

EZDRM Integration MediaKind

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Version 1.0 / June 17, 2021

Introduction

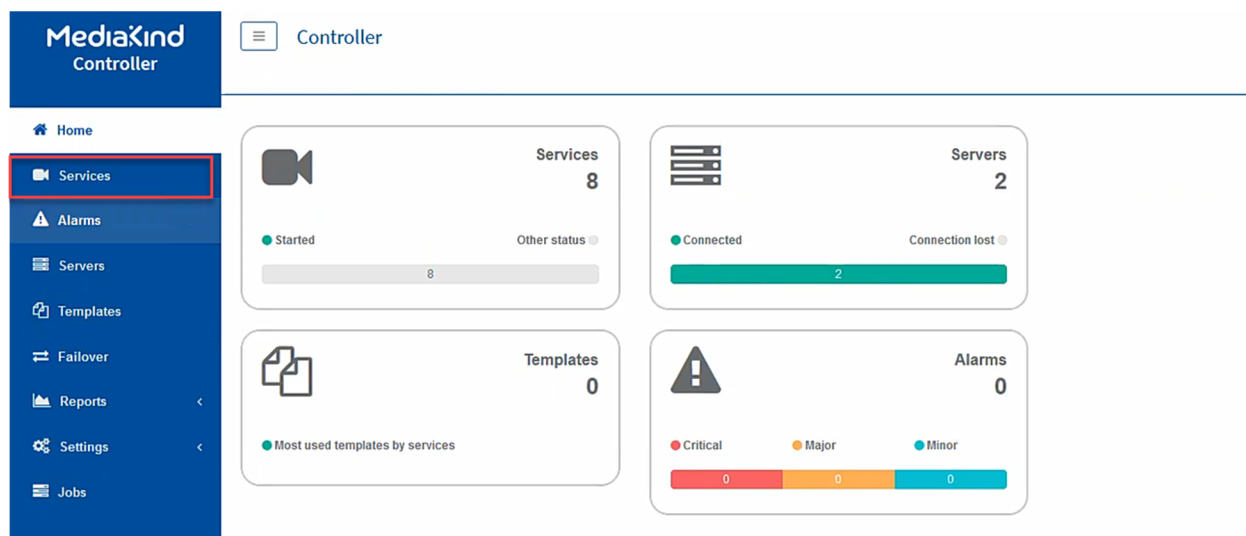
The following document outlines integration with EZDRM Encoding using the MediaKind Controller.

Widevine/PlayReady Common Encryption (CENC)

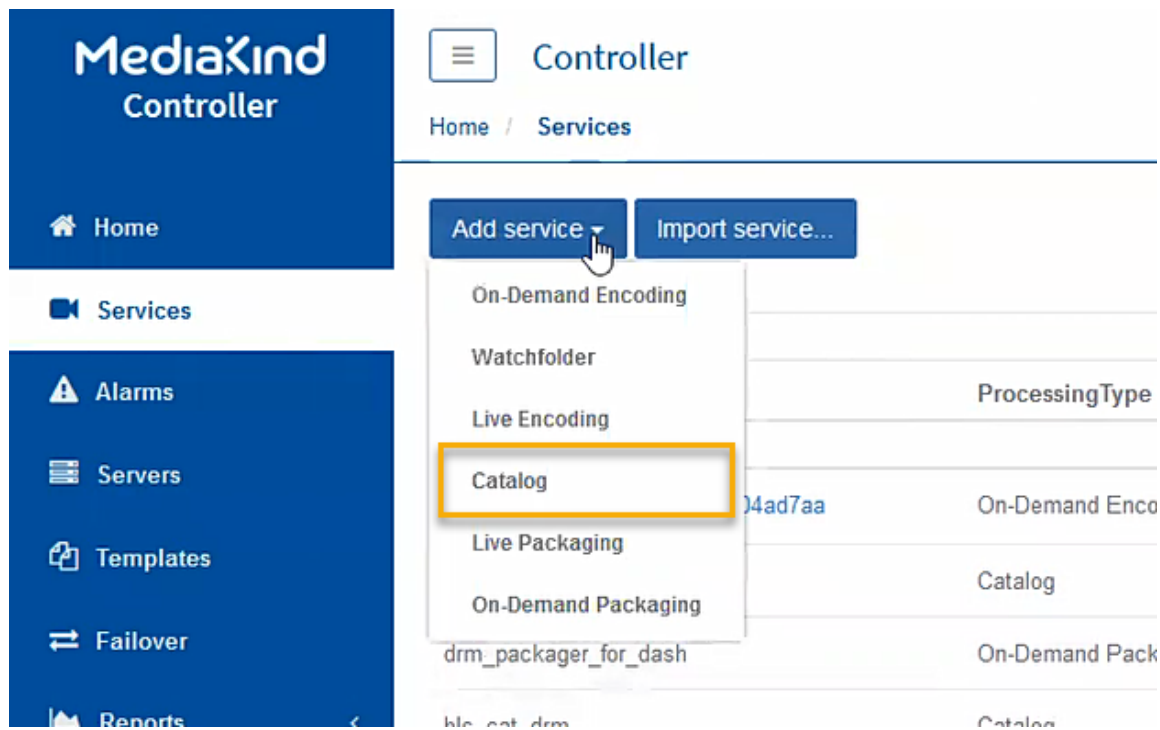
Catalog Creation

The first step is to create a catalog to store files for encoding. Within the catalog the **Output settings** are configured for encryption.

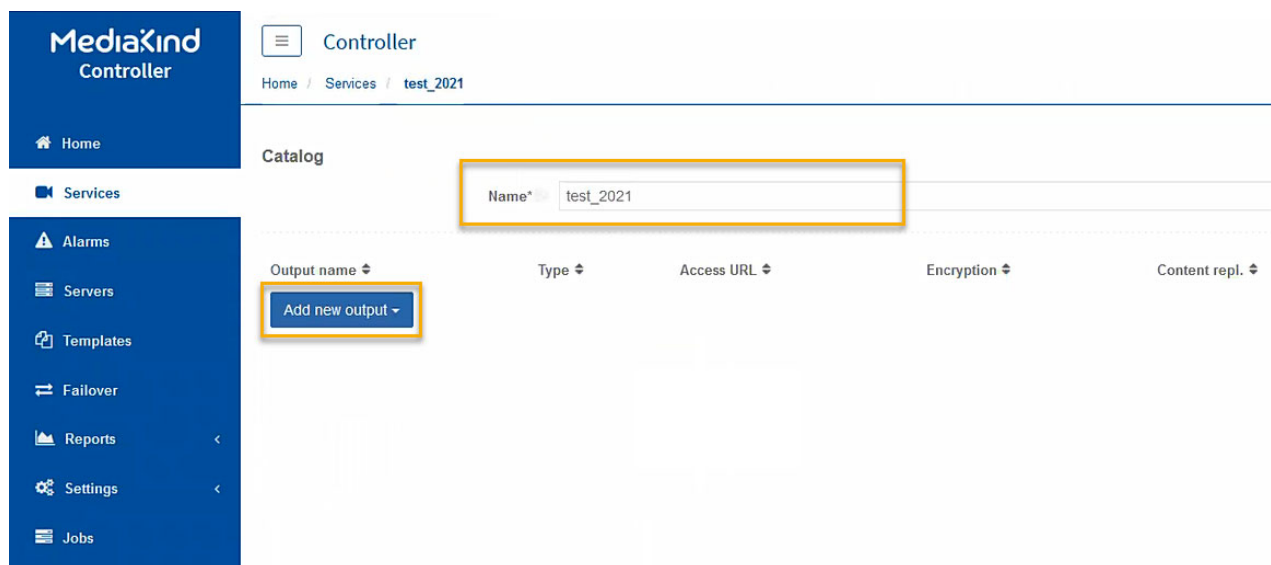
1. Click on **Services** menu on the right-hand column.



2. Click **Add service**. Select **Catalog**.

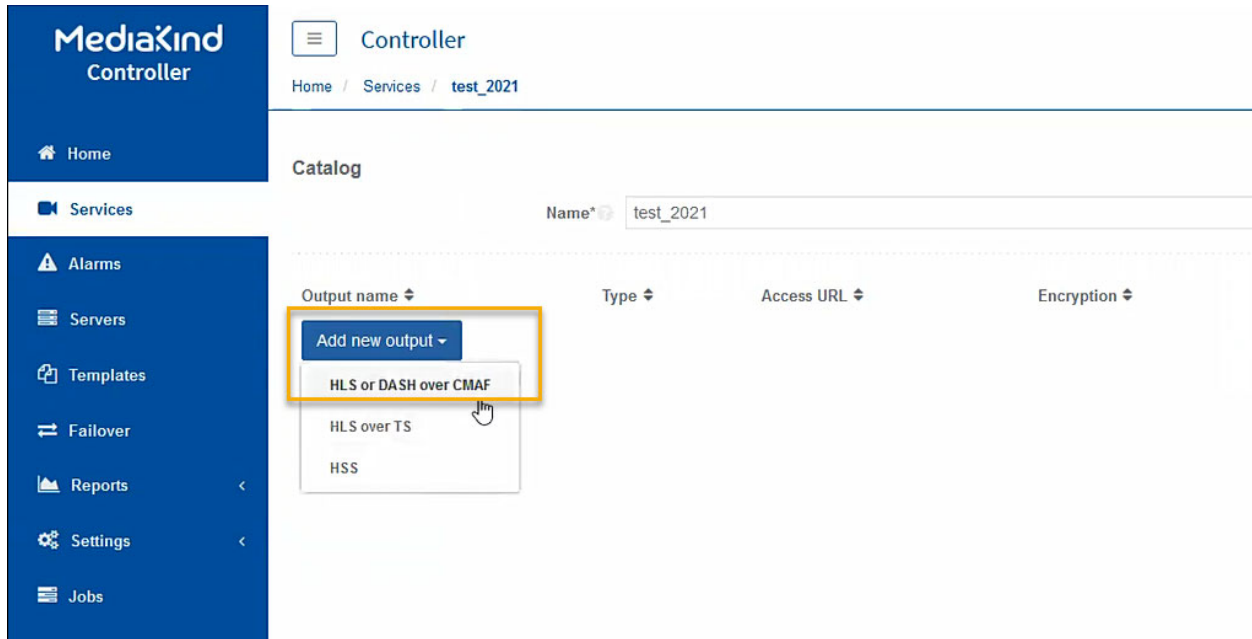


3. Enter a **Name** for the Catalog. Then click **Add new output**.



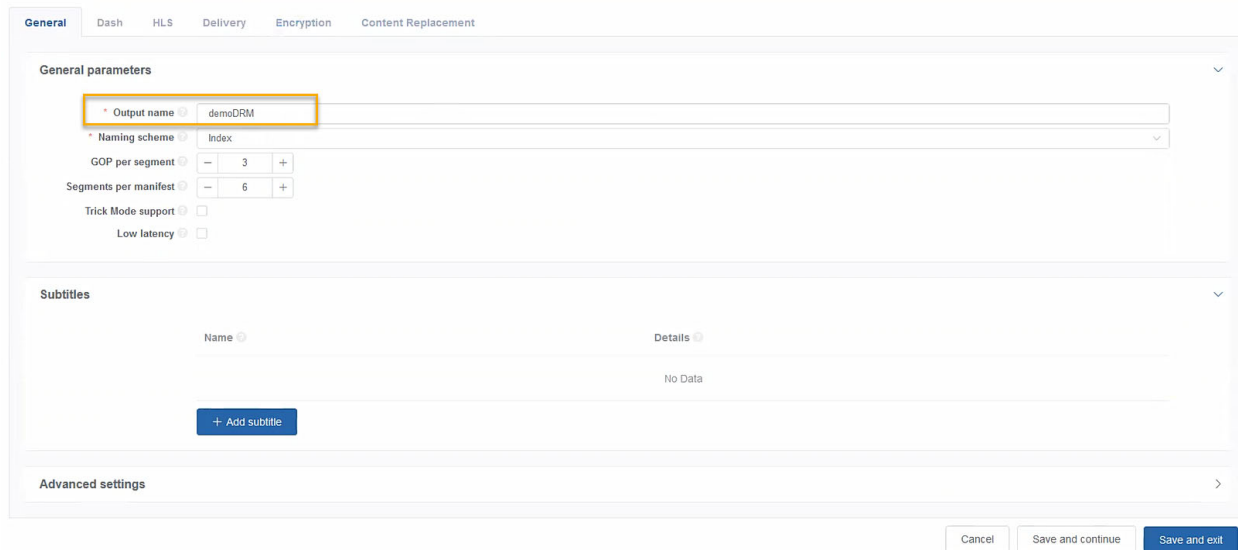
4. Select **HLS or DASH over CMAF**.

5.



The screenshot shows the MediaKind Controller interface. On the left is a navigation menu with options: Home, Services, Alarms, Servers, Templates, Failover, Reports, Settings, and Jobs. The main area is titled 'Controller' and shows a breadcrumb 'Home / Services / test_2021'. Below this is a 'Catalog' section with a search bar containing 'test_2021'. A table with columns 'Output name', 'Type', 'Access URL', and 'Encryption' is visible. A dropdown menu is open under the 'Add new output' button, showing three options: 'HLS or DASH over CMAF' (highlighted with a yellow box and a mouse cursor), 'HLS over TS', and 'HSS'.

6. On the General tab, enter a unique **Output name**. Keep the other defaults.

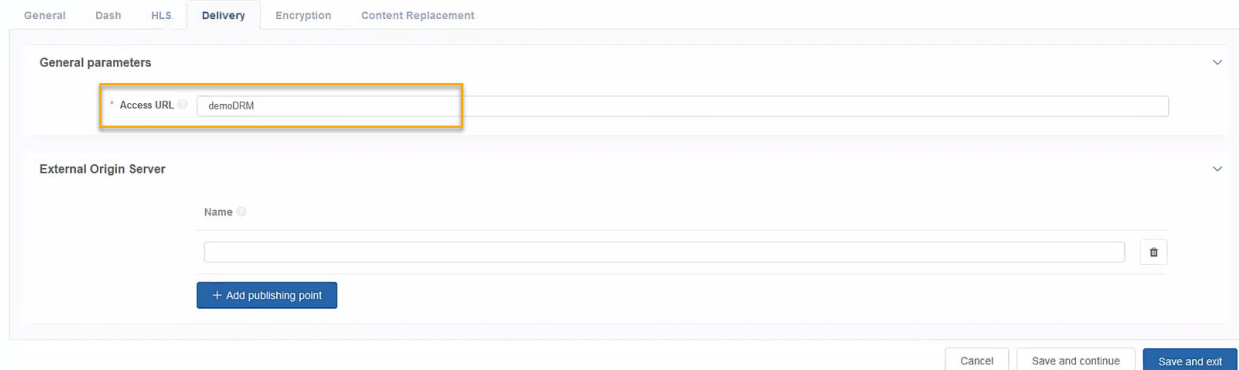


The screenshot shows the 'General' tab configuration page. The 'General parameters' section includes: 'Output name' (set to 'demoDRM', highlighted with a yellow box), 'Naming scheme' (set to 'Index'), 'GOP per segment' (set to 3), 'Segments per manifest' (set to 6), 'Trick Mode support' (unchecked), and 'Low latency' (unchecked). The 'Subtitles' section is empty with a '+ Add subtitle' button. The 'Advanced settings' section is collapsed. At the bottom right are buttons for 'Cancel', 'Save and continue', and 'Save and exit'.

7. For the DASH tab, keep the defaults.

8. For the HLS tab, keep the defaults.

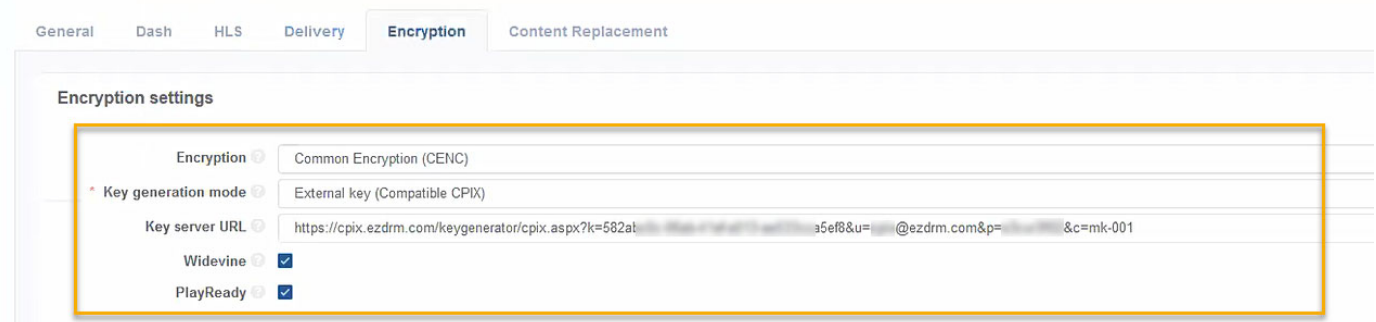
9. On the Delivery tab – **Access URL**, for this example we are using the same Output name from the General tab (be sure it matches exactly). This will create a local folder with the same name on the encoding server for playback.



The screenshot shows the 'Delivery' tab in the EZDRM configuration interface. The 'General parameters' section has an 'Access URL' field highlighted with an orange box, containing the text 'demoDRM'. Below this is the 'External Origin Server' section, which includes a 'Name' field and a '+ Add publishing point' button. At the bottom right, there are three buttons: 'Cancel', 'Save and continue', and 'Save and exit'.

10. On the Encryption tab enter the following parameters:

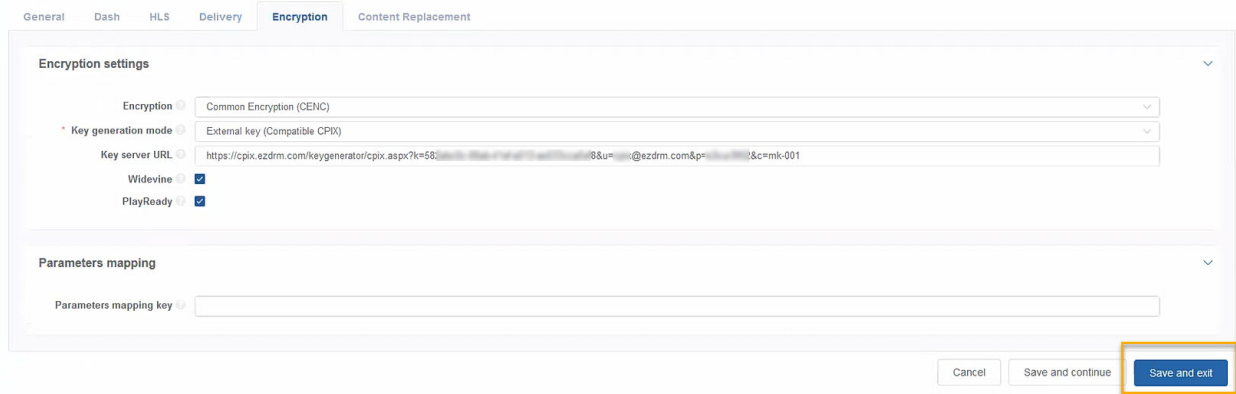
- From the **Encryption** dropdown, select **Common Encryption (CENC)**
- From the **Key generation mode** dropdown select **External key (Compatible CPIX)**
- For the **Key server URL** enter the **EZDRM CPIX Key Generator URL** that includes the Key, Username, Password and Resource name (see [next section](#) for more details)
- **Widevine** and **PlayReady** checkboxes should be checked



The screenshot shows the 'Encryption' tab in the EZDRM configuration interface. The 'Encryption settings' section is highlighted with an orange box. It contains the following fields and checkboxes: 'Encryption' dropdown set to 'Common Encryption (CENC)', 'Key generation mode' dropdown set to 'External key (Compatible CPIX)', 'Key server URL' text field containing a long URL, 'Widevine' checkbox checked, and 'PlayReady' checkbox checked. At the bottom right, there are three buttons: 'Cancel', 'Save and continue', and 'Save and exit'.

11. For the Content Replacement tab, keep the defaults.

12. Click **Save and exit**.



General Dash HLS Delivery **Encryption** Content Replacement

Encryption settings

Encryption: Common Encryption (CENC)

* Key generation mode: External key (Compatible CPK)

Key server URL: <https://cpix.ezdrm.com/keygenerator/cpix.aspx?k=56&u=@ezdrm.com&p=;&c=mk-001>

Widevine: ☒

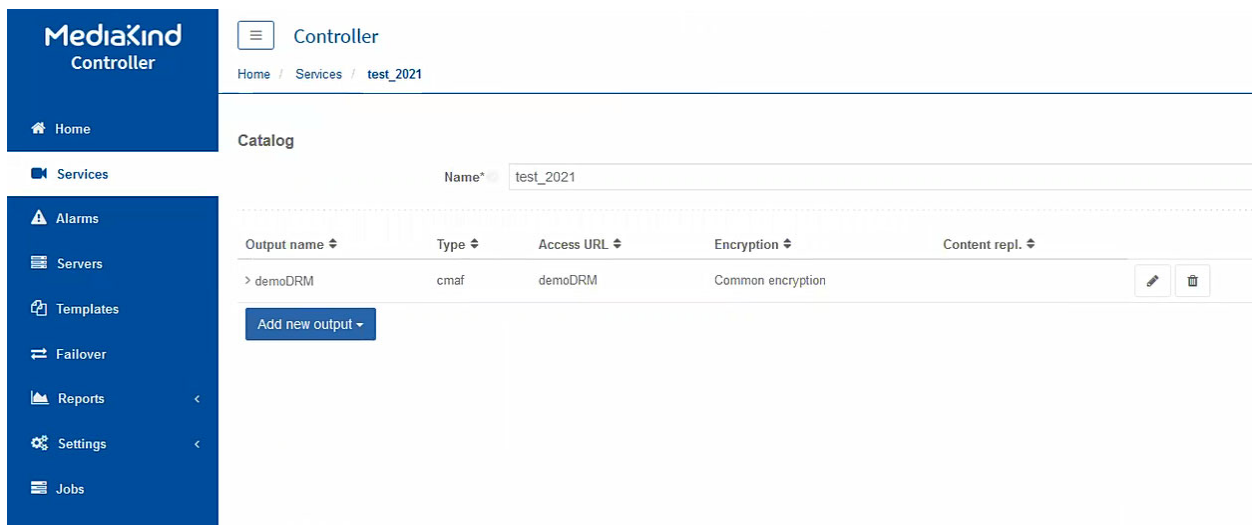
PlayReady: ☒

Parameters mapping

Parameters mapping key:

Cancel Save and continue **Save and exit**

The catalog with encryption is now created.



MediaKind Controller

Controller

Home / Services / test_2021

Catalog

Name*: test_2021

Output name	Type	Access URL	Encryption	Content repl.
> demoDRM	cmf	demoDRM	Common encryption	

Add new output

The EZDRM CPIX Key Generator URL

The Base URL for EZDRM Key Generation is formatted as follows:

<https://cpix.ezdrm.com/keygenerator/cpix.aspx?k=kid&u=username&p=password&c=resourcename>

The parameters include:

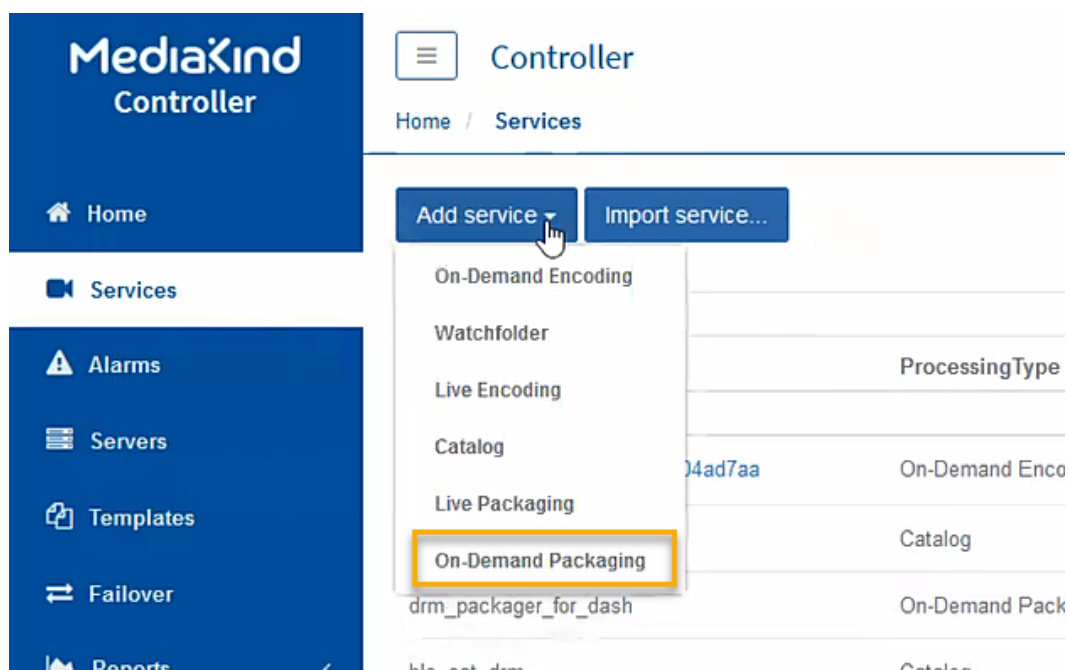
Parameter	Description
k	kid or Key ID value (client generated) in GUID format*
u	EZDRM username
p	EZDRM password
c	Content ID – generic resource name/identifier (client generated) – passed into id field

* To generate a GUID for the k value, you can use a GUID generator like the one found here: <http://guid-convert.appspot.com>.

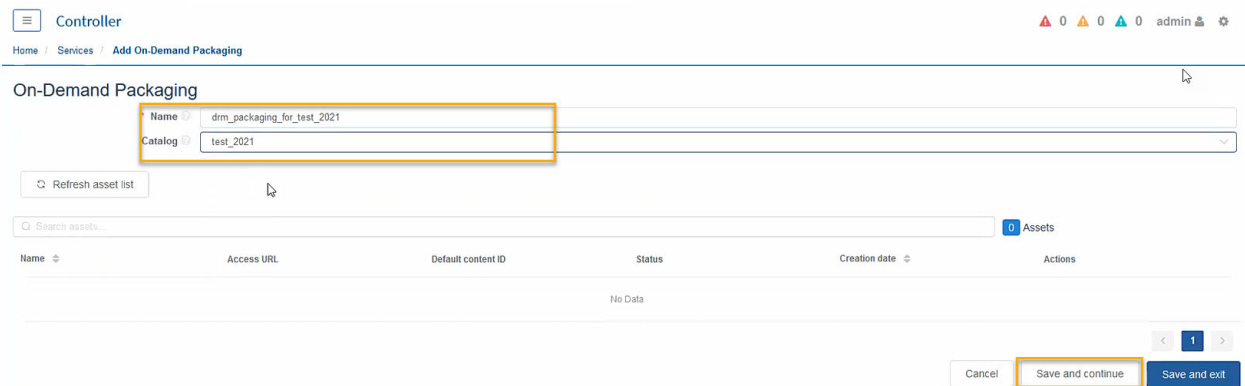
On-Demand Packaging

The second step is to create the On-Demand Packaging for the Catalog.

1. From the **Services** Menu click **Add service**. Select **On-Demand Packaging**.



2. Enter **Name** for Packaging
3. Select the correct **Catalog** from the dropdown, created in the previous steps
4. Click **Save and Continue**



Controller

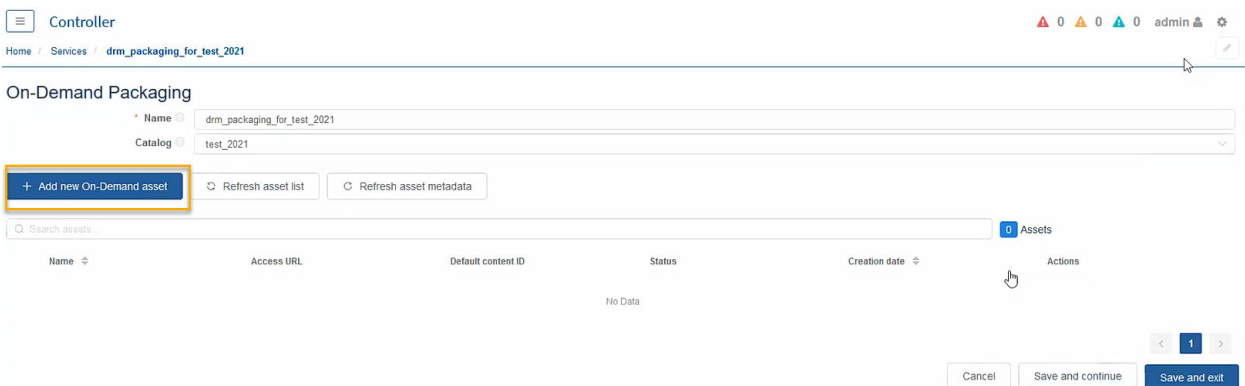
Home / Services / Add On-Demand Packaging

On-Demand Packaging

Name:

Catalog:

5. Click Add new On-Demand asset



Controller

Home / Services / drm_packaging_for_test_2021

On-Demand Packaging

Name:

Catalog:

6. Enter Asset **Name** for the On-Demand Asset



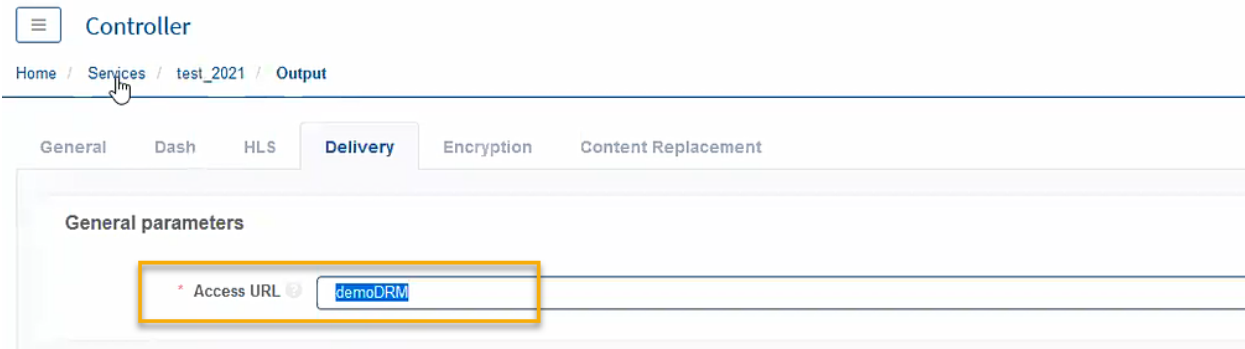
Controller

Home / Services / hls_packaging_2021

On-Demand Packaging

Name:

- Enter the **Access URL** - this is the Delivery Access URL from the Catalog previously created (Services / Controller / Catalog / Output / Delivery / Access URL)



Controller

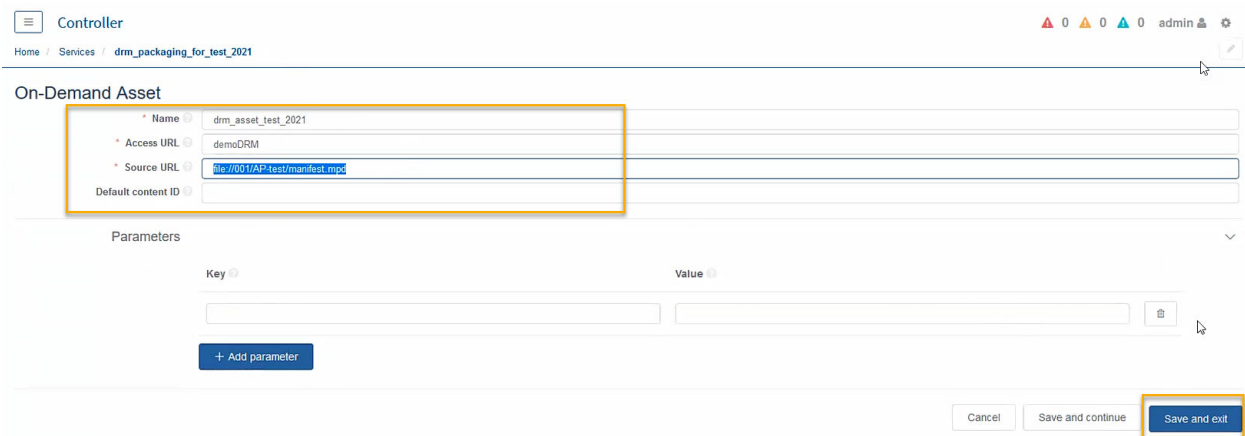
Home / Services / test_2021 / Output

General Dash HLS **Delivery** Encryption Content Replacement

General parameters

* Access URL

- Enter **Source URL** - the source file location for the MPD file



Controller

Home / Services / drm_packaging_for_test_2021

On-Demand Asset

* Name

* Access URL

* Source URL

Default content ID

Parameters

Key

Value

+ Add parameter

Cancel Save and continue **Save and exit**

- Click **Save and Exit**. The Asset will be shown as **Valid** if created successfully.



Controller

Home / Services / drm_packaging_for_test_2021

Success
Saved!

On-Demand Asset

* Name

* Access URL

* Source URL

Default content ID

Controller

Home / Services / drm_packaging_for_test_2021

On-Demand Packaging

Name:

Catalog:

+ Add new On-Demand asset Refresh asset list Refresh asset metadata

Search assets...

Name	Access URL	Default content ID	Status	Creation date	Actions
drm_asset_test_2021	demoDRM		valid	2021-01-22 19:12:31 UTC	⌵ ⌴ ⌵

Output Name	Status	Access URL	Actions
demoDRM	valid	http://host/demoDRM/demoDRM/manifest.mpd	⌵

10. The **Access URL** will now produce the MPD file with encryption, see example below:

Name	Access URL	Default content ID	Status	Creation date	Actions
drm_asset_test_2021	demoDRM		valid	2021-01-22 19:12:31 UTC	⌵ ⌴ ⌵

Output Name	Status	Access URL	Actions
demoDRM	valid	http://host/demoDRM/demoDRM/manifest.mpd	⌵

```

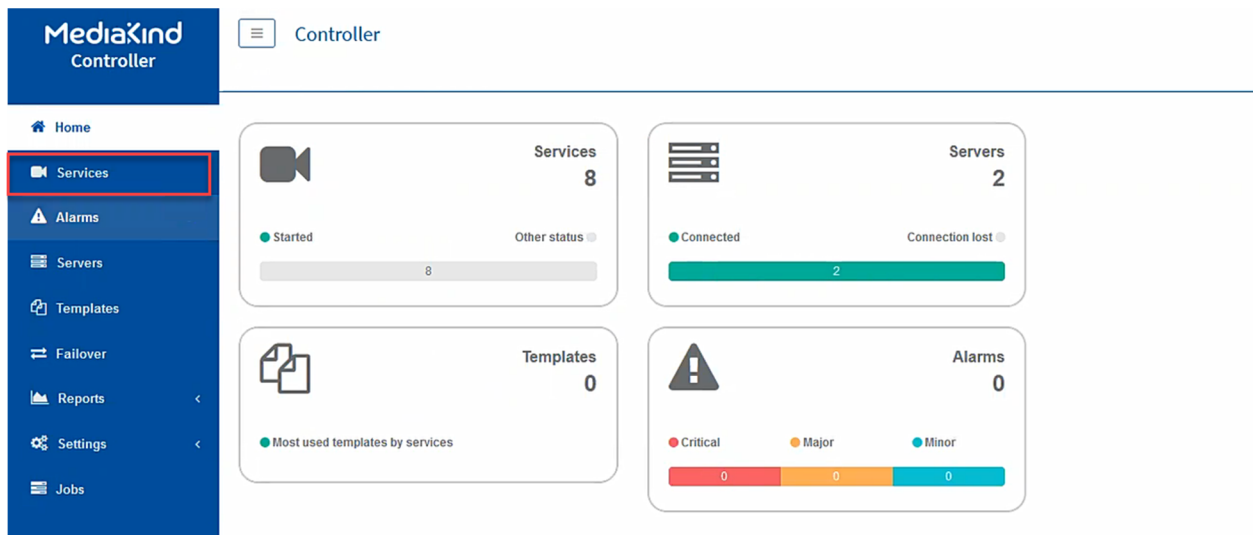
1  <?xml version="1.0" encoding="UTF-8"?>
2  <MPD xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:mpeg:dash:schema:mpd:2011" xmlns:cenc="urn:mpeg:cenc:2013" xsi:schemaLocation="urn:mpeg:dash:schema:mpd:2011 urn:mpeg:dash:schema:mpd:2011" maxSegmentDuration="PT6.016S" availabilityStartTime="2021-01-22T19:12:31Z" mediaPresentationDuration="PT181.981S">
3    <Period id="period0" start="PT0.101S">
4      <AssetIdentifier schemeIdUri="urn:uuid:" value="md:cld:EIDR:10.524092f9e32-2d22-6a84-2a02-c"/>
5      <AdaptationSet id="1" contentType="video" mimeType="video/mp4" segmentAlignment="true" startWithSAP="1" maxWidth="1920" maxHeight="1080" maxFrameRate="30000/1001" par="16:9">
6        <ContentProtection schemeIdUri="urn:mpeg:dash:mp4protection:2011" value="cenc" cenc:default_KID="582abc0c-06ab-41ef-a013-ae533cca5ef8"/>
7        <ContentProtection schemeIdUri="urn:uuid:edef83b36776ffc44656127e04272b80" value="1d21ed">
8          <cenc:pssh>AAAAA...:tzIjpbIlNEI119KgUTB
9          </cenc:pssh>
10        </ContentProtection>
11        <ContentProtection xmlns:mspr="urn:microsoft:playready" schemeIdUri="urn:uuid:9a04f079-9840-4286-ab92-e65be085f95">
12          <mspr:pro>
13            SgIAAAEA...MAAwADcALwAwADMA
14            wAYQBSAF...wARQBOAD4AMQA2AE
15            AEUAWQBM...AGcARQA2ADUAVABQ
16            BLACsAQ...BIAHQAAAUAGEACw
17            FwSwAFgA...PgA8AEMA5ABFAEMA
18            UATQA+ADMA0AA4AEUAswBVAFYAMABnAG0AQQA9ADwALwBDAGeARQBDAGeAUwBVAE0APgA8AC9ARABBAFQAQQA+ADwALwBXAFIATQBIAEUAQQA+AA==</mspr:pro>
19          </ContentProtection>
20          <mspr:pro>
21            AADABnBzc...A8MAAwBmAHQA
22            SAbQAVAEQ...BFAFQAQBDAE
23            AEYATWA+AI...SwBjAEQAQgBE
24            BKAFCASwB...4AYwBVAAGALw
25            bGbjAHKAL...AHEAcwAYAGoA
26            OAPAAVAEQ...BSAD4A</cenc
27        </ContentProtection>
28        <SegmentTemplate timescale="90000" initialization="$RepresentationID$-init.m4s" media="$RepresentationID$-182524-1-$Number$.m4s" startNumber="1" duration="528335"
29        </SegmentTemplate>
30      </AdaptationSet>
31    </Period>
32  </MPD>
  
```

Apple FairPlay Common Encryption (CBCS)

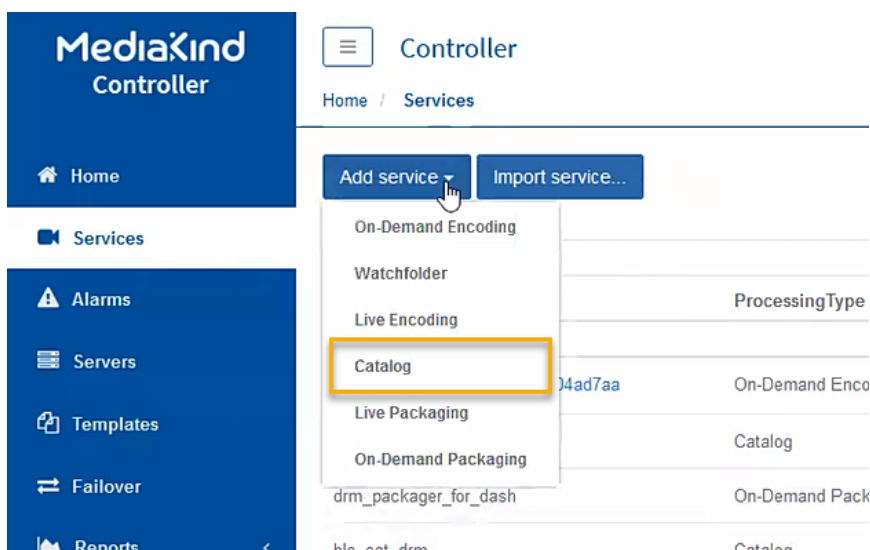
Catalog Creation

The first step is to create a catalog to store files for encoding. Within the catalog the Output settings are configured for encryption.

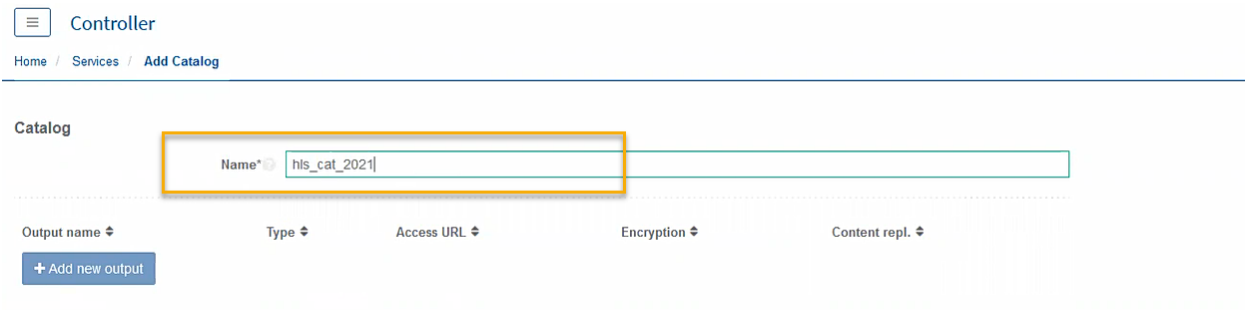
1. Click on **Services** menu on the right-hand column.



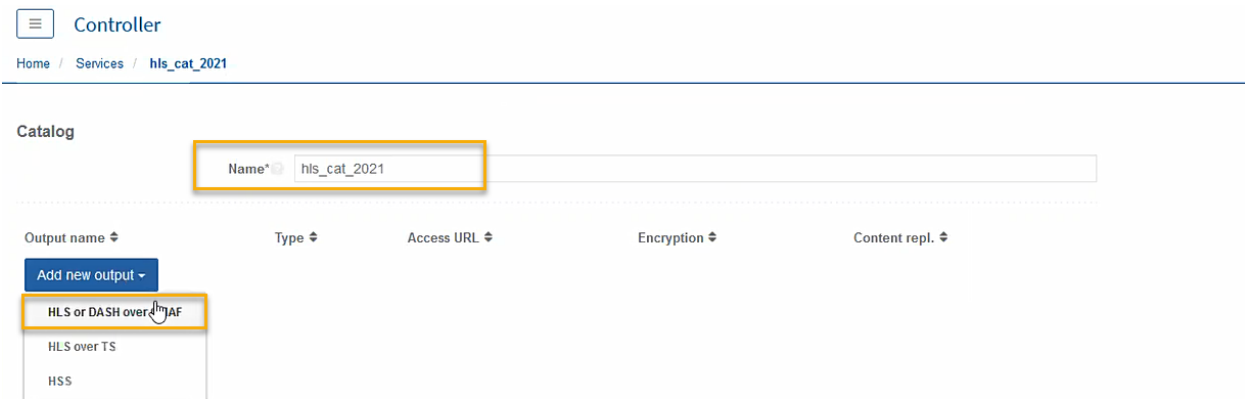
2. Click **Add service**. Select **Catalog**.



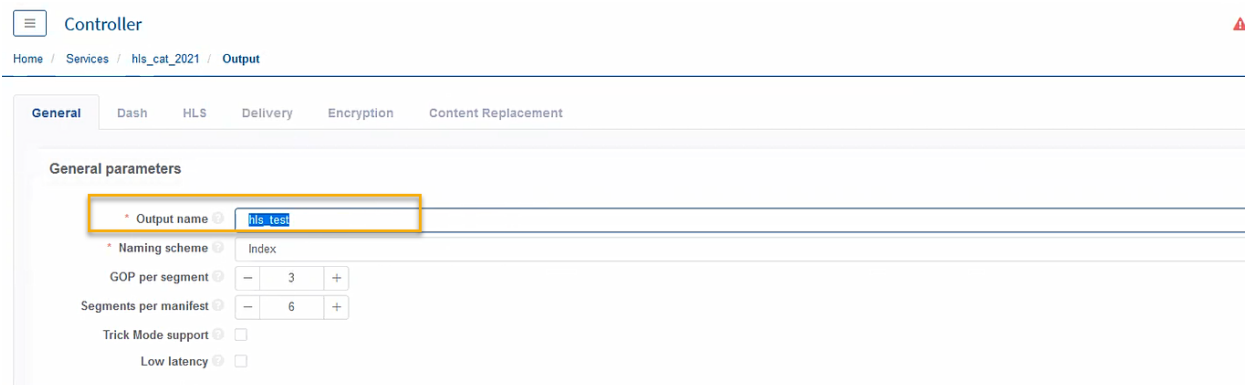
3. Enter a **Name** for the Catalog. Then click **Add new output**.



4. Select **HLS or DASH over CMAF**.



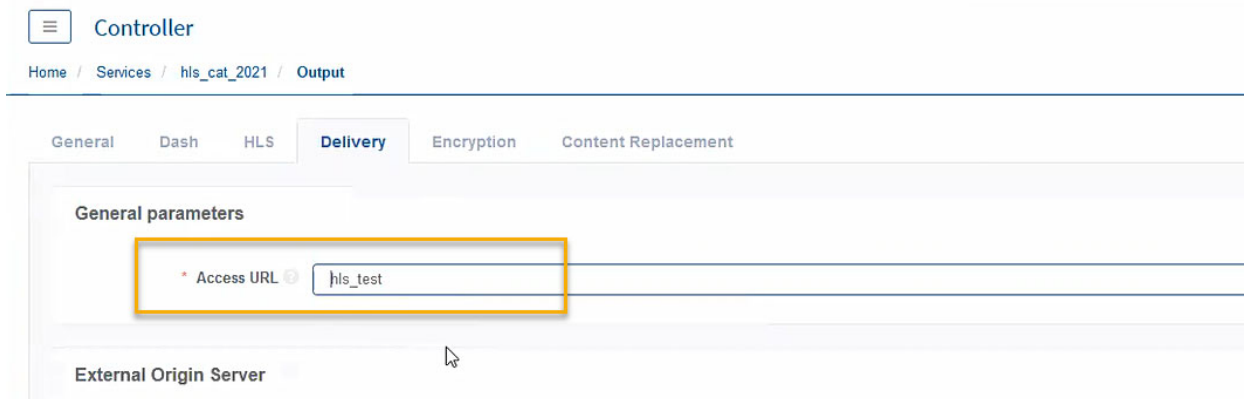
5. On the General tab, enter a unique **Output name**. Keep the other defaults.



6. For the DASH tab, keep the defaults.

7. For the HLS tab, keep the defaults.

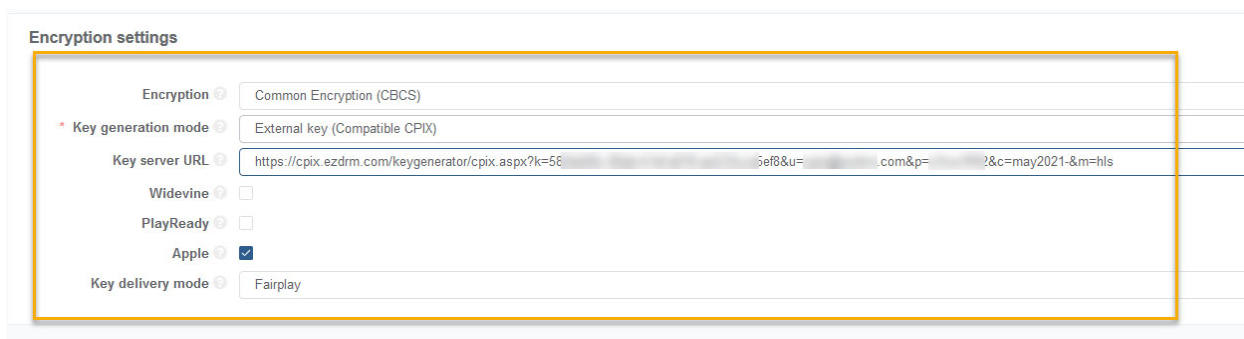
- On the Delivery tab – for the **Access URL**, for this example we are using the same Output name from the General tab (be sure it matches exactly). This will create a local folder with the same name on the encoding server for playback.



The screenshot shows the EZDRM Controller interface. At the top, there's a navigation bar with 'Home / Services / hls_cat_2021 / Output'. Below this, there are tabs for 'General', 'Dash', 'HLS', 'Delivery' (which is selected), 'Encryption', and 'Content Replacement'. Under the 'Delivery' tab, there's a section for 'General parameters'. A text input field labeled '* Access URL' is highlighted with an orange box and contains the text 'hls_test'. Below this, there's a section for 'External Origin Server'.

- On the Encryption tab enter the following parameters:

- From the **Encryption** dropdown, select **Common Encryption (CBCS)**
- From the **Key generation mode** dropdown select **External key (Compatible CPIX)**
- For the **Key server URL** enter the **EZDRM CPIX Key Generator URL** that includes the Key, Username, Password and Resource name (see [next section](#) for more details)
- Widevine** and **PlayReady** checkboxes should be unchecked, and the **Apple** Checkbox should be checked.

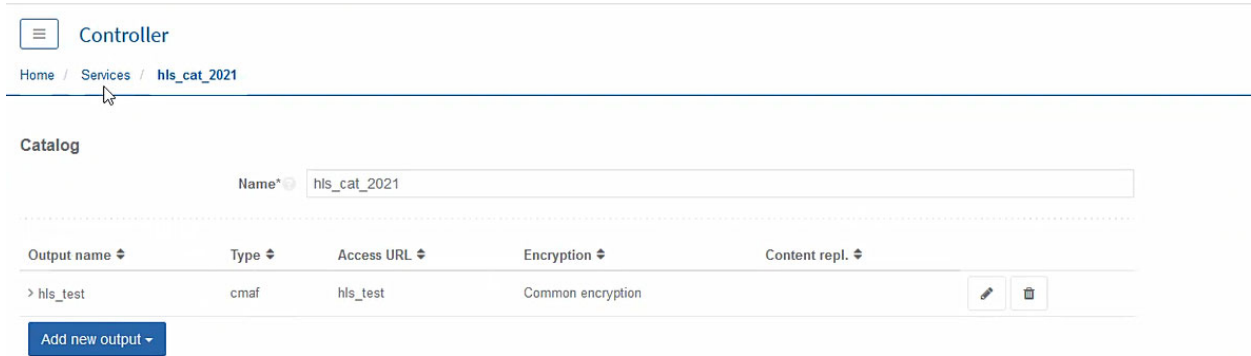


The screenshot shows the 'Encryption settings' form. It has several fields: 'Encryption' (dropdown set to 'Common Encryption (CBCS)'), '* Key generation mode' (dropdown set to 'External key (Compatible CPIX)'), 'Key server URL' (text input with a long URL), 'Widevine' (checkbox, unchecked), 'PlayReady' (checkbox, unchecked), 'Apple' (checkbox, checked), and 'Key delivery mode' (dropdown set to 'Fairplay'). The entire form is highlighted with an orange box.

- For the Content Replacement tab, keep the defaults.

11. Click **Save and exit**.

The catalog with encryption is now created.



The screenshot shows the EZDRM Controller interface. At the top, there's a navigation bar with 'Home / Services / hls_cat_2021'. Below this, the 'Catalog' section is visible. A form shows 'Name*' as 'hls_cat_2021'. Below the form, a table lists the catalog's outputs:

Output name	Type	Access URL	Encryption	Content repl.
> hls_test	cmaf	hls_test	Common encryption	

Below the table, there is a button labeled 'Add new output'.

The EZDRM CPIX Key Generator URL

The Base URL for EZDRM Key Generation is formatted as follows:

<https://cpix.ezdrm.com/keygenerator/cpix.aspx?k=kid&u=username&p=password&c=resourcename&m=hls>

The parameters include:

Parameter	Description
k	kid or Key ID value (client generated) in GUID format*
u	EZDRM username
p	EZDRM password
C	Content ID – generic resource name/identifier (client generated) – passed into id field
m	Media type, enter hls to return FairPlay key values

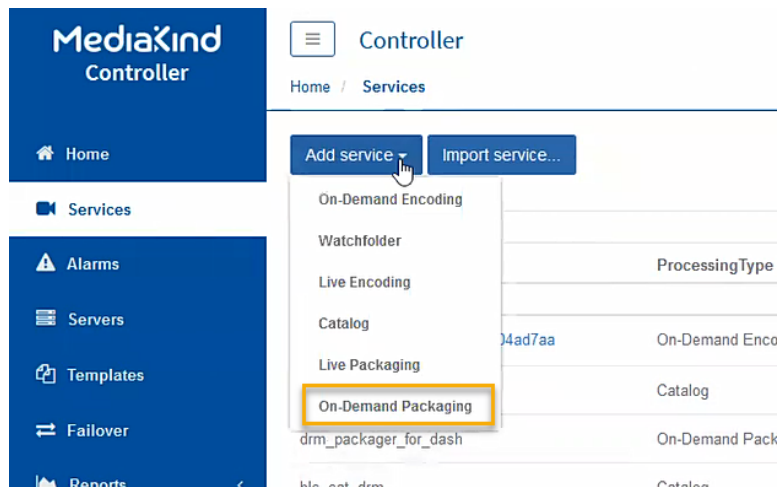
* To generate a GUID for the k value, you can use a GUID generator like the one found here: <http://guid-convert.appspot.com>.

* The **Key ID** used in the CPIX call is the Asset ID for your player.

On-Demand Packaging

The second step is to create the On-Demand Packaging for the Catalog.

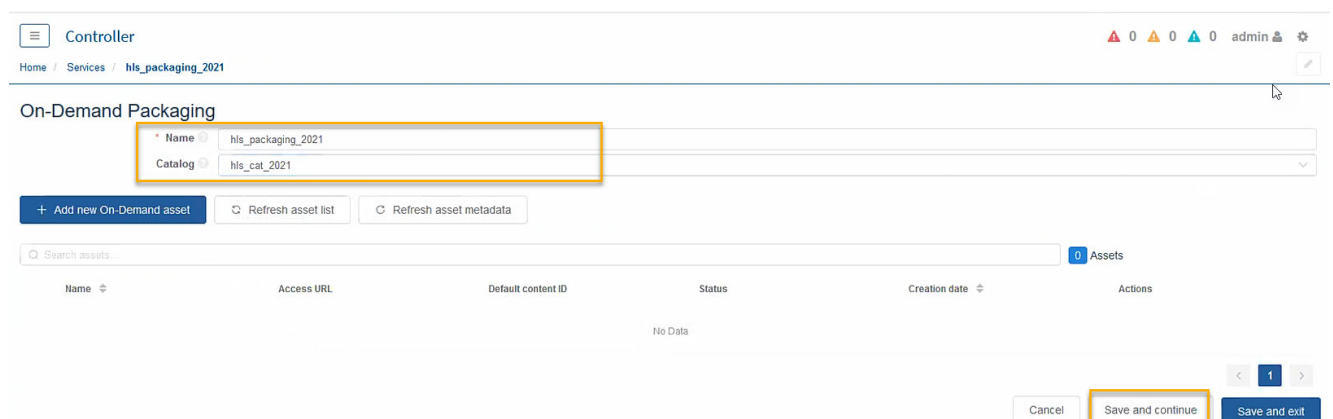
11. From the **Services** Menu click **Add service**. Select **On-Demand Packaging**.



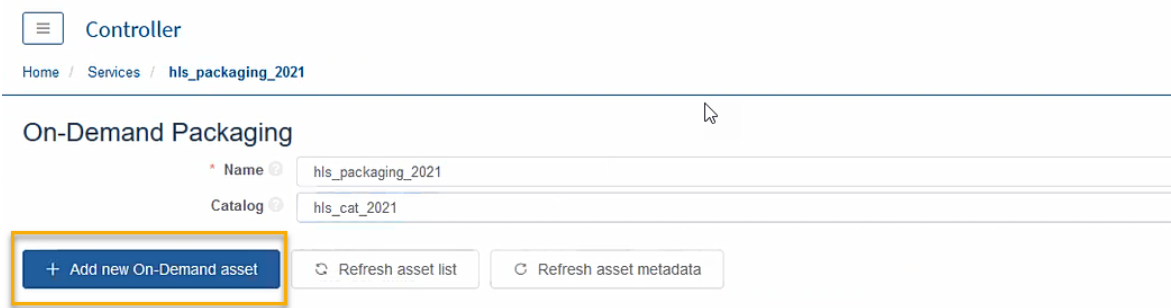
12. Enter **Name** for Packaging

13. Select the correct **Catalog** from the dropdown, created in the previous steps

14. Click **Save and Continue**



15. Click **Add new On-Demand asset**



Controller

Home / Services / hls_packaging_2021

On-Demand Packaging

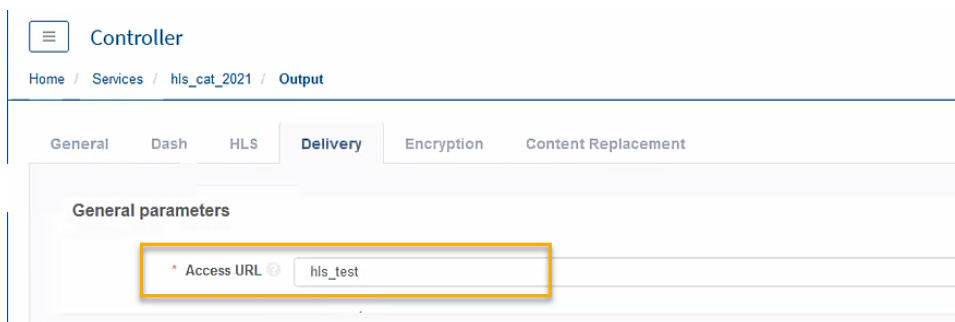
* Name

Catalog

+ Add new On-Demand asset Refresh asset list Refresh asset metadata

16. Enter Asset **Name** for the On-Demand Asset

17. Enter the **Access URL** - this is the Delivery Access URL from the Catalog previously created (Services / Controller / Catalog / Output / Delivery / Access URL)



Controller

Home / Services / hls_cat_2021 / Output

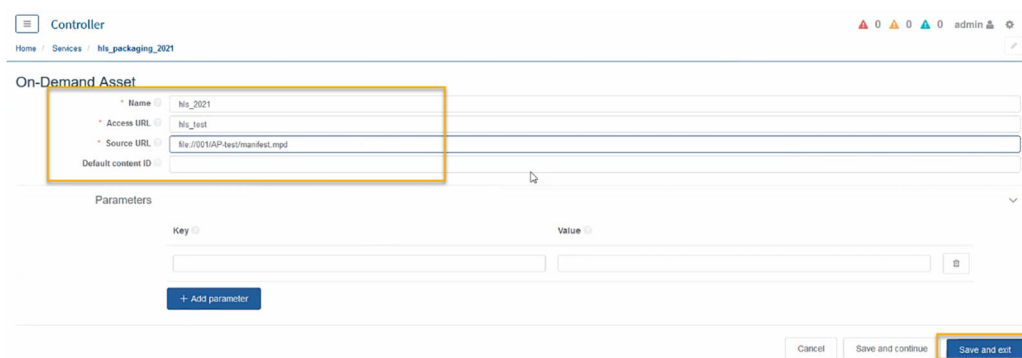
General Dash HLS **Delivery** Encryption Content Replacement

General parameters

* Access URL

18. Enter **Source URL** – the source file location for the MPD file

19. Click **Save and Exit**. The Asset will be shown as Valid if created successfully.



Controller

Home / Services / hls_packaging_2021

On-Demand Asset

* Name

* Access URL

* Source URL

Default content ID

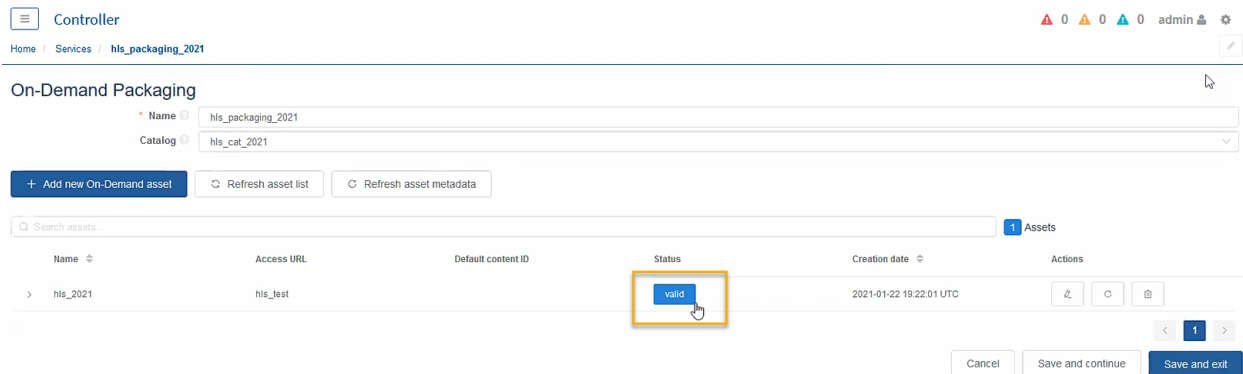
Parameters

Key Value

+ Add parameter

Cancel Save and continue **Save and exit**

20. The Asset will be shown as **Valid** if created successfully.



Controller

Home / Services / hls_packaging_2021

On-Demand Packaging

Name: hls_packaging_2021

Catalog: hls_cat_2021

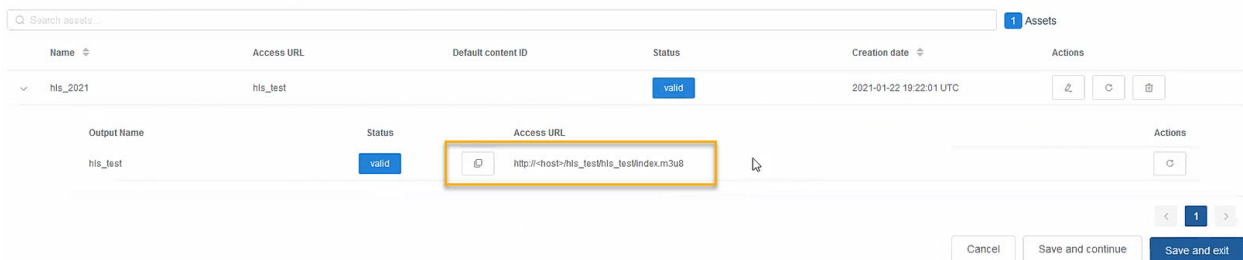
+ Add new On-Demand asset Refresh asset list Refresh asset metadata

Search assets...

Name	Access URL	Default content ID	Status	Creation date	Actions
hls_2021	hls_test		valid	2021-01-22 19:22:01 UTC	[Icons]

Cancel Save and continue Save and exit

21. The **Access URL** will now produce the M2U8 file with encryption, see example below:



Search assets...

Name	Access URL	Default content ID	Status	Creation date	Actions
hls_2021	hls_test		valid	2021-01-22 19:22:01 UTC	[Icons]

Output Name	Status	Access URL	Actions
hls_test	valid	http://host-hls_test/hls_testIndex.m3u8	[Icon]

Cancel Save and continue Save and exit

The **Key ID** used in the CPIX call is the Asset ID for your player.

Additional Information

For additional questions and comments please contact simplify@ezdrm.com.