

# MediaFirst Content Processing

Content Processing v1.0

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USER GUIDE

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## CHAPTER 1

# Quick start

# Connect to MediaFirst Video Processing

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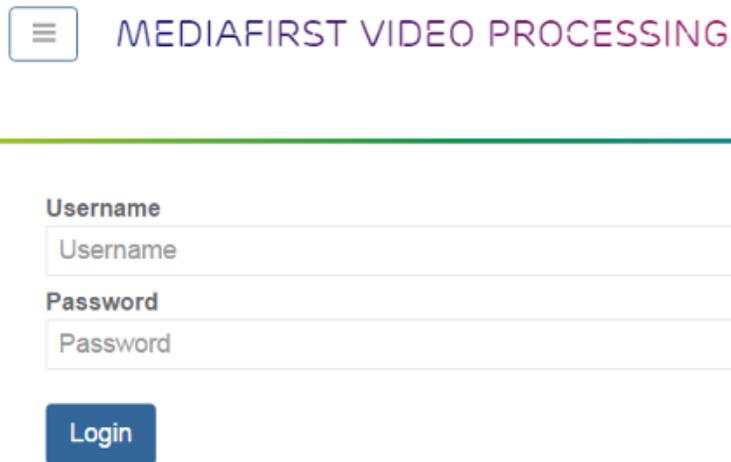
1. Open a Web browser.
2. Enter the access URL, then press **Enter**.

**NOTE** Your access is either HTTP or HTTPS depending on your security settings.

**Example HTTP:** `http://[IP-Address]:8080`

**Example HTTPS:** `https://[IP-address]` or `https://[IP-address]:8443`.

**Result:** The **Login** page displays if user authentication is activated and configured.



☰ MEDIAFIRST VIDEO PROCESSING

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**Username**  
Username

**Password**  
Password

Login

3. If the **Login** page displays: Enter your **username** and **password**.

**NOTE** Default admin user log in information:

- **Username:** admin
- **Password:** admin

**Result:** The **Home** page displays.

# MFVP menus and navigation

## Menus and navigation

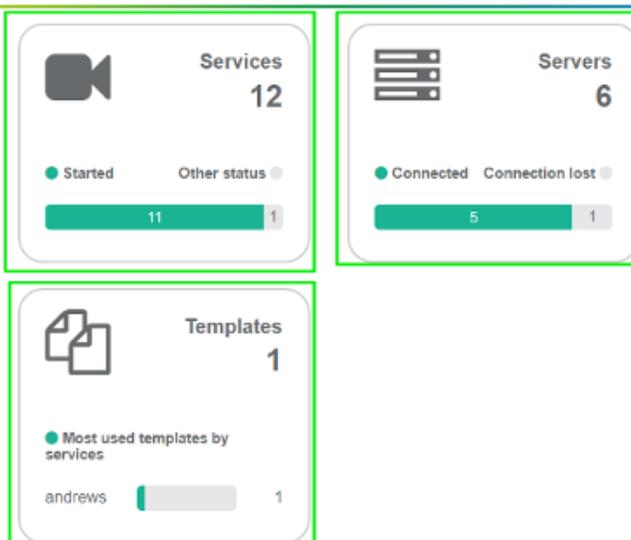
There are multiple navigation options in MediaFirst Video Processing. Some **menu options depend on the MFVP products that you have installed.**

**IMPORTANT** Features, menus and options vary based on your solution and the MFVP products installed.

## Home page and dashboard overviews

The **Home** page displays a dashboard with overviews for services, servers and templates.

**TIP** Click an overview to link to the related page.



## Collapse/expand button

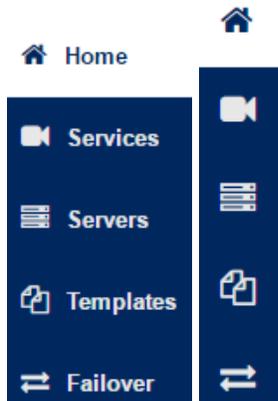
The button collapses or expands the Menu panel to either hide or display menu text.



## Menu panel

Access information and configuration options.

**Examples: Full / Collapsed**



## Breadcrumbs

Breadcrumbs are navigational links to previous pages. They display above the viewing screen.

**NOTE** No breadcrumbs display when viewing the **Home** page.



## System center menu

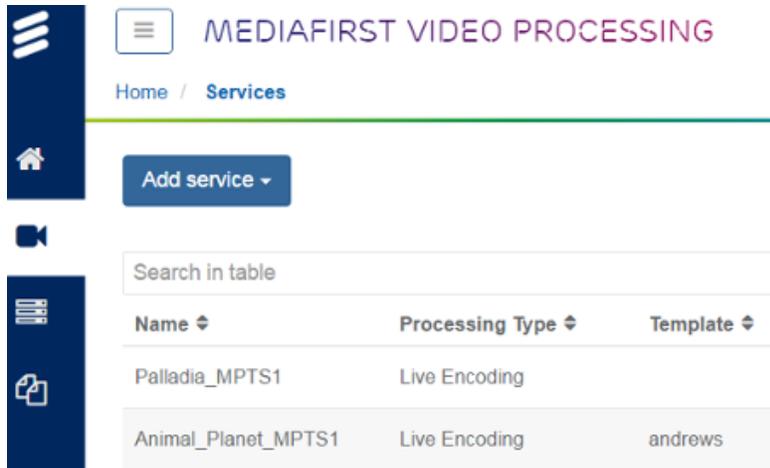
The **System Center** menu drops down after clicking the  in the upper right corner of the screen.



## Services and processing types

A service is a set of parameters required for a given processing type. Services require an assigned server to run. A same service can run on 1 or several servers. Services can be manually started and stopped.

**NOTE** Access services from the **Home** page or the left-side menu panel.



## Processing types

Processing type	Required Software
Live Encoding	MFVP Encoding Live
Multiplexing	MFVP Stream Processing
VOD Packaging	MFVP Packaging Recorder
Live Packaging	MFVP Packaging Dynamic
Catalog	MFVP Packaging
Monitored Generic Work Flow (C2)	MFVP C2
OD Encoding	MFVP Encoding On-Demand
Content Processing	Content Processing
Stream Personalization	Stream Personalization
Licensing	<p>Dedicated license server running the license manager</p> <p><b>NOTE</b> The <a href="#">license manager</a> may also be installed on the MFVP Management Controller server.</p>

## Servers

A **server** is a computing entity able to handle different processing types. Server types have different functions: encoding, packaging, multiplexing and stream processing. The **Servers** view displays system information to monitor and manage servers.

**NOTE** See [processing types](#) for more information.



## System Center for MFVP solution administration

The **System Center** menu provides access to administration features. Administrators can manage users, system backups and restore options, as well as monitor servers, and manage settings.

### System Center access rights

The **System Center** (  ) menu includes a number of options for system administration and monitoring.

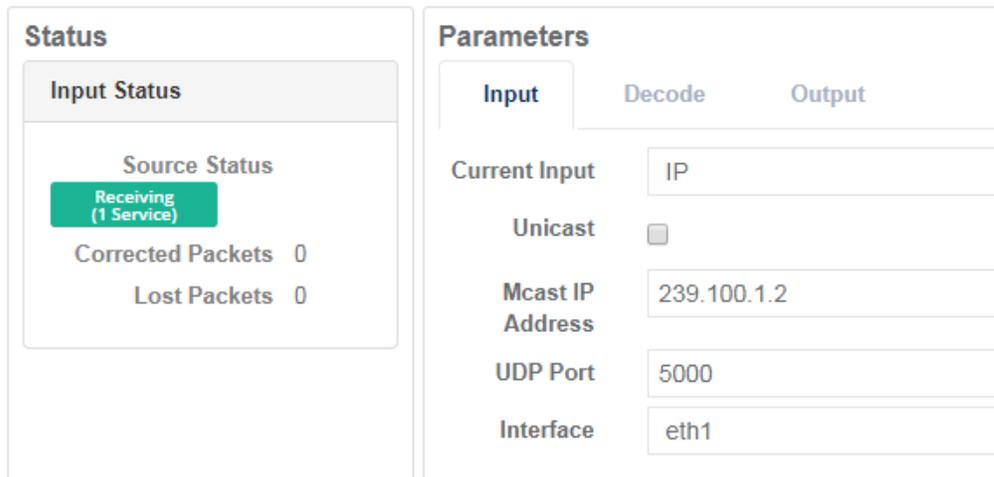
System Center				
Group	Restore	Backup	User Management	Failover
<i>Admin</i>	Yes	Yes	R+W	Yes
<i>Monitoring</i>	No	Yes	N/A	Yes
<i>Configuration</i>	Yes	Yes	N/A	Yes

## Manage displays for Content Processing

The **Status** window displays when editing Service parameters: **Input, Decode, Output**

1. Display **Services**.
2. Edit a service.

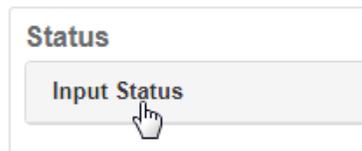
**Result:** Service **Parameters** and **Status** display.



The image shows two side-by-side panels. The left panel, titled 'Status', has a sub-panel 'Input Status' which contains a 'Source Status' section. This section shows a green 'Receiving (1 Service)' indicator, 'Corrected Packets 0', and 'Lost Packets 0'. The right panel, titled 'Parameters', has three tabs: 'Input', 'Decode', and 'Output'. The 'Input' tab is active and contains several fields: 'Current Input' with the value 'IP', 'Unicast' with an unchecked checkbox, 'Mcast IP Address' with the value '239.100.1.2', 'UDP Port' with the value '5000', and 'Interface' with the value 'eth1'.

3. Click the items in the **Status** window to minimize or expand views.

**Example:**



The image shows the 'Status' window with the 'Input Status' sub-panel highlighted in a light grey color. A mouse cursor is pointing at the 'Input Status' label.

## Edit the number of rows displayed

Edit the number of **rows per page** in lists or table displays.

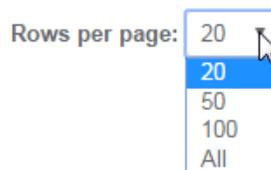
1. Use the left-side **Menu** panel to display views.

**Example:**

- [Services](#)
- [Servers](#)

2. Scroll to the bottom of the page and edit the number of rows to display per page.

**Example:**



The image shows a 'Rows per page:' label followed by a dropdown menu. The dropdown menu is open, showing a list of options: '20', '50', '100', and 'All'. The '20' option is currently selected and highlighted in blue. A mouse cursor is pointing at the '20' option.

## Use the search bar

The **Search** bar displays in pages with table displays. Searches are based on **any element in the table:** text, headers, labels, etc.

1. Use the left-side **Menu** panel to display views.

**Example:**

- [Services](#)
- [Servers](#)

2. Enter one or several keywords in the **Search** bar to filter the table.

**Search requirements:**

- Keyword based
- Case insensitive
- No wildcards

**Example:**

Search in table		
Name ↕	IP Address ↕	Processing Type
C2_primary	213.246.134.114	Stream Processing (C2)

## CHAPTER 2

# Managing MFVP Solutions

# Manage services

## Display services

Services are listed in a table and are associated to a specific processing type. Service parameters and options depend on the processing type.

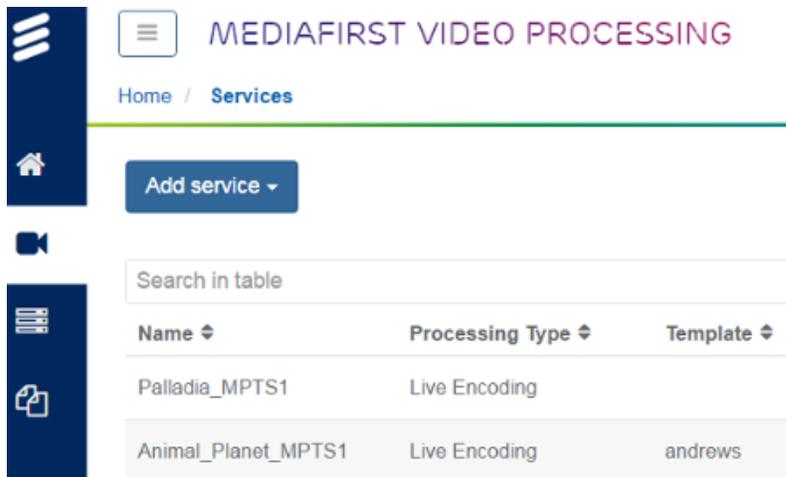
### Prerequisites:

At least one service is configured.

1. Click [Services](#) in the left-side menu panel.

**TIP** The **Services** page is also available from **Home > Services**.

**Result:** The table of services displays.



2. Optional: Edit the number of [rows displayed](#) or use the [search bar](#) to filter the display.

## Create a service

Service configurations vary per processing type. See the specific product user guide for detailed information about service creation.

1. [Display services](#).
2. Click **Add Service**.

**Example:**



3. Select a [processing type](#).

**Result:** The service parameter options display.

4. Configure the service parameters.

**IMPORTANT** Parameters vary per [processing type](#). See specific product *User Guide* for detailed information about configuring services.

5. [Assign a server](#) to the service.

6. Use the buttons in the action column to [start](#) or [stop](#) the service.

## Export a service configuration

Exported service configurations are for importing onto a **different MFVP** system. This is useful for product or production support, or testing (parameters and expected function).

### Prerequisites:

- You are connected to MFVP with the correct access rights.
- At least one service is configured.

**IMPORTANT** Exports **exclude** the service state (started or stopped).  
Importing service configurations may require manually starting or stopping services.

1. [Display services](#).

2. Click  to export.

**Result:** A file downloads to the Web browser default location.

**IMPORTANT** The download date in the file name is in the following format: **MM/DD/YYYY**

## Start a service

Services can be started and stopped manually from the **Services** page.

### Prerequisites:

A service exists.

1. [Display services](#).

2. Click the field in the **Server** column to assign the service to a server.

3. Click  to launch the service.

**Result:** The **Status** is **started**.

**NOTE** If an alarm is raised:

- Click  to display all alarms.
- Alarm colors are based on severity.

## Stop a service

1. [Display services.](#)

**TIP** Use the [rows per page](#) or the [search bar](#) to filter multiple services and to find a specific service.

2. Click  in the **Actions** column to stop the service.

**Result:** You are prompted to confirm.

3. Click **Yes, Stop it.**

**Result:** The service stops running and the service status displays **stopped**.

Stats	Alarms 	Servers	Status
		controller1 	stopped
		controller1 	stopped
		controller1 	stopped
		controller1 	stopped

## Deleting a service

Deleting a service removes a service from the list of available services.

### Prerequisites:

A service exists.

1. [Display services.](#)

2. Click  in the **Actions** column to delete the service.

**Result:** The service is now removed from the services table and is no longer available.

# Manage servers

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## Display servers

Servers are listed in a table. You can view server settings and usage statistics per server.

### Prerequisites:

At least one server is installed.

1. Click **Servers** from the left-side **Menu** panel.

**TIP** The Servers page is also available from **Home > Servers**.

**Result:** The table of servers displays.

2. Optional: Edit the number of [rows displayed](#) or use the [search bar](#) to filter the display.

## Display server information (system)

Check server functions and performance to manage server and service allocation, or to view license information. System settings and information display for each server.

1. [Display servers](#).
2. Click  in the **Actions** column to view server information.
3. Click the tabs to display server information.

**Result:** Information based on the server type displays.

- **General**
- **System Settings**
- **Statistics**

## Display a server IP address

View the server IP address for system administration or to view general server information.

1. [Display servers](#).
2. Click  in the **Actions** column to view server information.

**Example:**

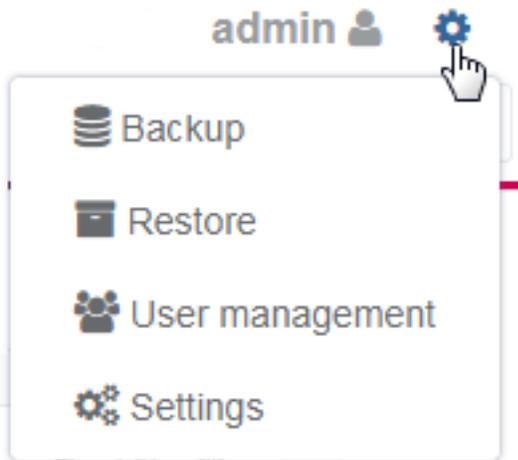
- **General**
- **System Settings**
- **Statistics**

# MFVP system administration

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## System center

Management and administration features for failover, users, backup, and restore are available in the **System Settings** menu (⚙️).



## Backup and restore

### Backup and restore configurations

Backups include services, server definitions, and locally defined users. You can back up your configurations in order to restore a previous configuration (for upgrades or rollbacks or after a server crash, etc.)

- NOTE**
- Access to configurations is blocked while a backup or restore is in progress.
  - Up to 30 backup files are supported for local backups.
  - The oldest backup is deleted once 30 backups are detected.

### Backup MFVP database configurations

Create a backup of MFVP configurations to save a version locally or on a remote server.

### Display backup MFVP database options

Back up the MFVP configuration to a local or remote server. Backups include services, servers, and users. Backups are time-stamped.

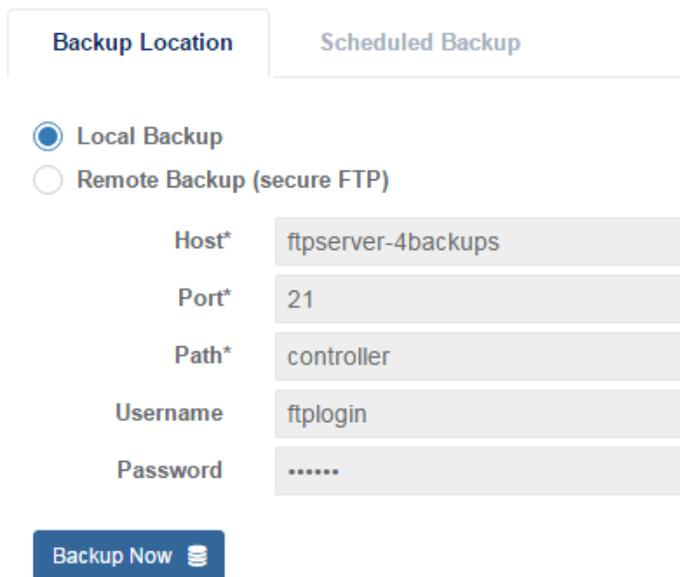
1. Click  in the upper-right corner of the screen.  
**Result:** The **System Center** menu displays.
2. Select **Backup**.  
**Result:** The **Backup Controller Database** options display.

## Create a local backup

Local backups of MFVP settings are still accessible even when no remote access is possible. Backups only include the list of servers, services, and user configurations.

1. [Display backup options.](#)

**Example:**



The screenshot shows a web interface for configuring backups. At the top, there are two tabs: 'Backup Location' (selected) and 'Scheduled Backup'. Below the tabs, there are two radio button options: 'Local Backup' (which is selected) and 'Remote Backup (secure FTP)'. Under the 'Remote Backup' option, there are several input fields: 'Host\*' with the value 'ftpserver-4backups', 'Port\*' with '21', 'Path\*' with 'controller', 'Username' with 'ftplogin', and 'Password' with a masked field of seven dots. At the bottom of the form is a blue button labeled 'Backup Now' with a small icon of a document with a checkmark.

**NOTE** The **Host**, **Port** and **Path** are only required for a [remote backup](#).

**Result:** **Local Backup** is selected by default.

2. Click **Backup now**.  
**Result:** The backup is stored on the local drive.

## Create a remote backup

Create remote backups to restore MFVP settings from a remote server using FTP.

1. [Display backup options.](#)
2. Select **Remote backup**.  
**Result:** [Required fields](#) are highlighted.
3. Enter the required remote backup settings information.  
**Example:**

**Backup Location** | **Scheduled Backup**

Local Backup

Remote Backup (secure FTP)

Host\*

Port\*

Path\*

Username

Password

**Backup Now**

**IMPORTANT** Editing the backup file storage location impacts scheduled backups.

4. Click **Backup Now**.

## Schedule an automatic backup (periodic)

Set a schedule to back up the MFVP database on a regular basis: monthly, weekly or daily. Backup guard times may impact backup availability.

1. Enable the scheduled backup.
2. Select the backup schedule time.

**NOTE** The time stamp is based on the current time on the Controller server.

3. Open the **Backup Location** tab to set the backup file storage settings, if they are not currently configured.
4. Save and exit.

## Restore configurations

Restore configurations for recovery or troubleshooting. You must have already created a local or remote backup in order to restore. Backups are selected based on the backup time stamp.

- IMPORTANT**
- The Database is **inaccessible until the restore completes**.
  - Only one restore can be launched at a time.
  - Alarms and statistical data are not restored because they are dynamic.

## Display restore options

You can restore the MFVP database configuration from existing local or remote backups.

1. Click  in the upper-right corner of the screen.  
**Result:** The **System Center** menu displays.
2. Select **Restore**.  
**Result:** The **Restore Controller Database** page displays.

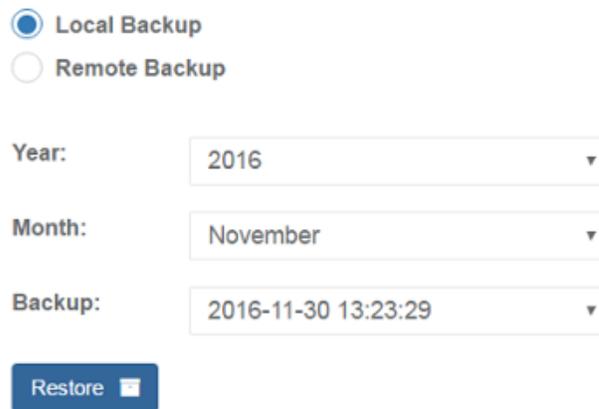
## Restore configurations from a remote backup

1. [Display restore options](#).
2. Select **Remote Backup**.
3. Select a **Year** > **Month** > **Backup**.

**NOTE**

- Available backups are **time-stamped**.
- Guard time configurations may impact availability.

### Example:



The screenshot shows a web interface for restoring configurations. At the top, there are two radio buttons: "Local Backup" (selected) and "Remote Backup". Below this are three dropdown menus: "Year" (set to 2016), "Month" (set to November), and "Backup" (set to 2016-11-30 13:23:29). A blue "Restore" button is located at the bottom left of the form.

4. Click **Restore**.

**IMPORTANT** The Management Controller is unavailable to all users until the restore completes.

## Restore configurations from a local backup

### Prerequisites:

You are connected MFVP with the correct access rights.

1. [Display restore options](#).  
**Result:** **Local Backup** is selected by default.
2. Expand the **Backup** drop-down list to display available backups, then select a backup to restore.

**NOTE**

- Available backups are **time-stamped**.
- Guard time configurations may impact availability.

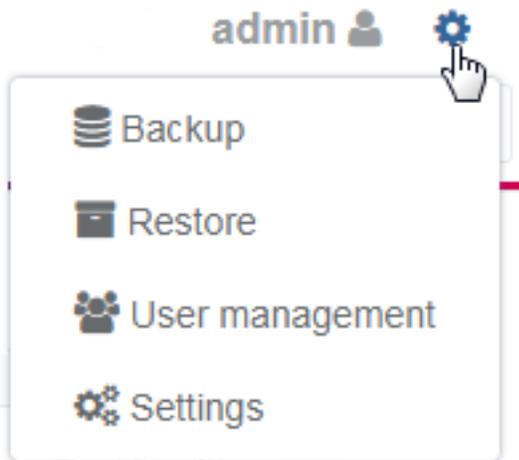
3. Click **Restore**.

**Result:** All users are temporarily assigned to the [Monitoring user group](#) until the restore completes or is terminated.

## User management

### Manage users

Administrators have rights to create users and assign groups. User groups reflect different user roles with specific permissions. Permissions authorize access to MFVP applications, menus and features.



### User groups

A user group is a set of access rights and permissions. Permissions authorize users to either display or edit configurations. Users are assigned to at least 1 user group. A user can be assigned to multiple groups.

**NOTE** New users are automatically assigned to the **Monitoring** group.

### User group permissions

There are 3 default user groups. Permissions are either Read (R), Write (W), or Read and Write (R/W). Yes means the user group can carry out the action, but may be limited to specific options.

	<i>Admin</i>	<i>Configuration</i>	<i>Monitoring</i>
<b>Services</b>	R/W	R/W	R
<b>Servers</b>	R/W	R/W	R
<b>Templates</b>	R/W	R/W	R
<b>Failover</b>	R/W	R/W	R

	<i>Admin</i>	<i>Configuration</i>	<i>Monitoring</i>
<b>System Center</b>	R/W	R	R
<b>Restore</b>	Yes	Yes	No
<b>Backup</b>	Yes	Yes	Yes
<b>User Management</b>	R+W	N/A	N/A

## Display the list of users

1. Click  in the upper right corner of the window.
2. Select **User Management**.  
**Result:** The **User Administration** page displays.
3. Select **Users**.  
**Result:** The list of users displays.  
**TIP** Scroll to the end of the list to display the total number of users.

## Create a new user

The MFVP Management Controller is a single access point for MFVP products. Administrators manage users, groups and permissions from the system center.

### Prerequisites:

You are connected to MFVP as an Administrator.

1. [Display users](#).
2. Select **Add User**.  
**Result:** You are prompted to enter User information.
3. Enter the User information.

- **Username**
- **Password**

---

**IMPORTANT**

- An Admin user can edit or create other Admin users and profiles, including passwords and permissions.
- **Password** is case sensitive.

---

4. Select a **Save** option.
5. [Assign a user to a group](#) to manage user access [rights and permissions](#).  
**Result:** By default, new users are assigned to the **Monitoring** group.

## Assign a user to a group

Groups are a set of access rights and permissions. Permissions authorize users to either display or edit configurations. Give a user access rights by assigning the user to a group.

### Prerequisites:

You are connected to MFVP as an Administrator.

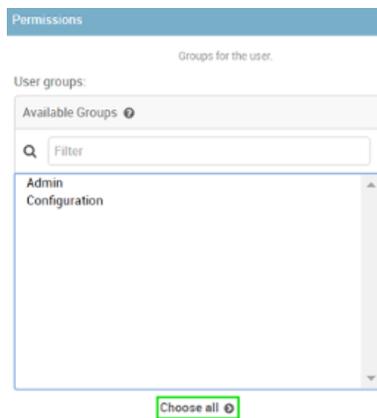
1. [Display users](#).
2. Click the user in the list to display user information and permissions.
3. Scroll to **Permissions** and use the arrows to add the group to the list of **Chosen groups**.

### Example:



**TIP** You can add multiple groups, or click **Choose all** to assign the user to all available groups.

### Example:



4. Click **Save**.

## Link LDAP or Active Directory

The MFVP Management Controller can be linked with an external server (LDAP or ActiveDirectory) to identify and authenticate users. If activated, the authentication page displays before granting access to the Controller **Home** page.

- NOTE**
- The LDAP connection parameters are defined in a dedicated configuration file.
  - If using LDAP, then the MFVP Management Controller neither stores nor manages user passwords that are managed by the external LDAP server.

- Users defined on the external server can coexist with locally defined users.

1. See the Installation manual for LDAP configuration procedures.

**Result:** When users are first installed from the LDAP or ActiveDirectory server, they are automatically assigned to the Monitoring group. Administrators can [edit user groups](#) to [manage permissions](#) and access rights.

## Edit user information

### Prerequisites:

You are connected to MFVP as an Administrator.

1. [Display users](#).

2. Select a **User**.

3. Edit the user information:

**NOTE** An Admin user can edit or create other Admin users and profiles, including passwords and permissions.

- **Username**
- **Password**
- **Personal information**
- [Permissions](#)

4. Select a save option to continue or exit.

## Edit a user password

Any user can edit their password, but only users with admin or configuration permissions can edit passwords for other users.

### Prerequisites:

You are connected to MFVP with administrator user rights and permissions.

1. [Display the list of users](#) in the System Center.

2. Click the current Admin user from the list to edit.

3. Click the link as shown in the example below to change the password.

### Example:

Home > User Management > Users > admin

### Change User

**Username:**   
Required. 30 characters or fewer. Letters, numbers and @/./+/-/\_ characters

---

**Password:** **algorithm:** pbkdf2\_sha256 **iterations:** 30000 **salt:** Z6lZOY\*\*\*\*\* **hash:** lRxo7\*\*\*\*\*  
Raw passwords are not stored, so there is no way to see this user's password, but you can change the password using [this form](#)

4. Optional: Edit user profile settings, then **Save**.

## Save options for user management

Save Option	Result
Save	the user is added to the list
Save and continue	additional user information displays (groups and permissions)
Save and add another	user is added to the list and the add user page is refreshed to add another new user

## Manage alarms

## Manage licensing

### Manage Licensing

MFVP solutions offer flexible licensing models. Each model depends on your solution and installation options. A service can be configured but can only be processed for a limited period of time without a license (grace period).

### License servers and installation

The license manager is a micro-service application installed on a server, or on 2 servers if in redundancy mode. By default, the Controller hosts this application that is identified by a *Licensing* processing type.

The license manager may also run dedicated servers for very large configurations.

- 
- TIP** View [license details per feature](#) to display:
- [license usage per feature](#)
  - [license codes](#)
  - [license expiry dates in Universal Time \(UTC\)](#)
- 

### Display license details

There is a license code per feature. Licenses are required for features and options in the MFVP solution and have expiry dates.

- 
- IMPORTANT**
- Licenses are managed by a License Manager.
  - The License Manager is a micro-service application installed by default on the Controller server or a dedicated license server.

- There may be more than one license server if your solution is installed in redundancy.

1. [Display servers.](#)

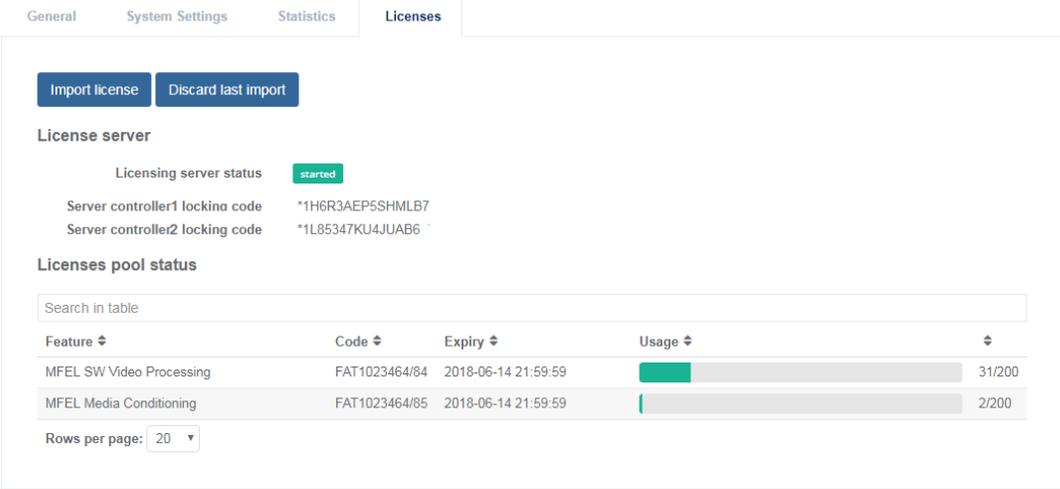
**Result:** The servers display.

2. Click  for the server with the **Licensing processing type.**

**NOTE** The *Licensing* processing type may display for the Controller server if the licensing manager is installed on the same machine as the Management Controller.

3. Select the **Licenses** tab.

**Example:**



Feature	Code	Expiry	Usage
MFEL SW Video Processing	FAT1023464/84	2018-06-14 21:59:59	31/200
MFEL Media Conditioning	FAT1023464/85	2018-06-14 21:59:59	2/200

**Result:** The license information displays.

**NOTE** All time stamps are in Universal Time (UTC).

## Request license file

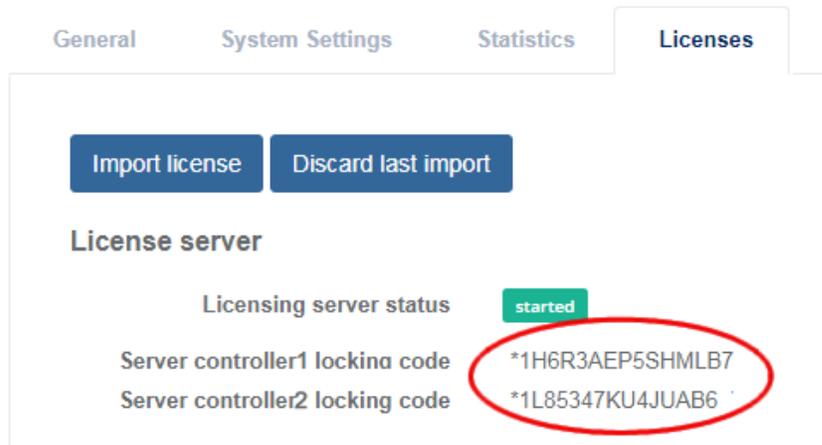
This is your first time connecting to your MFVP user interface and you want to request a license file.

1. [Display license details.](#)

**Result:** The licensing information displays for the specific server.

2. Copy the locking code, including the asterix (\*) and paste into the email or file you plan to send to Ericsson.

**Example:**



**IMPORTANT** In redundant solutions:

- Multiple locking codes display per server.
- Provide both locking codes.

3. Copy and paste the LAC reference number for your Software Handling Community to the same file or email and send to your Ericsson representative.

**NOTE** The LAC reference number and the Software Handling Community details are in the software Delivery Note. See software installation package.

## Import license file

New license files are available from the support center.

### Prerequisites:

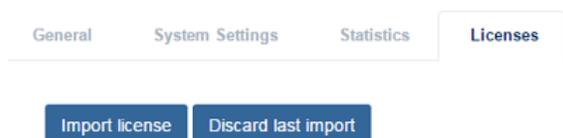
- The new license file needs to be available on the machine.
- Only configuration and admin users can import license files.

1. [Display the license details.](#)

**Result:** The licensing information displays for the specific server.

2. Click **Import license** > **Select file** to browse and select the file to import.

### Example:



**Result:** A summary displays.

**TIP** If an error occurs, keep a copy of the error number and contact support.

## Revert to the previous license file

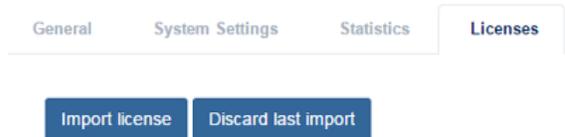
This feature is helpful when solving import errors that restrict license use. **Only use if Ericsson support staff approves a revert.**

### Prerequisites:

You are connected to MFVP with the appropriate user rights.

1. [Display the license details.](#)
2. Click **Discard last import**.

### Example:



**Result:** You are prompted to confirm.

3. Click **OK** to confirm.

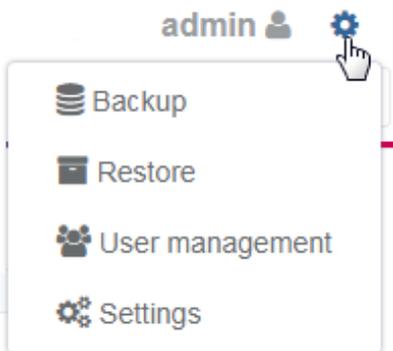
**Result:** The last license file import is discarded and the previous file is used.

## Manage settings

### Settings

Access multiple shared parameters from the **Settings** option in the **System center** menu.

### Example:



## CHAPTER 3

# Using Content Processing

# Configure decoding

## Configure input for decoding (transport streams)

There are multiple types of transport stream configurations. Each type presents a different set of parameters.

### Status

#### Input Status

**Source Status**

Receiving  
(1 Service)

Corrected Packets 0

Lost Packets 0

### Parameters

Input

Decode

Output

Current Input

Unicast

Mcast IP Address

UDP Port

Interface

## Supported decoding formats

### Video formats and decoding standards

Resolution	Frame rate	Bit depth	Chroma	Codec
1920 x 1080i	25 / 29.97 fps	8 / 10 bit	4:2:0 / 4:2:2	MPEG-2 H.264 H.265
1280 x 720p	50 / 59.94 fps	8 / 10 bit	4:2:0 / 4:2:2	MPEG-2 H.264 H.265
1920 x 1080p	50 / 59.94 fps	8 / 10 bit	4:2:0 / 4:2:2	MPEG-2 H.264 H.265
3840 x 2160p	50 / 59.94 fps	10 bit	4:2:0 / 4:2:2	H.265

### Audio formats and decoding standards

Codec	Sample Rate	Bit Depth	Output format
MPEG1-LII	48kHz	n/a	Decode
Dolby Digital	48kHz	n/a	Decode
Dolby Digital +	48kHz	n/a	Decode

LPCM	48kHz	16 / 20 / 24	Pass-through
Dolby-E	48kHz	16 / 20 / 24	Pass-through

## Data formats

Format	Output format
AFD / BAR data	SMPTE 2016
Teletext	OP47 / SMPTE 2031
Closed Captions	SMPTE 334M for EIA-708-B
Time code	SMPTE 12M + RP188
Generic VANC	SMPTE 2038

## Configure transport stream input for ASI

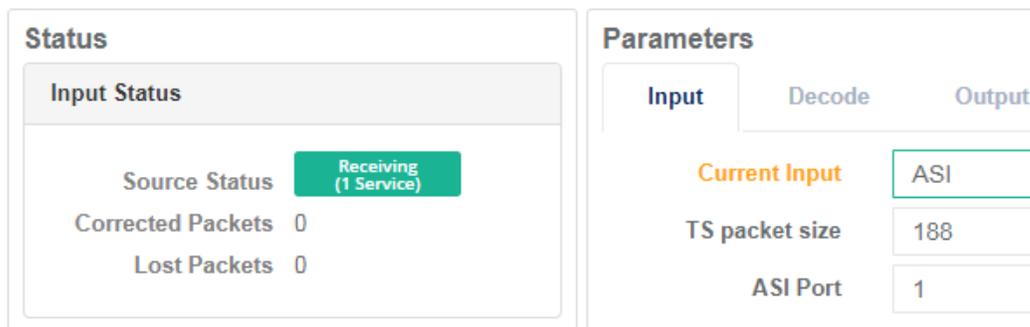
Transport streams can be streamed into Content Processing over either Ethernet or ASI depending on the hardware fitted to the M1 server.

### Prerequisites:

At least one service is configured.

1. Display services.
2. Click  to edit the service.
3. Select **ASI** for **Current input**.

### Example:



**NOTE** Packet size depends on the input format. For ASI options are either 188 or 204.

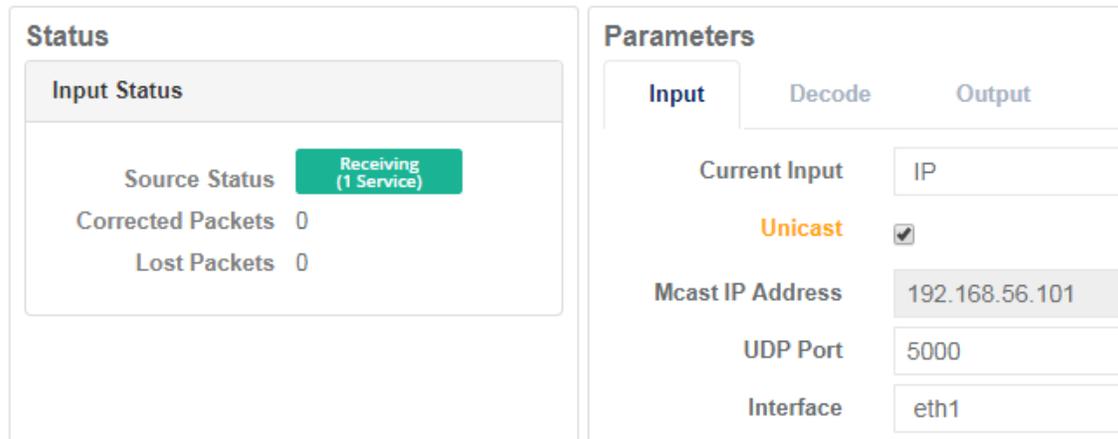
4. Ensure that the **Source Status** is green (receiving) and that they're no errors (this only applies if the source currently exists).

## Configure transport stream input for IP in Unicast

Transport streams can be streamed into Content Processing over either Ethernet or ASI depending on the hardware fitted to the M1 server.

1. Display services.
2. Click  to edit the service.
3. Select **Unicast**.

**Example:**



The screenshot shows two panels: 'Status' and 'Parameters'. The 'Status' panel has a sub-section 'Input Status' with a green 'Receiving (1 Service)' indicator, and 'Corrected Packets' and 'Lost Packets' both at 0. The 'Parameters' panel has tabs for 'Input', 'Decode', and 'Output'. Under 'Input', 'Current Input' is 'IP', 'Unicast' is checked, 'Mcast IP Address' is '192.168.56.101' (greyed out), 'UDP Port' is '5000', and 'Interface' is 'eth1'.

**Result:** **Multicast IP** is greyed out and a port parameter displays.

4. Enter a **port**.
5. Enter the **UDP port** number for the incoming transport stream.
6. Select the Ethernet port for the **Interface** that the incoming transport stream is available on.
7. Ensure that the **Source Status** is green (receiving) and that there are no errors (this only applies if the source currently exists).

## Configure transport stream input for IP in multicast

Transport streams can be streamed into Content Processing over either Ethernet (IP) or ASI depending on the hardware installation.

1. Display services.
2. Click  to edit the service.
3. Clear the **Unicast** check box and enter a **Multicast IP address**.

**Example:**

The screenshot shows two main sections: 'Status' and 'Parameters'.  
The 'Status' section has a sub-section 'Input Status' which contains 'Source Status'. Under 'Source Status', there is a green button labeled 'Receiving (1 Service)'. Below this, it shows 'Corrected Packets 0' and 'Lost Packets 0'.  
The 'Parameters' section has three tabs: 'Input', 'Decode', and 'Output'. The 'Input' tab is active. It contains several fields: 'Current Input' with the value 'IP', 'Unicast' with an unchecked checkbox, 'Mcast IP Address' with the value '239.100.1.2', 'UDP Port' with the value '5000', and 'Interface' with the value 'eth1'.

**NOTE** The Multicast parameter is greyed out if **Unicast** is selected.

4. Enter a **port**.
5. Enter the **UDP port** number for the incoming transport stream.
6. Select the **Interface** (Ethernet port) that the incoming transport stream is available on.
7. Ensure that the **Source Status** is green (receiving) and that there are no errors (this only applies if the source currently exists).

## Configure video decoding

Content Processing is designed to decode video, audio and data from an incoming transport stream.

### Prerequisites:

[Inputs](#) are configured.

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decoding** tab.

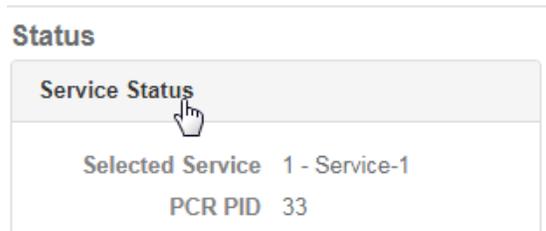
### Example:

The screenshot shows the 'Parameters' section with three tabs: 'Input', 'Decode', and 'Output'. The 'Decode' tab is selected. Below the tabs, there is a 'Selected Service' field with a dropdown menu showing 'Service-1'.

4. Optional: Select a service from the **Selected Service** drop-down list to decode.  
**Result:** The first video and audio as listed in the service PMT are automatically decoded.

5. Check **Service Status**.

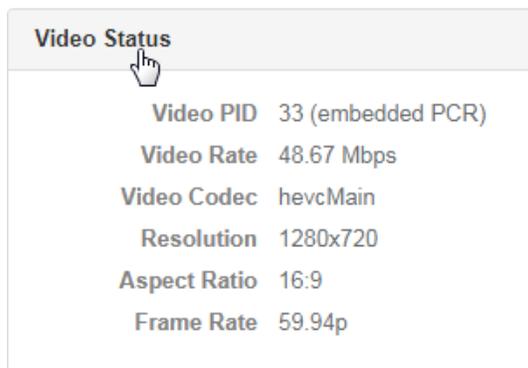
### Example:



**Result:** The first video and audio as listed in the service PMT are automatically decoded. The service name and associated PCR PID are displayed in the Service status window.

6. Check the **Video Status**.

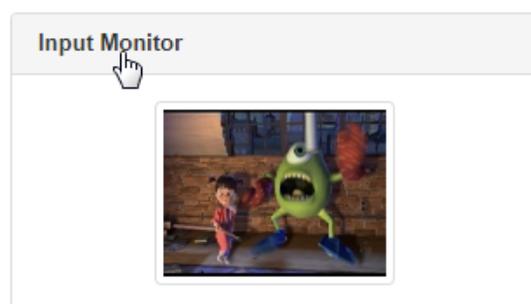
**Example:**



**Result:** The video PID, component bit rate, codec being used, resolution, picture aspect ratio and frame rate are displayed in the **Video Status** window.

7. Check the **Input Monitor**.

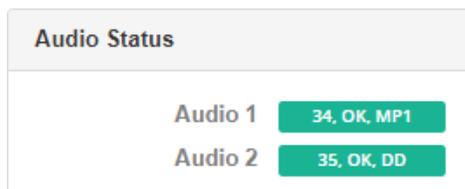
**Example:**



**Result:** A thumbnail of the decoded video is displayed in the **Input Monitor** window. The thumbnail is updated every 5 seconds.

8. Check the **Audio Status**.

**Example:**



**Result:** The audio PID, status and codec are displayed in the **Audio Status** window.

**TIP** Hover your cursor over the audio status to display the channel mode, language and component bit rate.

## Configure audio decoding

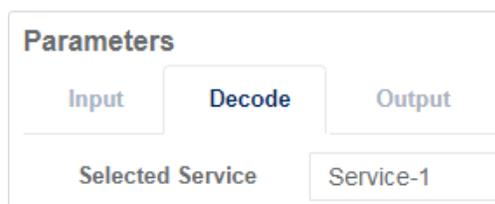
### Prerequisites:

- At least one service is configured.
- [Video decoding](#) is configured.

**IMPORTANT** A maximum of 16 audio components can be decoded simultaneously for each decoded video service.

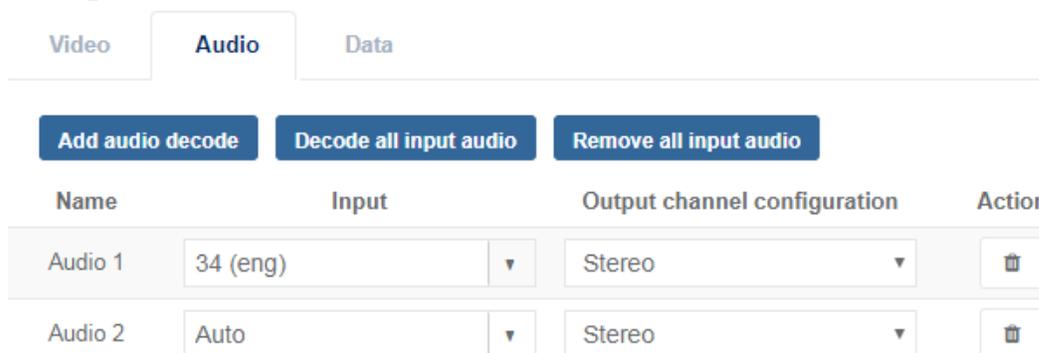
1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

### Example:



4. Select **Audio** to display audio decode settings.

### Example:



**Result:** The first decoded audio is automatically given the reference name **Audio 1**. This reference is used when configuring the audio outputs.

5. Select an audio **Input** from the drop-down menu.

**Result:** The PID and language of the audio being decoded are shown in the **Input** column once the configuration is saved.

6. Enter a PID value to be decoded.

**TIP** You can choose to manually enter a PID.

**Result:** If the selected PID is present in the PMT then the Content Processing attempts to decode any available audio on the PID.

7. Optional: [Add an audio](#) to decode.

8. Select an **Output channel configuration** for each audio.

**Result:** Setting the output channel configuration also sets the number of embedded channels required for the SDI output. You can see the incoming audio stereo or 5.1 layout from the **Audio Status** window

- IMPORTANT**
- 1 embedded channel for a Stereo pair.
  - 3 embedded channels for a 5.1 service.
  - If the audio being decoded is a **5.1 service** and **Stereo** is selected, then the audio will be down mixed to a Stereo pair.

## Add an audio to decode (optional)

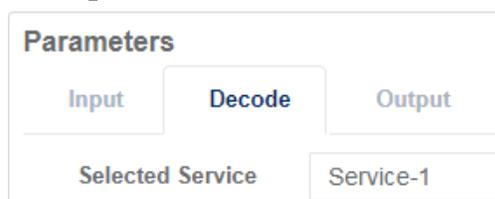
### Prerequisites:

- At least one service is configured.
- [Video decoding](#) is configured.

**IMPORTANT** A maximum of 16 audio components can be decoded simultaneously for each decoded video service.

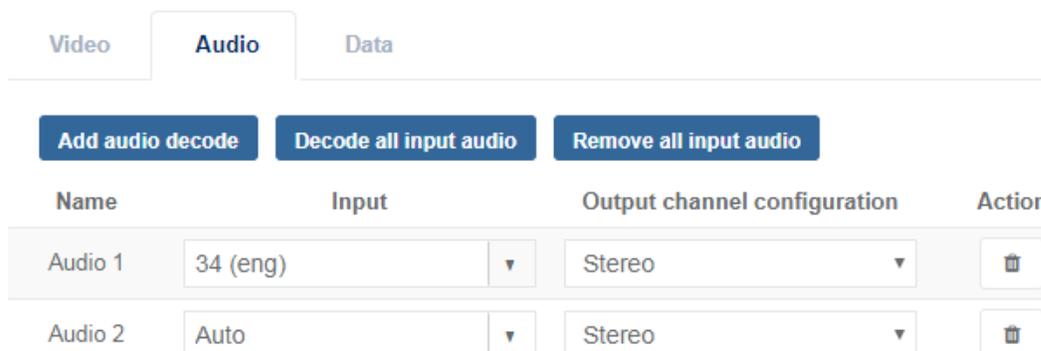
1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

### Example:



4. Select **Audio** to display audio decoding parameters.

### Example:



**Result:** The first decoded audio is automatically given the reference name **Audio 1**. This reference is used when configuring the audio components.

5. Select an **Input**.

**Result:** The PID and language of the audio being decoded are shown in the **Input** column.

6. Select an **Output channel configuration**.

## Decode all input audio (optional)

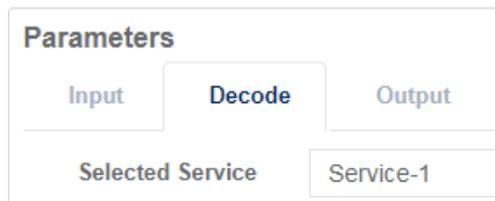
### Prerequisites:

- At least one service is configured.
- At least one audio component is configured.

**IMPORTANT** A maximum of 16 audio components can be decoded simultaneously for each decoded video service.

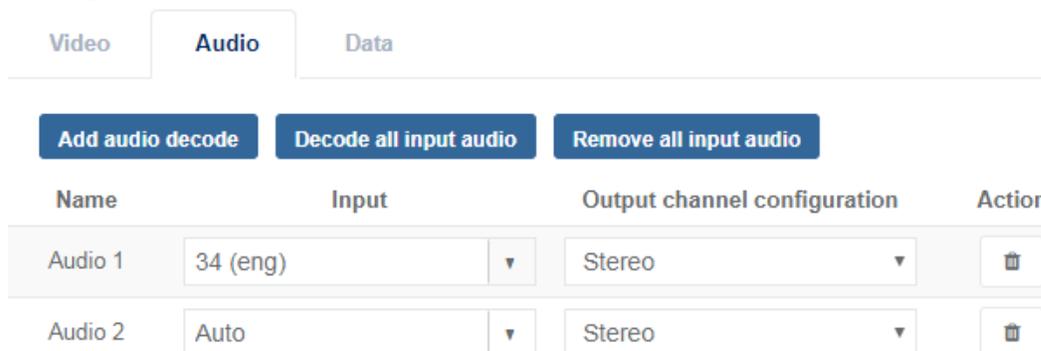
1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

### Example:



4. Select **Audio** to display audio decoding parameters.

### Example:



5. Click **Decode all input audio**.

**Result:** The audio components that are not currently being decoded are added in the order that they are listed in the PMT (**up to a maximum of 16 decodes per service**). The defaults channel configuration is **Stereo**.

## Delete an audio from a decode configuration (optional)

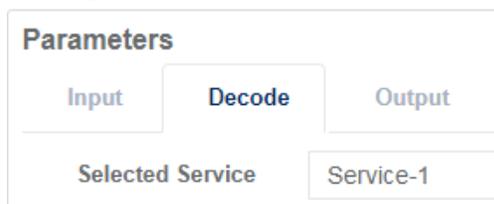
**Prerequisites:**

- At least one service is configured.
- [Video decoding](#) is configured.

**IMPORTANT** A maximum of 16 audio components can be decoded simultaneously for each decoded video service.

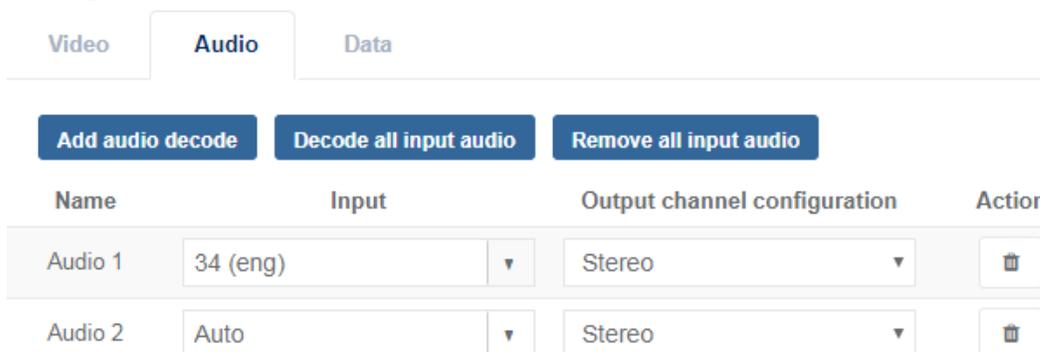
1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

**Example:**



4. Select the **Audio** tab to display audio decoding parameters.

**Example:**



5. Click  to delete an audio component or click **Remove all decoded audio**.

**Result:** The audio decode is now removed from both the list of decoded components and from any output configurations.

## Configure data decoding

The section explains how to decode data in Content Processing that is carried on a separate PID.

Content Processing currently supports the following data types:

- Closed Captions
- Teletext
- Time code
- AFD
- Generic data

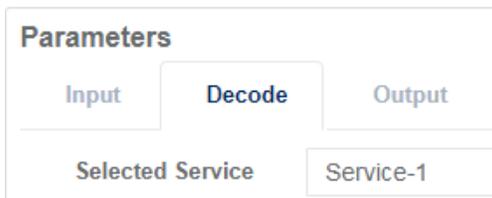
Data is carried within the transport stream in 1 or 2 possible ways, depending on the type of data.

1. Encapsulated in the video component as SEI (H.264 / H.265) or USER data (MPEG2)
2. On a separate data PID

**IMPORTANT** A maximum of 8 data components can be decoded at any one time for each decoded video service.

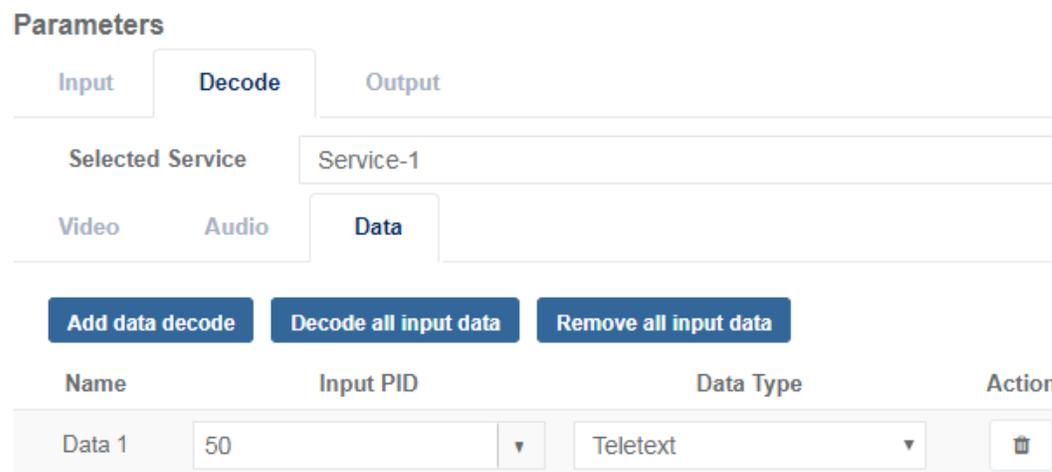
1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

**Example:**



4. Select **Data** to display data decoding parameters.

**Example:**



5. Optional: Add an additional data component to decode.
6. Select an **Input PID**.

**TIP** You can choose to manually enter a PID.

**Result:** If the selected PID is present in the PMT then Content Processing attempts to decode any data on that PID.

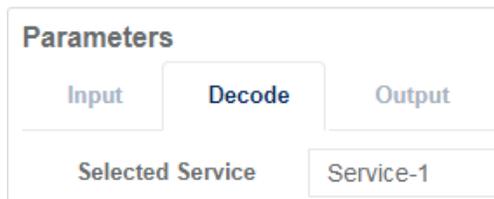
7. Select a **Data type**.

## Add a data decoding

1. Display services.

2. Click  to edit the service.
3. From the **Parameters** section, select the **Decode** tab.

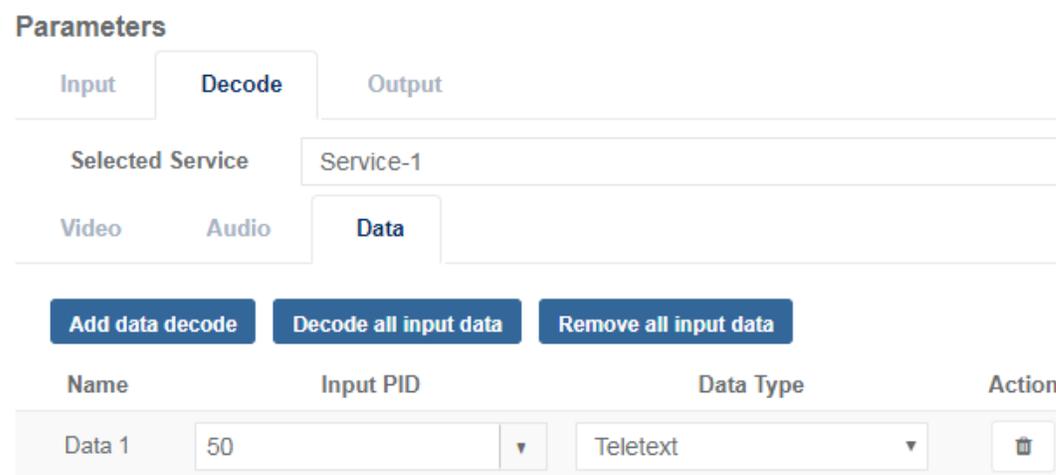
**Example:**



The screenshot shows a 'Parameters' section with three tabs: 'Input', 'Decode', and 'Output'. The 'Decode' tab is selected. Below the tabs, there is a 'Selected Service' field containing the text 'Service-1'.

4. Select **Data** to display data decoding parameters.

**Example:**



The screenshot shows the 'Parameters' section with the 'Decode' tab selected. Underneath, there are sub-tabs for 'Video', 'Audio', and 'Data'. The 'Data' sub-tab is selected. Below the sub-tabs, there are three buttons: 'Add data decode', 'Decode all input data', and 'Remove all input data'. At the bottom, there is a table with the following structure:

Name	Input PID	Data Type	Action
Data 1	50	Teletext	

5. Click **Add data decode**.  
**Result:** A new data displays in the list.
6. [Configure data decoding](#) parameters.

## Decode all input data

### Prerequisites:

- At least one service is configured.
- [Video decoding](#) is configured.

**IMPORTANT** A maximum of 16 audio components can be decoded simultaneously for each decoded video service.

1. Display services.
2. Click  to edit the service.

**Example:**

**Parameters**

Input    **Decode**    Output

Selected Service    Service-1

3. From the **Parameters** section, select the **Decode** tab.

**Example:**

**Parameters**

Input    **Decode**    Output

Selected Service    Service-1

Video    Audio    **Data**

**Add data decode**    **Decode all input data**    **Remove all input data**

Name	Input PID	Data Type	Action
Data 1	50	Teletext	

4. Select **Data** to display parameters.

5. Click **Decode all input data**.

**Result:** All the data components for the selected service that are not currently being decoded are added in the order that they are listed in the PMT (a **maximum of 8 decodes per service**). The default **Data type** is set to **Ancillary**.

## Delete data from a decoding configuration

**Prerequisites:**

- At least one service is configured.
- At least one data input is configured for decoding.

1. Display services.

2. Click to edit the service.

**Example:**

**Parameters**

Input    **Decode**    Output

Selected Service    Service-1

3. From the **Parameters** section select the **Decode** tab.

**Example:**

### Parameters

Input **Decode** Output

---

Selected Service Service-1

---

Video Audio **Data**

---

**Add data decode** **Decode all input data** **Remove all input data**

Name	Input PID	Data Type	Action
Data 1	50	Teletext	

4. Select **Data** to display data decoding parameters.
5. Click  to delete a data from the decoding or click **Remove all input data**.

# Configure output

## Configure output

The Content Processing is designed to output a decoded video component and related audio and data components.

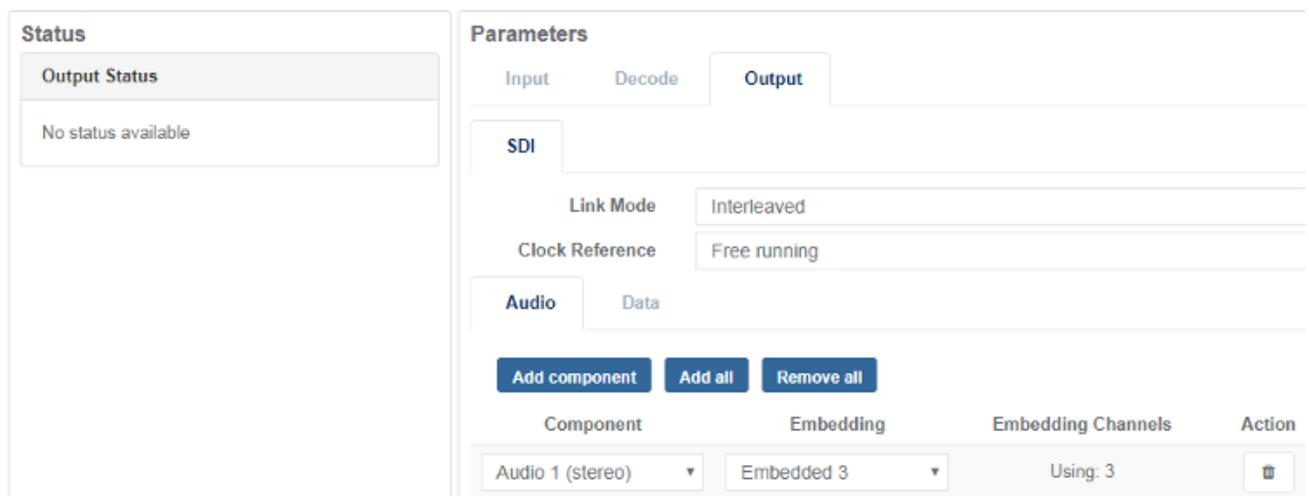
## Configure UHD video output

UHD 4k video can be output in 2 different formats:

- Quadrant squared division (4 x 3G links only)
- 2 sample interleaved (4 x 3G or single 12G)

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.

### Example:



4. Select the **Link Mode** format required for the video output.
5. Optional: [Configure audio](#) and [data output](#) accordingly.

## Configure audio output

### Prerequisites:

- At least one service is configured.
- A video service and at least 1 audio input has been configured to be decoded.

Output Format	Number of audio channels
1.5G SDI (720p / 1080i)	16 channels (8 stereo pairs)

3G SDI (1080p)	32 channels (16 stereo pairs)
4 x 3G SDI (2160p)	32 channels (16 stereo pairs) embedded in the first SDI output
12G SDI (2160p)	32 channels (16 stereo pairs)

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.
4. Select **Audio** to open the tab and display options.
5. Optional: [Add an audio](#) if none are currently configured.
6. Select a **Component** from the drop-down list.

**NOTE** Available audio components are based on the audio being decoded for the service.

7. Select an **Embedding** position from the drop-down list.

- NOTE**
- A single Embedded channel is required to output a stereo audio.
  - 3 Embedded channels are required to output a 5.1 audio.

**Result:** Each audio component is embedded into the output SDI at the selected position.

Output Format	Embedded options
1.5G SDI (720p / 1080i)	Embedded 1 to 8
3G SDI (1080p)	Embedded 1 to 16
4 x 3G SDI (2160p)	Embedded 1 to 16
12G SDI (2160p)	Embedded 1 to 16

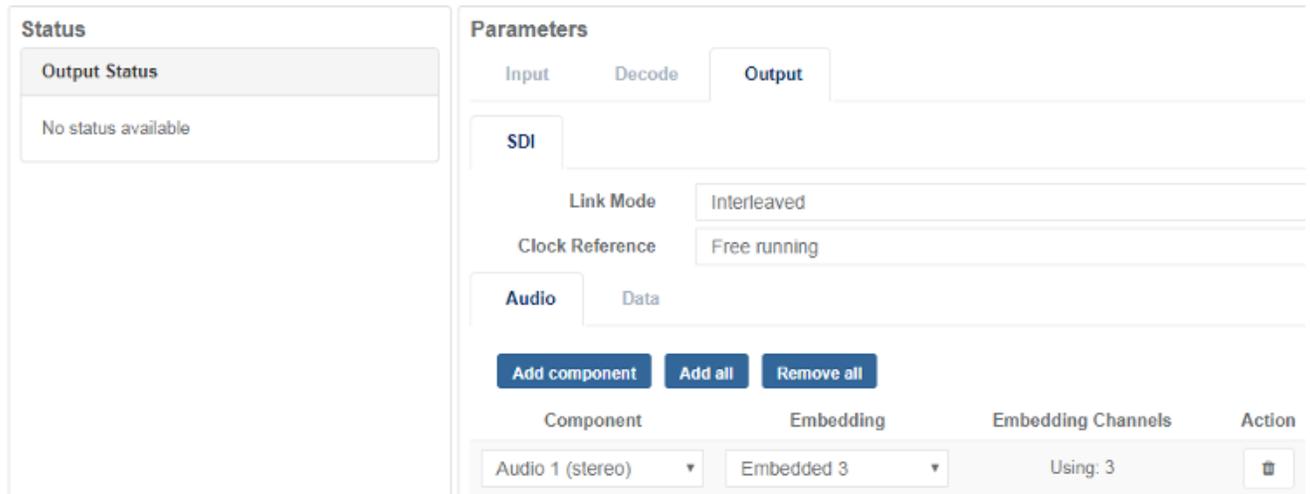
## Add an output audio component

### Prerequisites:

- At least one service is configured.
- A video service and at least 1 audio component is configured to be decoded.

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.

### Example:



4. Select **Audio** to open the tab and display options.
5. Select **Add component**.  
**Result:** An audio component displays.
6. [Configure audio output](#) parameters.

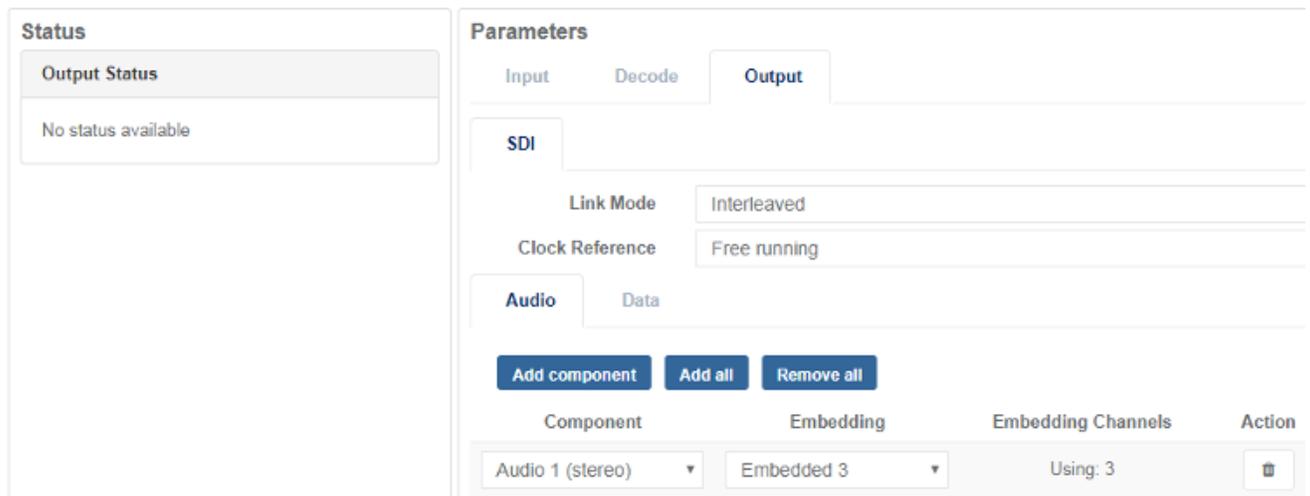
## Add all output audio

### Prerequisites:

- At least one service is configured.
- A video service and at least 1 audio component is configured to be decoded.

1. Display services.
2. Click to edit the service.
3. From the **Parameters** section, select **Output** to display options.

### Example:



4. Select **Audio** to open the tab and display options.
5. Select **Add all**.

**Result:** All the decoded audio components that are not currently included in the output audio configuration are added to the component column (**up to a maximum number of embedded channels available for the output video format in use**).

Embedded channels are allocated in sequence until all available channels are filled.

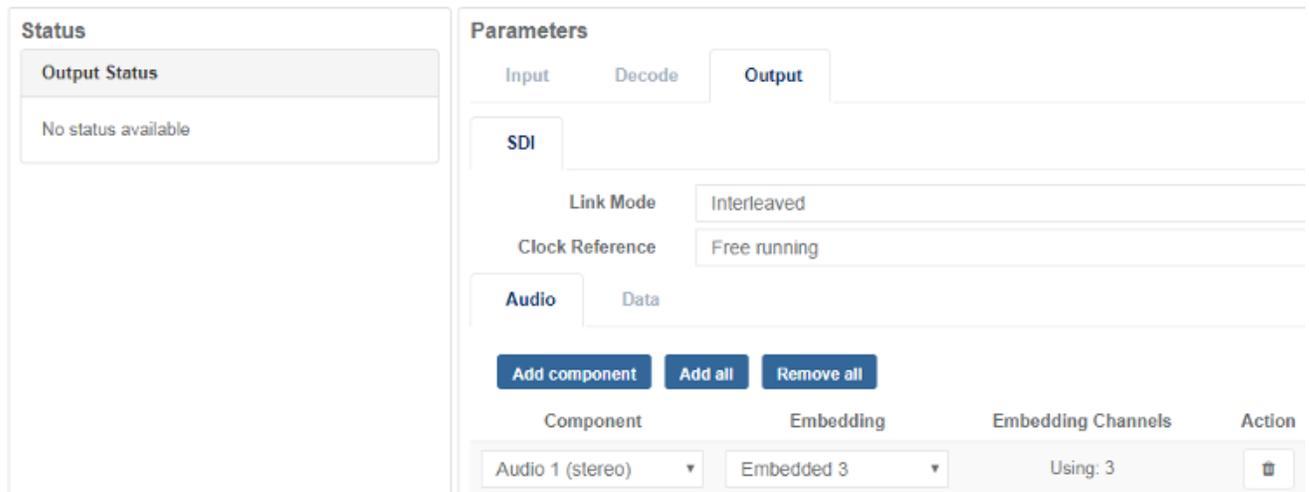
## Delete an output audio

### Prerequisites:

- At least one service is configured.
- A video service and at least 1 audio component has been configured to be decoded.

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.

### Example:



4. Select **Audio** to open the tab and display options.
5. Select   
**Result:** The audio component no longer displays.

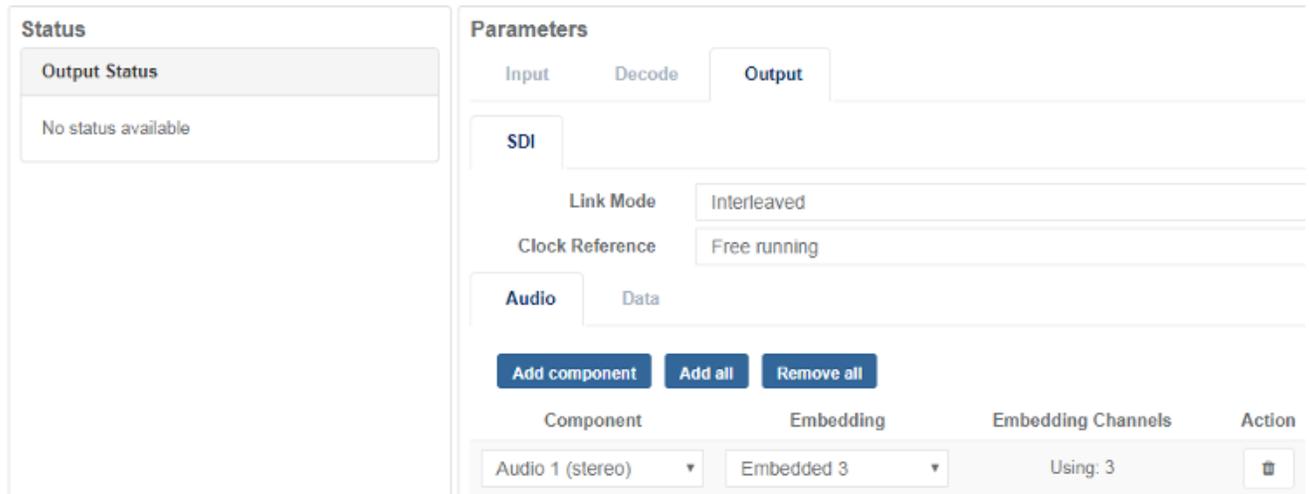
## Delete all output audio

### Prerequisites:

- At least one service is configured.
- A video service and at least 1 audio input has been configured to be decoded.

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.

### Example:



4. Select **Audio** to open the tab and display options.

5. Select **Remove all**

**Result:** All the audio components are now removed from the list of output configurations.

## Configure data output

Data is embedded into the VANC (Vertical Ancillary) lines of the SDI output. It is possible to embed more than one data type onto a single VANC line.

### Prerequisites:

- At least one service is configured.
- The service to be decoded has been selected from the **Selected Service** list in the **Input** tab.

MFCP currently supports the following data types:

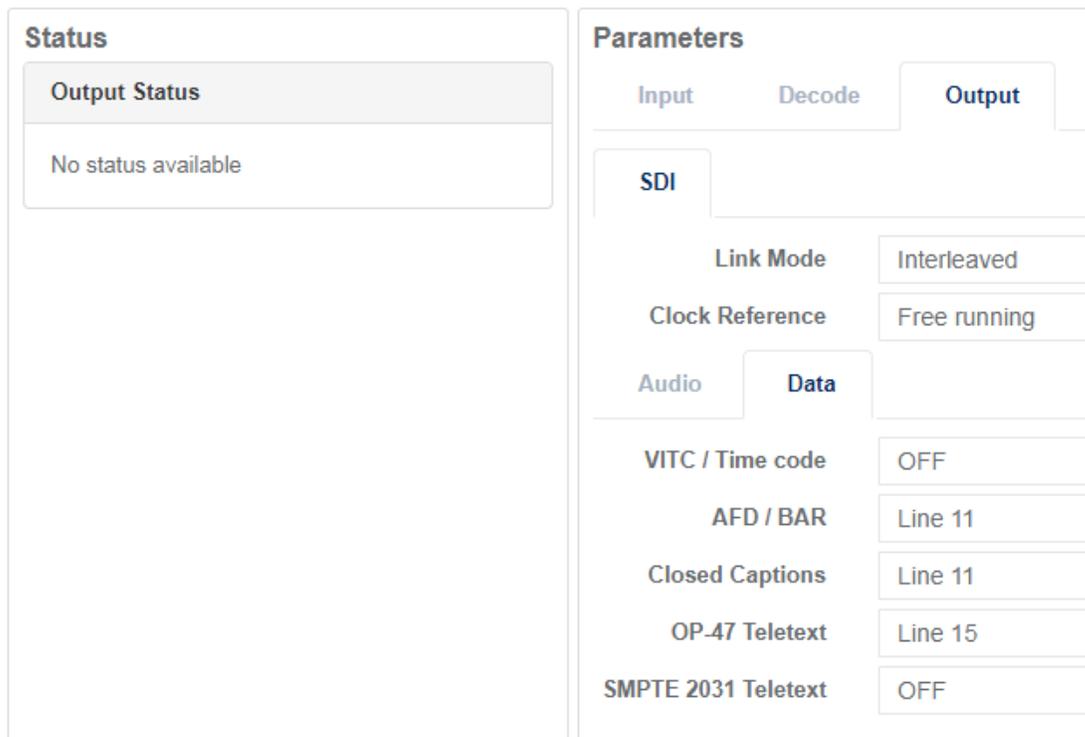
- VITC / Time code
- AFD / BAR
- Closed Captions
- OP-47 Teletext
- SMPTE 2031 Teletext
- Generic data

1. Display services.

2. Click  to edit the service.

3. From the **Parameters** section, select **Output** to display options.

**Example:**



4. Select **Data** to open the tab and display options.
5. Select the **Line number** from the drop-down menu.

**Result:** Each selected data component (if present on the incoming transport stream) is now either decoded from a data PID or is extracted from User data or SEI in the video elementary stream).

**NOTE** Generic data is automatically reinserted into the same line it came in.

## Disable data output

### Prerequisites:

- At least one service is configured.
- The service to be decoded has been selected from the **Selected Service** list in the **Input** tab.

1. Display services.
2. Click  to edit the service.
3. From the **Parameters** section, select **Output** to display options.
4. Select **Data** to open the tab and display options.

**Example:**

The screenshot shows a configuration interface with two main sections: **Status** and **Parameters**.

**Status**: Contains a sub-section titled **Output Status** with the text "No status available".

**Parameters**: Contains several sub-sections and controls:

- Input**, **Decode**, and **Output** tabs.
- SDI** tab.
- Link Mode**: Interleaved
- Clock Reference**: Free running
- Audio** and **Data** tabs.
- VITC / Time code**: OFF
- AFD / BAR**: Line 11
- Closed Captions**: Line 11
- OP-47 Teletext**: Line 15
- SMPTE 2031 Teletext**: OFF

5. Select **Off** from the drop-down menu for each data that you want to disable.  
**Result:** Once disabled, the data is no longer embedded into SDI outputs.

## Supported output formats

### Output formats

Format	Notes
1.5G / 3G SDI	4 x 3G is required for UHD
12G SDI	Available Q4 2017
HDMI 2.0b	Available Q4 2017
SMPTE 2022-6	Available Q1 2018
SMPTE 2110	Available Q1 2018

**TIP** See [Supported decoding formats](#) on page 30.

## CHAPTER 4

# Parameter descriptions

# Input parameters

---

## Input parameters for MFVP Content Processing

### IP

<b>Current Input</b>	Select either IP or ASI input
<b>Unicast</b>	Sets input stream to be unicast.
<b>Mcast IP Address</b>	Multicast IP address
<b>UDP Port</b>	Port number for UDP input
<b>Interface</b>	Name of the network interface used to capture the input stream.

### ASI

<b>Current Input</b>	Select either IP or ASI input
<b>TS packet size</b>	Sets 188 or 204 byte packets.
<b>ASI Port</b>	Port used to capture the input stream.

## Backup parameters

---

<b>Host</b>	Remote server Hostname or IP address. <b>Possible values:</b> 32 characters max
<b>Port</b>	IP Port for the secure FTP connection. <b>Possible values:</b> 1 to 65535 <b>Recommended value:</b> 21
<b>Path</b>	Backup file storage directory on the remote server. This path is a <b>relative path</b> , and must exist on the remote server. <b>Possible values:</b> 128 characters max
<b>Username</b>	For the secure FTP connection. Must be a valid secure FTP server user. <b>Possible values:</b> 16 characters max
<b>Password</b>	Allows the configured username to connect to the secure FTP server. <b>Possible values:</b> 16 characters max

# Failover parameters

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<b>Group name</b>	Enter a unique failover group name for your selected primary and backup servers.
<b>Group processing type</b>	Select the processing type to display compatible servers.
<b>Group mode</b>	In Automatic mode, the system triggers a server failover when a critical alarm occurs (manual triggers are still possible).

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## Related Tasks

[Create a failover group](#)

# License parameters

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<b>Licensing server status</b>	<b>started:</b> the server is running and available.
<b>Licensing version</b>	License software version installed on the license server.
<b>Feature</b>	MFVP processing options per processing type.
<b>Code</b>	The license code used to identify the feature.
<b>Expiry</b>	The date when the feature is no longer available unless the license is renewed.
<b>Usage</b>	The current use of licenses in relation to the total of available licenses.
<b>Count</b>	The total licenses currently used in relation to the total of available licenses.