MediaFirst Video Processing Packaging

Version 7

CONFIGURATION GUIDE

P/N 10-00343-01 Rev01

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Contents

Introduction

Chapter 1

Overview

Operators and broadcasters are facing new challenges with multi-screen strategy and the diversity of new devices to address (gaming consoles, iPhone/iPad, tablets and computers… to name a few). Viewers are now willing to consume their favorite content anywhere, anytime, on any device.

This leads operators and broadcasters to re-think their architecture to answer to the following problematic:

- Adapt video content to any device
- Optimize distribution with the increasing number of streams and formats
- Guarantee video quality with tight control over the bandwidth consumed
- Monetize delivery of content on these new devices

Taking into account these new constraints, a new converged delivery architecture is proposed:

Multi rate encoders (multi-screens head-end)

- Multi-rate encoders address all resolutions and bit rates in a "mezzanine" format.
- Besides resolutions, "Mezzanine" format contains codecs that are compatible with any device of the network.

Video/Data backbone

- One network is used for video delivery, which prevents from duplicating traffic across the backbone.
- Monitoring is facilitated.

Edge processing

- Transport adaptation at the edge (Silverlight, Apple HTTP Streaming)
- (Optional) content protection with Microsoft PlayReady DRM or AES encryption as recommended by Apple

Support information

You may contact us for specific projects requiring customized options or specific development, available through our service organization. For contact information, see the Ericsson website at http://www.ericsson.com.

If you have support questions, contact Ericsson Customer Services (former Envivio Customer Services: support@envivio.com) or send an email to your Sales contact.

Quick start

Chapter 2

Step 1: Setting the IP address

By default, the network management interface (Ethernet 1) is set with a static address: **10.0.0.1XX** (where **XX** is the two last digits of the serial number located on the sticker at the rear of the chassis)

You can configure the network interfaces' role (Ethernet 2 to Ethernet 10 (advanced) or 12 (standard)) via the web interface. (see *page 20).*

Step 2: Setting the system parameters

See Chapter 5, "System configuration" on page 23

Step 3: Configuring the services

- Configure the service input
  See "Configuring the service input" on page 56.
- Configure the service output
  See "Configuring the service output" on page 61.

Step 4: Start the service output

- At service level, click the start output button.
  See "Starting/stopping the services" on page 177.

Web interface basics

Chapter 3

Accessing the web interface

Note: MFVP - Packaging has been optimized to process streams generated by MFVP - Encoding Live version 2.31 and above.

To connect to MFVP - Packaging web interface, follow these steps:

1. From any computer that has a network access to MFVP - Packaging, open a web browser and.
2. Enter the following address: **http://10.0.0.1XX:8080/**

Caution: By default, the network management interface (**Ethernet 1**) is set with a static address: **10.0.0.1XX** (where **XX** is the two last digits of the serial number located on the sticker at the rear of the chassis)

Note: The web browser must support HTML 4.0. We recommend Firefox 4.0 or later and Internet Explorer 8.0[1] or later.

The web interface is automatically refreshed every 3 seconds to maintain consistency between the web interface and MFVP - Packaging.

1. Using IE 8.0, if a popup asks you to stop a script being executed, you will need to configure your browser in compatibility mode. You can do so by pressing the **F12** key and setting the **Browser Mode** to **IE8 Compatibility View**.

Web interface overview

The menu bar

The menu bar is located on top of the page. It includes different icons:

- The  icon, to access the home page.
- The  icon, to access the system configuration pages.

It may display a  icon, when alarms are raised. You can click this icon to directly access the Alarms page.

The dashboard/service configuration

You access this page:

- when opening MFVP - Packaging web interface,
- or when you click the home icon (i.e. the dashboard),  located on the main banner left side.

This section provides you with instant status of all the services you configured, and lets you access and configure each service (input, output, content protection etc.).

The MFVP - Packaging system settings

You can access this page by clicking the  icon, located on the right side of the main banner.

From this section, you can configure some parameters related to your platform, including interface role, access control, credentials, configuration loading…

Applying modifications

- In the service input and output pages (accessible from the  icon) modifications are applied when you press the **OK** button.
- In the service configuration pages (accessible from the  icon), modifications are applied when you press the **Apply** button.

Network interfaces

Chapter 4

Configuring the network interfaces

Note: To configure the MFVP - Packaging IP address for the first time, see Installation Guide, "Network interfaces configuration" on page 40

The following sections explain how to configure the network interfaces[1].

The network configuration depends on the presence of a DHCP server:

- **If you have a DHCP server,** MFVP - Packaging will obtain an IP address automatically from the DHCP server. You do not need to re-configure the network address.
- **If you do not have a DHCP server,** you have to configure the network interface(s) with a static address.

Note: By default, the Ethernet interfaces use a DHCP configuration, except Ethernet 1 that is configured with a static IP address (**10.0.0.1XX**).

Configuring the physical network interfaces

The physical network interfaces' configuration has to be done via the MFVP - Packaging Operating System.

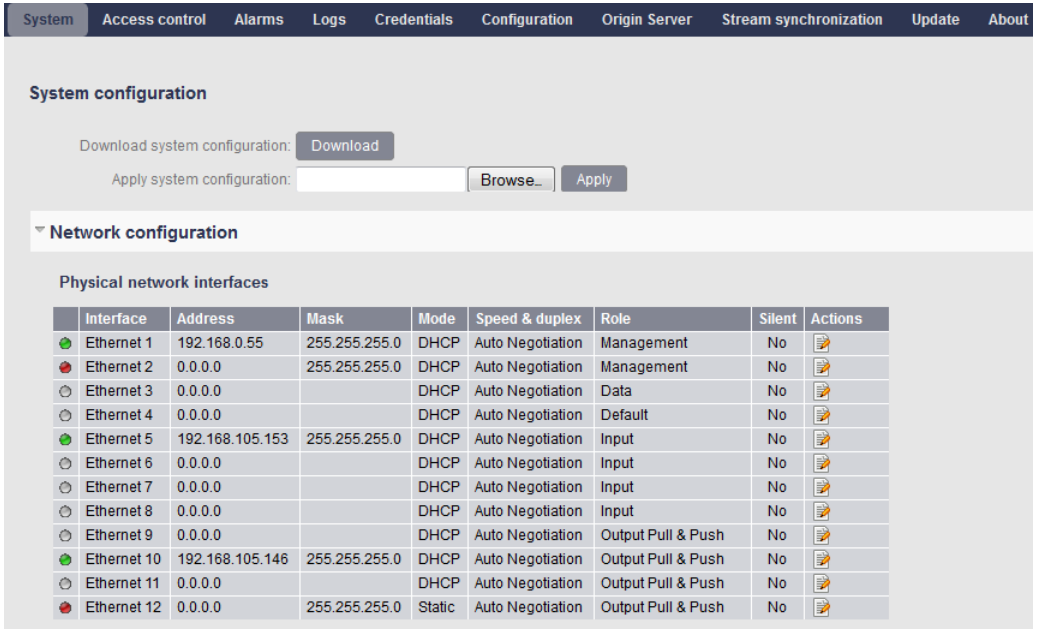
MFVP - Packaging's user interface allows you to set the role of each network interface. To configure the Ethernet connectors' role, follow these steps:

1 From the menu bar, click the  icon and select the **System** tab.

2 Go to the **Network configuration** section, then **Physical network interfaces** subsection.
A table displays the configuration of the network interfaces(1): Interface, Address, Mask, Mode, Speed & duplex, Role, Silent, IGMP, Actions.

1. Ten or twelve network interfaces depending on the system (Advanced or Standard).

Configuring the Ethernet interfaces



	Interface	Address	Mask	Mode	Speed & duplex	Role	Silent	Actions
	Ethernet 1	192.168.0.55	255.255.255.0	DHCP	Auto Negotiation	Management	No	
	Ethernet 2	0.0.0.0	255.255.255.0	DHCP	Auto Negotiation	Management	No	
	Ethernet 3	0.0.0.0		DHCP	Auto Negotiation	Data	No	
	Ethernet 4	0.0.0.0		DHCP	Auto Negotiation	Default	No	
	Ethernet 5	192.168.105.153	255.255.255.0	DHCP	Auto Negotiation	Input	No	
	Ethernet 6	0.0.0.0		DHCP	Auto Negotiation	Input	No	
	Ethernet 7	0.0.0.0		DHCP	Auto Negotiation	Input	No	
	Ethernet 8	0.0.0.0		DHCP	Auto Negotiation	Input	No	
	Ethernet 9	0.0.0.0		DHCP	Auto Negotiation	Output Pull & Push	No	
	Ethernet 10	192.168.105.146	255.255.255.0	DHCP	Auto Negotiation	Output Pull & Push	No	
	Ethernet 11	0.0.0.0		DHCP	Auto Negotiation	Output Pull & Push	No	
	Ethernet 12	0.0.0.0	255.255.255.0	Static	Auto Negotiation	Output Pull & Push	No	

Note: The network interface order is not necessarily the same as the output of an **`ipconfig`** command.

3 In the **Actions** column, click the **Edit** icon,  next to the interface to be configured. A new window is displayed

4 Select the interface role to determine the behavior of the Ethernet. Possible values are:

- **Management,**
- **Data,**
- **Input,**
- **Output Push, Output Pull, Output Pull&Push,**
- **Default. When selected, interface can be used for input, output and management.**

Note: See Installation Guide, "Configuring the Halo (G6 1022) network interfaces" on page 40 for recommended Ethernet and roles.

For software edition, any Ethernet interface can play any role.

5 You can check the **Disable "The cable may be unplugged" alarm** option to ignore alarms when the interface is unplugged.

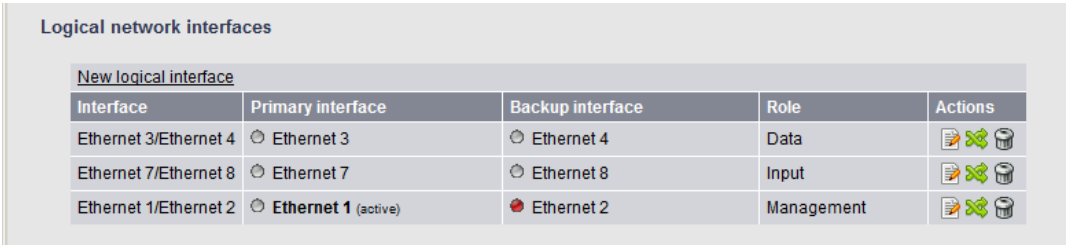
6 Click the **Ok** button to validate your modifications.

Configuring the logical network interfaces

Once all the Ethernet connectors have been configured, you can define logical links between network interfaces:

1 Go to the **Logical network interfaces** section.

Logical network interfaces configuration



2 Click the **new logical interface** link.

3 Select the primary and the associated backup interfaces

Note: You can define one or more virtual IP address(es) and the corresponding network mask(s) to get redundant network interfaces. In this case, the primary interface will be used by default, but if it fails, then the backup interface will be used instead. Both network interfaces must be on the same subnet.

Virtual IP addresses are available for management and Data roles only.

4 Click the **OK** button to validate your modifications.

Once defined, you can:

- Edit the logical interface to define a virtual IP address,
- Switch between primary and backup interfaces,
- Delete the logical interface,

System configuration

Chapter 5

Getting information about MFVP - Packaging

To get information on your MFVP - Packaging, follow these steps:

1 From the menu bar, click the  icon and select the **About** tab.

2 The following information is displayed:

About panel

Especially:

- Firmware and system versions
- Licensing information

Managing the system configuration

You can save and restore the MFVP - Packaging system settings, that means Ethernet interfaces configuration, stream synchronization and SNMP settings. The complete system settings are gathered into a single XML file, **settings_config.xml**.

To access the configuration panel, follow these steps:

1 From the menu bar, click the icon and select the **System** tab.

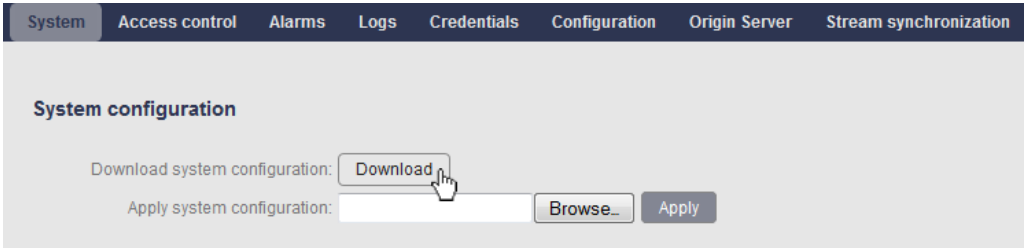
2 Go to the **System configuration** section.

Saving the current configuration

To get the current configuration and save it on a remote computer, follow these steps:

1 Click the **Download** button.

Downloading the configuration



2 A new window is opened depending on the browser you are using. Save the configuration file.

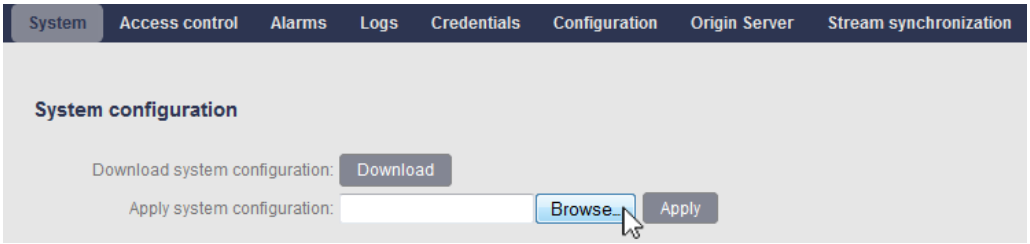
Uploading a configuration file

To upload an existing configuration file, follow these steps:

1 Select the appropriate configuration file by clicking the **Browse...** button.

2 Click the **Apply** button.

Uploading a configuration



Managing the services configuration

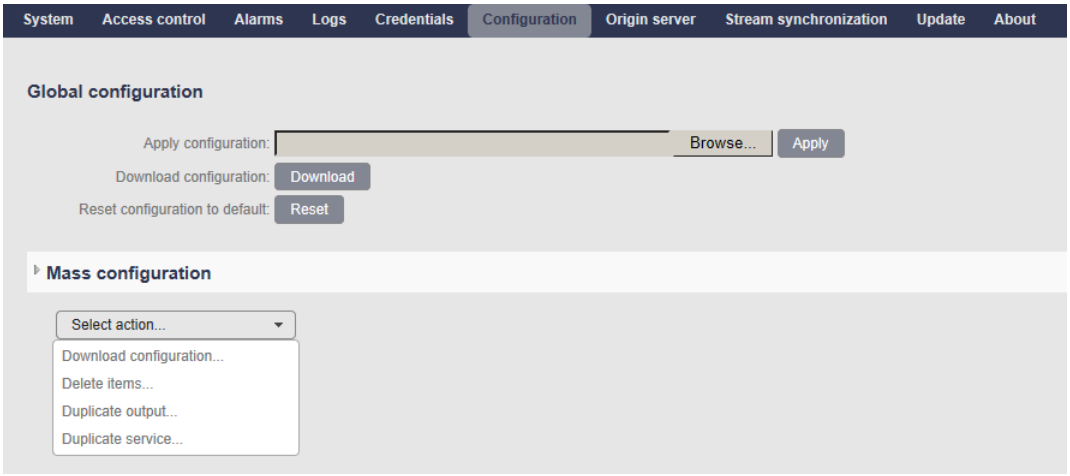
You can save and restore the MFVP - Packaging settings, that means its services configuration. The complete settings are gathered into a single XML file, **halo_config.xml**.

To access the configuration panel, follow these steps:

1 From the menu bar, click the  icon.

2 Select the **Configuration** tab, then click on **Mass Configuration.**

Configuration page



3 Select **Download configuration** amongst the available actions

4 You can either select some or all the services by checking the box in front of each service or by using the **Filter**. You can also use one of the **Select object** buttons that select either:

- **none objects (None),**
- **all the services and outputs (All) or**
- **all the services without the outputs (Services).**

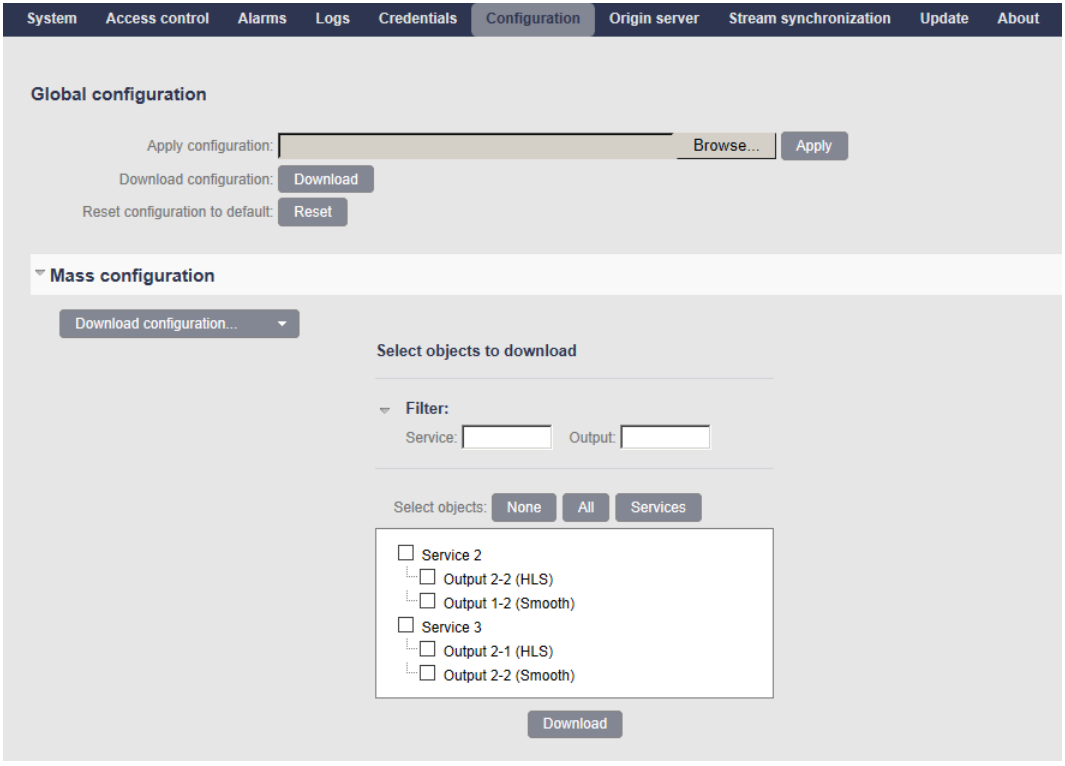
Note: The **Filter** section allows to filter either by the service name, the output name or type.

Saving the current configuration (Download configuration)

To get the current configuration and save it on a remote computer, follow these steps:

1 Select **Download configuration** from the drop-down list.

Downloading the current configuration



2 Select the service(s) by clicking the corresponding checkbox(es) and click the **Download** button.

3 A new window is opened depending on the browser you are using. Save the configuration file.

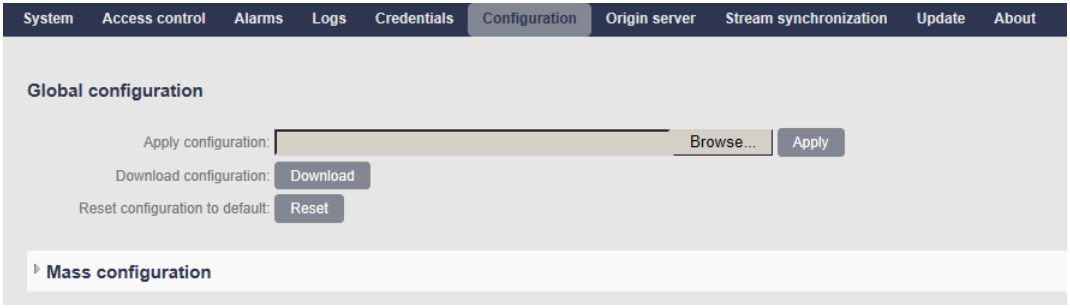
Note: To download the complete set of configuration available on your MFVP - Packaging, you can click the **Download** button next to Download configuration on the **Global configuration** section

Uploading a configuration file

To upload an existing configuration, follow these steps:

1 Next to the **Apply configuration** field, select the appropriate configuration file by clicking the **Browse...** button, then click the **Apply** button.

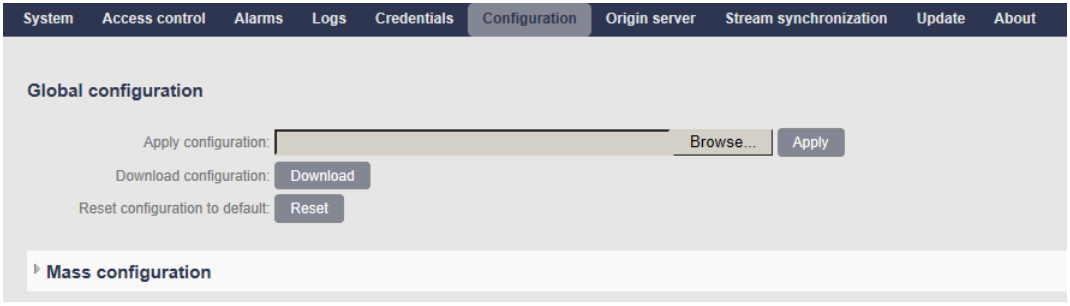
Uploading a configuration



Resetting to default configuration

To reset MFVP - Packaging to its default configuration, click the **Reset** button next to the **Reset configuration to default** field.

Resetting to default configuration



Restricting access to the remote configuration

You can restrict the access to the remote configuration web interface by defining users and associated passwords.

1 From the menu bar, click the icon.

2 Select the **Access control** section.

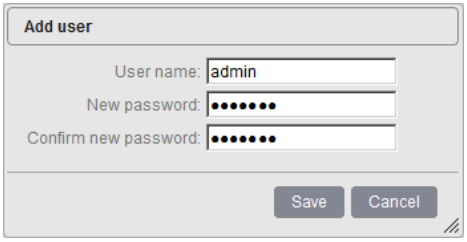
Adding a user

To add a user, follow these steps:

1 In the **Users** section, click the **Add user** link.

2 Enter the user name and the password twice then click the **Save** button.

Adding a user



Note: You can click the **Edit** icon, to change the current password.

You can click the **Delete** icon, to delete the user.

Enabling the access control

To enable the access control, select the **Access control enabled** checkbox then click the **Apply** button.

To remove the password, deselect the **Access control enabled** checkbox.

Managing certificates, credentials and policies

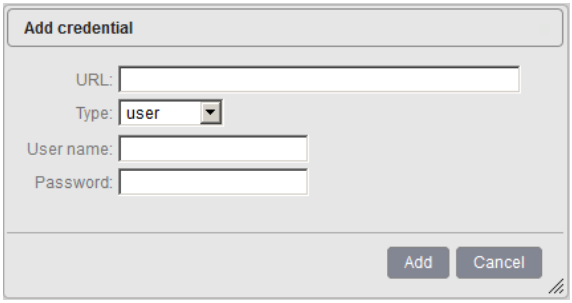
Adding a credential

You can create credentials to access a server for input or output files.
To create a credential, follow these steps:

1 From the menu bar, click the icon and select the **Credentials** tab.

2 Click the **Add credential** link. A new window is opened.

Adding a credential



3 Select the appropriate value for each parameter.

4 The new credential will be added to the list of credentials.

URL Enter the URL to the server using the following syntax: **file://host/directory**

Type Possible values: **Token**[1], **User**, or **Certificate**
Depending on the credential type, additional parameters are displayed.

1. Especially for HTTP streaming publishing with CDNs

Specific Token authentication parameters

Token seed **Enter the Token seed.**

Refresh period Specify the Token refresh period.

Specific User authentication parameters

Corresponds to the basic/digest authentication.

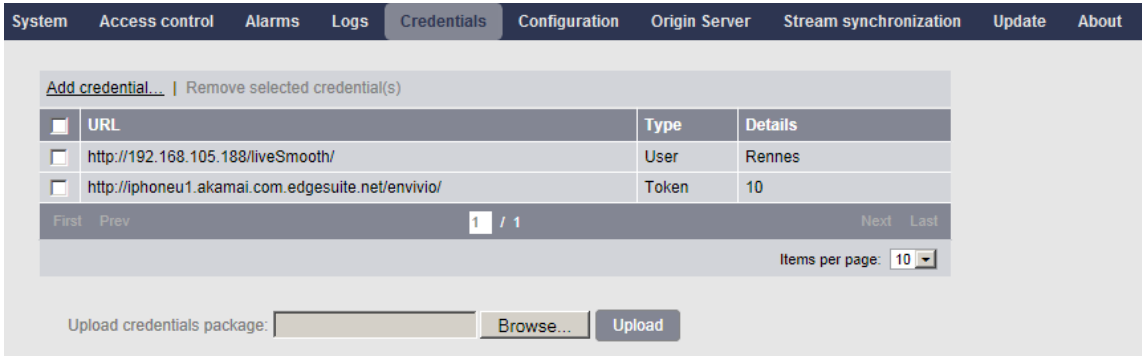
User name Specify the user name (server_**ip_address\user_name** or **domain_name\user_name to** access the server).

Password Specify the password to access the server.

Specific Certificate authentication parameters

1. To download a certificate, follow these steps:
2. Click the **Browse** button then select the appropriate certificate file and click the **Add** button.
3. The new certificate is added to the list of credentials.

Credentials



Uploading a credential file

To upload a credential file, go to the **Upload credentials** section, click the **Browse** button next to the **Upload credentials package** field then select the appropriate file and click the **Upload** button. The credentials are added to the list of credentials.

Zip archive must contain:

- An xml credential configuration file (mandatory),
- Required certificates files (optional, needed if the credential configuration contains a certificate-based credentials).

Example of a credential file:

```
<credentials>
<credential type="token">
<url>http://192.168.105.31/token</url>
<seed>Yemv71DtcbUVkIg/UxxigQ==</seed>
<refreshPeriod>60</refreshPeriod>
</credential>
<credential type="user">
<url>rtsp://192.168.105.31/Toto2</url>
<username>myusername</username>
<password>mypassword</password>
</credential>
<credential type="certificate">
<url>https://192.168.105.31/certificate</url>
<path>cnopp.pem</path>
</credential>
</credentials>
```

In our example, you will create a ZIP file including both the above XML file and the **cnopp.pem** file.

Using a credential

Once you have defined credentials, when entering the server URL, the user icon, should appear in color.

Deleting a credential

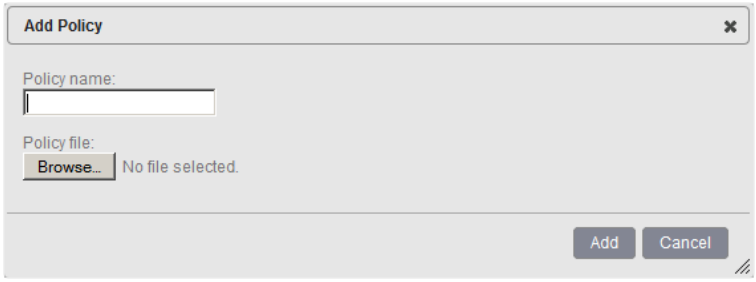
You can delete a credential by selecting its checkbox and clicking the **Remove selected credential(s)** link.

Adding a policy

To create a credential, follow these steps:

1. From the menu bar, click the icon and select the **Credentials** tab.
2. Click the **Add policy** link. A new window is opened.

Adding a policy



3 Enter the name of the new policy.

4 Click the browse button to import the policy file into MFVP - Packaging

5 The new policy will be added to the list of policies.

Origin server

MediaFirst Video Processing - Packaging embeds an origin server for delivery of HTTP Live Streaming (HLS), Smooth Streaming, HTTP Dynamic Streaming (HDS) and DASH video formatted content. This origin server features the following characteristics:

- Dense ingest: 100 multi-rate services/750Mbps max ingest. Instead of ingesting multiple formats, a single format (Genesis/third-party Multi-TS) is managed, thus reducing simultaneous read/write operations (that usually limit origin servers' capabilities), and enhancing delivery capabilities.
- Dense real-time delivery: up to 2000 simultaneous connections can be managed with a maximum of 3Gbps overall throughput.
- Optimized redundancy support: using built-in origin server for HLS and/or Smooth Streaming delivery, redundancy support is optimized, and content can be transparently retrieved from either one or the other MFVP - Packaging platform.

Note: Origin server mode is not available for RTMP delivery

To start/stop the origin server, follow these steps:

1. From the menu bar, click the  icon and select the **Origin Server** tab.
2. Click the **Start server** or **Stop server** button.

Publishing modes

MediaFirst Video Processing - Packaging features a built-in origin server for real-time delivery of HTTP Live Streaming (HLS), Smooth Streaming, HTTP Dynamic Streaming (HDS) and DASH video content. When configuring publishing settings, two options are available:

- You can publish formatted video content to an external origin server (also referred to as “push” mode)
- or you can publish content on MediaFirst Video Processing - Packaging built-in origin server (also referred to as “pull mode”). In this case, the content will be pulled from servers from a CDN infrastructure.

These two different publishing modes are illustrated below.

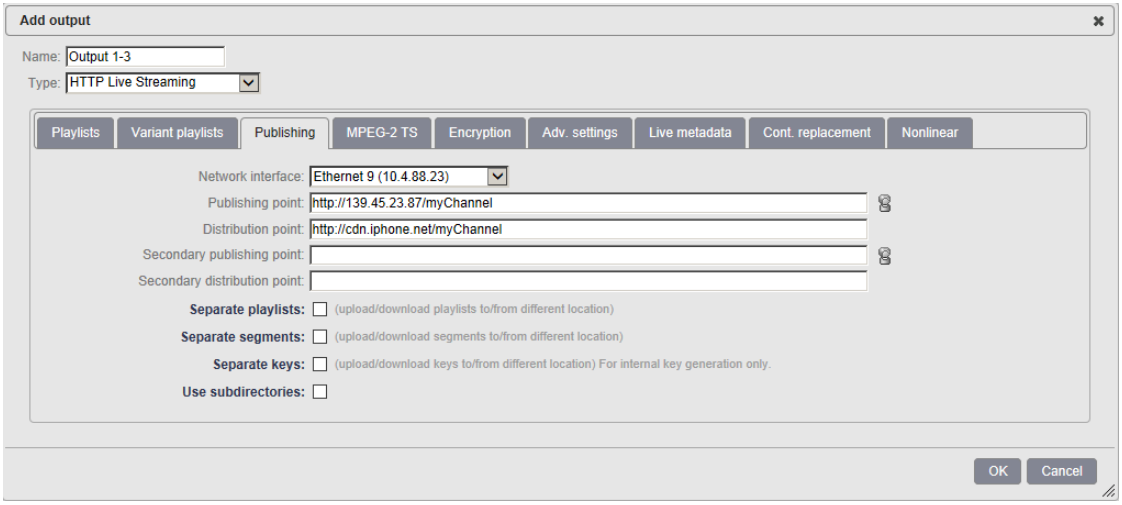
Publishing to an external origin server

In our example, HLS video content is produced by MediaFirst Video Processing - Packaging – the output type set to **HTTP Live Streaming** [1] – and published to an external origin server with the following IP address, **`http://139.45.23.87`**, and in the following folder, **`myChannel`**. The content will be accessed from this external origin server using the distribution URL defined (**Distribution Point** parameter), in our example, **`http://cdn.iphone.net/myChannel`**.

Note: On a profile stop, in HLS mode, the latest chunks remain on the publishing server despite the selection of the **Delete expired content** checkbox.

To clean up remaining chunks, you can set up and run a periodically script that will delete the chunks.

Example #1: publishing to an external origin server



Publishing over MFVP - Packaging built-in origin server

Publishing to MediaFirst Video Processing - Packaging internal origin server requires the following configuration:

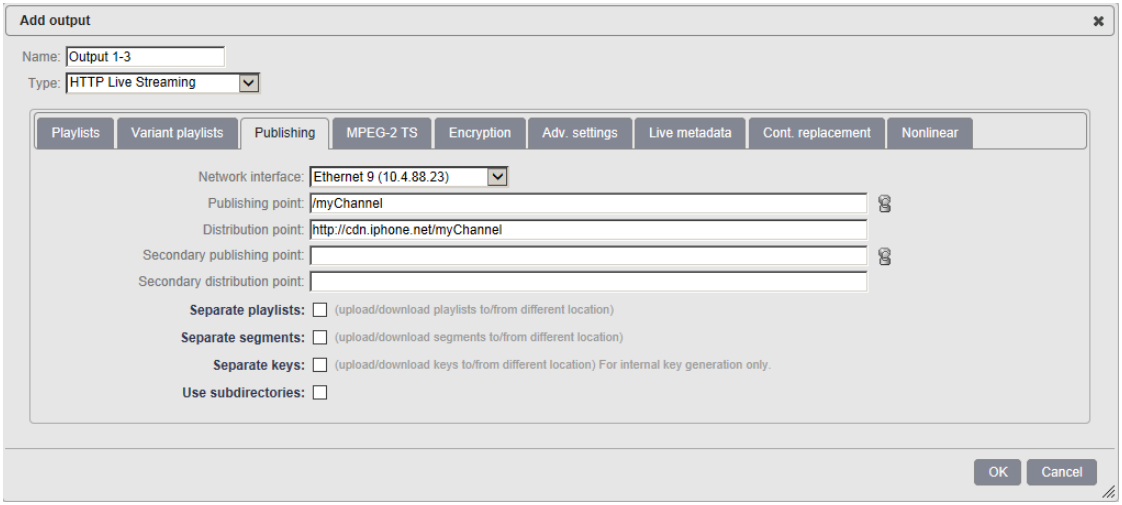
- **Publishing point**: you need to specify the path by using the following format: start with slash character (**/**) and specify the folder **`/subfolders`**.

1. See "HTTP Live Streaming specific output settings" on page 63.

In our example, we just have one sub-folder which is **myChannel** (the path is set to **/myChannel**)

- **Distribution point**: devices will connect to the distribution URL set in the playlist. CDN will then either distribute from servers that already have the content, or directly pull the content from MediaFirst Video Processing - Packaging origin server.

Example #2: Publishing to MediaFirst Video Processing - Packaging internal origin server



Connecting directly to the origin server to get a HLS playlist

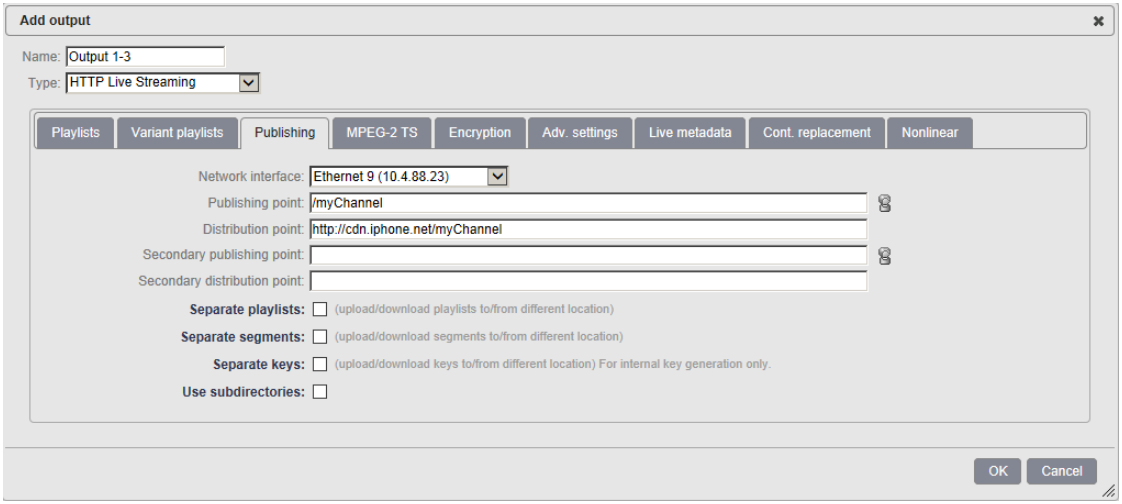
If a client or a server connects directly to MediaFirst Video Processing - Packaging origin server to get a HLS playlist, the request needs to be formatted the following way:

`http://MFVP-P.ip_address/hls/[path]`

`MFVP-P.ip_address` must be one of the MFVP - Packaging interfaces configured with one of the following roles:

- Default
- Output Pull
- Output Pull & Push

Example #3: Connecting to MediaFirst Video Processing - Packaging internal origin server for



HLS

http://192.168.100.20/hls/myChannel/index.m3u8, assuming that 192.168.100.20 is the output Ethernet interface and index.m3u8 is the master playlist name.

In the example above, **[path]** is set to **myChannel**

Connecting directly to the origin server to get a HSS manifest

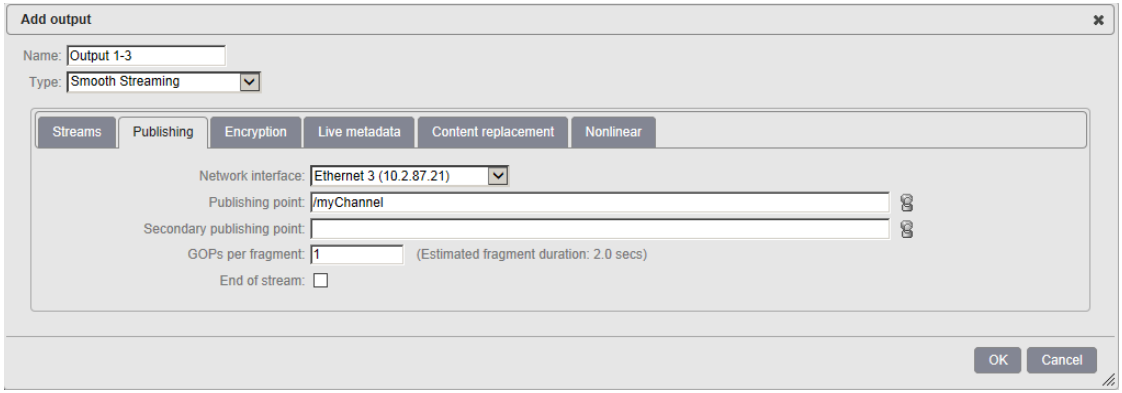
If a client or a server connects directly to MediaFirst Video Processing - Packaging origin server to get a Smooth Streaming manifest, the request needs to be formatted the following way:

http://MFVP-P.ip_address/ss/[path]

MFVP-P.ip_address must be one of the MFVP - Packaging interfaces configured with one of the following roles:

- Default
- Output Pull
- Output Pull & Push

Example #3: Connecting to MFVP - Packaging internal origin server for SS



http://10.2.87.21/ss/myChannel.isml/manifest, assuming that 192.168.100.20 is the output Ethernet interface.

In the example above, **[path]** is set to **myChannel**

Note: The syntax of the **[path]** must be followed by the .isml extension as shown on above example.

Connecting directly to the origin server to get a HDS playlist

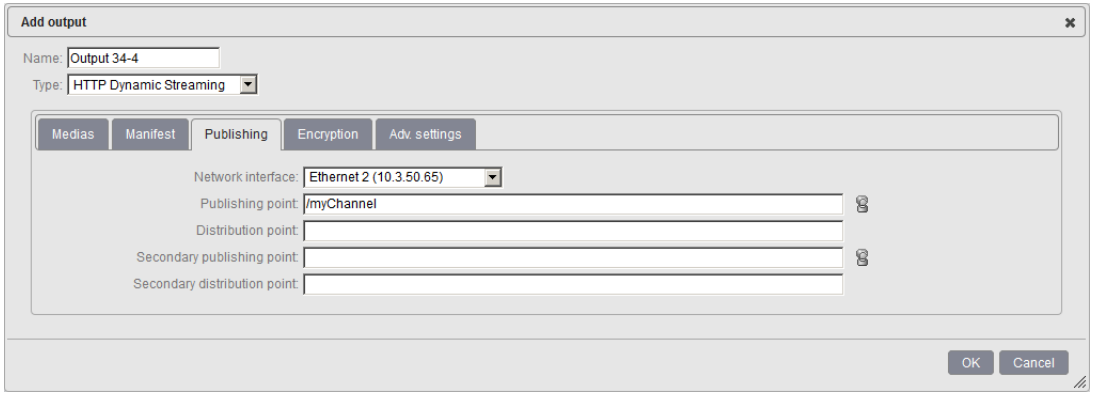
If a client or a server connects directly to MediaFirst Video Processing - Packaging origin server to get a HDS media, the request needs to be formatted the following way:

http://MFVP-P.ip_address/hds/[path]

MFVP-P.ip_address must be one of the MFVP - Packaging interfaces configured with one of the following roles:

- Default
- Output Pull
- Output Pull & Push

Example #4: Connecting to MFVP - Packaging internal origin server for HDS



http://192.168.100.20/hds/myChannel/index.f4m, assuming that 192.168.100.20 is the output Ethernet interface and index.f4m is the manifest name.

In the example above, **[path]** is set to **myChannel**

Customizing HTTP Header

MFVP - Packaging allows you to address HTTP headers, such as **cache control**, to the origin server.

HTTP Headers are set by URL and must be ordered from the more generic to the more specific pattern.

To add a HTTP Header, follow these steps:

1 Click the Add URL Pattern link

2 Fill in the URL Pattern and the HTTP Headers fields.

Note: HTTP Header support the Glob pattern syntax

3 Click the Add button to complete the HTTP Header configuration.

4 Click the arrows to set the HTTP Header in the correct order priority.

Note: For interoperability with the Silverlight player, it is advised to configure segment and manifest expirations delays. If expiration delays are not set, the Silverlight player may experience some problems when it is reconnecting to the stream.

Nonlinear publishing settings

Storage URL management for nonlinear content

To create storage URL for nonlinear content and create related aliases, follow these steps:

Note: In this configuration, we consider following publishing points:
HLS: **file://Nas.ip_address/nonlinear/channel1/sport/**
HSS: **file://Nas.ip_address/nonlinear/channel1/sport/football**

1 From the menu bar, click the icon and select the **Origin Server** tab.

2 Click the **Settings** text to expand the settings details.

3 Click the **Add alias** text under the **Nonlinear aliases** section to open the configuration window and edit the caching settings

Storage URL **Enter the storage URL starting by file://**
example: file://Nas.ip_address/nonlinear/channel1

Alias **Set a alias for the related storage URL starting by /**
example: /dvrcontent

If a client or a server connects directly to MediaFirst Video Processing - Packaging origin server, the request needs to be formatted the following way:

- For HLS: **`http://MFVP-P.ip_address/hls/alias/[file path]`**
- For Smooth Streaming (HSS): **`http://MFVP-P.ip_address/ss/alias/[file path]`**

`MFVP-P.ip_address` The IP address must be one of the MFVP - Packaging interfaces configured with one of the following roles:
Default
Output Pull
Output Pull & Push

hls/ss **Depending on the output type, hls or ss will have to be used.**

alias **Use the alias used to access the related storage URL**

[file path] The file can be:
directly within the last folder edited in the storage URL (in our example: channel1)
within a subfolder of the last folder edited in the storage URL (for example: channel1/sport)
File format is:
For HLS: **.m3u8**, **.ts** or **.key**
for Smooth Streaming: **manifest**

In our configuration, the requests are:

HLS:
http://MFVP-P.ip_address/hls/dvrcontent/sport/index-timeshifting.m3u8

HSS:

http://MFVP-P.ip_address/ss/dvrcontent/sport/football.isml/Manifest-timeshifting

Stream synchronization

From its ability to ingest a large number of streams, and reformat them to target any devices, MFVP - Packaging is a critical piece of the ecosystem. This component can be compared to a multiplexer in a DTH ecosystem.

To guarantee the best user experience with no service interruption, Ericsson designed synchronization mechanisms to ensure that two MFVP - Packaging units deployed in 1+1 stay output exactly the same content. Synchronization information is sent via multicast. This address can be configured in MFVP - Packaging.

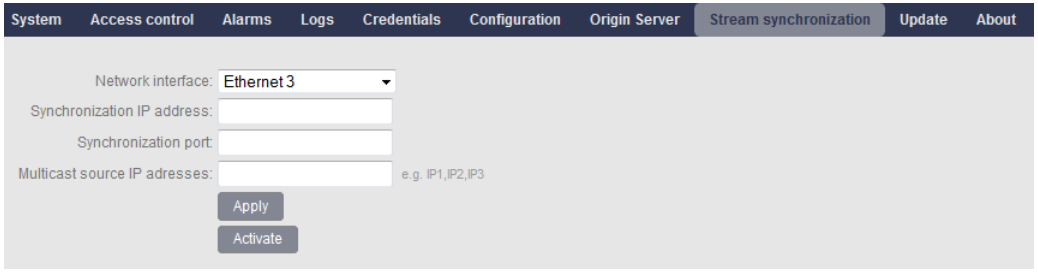
Note: Due to Smooth Streaming player restrictions, synchronization is not working correctly when MFVP - Packaging configuration contains Smooth Streaming outputs with closed caption.

Synchronization settings

To configure synchronization multicast address, follow these steps:

1. From the menu bar, click the  icon and select the **Stream synchronization** tab.
2. The following parameters are displayed:

Stream synchronization



Select the appropriate value for each parameter:

Network interface Specify which Ethernet connector is used for exchanging synchronization information.

Synchronization IP address Multicast IP address.

Synchronization Port
Specify the port to listen.
Possible values: from **1024** to **65534** (even number)

Multicast source IP addresses
This setting is only to be used when IGMPv3 is enabled. MFVP - Packaging is IGMPv3-compliant.
You can define one or more source address(es) following this syntax:
<multicast address>@<primary source address>, <secondary source address>
Example: ***239.194.210.5@192.168.1.1,192.168.2.2***

Click the **Activate** button to validate your settings.

In order to fully guarantee the stream synchronization, it is important to have on both MFVP - Packaging units:

- **the same services configuration**
- **the same alias nomination for DVR publishing**
- **the same date and time**
- **the same NTP server IP address**

Stream synchronization per service will only be effective when the output will be started.

Live publishing Synchronization

If two services are synchronized and if both services have been configured with the same publishing point for the live publishing, the publication will be in an active/stand-by mode.

Note: Active/stand-by mode are only available for HLS and HSS outputs

Assuming that both MFVP - Packaging units have the same service and output configured, including the live publishing points:

- MFVP - Packaging unit A publishes the live content
- The other one (MFVP - Packaging unit B) monitors the publishing and takes over as soon as MFVP - Packaging unit A fails.

The MFVP - Packaging unit that will publish the active output will raise the following alarm in the Alarm history table of the Alarms tab:

The live publishing is activated

The MFVP - Packaging unit that hosts the passive output will raise the following alarm in the Alarm history table of the Alarms tab:

The live publishing is deactivated

The service interruption is limited to a few fragments.

DVR publishing Synchronization

If two services are synchronized and if both services have been configured with the same publishing point for the DVR publishing, the publication will be in an active/stand-by mode.

- MFVP - Packaging unit A publishes the DVR,
- The other one (MFVP - Packaging unit B) monitors the publishing and takes over as soon as MFVP - Packaging unit A fails over.

The MFVP - Packaging unit that will publish the active output will raise the following alarm in the Alarm history table of the Alarms tab:

The live publishing is activated

The MFVP - Packaging unit that hosts the passive output will raise the following alarm in the Alarm history table of the Alarms tab:

The live publishing is deactivated

The service interruption is limited to a few fragments.

MFVP - Packaging date and time

MFVP - Packaging retrieves the date and time information on the Operating System on which MFVP - Packaging has been installed.

To display MFVP - Packaging's date and time, follow these steps:

1 From the menu bar, click the  icon and select the **System** tab.

2 Go to the **Date and time** section.

3 The date and time parameters are displayed:

- **UTC date and time**
- **Locall date and time**
- **Time zone**
- **Daylight saving**
- **NTP server**

NTP Settings

NTP configuration can be done on the Operation System side.

Configuring SNMP

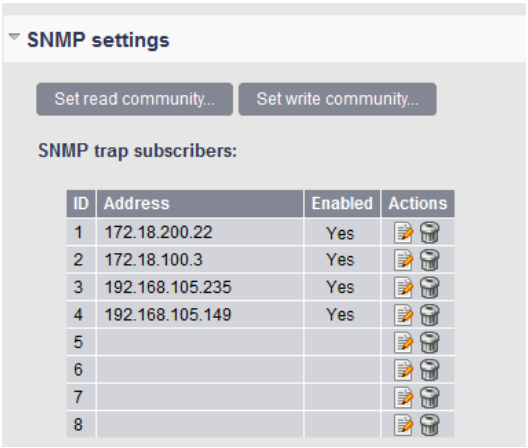
SNMP traps are used to monitor the events and alarms generated by the MFVP - Packaging. To receive SNMP traps, you have to be registered as a trap listener on the MFVP - Packaging SNMP agent.

Note: Each MFVP - Packaging supports up to eight trap listeners.

To configure SNMP, follow these steps:

1 From the menu bar, click the icon and select the **System** tab.

SNMP settings



- The default Read SNMP community name for the SNMP agent is **public_!envivio!**
- The default Write SNMP community name for the SNMP agent is **private_!envivio!**

You can then edit the read and write communities or delete them by clicking the corresponding buttons.

The list of SNMP track subscribers is displayed.

Registering as a trap listener

To be registered as a trap listener, follow these steps:

1. Click the **Edit** icon,  next to the trap subscriber.
2. Enter the SNMP trap IP address and check the **Enabled** option.

Deleting a trap listener

To delete a trap listener, follow these steps:

1. Click the **Delete** icon,  next to the trap subscriber.
2. Click the **OK** button to confirm the deletion.

Updating MFVP - Packaging

Caution: This procedure only applies for MFVP - Packaging appliances, not for MFVP - Packaging software edition

To update MFVP - Packaging, contact Ericsson Professional Services that will supply you with a package update including an update package file (UPD file).

Warning: Prior initiating MFVP - Packaging update, you need to check that the **Upgrade limit rights** date is not outdated.

If the **Upgrade limit rights** date is outdated, please contact Ericsson Professional Services that will supply you with a package including a license file (FLI file).

To access the **Upgrade limit rights** date, click the  icon, select the **Update** tab and then the **Licensing** tab

Then follow these steps:

1. Power on MFVP - Packaging, then, from any computer that has a network access to MFVP - Packaging, copy the update package file to a local temporary directory.
2. Open a web browser to access the MFVP - Packaging web interface (see "Accessing the web interface" on page 17).
3. From the menu bar, click the  icon and select the **Update** tab.
4. A new page is displayed. Select the **Installation** menu item.
5. Click the **Browse** button to choose the update package file, then click the **Upload** button.

Note: The update process may take a few minutes.

6. Just after the upload, a status is provided. A result such as **`No error`** will be displayed if the license was installed successfully.
7. Click the **Back to product** button to go back to the MFVP - Packaging web interface.
8. You can check that the MFVP - Packaging has been correctly updated by selecting the **About** tab. The new version number should be displayed.

Note: The **Licence update** menu item lets you update the MFVP - Packaging licence (see "Updating MFVP - Packaging license" on page 51).
The **Get Platform Identifier** menu item lets you retrieve the platform information for support purpose.

Updating MFVP - Packaging license

To update the MFVP - Packaging license, contact Ericsson Professional Services that will supply you with a package including a license file (**SLI** file).

To update your license, follow these steps:

1. Power on the MFVP - Packaging, then, from any computer that has a network access to MFVP - Packaging, copy the license file to a local temporary directory.
2. Open a web browser to access the MFVP - Packaging web interface (see "Accessing the web interface" on page 17).
3. From the menu bar, click the  icon and select the **Update** tab.
4. A new page is displayed. Select the **Licensing** menu item.
5. Click the **Browse** button to choose the update package file (**SLI** file), then click the **Upload** button.
6. Click the **Back to product** button to go back to the MFVP - Packaging web interface.

Note: You can check that the license has been correctly updated by selecting the **About** menu from the web interface. The new license information should be displayed.

Service configuration

Chapter 6

Service dashboard

To configure the services, click the home icon, located in the menu bar.

Note: You can configure up to 100 services.

MFVP - Packaging dashboard

When configured, the following information is displayed for each service:

- the input: multicast address and number of streams
- a led status indicating the global status on the input
- the output: output name, type and status (stopped, started)
- the synchronization status (Ok, unavailable)

From the dashboard, you can:

- Edit a service by clicking on it.
- Delete a service by clicking the  icon.
- Duplicate a service by clicking the  icon.
- Directly access the service statistics by clicking the  icon.

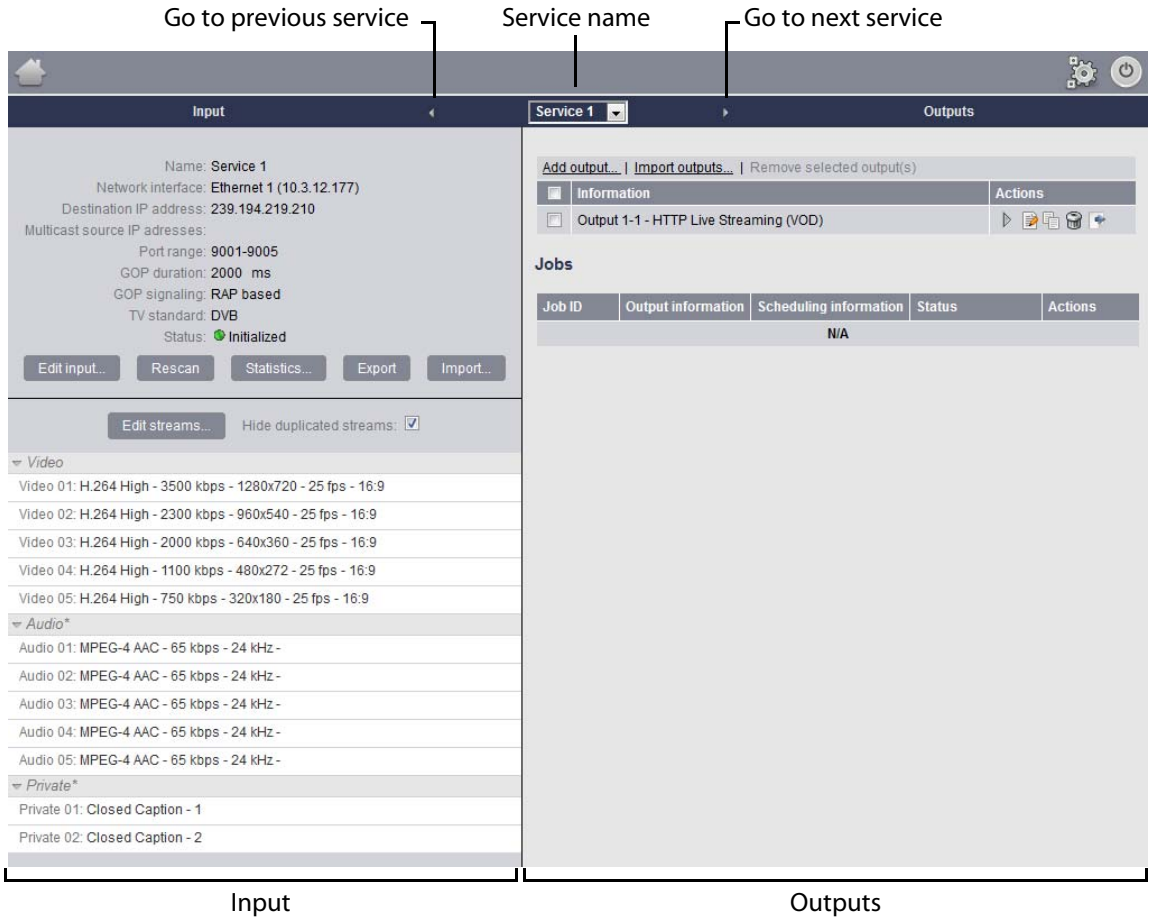
Quick search

To quickly access a specific service, a search field is included on the top right part of the dashboard.

Configuring a service

When selecting a service, a new service configuration panel is displayed below the menu bar:

Service configuration



This panel is divided in two sections: Input and Outputs.

You can use the left and right arrow keys next to the service number to navigate from the current service to the next or previous one or use the scroll bar to select the targeted service.

Configuring the service input

When used in conjunction with MFVP - Encoding Live, MFVP - Packaging is fed by several multicast (SPTS/UDP) sessions. Each video channel encoded by MFVP - Encoding Live is streamed out using Ericsson mezzanine format (also called "Genesis" format in this document):

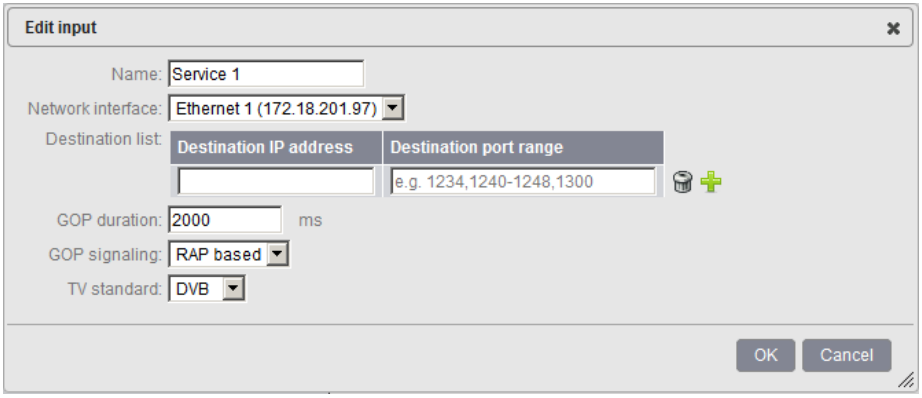
- Video is encoded by MFVP - Encoding Live over different bit rates and resolutions and output as a multicast SPTS stream.
- All SPTS sessions of a same video channel are multicast with the same destination address, but with a different port. This allows differentiating the different bit rates and resolutions. Furthermore, multiple sessions from the same channel are output synchronously.

Configuring a service input

To configure the input of a service, follow these steps:

1 In the **Input** section, click the **Edit** button.

Editing input parameters



2 Select the appropriate value for each parameter.

3 Enter the name of the service

To configure the video capture input, follow these steps:

Name Enter the name of the service.

Network interface Select the Ethernet interface used for ingest.

We recommend using network interfaces that have been configured as **Input** or **Default**. See "Configuring the physical network interfaces" on page 20.

Destination IP address Multicast address of the MPEG-2 TS stream to ingest.

Destination Port range Enter a range or a list of ports used to differentiate the different multiple SPTS sessions. When specifying a range, follow this syntax:

port_i-port_j, where **j>i** (for example, ***2000-2002***)
or a enter a comma-separated list of ports (for example, ***2000,2001,2002***)

Note: You can add Destination IP addresses and port range by clicking the  button.

GOP duration Enter the fragment duration.

Fragments will be produced by MFVP - Packaging based on the incoming multicast SPTS streams.

GOP duration is equal to the key frame period configured at the encoder level

GOP signaling Specify the method used to signal the boundary of the fragments (GOPs). Following methods are available:

RAP-based: used by MFVP - Encoding Live to signal GOP boundary.

IDR-based: use this mode to detect GOP boundaries, using IDR frames.

EBP-based: GOP is signaled using Adaptation Data field layer from the MPEG-TS source

TV standard For some compatibility reasons (mainly the frame rate), you must specify the TV standard.

Possible values: **ATSC** or **DVB**

4 Click the **OK** button to validate your modifications.

Note: You can also use **Rescan**, **Statistics**, **Export** or **Import** buttons.
Rescan is used to reload all the video, audio and private streams from the input address.
Statistics is used to display the global statistics about the service.
Export is used to export the configuration of the input, and applies it to other remote MFVP - Packaging units for instance.
Import is used to load the input configuration.

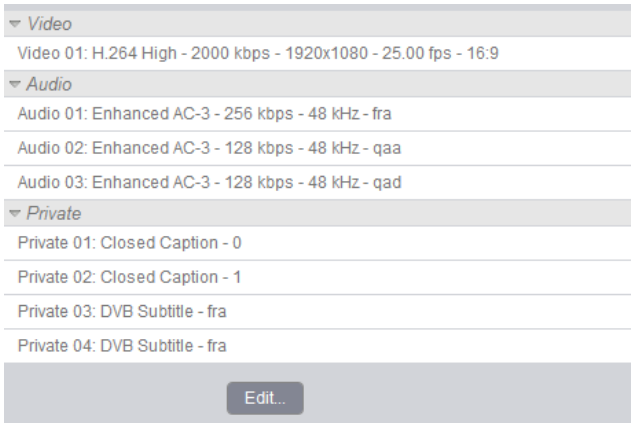
When the streams are correctly detected, the led status turns to green (grey if nothing has been detected and orange when searching) and the different streams ingested are listed.

Configuring the ingest streams

Note: You can tick the **Hide duplicated streams** checkbox to avoid displaying the duplicated audio, video and private streams.

The following input service characteristics are displayed:

Input characteristics



Video streams

List of all the video streams detected with the following parameters:

- video codec, bit rate, resolution, frame rate, and aspect ratio

Note: If the frame rate is not announced in the stream, a default value of 25 fps will be used if the service is DVB and 29.97 fps will be used if the service is ATSC.

Audio streams

List of all the audio streams detected (either multiplexed with the video or not) with the following parameters:

- audio codec, bit rate, sampling rate, and language

Private streams

List of all the private data embedded within the input streams. The streams can be:

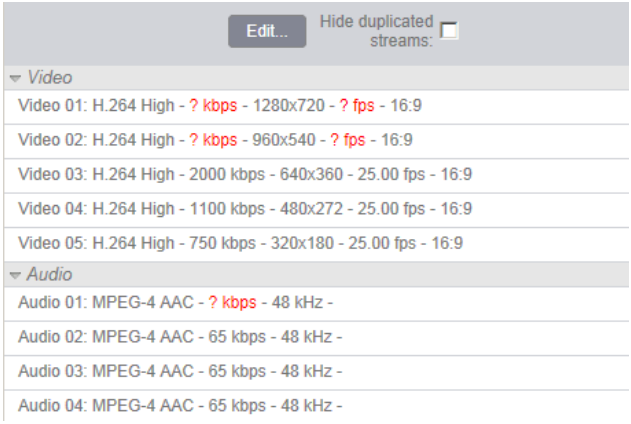
- Subtitling: closed caption, Teletext, subtitle.
- SCTE-35 trigger (for linear ad insertion purposes).

Caution: Due to a a limitation of the Silverlight player with closed caption, video GOP duration must not exceed 2 seconds. Beyond 2 seconds, subtitles won't be rendered to the player.

Editing the stream parameters

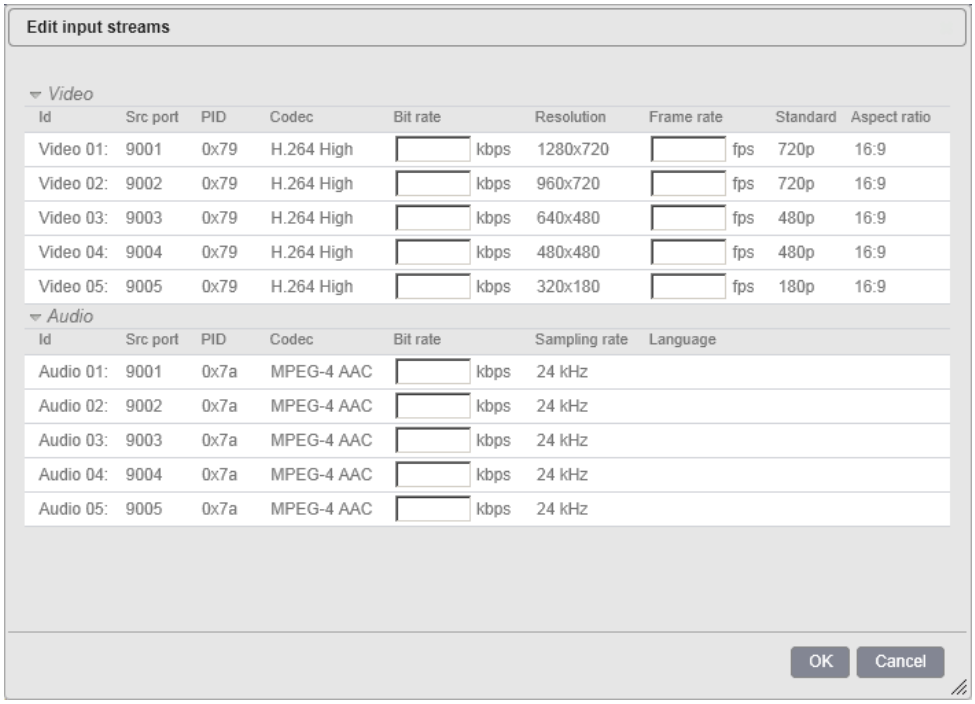
Some editing may be required. The parameters to be edited appear in red.

Input characteristics: missing bit rate and frame rate



To edit the parameters, click the **Edit** button on top of streams, then enter the appropriate value for missing bit rate and frame rate.

Input characteristics: editing bit rate and frame rate



Bit rate: using Genesis input stream, the bit rate is already signaled. This information may need to be overridden if not accurate, or if not using C4 encoders.

Frame rate: adjust frame rate is necessary

Note: In the video stream, you can modify the bit rate and frame rate, in the audio stream, only bit rate can be modified.

Then click the **OK** button to validate your modifications.

Configuring the service output

Once you have configured the input streams to process, you need to specify how you want to package, protect, etc. the defined input streams. This section explains how to process these input streams in HTTP Live Streaming (HLS) and in Smooth Streaming.

Adding or removing an output

By default all the services are already configured. You can add up to four outputs per configured channel.

To add a new output, click the **Add output** link on top of the table.

To remove an existing output, select the output to be removed then click the **Remove selected output(s)** link.

For each output, the following set of actions are possible:


To edit the corresponding output.


To duplicate the output.
This can be used when you need to configure different outputs with few differences.


To delete the output


To start the output processing.


To stop the output processing.


To export the output into a configuration file.


To import a configuration file.

Setting the general parameters

To configure the output parameters, follow these steps:

1 Click the **Add output** link, a new window is displayed.

For each output, you must configure the following parameters:

Name Enter an output name. We recommend using a name that clearly identifies the output type.

Output type Select an output type.

Possible values:

HTTP Live Streaming
Smooth Streaming
MPEG-2 TS/UDP
Flash RTMP
HTTP Dynamic Streaming
DASH
HTTP Live Streaming (VOD)
Smooth Streaming (VOD)
MPEG-2 TS (VOD)

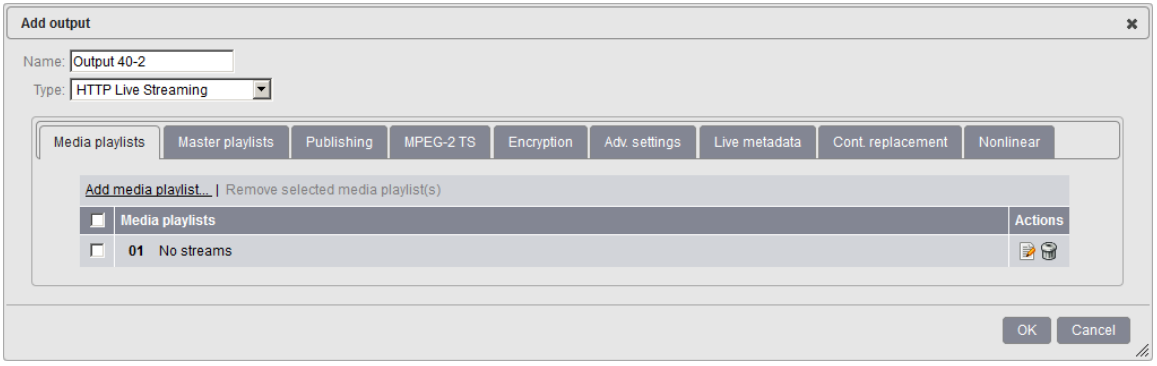
Note: Depending on the selected output type, specific parameters are displayed.

HTTP Live Streaming specific output settings

When you set the **Output type** is set to **HTTP Live Streaming,** specific tabs are displayed:

- **Media playlists**
- **Master playlists**
- **Publishing**
- **MPEG-2 TS**
- **Encryption**
- **Advanced settings**
- **Live metadata**
- **Content replacement**
- **Nonlinear**

HLS editing



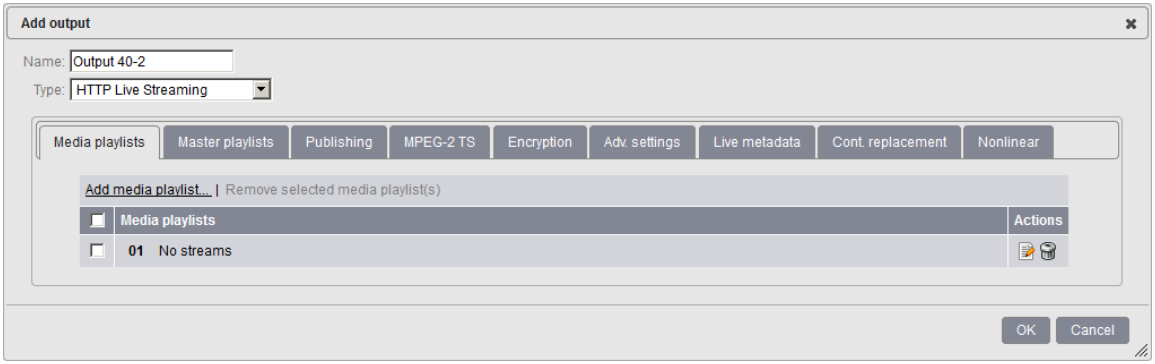
Output parameters are displayed in several tabs that you have to fill one after the other.

Media playlists

You can add or remove media playlists and define the composition of the playlist by selecting the video stream, the audio stream, and the private data that will be sent to the output.

The media playlist references the segments per bit rate. There is one media playlist per bit rate. You can configure as many media playlists as you want.

Playlist configuration



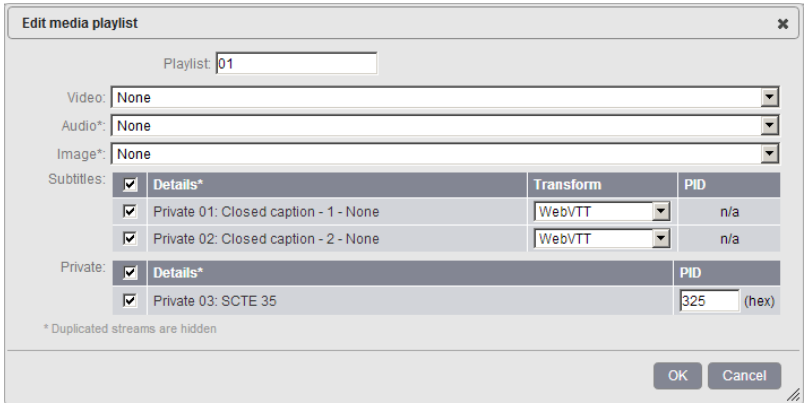
To add a new media playlist, click the **Add media playlist** link on top of the table.

To remove an existing media playlist, select the media playlist to be removed then click the **Remove selected media playlist(s)** link.

To edit a particular media playlist, follow these steps:

1 Click the corresponding button.

Media playlist editing



2 Select the video, audio, image and associated subtitles and private streams then click the **OK** button.

3 The media playlist is added to the list of playlists.

Master playlists

Master playlist

Master playlists reference the different bit rates available, and thus the different media playlists the device can have access to. In other terms, a master playlist is a pointer to the playlists, and you can configure the playlists as you want.

Note: The master playlist name must be unique and different from any other playlist name.

To add a new master playlist, click the **Add master playlist** link on top of the table.

To remove an existing master playlist, select the master playlist to be removed then click the **Remove selected master playlist(s)** link.

To edit a particular master playlist, follow these steps:

1 Click the corresponding button.

Master playlist

2 Select the playlists then click the **OK** button.

3 The master playlist is added to the list of master playlists.

You can create as many master playlists as you want. A practical use case is to generate master playlist for different devices like for example:

- iPhones
- iPads
- Smartphones

iOS 5 related features

Alternative audio group

This feature lets you package each media stream (audio or video stream) in a flexible manner.

An audio group (*rendering group* in Apple specifications) aggregates several audio playlists to propose an alternative rendition of the audio for a given video stream. For instance, an English audio playlist can be replaced by a French or a Spanish audio playlist. Inside a group, a default playlist can be set.

To use this feature, you must first create audio-only and video-only playlists, then you will associate the audio and video streams into one or more master playlist(s).

If you want to define an alternative audio group, follow these steps:

1 Create audio-only and video-only playlists (*see* "Media playlists" on page 63)

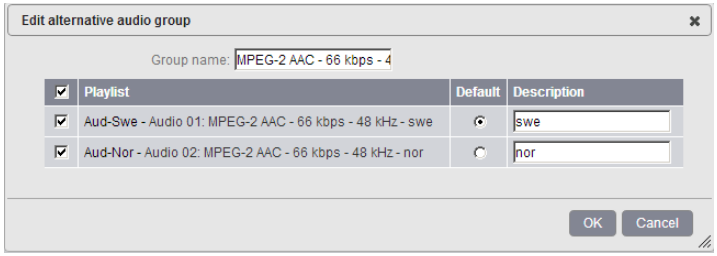
2 From the Master Playlist tab, tick the **Use alternative audio groups** checkbox. A new table is displayed.

3 In the alternative audio group table, you can either:

- click the **Auto-configure** link to automatically create alternative audio groups based on the audio-only playlists you created,
- or click the **Add Alternative Audio Groups...** link to create a new group then click the **Edit** link to define the composition of your alternative audio group. Select the default audio stream and add a description.

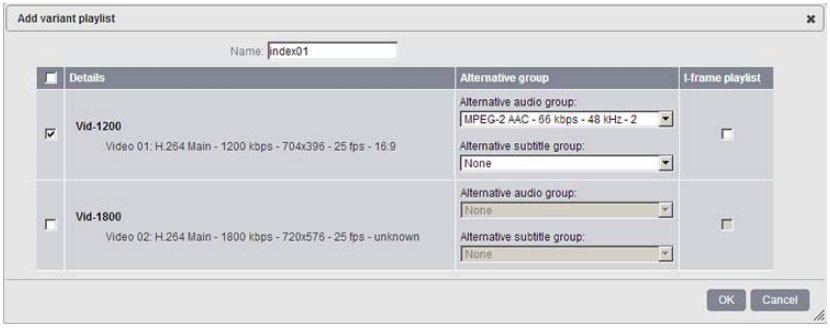
Note: Only audio streams with identical codec/bitrate/channels/sampling rate can be associated in a same group.

Editing alternative audio groups



4 The alternative audio group is added to the table:

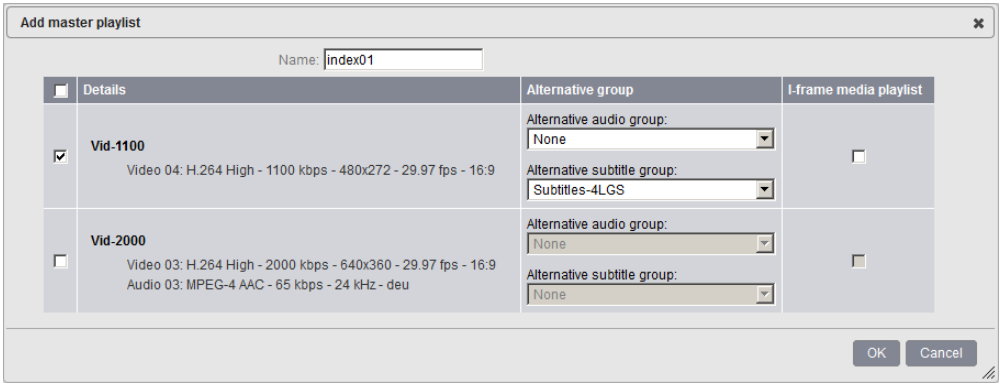
Alternative audio groups table



5 In the master playlist table, click the **Add** link to create a new master playlist, then click the **Edit** link.

6 Select the alternative audio group you want to associate to the video stream then click the **OK** button.

Editing master playlists

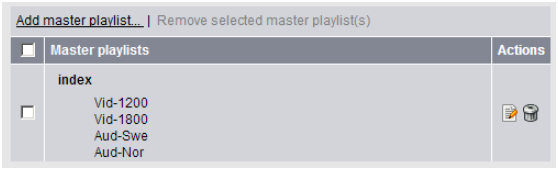


7 You can check the **I-frame playlist** option to reference I-frames in the stream.

Note: To optimize rapid forward and reverse playback, Apple introduced the notion of I-Frame playlist in iOS5.

8 The master playlist is added to the table:

Master playlists table



Alternative subtitle group

This feature lets you package each media stream (audio or video stream) in a flexible manner.

A subtitle group aggregates several subtitle playlists to propose an alternative rendition of the subtitle for a given video stream. For instance, an English subtitle playlist can be replaced by a French or a Spanish subtitle playlist. Inside a group, a default playlist can be set.

To use this feature, you must first create audio-only, video-only and subtitle-only playlists, then you will associate the subtitle, audio and video streams into one or more master playlist(s).

If you want to define an alternative subtitle group, follow these steps:

1 Create audio-only, video-only and subtitle-only playlists (*see* "Media playlists" on page 63)

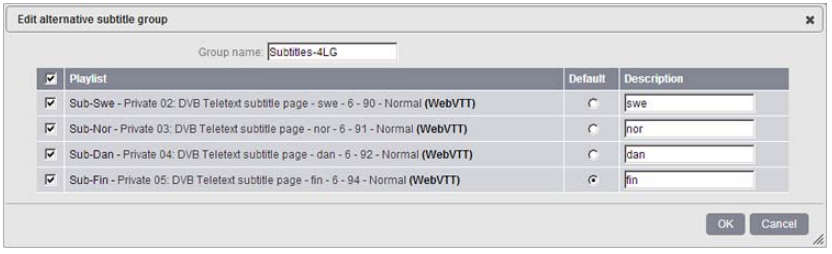
2 From the Master Playlist tab, tick the **Use alternative subtitle groups** checkbox. A new table is displayed.

3 In the alternative subtitle group table, you can either:

- click the **Auto-configure** link to automatically create alternative audio groups based on the subtitle-only playlists you created,
- or click the **Add Alternative subtitle Groups...** link to create a new group then click the **Edit** link to define the composition of your alternative audio group. Select the default audio stream and add a description.

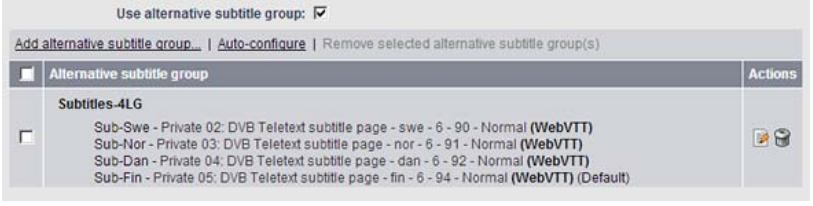
Note: Alternative Subtitle Group only works with teletext subtitles (Closed-caption and webVTT).

Editing alternative subtitle groups



4 The alternative subtitle group is added to the table:

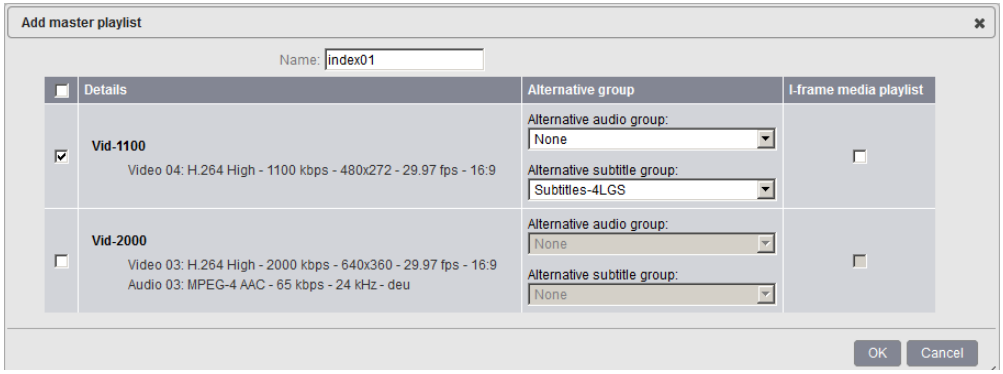
Alternative subtitle group table



5 In the master playlist table, click the **Add** link to create a new master playlist, then click the **Edit** link.

6 Select the alternative subtitle group you want to associate to the video stream then click the **OK** button.

Editing master playlists

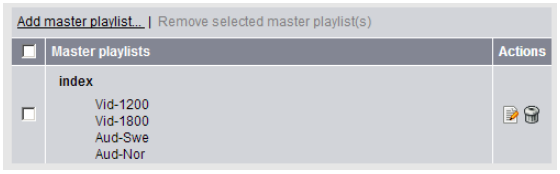


7 You can check the **I-frame playlist** option to reference I-frames in the stream.

Note: To optimize rapid forward and reverse playback, Apple introduced the notion of I-Frame playlist in iOS5.

8 The master playlist is added to the table:

Master playlists table



Alternative closed-captions group

This feature lets you package each media stream (audio or video stream) in a flexible manner.

A closed-captions group aggregates a list of closed-captions to propose an alternative rendition of the closed-captions for a given video stream. For instance, an English closed-caption can be replaced by a French or a Spanish closed-caption. Inside a group, a default playlist can be set.

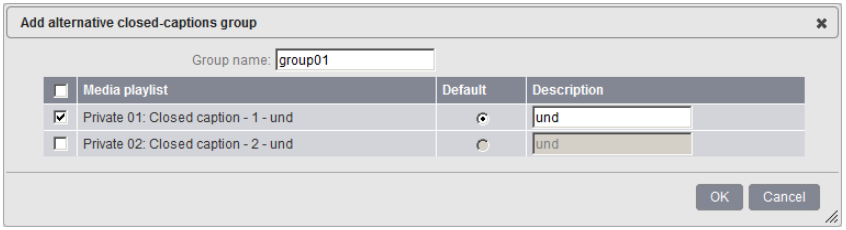
If you want to define an alternative closed-captions group, follow these steps:

1 From the Master Playlist tab, tick the **Use alternative closed-captions group** checkbox. A new table is displayed.

2 In the alternative closed-captions group table, you can either:

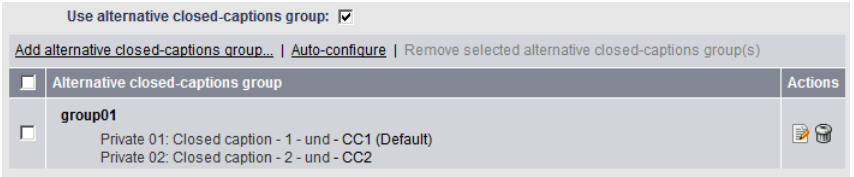
- click the **Auto-configure** link to automatically create alternative closed-captions groups,
- or click the **Add Alternative subtitle Group...** link to create a new group then click the **Edit** link to define the composition of your alternative closed-captions group. Select the default closed-captions and add a description.

Editing alternative closed-captions group



3 The alternative closed-captions group is added to the table:

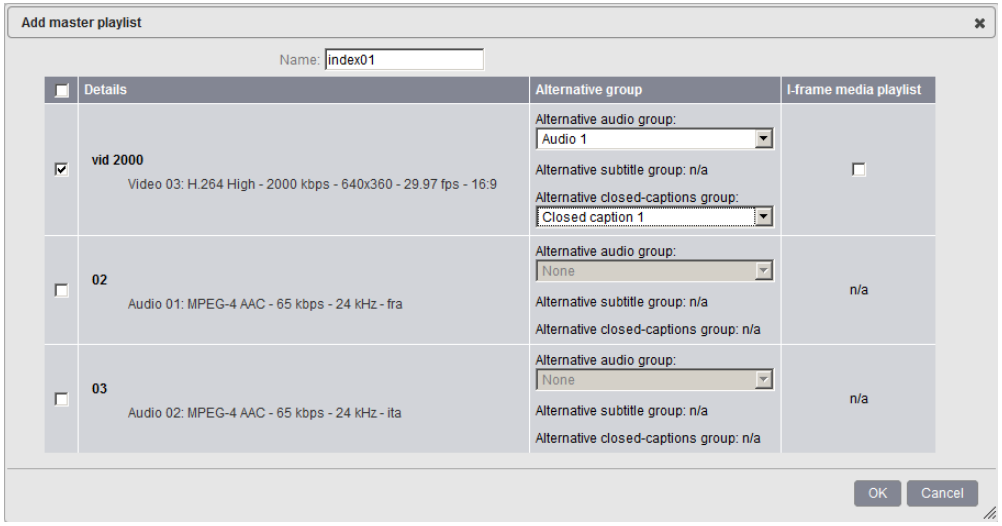
Alternative subtitle group table



4 In the master playlist table, click the **Add** link to create a new master playlist, then click the **Edit** link.

5 Select the alternative closed-captions group you want to associate to the video stream then click the **OK** button.

Editing master playlists

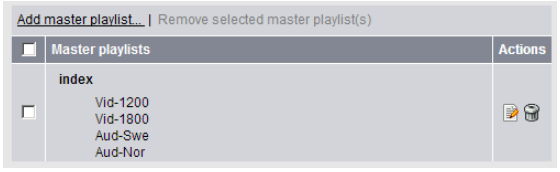


6 You can check the **I-frame playlist** option to reference I-frames in the stream.

Note: To optimize rapid forward and reverse playback, Apple introduced the notion of I-Frame playlist in iOS5.

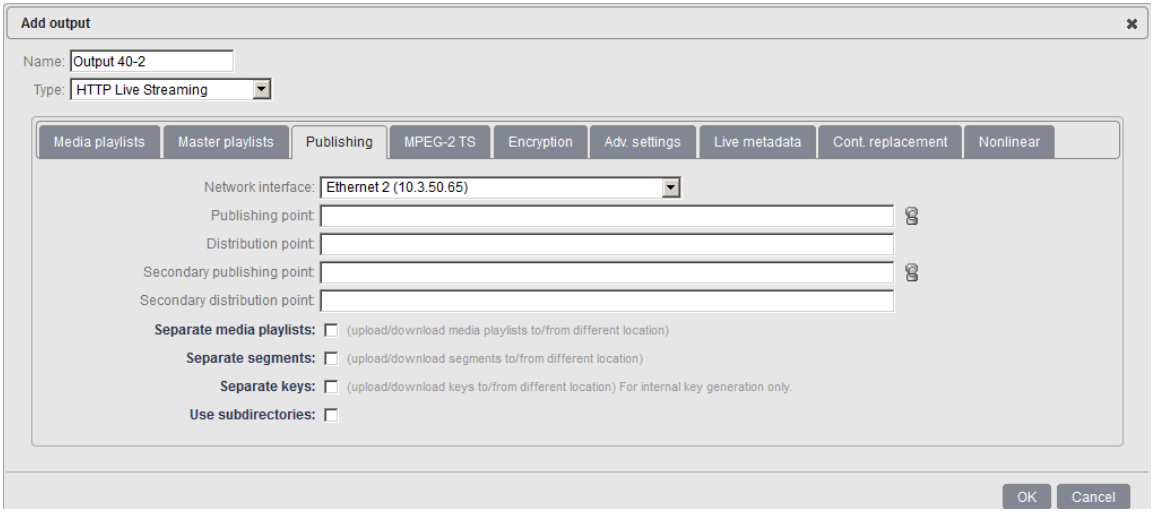
7 The master playlist is added to the table:

Master playlists table



Publishing

Publishing configuration



To configure the publishing, define the following parameters:

Network interface — Select the Ethernet interface used for output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20.

Publishing point — Primary server publishing URL. This is where MPEG2–TS segments and index files are published.

Note: Publishing points used must not be used in another output.

Distribution point — URL referenced within the playlist, and used by the player to request segments.

Secondary Publishing point — Secondary server publishing URL. This is where MPEG2–TS segments and index files are published.

Secondary Distribution point — URL referenced within the playlist, and used by the player to request segments.

If you need to publish playlists in a separate location, check the **Separate media playlists** checkbox and configure playlist publishing as explained above.

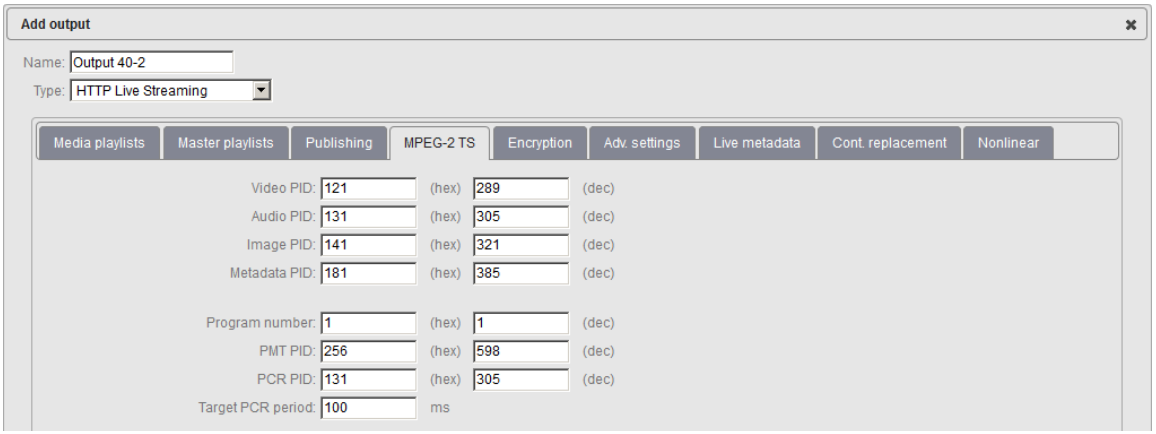
If you need to publish segments in a separate location, check the **Separate segments** checkbox and configure segments publishing as explained above.

If you need to publish keys in a separate location, check the **Separate keys** checkbox and configure keys publishing as explained above.

If you need to split segments publishing in several subdirectories, check the **Use subdirectories** checkbox and specify the folder roll-over frequency.

MPEG-2 TS

MPEG-2 TS configuration



Configure the following TS settings:

Video PID PID (Packet IDentifier) of the video stream.

Possible values: from **0x0010** to **0x1FFE** *(see "PIDs consistency rules" on page 75).*

If you set the **Output type** to **HTTP Live Streaming**, all the video streams will have the same PID as the first video stream.

Audio PID MPEG-2 TS parameter. PID of the audio stream.

Possible values: from **0x0010** to **0x1FFE**

See "PIDs consistency rules" on page 75.

Program number	Program identifier. Possible values: from **0x0001** to **0xffff** (hexadecimal) or from 1 to 65 535 (decimal).
PMT PID	PID (Packet IDentifier) of the PMT (Program Map Table) stream. Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).
PCR PID	PID of the PCR, Program Clock Reference used to synchronize the video and audio packets. Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).
Target PCR Period	PCR period (in milliseconds) Possible values: from **20** to **1000** ms.

PIDs consistency rules

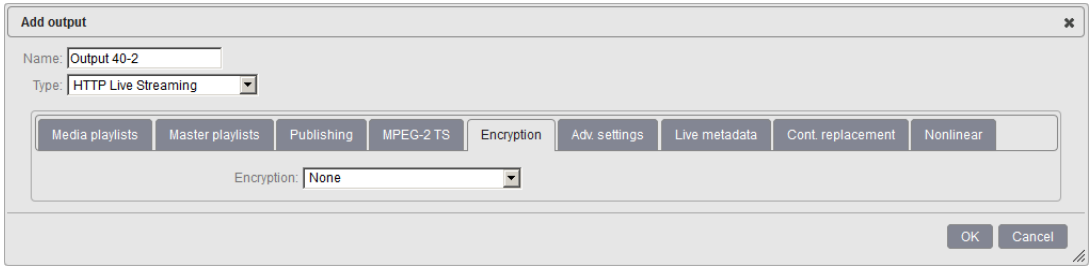
- PID must be between **0x0010** and **0x1ffe**.
- PMT PID must be different from video and audio PIDs.
- Video PID must be different from audio PID.
- PCR PID can be equal to PMT PID or to Video/Audio PIDs.

In HTTP Live Streaming output, the audio and video PES packets are interleaved in timestamp order, and multiple audio frames are concatenated to form a single PES packet. This can result in long sequences of non-audio TS packets within a TS segment. If the PCR PID is equal to the audio PID, then the PCR field is present only on audio TS packets.

In HTTP Live Streaming output, the TS is multiplexed using an ABR model, so the long sequence of non-audio TS packets will result in a large PCR gap, which may exceed the configured PCR period.

Encryption

Encryption



By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

MFVP - Packaging supports the following encryption modes:

- **Apple segment based Encryption**
  - **Fixed key generation**
  - **Internal key generation**
  - **External key generation (Envivio HTTP interface)**
  - **External key (Cisco Key Store) generation**
- **Apple sample based Encryption**
  - **External key generation (Envivio HTTP interface)**
  - **Playready (compatible Discretix) Encryption**
- **Playready (compatible Discretix) Encryption**
  - **Fixed key generation**
  - **External key generation (Envivio HTTP interface)**
- **Playready (compatible Inside Secure) Encryption**
  - **Fixed key generation**
  - **External key generation (Envivio HTTP interface)**
- **Playready (compatible Irdeto) Encryption**
  - **Fixed key generation**
  - **External key generation (Envivio HTTP interface)**
  - **External key (Scalable licences) generation**

- **Adobe Primetime Encryption**
  - **External key (Irdeto Rights Server) generation**
  - **External key (CKM) generation**

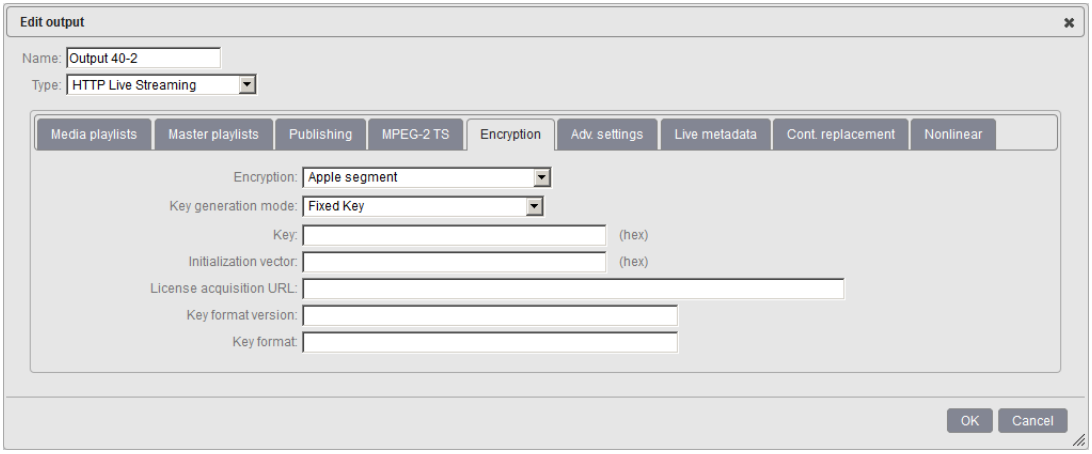
Apple segment based Encryption

Available key generation modes for Apple segment based encryption are:

- Fixed key
- Internal key
- External key (Envivio HTTP interface)
- External key (Cisco key store)

Fixed key generation

Apple segment based Encryption - Fixed key generation



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Initialization vector Initialization Vector to be used with the key

License acquisition URL URL of the License Acquisition Web Server.

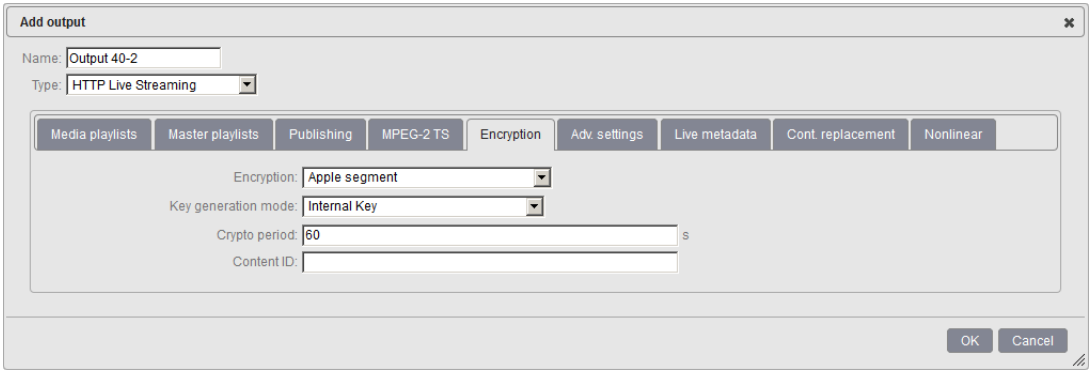
Key format version Indicate which versions of the key format are supported

Key format Specify how the key is represented in the resource specified in the URL

Internal key generation

When you select internal key generation, MFVP - Packaging generates internally a unique AES-128 encryption key (based on profile parameter).

Apple segment based Encryption - Internal key generation



Enter the appropriate value provided by the encryption server for each parameter:

Crypto period Specify how often MFVP - Packaging will refresh the encryption key (request to key server).

Default value: **60** s.

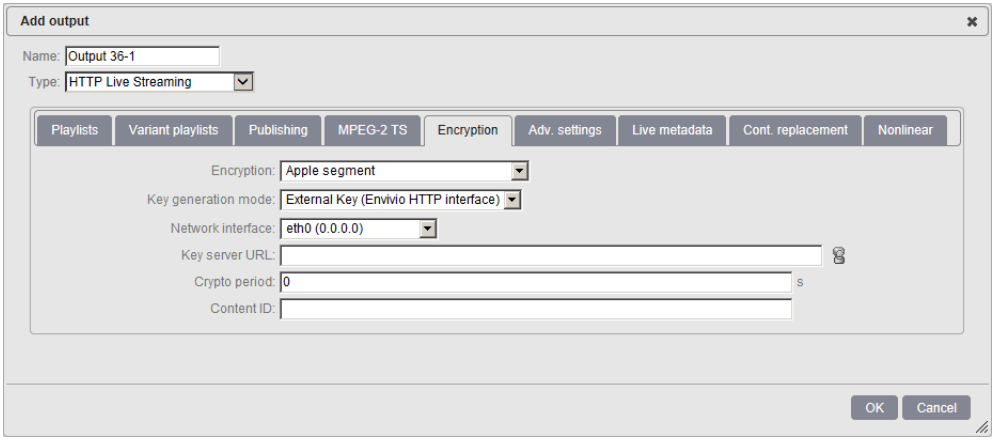
Content ID Parameter to uniquely identify the channel to encrypt

External key generation (Envivio HTTP interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Apple segment based Encryption - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Crypto period Specify how often MFVP - Packaging will refresh the encryption key (request to key server).

Default value: **60** s.

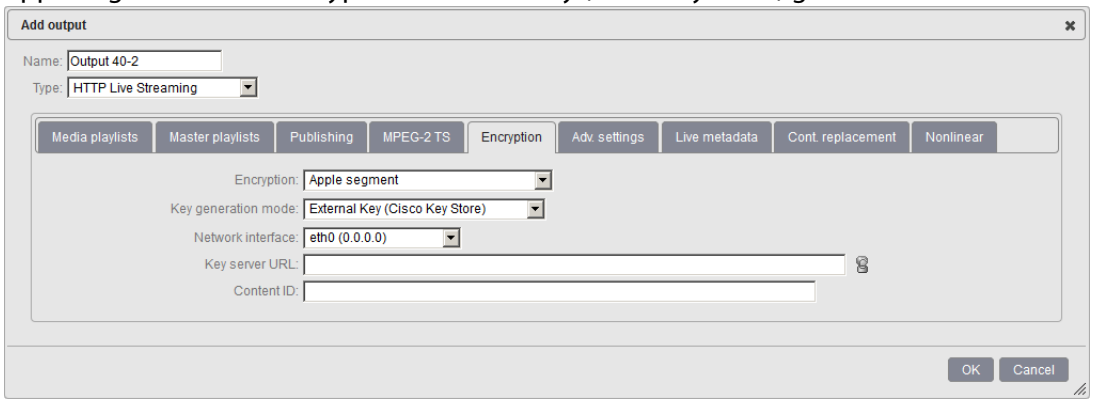
Content ID Parameter to uniquely identify the channel to encrypt.

External key (Cisco Key Store) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Apple segment based Encryption - External key (Cisco Key Store) generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Content ID Parameter to uniquely identify the channel to encrypt.

Apple sample based Encryption

Available key generation modes for Apple sample based encryption are:

- Fixed key
- External key (Envivio HTTP interface)
- External key (Bouygues Telecom interface)

Fixed key generation

Apple sample based Encryption - Fixed key generation

Enter the appropriate value provided by the encryption server for each parameter:

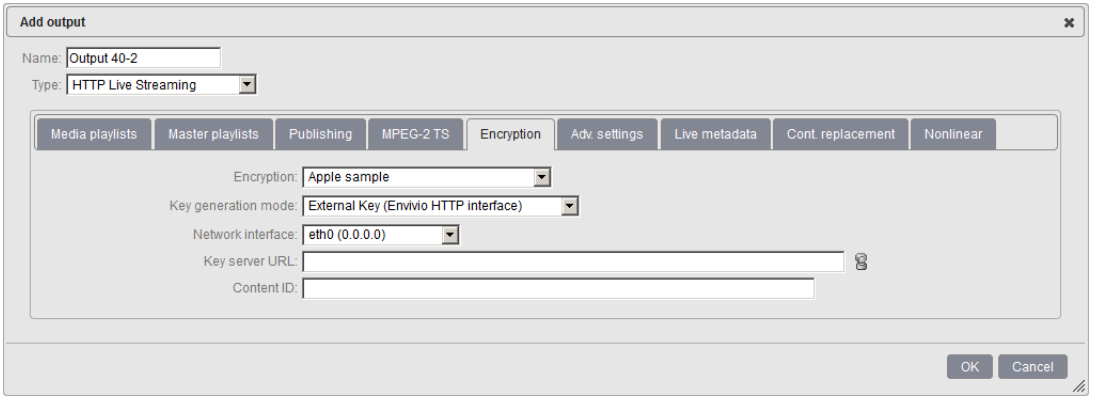
Key	16-byte AES key used for encrypting the content Key field has to be configured in hexadecimal value
Initialization vector	Initialization Vector to be used with the key
License acquisition URL	URL of the License Acquisition Web Server

External key generation (Envivio HTTP interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Sample based Encryption - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

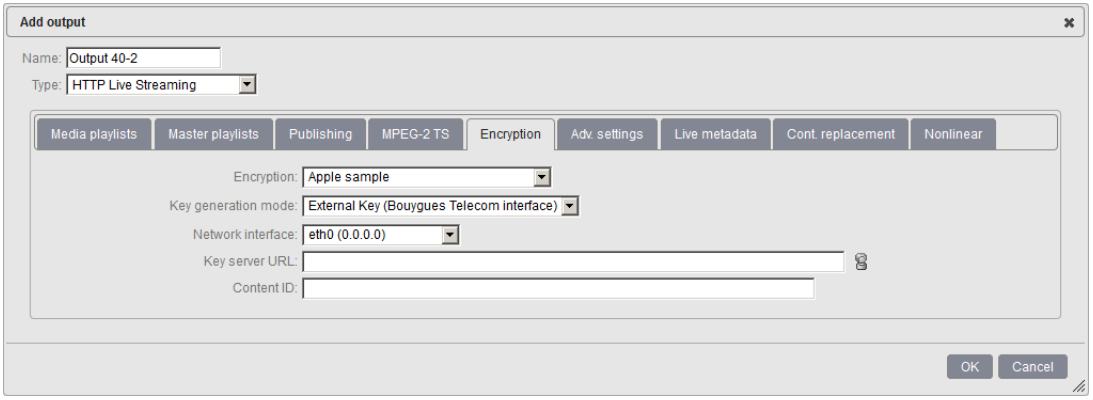
Content ID Parameter to uniquely identify the channel to encrypt.

External key generation (Bouygues Telecom interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Sample based Encryption - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Content ID Parameter to uniquely identify the channel to encrypt.

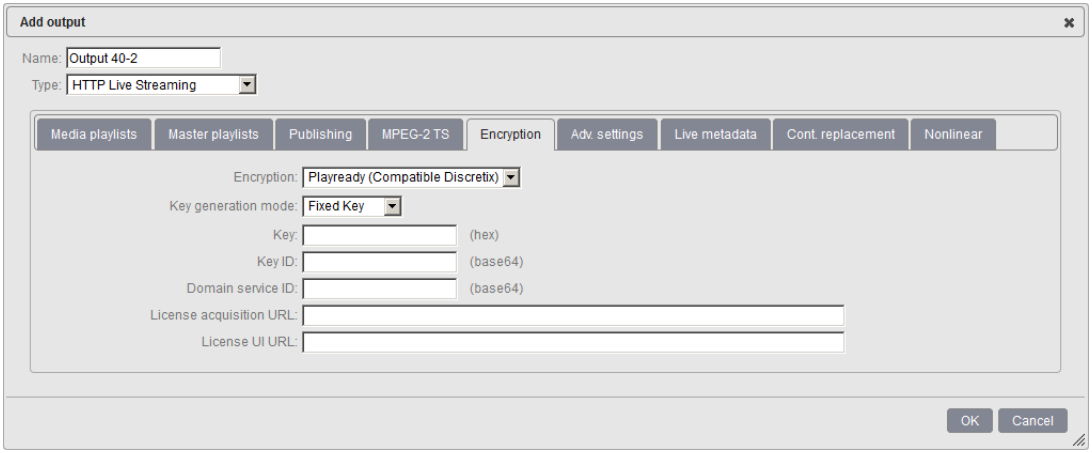
Playready (compatible Discretix) Encryption

Available key generation modes for Playready (compatible Discretix) encryption are:

- Fixed key
- External key (Envivio HTTP interface)

Fixed key generation

Playready (compatible Discretix) - Fixed key generation



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

Licence Acquisition Url URL of the License Acquisition Web Server.

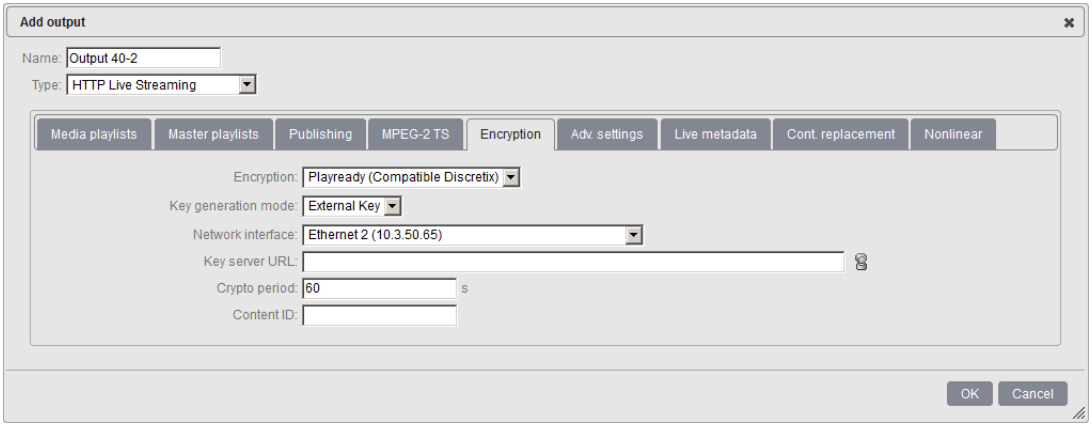
Licence Ui Url URL of the non-silent License Acquisition Web Service.

External key generation (Envivio HTTP interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Playready (compatible Discretix) - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Crypto period Specify how often MFVP - Packaging will refresh the encryption key (request to key server).

Default value: **60** s

Content ID Parameter to uniquely identify the channel to encrypt.

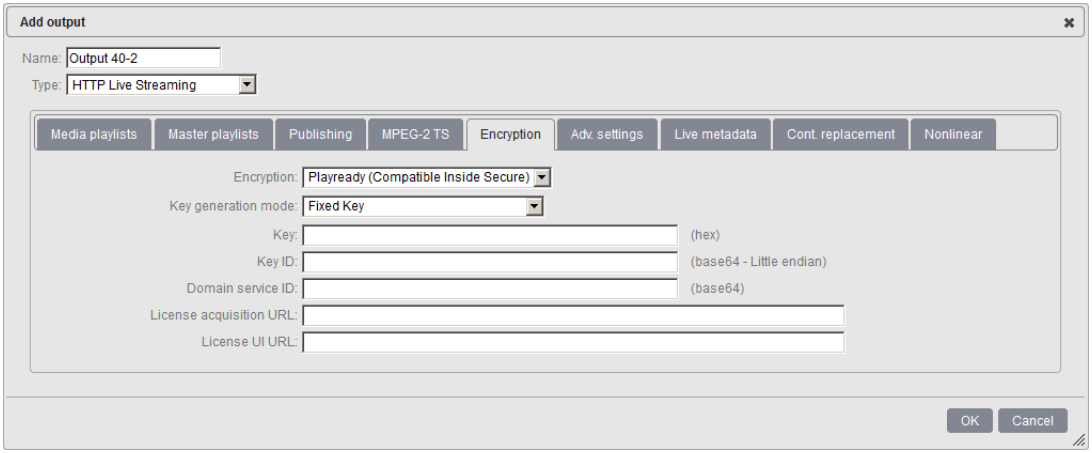
Playready (compatible Inside Secure) Encryption

Available key generation modes for Playready (compatible Inside Secure) encryption are:

- Fixed key
- External key (Envivio HTTP interface)

Fixed key generation

Playready (compatible Inside Secure) - Fixed key generation



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

Licence Acquisition Url URL of the License Acquisition Web Server.

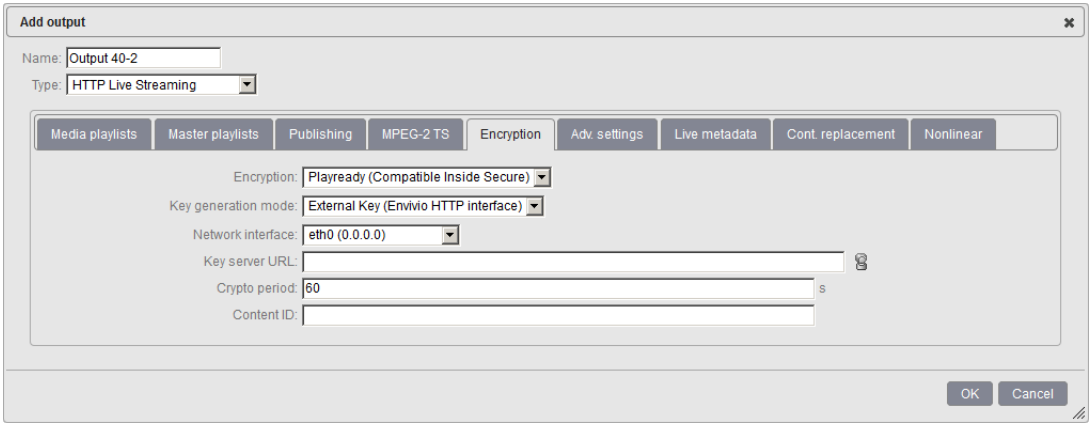
Licence Ui Url URL of the non-silent License Acquisition Web Service.

External key generation (Envivio HTTP interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Playready (compatible Inside Secure) - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Crypto period Specify how often MFVP - Packaging will refresh the encryption key (request to key server).

Default value: **60** s

Content ID Parameter to uniquely identify the channel to encrypt.

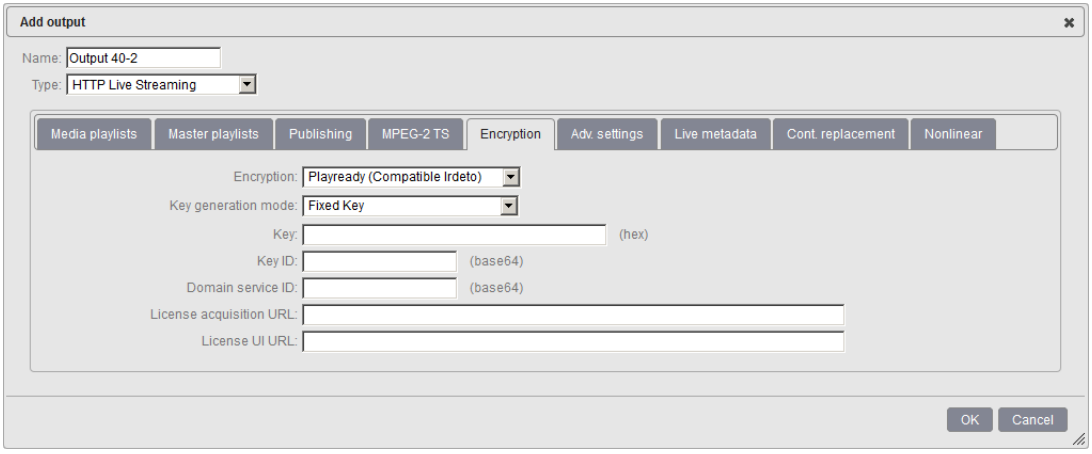
Playready (compatible Irdeto) Encryption

Available key generation modes for Playready encryption are:

- Fixed key
- External key (Envivio HTTP interface)
- External key (Scalable licenses)

Fixed key generation

Playready (compatible Irdeto) - Fixed key generation



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

Licence Acquisition Url URL of the License Acquisition Web Server.

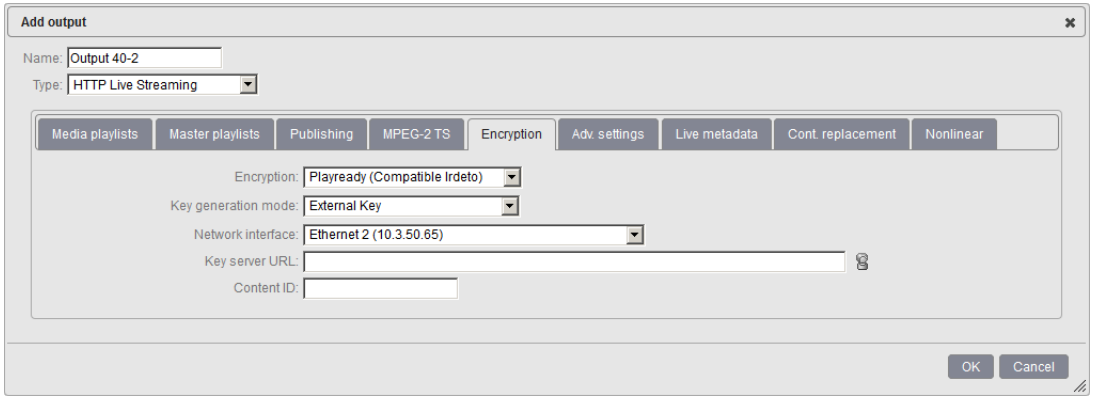
Licence Ui Url URL of the non-silent License Acquisition Web Service.

External key generation (Envivio HTTP interface)

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Playready (compatible Irdeto) - External key generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

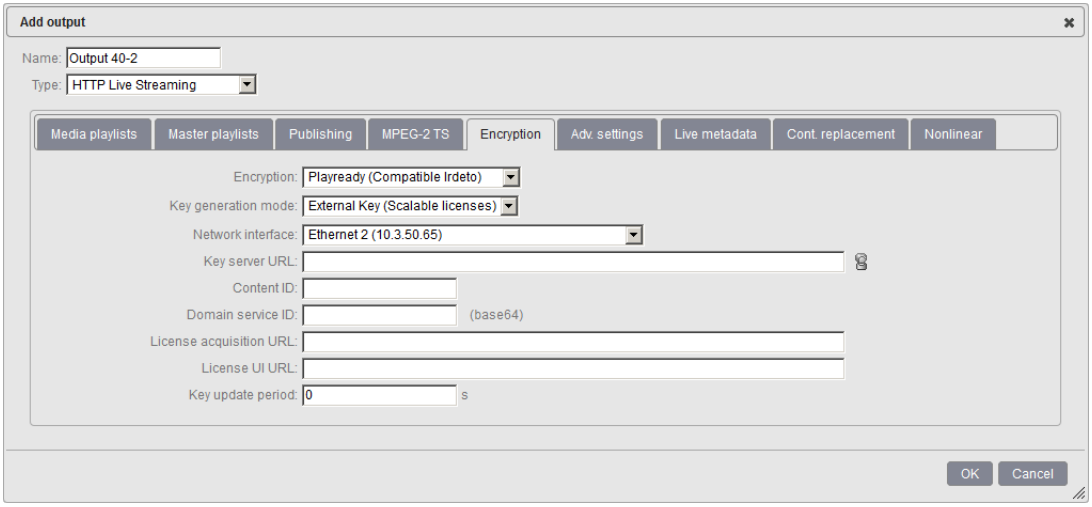
Content ID Parameter to uniquely identify the channel to encrypt.

External key (Scalable licences) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

Playready (compatible Irdeto) - External key (Scalable licences) generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface	Select the interface used to exchange key. We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..
Key server URL	URL of the CAS/DRM keys server.
Content ID	Parameter to uniquely identify the channel to encrypt.
Domain Service ID	Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.
Licence Acquisition Url	URL of the License Acquisition Web Server.
Licence Ui Url	URL of the non-silent License Acquisition Web Service.
Key update period	Specify how often MFVP - Packaging will send the key request to the server

Adobe Primetime Encryption

Available key generation modes for Playready encryption are:

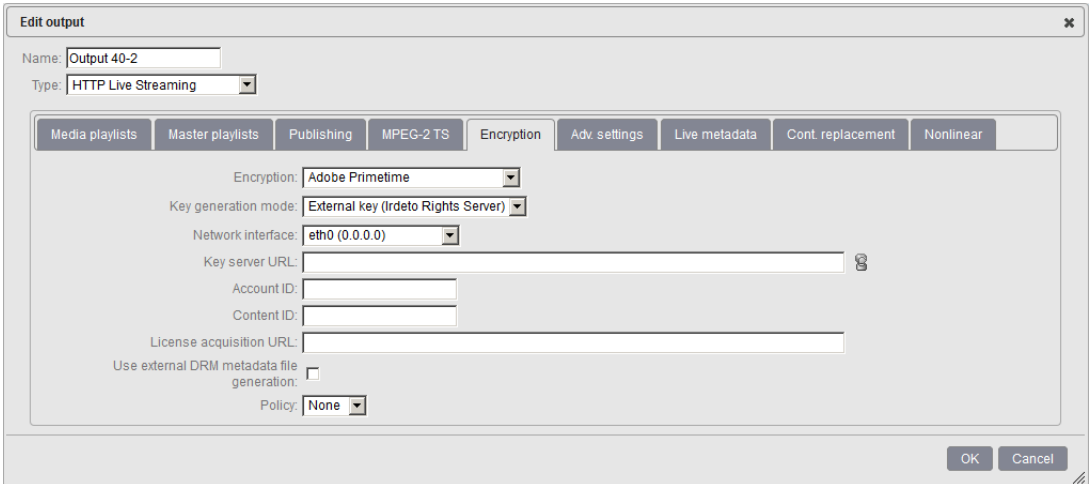
- External key (Irdeto Rights Server)
- External key (CKM)

External key (Irdeto Rights Server) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

External key (Irdeto Rights Server) generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface	Select the interface used to exchange key. We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..
Key server URL	URL of the CAS/DRM keys server.
Account ID	Parameter to uniquely identify the content to encrypt.
Content ID	Parameter to uniquely identify the channel to encrypt.
Licence Acquisition Url	URL of the License Acquisition Web Server.
Use external DRM metadata file generation	Specifies whether the DRM data should be written in a separate file.

Policy Select the policy to apply in the drop-down list.

Leave to **none** if you don't need specific policies.

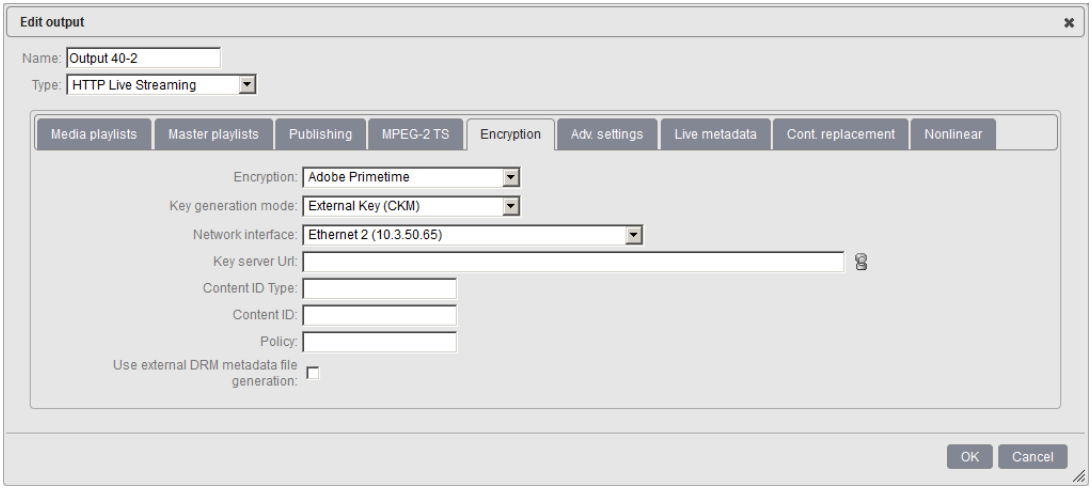
Note: To manage policies, refer to "Adding a policy" on page 33.

External key (CKM) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

External key (CKM) generation



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Data** or **Default**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Content ID Type Content ID class.

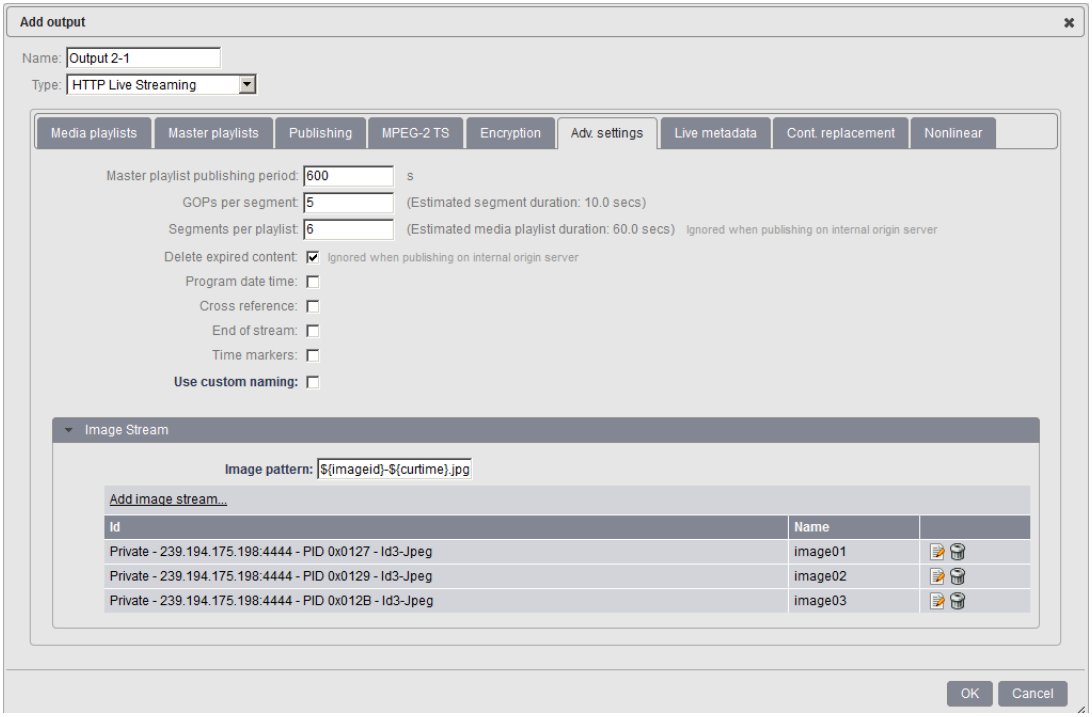
Content ID Parameter to uniquely identify the channel to encrypt.

Policy Parameter that defines the usage rules of the encrypted content

Use external DRM metadata file generation Specifies whether the DRM data should be written in a separate file.

Advanced settings

Advanced settings



This section lets you configure advanced settings for the output:

Master playlist publishing period Specify how often the master playlist has to be republished.

GOPs per segment Specify the number of GOPs to include inside one segment. GOP duration is set at the input configuration level.

Segment per playlist Defines the depth of segments to keep.

Delete expired content Specify whether MediaFirst Video Processing - Packaging needs to leave content while publishing onto CDN's origin server.

Note: This parameter is ignored when publishing on the internal origin server.

Note: On a profile stop, in HLS mode, the latest chunks remain on the publishing server despite the selection of the **Delete expired content** checkbox.
To clean up remaining chunks, you can set up and run a periodically script that will delete the chunks.

Program date time If you check this option, a program date information is inserted in the playlist. This tag associates the first sample of a media segment with an absolute date and/or time.

Cross reference The cross reference enables redundancy at player level. It is used when playlists are published on both primary and backup publishing points. If you check this option, master playlists reference both the primary and the backup publishing points.

Example of a master playlist using cross reference:

```
#EXTM3U
#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=500832
http://myPrimaryServer/france5/01.m3u8
#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=500832
http://myBackupServer/france5/01.m3u8
```

End of stream tag value: `#EXT-X-ENDLIST`

If you check this option an EOS (End Of Stream) tag is inserted at the end of the playlist when the associated profile is stopped.

Time Marker when checked, a time marker parameter will be inserted in the playlist.

Use subdirectory when checked, specify the folder roll-over frequency.

Use custom naming When checked you can customize segment, WebVTT segment, playlist, master playlist and IFrame playlist name the following way:

`${startime}`: time when the data was published by MediaFirst Video Processing - Packaging.
`${id}`: Id of the channel
`${seq}`: sequence number
`${variantid}`: name of the master playlist

MFVP - Packaging allows you to publish one or several image streams (jpg format) in addition of the HLS transport stream.

Note: Default Image pattern of the published image is: **${imageid}-${curtime}.jpg**

Pattern can be modified by replacing default value

This section lets you configure a jpg image stream:

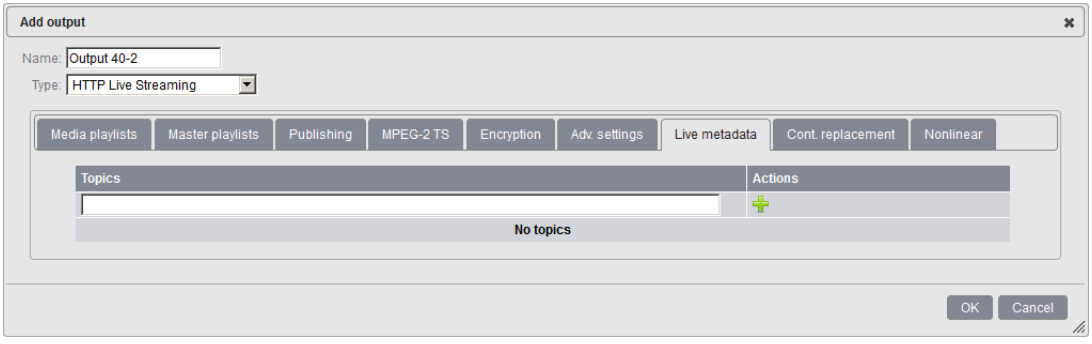
Add Image Stream Click the **Add Image Stream** link to set an image stream on the HLS output

Stream ID Select the Stream ID that is available in the input source

Name Enter the name of the stream id that will be used in the published jpg file

Live metadata

Live metadata



Live metadata insertion is a service URI accessible via http interface on the management port. This request can be used by third parties equipment to trigger the insertion of metadata content associated with a specific topic at a specify time.

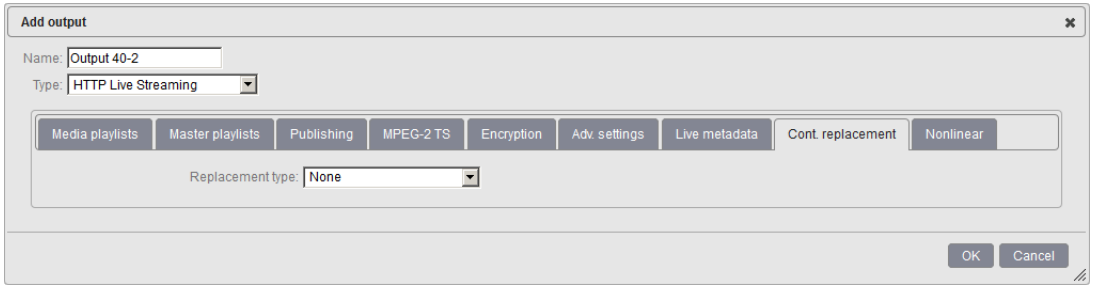
Each Output of each Service can be configured to have one “metadata” output stream. Each “metadata” output stream needs to be configured with a list of topics to which it is subscribed, such as “EAS, Weather, StockPrices, CNN”. Then, for each request received to insert live metadata on a particular topic, all output streams that are subscribed to that topic will have the metadata content transmitted on that stream.

The http request sent to MFVP - Packaging by the third party equipment has to follow Ericsson-defined live metadata insertion API (available upon request).

For HLS, the output stream is an ID3 metadata PID. The metadata content is placed in a PES packet in the ID3 metadata PID in the MPEG-2 TS stream.

Content replacement

Content replacement



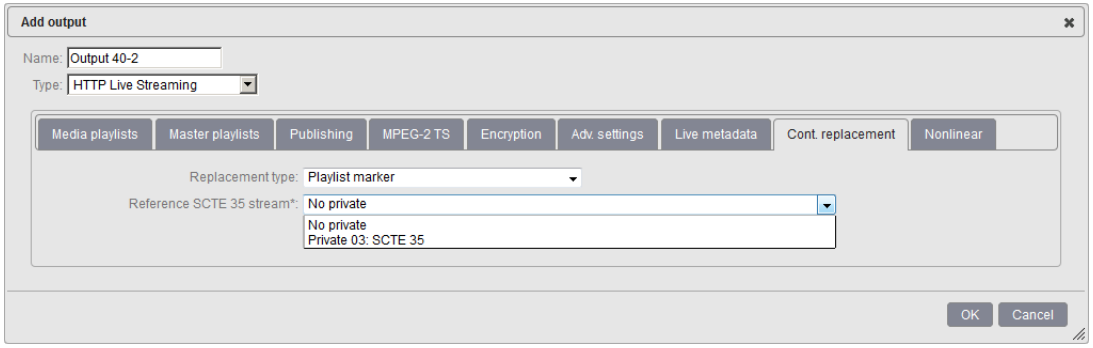
Linear ad insertion in HLS consists in inserting tags or replacing the URLs referencing the ad chunks by new ones (local/regional ad) within the playlist. In order to achieve this, two strategies/ecosystems can be envisioned:

- **Splice Marker playlist insertion (Playlist Marker)**
- **URL substitution (POIS playlist conditioning)**

Note: By default, Content replacement mode is set to **None** and therefore not activated.

Playlist Marker

Playlist Marker



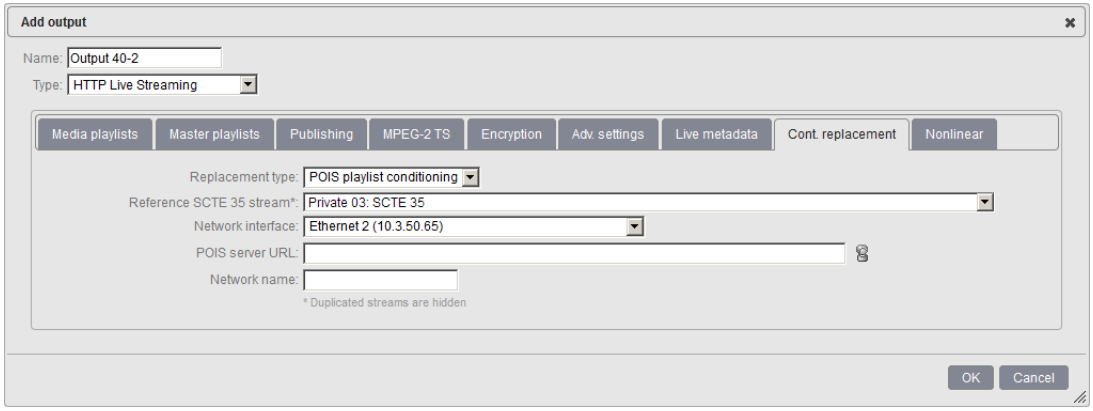
Replacement type Select Playlist Marker

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived

Specific EXT-X-CUE-IN and EXT-X-CUE-OUT tags will be inserted within the hls playlist to delimit ad boundaries.

POIS playlist conditioning

POIS playlist conditioning



Replacement type Select POIS playlist conditioning

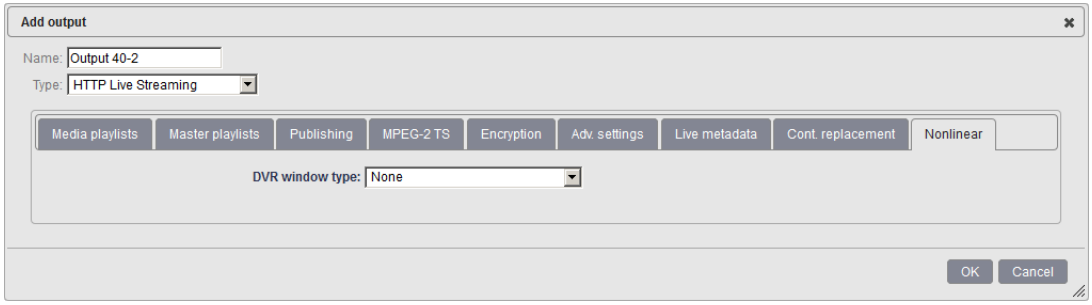
Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived.

Network interface	Select the network interface to be used. We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..
POIS server URL	Enter the POIS (Placement Opportunity Information Service) server URL. Upon MFVP - Packaging placement opportunity notification, POIS will either return a list of URLs to insert in place of the initial one, or will return specific tags to be inserted within the playlist
Network name	Enter the name of the Network.

Note: If you have ticked the **Hide duplicated streams** checkbox during the service's input configuration, duplicated private streams won't be visible. To make them visible, you need to untick the **Hide duplicated streams** checkbox.

Nonlinear

Nonlinear



Nonlinear tab is used to configure MFVP - Packaging to create non linear viewing experiences from live (time-shifting, start-over, catch-up, highlights). Available configuration settings are:

- **Content indexing only**
- **Content indexing and publishing**

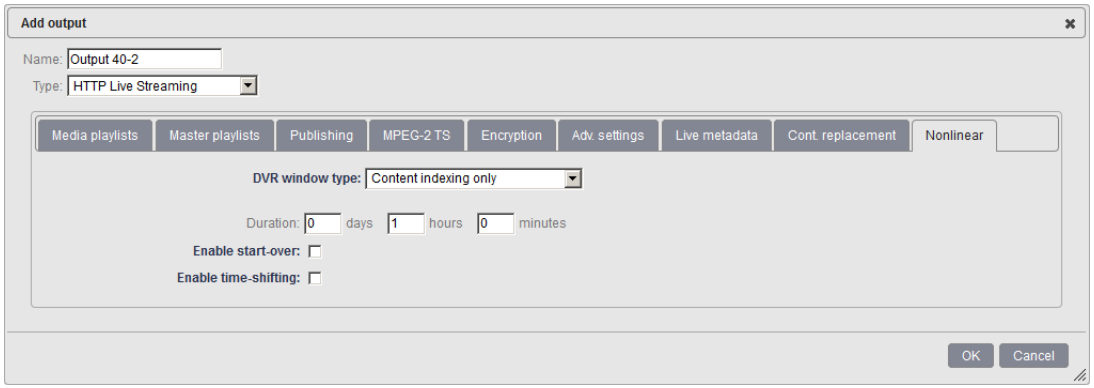
In Content indexing only, MFVP - Packaging is controlled to create playlists only based on chunks information indexed internally to it (chunk duration, size, time)

In Content indexing and publishing mode, MFVP - Packaging publishes a DVR window of chunks, giving the possibility to deliver content from MFVP - Packaging Origin server.

Note: By default, the DVR window type is set to **None** and therefore not activated.

Content indexing only

Content indexing only



DVR window type Select Content indexing only

Duration Set the duration to apply in days, hours and minutes.
Default duration is set to 1 hour

Enable start-over Check this option to enable start-over

Enable time-shifting Check this option to enable time-shifting

Set the **duration** in minutes
Default duration is set to 5 minutes

When start-over and/or time-shifting are enable, you may need to publish master playlists in a separate location, check the **Separate playlists** checkbox and configure playlist publishing:

Network interface Select the Ethernet interface used for output context indexing.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Primary server publishing URL. This is where segments and index files are published.

Note: Publishing points used must not be used in another output.

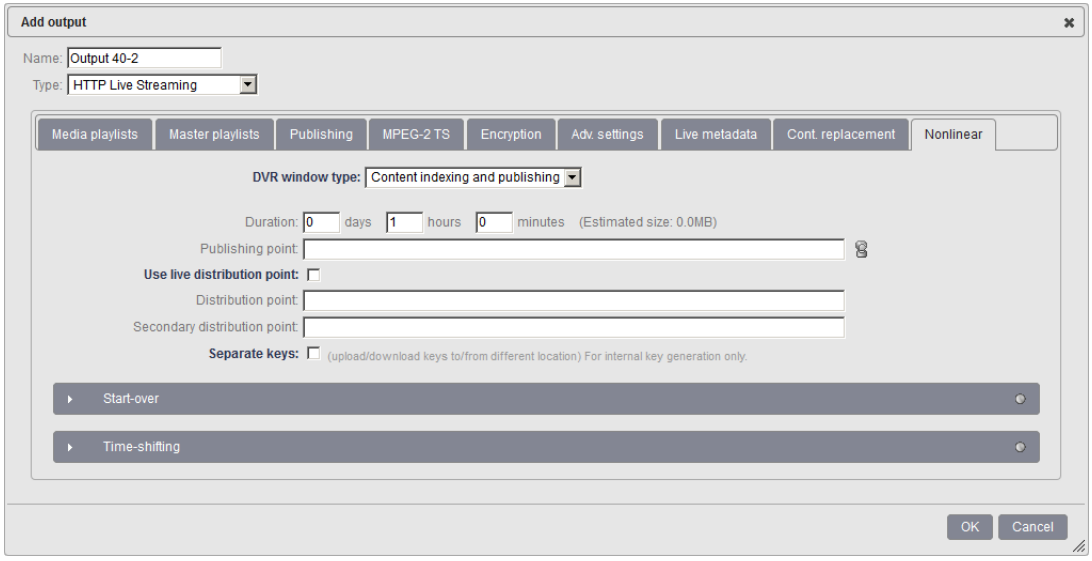
Segment distribution point URL referenced within the playlist, and used by the player to request segments.

Secondary publishing point For redundancy aspects, a secondary publishing point can be configured.

Segment secondary distribution point Secondary server publishing URL. URL referenced within the playlist, and used by the player to request segment.

Content indexing and publishing

Content indexing and publishing



DVR window type Select Content indexing and publishing.

Duration Set the duration to apply in days, hours and minutes. Default duration is set to 1 hour.

Publishing point: This is where content and index files are published using CIFS protocol (file://)

Note: Publishing points used must not be used in another output.

Use live distribution point: Check this option to use the same distribution point set up for live publishing (**Publishing** tab).

Distribution point:	URL referenced within the playlist, and used by the player to request segments.
Secondary distribution point:	URL referenced within the playlist, and used by the player to request segments.
Separate keys	Click this checkbox if you want the key to be published in another location than the streams, then fill in the different parameters. **Network interface:** select which network interface is used to publish keys. We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20.. **Publishing point**: specify the location where keys will be published. **Distribution point**: URL referenced within the playlist, and used by the player to get the key. **Secondary publishing point**: for redundancy aspects, a secondary publishing point can be configured. **Secondary Distribution point**: URL referenced within the playlist, and used by the player to get the key.
Enable start-over	Check this option to enable start-over.
Enable time-shifting	Check this option to enable time-shifting Set the **duration** in minutes Default duration is set to 5 minutes.

Note: When start-over is enabled the led button turns green

When start-over and/or time-shifting are enabled, you may need to publish playlists and/or master playlists in a separate location

Check the **Separate playlists** checkbox and configure playlist publishing:

Network interface	Select the Ethernet interface used for output streaming. We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Primary server publishing URL. This is where segment and index files are published.

Note: Publishing points used must not be used in another output.

Distribution point URL referenced within the playlist, and used by the player to request segment.

Secondary publishing point For redundancy aspects, a secondary publishing point can be configured.

Secondary distribution point Secondary server publishing URL. URL referenced within the playlist, and used by the player to get the key.

Check the **Separate master playlists** checkbox and configure master playlist publishing:

Network interface Select the Ethernet interface used for output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Primary server publishing URL. This is where segment and index files are published.

Note: Publishing points used must not be used in another output.

Secondary publishing point For redundancy aspects, a secondary publishing point can be configured.

Smooth Streaming specific output settings

When you set the **Output type** to **Smooth Streaming,** specific tabs are displayed:

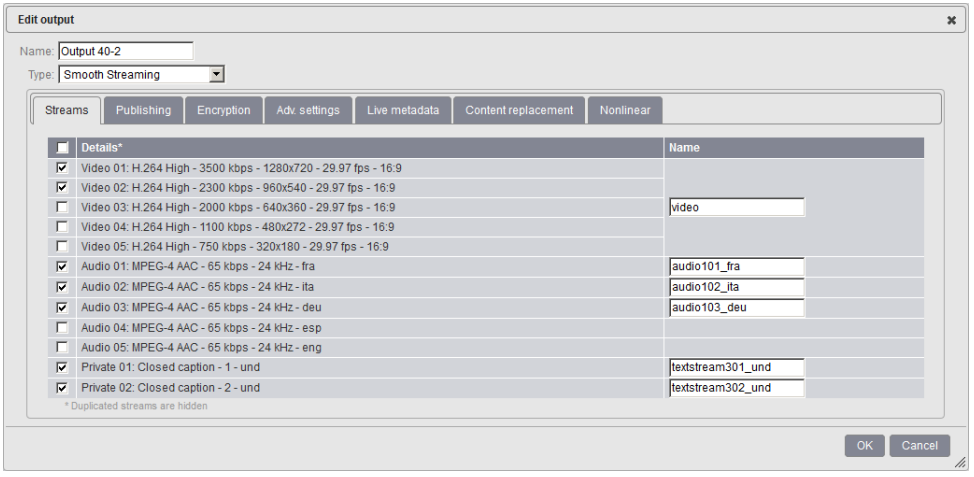
- **Streams**
- **Publishing**
- **Encryption**
- **Advanced settings**
- **Live metadata**
- **Content replacement**
- **Nonlinear**

Streams

Within Streams section, you can select the data you need to be part of your Smooth Streaming. You can select:

- Video streams
- Audio streams
- Private data such as DVB-Teletext, DVB subtitling or Closed Caption (converted into DFXP), or SCTE-35 triggers.

Streams

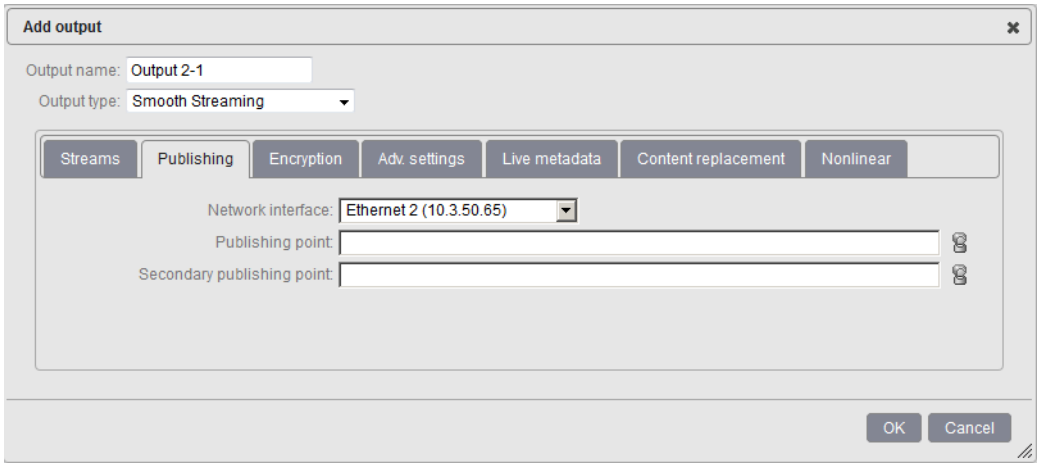


Output custom naming

When ticking a stream's checkbox, a related editable field appears in the **Name** column. You can leave the field as it is or customize the stream name.

Publishing

Publishing configuration



Select the appropriate value for each parameter:

Network interface — Select the interface used for the output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

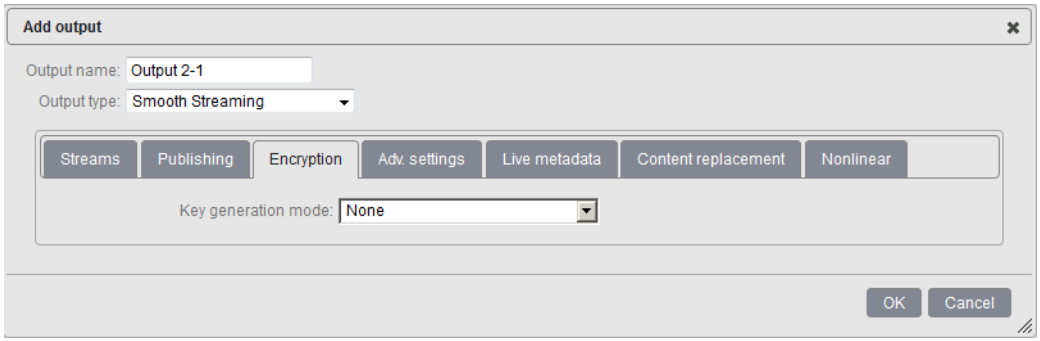
Publishing point — Specify the URL of the IIS streaming server (or any IIS compatible origin server).

Note: Publishing points used must not be used in another output.

Secondary publishing point — Specify an alternative publishing URL to IIS server.

Encryption

Encryption



By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

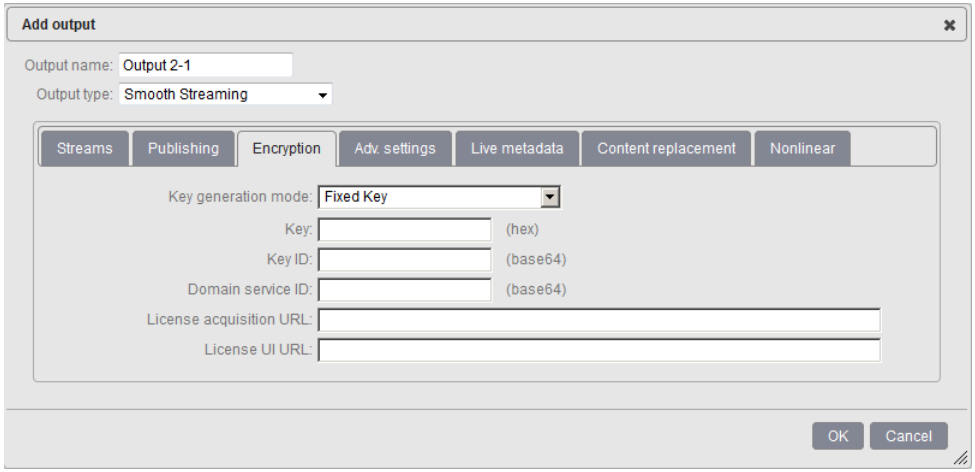
MFVP - Packaging supports the following encryption modes:

- Fixed key generation
- External key generation (Envivio HTTP interface)
- External key (Scalable licences) generation
- External key (Irdeto SOAP interface) generation

Fixed key generation

When selecting fixed key encryption mode, the following parameters need to be configured:

Fixed key encryption



A set of PlayReady parameters are displayed. All these parameters have to be retrieved from PlayReady DRM keys server (or equivalent from third- party key servers).

Note: The configuration of PlayReady DRM keys server is out of the scope of this Configuration Guide.

Select the appropriate value for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

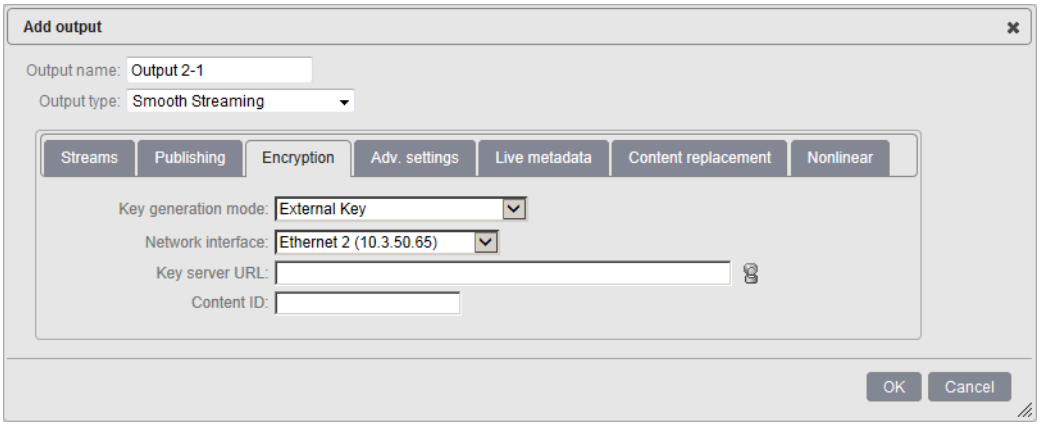
License acquisition URL URL of the License Acquisition Web Server.

License UI URL URL of the non-silent License Acquisition Web Service.

External key generation (Envivio HTTP interface)

When selecting **External key generation** mode, the following appears:

External key generation



Similar to HLS external key generation, this mode supposes that the key is generated by an external key server (Microsoft DRM keys server or equivalent from third-party CAS/DRM vendors).

Select the appropriate value for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the DRM keys server.

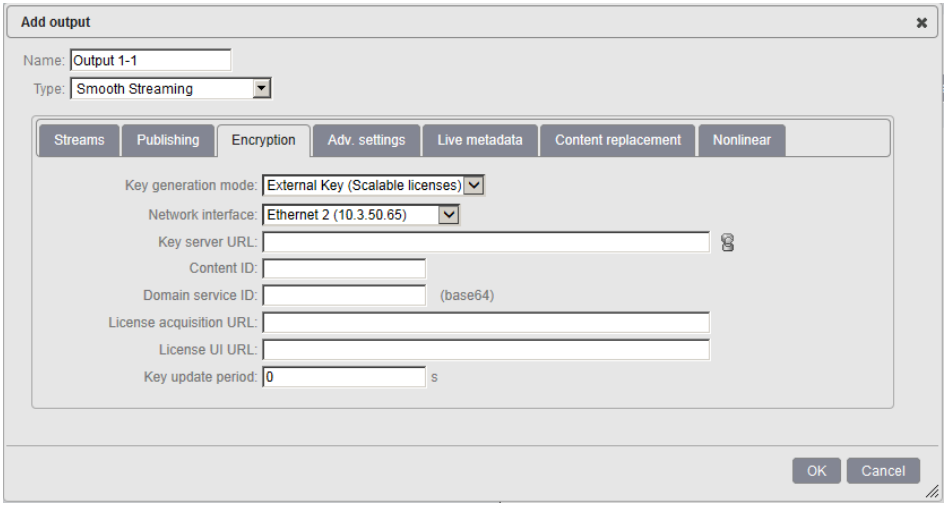
Content ID Uniquely identify the live channel to encrypt. It implies DRM key server has the knowledge of the ID and corresponding encryption key.

External key (Scalable licences) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

External key (Scalable licences) generation



Select the appropriate value for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Content ID Parameter to uniquely identify the channel to encrypt.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

Licence Acquisition Url URL of the License Acquisition Web Server.

Licence Ui Url URL of the non-silent License Acquisition Web Service.

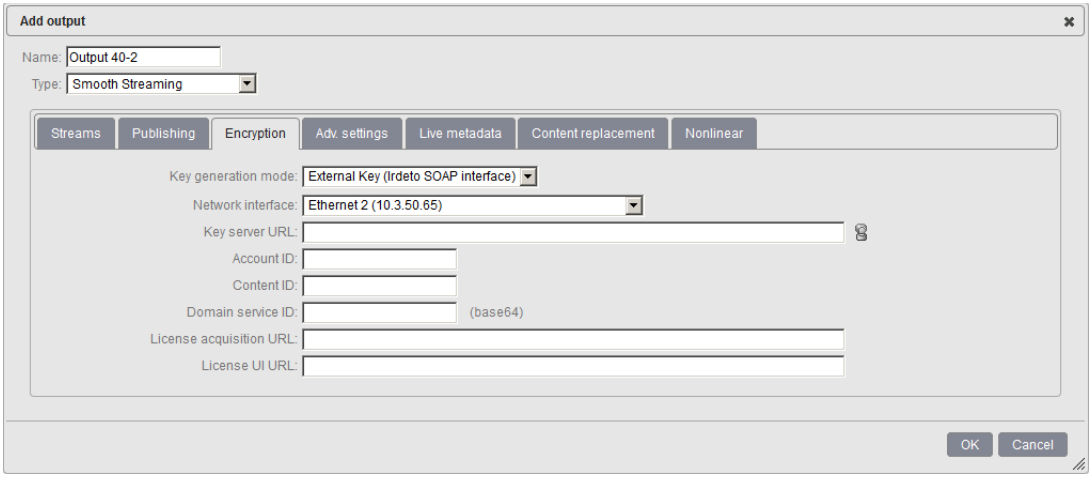
Key update period Specify how often MFVP - Packaging will send the key request to the server.

External key (Irdeto SOAP interface) generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

External key (Irdeto SOAP interface) generation



Select the appropriate value for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server.

Account ID Parameter to uniquely identify the account

Content ID Parameter to uniquely identify the channel to encrypt.

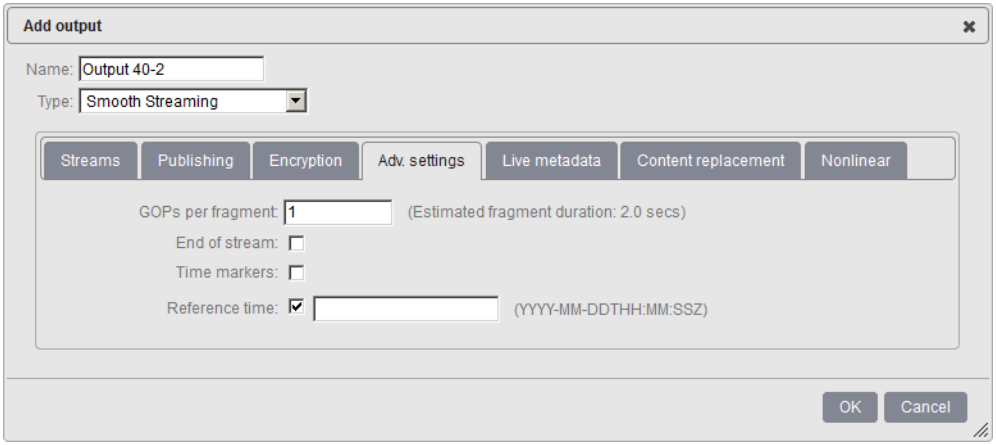
Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

Licence Acquisition Url URL of the License Acquisition Web Server.

Licence Ui Url URL of the non-silent License Acquisition Web Service.

Advanced Settings

Advanced Settings



Select the appropriate value for each parameter:

GOPs per fragment Specify the number of GOPs to be inserted inside one Smooth Streaming fragment.

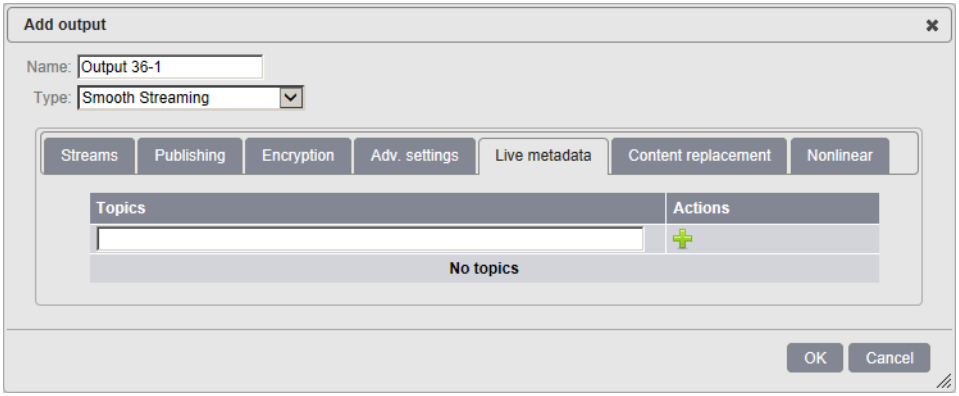
End of stream Check this option to send an EOS (End Of Stream) to the IIS server when the associated profile is stopped.

Time Marker When checked, a time marker parameter will be inserted in the playlist.

Reference Time When checked, enter a time that will become the fragment's reference time.

Live metadata

Live metadata



Live metadata insertion is a service URI accessible via http interface on the management port. This request can be used by third parties equipment to trigger the insertion of metadata content associated with a specific topic at a specify time.

Each Output of each Service can be configured to have one “metadata” output stream. Each “metadata” output stream needs to be configured with a list of topics to which it is subscribed, such as “EAS, Weather, StockPrices, CNN”. Then, for each request received to insert live metadata on a particular topic, all output streams that are subscribed to that topic will have the metadata content transmitted on that stream.

The http request sent to MFVP - Packaging by the third party equipment has to follow Ericsson-defined live metadata insertion API (available upon request).

For HLS, the output stream is an ID3 metadata PID. The metadata content is placed in a PES packet in the ID3 metadata PID in the MPEG-2 TS stream.

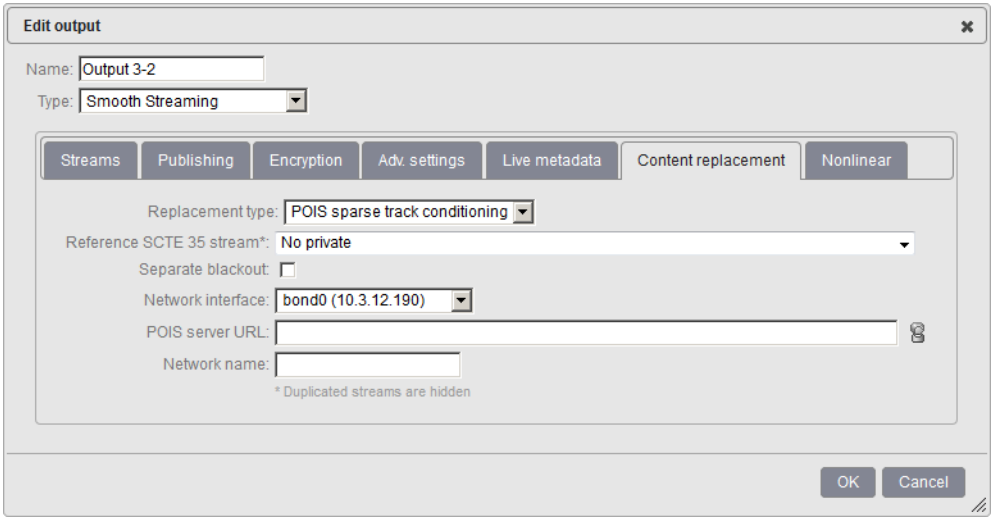
For Smooth Streaming, the metadata output stream is a sparse track (distinct from the "adsplice" and "captions" sparse text tracks). More information in the specifications.

Content replacement

Note: By default, Content replacement mode is set to **None** and therefore not activated.

Sparse track marker from POIS

Sparse track marker from POIS



replacement type Select POIS Sparse track marker.

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived.

Separate blackout When checked, blackout and ad-insertion SCTE 35 tracks will be separated.

Network interface Select the network interface to be used.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

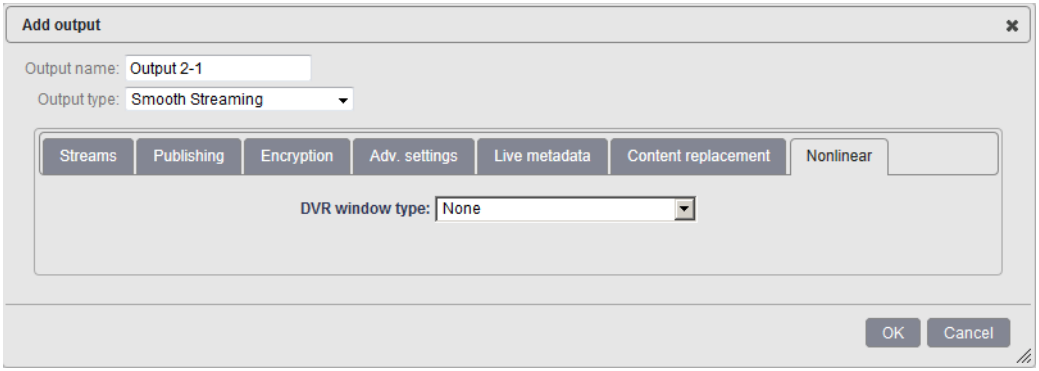
POIS server URL Enter the POIS (Placement Opportunity Information Service) server URL. Upon MFVP - Packaging placement opportunity notification, POIS will return specific ad information to be inserted within a sparse track.

Network name Enter the name of the Network.

Note: If you have ticked the **Hide duplicated streams** checkbox during the service's input configuration, duplicated private streams won't be visible. To make them visible, you need to untick the **Hide duplicated streams** checkbox.

Nonlinear

Nonlinear



Nonlinear tab is used to configure MFVP - Packaging to create non linear viewing experiences from live (time-shifting, start-over, catch-up, highlights). Available configuration setting is:

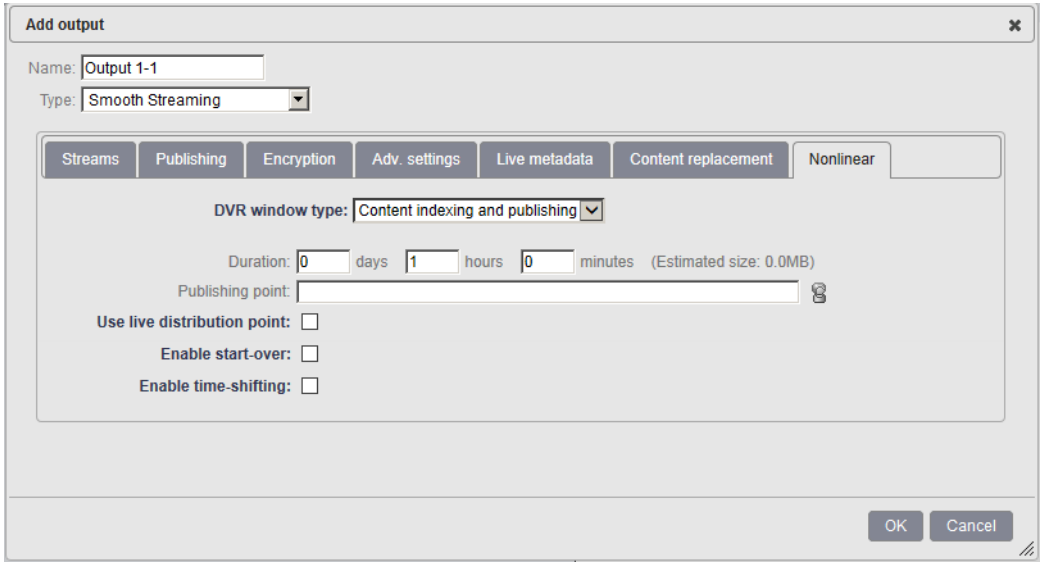
- **Content indexing and publishing**

In Content indexing and publishing mode, MFVP - Packaging publishes a DVR window of chunks, giving the possibility to deliver content from MFVP - Packaging Origin server.

Note: By default, the DVR window type is set to **None** and therefore not activated.

Content indexing and publishing

Content indexing and publishing



DVR window type Select Content indexing and publishing.

Duration Set the duration to apply in days, hours and minutes.
Default duration is set to 1 hour

Publishing point: This is where content and index files are published using CIFS protocol (file://).

Note: Publishing points used must not be used in another output.

Use live distribution point: Check this option to use the same distribution point set up for live publishing (**Publishing** tab).

Enable start-over Check this option to enable start-over.

Enable time-shifting Check this option to enable time-shifting

Set the **duration** in minutes
Default duration is set to 5 minutes

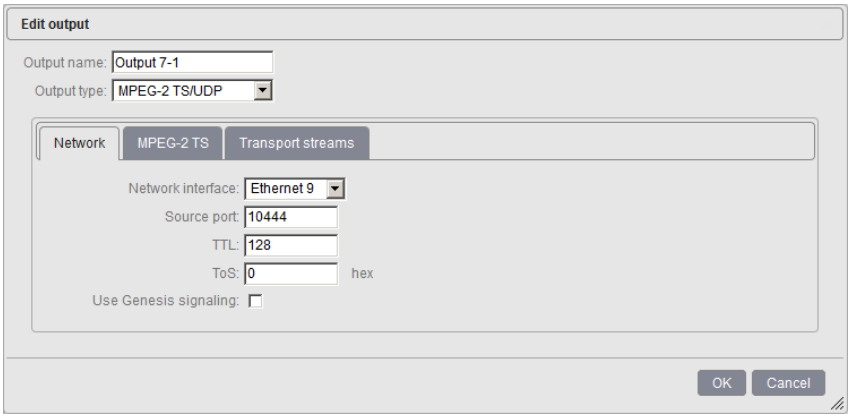
MPEG-2 TS/UDP specific output settings

When you set the **Output type** is set to **MPEG-2 TS/UDP,** specific tabs are displayed:

- **Network**
- **MPEG-2 TS**
- **Transport streams**

Network

Network parameters



Select the appropriate value for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Source port Source port for streams.

Possible values: from **1024** to **65535**

TTL TTL stands for Time To Live.

A value in the range 0 through 255 defines the scope within which multicast packets should be sent over a network using Internet Protocol (IP).
Each router decrements the ttl by one. When the value reaches a predefined lower limit, the router throws the packet away. By default the ttl is set to 128.

ToS **ToS** stands for Type Of Service byte (for QoS purpose).

Possible value: numerical value (3 hexadecimal bytes).

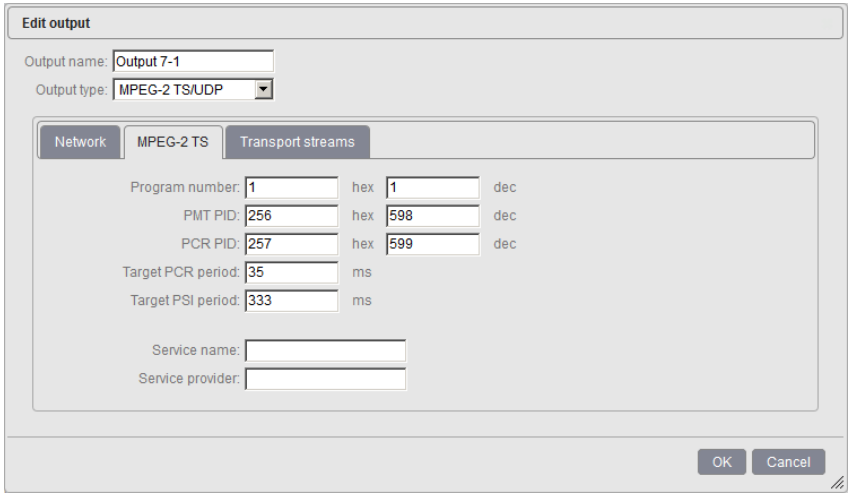
A flag is added to the IP packet headers to show which kind of information is embedded in the IP stream so that switches can identify the traffic type without having to understand the traffic.

Use Genesis signaling Check this option if you want to use Ericsson Genesis signaling format.

When using the Genesis format, Random access indicators are only present on key frames at the beginning of a fragment. Their interval is equal to the max key frame period.

MPEG-2 TS

TS settings



Select the appropriate value for each parameter:

Program number Program identifier.
Possible values: from **0x0001** to **0x1fff**.

PMT PID PID (Packet IDentifier) of the PMT (Program Map Table) stream.
Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).

PCR PID PID of the PCR, Program Clock Reference used to synchronize the video and audio packets.
Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).

Target PCR Period PCR period (in milliseconds)
Possible values: from **20** to **1000** ms.

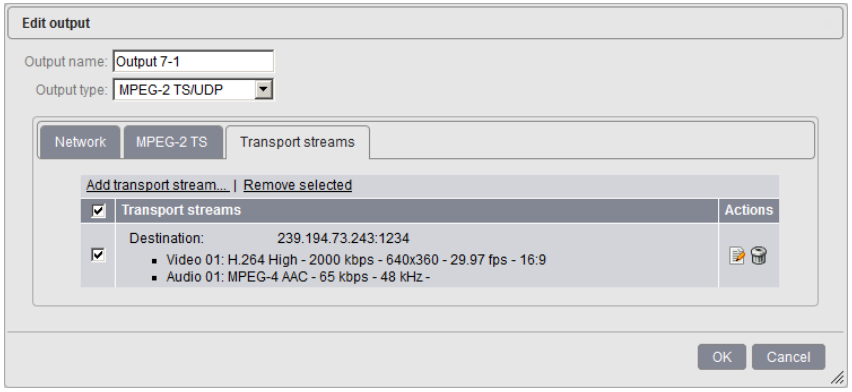
Target PSI Period PSI period (in milliseconds)
Possible values: from **20** to **1000** ms.*

Service name *Internet TV DVB export type only.*
Service name in SDT.

Service provider Provider of the program stream.

Transport streams

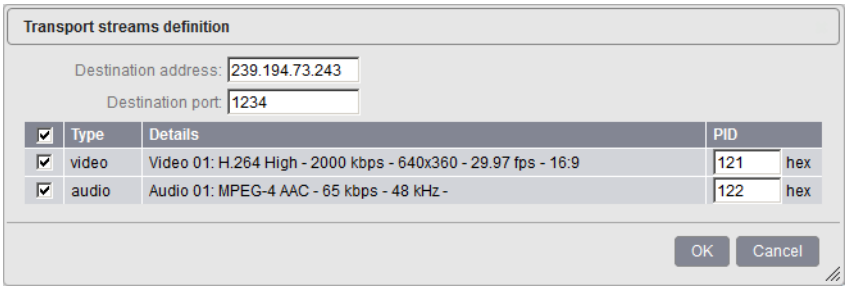
Transport streams



You can specify the composition of the output stream by selecting the streams that will be sent to the selected output.

To edit the destination streams, click the  button.

Transport stream edition



You can modify the following parameter:

Destination address Destination IP address for streams. You can modify this address by entering a unicast or multicast address.

A multicast address is between **224.0.1.0** and **239.255.255.255**.

Destination port Destination port for streams.
Possible values: from **1024** to **65535**

Audio PID MPEG-2 TS parameter. PID of the audio stream.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal)
See "PIDs consistency rules" on page 75.

The audio PID defined is for the first audio. The second is increased by +1 and so on.

Video PID *MPEG-2 TS parameter*. PID of the video stream.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal)

See "PIDs consistency rules" on page 75.

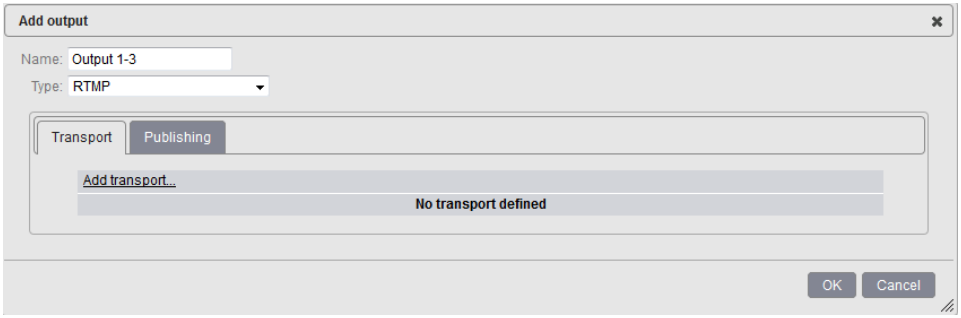
Flash RTMP specific output settings

When you set the **Output type** to **RTMP** (Flash Real Time Messaging Protocol), specific tabs are displayed:

- **Transport**
- **Publishing**

Transport

Transport configuration

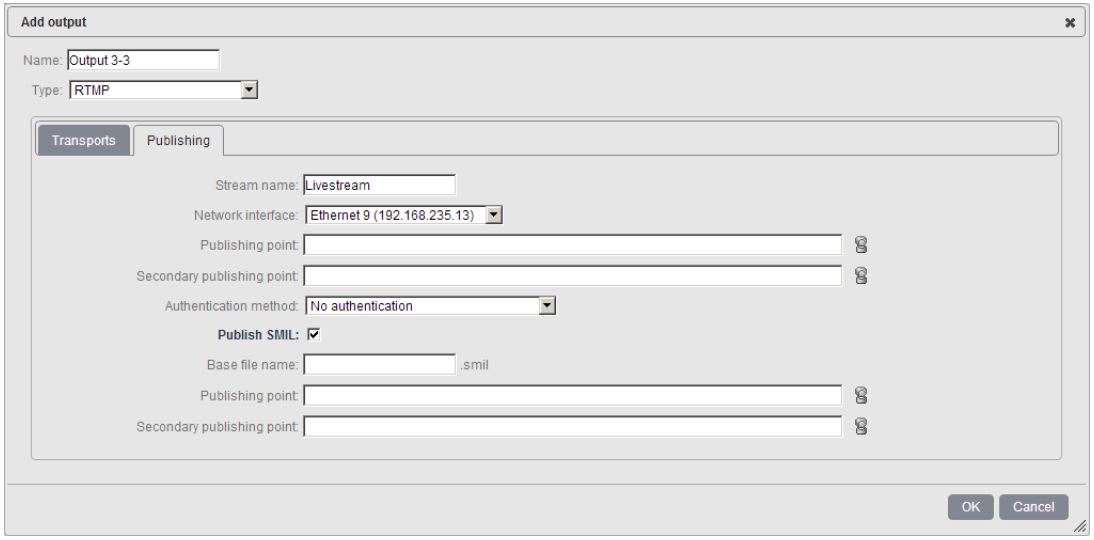


You can add or remove transports by selecting the video stream and the audio stream that will be sent to the output.

Transport configuration

Publishing

Publishing configuration



Select the appropriate value for each parameter:

Stream name Enter an Output stream name.
The stream naming for multiple bit rate output is based on a generic stream name that include placeholders:

%i : the index of the stream
%a : the index of the audio stream
%v : the index of the video stream
The indexes represented by %i, %a and %v start at 1.

Network interface Select the interface used for the output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Specify the URL of the Flash Media Server (or any Flash RTMP compatible origin server).

Secondary publishing point Specify an alternative publishing URL to Flash Media Server.

Authentication method Select the authentication method to be applied for the output streaming.

Available authentication methods are:

Authentication with Flash Media Server
Authentication with Akamai
Authentication with Limelight
Authentication with Level 3
No authentication

SMIL Check this option to enable SMIL configuration.

Base filename Enter a SMIL file name.
The stream naming for multiple publication point is based on a generic stream name that include placeholders:

%i : the index of the publication point.

Publishing point Specify the publishing location, 2 methods:

http://[smil.publishing.url] (HTTP protocol)
file://[smil.publishing.path] (CIFS protocol)

Secondary publishing point Specify an alternative publishing location.

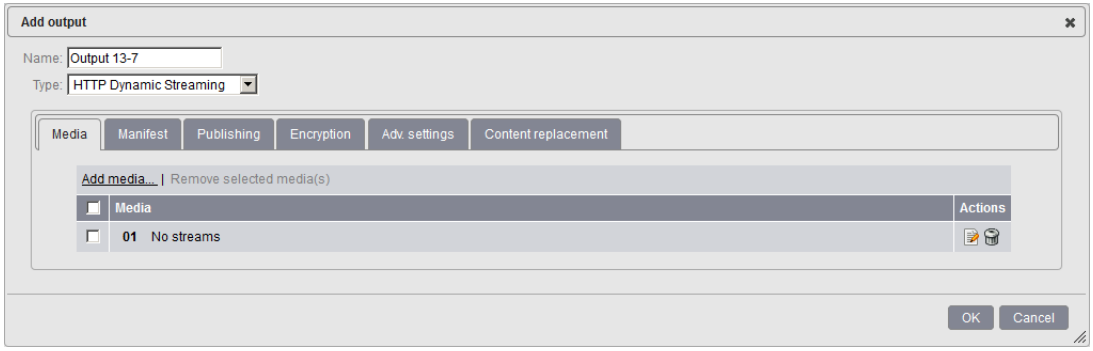
HTTP Dynamic Streaming specific output settings

When you set the **Output type** to **HDS** (HTTP Dynamic Streaming), specific tabs are displayed:

- **Media**
- **Manifest**
- **Publishing**
- **Encryption**
- **Advanced Settings**
- **Content replacement**

Media

Media configuration



You can add or remove media and define the composition of the media by selecting the video stream, the audio stream, and the private data that will be sent to the output.

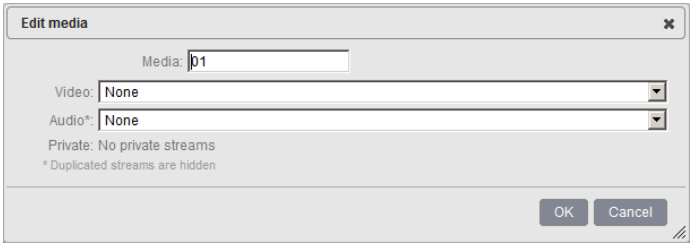
To add a new media, click the **Add media** link on top of the table.

To remove an existing media, select the media to be removed then click the **Remove selected media** link.

To edit a particular media, follow these steps:

1 Click the corresponding button.

Media editing

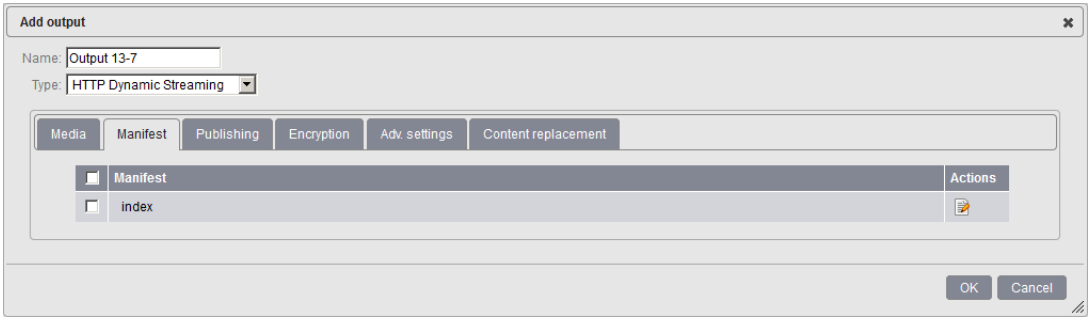


2 Select the video, audio, and associated subtitles and private streams then click the **OK** button.

The media is added to the list of media

Manifest

Manifest configuration

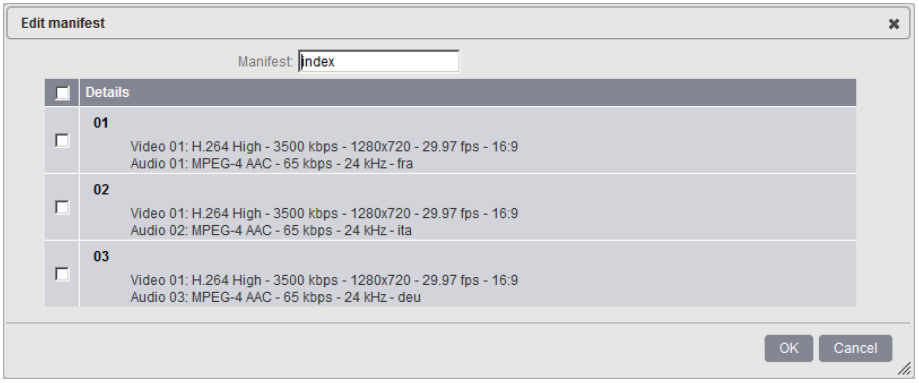


Manifest reference the different bit rates available, and thus the different media the device can have access to. In other terms, a manifest is a pointer to the media, and you can configure the manifest as you want.

To edit a particular manifest, follow these steps:

1 Click the corresponding button.

Manifest editing

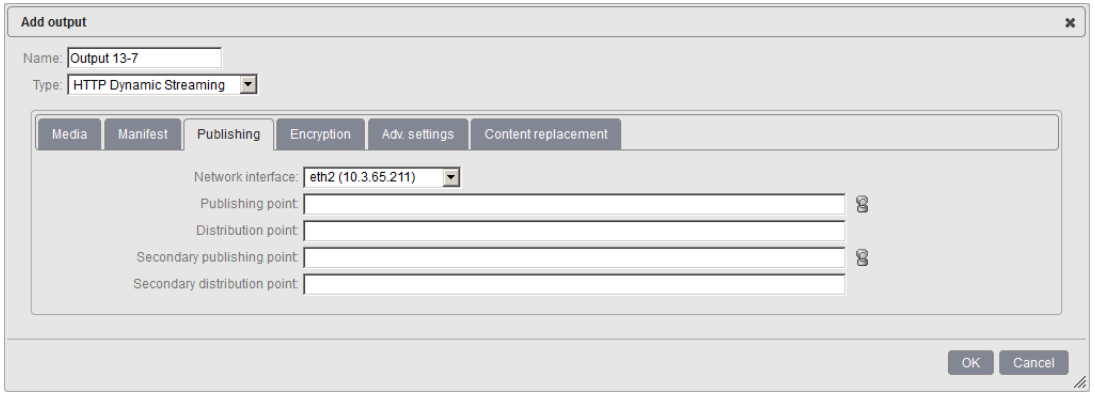


2 Select the media previously configured then click the **OK** button.

The manifest is added to the list of manifest

Publishing

Publishing configuration



Select the appropriate value for each parameter:

Network interface Select the Ethernet interface used for output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Primary server publishing URL. This is where segments are published.

Note: Publishing points used must not be used in another output.

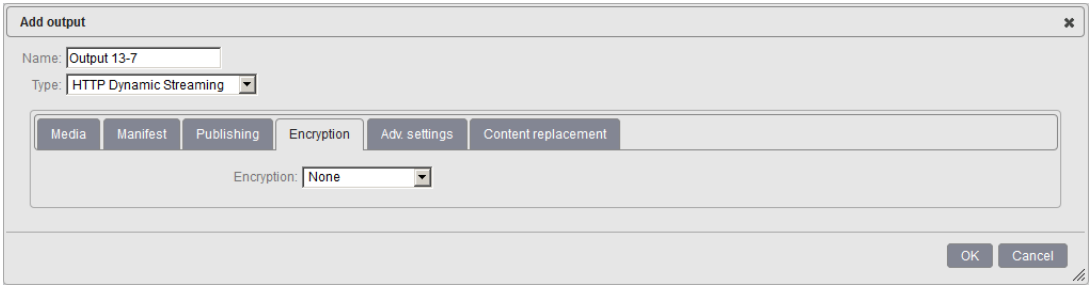
Distribution point URL referenced within the manifest, and used by the player to request segments.

Secondary Publishing point Secondary server publishing URL. This is where fragments are published.

Secondary Distribution point URL referenced within the manifest, and used by the player to request fragments.

Encryption

Encryption configuration



By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

MFVP - Packaging supports the following encryption mode:

- **Adobe Primetime**

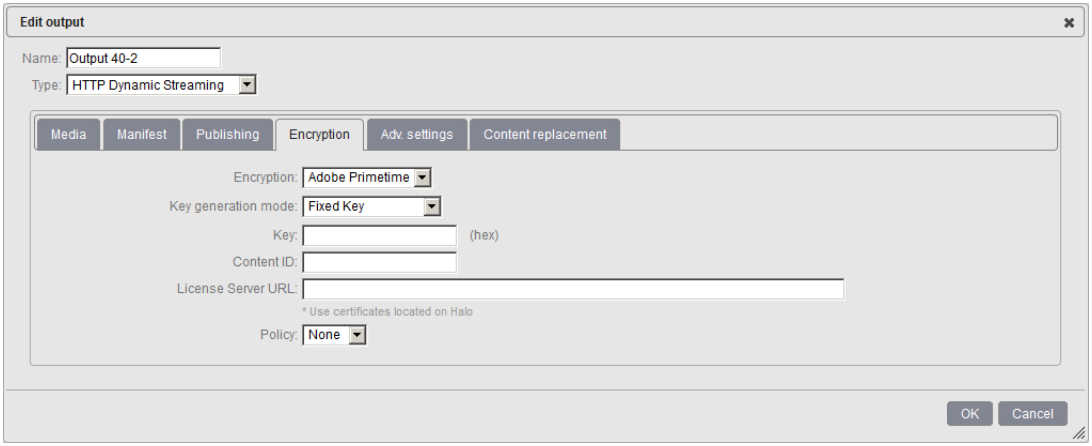
Adobe Primetime Encryption

Available key generation mode for Adobe Primetime Encryption encryption are:

- Fixed key
- External key (CKM)

Fixed key generation

Fixed key generation



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Content ID Parameter to uniquely identify the channel to encrypt.

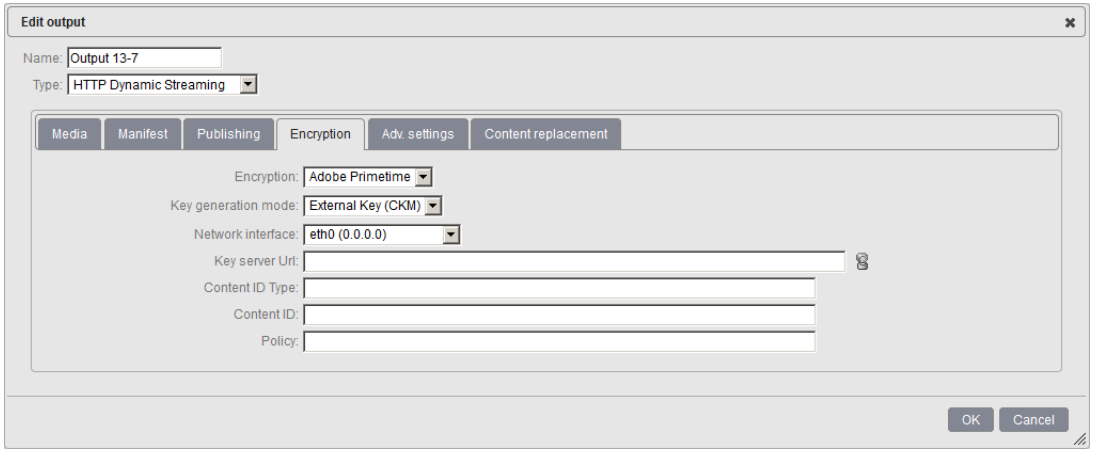
License Server URL URL of the license server.

Policy Select the policy to apply in the drop-down list.
Leave to **none** if you don't need specific policies.

Note: To manage policies, refer to "Adding a policy" on page 33.

External key (CKM) generation

CKM encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server

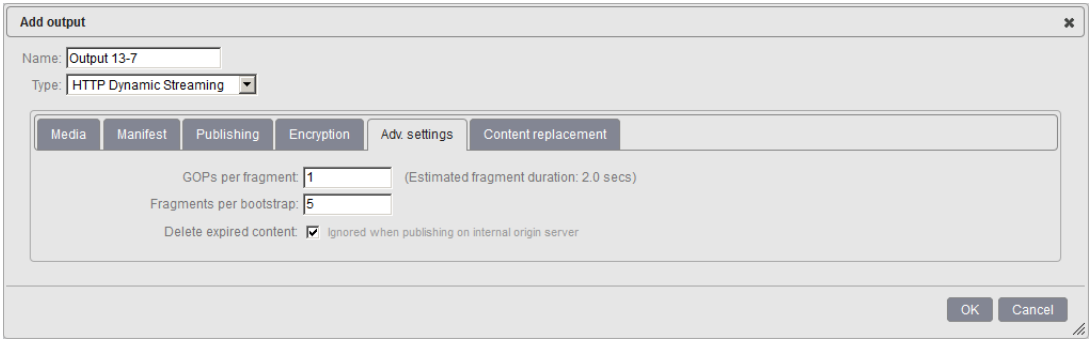
Content ID Type Content ID class

Content ID Parameter to uniquely identify the channel to encrypt.

Policy Parameter that defines the usage rules of the encrypted content

Advanced Settings

Advanced settings configuration



This section lets you configure advanced settings for the output:

GOPs per fragment Specify the number of GOPs to be inserted inside one HDS fragment.

Fragments per bootstrap Specify the number of fragments to include inside one bootstrap.

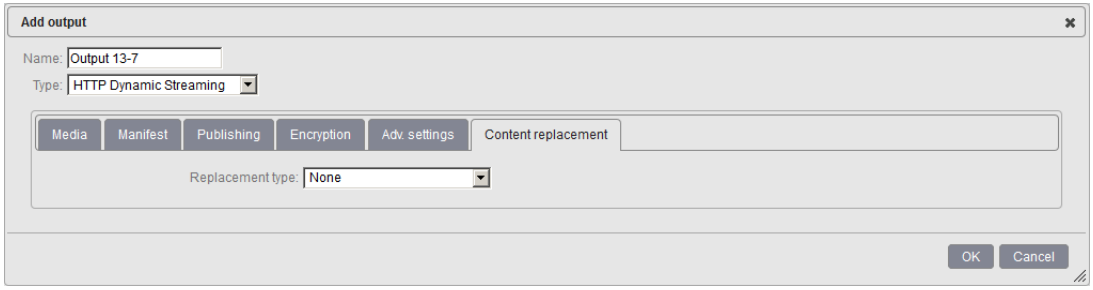
Delete expired content Specify whether MediaFirst Video Processing - Packaging needs to leave content while publishing onto CDN's origin server.

Note: This parameter is ignored when publishing on the internal origin server.

Note: On a profile stop, in HDS mode, the latest chunks remain on the publishing server despite the selection of the **Delete expired content** checkbox.
To clean up remaining chunks, you can set up and run a periodically script that will delete the chunks.

Content replacement

Content replacement



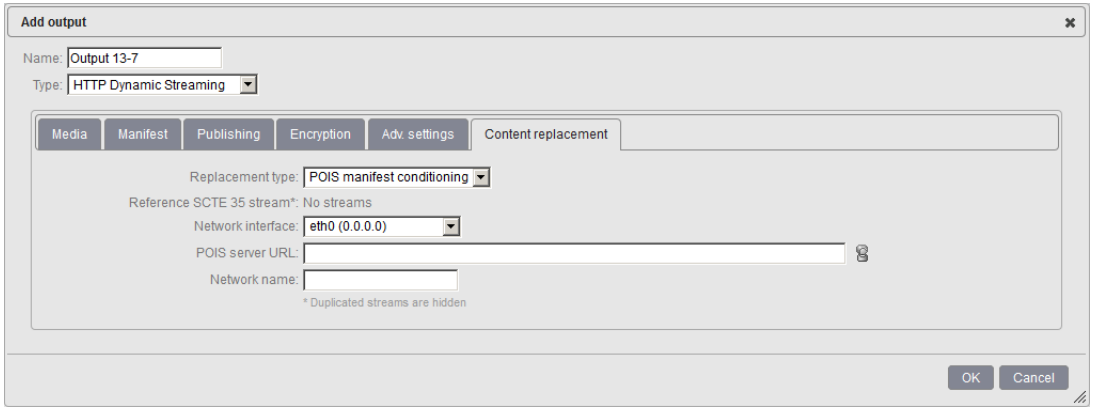
Linear ad insertion in HDS consists replacing the URLs referencing the ad chunks by new ones (local/regional ad) within the playlist. In order to achieve this, the following strategy can be envisioned:

- **URL substitution (POIS manifest conditioning)**

Note: By default, Content replacement mode is set to **None** and therefore not activated.

POIS manifest conditioning

POIS manifest conditioning



Replacement type Select POIS playlist conditioning

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived.

Network interface Select the network interface to be used.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

POIS server URL Enter the POIS (Placement Opportunity Information Service) server URL. Upon MFVP - Packaging placement opportunity notification, POIS will either return a list of URLs to insert in place of the initial one, or will return specific tags to be inserted within the playlist

Network name Enter the name of the Network.

If you have ticked the **Hide duplicated streams** checkbox during the service's input configuration, duplicated private streams won't be visible. To make them visible, you need to untick the **Hide duplicated streams** checkbox.

DASH specific output settings

When you set the **Output type** to **DASH,** specific tabs are displayed:

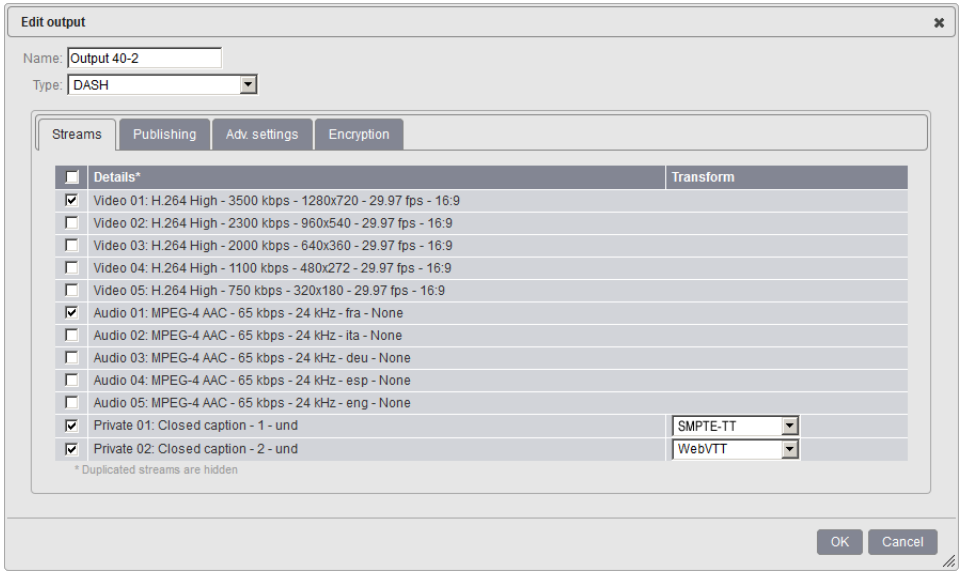
- **Streams**
- **Publishing**
- **Advanced settings**
- **Encryption**

Streams

Within Streams section, you can select the data you need to be part of your Smooth Streaming. You can select:

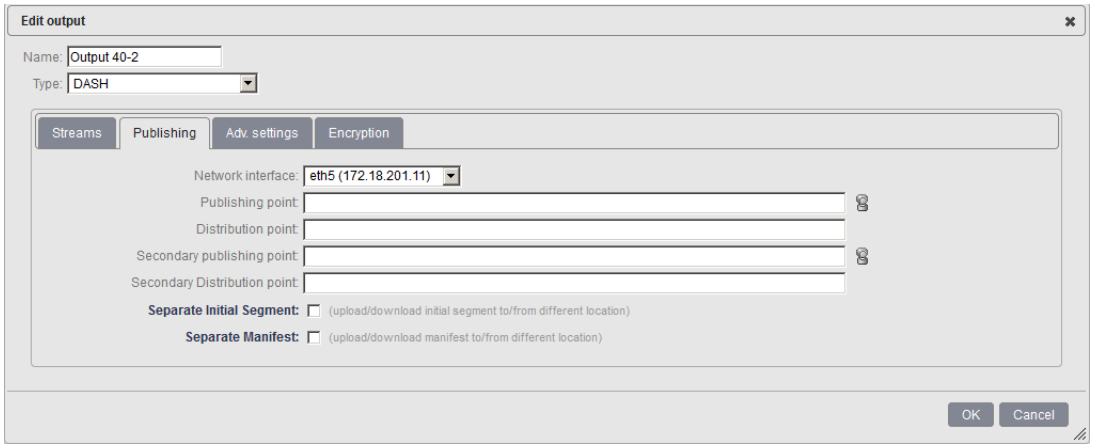
- Video streams
- Audio streams
- Private data such as DVB-Teletext, DVB subtitling or Closed Caption (converted into Webvtt & SMPTE-TT)

Streams



Publishing

Publishing configuration



To configure the publishing, define the following parameters:

Network interface Select the Ethernet interface used for output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point Primary server publishing URL. This is where segments are published.

Note: Publishing points used must not be used in another output.

Distribution point URL referenced within the manifest, and used by the player to request segments.

Secondary Publishing point Secondary server publishing URL. This is where segments are published.

Secondary Distribution point URL referenced within the manifest, and used by the player to request segments.

If you need to publish segment in a separate location, check the **Separate Initial Segment** checkbox and configure Stream publishing as explained above.

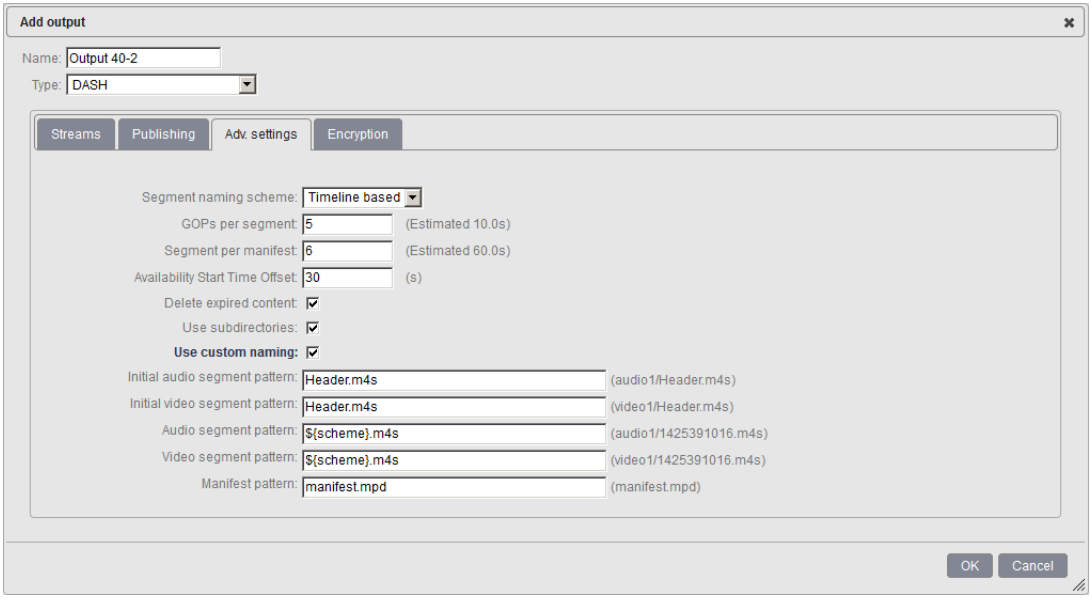
If you need to publish fragments in a separate location, check the **Separate Manifest** checkbox and configure segments publishing as explained above.

If you need to publish keys in a separate location, check the **Separate keys** checkbox and configure keys publishing as explained above.

If you need to split fragments publishing in several subdirectories, check the **Use subdirectories** checkbox and specify the folder roll-over frequency.

Advanced Settings

Advanced Settings



Select the appropriate value for each parameter:

Segment naming scheme — You can either select:
Timeline based
Index based

GOPs per segment — Specify the number of GOPs to include inside one segment.
Default value is set to 5

Note: GOP duration is set at the input configuration level.

Segment per manifest — Defines the depth of segments to keep.
Default value is set to 6

Availability Start Time Offset
Offset to be applied to the start time
Default value is set to 30

Delete expired content
Specify whether MediaFirst Video Processing - Packaging needs to leave content while publishing onto CDN's origin server.

Note: This parameter is ignored when publishing on the internal origin server.

Note: On a profile stop, the latest chunks remain on the publishing server despite the selection of the **Delete expired content** checkbox.
To clean up remaining chunks, you can set up and run a periodically script that will delete the chunks.

Use subdirectories
When checked, fragments publishing will be split in several subdirectories.

Use custom naming
When checked you can customize initial audio and video segment patterns, audio and video segment patterns and manifest pattern.

Default values are:

Header.m4s for initial audio and video segment patterns
${scheme}.m4s for audio and video segment patterns
You can also edit these patterns

manifest.mpd for manifest pattern

Encryption

Encryption configuration

By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

MFVP - Packaging supports the following encryption mode:

- **Common Encryption**
- **Playready Encryption**
- **Marlin MS3 Encryption**
- **Widevine Encryption**

Common Encryption

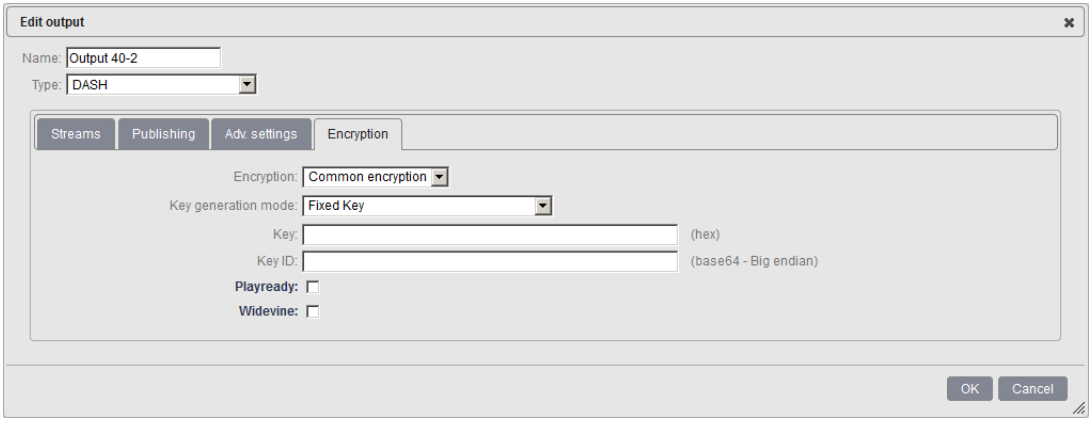
The common encryption scheme defines a shared format that can be used by one or more digital rights and key management systems to decrypt a same content protected by different DRM systems.

Available key generation modes for Common encryption are:

- Fixed key
- External key (Bouygues Telecom interface)
- External key (Irdeto interface)
- External key (Viaccess-Orca interface)

Fixed key generation

Fixed key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

CAS/DRM Systems Select at least one of the following encryption provider by ticking the related checkbox:

Playready
Widevine

Playready

When you select Playready compatibility encryption, enter the appropriate value provided by the encryption server:

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

License acquisition URL URL of the License Acquisition Web Server.

License UI URL URL of the non-silent License Acquisition Web Service.

Widevine

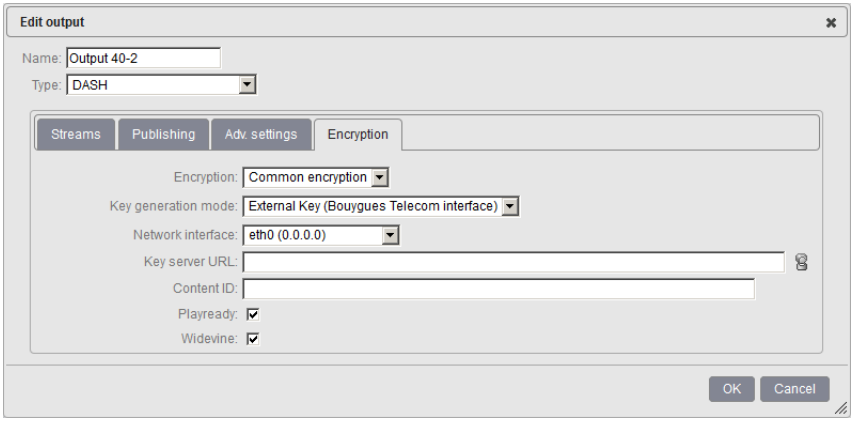
When you select Widevine compatibility encryption, enter the appropriate value provided by the encryption server:

Initialization vector Initialization Vector to be used with the key

PSSH DRM specific header provided by the license server

External key generation (Bouygues Telecom interface)

External key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See “Configuring the physical network interfaces” on page 20..

Key server URL URL of the common CAS/DRM keys server

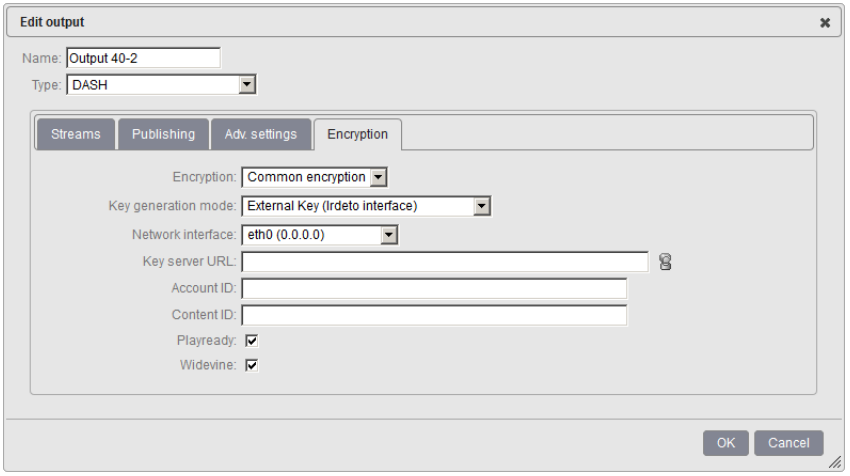
Content ID Parameter to uniquely identify the channel to encrypt

CAS/DRM Systems Select at least one of the following encryption provider by ticking the related checkbox:

Playready
Widevine

External key generation (Irdeto interface)

External key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the common CAS/DRM keys server

Account ID Parameter to uniquely identify the content to encrypt.

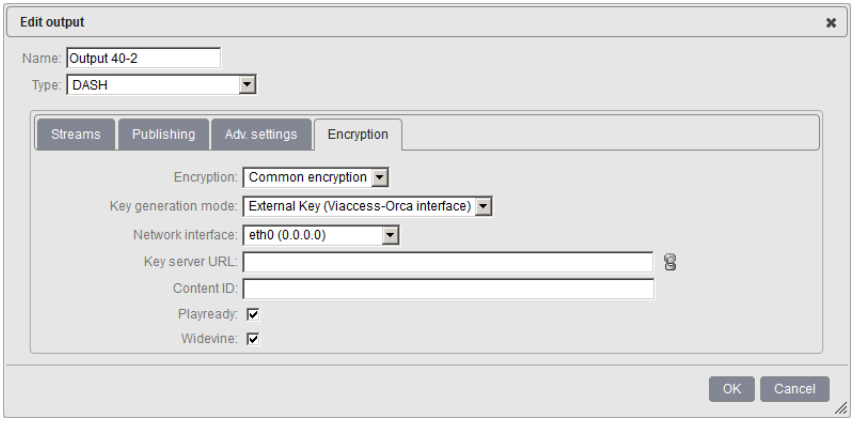
Content ID Parameter to uniquely identify the channel to encrypt.

CAS/DRM Systems Select at least one of the following encryption provider by ticking the related checkbox:

Playready
Widevine

External key generation (Viaccess-Orca interface)

External key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the common CAS/DRM keys server

Content ID Parameter to uniquely identify the channel to encrypt

CAS/DRM Systems Select at least one of the following encryption provider by ticking the related checkbox:

Playready
Widevine

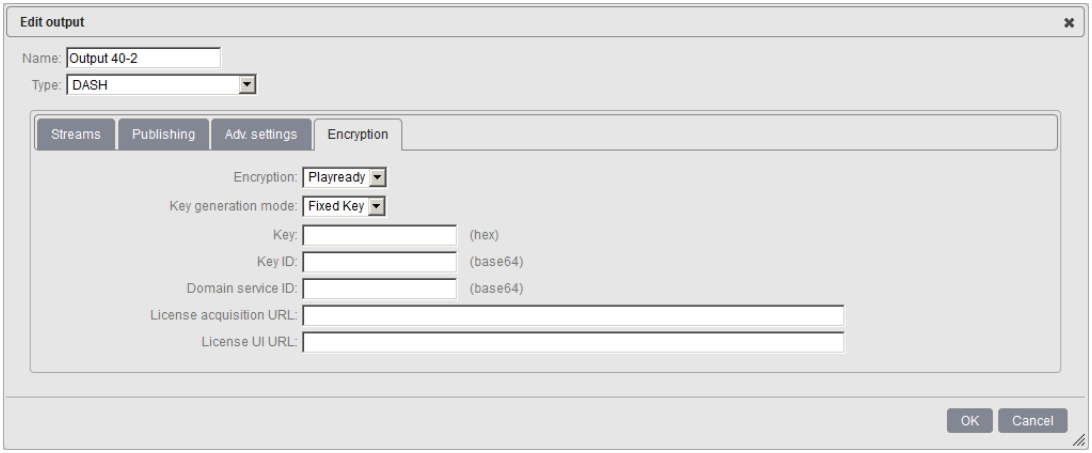
Playready Encryption

Available key generation modes for Playready encryption are:

- Fixed key
- External key

Fixed key generation

Fixed key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.

Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

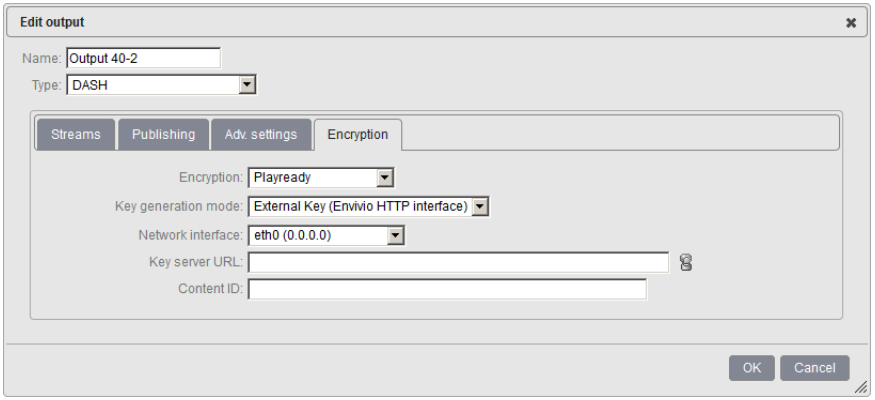
Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

License acquisition URL URL of the License Acquisition Web Server.

License UI URL URL of the non-silent License Acquisition Web Service.

External key generation (Envivio HTTP interface)

External key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the common CAS/DRM keys server

Content ID Parameter to uniquely identify the channel to encrypt.

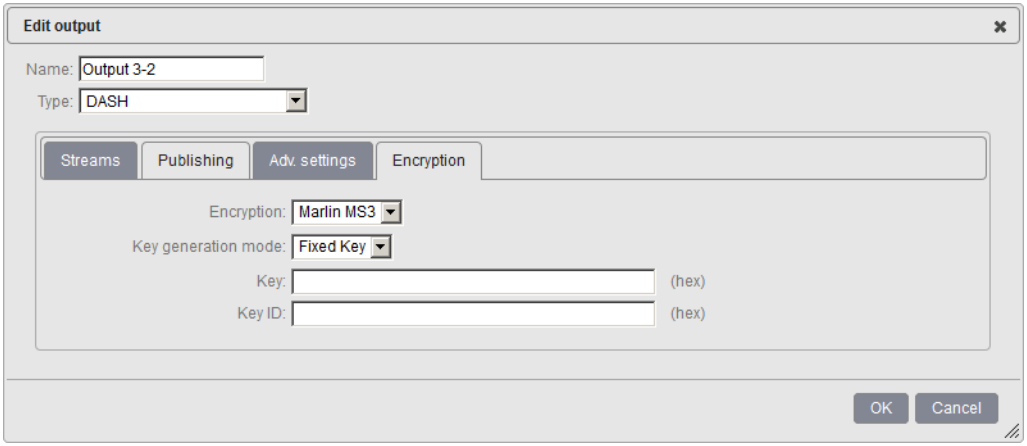
Marlin MS3 Encryption

Available key generation mode for Marlin MS3 encryption is:

- Fixed key

Fixed key generation

Fixed key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

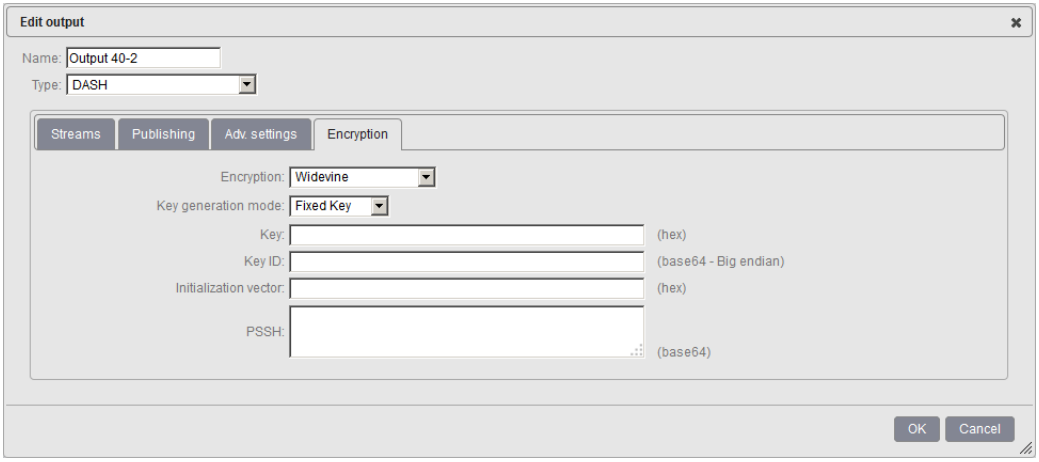
Widevine Encryption

Available key generation modes for Widevine encryption are:

- Fixed key
- External key

Fixed key generation

Fixed key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

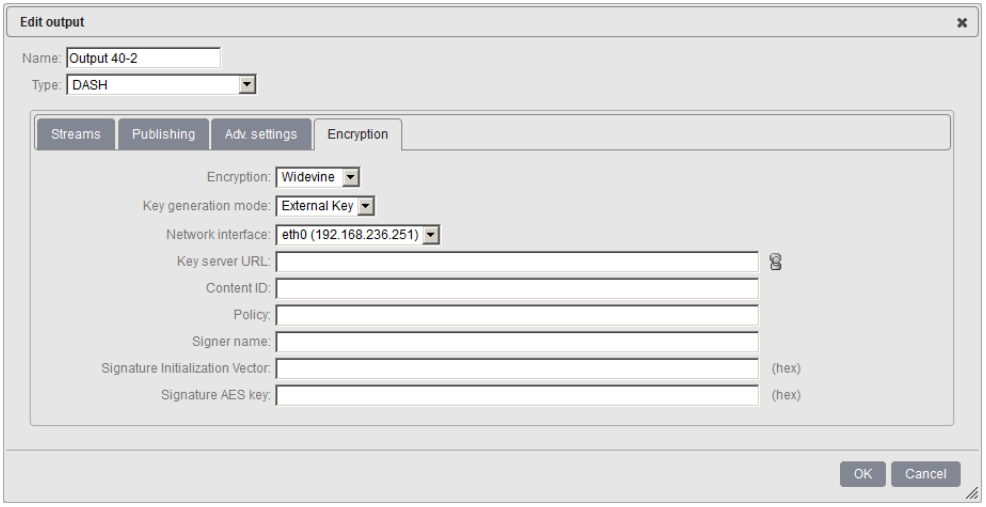
Key ID 16-byte identifier used to uniquely identify the key within the system.

Initialization vector Initialization Vector to be used with the key

PSSH DRM specific header provided by the license server

External key generation

External key encryption



Enter the appropriate value provided by the encryption server for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20..

Key server URL URL of the CAS/DRM keys server

Content ID Parameter to uniquely identify the channel to encrypt

Policy Parameter that defines the usage rules of the encrypted content

Signer name Name of the encryption key signer

Signature Initialization vector Signature Initialization Vector to be used with the key

Signature AES key AES key used for encrypting the request

HLS (VOD) specific output settings

This output is dedicated to create files in real time based on a schedule. This recording schedule must be provided prior to effective program start. This recording schedule (Output to create an asset from, start-time, stop-time) is sent by a Content Management System (CMS) and follows Ericsson-defined API specifications for scheduled-recording outputs (specification provided upon request).

When you set the **Output type** is set to **HTTP Live Streaming (VOD),** specific tabs are displayed:

- **Media playlists**
- **Master playlists**
- **Publishing**
- **MPEG-2 TS**
- **Encryption**
- **Advanced settings**
- **Content replacement**

HLS VOD editing

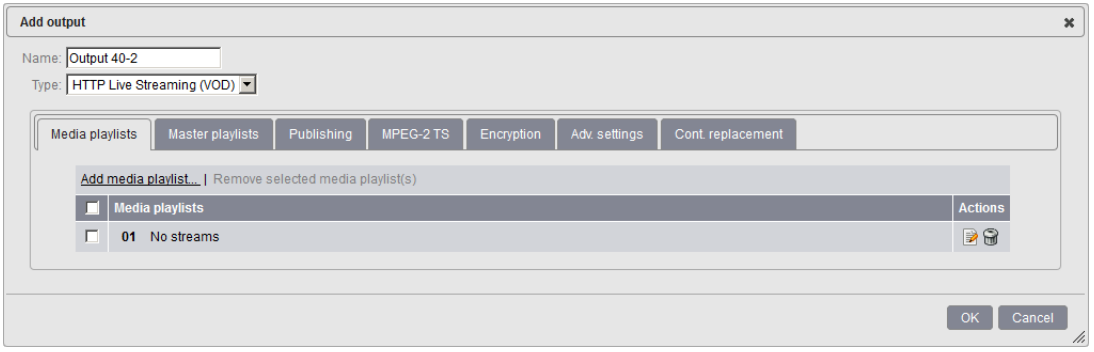
Output parameters are displayed in several tabs that you have to fill one after the other.

Media Playlist

You can add or remove media playlists and define the composition of the playlist by selecting the video stream, the audio stream, and the private data that will be sent to the output.

The media playlist references the segments per bit rate. There is one media playlist per bit rate. You can configure as many media playlists as you want.

Media playlist configuration



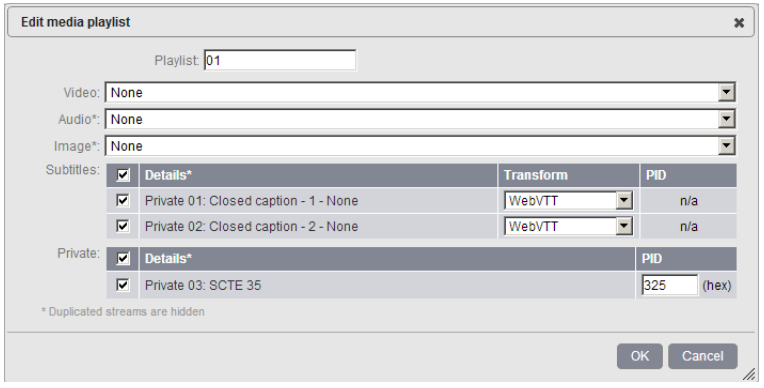
To add a new playlist, click the **Add media playlist** link on top of the table.

To remove an existing playlist, select the media playlist to be removed then click the **Remove selected media playlist(s)** link.

To edit a particular media playlist, follow these steps:

1 Click the corresponding button.

Playlist editing

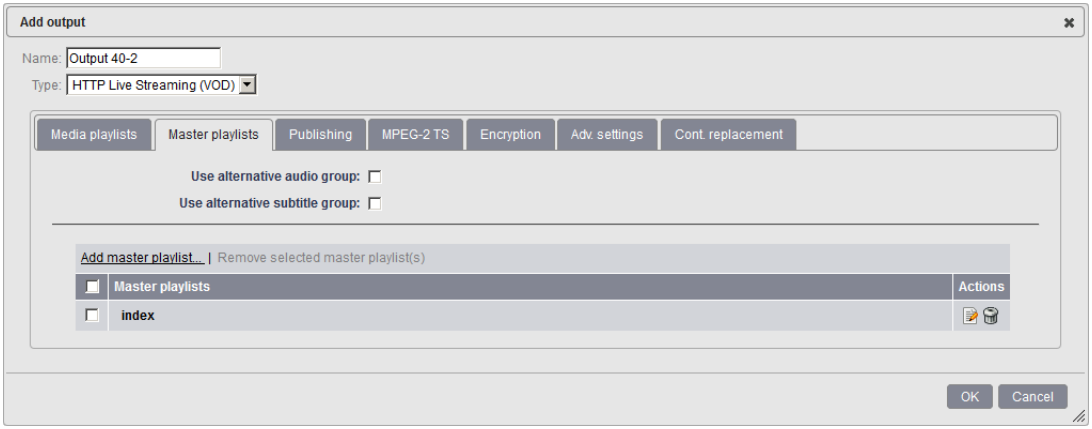


2 Select the video, audio, image and associated private streams then click the **OK** button.

3 The playlist is added to the list of playlists.

Master playlists

Master playlist



Master playlists reference the different bit rates available, and thus the different playlists the device can have access to. In other terms, a master playlist is a pointer to the media playlists, and you can configure the playlists as you want.

Note: The master playlist name must be unique and different from any other playlist name.

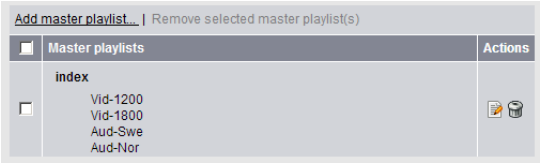
To add a new master playlist, click the **Add master playlist** link on top of the table.

To remove an existing master playlist, select the master playlist to be removed then click the **Remove selected master playlist(s)** link.

To edit a particular master playlist, follow these steps:

1 Click the corresponding button.

Master playlist



2 Select the playlists then click the **OK** button.

3 The master playlist is added to the list of master playlists.

You can create as many master playlist as you want. A practical use case is to generate master playlist for different devices like for example:

- iPhones
- iPads
- Smartphones

iOS 5 related features

Alternative audio group

This feature lets you package each media stream (audio or video stream) in a flexible manner.

An audio group (*rendering group* in Apple specifications) aggregates several audio playlists to propose an alternative rendition of the audio for a given video stream. For instance, an English audio playlist can be replaced by a French or a Spanish audio playlist. Inside a group, a default playlist can be set.

To use this feature, you must first create audio-only and video-only playlists, then you will associate the audio and video streams into one or more master playlist(s).

If you want to define an alternative audio group, follow these steps:

1 Create audio-only and video + audio or video-only playlists (*see* "Media playlists" on page 63)

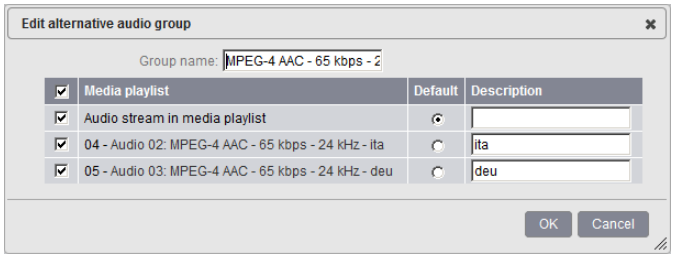
2 From the Master Playlist tab, tick the **Use alternative audio group** checkbox. A new table is displayed.

3 In the alternative audio group table, you can either:

- **click the Auto-configure link to automatically create alternative audio groups based on the audio-only playlists you created,**
- **or click the Add Alternative Audio Group... link to create a new group then click the Edit link to define the composition of your alternative audio group. Select the default audio stream and add a description.**

Note: Only audio streams with identical codec/bitrate/channels/sampling rate can be associated in a same group.

Editing alternative audio group



Default audio in media playlist

Depending on the diversity of audio input streams, the alternative audio group may contain several audio streams. You can set the default audio stream to be played by clicking the default button in front of the selected audio stream.

You can set as default audio stream:

- **The Audio stream in media playlist**

Note: This feature is only available if a video+audio Media playlist has been configured.

- **One of the audio-only streams set in the Media playlist tab**

4 The alternative audio group is added to the table:

Alternative audio group table

5 In the master playlist table, click the **Add** link to create a new master playlist, then click the **Edit** link.

6 Select the alternative audio group you want to associate to the video stream then click the **OK** button.

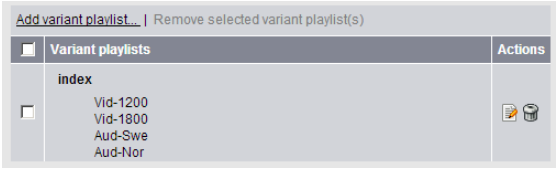
Editing master playlists

7 You can check the **I-frame playlist** option to reference I-frames in the stream.

Note: To optimize rapid forward and reverse playback, Apple introduced the notion of I-Frame playlist in iOS5.

8 The master playlist is added to the table:

Master playlists table



Alternative subtitle group

This feature lets you package each media stream (audio or video stream) in a flexible manner.

A subtitle group aggregates several subtitle playlists to propose an alternative rendition of the subtitle for a given video stream. For instance, an English subtitle playlist can be replaced by a French or a Spanish subtitle playlist. Inside a group, a default playlist can be set.

To use this feature, you must first create audio-only, video-only and subtitle-only playlists, then you will associate the subtitle, audio and video streams into one or more master playlist(s).

If you want to define an alternative subtitle group, follow these steps:

1 Create audio-only, video-only and subtitle-only playlists (*see* "Media playlists" on page 63)

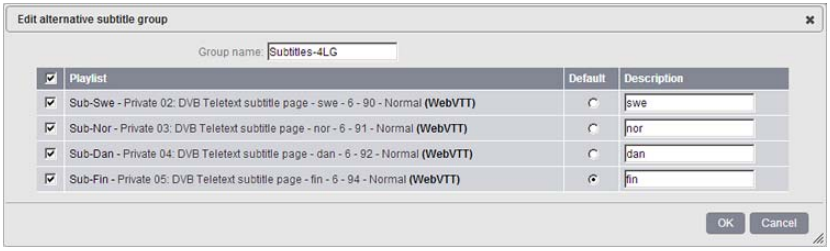
2 From the Master Playlist tab, tick the **Use alternative subtitle group** checkbox. A new table is displayed.

3 In the alternative subtitle group table, you can either:

- **click the Auto-configure link to automatically create alternative audio groups based on the subtitle-only playlists you created,**
- **or click the Add Alternative subtitle Group... link to create a new group then click the Edit link to define the composition of your alternative audio group. Select the default audio stream and add a description.**

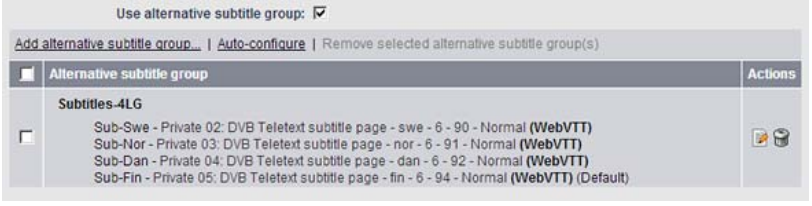
Note: Alternative Subtitle Group only works with teletext subtitles (Closed-caption and webVTT).

Editing alternative subtitle groups



4 The alternative subtitle group is added to the table:

Alternative subtitle group table



5 In the master playlist table, click the **Add** link to create a new master playlist, then click the **Edit** link.

6 Select the alternative subtitle group you want to associate to the video stream then click the **OK** button.

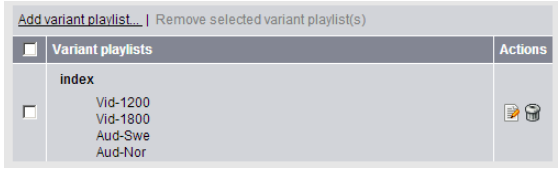
Editing master playlists

7 You can check the **I-frame playlist** option to reference I-frames in the stream.

Note: To optimize rapid forward and reverse playback, Apple introduced the notion of I-Frame playlist in iOS5.

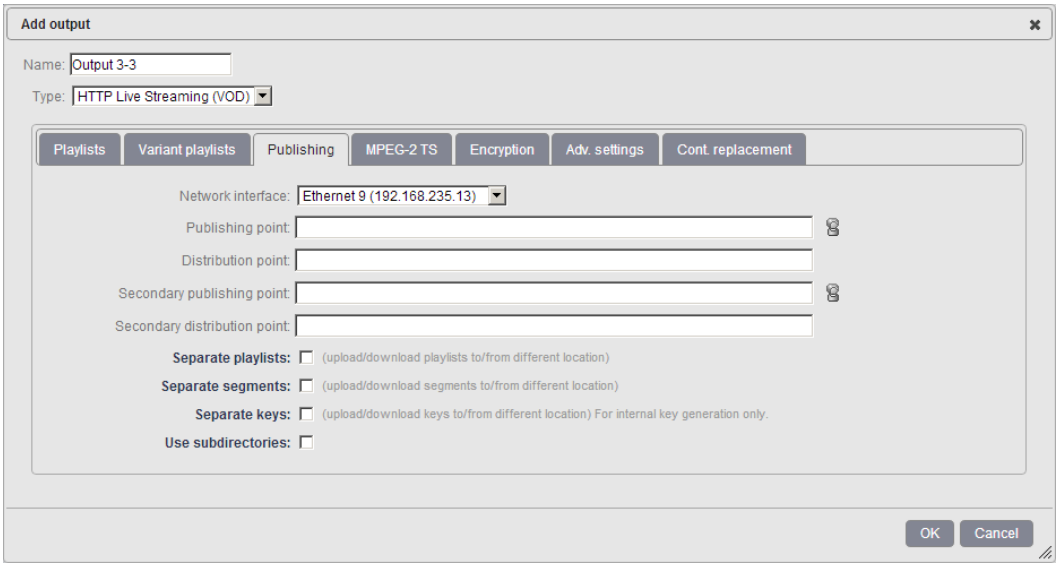
8 The master playlist is added to the table:

Master playlists table



Publishing

Publishing configuration



To configure the publishing, define the following parameters:

Network interface — Select the Ethernet interface used for output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20..

Publishing point — Primary server publishing URL. This is where MPEG2–TS fragments and index files are published.

Note: Publishing points used must not be used in another output.

Distribution point — URL referenced within the playlist, and used by the player to request fragments.

Secondary Publishing point — Secondary server publishing URL. This is where MPEG2–TS fragments and index files are published.

Secondary Distribution point — URL referenced within the playlist, and used by the player to request fragments.

If you need to publish playlists in a separate location, check the **Separate playlists** checkbox and configure playlist publishing as explained above.

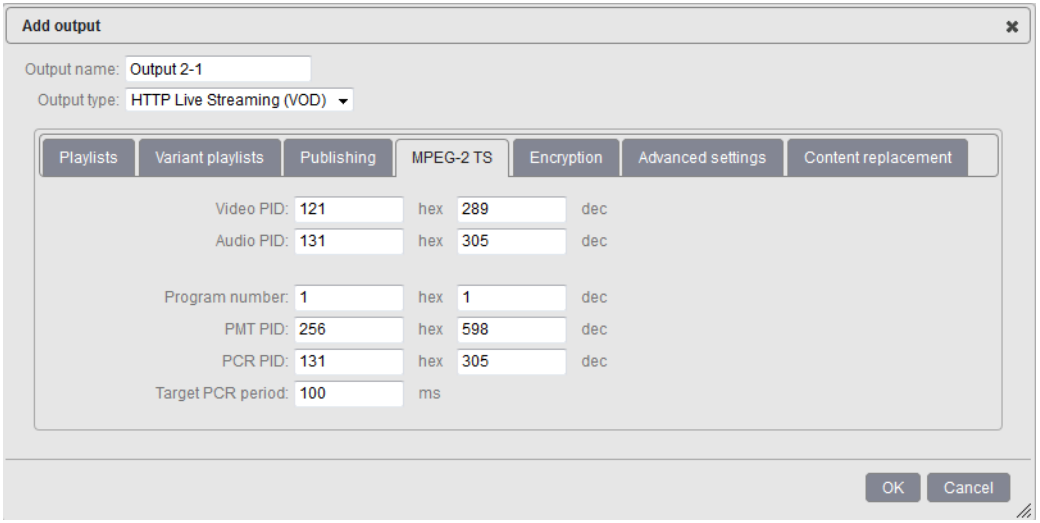
If you need to publish fragments in a separate location, check the **Separate segments** checkbox and configure segments publishing as explained above.

If you need to publish keys in a separate location, check the **Separate keys** checkbox and configure keys publishing as explained above.

If you need to split playlists publishing in several subdirectories, check the **Use subdirectories** checkbox and specify the folder roll-over frequency.

MPEG-2 TS

MPEG-2 TS configuration



Configure the following TS settings:

Video PID PID (Packet IDentifier) of the video stream.

Possible values: from **0x0010** to **0x1FFE** *(see "PIDs consistency rules" on page 75).*

If you set the **Output type** to **HTTP Live Streaming**, all the video streams will have the same PID as the first video stream.

Audio PID MPEG-2 TS parameter. PID of the audio stream.

Possible values: from **0x0010** to **0x1FFE**

See "PIDs consistency rules" on page 75.

Program number Program identifier.

Possible values: from **0x0001** to **0xffff** (hexadecimal) or from 1 to 65 535 (decimal).

PMT PID PID (Packet IDentifier) of the PMT (Program Map Table) stream.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).

PCR PID PID of the PCR, Program Clock Reference used to synchronize the video and audio packets.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal) or from 16 to 8190 (decimal).

Target PCR Period PCR period (in milliseconds)

Possible values: from **20** to **1000** ms.

PIDs consistency rules

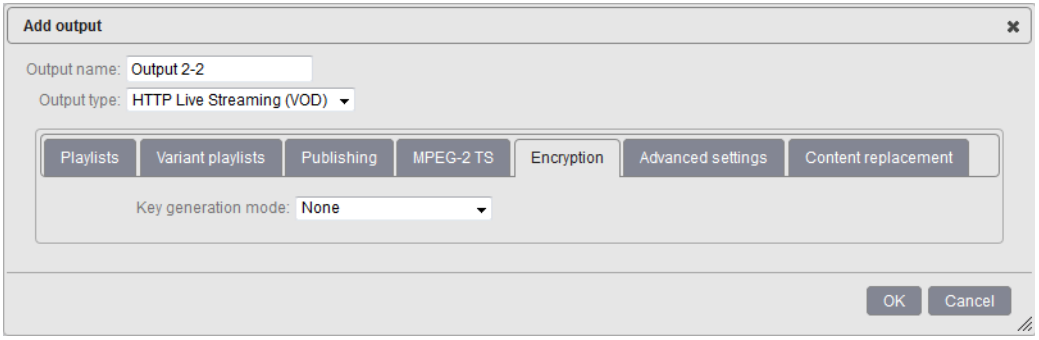
- PID must be between **0x0010** and **0x1ffe**.
- PMT PID must be different from video and audio PIDs.
- Video PID must be different from audio PID.
- PCR PID can be equal to PMT PID or to Video/Audio PIDs.

In HTTP Live Streaming output, the audio and video PES packets are interleaved in timestamp order, and multiple audio frames are concatenated to form a single PES packet. This can result in long sequences of non-audio TS packets within a TS segment. If the PCR PID is equal to the audio PID, then the PCR field is present only on audio TS packets.

In HTTP Live Streaming output, the TS is multiplexed using an ABR model, so the long sequence of non-audio TS packets will result in a large PCR gap, which may exceed the configured PCR period.

Encryption

Encryption



By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

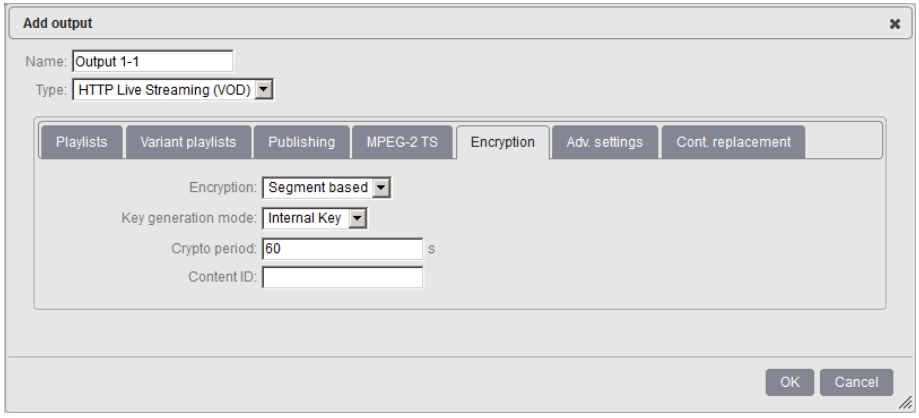
MFVP - Packaging supports the following encryption mode:

- **Segment based**

Segment based - Internal key generation

When you select internal key generation, MFVP - Packaging generates internally a unique AES-128 encryption key (based on profile parameter).

Encryption: Internal key generation



Select the appropriate value for each parameter:

Crypto period Defines how long (in seconds) the key will be used. Default value: **60** s.

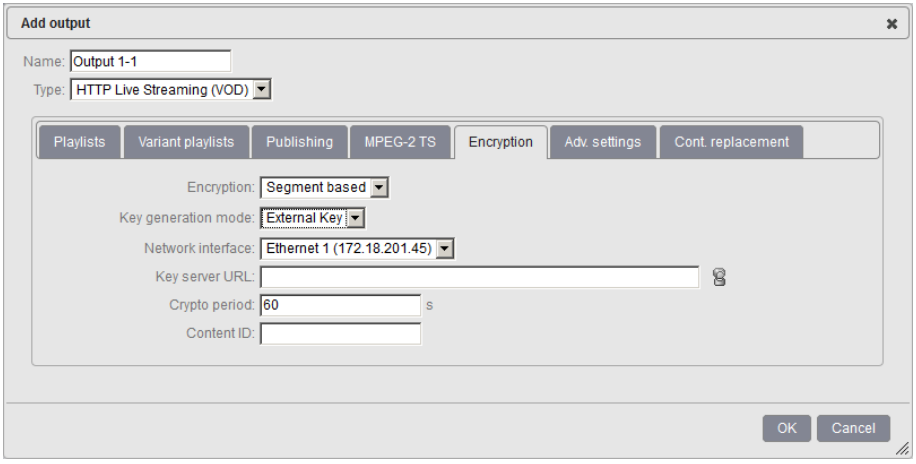
Content ID Parameter to uniquely identify the channel to encrypt

Segment based - External key generation

In this mode, MediaFirst Video Processing - Packaging will communicate with a third-party key server, and request the encryption key, as well as the key distribution point to be referenced within the playlist.

Note: For more details about CAS and DRM interoperability, please contact Ericsson.

External key generation



Select the appropriate value for each parameter:

Network interface Select the interface used to exchange key.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20.

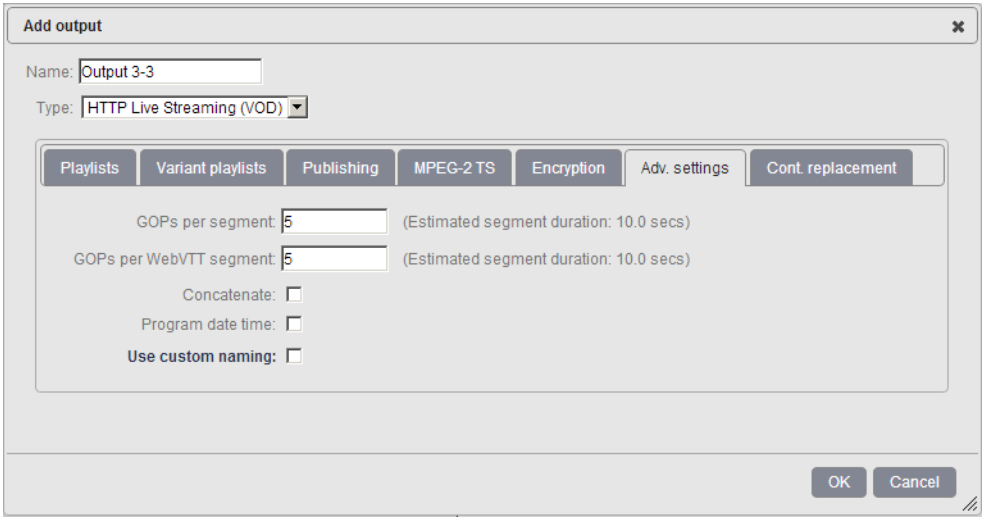
Key server URL URL of the CAS/DRM keys server.

Crypto period Specify how often MediaFirst Video Processing - Packaging will refresh the encryption key (request to key server).

Content ID Parameter to uniquely identify the channel to encrypt.

Advanced settings

Advanced settings



This section lets you configure advanced settings for the output:

GOPs per segment Specify the number of GOPs to include inside one segment. GOP duration is set at the input configuration level.

GOPs per WebVTT segment Specify the number of GOPs to include inside one WebVTT segment. GOP duration is set at the input configuration level.

Concatenate If you check this option, all HLS segments are published using byte range mode (one file per bitrate)

Program date time If you check this option, a program date information is inserted in the playlist. This tag associates the first sample of a media segment with an absolute date and/or time.

Use custom naming When checked you can customize segment, WebVTT segment, playlist, master playlist and IFrame playlist name the following way:

`${startime}`: time when the data was published by MediaFirst Video Processing - Packaging.
`${id}`: Id of the channel
`${seq}`: sequence number
`${variantid}`: name of the master playlist

VOD Job creation

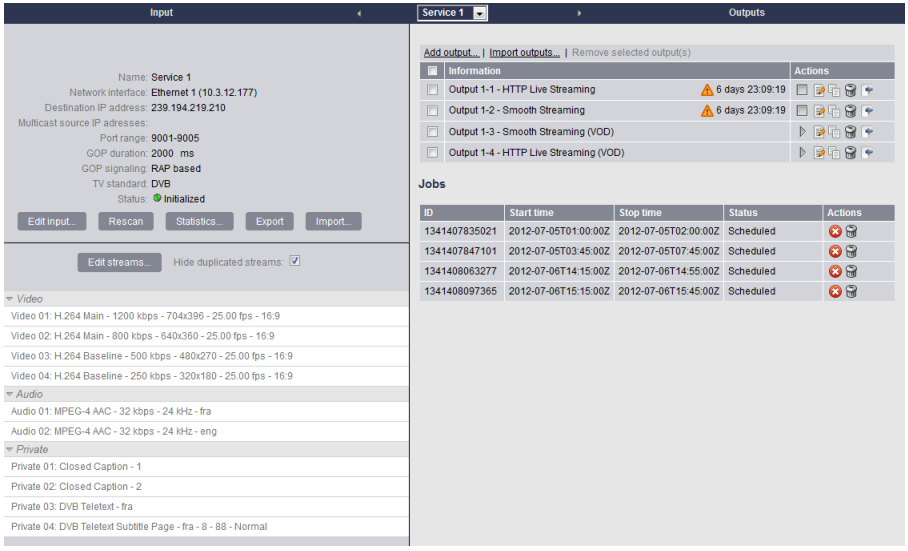
Once the VOD HLS outputs have been correctly set up, VOD assets can be either manually started or scheduled through an external interface.

To start manually, click the ▶ icon next to the output.

To schedule one or several assets, you need to use a third party scheduler that will interface with MFVP - Packaging.

Note: Scheduling API specification can be provided by Ericsson upon request.

Scheduled VOD jobs follow-up



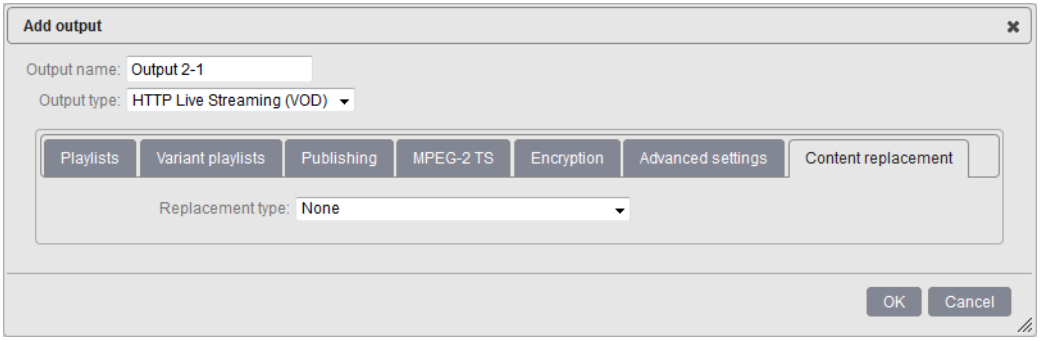
On the service configuration main panel, you can view, cancel or remove the VOD jobs that have been scheduled.

Note: Once a scheduled job is finished, it is removed from the service configuration page.

However, Jobs history status is available from the API 14 days after their creation.

Content replacement

Content replacement



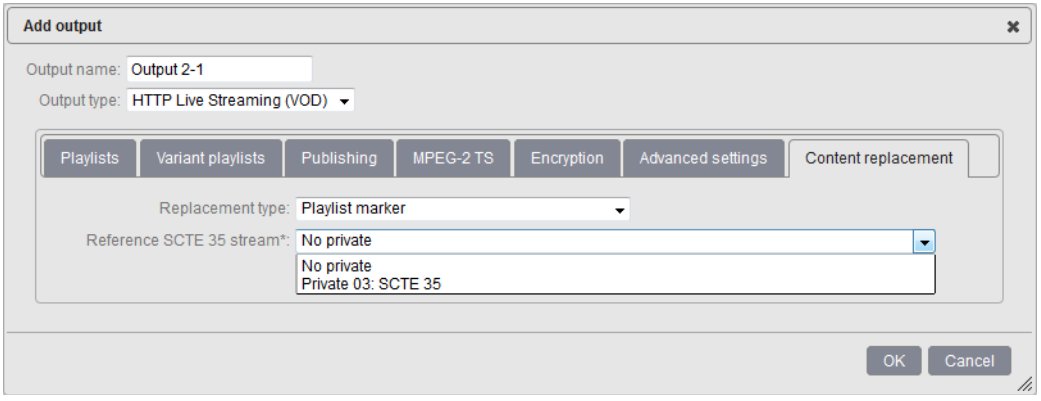
Linear ad insertion in HLS consists in inserting tags or replacing the URLs referencing the ad chunks by new ones (local/regional ad) within the playlist. In order to achieve this, two strategies/ecosystems can be envisioned:

- **Splice Marker playlist insertion (Playlist Marker)**
- **URL substitution (POIS playlist conditioning)**

Note: By default, Replacement type is set to **None** and therefore not activated.

Playlist Marker

Playlist Marker



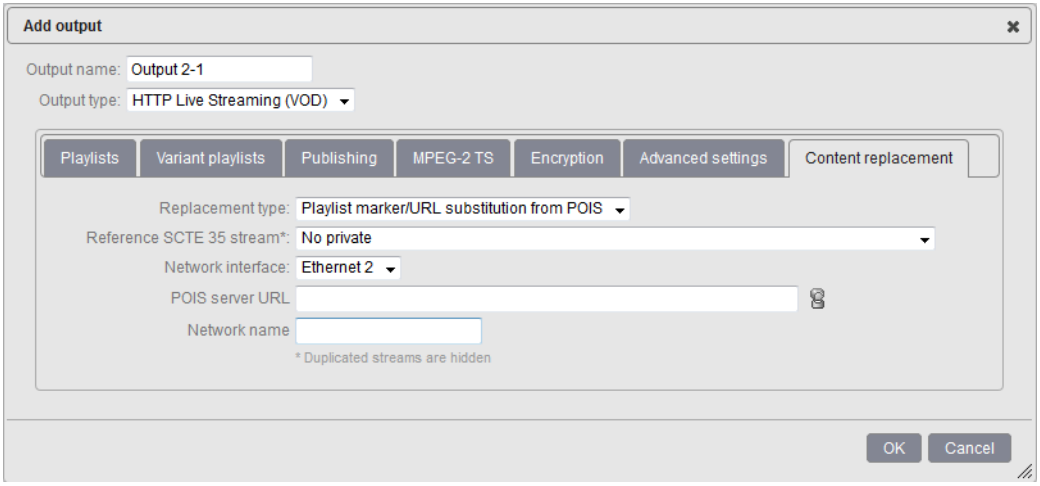
Replacement type Select Playlist Marker

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived

Specific EXT-X-CUE-IN and EXT-X-CUE-OUT tags will be inserted within the hls playlist to delimit ad boundaries.

POIS playlist conditioning

Playlist market/URL substitution from POIS



Replacement type Select POIS playlist conditioning

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived.

Network interface Select the network interface to be used.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20.

POIS server URL Enter the POIS (Placement Opportunity Information Service) server URL. Upon MFVP - Packaging placement opportunity notification, POIS will either return a list of URLs to insert in place of the initial one, or will return specific tags to be inserted within the playlist

Network name Enter the name of the Network.

Note: If you have ticked the **Hide duplicated streams** checkbox during the service's input configuration, duplicated private streams won't be visible. To make them visible, you need to untick the **Hide duplicated streams** checkbox.

Smooth Streaming (VOD) specific output settings

This output is dedicated to create files in real time based on a schedule. This recording schedule must be provided prior to effective program start. This recording schedule (Output to create an asset from, start-time, stop-time) is sent by a Content Management System (CMS) and follows Ericsson-defined API specifications for scheduled-recording outputs (specification provided upon request).v

When you set the **Output type** to **Smooth Streaming,** specific tabs are displayed:

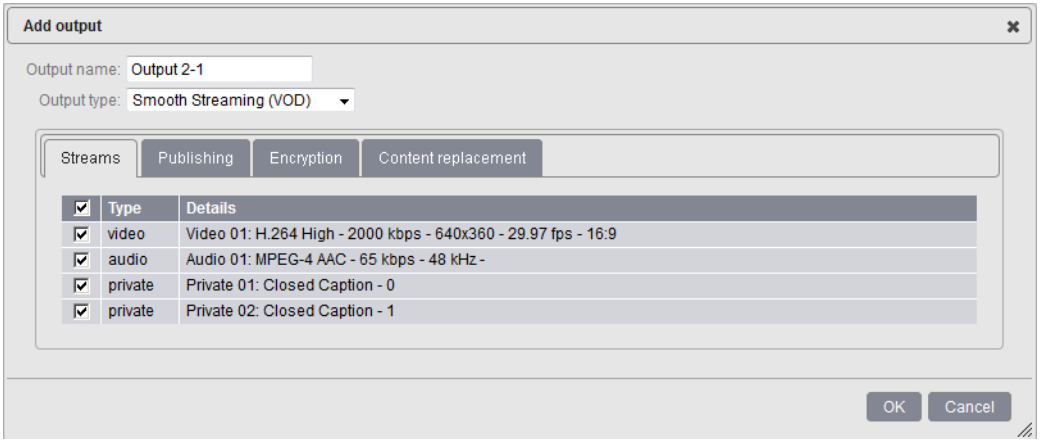
- **Streams**
- **Publishing**
- **Encryption**
- **Content replacement**

Streams

Within Streams section, you can select the data you need to be part of your Smooth Streaming. You can select:

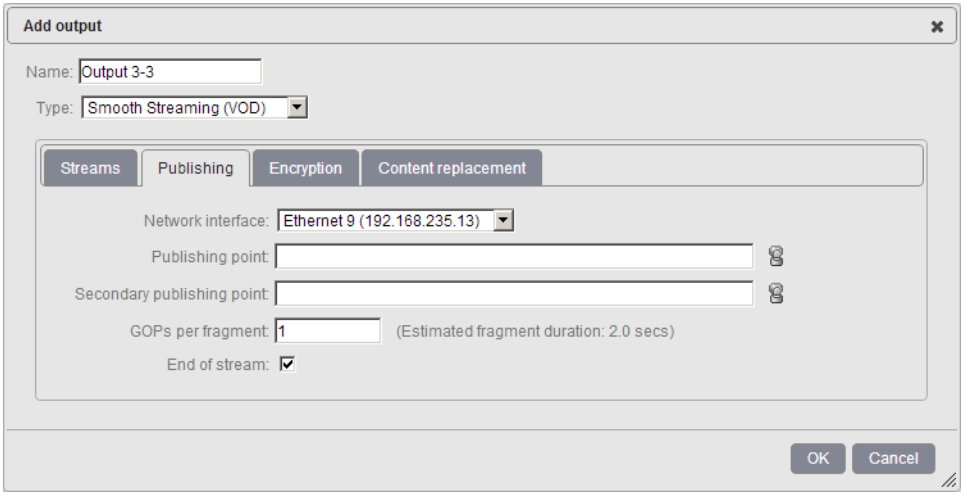
- Video streams
- Audio streams
- Private data such as DVB-Teletext, DVB subtitling or Closed Caption (converted into DFXP), or SCTE-35 triggers.

Streams



Publishing

Publishing configuration



Select the appropriate value for each parameter:

Network interface Select the interface used for the output streaming.

We recommend using network interfaces that have been configured as **Default**, **Output Push** or **Output Pull & Push**. See "Configuring the physical network interfaces" on page 20.

Publishing point Specify the URL of the IIS streaming server (or any IIS compatible origin server).

Note: Publishing points used must not be used in another output.

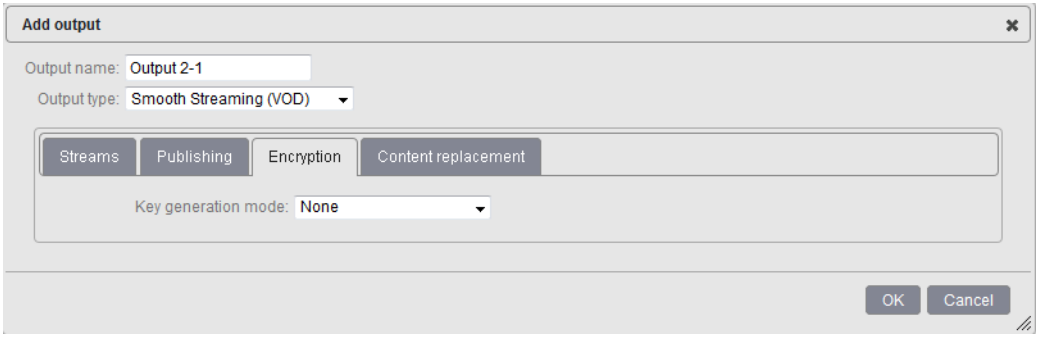
Secondary publishing point Specify an alternative publishing URL to IIS server.

GOPs per fragment Specify the number of GOPs to be inserted inside one Smooth Streaming fragment.

End of stream Check this option to send an EOS (End Of Stream) to the IIS server when the associated profile is stopped.

Encryption

Encryption



By default, the protection is not activated. If you enable the encryption, specific parameters are displayed.

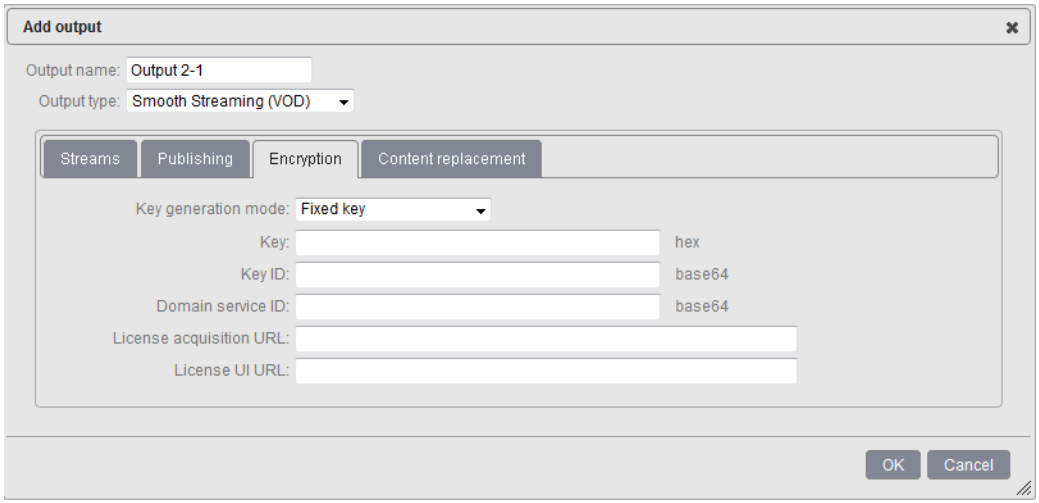
MFVP - Packaging supports two different encryption modes:

- **Fixed key**
- **External key generation**

Fixed key

When selecting fixed key encryption mode, the following parameters need to be configured:

Fixed key encryption



A set of PlayReady parameters are displayed. All these parameters have to be retrieved from PlayReady DRM keys server (or equivalent from third- party key servers).

Note: The configuration of PlayReady DRM keys server is out of the scope of this Configuration Guide.

Select the appropriate value for each parameter:

Key 16-byte AES key used for encrypting the content.
Key field has to be configured in hexadecimal value.

Key ID 16-byte identifier used to uniquely identify the key within the system.

Domain Service ID Identifier of the domain service. This unique identifier is provided by Microsoft to PlayReady technology supplier.

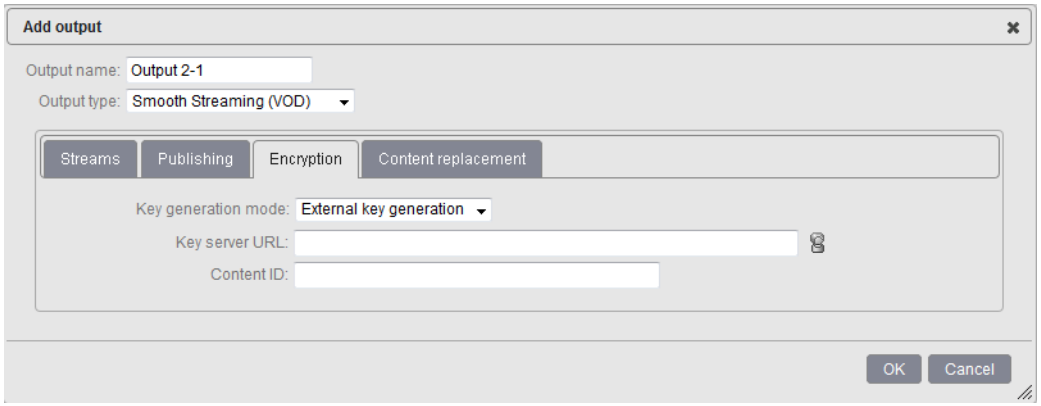
License acquisition URL URL of the License Acquisition Web Server.

License UI URL URL of the non-silent License Acquisition Web Service.

External key generation

When selecting **External key generation** mode, the following appears:

External key generation



Similar to HLS external key generation, this mode supposes that the key is generated by an external key server (Microsoft DRM keys server or equivalent from third-party CAS/DRM vendors).

Select the appropriate value for each parameter:

Key server URL URL of the DRM keys server.

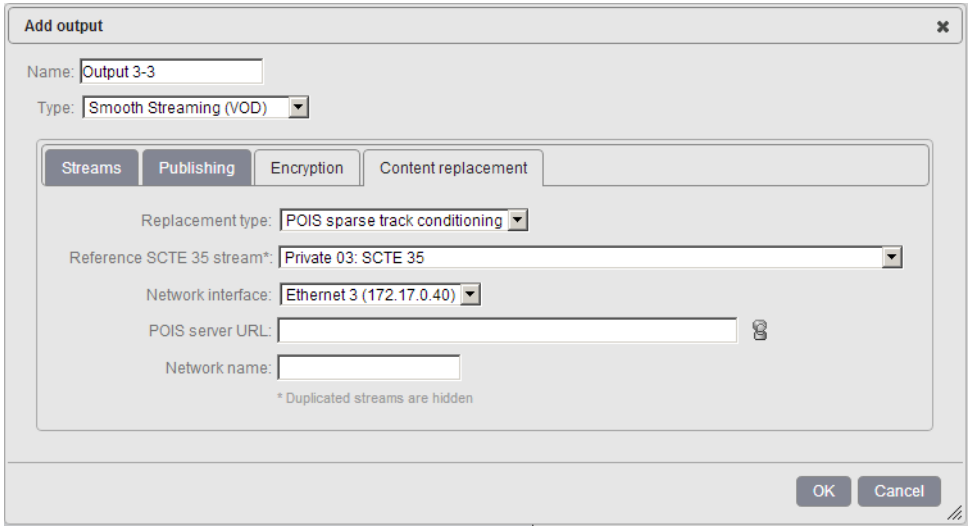
Content ID Uniquely identify the live channel to encrypt. It implies DRM key server has the knowledge of the ID and corresponding encryption key.

Content replacement

Note: By default, Content replacement mode is set to **None** and therefore not activated.

POIS Sparse track conditioning

POIS Sparse track conditioning



replacement type Select POIS Sparse track conditioning

Reference SCTE 35 stream Select the SCTE 35 marker from which splice-in and splice-out information will be derived.

Network interface Select the network interface to be used.

We recommend using network interfaces that have been configured as **Default** or **Data**. See "Configuring the physical network interfaces" on page 20.

POIS server URL Enter the POIS (Placement Opportunity Information Service) server URL. Upon MFVP - Packaging placement opportunity notification, POIS will return specific ad information to be inserted within a sparse track.

Network name Enter the name of the Network.

Note: If you have ticked the **Hide duplicated streams** checkbox during the service's input configuration, duplicated private streams won't be visible. To make them visible, you need to untick the **Hide duplicated streams** checkbox.

VOD Assets creation

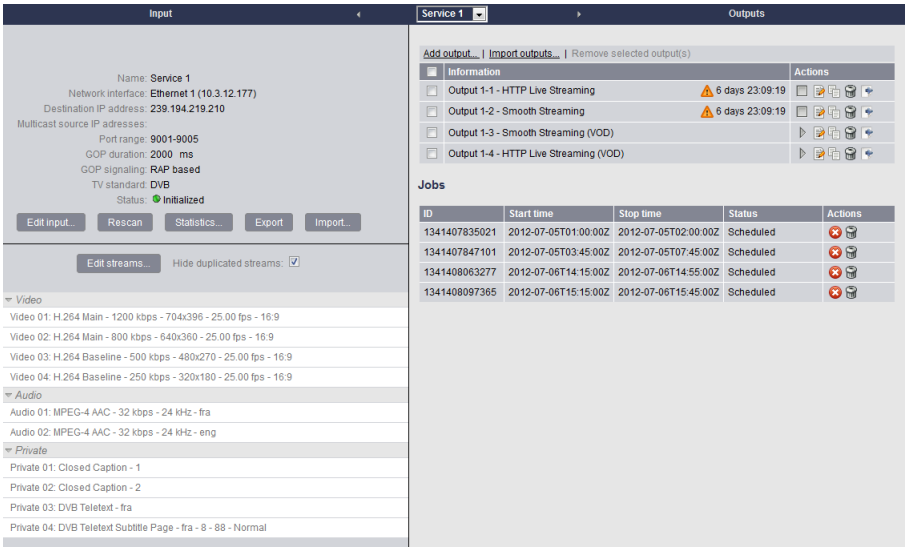
Once the VOD HLS outputs have been correctly set up, VOD assets can be either manually started or scheduled through an external interface.

To start manually, click the ▶ icon next to the output.

To schedule one or several assets, you need to use a third party scheduler that will interface with MFVP - Packaging.

Note: Scheduling API specification can be provided by Ericsson upon request.

Scheduled VOD jobs follow-up



On the service configuration main panel, you can view, cancel or remove the VOD jobs that have been scheduled.

Note: Once a scheduled job is finished, it is removed from the service configuration page. However, Jobs history status is available from the API 14 days after their creation.

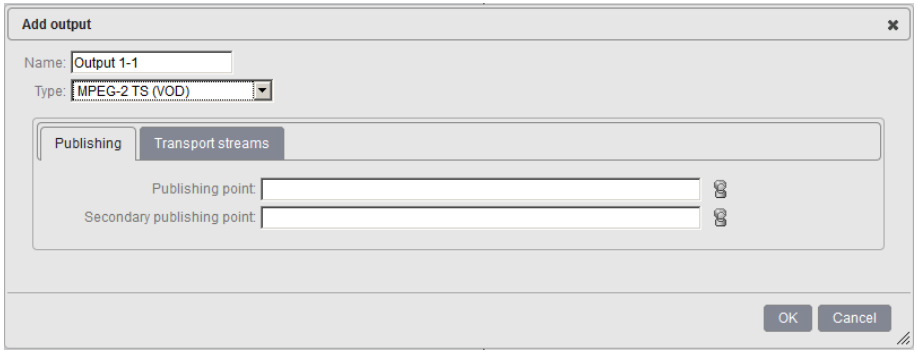
MPEG-2 TS (VOD) specific output settings

When you set the **Output type** is set to **MPEG-2 TS (VOD),** specific tabs are displayed:

- **Publishing**
- **Transport streams**

Publishing

Publishing parameters



Select the appropriate value for each parameter:

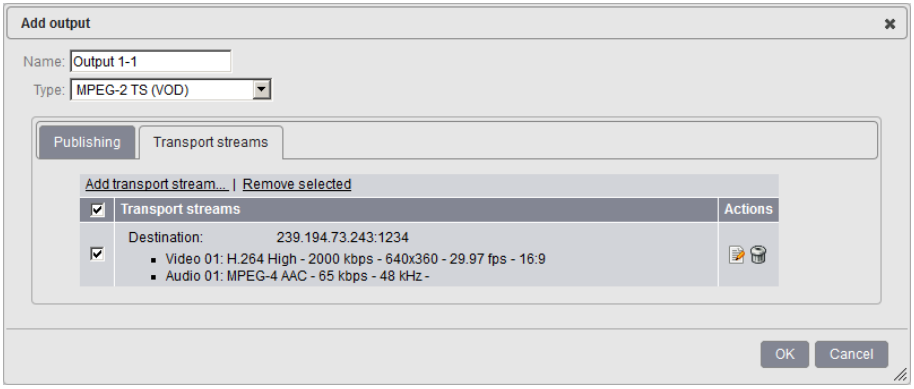
Publishing point Primary server publishing URL. This is where segment and index files are published.

Note: Publishing points used must not be used in another output.

Secondary publishing point For redundancy aspects, a secondary publishing point can be configured.

Transport streams

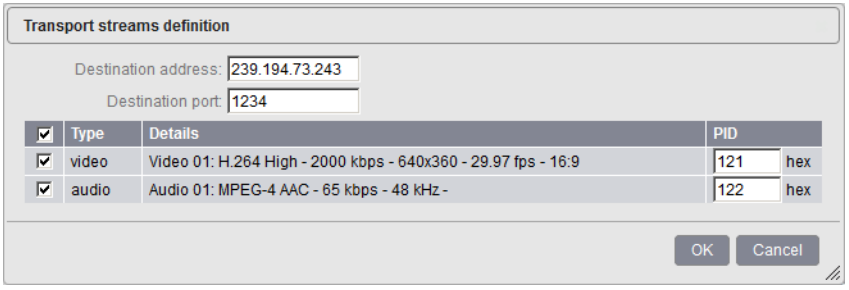
Transport streams



You can specify the composition of the output stream by selecting the streams that will be sent to the selected output.

To edit the destination streams, click the  button.

Transport stream edition



You can modify the following parameter:

Destination address Destination IP address for streams. You can modify this address by entering a unicast or multicast address.

A multicast address is between **224.0.1.0** and **239.255.255.255**.

Destination port Destination port for streams.
Possible values: from **1024** to **65535**

Audio PID MPEG-2 TS parameter. PID of the audio stream.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal)
See "PIDs consistency rules" on page 75.

The audio PID defined is for the first audio. The second is increased by +1 and so on.

Video PID *MPEG-2 TS parameter*. PID of the video stream.

Possible values: from **0x0010** and **0x1ffe** (hexadecimal)

See "PIDs consistency rules" on page 75.

Services Mass Configuration

Mass configuration functionality enables mass configuration of services and includes:

- Downloading the configuration of a selected set of services
- Duplicating the configuration of a service several times
- Duplicating the output of a service to a selected set of services
- Deleting all or some of the outputs/services

To access the services mass configuration panel, follow these steps:

1 From the menu bar, click the  icon and select the **Configuration** tab.

2 Click on **Mass Configuration** to display the mass configuration section.

Note: You can either select some or all the services by checking the box in front of each service or by using the **Filter**. You can also use one of the **Select object** buttons that select either:

- **none objects (None),**
- **all the services and outputs (All) or**
- **all the services without the outputs (Outputs).**

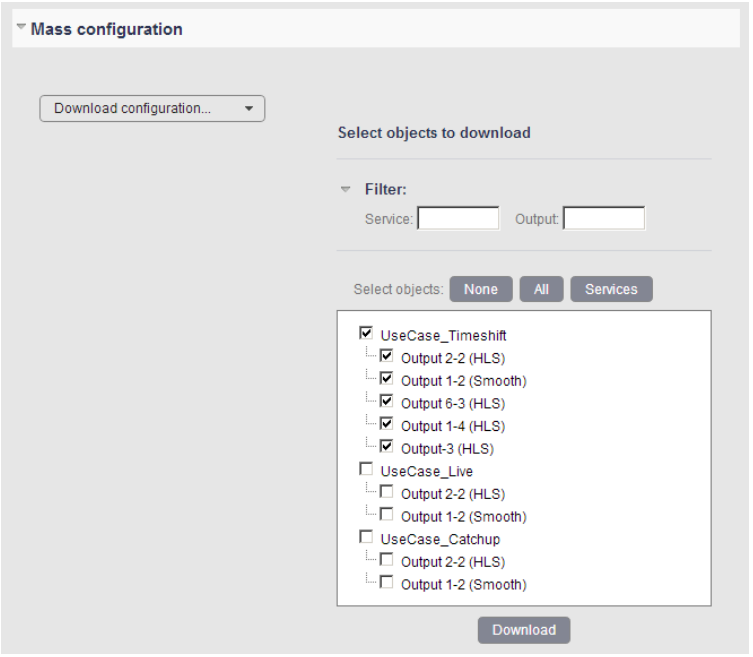
The **Filter** section allows to filter either by the service name or the output name.

Downloading the configuration of a selected set of services

Once a service has been configured, it can be downloaded as a Xml file. You can download the configuration of one or several outputs with or without the configuration of the related service(s).

If a service has been configured without outputs, only the service inputs details will be downloaded.

Downloading the configuration of a selected set of services



To download a selected set of services/outputs, follow these steps:

1. Tick the checkbox in front of the service/outputs you want to duplicate
2. Click the **Download** button
3. Save or open the XML file that contains the configuration of all the selected services/outputs

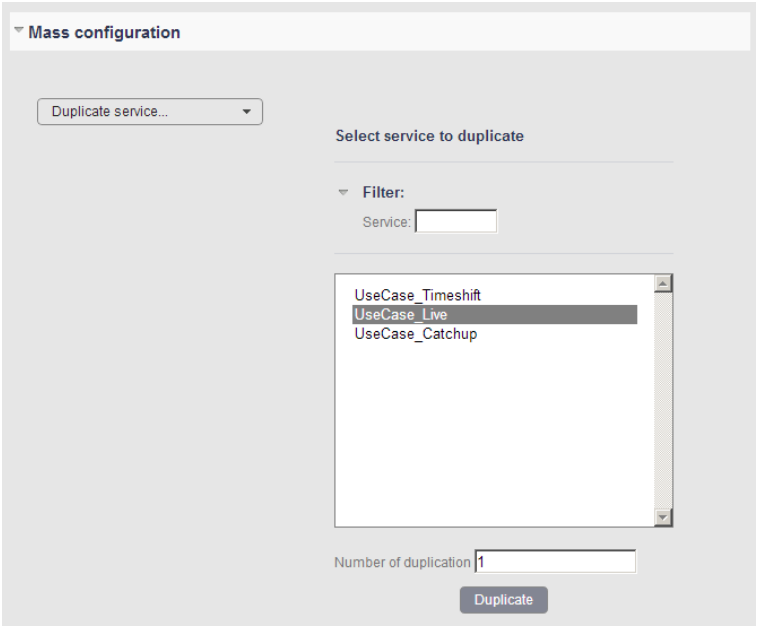
Duplicating the configuration of a service several times

Once a service has been configured, it can be duplicated one or several times. Duplicating a service includes all the elements that compose the service.

If a service has been configured without outputs, only the service inputs details will be duplicated. If a service have been configured with outputs, the services inputs and outputs details will be also duplicated.

Note: You can only duplicate one service at a time

Duplicating a service



To duplicate one service, follow these steps:

1 Select the service you want to duplicate

2 Enter the number of times you want to duplicate the service

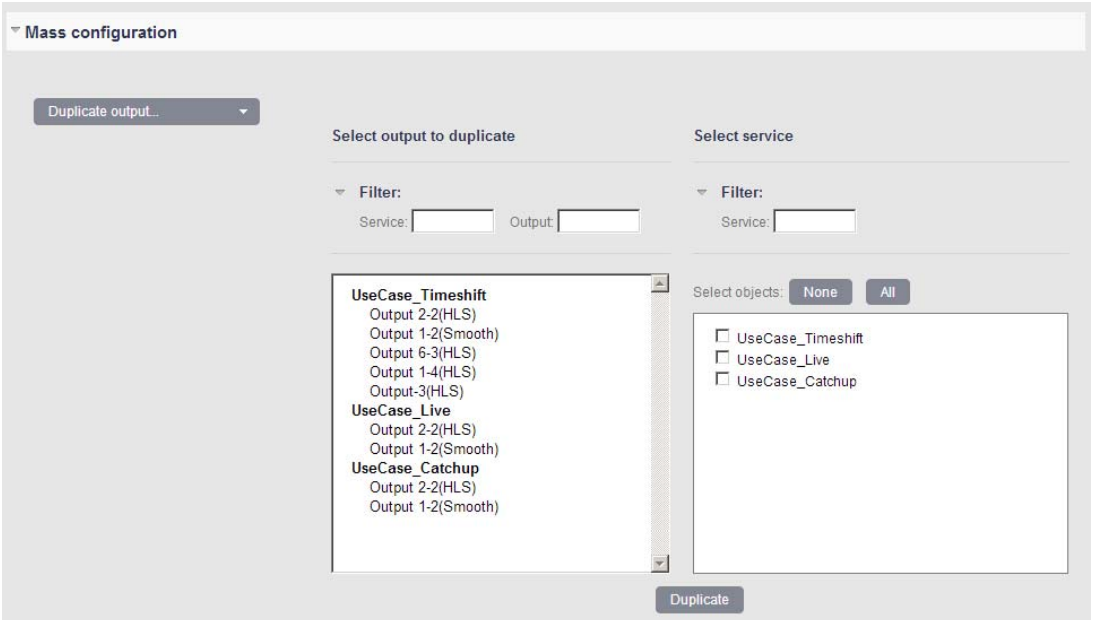
3 Click the **Duplicate** button to apply the duplicate

Duplicating the configuration of an output on several services

Once an output has been configured, it can be duplicated on as many existing services as you want.

Note: You can only duplicate one output at a time

Duplicating an output



To duplicate an output, follow these steps:

1 Select the output you want to duplicate

2 Tick the checkbox of the service(s) on which you want to duplicate the output

3 Click the **Duplicate** button to apply the duplicate

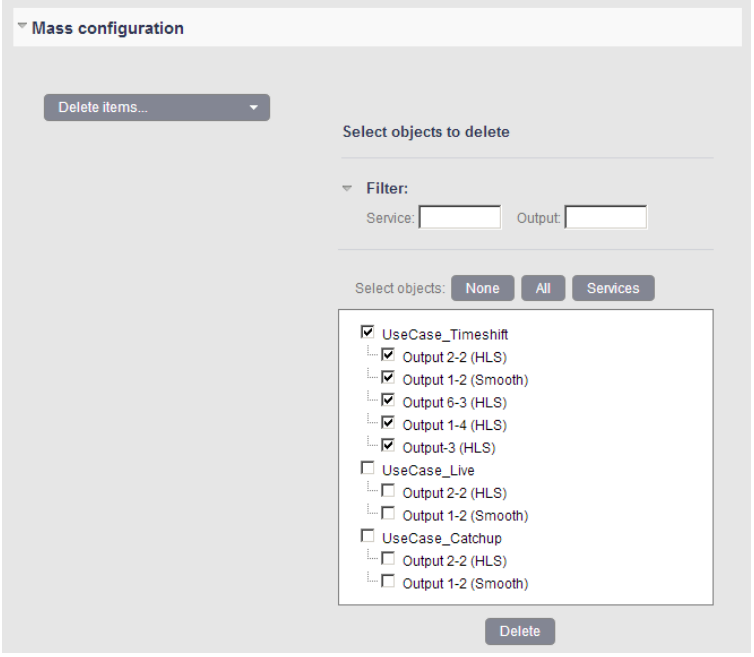
Note: You can also change the targeted services by clicking **previous** or cancel the action by clicking **cancel**
The duplicated outputs will be named in the targeted services as per the source output

Deleting all or some of the Services / Outputs

You can delete as many services and / or outputs as you want through the Mass configuration section.

Note: You can either delete all or some the services that include the outputs that belongs to the services, or all or some of the outputs without deleting the services.

Deleting services or outputs



To delete all or some of the outputs and/or services, follow these steps:

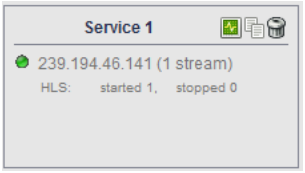
1 Tick the checkbox in front of the outputs and/or services you want to delete

2 Click the **Delete** button to apply the deletion

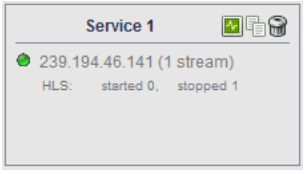
Starting/stopping the services

Single Starting/Stopping

To start a service, in the **output** section, click the icon.
The service status, started is displayed in the dashboard.



To stop a service, in the **output** section, click the icon.
The service status, stopped is displayed in the dashboard.



Mass Starting/Stopping

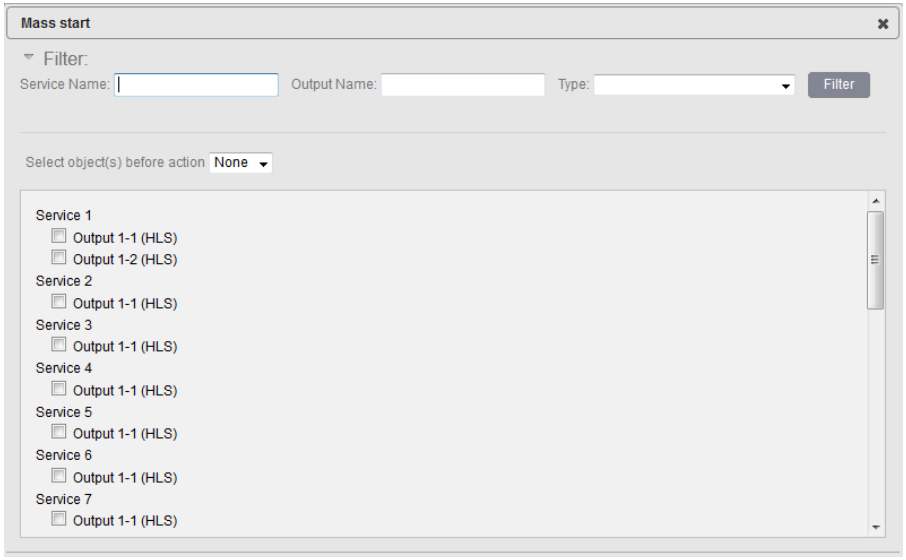
You can start and stop several services at the same.

To access the mass starting/stopping panel, follow these steps:

1. From the dashboard, click the **Start outputs/Stop outputs** link.
2. From the **Mass start / Mass stop** windows, you can either select some or all the services by checking the box in front of each service or by using the **Filter**. You can also use the **Select object(s) before action** scroll bar that select either all the services, all the outputs or all the elements.

Note: The **Filter** section allows to filter either by the service name, the output name or type.

Mass Starting/Stopping



3 Click the **ok** button to validate the mass starting/stopping.

Configuration Use Cases

Chapter 7

Live Configuration

Prerequisites

To set up a live configuration from MFVP - Packaging you need the following:

- A multicast video source
- MFVP - Packaging with following network configuration:

	Interface	Address	Mask	Mode	Speed & duplex	Role	Silent	Actions
	Ethernet 5	10.4.88.21	255.255.0.0	Static	Auto Negotiation	Input	Yes	
	Ethernet 12	83.206.103.246	255.255.255.192	Static	Auto Negotiation	Output Pull & Push	Yes	

- MFVP - Packaging's internal origin server / or an external origin server (in this configuration: 139.45.23.87)

Configuration

1 From the MFVP - Packaging Dashboard, click the **add service** link or duplicate an existing service to access the Service Configuration page

2 From the Service Configuration page, click the **Edit** button on the Input area to configure the video source (input) (refer to "Configuring a service input" on page 56 for detailed information)

3 To configure the service output, click the **add output** link and define the settings as follows (refer to "Configuring the service output" on page 61 for detailed information)

Name Enter an output name. We recommend using a name that clearly identifies the output type.

Output type Select an output type. In this case, possible values are:

HTTP Live Streaming
Smooth Streaming
HTTP Dynamic Streaming

Publishing

Network Interface: select the interface that will be used to push the content (n/a for internal publishing):

139.45.23.87: external Origin Server

Publication point: enter the name of the subfolder in which content will be published. In this configuration, publishing point is **/UseCase_live**

Publication point syntax must start with **/**

4 Click the **ok** button to confirm the service output configuration

5 Click the (Start) button to start content processing

Content publishing

Content will be published at the following addresses:

e:\hls\UseCase_Live (internal origin server, HLS content)

e:\ss\UseCase_Live (internal origin server, SS content)

e:\hds\UseCase_Live (internal origin server, HDS content)

http://139.45.23.87/hls/UseCase_Live (external origin server, HLS content)

http://139.45.23.87/ss/UseCase_Live (external origin server, SS content)

http://139.45.23.87/hds/UseCase_Live (external origin server, HDS content)

Content distribution

Content will be available for distribution at the following addresses:

http://83.206.103.246/hls/usecase_live/index.m3u8 (HLS content)

http://83.206.103.246/ss/usecase_live.isml/manifest (SS content)

http://83.206.103.246/hds/usecase_live/index.f4m (HDS content)

Note: URL are case sensitive

Time-shifting Configuration

Prerequisites

To set up a Time-shifting configuration from MFVP - Packaging you need the following:

- A multicast video source
- MFVP - Packaging with following network configuration:

	Interface	Address	Mask	Mode	Speed & duplex	Role	Silent	Actions
	Ethernet 5	10.4.88.21	255.255.0.0	Static	Auto Negotiation	Input	Yes	
	Ethernet 12	83.206.103.246	255.255.255.192	Static	Auto Negotiation	Output Pull & Push	Yes	

- MFVP - Packaging's internal origin server / or an external origin server (in this configuration: 139.45.23.87)
- A file server for nonlinear content publishing (in this configuration: 140.12.60.87)

Configuration

1 Click the  icon and select the **Origin server** tab to configure the nonlinear content publishing with following settings:

Settings **Nonlinear aliases**: click the add alias button and configure it as follows

Storage URL: enter the folder destination of the nonlinear content (in this configuration: **file://140.12.60.87/nonlinear/dvr**)

Alias: create an alias that will be used for content distribution starting with / (in this configuration: **/content1**)

Origin server Click the **Start server** button

2 From the MFVP - Packaging Dashboard, click the **add service** link or duplicate an existing service to access the Service Configuration page

3 From the Service Configuration page, click the **Edit** button on the Input area to configure the video source (input) (refer to "Configuring a service input" on page 56 for detailed information)

4 To configure the service output, click the **add output** link and define the settings as follows (refer to "Configuring the service output" on page 61 for detailed information)

Name Enter an output name. We recommend using a name that clearly identifies the output type.

Output type Select an output type. In this case, possible values are:

HTTP Live Streaming
Smooth Streaming

Publishing **Network Interface**: select the interface that will be used to push the content (n/a for internal publishing):

139.45.23.87: external Origin Server

Publication point: enter the name of the subfolder in which content will be published. In this configuration, publishing point is **/UseCase_live_Timeshift**

Publication point syntax must start with **/**

Nonlinear **DVR window type**: select **content indexing and publishing**

Duration: set the duration of the nonlinear content edition (buffer period to present time)

Publication point: enter the path in which content will be published. In this configuration, publishing point is **file://140.12.60.87/nonlinear/dvr/Timeshift**

Time-shifting:

select the **Enable time-shifting** checkbox
set the duration of the Time-shifting content edition (in this configuration **5 minutes**, that are the 5 last minutes before present time)

5 Click the **ok** button to confirm the service output configuration

6 Click the ▷ (Start) button to start content processing

Live Content publishing

Live content will be published at the following addresses:

e:\hls\UseCase_Live (internal origin server, HLS content)

e:\ss\UseCase_Live (internal origin server, SS content)

http://139.45.23.87/hls/UseCase_Live_Timeshift (external origin server, HLS content)

http://139.45.23.87/ss/UseCase_Live_Timeshift (external origin server, SS content)

Time-shifting Content publishing

Time-shifting content will be published at the following addresses:

http://140.12.60.87/nonlinear/dvr/Timeshift/hls (HLS content)

http://140.12.60.87/nonlinear/dvr/Timeshift/ss (SS content)

Content distribution

Content will be available for distribution at the following addresses:

http://83.206.103.246/hls/content1/Timeshift/index.m3u8(HLS content)

http://83.206.103.246/ss/content1/Timeshift.isml/manifest (SS content)

Note: URL are case sensitive

Catch-up Asset Configuration

Prerequisites

To set up a Catch-up asset from MFVP - Packaging you need the following:

- A multicast video source
- MFVP - Packaging with following network configuration:

	Interface	Address	Mask	Mode	Speed & duplex	Role	Silent	Actions
	Ethernet 5	10.4.88.21	255.255.0.0	Static	Auto Negotiation	Input	Yes	
	Ethernet 12	83.206.103.246	255.255.255.192	Static	Auto Negotiation	Output Pull & Push	Yes	

- MFVP - Packaging's internal origin server / or an external origin server (in this configuration: 139.45.23.87)
- Ericsson's Demokit tool for catch-up asset scheduling
- A file server for catch-up asset publishing (in this configuration: 140.12.60.87)

Configuration

1 Click the  icon and select the **Origin server** tab to configure the nonlinear content publishing with following settings:

Settings

Nonlinear aliases: click the add alias button and configure it as follows

Storage URL: enter the folder destination of the nonlinear content (in this configuration: **file://140.12.60.87/nonlinear/dvr**)

Alias: create an alias that will be used for content distribution starting with / (in this configuration: **/content2**)

Origin server

Click the **Start server** button

2 From the MFVP - Packaging Dashboard, click the **add service** link or duplicate an existing service to access the Service Configuration page

3 From the Service Configuration page, click the **Edit** button on the Input area to configure the video source (input) (refer to "Configuring a service input" on page 56 for detailed information)

4 To configure the service output, click the **add output** link and define the settings as follows (refer to "Configuring the service output" on page 61 for detailed information)

Name Enter an output name. We recommend using a name that clearly identifies the output type. (in this configuration, Service name is **UseCase_Catchup**)

Output type Select an output type. In this case, possible values are:

HTTP Live Streaming
Smooth Streaming

Publishing **Network Interface**: select the interface that will be used to push the content (n/a for internal publishing):

139.45.23.87: external Origin Server

Publication point: enter the name of the subfolder in which content will be published. In this configuration, publishing point is **/UseCase_live_Catchup**

Publication point syntax must start with **/**

Nonlinear **DVR window type**: select **content indexing and publishing**

Duration: set the duration of the nonlinear content edition (buffer period to present time)

Publication point: enter the path in which content will be published. In this configuration, publishing point is **file://140.12.60.87/nonlinear/dvr/Catchup**

5 Click the **ok** button to confirm the service output configuration

6 Click the ▷ (Start) button to start content processing

7 Open Ericsson's demo kit, enter the MFVP - Packaging's ip address, click on **Catchup** menu and select the Service for which you want to create an catch-up asset (in this configuration, select **UseCase_Catchup**)

8 Click on the day that you want set ut the catch-up asset

9 Configure asset export as follows:

Output Select the output that will be used for catch-up asset creation. In this configuration, output is **UseCase_Catchup**

Extraction NIC

Network Interface: select the interface that will be used to push the content:

139.45.23.87: external Origin Server

Publication point: enter the path in which content will be published:

file://140.12.60.87/nonlinear/dvr/hls (HLS content)

file://140.12.60.87/nonlinear/dvr/ss (SS content)

Live Content publishing

Live content will be published at the following addresses:

e:\hls\UseCase_live_Catchup (internal origin server, HLS content)

e:\ss\UseCase_live_Catchup (internal origin server, SS content)

http://139.45.23.87/hls/UseCase_live_Catchup (external origin server, HLS content)

http://139.45.23.87/ss/UseCase_live_Catchup (external origin server, SS content)

Content distribution

Content will be available for distribution at the following addresses:

http://83.206.103.246/hls/content2/Timeshift/index.m3u8(HLS content)

http://83.206.103.246/ss/content2/Timeshift.isml/manifest (SS content)

Alarms and Logs

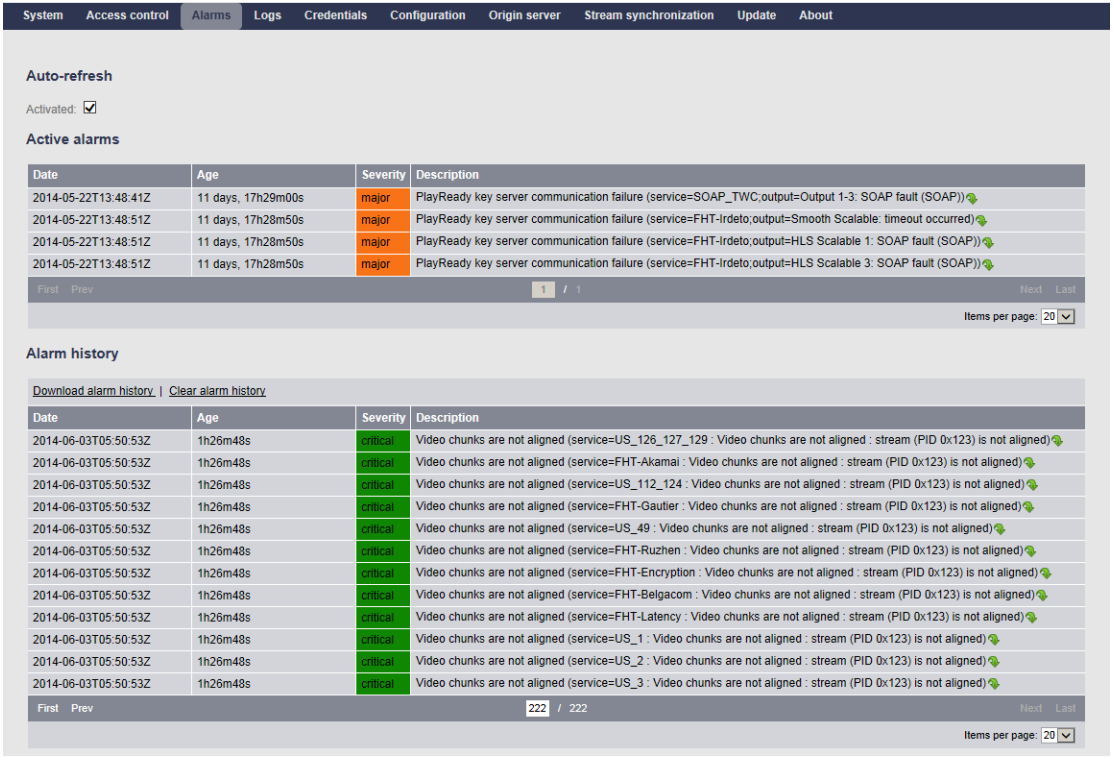
Chapter 8

Reviewing the MFVP - Packaging alarms

To view the MFVP - Packaging alarms, follow these steps:

1. From the menu bar, click the icon and select the **Alarms** tab, or click the alarm icon, in the top menu bar when available.
2. The list of alarms is displayed below.
3. You can activate/deactivate the Auto-refresh option by clicking the corresponding button. When activated, the list is periodically updated (every 3 seconds).

Alarms panel



Reviewing the MFVP - Packaging logs

To view the MFVP - Packaging logs, follow these steps:

1 From the menu bar, click the icon and select the **Logs** tab.

2 You can either download the logs on your PC or upload the logs to a remote server

Logs panel

Downloading the logs

To download the logs, click the **Download Logs** button.

Uploading the logs

To upload the logs, follow these steps:

1 Configure the remote server by entering the **Location** then enter the **Upload period** from 0 (disabled) to 1440 minutes.

2 Click the **Apply** button.

3 You can click the **Upload** button at any moment to upload the logs to the specified remote server.

Troubleshooting

Chapter 9

I cannot access the web interface of my MFVP - Packaging

Problem description

I cannot open MFVP - Packaging web interface **http://<IPaddress>:8080/mfvp**.

Tests to perform

1 Check the IP connectivity, by *pinging* the MFVP - Packaging from another device on the same IP subnet (from this device command prompt):

ping <IPaddress> (where **IPaddress** is the IP address of your MFVP - Packaging)

If the MFVP - Packaging does not reply, refer to the solution explained on page 194, I cannot ping my MFVP - Packaging.

2 Try to access one of the following pages:

- **The updater web page: http://<IPaddress>:8080/Updater/**
- **The support page: http://<IPaddress>:8080/Support.html**

If you can access one of these pages but you cannot access the MFVP - Packaging page, see solution below.

Solution

1 Restart your MFVP - Packaging to reset the startup configuration (see "How to report a problem to the support team." on page 198).

2 If the problem still exists after restarting, get the support package and send it to the Ericsson support team (see "How to report a problem to the support team." on page 198) who will provide you a way to overcome this issue.

I cannot ping my MFVP - Packaging

Problem description

When I ping my MFVP - Packaging:

`ping <IPaddress>` (where **`IPaddress`** is the IP address of your MFVP - Packaging),

… I receive no reply from the equipment.

Tests to perform /solution

Usually this problem is related to a network failure, but it can also be due to a bad network configuration.

1. Check at the back of the MFVP - Packaging that the network interface is connected to the network.
2. Check that you can ping another system located on the same network as the MFVP - Packaging.

- If you cannot ping any equipment on the network – your IP switch or router may malfunction, or your console is not connected to the network – you should contact your network administrator.
- If you cannot ping the MFVP - Packaging but you can ping other equipment, check the network connection between the MFVP - Packaging and your network switch.

  On the switch side, check the LED corresponding to the port to which the MFVP - Packaging is connected (refer to the switch's manufacturer documentation for the meaning of the LED status).

  - If the LED status means that the MFVP - Packaging is not connected, check that the cable is properly inserted into both the switch's and MFVP - Packaging's Ethernet ports.
  - If the LED status means that the MFVP - Packaging is still not connected, try to connect the MFVP - Packaging to another port in the network switch.
  - If the LED status means that the MFVP - Packaging is still not connected, connect the network switch to another of the MFVP - Packaging's Ethernet ports.
  - If the LED status means that the MFVP - Packaging is still not connected, try to use another Ethernet cable.

- If the LED status means that the MFVP - Packaging is still not connected, contact Ericsson support.

The 10Gbps interfaces are not functional

Problem description

- Both 10Gbps interface are connected properly
- Interfaces are not available in OS and web UI
- LED on the interface card do not show any activity on the link

Solution

1. Power down the MFVP - Packaging unit
2. Unplug all power cords
3. Wait for a few minutes
4. Plug back the power cords
5. Startup the unit

I cannot generate the LIF file of my MFVP - Packaging

Problem description

This problem occurs when one or more NIC is disabled on the server.

Test to perform / solution

1. Log into the system as administrator
2. Open the “Control Panel” using the start menu
3. Select “Network and Internet”
4. Select “Network and Sharing Center”
5. In the left menu, select “Change adapter settings”
6. Verify that all connections are enabled, there shouldn’t be any disabled NIC

How to report a problem to the support team.

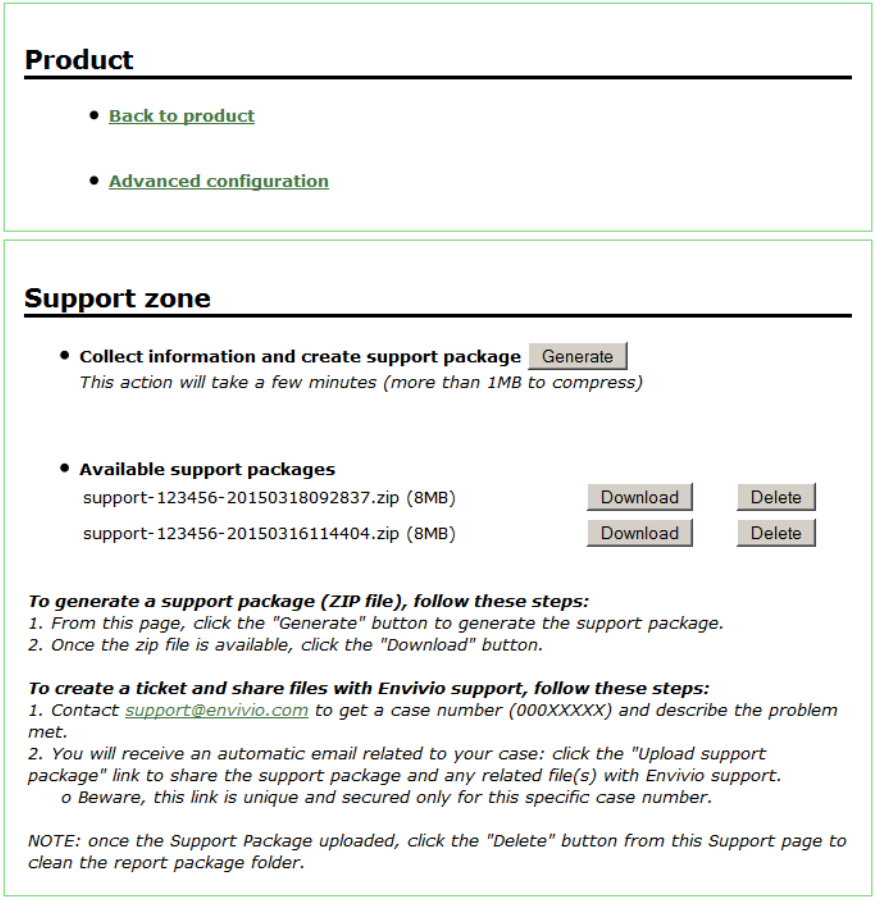
To optimize the support process and bug tracking, a report package should be sent to the Support team.

To generate a report package, follow these steps:

1 Open a browser and enter the following address to connect to the support web page:

http://<IPaddress>:8080/Support.html

The following page is displayed:



2 Click the **Generate** button to generate the support package.

3 Once the zip file is available, click the **Download** button.

4 Contact support@envivio.com to get a case number (000XXXXX) and describe the problem met.

5 Upon the reception of the automatic email related to your case, click on the "Upload support package" link to upload the support file.

6 Go back to this support page and click the **Delete** button to clean the Report package folder.