

WORKING WITH VOD CATALOG ASSETS

AWS ELEMENTAL DELTA



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This guide corresponds to AWS Elemental Delta version 2.2 and 2.3.

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About This Guide

This guide describes the Delta VOD Catalog feature.

Assumptions

This guide assumes that you are familiar with the following:

- Basic AWS Elemental Delta usage.
- Navigating the Delta web interface, including how to log in and create input filters and output filters.
- Using the REST API, including how to login to the node over SSH.

Related Documentation

- [AWS Elemental Delta 2.2 API Guide](#)
- [AWS Elemental Delta 2.2 User Guide](#)

2 OVERVIEW

When standard VOD content is created in Delta (either through a watch folder or ingested as VOD content), metadata is generated for the content. This metadata is used for packaging content and providing other services, and includes:

- Configuration information for the system, content, and endpoints
- Content and endpoint indexes
- Statistics

This metadata is stored on the Delta node's Postgres database, which becomes a problem with large VOD libraries. In a Delta cluster, the leader and secondary nodes handle all of the database writes, so storage is limited to these two nodes (even if there are more egress-only nodes).

To solve the storage problem, VOD Catalog content stores all content-related metadata as an individual file for each content. This way, scaling up for metadata storage involves adding more space to the metadata storage location and not by adding more Delta nodes. Additionally, Delta performance is not impacted by large amounts of metadata.

If storage is not an issue, you can continue to use standard VOD content as described in the AWS Elemental Delta 2.2 User Guide.

The following sections provide more details on using VOD Catalog.

2.1 Available VOD Catalog Workflows

There are several steps that must be completed for all VOD Catalog workflows. See [Getting Started Steps](#) for what must be done. Note that some of these steps are one-time requirements and may not be required again (unless updates are required).

Once the initial steps are complete, see the table for available VOD Catalog workflows.

Workflow	Use	Page
Live to VOD Catalog	For promoting ingested live content to VOD Catalog content	12
Streaming VOD Ingest	For promoting ingested VOD content to VOD Catalog content	16
VOD Catalog Upgrade	For upgrading VOD content that already exists in Delta	18
VOD Catalog Ingest	For ingesting VOD content that already exists on S3 or local directory	20

2.2 How VOD Catalog Works

1. When VOD Catalog content is created (through one of the four described workflows), egress metadata is generated and exported to the metadata storage location (either NAS or S3).

The physical transport stream (TS) files are stored separately from the metadata, according to the workflow used to create the VOD Catalog content.

2. When the content is requested for playback, the serving node loads the metadata and applies the packaging and filters indicated in the VOD Catalog output template. For this reason, initial requests for a content may take longer to fulfill than subsequent requests. The metadata is cached in a subdirectory of the VOD database on the serving node (found at `/data/pgsql-delta-vod/data/base`) but is not replicated throughout the cluster.

Note: When you delete VOD Catalog content, you are deleting the TS files and metadata. The subdirectory on the Delta node for the content is not deleted. Instead, Postgres manages these subdirectories and removes them when content is inactive.

3. As new content requests come in to a node, old metadata is cleared from the node's cache. If a content is requested after its metadata has been removed from the cache, then Delta reloads the metadata, as described in step 2.

2.2.1 Storage Locations

VOD Catalog in AWS Elemental Delta uses multiple locations for storing data related to VOD Catalog content. These locations prevent the primary Postgres database from becoming excessively large, hindering backup and restore processes. Delta uses these three locations for VOD Catalog:

- The **VOD database of the Delta node** that is serving the VOD Catalog content. This database is found in `/data/pgsql-delta-vod/data/base` and consists of a subdirectory for each VOD Catalog content that this node has served. If a content has never been served by this node, then it won't have a subdirectory in this location.
- The **VOD Catalog output location** that you identified on the input filter (page 10). This folder holds the physical transport stream (TS) files for the VOD Catalog content. All egress nodes must have access to these files to serve the content.
- The **VOD Catalog metadata storage location** that you identified in the Delta settings (page 9). This directory holds all of the metadata related to VOD Catalog content, including audio and video tracks. All egress nodes must have access to these metadata files to serve the content.

2.3 Content Requirements

VOD Catalog requires that content:

- Is complete (either the live-to-VOD window is over or the VOD content is done)
- Uses the metadata storage location configured in General Settings (see page 9)

2.4 Output Template Replacement Tokens

Replacement tokens are temporary values used on VOD Catalog output with the intent to be replaced with real values when the output template is applied to VOD Catalog content. Tokens are primarily used on filters that require unique values per contents or for custom URLs.

The following replacement tokens are available:

Token	Filters used in	Settings used in	Replacement value source
\$name\$	Any	Custom URL field Output_url tag	The user-defined name from the live to VOD Catalog output filter or from the VOD Catalog contents. Replacement value is supplied when the VOD output template is applied (at content egress).
\$resourceid\$	Any	Any string-based settings on encryption filters, including keyprovider settings on DRM filters. Does not work in the Custom URL field.	The user-defined resource id from the Live to VOD Catalog output filter or from the VOD Catalog contents. Replacement value is supplied when the VOD output template is applied (at content egress).
\$resourceid_alt\$	Any	Any string-based settings on encryption filters, including keyprovider settings on DRM filters. Does not work in the Custom URL field.	The \$resourceid_alt\$ behaves in the same way as \$resourceid\$ (above). Use \$resourceid_alt\$ when you need to use more than one variable on an output filter.

1. On the VOD output template, enter \$name\$, \$resourceid\$, and \$resourceid_alt\$ as needed on applicable output filters.
2. Define the content-specific name and resourceid values. Either:
 - On the Live to VOD Catalog output filter, enter values in the Name, Resource ID, and Alternate Resource ID fields as applicable.
 - If you're upgrading existing VOD content in Delta or ingest VOD Catalog content, after the VOD Catalog contents is created, use the REST API to modify the contents to define the name, resourceid, and resourceid_alt. See the "PUT VOD Catalog Contents" of the [AWS Elemental Delta API Guide](#) for assistance.

At egress, the output template is applied to the contents and the tokens are replaced with the values defined on the VOD Catalog contents.

2.5 Aliased Endpoints

An aliased endpoint is an optional alternate reference for VOD Catalog content. Delta constructs default endpoints using the content path (`<input_filter_prefix>/<live_playlist_alias>`), which is often difficult to parse or know in advance of content promotion. When you add an alias to VOD Catalog content, the alias takes the place of the content path after VOD Catalog content promotion. The result is a fully custom, predictable URL.

Endpoint Formats

Aliased endpoints take the following formats:

- Aliased default endpoint URI: `http://<delta_IP>/out/vod/valias/<alias>/i/<filter>.<extension>`
- Aliased custom endpoint URI: `http://<delta_IP>/out/vod/v1/<alias>/u/<filter>.<extension>`

These endpoints are available in the VOD Catalog content detail on the Delta web interface as well as from a GET on the VOD Catalog content through the REST API. Use the aliased endpoints for content requests as well as when referencing the content through the REST API.

How to Define

The alias can be defined in the following ways:

- When promoting live content to VOD Catalog, specify the alias on the Live to VOD Catalog output filter (page 13)
- When promoting existing VOD content to VOD Catalog, specify the alias in the promotion information (page 18)
- Modify existing VOD Catalog content to add the alias

Alias Naming Restrictions

The alias must meet these requirements:

- Must be unique. Since the alias isn't available in the database until after promotion, you won't be able to see on the web interface or REST API if an alias is already in use. You must manually keep track of the aliases that are active. If you try to use an existing alias, then content promotion will fail.
- Must only use allowed characters: numbers, letters, dashes, and underscores.
- Must not use the word "valias." Since valias is used in URL construction, it is a restricted term and can't be used in the user-defined alias.

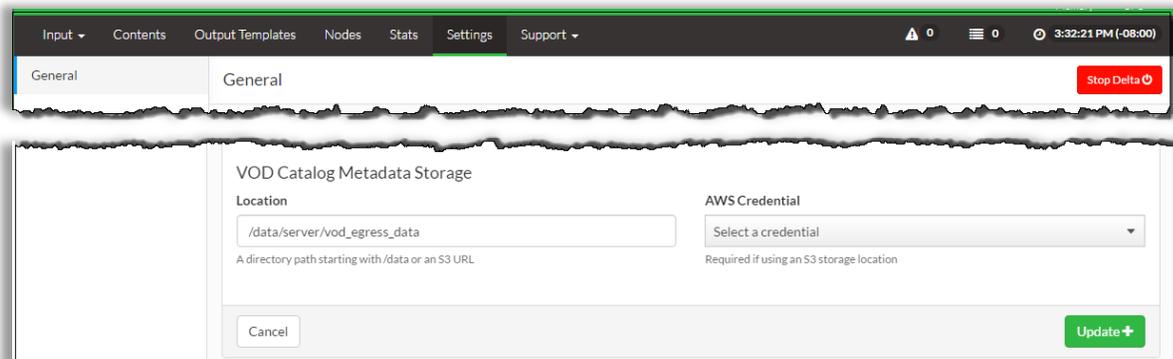
3 GETTING STARTED STEPS

The following steps must be completed prior to initiating any of the VOD Catalog workflows described in VOD Catalog Workflows starting on page 11.

Step A: Configure the Metadata Storage Location

The metadata storage location is where the VOD Catalog content metadata is stored. This can either be a local folder, a folder on a mounted NAS, or an S3 bucket. For a Delta cluster, this must be a shared location (either NAS or S3).

If you are using S3, you must have AWS credentials configured as well.

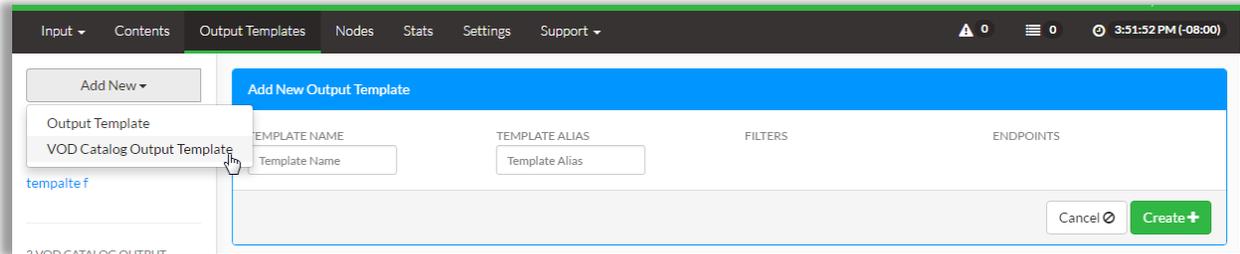


The screenshot shows the Delta web interface with the 'Settings' tab selected. The 'General' sub-tab is active, displaying the 'VOD Catalog Metadata Storage' configuration. The 'Location' field contains the path '/data/server/vod_egress_data' with a note below it: 'A directory path starting with /data or an S3 URL'. The 'AWS Credential' field is a dropdown menu with 'Select a credential' and a note: 'Required if using an S3 storage location'. At the bottom, there are 'Cancel' and 'Update' buttons.

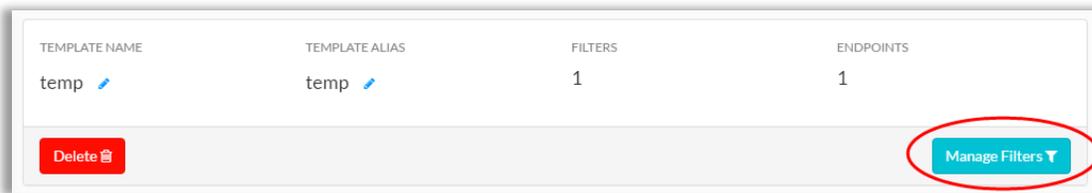
1. Access the Delta web interface. If you have a Delta cluster, access the leader node.
2. Go to the Settings > General screen.
3. In the VOD Catalog Metadata Storage > Location field, enter the directory path or S3 URL where the metadata will be stored.
4. If you are using an S3 bucket, enter the URL as `s3://<path>` and select a credential in the AWS Credential drop-down.
5. Click Update.

Step B: Create a VOD Catalog Output Template

At least one VOD Catalog output template must be configured to create VOD Catalog content. The VOD Catalog output template applies output filters to VOD Catalog content at egress (instead of at content creation, like with standard live and VOD content). This allows changes to become effective immediately without reprocessing content to generate egress metadata.



1. On the Delta web interface, go to the Output Templates screen.
2. Click Add New and select VOD Catalog Output Template.
3. In the Add New Output Template section, provide a Template Name and Template Alias.
Note that the Template Alias is how you will refer to the output template in input filters.
4. Click Create.
5. Click Manage Filters to add output filters to the output template.



6. Add output filters as needed.
See the [AWS Elemental Delta 2.2 User Guide](#) for filter and field explanations.

Step C: Configure Input Filter

Create input filters to start ingesting content.

See the appropriate section in [VOD Catalog Workflows](#) for initiating VOD Catalog content:

Workflow	Use	Page
Live to VOD Catalog	For promoting ingested live content to VOD Catalog content	12
Streaming VOD Ingest	For promoting ingested VOD content to VOD Catalog content	16
VOD Catalog Upgrade	For upgrading VOD content that already exists in Delta	18
VOD Catalog Ingest	For ingesting VOD content that already exists on S3 or local directory	20

Step D: Play VOD Catalog Content

The screenshot shows the 'Endpoints' tab for a VOD Catalog content item. The table below is a representation of the data shown in the image:

Description	ID	Default Endpoint URI	Custom Endpoint URI
N/A	184	<ul style="list-style-type: none"> ▶ http://epsilon/out/vod/v1/hlsvod2vod_hlsvod10/content_63/i/184.m3u8 ▶ http://epsilon/out/vod/valias/hlsvod2vod_hlsvod10/i/184.m3u8 	
N/A	86	<ul style="list-style-type: none"> ▶ http://epsilon/out/vod/v1/hlsvod2vod_hlsvod10/content_63/i/86.m3u8 ▶ http://epsilon/out/vod/valias/hlsvod2vod_hlsvod10/i/86.m3u8 	

1. Access the Contents > VOD Catalog Contents screen.
2. Locate the VOD Catalog contents you are working with.

Note that you can use the Path or VOD Catalog Output Template Alias filters to narrow the displayed contents.

3. Click on the Path name in the contents results to display information about the content entity.
4. To test playback, click the play button in one of the endpoint columns.

If the endpoints on the output template contain custom URI configuration, the Custom Endpoint URI will contain the corresponding URI as well.

If you defined an alias for this content, then each endpoint column will contain two endpoints. The top endpoint is the default and the bottom is the aliased endpoint.

5. Make note of the Default Endpoint URI for use in downstream players/devices.

When the content is requested for playback, the VOD Catalog output template and filters are applied to the content.

Egress nodes maintain a cache of content they have delivered. Least-recently-used contents are paged out of the cache when newer content is paged in. In this way, limited space is used and nodes are able to maintain performance and reliability.

4 VOD CATALOG WORKFLOWS

4.1 Live to VOD Catalog

In this workflow, a linear stream is ingested and clipped to create a VOD Catalog content entity based on values in the output filter.

Step A: Create the Input Filter

1. Create an input filter. Supported selections are:
 - HTTP PUT
 - MSS
 - RTMP
 - UDP
 - WebDAV
2. To indicate that the live content is being promoted to VOD Catalog after ingest, complete the VOD Catalog fields as described in the table.

Field	Description	Notes
VOD Content (not shown on MSS and UDP input filters)	When Enabled is checked, indicates that the asset being handled by this input filter is VOD.	Enabled must be <i>unchecked</i> for this workflow.
VOD Catalog URL Prefix	Partial URL path added to the start of all VOD Catalog content endpoints produced from this input filter.	Optional.
VOD Catalog Output Template	Template with output filters to be applied at egress of VOD Catalog content.	An output template must be defined prior to creating input filters that will create VOD Catalog contents.
Live to VOD Catalog Output Location Type	Folder to store VOD Catalog content after promotion. Select either S3 or Local storage.	AWS credentials must be entered for S3 storage.
Local/S3 Live to VOD Catalog Output Location	URL for folder where VOD catalog content will be stored.	If S3 storage is selected, the URL must be entered as <code>s3://<full_path></code>

3. Ensure remaining fields are completed as necessary, and click Create.

Step B: Ingest Content

When a live stream is pushed to this input filter, a live contents entity is created automatically on the Contents page.

Step C: Create Live to VOD Output Filter

A Live to VOD Catalog output filter must be added to the output filter tree to create VOD Catalog content. The Live to VOD Catalog output filter must be a top-level filter. When it is added to the filter tree, child output filters from the VOD catalog output template are automatically applied.

1. Access the Contents > Live Contents screen and locate the contents entity created in Step B.

Note that the content Alias is automatically configured using the input filter label. Enter this label in the Alias filter to narrow the number of contents entities displayed.

2. Add a top-level **Live to VOD Catalog** output filter that will create VOD Catalog content.
3. Complete the fields on the Live to VOD Catalog output filter:

Field	Description	Notes
Description	Any descriptive information you want to add. This information is useful for creating a cross-reference to data in your CMS.	Optional.
Start	Calendar date/time for the start of the VOD Catalog content window.	Formatted according to the ISO 8601 standard: yyyy-mm-dd <space> hh:mm:ss <space> offset Where <offset> is the offset for the desired time zone. If no offset is entered, the offset for the time zone specified in the Delta settings is assumed.
End	Calendar date/time for the end of the VOD Catalog content window.	

Field	Description	Notes
Expire	Calendar date/time that the asset will be promoted to a VOD Catalog asset. The expiration time provides a buffer to allow the CMS to adjust start/end times after the end of an event (if needed).	The Live to VOD Catalog output filter is automatically removed from the filter tree at the specified expire time.
Promote on expiration	Indicates that the content will be promoted to VOD Catalog at the specified expiration time.	<i>Must</i> be checked for content to be promoted.
Name	Value for the \$name\$ replacement token in the Custom URL field of the output template.	Optional. If you haven't used replacement tokens, then defining the name will have no effect.
Alias	Endpoint modifier for VOD Catalog content. The alias takes place of the path in the endpoint URL.	Optional. Aliased endpoints are in a different format than default endpoints. See Aliased Endpoints for more information.
Resource ID	Value for the \$resourceid\$ replacement token in encryption fields on the output template.	Optional. If you haven't used replacement tokens, then defining the resource ID will have no effect.
Alternate Resource ID	Value for the \$resourceid_alt\$ replacement token in encryption fields on the output template.	Optional. If you haven't used replacement tokens, then defining the alternate resource ID will have no effect.

At the date and time specified in the Expire field, the Live content is promoted to VOD Catalog content:

- a. The Live contents are copied to the VOD Catalog output location identified on the input filter. The content metadata is moved from the Postgres database to the Metadata Storage Location indicated on the Settings > General page in the web interface.
- b. Delta creates a new VOD Catalog contents entity.

If there are multiple Live to VOD Catalog output filters on the same live content, an independent VOD Catalog contents entity and content file is created for each.

- c. Delta deletes the Live to VOD Catalog output filter and child filters from the live content entity.
- d. When outside the content window set in the input filter, the live content is removed as per standard clean-up process.
- e. At VOD Catalog content egress, output filters indicated on the output template are applied.

Step D: Gather Endpoints

The VOD Catalog endpoints are available for playback when the Live to VOD Catalog output filter is applied to the live content, and remain the same throughout and post-promotion. To obtain the endpoints:

Pre-promotion

The VOD catalog endpoints must be gathered from the REST API.

For general information about using the REST API, see the [AWS Elemental Delta API Guide](#).

1. Do a GET for the live content.

```
GET http://<Delta IP address>:8080/contents/<content ID>
```

2. Locate the VOD Catalog output filter and vod_catalog > endpoints element.

```
<filter_type>live_to_vod_catalog</filter_type>
.
.
<vod_catalog>
.
.
  <endpoints>
```

3. In the endpoints element, make note of the default_endpoint_uri

Use this URI for VOD Catalog playback, both before and after promotion.

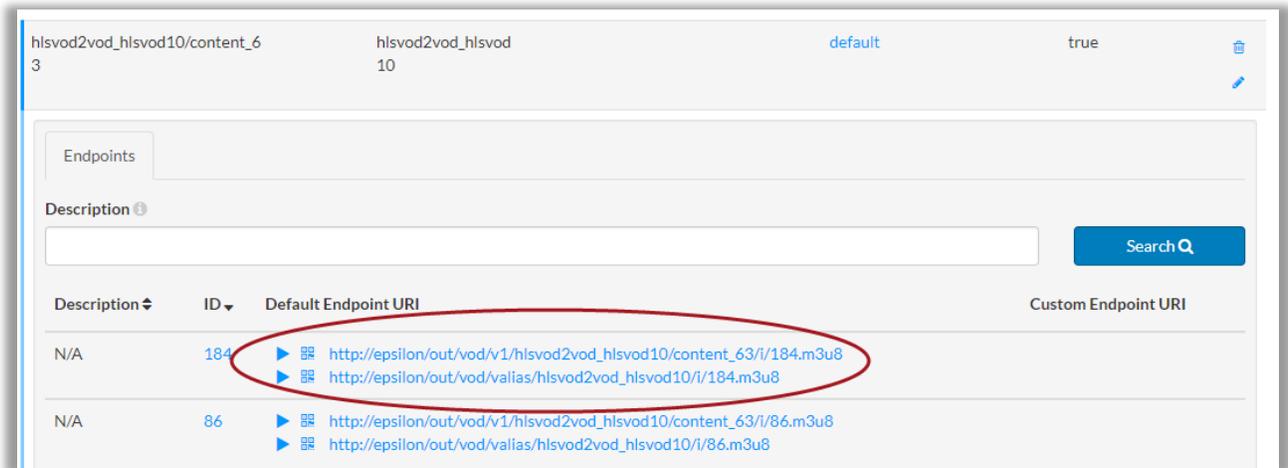
Example

```
GET http://delta_node:8080/contents/9/
content-type: application/xml
accept: application/xml
-----
<?xml version="1.0" encoding="UTF-8"?>
<content href="/contents/9" product="Delta" version="2.2.0.56209">
.
.
  <filters>
    <filter>
.
.
      <filter_type>live_to_vod_catalog</filter_type>
.
.
      <filter_settings>
        <stream_sets/>
        <vod_catalog>
.
.
          <endpoints>
            <endpoint>
.
.

<default_endpoint_uri>http://delta_node/out/vod/v1/input_filter_content/vod_62/i/12.m3u8</def
ault_endpoint_uri>
```

Post-promotion

Once the VOD Catalog content is created, you can use the web interface to gather the endpoints.



1. Access the Contents > VOD Catalog Contents screen.
2. Locate the VOD Catalog contents you are working with.

Note that you can use the Path and VOD Catalog Output Template Alias filters to narrow down the contents displayed.

3. Click on the Path name in the contents results to display information about the content entity.
4. Note the Default Endpoint URI. If you defined a content alias, use the aliased endpoint that includes the term “valias.”

4.2 Streaming VOD Ingest

In this workflow, Delta’s streaming input filters (HTTP PUT, RTMP, MSS, or WebDAV) are used to ingest content into the VOD Catalog: streaming content received on the input filter is initially ingested as a standard VOD asset. Once ingest is complete, the content is converted to a VOD Catalog asset and the standard VOD metadata is deleted. The actual content files are ingested and written once (they are not copied to a new destination as in other workflows).

Note that:

- This workflow is only used for ingesting new content into the VOD Catalog.
 - An input filter that has already ingested standard VOD content cannot be reconfigured for VOD Catalog (the “Automatically Promote After Ingest” option cannot be enabled). This is to avoid collisions between the standard output filters and the VOD Catalog output template.
 - To promote standard VOD content that already exists in Delta, see [VOD Catalog Upgrade](#).
- Output filters cannot be added to the standard VOD asset that is created during ingest. Instead, the VOD Catalog output template is applied at VOD Catalog content egress.
- Content cannot be played back until it has been promoted to VOD Catalog content.

Create the streaming VOD input filter and complete the VOD fields as described in the table.

Field	Description	Notes
VOD Content	When Enabled is checked, indicates that the asset being handled by this input filter is VOD.	Enabled must be <i>checked</i> for this workflow.
Promote After Ingest *only displayed once VOD Content is checked	When enabled, content is promoted to VOD Catalog content once it is complete.	Enabled must be <i>checked</i> for this workflow.
Promotion Delay	Indicates how many seconds the system will wait after the content is complete to convert VOD content to VOD Catalog content.	The delay helps systems with unreliable ingest networks. Configuring a delay here ensures that a temporary/short ingest interruption does not cause an incomplete VOD Catalog asset to be created.
VOD Catalog URL Prefix	Partial URL path added to the start of all VOD Catalog content endpoints produced from this input filter.	Optional.
VOD Catalog Output Template	Template with output filters to be applied at egress of VOD Catalog content.	An output template must be defined prior to creating input filters that will create VOD Catalog contents.

Content ingested by this input filter shows up as standard VOD content until it is complete. When it is complete, the content is converted to VOD Catalog and the standard VOD metadata is deleted from the Postgres database. Content files are only ingested and written once and are not copied to a new destination.

Content can be played back as described in Step D: Play VOD Catalog Content on page 11.

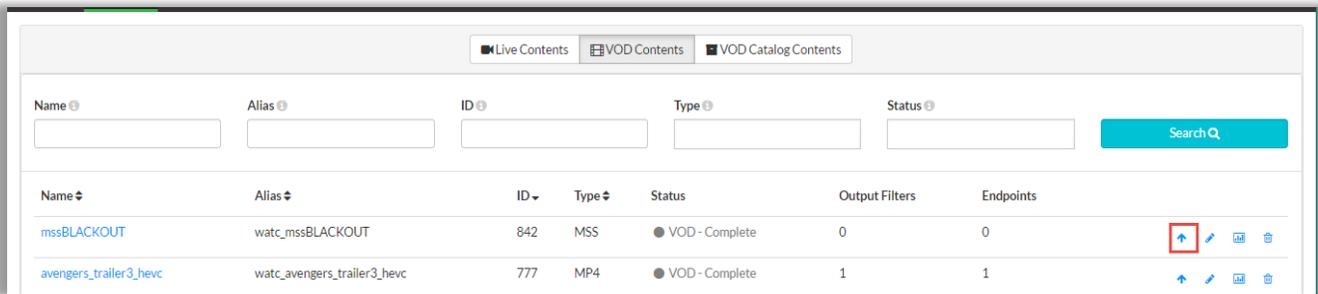
4.3 VOD Catalog Upgrade

In this workflow, a streaming VOD asset that has already been ingested into Delta is upgraded to VOD Catalog content. This workflow is often used if you want to upgrade to VOD Catalog from content from an existing input filter or from a watch folder. Since the standard VOD asset can still be played during and after upgrade, this workflow is also useful for limited interruption when migrating assets to VOD Catalog.

As the upgrade is performed on the existing VOD content itself, all of the upgrade work is done through REST API. There is no web interface component of this workflow.

Web Interface Promotion

1. On the VOD Contents page, locate the content to be promoted to VOD Catalog.
2. Click Promote Content (up arrow) and complete the fields as described in the table.



Field	Description	Notes
VOD Catalog Output Template	The output template that will be applied to the VOD Catalog content.	You must have a VOD Catalog output template defined prior to promoting content to VOD Catalog. For reference, see Getting Started Steps .
Content Alias	The optional alternate reference for the VOD Catalog content.	The alias is applied to the content post-promotion. For more information, see Aliased Endpoints .

This indicates that the job has been queued up for execution. Note that:

- No content is moved or copied
 - The standard VOD metadata continues to exist in the Postgres database and can continue to be played until the Step C is complete
 - The VOD Catalog metadata is created in parallel with the standard VOD metadata
 - VOD Catalog content can be played back as described in Step D: Play VOD Catalog Content on page 11.
3. Delete the standard VOD content metadata using the API, as described on page 19.

API Promotion

Step A: Gather Required Information

Ensure you are familiar with the VOD Catalog output template alias and the content ID or alias for the existing VOD content that is being upgraded.

- The content ID can be gathered from the Contents > VOD Contents screen on the web interface or from

```
GET http://<Delta IP address>:8080/contents
```

- The output template alias can be gather from the Output Templates screen on the web interface or from

```
GET http://<Delta IP address>:8080/vod_output_templates
```

Step B: Create VOD Catalog Asset

Through the REST API, POST a vod_catalog_content entity to the existing VOD content. In the body, include the vod_catalog_output_template_alias.

Example

```
POST http://10.4.136.95:8080/contents/16/vod_catalog_content
content-type: application/xml
accept: application/xml
-----
<vod_catalog_content>
  <vod_output_template_alias>Upgrade VOD</vod_output_template_alias>
</vod_catalog_content>
```

The response repeats back the data you entered, and adds the vod_catalog_content_path.

```
<?xml version="1.0" encoding="UTF-8"?>
<vod_catalog_content href="/contents/16/vod_catalog_content" product="Delta"
version="2.2.0.12345">
  <vod_catalog>
    <vod_catalog_content_path>WebDAV_VOD_Catalog/content_16</vod_catalog_content_path>
  </vod_catalog>
</vod_catalog_content>
```

This indicates that the job has been queued up for execution. Note that:

- No content is moved or copied
- The standard VOD metadata continues to exist in the Postgres database and can continue to be played until the Step C is complete
- The VOD Catalog metadata is created in parallel with the standard VOD metadata
- VOD Catalog content can be played back as described in Step D: Play VOD Catalog Content on page 11.

Step C: Delete Standard VOD Metadata

When you are ready to fully migrate over the VOD Catalog endpoints, delete the metadata from the Postgres database. This does not impact the content files.

Through the REST API, DELETE the metadata from the standard VOD content entity.

Example

```
DELETE http://10.4.136.95:8080/contents/16/metadata
```

A 200 response indicates that the delete is complete.

4.4 VOD Catalog Ingest

In this workflow, VOD content that already exists in NAS or S3 is ingested as VOD Catalog content. A VOD Catalog input filter is configured with the asset base location, and, when the asset is ready to be ingested, your CMS sends an API call to Delta with the relative path for the asset.

Content is not moved when the VOD Catalog content is created. It is played and managed from the NAS/S3 bucket. Be aware that this could lead to billing implications if your content is served from an S3 bucket.

Supported file formats:

- NAS: HLS, MP4, MSS
- S3: HLS, MP4

Step A: Create Input Filter

Create a VOD Catalog Input filter and complete the fields as described in the table and click Create.

Field	Description	Notes
Label	The name of the input filter.	
VOD Catalog URL Prefix	Partial URL path added to the start of all VOD Catalog content endpoints produced from this input filter.	Optional.
Take Ownership of Content	When enabled, Delta takes ownership of the content. This means that if the VOD Catalog content is deleted from Delta, the content files are also deleted.	
VOD Catalog Output Template	Template with output filters to be applied at egress of VOD Catalog content.	An output template must be defined prior to creating input filters that will create VOD Catalog contents.
Location Type	Folder type where the source content is stored. Select either S3 or Local storage.	AWS credentials must be entered for S3 storage.
Local/S3 Location	Base location for where the content is stored.	If S3 storage is selected, the URL must be entered as s3://<full_path>

Step B: Ingest Content

Content ingest can be initiated from the web interface, or through the REST API. See the following sections for more information.

Web Interface Initiation

1. On the Input Filters screen of the web interface, locate the VOD Catalog Input filter to ingest the content.
2. Click the Ingest Content button.

FILTER LABEL ⓘ	FILTER ID	FILTER TYPE
Filter 36	36	VOD Catalog Input

VOD Catalog URL Prefix ⓘ
vcat

Take Ownership of Content ⓘ
 Enabled

VOD Catalog Output Template ⓘ
tpub [Template Details](#)

Location Type ⓘ
Local

Local Location ⓘ
/data/server/content/steve-vm-delta1/

Delete

Ingest Content + [Edit](#)

3. Enter the path to the manifest to be ingested and click Ingest.

Ingest Content ×

Relative Path to Manifest ⓘ

Cancel ⌵ Ingest +

The content is ingested and a VOD Catalog content object is created.

Content can be played back as described in Step D: Play VOD Catalog Content on page 11.

API Initiation

When content is ready to be ingested, the CMS sends an API call to the VOD Catalog input filter endpoint in Delta, including the relative path to the content being ingested.

```
POST http://<Delta IP>:8080/input_filters/<ID>/vod_catalog_contents
```

Where <ID> is the VOD Catalog Input filter's ID.

Example

```
POST http://10.4.136.95:8080/input_filters/6/vod_catalog_contents
content-type: application/xml
accept: application/xml
-----
<vod_catalog_content>
  <relative_path>relative/path/example/index.m3u8</relative_path>
</vod_catalog_content>
```

Note that a 202 response is received, even if the relative path is incorrect. This indicates that the content is queued for ingest later.

Content can be played back as described in Step D: Play VOD Catalog Content on page 11.