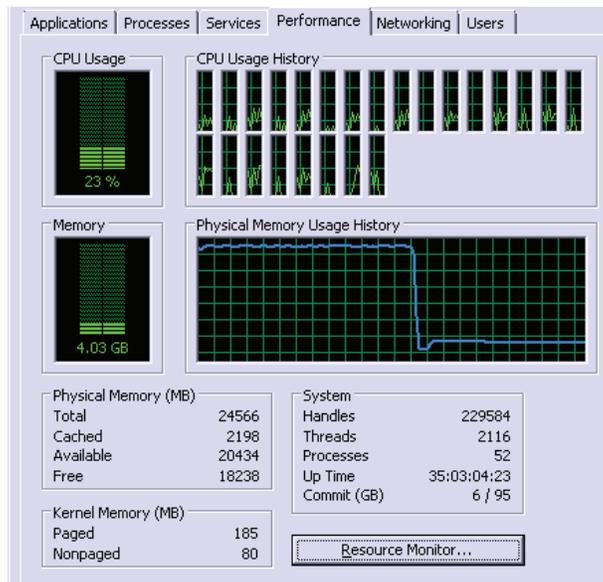


Figure: CPU and Memory Usage

12.3 Checking Video Storage Utilization

Check the Video storage utilization by right clicking on the mounted **Video** folder and selecting the **“Properties”** item from the popup menu. The **“Video Properties”** window will appear.

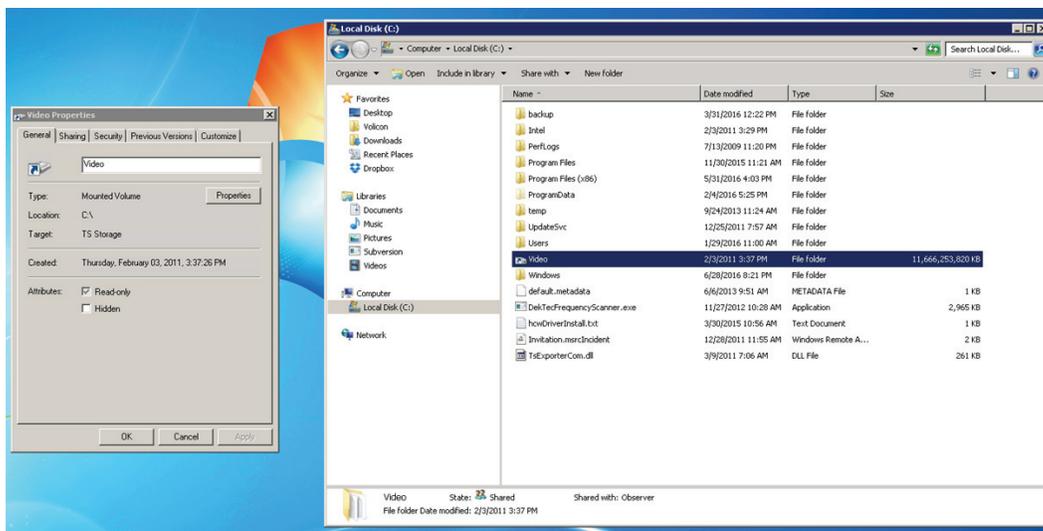


Figure: Select Video Properties

Click the **<Properties>** button) to open the **(C:\Video) Properties** window as shown below. The **“General”** tab contains the video storage utilization pie chart with **“Used Space”** and **Capacity** values. Their ratio: **“Used Space”/“Capacity”** yields the video storage utilization.

Insure this value levels off after reaching the specified MIP storage capacity, e. g., 6 months storage.

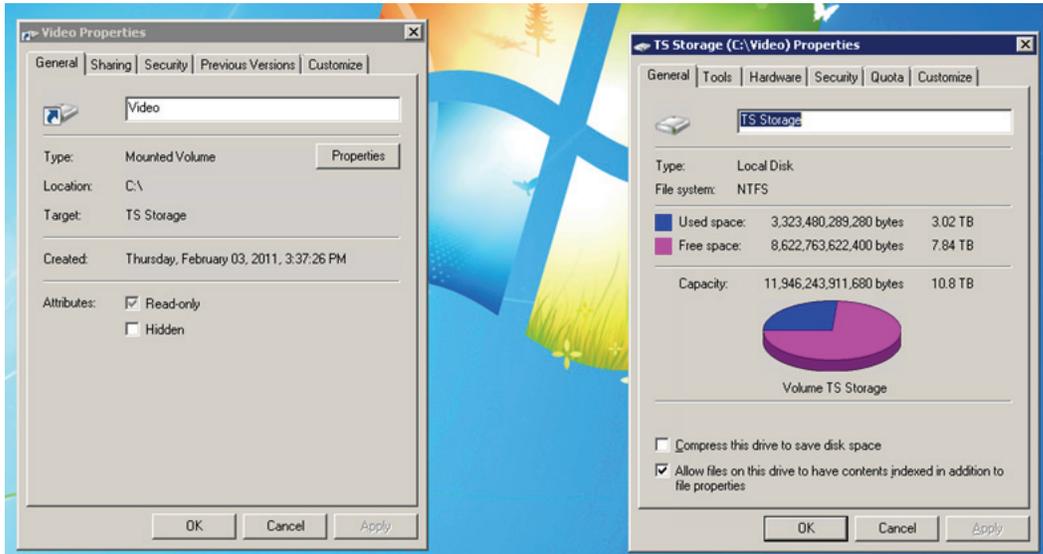


Figure: Video properties display

13 TROUBLESHOOTING AND MAINTENANCE

Troubleshooting often works best using the divide in half method. Find a logical partition and check if everything up to that point is working correctly.

13.1 No Video Playing

- Verify Encoder's hostname/IP address for each stream/channel
- Verify accessibility to media streaming ports 5502 or 4504 and 8001
- Use the Configuration Tool to verify the Encoder is running
- Verify if MIP Encoder and MIP Streamer services are running on Probe server
- Use the video application suite to play videos outside the MIP environment

13.2 User Log In

One common issue in large organizations is that sometimes users cannot access the MIP system transparently, and the username/password dialog pops up. This is caused when IE cannot determine correctly which webserver is in the Intranet security zone (i.e. accessed by IP). The solution is either to access the server by server name (FQDN) or to add the accessed Web server to the trusted security zone in IE.

13.2.1 Client Machine Not Working

After a MIP software upgrade, or when you notice inconsistent MIP Client behavior, Volicon, a division of Verizon Digital Media Services recommends deleting the **Temporary Internet files** in the browser.

13.3 Install Player CAB File

When a systems administrator needs to install the ActiveX media on multiple machines or the firewall blocks player download from the web server, it's more convenient to work with installation cab file. You can download the cab file from the MIP Web server address: <https://MIP-url-addresss/MIP.cab>

When the download completes, double click on the CAB file and accept the player prompts to install the media player.

13.4 License Problem Sources

To keep the MIP license valid, avoid the following changes to the MIP system:

- Enable/disable or change any onboard hardware devices since license was applied
- Install any additional hardware or software components

13.5 Capture Card Debugging

A useful troubleshooting tool to investigate video/audio capture problems is to access the card directly from the card's application suite. This enables you to access the capture card without using MIP.

13.5.1 BlackMagic

To verify proper operation connect the video source to the capture card. Launch BlackMagic Media Express and click on the **<Log and Capture>** tab. Assuming everything is working correctly, the source will appear in the Media Express preview pane.

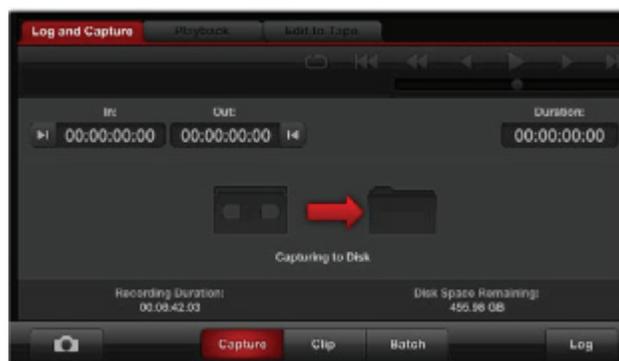


Figure: Capture Preview

13.5.2 Dektec

13.5.3 Osprey

On the Osprey 460e cards, Audio/Video can be examined at the input independently of the MIP software. This is useful for general A/V debugging and for Audio configuration.

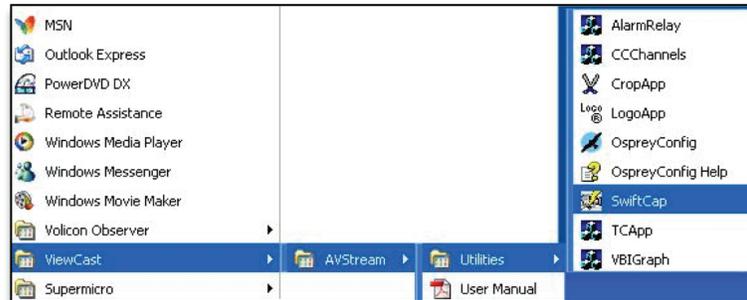


Figure: Accessing ViewCast

At the Probe server - go to Programs and open the ViewCast SwiftCap program.

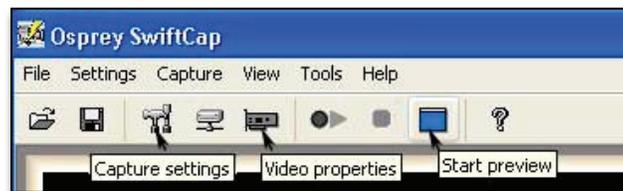


Figure: ViewCast SwiftCap

Select the video channels in Capture Settings.

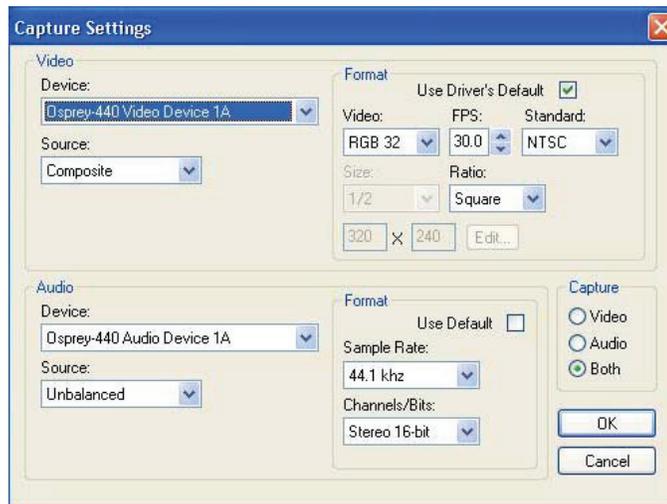
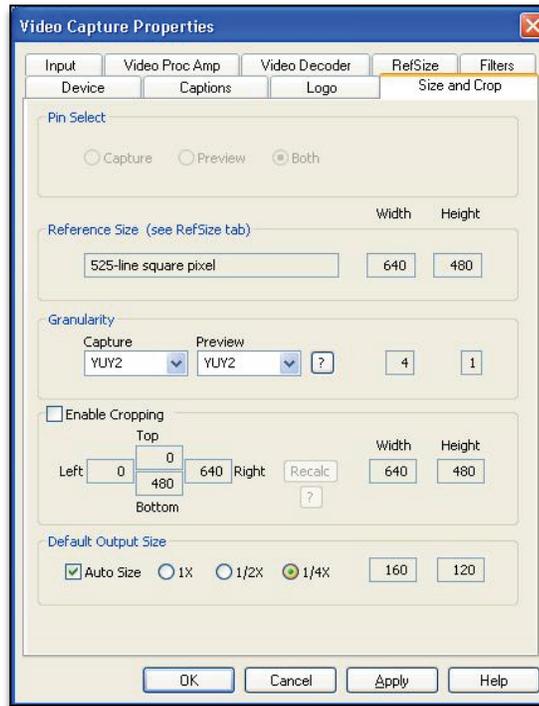


Figure: Select Video Channels

If you are working over Remote Desktop and network bandwidth is limited, decrease the size of the SwiftCap display in Video Capture Properties using Default Output Size selection.

Click the Start Preview icon in Osprey SwiftCap screen above to examine the video input you just configured.

13.5.3.1 Adjusting Audio with Osprey Encoder

In addition to the automatic audio adjustment, search for “Audio Adjust” section above, there is a manual procedure to adjust Osprey cards. From desktop select Start □ All Programs □ ViewCast □ AVStream □ Utilities □ Osprey Config.



Figure: OspreyConfig

The Osprey Config Panel appears. Expand the “Osprey 460e Device 1A”, and select “Balanced or Unbalanced Audio filter”.

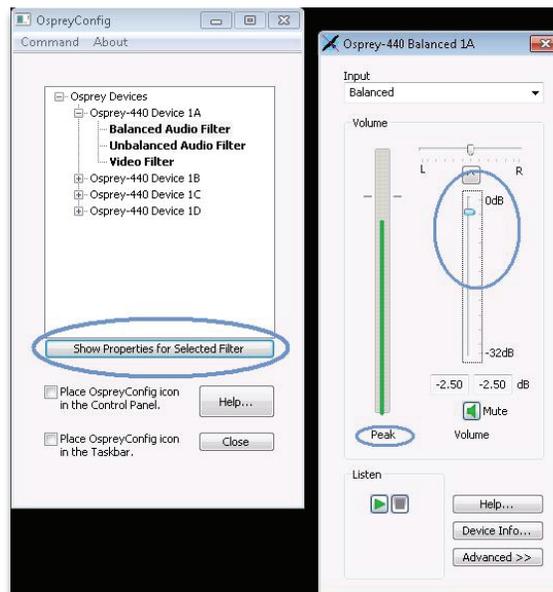


Figure: Osprey Filter

Press the **<Show Properties for Selected Filter>** button. The **“Osprey 460e Balanced 1A”** window appears.

Note the “Peak” **vertical (green) bar** which indicates the incoming signal level.

The **Volume** bar on the right has a dB grading scale to measure the incoming signal. Move the “Audio gain” **handle** circled by the **vertical ellipse** accordingly to adjust the incoming audio level.

13.5.4 Hauppauge

Use the application suite to view input from the Hauppauge card.

13.6 Technical Support Portal

If you need support from Volicon, a division of Verizon Digital Media Services, please fill out a request for service at our [support](http://www.Volicon.com/Volicon-support/) web page: <http://www.Volicon.com/Volicon-support/>. In response a case ticket number will be opened with a specific tech assigned to help with the issue. Then every time you email or call back please refer to this number until the case is closed.

14 SNMP NOTIFICATION

MIP sends SNMP notifications to external systems (e.g., your Network Management System (NMS)) using the Alert Notification variables shown in the “SNMP Notification Settings” Table. You must configure the IP addresses of your NMS stations in MIP to enable this capability.

MIB definitions are common across all Observer products.

14.1 MIB Variables

SNMP V2 MIB variables with definitions are listed in the “EncoderTraps_v2.mib” file or a similar *.mib file located on the MIP server in the “Program Files\Volicon\docs” directory. The MIB file should be used in addition to the “MIB Variables table” below.

The MIP can send SNMP V2 trap messages both for media related alerts that create fault clips and for system critical events that do not generate clips.

Alert Variable Names (in MIB)	OID Strings	Description
volEncoder	PREFIX = 1.3.6.1.4.1.23522.1	Probe Server Name OID type and prefix for OIDs below.
volEncoderName Octet String	PREFIX.2	Name of Encoder which detected the alert. (Names) configured during installation and usually not changed by the user
volEncoderHostname Octet String	PREFIX.3	Probe server Hostname, IP or DNS name. The Hostnames should be unique within servers on the NMS monitored network.
volAlertClipID Integer	PREFIX.11.1	Generated with each new event (e.g., media defect) to identify it.
volAlertDescription Octet String	PREFIX.11.2	Textual description of the alert.
volAlertClipRef Octet String	PREFIX.11.3	Alert clip ID and URL for its location on the web server e.g., http://MIP-url.com/clip_view.php?id=158079 .

volStreamName Octet String	PREFIX.11.4	Stream/scanner name to help identifying the link/STB location.
volAlertEnum Integer	PREFIX.11.5	Grouping: event(0), test(10), service(20), encoder(30), storage(40), license(50), AFD fault(100), video(200), metadata(300), power(400), Video Lost(500).
volAlertName Octet String	PREFIX.11.6	E.g., AUDIOLOW, ENCODER STOPPED.
volAlertType Integer	PREFIX.11.7	Signals the NMS SET(1) or CLEAR(0) alert states, e.g. alert is SET.
volCertainty Integer	PREFIX.11.8	Degree of alert type percentage, e.g., 96 percent of Black Screen.
volAudioLevel Integer	PREFIX.11.9	Integer value of audio Level in dB.
volAudioPin Integer32	PREFIX.11.10	Audio Pin number, it is audio language pin. For now single language is used, the Pin is always 0.
volEventTime Octet String	PREFIX.11.11	Time when the alert has occurred, e.g. 2010-10-31 20:57:21.
rpmChannelID Octet String	PREFIX.11.12	Channel Number in the Lineup. It is stored in a string, such as "124".
rpmChannelName Octet String	PREFIX.11.13	Lineup Channel/Service name such as Fox.
rpmChannelQAM Octet String	PREFIX.11.14	Channel group name for any group of channels logically related.
volAlertSeverity Integer32	PREFIX.11.15	Designates priority for a corresponding problem to get resolved: info(1), warning(2), minor(3), major(4), critical(5).
oidAlertLevel Octet String	PREFIX.11.16	Alert level (category) with one of the following possible values: probe (1), group (2), system (3).
oidGroup Octet String	PREFIX.11.17	Name of the affected probe's group.
oidProbe Octet String	PREFIX.11.18	Name of affected probe machine.

Table: MIB Variables

VolAlertName, VolAlertEnum, and VolAlertType variables indicate when to set or clear NMS internal alarms. System related traps (other than for media), though not used to set or clear alarms, provide important information about the defect source such as **volAudioLevel** and **volAlertSeverity**.

14.1.1 MIB Variables Alert Example

A real-time trap from an audio alert was traced to build this table, specifically, the **Notification Variables** in the leftmost column. The last column illustrates examples to **Set** and **Clear** an SNMP alert:

Notification Variables Name	OID Strings	Description	Alert SET / CLEAR
volEncoder	PREFIX = 1.3.6.1.4.1.23 522.1	Probe Server Name OID prefix for OIDs below.	
trapEncAlerts	PREFIX.12 = 1.3.6.1.4.1.23 522.1.12	ID identifying an MIP trap. This variable binds all other variables in it.	
volEncoderName	PREFIX.2 = 1.3.6.1.4.1.23 522.1.2 Octet String (Size 0...32)	Encoder Stream name.	Value: ENC1
volEncoderHostname	PREFIX.3 Octet String (Size 0...32)	Encoder hostname or IP address.	Value: ObsRpmVa
volEncAlerts	PREFIX.11	Object identifier.	
volAlertClipID	PREFIX.11.1 Integer32	Clip ID created on this alert.	Value: 6 (Value: 9)
volAlertDescription	PREFIX.11.2 Octet String	Textual description of the alert.	Value: LOW AUDIO LEVEL /(AUDIO-OK): History Channel 66; Encoder: ENC1 Audio level: -69. (-34) Server time: 2010-09-29 18:52:41
volAlertClipRef	PREFIX.11.3 Octet String	URL to the clip created for this alert.	Value: IP Address
volStreamName	PREFIX.11.4 Octet String (Size 0...32)	Stream (scanner in RPM) name.	Value: P1
volAlertEnum	PREFIX.11.5 Integer [enumerat]	Alerts enumeration.	See the following table for "volAlertEnum"

volAlertName	PREFIX.11.6 Octet String (Size(32))	Alert nickname.	Value: AUDIOLOW
volAlertType	PREFIX.11.7 Integer32 (0/1/2)	Type of alert: set (1), clear(0), or warning (2).	Value: 1
volCertainty	PREFIX.11.8 Integer32	Certainty in percentage.	Value: 0
volAudioLevel	PREFIX.11.9 Integer32	Audio level in dB units.	Value: -69 (-34)
volAudioPin	PREFIX.11.10 Integer32	Audio Pin.	Value: 0
volEventTime	PREFIX.11.11 Octet String (Size(32))	Event time in format2011/02/09 18:21:33.	Value: 2010-09- 29 18:52:41
rpmChannelID	PREFIX.11.12 Octet String (Size(32))	Lineup channel ID (usually a channel number).	Value: 66
rpmChannelName	PREFIX.11.13 Octet String	Lineup Service name.	Value: History Channel
rpmChannelQAM	PREFIX.11.14 Octet String (Size(32))	Lineup channel group.	Value: Westside
volAlertSeverity	PREFIX.11.15 Integer {info (1), warning (2), minor (3), major (4), critical (5)}	The degree of priority to correct the problem.	Value: 4
oidAlertLevel	PREFIX.11.16 Integer {probe (1), group (2), system (3)}	Alert level.	
oidGroup	PREFIX.11.17 Octet String (32)	Name of affected probe group.	Value: Burlington News
oidProbe	PREFIX.11.18 Octet String (32)	Name of affected Probe server.	Value: Probe66

Table: MIB Variables Alert Example

14.2 SNMP Notification Signaling

Various alert related SNMP traps are listed below:

<u>VolAlertName</u>	MIP RPM Alerts (Fault Clips) <u>Set /Clear and Notify</u> <u>(w/o clear) alerts</u>	<u>VolAlertEnum</u>
VIDEO-OK, AUDIOLOW	Set AUDIOLOW alert	<u>200</u> (VIDEO)
VIDEO-OK, AUDIOLOW	Clear AUDIOLOW event	<u>200</u>
VIDEO-OK, AUDIOHIGH	Set AUDIOHIGH alert	<u>200</u>
VIDEO-OK, AUDIOHIGH	Clear AUDIOHIGH alert	<u>200</u>
VIDEOLOST, AUDIOLOW	Set "Video Lost" alert	<u>500</u> (VIDEOLOST)
VIDEOLOST, AUDIOLOW	Clear "Video Lost" alert	<u>500</u>
VIDEOBLACK, AUDIOLOW	Set "Video Black" alert	<u>200</u> (VIDEO)
VIDEOBLACK, AUDIOLOW	Clear "Video Black" alert	<u>200</u>
VIDEOSTATIC, AUDIOLOW	Set "Video Static" alert	<u>200</u>
VIDEOSTATIC, AUDIOLOW	Clear "Video Static" alert	<u>200</u>
VIDEOMOTION	Set "Video Motion" alert	<u>200</u>
VIDEOMOTION	Clear "Video Motion" alert	<u>200</u>
SCRIPTERROR	System detected syntax error in the script	<u>200</u>
CCLOST	Set "closed captions Lost" alert	<u>300</u> (METADATA)
CCLOST	Clear "closed captions Lost" alert	<u>300</u>
Equipment Error	"Equipment Error" event	
STB Faulted	"STB Faulted" alert	
NAVE-WM-FAULT	Set "NAVE WM fault" alert	<u>50</u>
NAVE-WM-RECOVERY	Clear "Nave Low Watermark" alarm	<u>50</u>
NAVPERC-FAULT	Set "NAVE percentage fault" alert	<u>60</u>
NAVE-PERC-WARN	Set " NAVE percentage warning" alarm	<u>60</u>
NAVE-TS-FAULT	Set "NAVE TS Fault"	<u>70</u>
NAVE-TS-RECOVERY	Clear "NAVE TS Fault"	<u>70</u>
GPI FAULTS	Set "GP Faults" alert	<u>0</u>
GPI FAULTS CLEAR	Clear "GP Faults" alert	<u>0</u>

Table: SNMP Notification Signaling

14.3 System Alerts

Most of the equipment and link related alerts are detected at the Probes and forwarded to the CS. The CS generates Event log and Event viewer entries. Since these alerts do not generate SNMP traps, the parameters such as “**AlertEnum**” are not critical.

ALERT NAME	Description of MIP Events (No SNMP only Event log)
POWER	Toggle "STB Power" event
TEST	"Test" Event
SERVICE STOPPED	"Service Stopped" event
SERVICE STARTED	"Service Started" alert
Probe Down Alert	"Probe Down Alert"
Probe Recovered Alert	"Probe Recovered Alert"
ENCODER STOPPED	"Encoder Stopped" alarm
ENCODER STARTED	"Encoder Started " alert
AFD FAULT	"AFD Fault" alert
STORAGE ERROR	"Hard disk file Error" event
LICENSE	"License expiration" event

Table: System Alerts

15 REVISION HISTORY

15.1 MIP Releases

Version	Build number	Date	Description

15.2 Revision Change History

Date	Description

About Volicon Volicon is the leading provider of enterprise media intelligence solutions serving the needs of broadcasters, networks, cable operators, and governments worldwide. The Observer Media Intelligence Platform™ provides powerful tools for content creation and repurposing, compliance monitoring, ad verification, competitive analysis, and quality of service monitoring. Deployed by over 1200 customers in more than 70 countries worldwide, Volicon solutions are used by all stakeholders in the media enterprise — from engineering to the executive suite.



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