AWS Elemental
MediaLive API Reference

API Reference
# AWS Elemental MediaLive API Reference

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<td>Properties</td>
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What Is the AWS Elemental MediaLive API?

This is the AWS Elemental MediaLive REST API Reference. It provides information on the URL, request contents, and response contents of each AWS Elemental MediaLive REST operation.

We assume that your IAM user credentials have the permissions needed to use AWS Elemental MediaLive via the REST API. We also assume that you are familiar with the features and operations of AWS Elemental MediaLive, as described in the user guide.

For general information on the service, see the AWS Elemental MediaLive User Guide.
Resources

The AWS Elemental MediaLive REST API includes the following resources.

Topics
- Channels (p. 2)
- Channels channelId (p. 123)
- Channels channelId Start (p. 253)
- Channels channelId Stop (p. 359)
- InputSecurityGroups (p. 464)
- InputSecurityGroups inputSecurityGroupId (p. 470)
- Inputs (p. 476)
- Inputs inputId (p. 485)

Channels

URI
/prod/channels

HTTP Methods

GET

Operation ID: ListChannels

Produces list of channels that have been created

Query Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nextToken</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
<tr>
<td>maxResults</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>ListChannelsResultModel (p. 14)</td>
<td>An array of channels</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 27)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>Status Code</td>
<td>Response Model</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 27)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 28)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 27)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 28)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 27)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

**POST**

Operation ID: CreateChannel

Creates a new channel

**Responses**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>CreateChannelResultModel (p. 26)</td>
<td>Creation of channel is started.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 27)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>422</td>
<td>ChannelConfigurationValidationError (p. 27)</td>
<td>The Channel failed validation and could not be created.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 27)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 28)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 27)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 28)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 27)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 27)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

**Schemas**

**Request Bodies**

**Example POST**

```json
{
   "inputAttachments (p. 51)" : [
```
```json
{
    "inputId (p. 86)": "string",
    "inputSettings (p. 86)": {
        "sourceEndBehavior (p. 89)": enum,
        "audioSelectors (p. 89)": [
            {
                "name (p. 38)": "string",
                "selectorSettings (p. 38)": {
                    "audioLanguageSelection (p. 38)": {
                        "languageSelectionPolicy (p. 36)": enum,
                        "languageCode (p. 36)": "string"
                    },
                    "audioPidSelection (p. 38)": {
                        "pid (p. 37)": integer
                    }
                }
            }
        ],
        "deblockFilter (p. 90)": enum,
        "networkInputSettings (p. 90)": {
            "hlsInputSettings (p. 108)": {
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                "bandwidth (p. 82)": integer,
                "retryInterval (p. 82)": integer,
                "bufferSegments (p. 82)": integer
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            "serverValidation (p. 108)": enum
        },
        "inputFilter (p. 90)": enum,
        "videoSelector (p. 90)": {
            "colorSpace (p. 122)": enum,
            "selectorSettings (p. 122)": {
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                    "pid (p. 122)": integer
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                "videoSelectorProgramId (p. 123)": {
                    "programId (p. 123)": integer
                }
            },
            "colorSpaceUsage (p. 122)": enum
        },
        "filterStrength (p. 90)": integer,
        "captionSelectors (p. 90)": [
            {
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                "languageCode (p. 47)": "string",
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                        "source608ChannelNumber (p. 62)": integer,
                        "convert608To708 (p. 63)": enum,
                        "source608TrackNumber (p. 63)": integer
                    },
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                        "convert608To708 (p. 114)": enum
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                        "pid (p. 57)": integer
                    },
                    "aribSourceSettings (p. 47)": {
                    },
                    "teletextSourceSettings (p. 47)": {
                        "pageNumber (p. 118)": "string"
                    },
                    "scte27SourceSettings (p. 48)": {
```
"pid (p. 114)": integer
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     "url (p. 109)": "string",
     "username (p. 109)": "string"
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    {"id (p. 109)": "string"
    }
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      "source (p. 118)": enum
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Schemas

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    "cacheFullBehavior (p. 113)": enum
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    "timestampOffsetMode (p. 106)": enum,
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"inputLossAction (p. 106)" : enum,
"sendDelayMs (p. 107)" : integer,
"eventIdMode (p. 107)" : enum,
"restartDelay (p. 107)" : integer,
"streamManifestBehavior (p. 107)" : enum
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  "indexNSegments (p. 77)" : integer,
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  "captionLanguageSetting (p. 78)" : enum,
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  "mode (p. 78)" : enum,
  "ivSource (p. 79)" : enum,
  "manifestCompression (p. 79)" : enum,
  "keyProviderSettings (p. 79)" : {
    "staticKeySettings (p. 91)" : {
      "staticKeyValue (p. 117)" : "string",
      "keyProviderServer (p. 117)" : {
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        "uri (p. 87)" : "string",
        "username (p. 88)" : "string"
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  "manifestDurationFormat (p. 79)" : enum,
  "keyFormatVersions (p. 79)" : "string",
  "streamInfResolution (p. 79)" : enum,
  "timestampDeltaMilliseconds (p. 80)" : integer,
  "segmentationMode (p. 80)" : enum,
  "baseUrlContent (p. 80)" : "string",
  "clientCache (p. 80)" : enum,
  "captionLanguageMappings (p. 80)" : [
    {
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      "captionChannel (p. 46)" : integer,
      "languageCode (p. 46)" : "string"
    }
  ],
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  "keepSegments (p. 80)" : integer,
  "timedMetadataId3Period (p. 81)" : integer,
  "programDateTime (p. 81)" : enum,
  "directoryStructure (p. 81)" : enum,
  "keyFormat (p. 81)" : "string",
  "inputLossAction (p. 81)" : enum,
  "adMarkers (p. 81)" : [enum
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  "programDateTimePeriod (p. 81)" : integer,
  "segmentLength (p. 82)" : integer,
  "hlsCdnSettings (p. 82)" : {
    "hlsAkamaiSettings (p. 76)" : {
      "httpTransferMode (p. 74)" : enum,
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    }
  }
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  "restartDelay (p. 83)": integer,
  "connectionRetryInterval (p. 83)": integer,
  "filecacheDuration (p. 84)": integer
}
}
,"name (p. 110)": "string"
],
"audioDescriptions (p. 63)": [
  {
    "languageCodeControl (p. 34)": enum,
    "audioTypeControl (p. 34)": enum,
    "remixSettings (p. 34)": {
      "channelMappings (p. 111)": [
        {
          "outputChannel (p. 33)": integer,
          "inputChannelLevels (p. 33)": [
            {
              "inputChannel (p. 86)": integer,
              "gain (p. 87)": integer
            }
          ]
        }
      ],
      "channelsOut (p. 111)": integer,
      "channelsIn (p. 112)": integer
    },
    "audioType (p. 34)": enum,
    "name (p. 35)": "string",
    "languageCode (p. 35)": "string",
    "codecSettings (p. 35)": {
      "aacSettings (p. 33)": {
        "vbrQuality (p. 28)": enum,
        "codingMode (p. 29)": enum,
        "profile (p. 29)": enum,
        "bitrate (p. 29)": number,
        "inputType (p. 29)": enum,
        "rawFormat (p. 29)": enum,
        "sampleRate (p. 29)": number,
        "rateControlMode (p. 29)": enum,
        "spec (p. 30)": enum
      }
    }
  }
]
"ac3Settings (p. 33)": {
  "drcProfile (p. 31)": enum,
  "dialnorm (p. 31)": integer,
  "codingMode (p. 31)": enum,
  "metadataControl (p. 31)": enum,
  "bitrate (p. 31)": number,
  "lfeFilter (p. 31)": enum,
  "bitstreamMode (p. 32)": enum
},
"eac3Settings (p. 34)": {
  "dialnorm (p. 59)": integer,
  "passthroughControl (p. 59)": enum,
  "metadataControl (p. 59)": enum,
  "drcLine (p. 59)": enum,
  "bitrate (p. 60)": number,
  "surroundExMode (p. 60)": enum,
  "ltRtSurroundMixLevel (p. 60)": number,
  "lifeControl (p. 60)": enum,
  "codingMode (p. 60)": enum,
  "surroundMode (p. 60)": enum,
  "attenuationControl (p. 60)": enum,
  "lfeFilter (p. 60)": enum,
  "ltRtCenterMixLevel (p. 61)": number,
  "dcFilter (p. 61)": enum,
  "phaseControl (p. 61)": enum,
  "stereoDownmix (p. 61)": enum,
  "bitstreamMode (p. 61)": enum,
  "loRoSurroundMixLevel (p. 61)": number,
  "drcRf (p. 61)": enum,
  "loRoCenterMixLevel (p. 62)": number
},
"passThroughSettings (p. 34)": {
},
"mp2Settings (p. 34)": {
  "codingMode (p. 104)": enum,
  "bitrate (p. 104)": number,
  "sampleRate (p. 104)": number
},
"streamName (p. 35)": "string",
"audioNormalizationSettings (p. 35)": {
  "targetLkfs (p. 36)": number,
  "algorithmControl (p. 36)": enum,
  "algorithm (p. 37)": enum
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"audioSelectorName (p. 35)": "string"
],
"captionDescriptions (p. 63)": [ {
  "captionSelectorName (p. 44)": "string",
  "languageDescription (p. 44)": "string",
  "name (p. 44)": "string",
  "languageCode (p. 45)": "string",
  "destinationSettings (p. 45)": {
    "scte27DestinationSettings (p. 45)": {
    },
    "burnInDestinationSettings (p. 45)": {
      "xPosition (p. 41)": integer,
      "backgroundColor (p. 41)": enum,
      "yPosition (p. 41)": integer,
      "teletextGridControl (p. 41)": enum,
      "backgroundOpacity (p. 41)": integer,
      "fontOpacity (p. 42)": integer,
      "fontResolution (p. 42)": integer,
      "shadowOpacity (p. 42)": integer,
"shadowYOffset (p. 42)": integer,
"outlineSize (p. 42)": integer,
"outlineColor (p. 42)": enum,
"fontSize (p. 43)": "string",
"shadowXOffset (p. 43)": integer,
"alignment (p. 43)": enum,
"shadowColor (p. 43)": enum,
"fontColor (p. 43)": enum,
"font (p. 43)": {
  "passwordParam (p. 87)": "string",
  "uri (p. 87)": "string",
  "username (p. 88)": "string"
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"teletextDestinationSettings (p. 45)": {
},
"smpteTtDestinationSettings (p. 45)": {
},
"webvttDestinationSettings (p. 45)": {
},
"ttmlDestinationSettings (p. 45)": {
  "styleControl (p. 118)": enum
},
"embeddedPlusScte20DestinationSettings (p. 45)": {
},
"dvbSubDestinationSettings (p. 46)": {
  "xPosition (p. 54)": integer,
  "backgroundColor (p. 54)": enum,
  "yPosition (p. 54)": integer,
  "teletextGridControl (p. 55)": enum,
  "backgroundColorOpacity (p. 55)": integer,
  "fontOpacity (p. 55)": integer,
  "fontResolution (p. 55)": integer,
  "shadowOpacity (p. 55)": integer,
  "shadowYOffset (p. 55)": integer,
  "outlineSize (p. 56)": integer,
  "outlineColor (p. 56)": enum,
  "fontSize (p. 56)": "string",
  "shadowXOffset (p. 56)": integer,
  "alignment (p. 56)": enum,
  "shadowColor (p. 56)": enum,
  "fontColor (p. 57)": enum,
  "font (p. 57)": {
    "passwordParam (p. 87)": "string",
    "uri (p. 87)": "string",
    "username (p. 88)": "string"
  }
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"embeddedDestinationSettings (p. 46)": {
},
"rtmpCaptionInfoDestinationSettings (p. 46)": {
},
"aribDestinationSettings (p. 46)": {
},
"scte20PlusEmbeddedDestinationSettings (p. 46)": {
}
],
"availConfiguration (p. 63)": {
  "availSettings (p. 39)": {
    "scte35TimeSignalApos (p. 39)": {
      "adArrivalTimeOffset (p. 116)": integer,
      "webDeliveryAllowedFlag (p. 116)": enum,
      "noRegionalBlackoutFlag (p. 116)": enum
    }
  }
}
"scte35SpliceInsert (p. 39)": {
  "adAvalOffset (p. 115)": integer,
  "webDeliveryAllowedFlag (p. 115)": enum,
  "noRegionalBlackoutFlag (p. 115)": enum
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"globalConfiguration (p. 64)": {
  "inputLossBehavior (p. 65)": {
    "inputLossImageType (p. 88)": enum,
    "inputLossImageColor (p. 88)": "string",
    "inputLossImageSlate (p. 88)": {
      "passwordParam (p. 87)": "string",
      "uri (p. 87)": "string",
      "username (p. 88)": "string"
    },
    "blackFrameMsec (p. 89)": integer,
    "repeatFrameMsec (p. 89)": integer
  },
  "supportLowFramerateInputs (p. 65)": enum,
  "initialAudioGain (p. 65)": integer,
  "inputEndAction (p. 66)": enum,
  "outputTimingSource (p. 66)": enum
},
"videoDescriptions (p. 64)": [
  {
    "respondToAfd (p. 120)": enum,
    "scalingBehavior (p. 121)": enum,
    "name (p. 121)": "string",
    "width (p. 121)": integer,
    "sharpness (p. 121)": integer,
    "codecSettings (p. 121)": {
      "h264Settings (p. 120)": {
        "minIInterval (p. 68)": integer,
        "slices (p. 68)": integer,
        "parNumerator (p. 69)": integer,
        "gopSizeUnits (p. 69)": enum,
        "maxBitrate (p. 69)": integer,
        "bitrate (p. 69)": integer,
        "bufFillPct (p. 69)": integer,
        "temporalAq (p. 69)": enum,
        "afdSignaling (p. 70)": enum,
        "timecodeInsertion (p. 70)": enum,
        "bufSize (p. 70)": integer,
        "softness (p. 70)": integer,
        "framerateControl (p. 70)": enum,
        "fixedAfd (p. 70)": enum,
        "level (p. 70)": enum,
        "lookAheadRateControl (p. 71)": enum,
        "profile (p. 71)": enum,
        " framerateNumerator (p. 71)": integer,
        "gopClosedCadence (p. 71)": integer,
        "framerateDenominator (p. 71)": integer,
        "entropyEncoding (p. 71)": enum,
        "spatialAq (p. 71)": enum,
        "adaptiveQuantization (p. 72)": enum,
        "colorMetadata (p. 72)": enum,
        "gopSize (p. 72)": number,
        "numRefFrames (p. 72)": integer,
        "gopBReference (p. 72)": enum,
        "sceneChangeDetect (p. 72)": enum,
        "parControl (p. 72)": enum,
        "parDenominator (p. 73)": integer,
        "syntax (p. 73)": enum,
        "scanType (p. 73)": enum,
        "gopNumBFrames (p. 73)": integer,
"flickerAq (p. 73)": enum,
"rateControlMode (p. 73)": enum
}
},
"height (p. 121)": integer
],
"blackoutSlate (p. 64)": {
"networkEndBlackoutImage (p. 39)": {
"passwordParam (p. 87)": "string",
"uri (p. 87)": "string",
"username (p. 88)": "string"
},
"networkEndBlackout (p. 40)": enum,
"networkId (p. 40)": "string",
"state (p. 40)": enum,
"blackoutSlateImage (p. 40)": {
"passwordParam (p. 87)": "string",
"uri (p. 87)": "string",
"username (p. 88)": "string"
}
},
"availBlanking (p. 64)": {
"state (p. 38)": enum,
"availBlankingImage (p. 39)": {
"passwordParam (p. 87)": "string",
"uri (p. 87)": "string",
"username (p. 88)": "string"
}
},
"inputSpecification (p. 52)": {
"codec (p. 91)": enum,
"resolution (p. 91)": enum,
"maximumBitrate (p. 91)": enum
}

Response Bodies

Example ListChannelsResultModel

```json
{
"channels (p. 92)": [
{"inputAttachments (p. 50)": [
{"inputId (p. 86)": "string",
"inputSettings (p. 86)": {
"sourceEndBehavior (p. 89)": enum,
"audioSelectors (p. 89)": [
{"name (p. 38)": "string",
"selectorSettings (p. 38)": {
"audioLanguageSelection (p. 38)": enum,
"languageSelectionPolicy (p. 36)": enum,
"languageCode (p. 36)": "string"
},
"audioPidSelection (p. 38)": {
"pid (p. 37)": integer
}
}
]}
]}
}
"deblockFilter (p. 90)": enum,
"networkInputSettings (p. 90)": {
  "hlsInputSettings (p. 108)": {
    "retries (p. 82)": integer,
    "bandwidth (p. 82)": integer,
    "retryInterval (p. 82)": integer,
    "bufferSegments (p. 82)": integer
  },
  "serverValidation (p. 108)": enum
},
"inputFilter (p. 90)": enum,
"videoSelector (p. 90)": {
  "colorSpace (p. 122)": enum,
  "selectorSettings (p. 122)": {
    "videoSelectorPid (p. 123)": {
      "pid (p. 122)": integer
    },
    "videoSelectorProgramId (p. 123)": {
      "programId (p. 123)": integer
    }
  },
  "colorSpaceUsage (p. 122)": enum
},
"filterStrength (p. 90)": integer,
"captionSelectors (p. 90)": [
  {
    "name (p. 47)": "string",
    "languageCode (p. 47)": "string",
    "selectorSettings (p. 47)": {
      "embeddedSourceSettings (p. 47)": {
        "scte20Detection (p. 62)": enum,
        "source608ChannelNumber (p. 62)": integer,
        "convert608To708 (p. 63)": enum,
        "source608TrackNumber (p. 63)": integer
      },
      "scte20SourceSettings (p. 47)": {
        "source608ChannelNumber (p. 114)": integer,
        "convert608To708 (p. 114)": integer
      },
      "dvbSubSourceSettings (p. 47)": {
        "pid (p. 57)": integer
      },
      "aribSourceSettings (p. 47)": {
      },
      "teletextSourceSettings (p. 47)": {
        "pageNumber (p. 118)": "string"
      },
      "scte27SourceSettings (p. 48)": {
        "pid (p. 114)": integer
      }
    }
  }
],
"denoiseFilter (p. 90)": enum
},
"roleArn (p. 50)": "string",
"destinations (p. 50)": [
  {
    "settings (p. 109)": [
      {
        "passwordParam (p. 109)": "string",
        "streamName (p. 109)": "string",
        "url (p. 109)": "string",
        "username (p. 109)": "string"
      }
    ]
  }
]
Example CreateChannelResultModel

```json
{
  "channel (p. 52)": {
    "inputAttachments (p. 48)": [
      {
        "inputId (p. 86)": "string",
        "inputSettings (p. 86)": {
          "sourceEndBehavior (p. 89)": enum,
          "audioSelectors (p. 89)": [
            {
              "name (p. 38)": "string",
              "selectorSettings (p. 38)": {
                "audioLanguageSelection (p. 38)": {
                  "languageSelectionPolicy (p. 36)": enum,
                  "languageCode (p. 36)": "string"
                },
                "audioPidSelection (p. 38)": {
                  "pid (p. 37)": integer
                }
              }
            }
          ]
        },
        "deblockFilter (p. 90)": enum,
        "networkInputSettings (p. 90)": {
          "hlsInputSettings (p. 108)": {
            "retries (p. 82)": integer,
            "bandwidth (p. 82)": integer,
            "retryInterval (p. 82)": integer,
            "bufferSegments (p. 82)": integer
          },
          "serverValidation (p. 108)": enum
        },
        "inputFilter (p. 90)": enum,
        "videoSelector (p. 90)": {
          "colorSpace (p. 122)": enum,
          "selectorSettings (p. 122)": {
            "videoSelectorPid (p. 123)": {
              "pid (p. 122)": integer
            }
          }
        }
      }
    ]
  }
}
```
},
  "videoSelectorProgramId (p. 123)": {
    "programId (p. 123)": integer
  },
  "colorSpaceUsage (p. 122)": enum,
  "filterStrength (p. 90)": integer,
  "captionSelectors (p. 90)": [
    {
      "name (p. 47)": "string",
      "languageCode (p. 47)": "string",
      "selectorSettings (p. 47)": {
        "embeddedSourceSettings (p. 47)": {
          "scte20Detection (p. 62)": enum,
          "source608ChannelNumber (p. 62)": integer,
          "convert608To708 (p. 63)": enum,
          "source608TrackNumber (p. 63)": integer
        },
        "scte20SourceSettings (p. 47)": {
          "source608ChannelNumber (p. 114)": integer,
          "convert608To708 (p. 114)": enum
        },
        "dvbSubSourceSettings (p. 47)": {
          "pid (p. 57)": integer
        },
        "aribSourceSettings (p. 47)": {
        },
        "teletextSourceSettings (p. 47)": {
          "pageNumber (p. 118)": "string"
        },
        "scte27SourceSettings (p. 48)": {
          "pid (p. 114)": integer
        }
      }
    }
  ],
  "denoiseFilter (p. 90)": enum
},
  "roleArn (p. 48)": "string",
  "destinations (p. 48)": [
    {
      "settings (p. 109)": [
        {
          "passwordParam (p. 109)": "string",
          "streamName (p. 109)": "string",
          "url (p. 109)": "string",
          "username (p. 109)": "string"
        }
      ],
      "id (p. 109)": "string"
    }
  ],
  "name (p. 48)": "string",
  "encoderSettings (p. 48)": {
    "timecodeConfig (p. 63)": {
      "syncThreshold (p. 118)": integer,
      "source (p. 118)": enum
    },
    "outputGroups (p. 63)": [
      {
        "outputs (p. 110)": [
          {
            "videoDescriptionName (p. 108)": "string",
            "streamName (p. 108)": "string"
          }
        ],
        "output (p. 110)": enum
      }
    ],
    "output (p. 110)": enum
  }
}
"captionDescriptionNames (p. 108)" : [ "string" ],
"outputName (p. 108)" : "string",
"outputSettings (p. 108)" : {
"rtmpOutputSettings (p. 111)" : {
"certificateMode (p. 113)" : enum,
"numRetries (p. 113)" : integer,
"destination (p. 114)" : {
"destinationRefId (p. 111)" : "string"
},
"connectionRetryInterval (p. 114)" : integer
},
"archiveOutputSettings (p. 111)" : {
"extension (p. 32)" : "string",
"containerSettings (p. 33)" : {
"m2tsSettings (p. 32)" : {
"audioStreamType (p. 94)" : enum,
"ecmPfid (p. 94)" : "string",
"dvbTeletextPfid (p. 94)" : "string",
"aribCaptionsPfidControl (p. 94)" : enum,
"bitrate (p. 94)" : integer,
"segmentationTime (p. 94)" : number,
"rateMode (p. 95)" : enum,
"audioPids (p. 95)" : "string",
"fragmentTime (p. 95)" : number,
"ebpAudioInterval (p. 95)" : enum,
"ebpLookaheadMs (p. 95)" : integer,
"audioFramesPerPes (p. 95)" : integer,
"scte35Pfid (p. 96)" : "string",
"pmtPeriod (p. 96)" : integer,
"pmtInterval (p. 96)" : integer,
"programNum (p. 96)" : integer,
"segmentationStyle (p. 96)" : enum,
"ebif (p. 97)" : enum,
"audioBufferModel (p. 97)" : enum,
"dvbNitSettings (p. 97)" : {
"networkName (p. 52)" : "string",
"networkId (p. 52)" : integer,
"repInterval (p. 52)" : integer
},
"absentInputAudioBehavior (p. 97)" : enum,
"timedMetadataPfid (p. 97)" : "string",
"timedMetadataBehavior (p. 97)" : enum,
"etvSignalPfid (p. 97)" : "string",
"pmtPfid (p. 98)" : "string",
"bufferModel (p. 98)" : enum,
"scte35Control (p. 98)" : enum,
"ebpPlacement (p. 98)" : enum,
"arib (p. 98)" : enum,
"nullPacketBitrate (p. 98)" : number,
"dvbSdtSettings (p. 98)" : {
"serviceName (p. 53)" : "string",
"serviceProviderName (p. 53)" : "string",
"repInterval (p. 53)" : integer,
"outputSdt (p. 53)" : enum
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"pcrpPfid (p. 99)" : "string",
"transportStreamId (p. 99)" : integer,
"pcrControl (p. 99)" : enum,
"videoPfid (p. 99)" : "string",
"esRateInPes (p. 99)" : enum,
"segmentationMarkers (p. 99)" : enum,
"dvbTdtSettings (p. 100)" : {
"repInterval (p. 57)" : integer
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"klv (p. 100)" : enum,
"ccDescriptor (p. 100)" : enum,
"patInterval (p. 100)" : integer,
"etvPlatformPid (p. 100)" : string,
"dvbSubPids (p. 100)" : string,
"aribCaptionsPid (p. 100)" : string,
"scte27Pids (p. 101)" : string,
"klvDataPids (p. 101)" : string
},

"nameModifier (p. 33)" : string
},

"msSmoothOutputSettings (p. 111)" : {
"nameModifier (p. 107)" : string
},

"udpOutputSettings (p. 111)" : {
"bufferMsec (p. 119)" : integer,
"destination (p. 120)" : {
"destinationRefId (p. 111)" : string
},

"containerSettings (p. 120)" : {
"m2tsSettings (p. 119)" : {
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"dvbTeletextPid (p. 94)" : string,
"aribCaptionsPidControl (p. 94)" : enum,
"bitrate (p. 94)" : integer,
"segmentationTime (p. 94)" : number,
"rateMode (p. 95)" : enum,
"audioPids (p. 95)" : string,
"fragmentTime (p. 95)" : number,
"ebpAudioInterval (p. 95)" : enum,
"ebpLookaheadMs (p. 95)" : integer,
"audioFramesPerPes (p. 95)" : integer,
"scte35Pid (p. 96)" : string,
"pcrPeriod (p. 96)" : integer,
"pmtInterval (p. 96)" : integer,
"programNum (p. 96)" : integer,
"segmentationStyle (p. 96)" : enum,
"ebif (p. 97)" : enum,
"audioBufferModel (p. 97)" : enum,
"dvbNitSettings (p. 97)" : {
"networkName (p. 52)" : string,
"networkId (p. 52)" : integer,
"repInterval (p. 52)" : integer
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"absentInputAudioBehavior (p. 97)" : enum,
"timedMetadataPid (p. 97)" : string,
"timedMetadataBehavior (p. 97)" : enum,
"etvSignalPid (p. 97)" : string,
"pmtPid (p. 98)" : string,
"bufferModel (p. 98)" : enum,
"scte35Control (p. 98)" : enum,
"ebpPlacement (p. 98)" : enum,
"arib (p. 98)" : enum,
"nullPacketBitrate (p. 98)" : number,
"dvbSdtSettings (p. 98)" : {
"serviceName (p. 53)" : string,
"serviceProviderName (p. 53)" : string,
"repInterval (p. 53)" : integer,
"outputSdt (p. 53)" : enum
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"pcrPid (p. 99)" : string,
"transportStreamId (p. 99)" : integer,
"pcrControl (p. 99)" : enum,
"videoPid (p. 99)" : string,
Schemas

"esRateInPes (p. 99)": enum,
"segmentationMarkers (p. 99)": enum,
"dvbTdtSettings (p. 100)": {
  "repInterval (p. 57)": integer
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"klv (p. 100)": enum,
"ccDescriptor (p. 100)": enum,
"patInterval (p. 100)": integer,
"etvPlatformPid (p. 100)": "string",
"dvbSubPids (p. 100)": "string",
"aribCaptionsPid (p. 100)": "string",
"scte27Pids (p. 101)": "string",
"klvDataPids (p. 101)": "string"
},
"fecOutputSettings (p. 120)": {
  "rowLength (p. 64)": integer,
  "columnDepth (p. 64)": integer,
  "includeFec (p. 65)": enum
},
"hlsOutputSettings (p. 111)": {
  "segmentModifier (p. 84)": "string",
  "hlsSettings (p. 84)": {
    "audioOnlyHlsSettings (p. 85)": {
      "audioTrackType (p. 37)": enum,
      "audioGroupId (p. 37)": "string",
      "audioOnlyImage (p. 37)": {
        "passwordParam (p. 87)": "string",
        "uri (p. 87)": "string",
        "username (p. 88)": "string"
      }
    },
    "standardHlsSettings (p. 85)": {
      "m3u8Settings (p. 117)": {
        "pmtPid (p. 101)": "string",
        "ecmPid (p. 101)": "string",
        "scte35Behavior (p. 102)": enum,
        "pcrPid (p. 102)": "string",
        "audioPids (p. 102)": "string",
        "audioFramesPerPes (p. 102)": integer,
        "scte35PId (p. 102)": "string",
        "transportStreamId (p. 102)": integer,
        "videoPid (p. 102)": "string",
        "pcrControl (p. 103)": enum,
        "pmtInterval (p. 103)": integer,
        "pcrPeriod (p. 103)": integer,
        "programNum (p. 103)": integer,
        "patInterval (p. 103)": integer,
        "timedMetadataPid (p. 103)": "string",
        "timedMetadataBehavior (p. 104)": enum
      },
      "audioRenditionSets (p. 117)": "string"
    }
  }
},
"nameModifier (p. 84)": "string"
],
"audioDescriptionNames (p. 109)": [
  "string"
]
},
"outputGroupSettings (p. 110)": {
  "archiveGroupSettings (p. 110)": {
    "destination (p. 32)": {
      "rowLength (p. 64)": integer,
"destinationRefId (p. 111)": "string",
"rolloverInterval (p. 32)": integer
},
"rtmpGroupSettings (p. 110)": {
"captionData (p. 112)": enum,
"authenticationScheme (p. 112)": enum,
"cacheLength (p. 113)": integer,
"restartDelay (p. 113)": integer,
"cacheFullBehavior (p. 113)": enum
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  "initialAudioGain (p. 65)": integer,
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<tr>
<td>height</td>
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</table>

**Blackout Slate**

- networkEndBlackoutImage
  - passwordParam: string
  - uri: string
  - username: string

- networkId: string
- state: enum

**Avail Blanking**

- state: enum
- availBlankingImage
  - passwordParam: string
  - uri: string
  - username: string

**Pipelines Running Count**

- state: enum
- id: string
- egressEndpoints: integer

**EgressEndpoints**

- parameter: enum
- maxBitrate: integer
- buflillct: integer
- temporalAq: enum
- lookAheadRateControl: enum
- profile: enum
- framerateNumerator: integer
- gopClosedCadence: integer
- framerateDenominator: integer
- entropyEncoding: enum
- spatialAq: enum
- adaptiveQuantization: enum
- colorMetadata: enum
- gopSize: number
- numRefFrames: integer
- gopBReference: enum
- sceneChangeDetect: enum
- parControl: enum
- parDenominator: integer
- syntax: enum
- scanType: enum
- gopNumBFrames: integer
- flickerAq: enum
- rateControlMode: enum
- height: integer
Example InvalidRequest

```
{
   "message (p. 91)": "string"
}
```

Example AccessDenied

```
{
   "message (p. 32)": "string"
}
```

Example ResourceConflict

```
{
   "message (p. 112)": "string"
}
```

Example ChannelConfigurationValidationError

```
{
   "validationErrors (p. 49)": [
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         "elementPath (p. 120)": "string"
      },
      "message (p. 49)": "string"
   ],
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Example LimitExceeded

```
{
   "message (p. 92)": "string"
}
```

Example InternalServiceError

```
{
   "message (p. 91)": "string"
}
```
Example BadGatewayException

```
{
    "message (p. 39)": "string"
}
```

Example GatewayTimeoutException

```
{
    "message (p. 65)": "string"
}
```

Properties

**AacCodingMode (enum)**

- AD_RECEIVER_MIX
- CODING_MODE_1_0
- CODING_MODE_1_1
- CODING_MODE_2_0
- CODING_MODE_5_1

**AacInputType (enum)**

- BROADCASTER_MIXED_AD
- NORMAL

**AacProfile (enum)**

- HEV1
- HEV2
- LC

**AacRateControlMode (enum)**

- CBR
- VBR

**AacRawFormat (enum)**

- LATM_LOAS
- NONE

**AacSettings**

**vbrQuality**

VBR Quality Level - Only used if rateControlMode is VBR.

- **Type:** string
- **Required:** False
**codingMode**

Mono, Stereo, or 5.1 channel layout. Valid values depend on rate control mode and profile. The adReceiverMix setting receives a stereo description plus control track and emits a mono AAC encode of the description track, with control data emitted in the PES header as per ETSI TS 101 154 Annex E.

- **Type:** string
- **Required:** False

**profile**

AAC Profile.

- **Type:** string
- **Required:** False

**bitrate**

Average bitrate in bits/second. Valid values depend on rate control mode and profile.

- **Type:** number
- **Required:** False

**inputType**

Set to "broadcasterMixedAd" when input contains pre-mixed main audio + AD (narration) as a stereo pair. The Audio Type field (audioType) will be set to 3, which signals to downstream systems that this stream contains "broadcaster mixed AD". Note that the input received by the encoder must contain pre-mixed audio; the encoder does not perform the mixing. The values in audioTypeControl and audioType (in AudioDescription) are ignored when set to broadcasterMixedAd. Leave set to "normal" when input does not contain pre-mixed audio + AD.

- **Type:** string
- **Required:** False

**rawFormat**

Sets LATM / LOAS AAC output for raw containers.

- **Type:** string
- **Required:** False

**sampleRate**

Sample rate in Hz. Valid values depend on rate control mode and profile.

- **Type:** number
- **Required:** False

**rateControlMode**

Rate Control Mode.

- **Type:** string
Properties

Required: False

spec

Use MPEG-2 AAC audio instead of MPEG-4 AAC audio for raw or MPEG-2 Transport Stream containers.

Type: string
Required: False

AacSpec (enum)

MPEG2
MPEG4

AacVbrQuality (enum)

HIGH
LOW
MEDIUM_HIGH
MEDIUM_LOW

Ac3BitstreamMode (enum)

COMMENTARY
COMPLETE_MAIN
DIALOGUE
EMERGENCY
HEARING_IMPAIRED
MUSIC_AND_EFFECTS
VISUALLY_IMPAIRED
VOICE_OVER

Ac3CodingMode (enum)

CODING_MODE_1_0
CODING_MODE_1_1
CODING_MODE_2_0
CODING_MODE_3_2_LFE

Ac3DrcProfile (enum)

FILM_STANDARD
NONE

Ac3LfeFilter (enum)

DISABLED
ENABLED

Ac3MetadataControl (enum)

FOLLOW_INPUT
USE_CONFIGURED

**Ac3Settings**

**drcProfile**
If set to filmStandard, adds dynamic range compression signaling to the output bitstream as defined in the Dolby Digital specification.

*Type:* string  
*Required:* False

**dialnorm**
Sets the dialnorm for the output. If excluded and input audio is Dolby Digital, dialnorm will be passed through.

*Type:* integer  
*Required:* False  
*Minimum:* 1  
*Maximum:* 31

**codingMode**
Dolby Digital coding mode. Determines number of channels.

*Type:* string  
*Required:* False

**metadataControl**
When set to "followInput", encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

*Type:* string  
*Required:* False

**bitrate**
Average bitrate in bits/second. Valid bitrates depend on the coding mode.

*Type:* number  
*Required:* False

**lfeFilter**
When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid in codingMode32Lfe mode.

*Type:* string  
*Required:* False
bitstreamMode

Specifies the bitstream mode (bsmod) for the emitted AC-3 stream. See ATSC A/52-2012 for background on these values.

Type: string
Required: False

AccessDenied

message

Type: string
Required: False

AfdSignaling (enum)

AUTO
FIXED
NONE

ArchiveContainerSettings

m2tsSettings

Type: M2tsSettings (p. 94)
Required: False

ArchiveGroupSettings

destination

A directory and base filename where archive files should be written. If the base filename portion of the URI is left blank, the base filename of the first input will be automatically inserted.

Type: OutputLocationRef (p. 111)
Required: True

rolloverInterval

Number of seconds to write to archive file before closing and starting a new one.

Type: integer
Required: False
Minimum: 1

ArchiveOutputSettings

extension

Output file extension. If excluded, this will be auto-selected from the container type.
Type: string
Required: False

containerSettings

Settings specific to the container type of the file.

Type: ArchiveContainerSettings (p. 32)
Required: True

nameModifier

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

Type: string
Required: False

AribDestinationSettings

AribSourceSettings

AudioChannelMapping

outputChannel

The index of the output channel being produced.

Type: integer
Required: True
Minimum: 0
Maximum: 7

inputChannelLevels

Indices and gain values for each input channel that should be remixed into this output channel.

Type: Array of type InputChannelLevel (p. 86)
Required: True

AudioCodecSettings

aacSettings

Type: AacSettings (p. 28)
Required: False

ac3Settings

Type: Ac3Settings (p. 31)
Properties

- **Required**: False

**eac3Settings**

- **Type**: Eac3Settings (p. 59)
- **Required**: False

**passThroughSettings**

- **Type**: PassThroughSettings (p. 111)
- **Required**: False

**mp2Settings**

- **Type**: Mp2Settings (p. 104)
- **Required**: False

**AudioDescription**

**languageCodeControl**

Choosing followInput will cause the ISO 639 language code of the output to follow the ISO 639 language code of the input. The languageCode will be used when useConfigured is set, or when followInput is selected but there is no ISO 639 language code specified by the input.

- **Type**: string
- **Required**: False

**audioTypeControl**

Determines how audio type is determined. followInput: If the input contains an ISO 639 audioType, then that value is passed through to the output. If the input contains no ISO 639 audioType, the value in Audio Type is included in the output. useConfigured: The value in Audio Type is included in the output. Note that this field and audioType are both ignored if inputType is broadcasterMixedAd.

- **Type**: string
- **Required**: False

**remixSettings**

Settings that control how input audio channels are remixed into the output audio channels.

- **Type**: RemixSettings (p. 111)
- **Required**: False

**audioType**

Applies only if audioTypeControl is useConfigured. The values for audioType are defined in ISO-IEC 13818-1.

- **Type**: string
- **Required**: False
Properties

**name**

The name of this AudioDescription. Outputs will use this name to uniquely identify this AudioDescription. Description names should be unique within this Live Event.

- **Type**: string
- **Required**: True

**languageCode**

Indicates the language of the audio output track. Only used if languageControlMode is useConfigured, or there is no ISO 639 language code specified in the input.

- **Type**: string
- **Required**: False

**codecSettings**

Audio codec settings.

- **Type**: AudioCodecSettings (p. 33)
- **Required**: False

**streamName**

Used for MS Smooth and Apple HLS outputs. Indicates the name displayed by the player (eg. English, or Director Commentary).

- **Type**: string
- **Required**: False

**audioNormalizationSettings**

Advanced audio normalization settings.

- **Type**: AudioNormalizationSettings (p. 36)
- **Required**: False

**audioSelectorName**

The name of the AudioSelector used as the source for this AudioDescription.

- **Type**: string
- **Required**: True

**AudioDescriptionAudioTypeControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED

**AudioDescriptionLanguageCodeControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED
AudioLanguageSelection

languageSelectionPolicy
When set to "strict", the transport stream demux strictly identifies audio streams by their language descriptor. If a PMT update occurs such that an audio stream matching the initially selected language is no longer present then mute will be encoded until the language returns. If "loose", then on a PMT update the demux will choose another audio stream in the program with the same stream type if it can't find one with the same language.

  Type: string
  Required: False

languageCode
Selects a specific three-letter language code from within an audio source.

  Type: string
  Required: True

AudioLanguageSelectionPolicy (enum)
LOOSE
STRICT

AudioNormalizationAlgorithm (enum)
ITU_1770_1
ITU_1770_2

AudioNormalizationAlgorithmControl (enum)
CORRECT_AUDIO

AudioNormalizationSettings
targetLkfs
Target LKFS(loudness) to adjust volume to. If no value is entered, a default value will be used according to the chosen algorithm. The CALM Act (1770-1) recommends a target of -24 LKFS. The EBU R-128 specification (1770-2) recommends a target of -23 LKFS.

  Type: number
  Required: False
  Minimum: -59.0
  Maximum: 0.0

algorithmControl
When set to correctAudio the output audio is corrected using the chosen algorithm. If set to measureOnly, the audio will be measured but not adjusted.

  Type: string
  Required: False
algorithm

Audio normalization algorithm to use. itu17701 conforms to the CALM Act specification, itu17702 conforms to the EBU R-128 specification.

*Type*: string  
*Required*: False

AudioOnlyHlsSettings

audioTrackType

Four types of audio-only tracks are supported: Audio-Only Variant Stream The client can play back this audio-only stream instead of video in low-bandwidth scenarios. Represented as an EXT-X-STREAM-INF in the HLS manifest. Alternate Audio, Auto Select, Default Alternate rendition that the client should try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=YES, AUTOSELECT=YES Alternate Audio, Auto Select, Not Default Alternate rendition that the client may try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=NO Alternate Audio, not Auto Select Alternate rendition that the client will not try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=NO

*Type*: string  
*Required*: False

audioGroupId

Specifies the group to which the audio Rendition belongs.

*Type*: string  
*Required*: False

audioOnlyImage

For use with an audio only Stream. Must be a .jpg or .png file. If given, this image will be used as the cover-art for the audio only output. Ideally, it should be formatted for an iPhone screen for two reasons. The iPhone does not resize the image, it crops a centered image on the top/bottom and left/right. Additionally, this image file gets saved bit-for-bit into every 10-second segment file, so will increase bandwidth by \{image file size\} * \{segment count\} * \{user count\}.

*Type*: InputLocation (p. 87)  
*Required*: False

AudioOnlyHlsTrackType (enum)

- ALTERNATE_AUDIO_AUTO_SELECT
- ALTERNATE_AUDIO_AUTO_SELECT_DEFAULT
- ALTERNATE_AUDIO_NOT_AUTO_SELECT
- AUDIO_ONLY_VARIANT_STREAM

AudioPidSelection

pid

Selects a specific PID from within a source.
**AudioSelector**

**name**

The name of this AudioSelector. AudioDescriptions will use this name to uniquely identify this Selector. Selector names should be unique per input.

- **Type**: string
  - **Required**: True

**selectorSettings**

The audio selector settings.

- **Type**: AudioSelectorSettings (p. 38)
  - **Required**: False

**AudioSelectorSettings**

**audioLanguageSelection**

- **Type**: AudioLanguageSelection (p. 36)
  - **Required**: False

**audioPidSelection**

- **Type**: AudioPidSelection (p. 37)
  - **Required**: False

**AudioType (enum)**

- CLEAN_EFFECTS
- HEARING_IMPAIRED
- UNDEFINED
- VISUAL_IMPAIRED_COMMENTARY

**AuthenticationScheme (enum)**

- AKAMAI
- COMMON

**AvailBlanking**

**state**

When set to enabled, causes video, audio and captions to be blanked when insertion metadata is added.
Properties

Type: string  
Required: False

availBlankingImage
Blanking image to be used. Leave empty for solid black. Only bmp and png images are supported.

Type: InputLocation (p. 87)  
Required: False

AvailBlankingState (enum)

DISABLED  
ENABLED

AvailConfiguration

availSettings
Ad avail settings.

Type: AvailSettings (p. 39)  
Required: False

AvailSettings

scte35TimeSignalApos

Type: Scte35TimeSignalApos (p. 116)  
Required: False

scte35SpliceInsert

Type: Scte35SpliceInsert (p. 115)  
Required: False

BadGatewayException

message

Type: string  
Required: False

BlackoutSlate

networkEndBlackoutImage
Path to local file to use as Network End Blackout image. Image will be scaled to fill the entire output raster.

Type: InputLocation (p. 87)
Required: False

**networkEndBlackout**

Setting to enabled causes the encoder to blackout the video, audio, and captions, and raise the "Network Blackout Image" slate when an SCTE104/35 Network End Segmentation Descriptor is encountered. The blackout will be lifted when the Network Start Segmentation Descriptor is encountered. The Network End and Network Start descriptors must contain a network ID that matches the value entered in "Network ID".

Type: string
Required: False

**networkId**

Provides Network ID that matches EIDR ID format (e.g., "10.XXXX/XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-C").

Type: string
Required: False

**state**

When set to enabled, causes video, audio and captions to be blanked when indicated by program metadata.

Type: string
Required: False

**blackoutSlateImage**

Blackout slate image to be used. Leave empty for solid black. Only bmp and png images are supported.

Type: InputLocation (p. 87)
Required: False

**BlackoutSlateNetworkEndBlackout** (enum)

DISABLED
ENABLED

**BlackoutSlateState** (enum)

DISABLED
ENABLED

**BurnInAlignment** (enum)

CENTERED
LEFT
SMART

**BurnInBackgroundColor** (enum)

BLACK
BurnInDestinationSettings

**xPosition**

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**backgroundColor**

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

- **Type:** string
- **Required:** False

**yPosition**

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**teletextGridControl**

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

- **Type:** string
- **Required:** False

**backgroundOpacity**

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 255
fontOpacity

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 255

fontResolution

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 96
- **Maximum**: 600

shadowOpacity

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 255

shadowYOffset

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False

outlineSize

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/ embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 10

outlineColor

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.
Properties

fontSize

Type: string
Required: False

When set to 'auto' fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

shadowXOffset

Type: integer
Required: False

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

alignment

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. All burn-in and DVB-Sub font settings must match.

shadowColor

Type: string
Required: False

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

fontColor

Type: string
Required: False

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

font

Type: string
Required: False

External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.
Properties

Type: InputLocation (p. 87)
Required: False

BurnInFontColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

BurnIn OutlineColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

BurnIn ShadowColor (enum)
BLACK
NONE
WHITE

BurnIn Teletext Grid Control (enum)
FIXED
SCALED

Caption Description

captionSelectorName
Specifies which input caption selector to use as a caption source when generating output captions. This field should match a captionSelector name.

Type: string
Required: True

language Description
Human readable information to indicate captions available for players (eg. English, or Spanish).

Type: string
Required: False

name
Name of the caption description. Used to associate a caption description with an output. Names must be unique within an event.
Type: string
Required: True

languageCode
Type: string
Required: False

destinationSettings
Additional settings for captions destination that depend on the destination type.
Type: CaptionDestinationSettings (p. 45)
Required: False

CaptionDestinationSettings

scte27DestinationSettings
Type: Scte27DestinationSettings (p. 114)
Required: False

burnInDestinationSettings
Type: BurnInDestinationSettings (p. 41)
Required: False

teletextDestinationSettings
Type: TeletextDestinationSettings (p. 118)
Required: False

smpteTtDestinationSettings
Type: SmpteTtDestinationSettings (p. 117)
Required: False

webvttDestinationSettings
Type: WebvttDestinationSettings (p. 123)
Required: False

ttmlDestinationSettings
Type: TtmlDestinationSettings (p. 118)
Required: False

embeddedPlusScte20DestinationSettings
Type: EmbeddedPlusScte20DestinationSettings (p. 62)
Required: False

dvbSubDestinationSettings
Type: DvbSubDestinationSettings (p. 54)
Required: False

embeddedDestinationSettings
Type: EmbeddedDestinationSettings (p. 62)
Required: False

rtmpCaptionInfoDestinationSettings
Type: RtmpCaptionInfoDestinationSettings (p. 112)
Required: False

aribDestinationSettings
Type: AribDestinationSettings (p. 33)
Required: False

scte20PlusEmbeddedDestinationSettings
Type: Scte20PlusEmbeddedDestinationSettings (p. 114)
Required: False

CaptionLanguageMapping
languageDescription
Textual description of language
Type: string
Required: True

captionChannel
Channel to insert closed captions. Each channel mapping must have a unique channel number (maximum of 4)
Type: integer
Required: True
Minimum: 1
Maximum: 4

languageCode
Three character ISO 639-2 language code (see http://www.loc.gov/standards/iso639-2)
Type: string
CaptionSelector

name
Name identifier for a caption selector. This name is used to associate this caption selector with one or more caption descriptions. Names must be unique within an event.

- **Type**: string
- **Required**: True

languageCode
When specified this field indicates the three letter language code of the caption track to extract from the source.

- **Type**: string
- **Required**: False

selectorSettings
Caption selector settings.

- **Type**: CaptionSelectorSettings (p. 47)
- **Required**: False

CaptionSelectorSettings

embeddedSourceSettings

- **Type**: EmbeddedSourceSettings (p. 62)
- **Required**: False

scte20SourceSettings

- **Type**: Scte20SourceSettings (p. 114)
- **Required**: False

dvbSubSourceSettings

- **Type**: DvbSubSourceSettings (p. 57)
- **Required**: False

aribSourceSettings

- **Type**: AribSourceSettings (p. 33)
- **Required**: False

teletextSourceSettings

- **Type**: TeletextSourceSettings (p. 118)
### Properties

#### Required: False

##### scte27SourceSettings

**Type:** Scte27SourceSettings (p. 114)  
**Required:** False

---

#### Channel

##### inputAttachments

List of input attachments for channel.  
**Type:** Array of type InputAttachment (p. 86)  
**Required:** False

---

##### roleArn

The Amazon Resource Name (ARN) of the role assumed when running the Channel.  
**Type:** string  
**Required:** False

---

##### destinations

A list of destinations of the channel. For UDP outputs, there is one destination per output. For other types (HLS, for example), there is one destination per packager.  
**Type:** Array of type OutputDestination (p. 109)  
**Required:** False

---

##### name

The name of the channel. (user-mutable)  
**Type:** string  
**Required:** False

---

##### encoderSettings

**Type:** EncoderSettings (p. 63)  
**Required:** False

---

##### pipelinesRunningCount

The number of currently healthy pipelines.  
**Type:** integer  
**Required:** False

---

##### state

**Type:** string
Properties

**Required:** False

**id**

The unique id of the channel.

**Type:** string  
**Required:** False

**egressEndpoints**

The endpoints where outgoing connections initiate from

**Type:** Array of type ChannelEgressEndpoint (p. 49)  
**Required:** False

**arn**

The unique arn of the channel.

**Type:** string  
**Required:** False

**inputSpecification**

**Type:** InputSpecification (p. 91)  
**Required:** False

**ChannelConfigurationValidationError**

**validationErrors**

A collection of validation error responses from attempting to create a channel with a bouquet of settings.

**Type:** Array of type ValidationError (p. 120)  
**Required:** False

**message**

**Type:** string  
**Required:** False

**ChannelEgressEndpoint**

**sourceIp**

Public IP of where a channel's output comes from

**Type:** string  
**Required:** False
ChannelState (enum)

CREATING
CREATE_FAILED
IDLE
STARTING
RUNNING
RECOVERING
STOPPING
DELETING
DELETED

ChannelSummary

inputAttachments

List of input attachments for channel.

Type: Array of type InputAttachment (p. 86)
Required: False

roleArn

The Amazon Resource Name (ARN) of the role assumed when running the Channel.

Type: string
Required: False

destinations

A list of destinations of the channel. For UDP outputs, there is one destination per output. For other types (HLS, for example), there is one destination per packager.

Type: Array of type OutputDestination (p. 109)
Required: False

name

The name of the channel. (user-mutable)

Type: string
Required: False

state

Type: string
Required: False

pipelinesRunningCount

The number of currently healthy pipelines.

Type: integer
Required: False
id
The unique id of the channel.
- **Type:** string
- **Required:** False

egressEndpoints
The endpoints where outgoing connections initiate from
- **Type:** Array of type ChannelEgressEndpoint (p. 49)
- **Required:** False

arn
The unique arn of the channel.
- **Type:** string
- **Required:** False

inputSpecification
- **Type:** InputSpecification (p. 91)
- **Required:** False

**CreateChannel**

inputAttachments
List of input attachments for channel.
- **Type:** Array of type InputAttachment (p. 86)
- **Required:** False

requestId
Unique request ID to be specified. This is needed to prevent retries from creating multiple resources.
- **Type:** string
- **Required:** False

roleArn
An optional Amazon Resource Name (ARN) of the role to assume when running the Channel.
- **Type:** string
- **Required:** False

destinations
- **Type:** Array of type OutputDestination (p. 109)
- **Required:** False
**name**

Name of channel.

  **Type:** string  
  **Required:** False

**encoderSettings**

  **Type:** EncoderSettings (p. 63)  
  **Required:** False

**inputSpecification**

Specification of input for this channel (max. bitrate, resolution, codec, etc.)

  **Type:** InputSpecification (p. 91)  
  **Required:** False

**CreateChannelResultModel**

**channel**

  **Type:** Channel (p. 48)  
  **Required:** False

**DvbNitSettings**

**networkName**

The network name text placed in the networkNameDescriptor inside the Network Information Table. Maximum length is 256 characters.

  **Type:** string  
  **Required:** True

**networkId**

The numeric value placed in the Network Information Table (NIT).

  **Type:** integer  
  **Required:** True  
  **Minimum:** 0  
  **Maximum:** 65536

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

  **Type:** integer  
  **Required:** False  
  **Minimum:** 25  
  **Maximum:** 10000
DvbSdtOutputSdt (enum)
- SDT_FOLLOW
- SDT_FOLLOW_IF_PRESENT
- SDT_MANUAL
- SDT_NONE

DvbSdtSettings

serviceName
The service name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
Required: False

serviceProviderName
The service provider name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
Required: False

repInterval
The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Minimum: 25
Maximum: 2000

outputSdt
Selects method of inserting SDT information into output stream. The sdtFollow setting copies SDT information from input stream to output stream. The sdtFollowIfPresent setting copies SDT information from input stream to output stream if SDT information is present in the input, otherwise it will fall back on the user-defined values. The sdtManual setting means user will enter the SDT information. The sdtNone setting means output stream will not contain SDT information.

Type: string
Required: False

DvbSubDestinationAlignment (enum)
- CENTERED
- LEFT
- SMART

DvbSubDestinationBackgroundColor (enum)
- BLACK
NONE
WHITE

DvbSubDestinationFontColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

DvbSubDestinationOutlineColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

DvbSubDestinationSettings

xPosition
Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

backgroundColor
Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

yPosition
Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
teletextGridControl

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

Type: string
Required: False

backgroundOpacity

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontOpacity

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontResolution

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 96
Maximum: 600

shadowOpacity

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

shadowYOffset

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

Type: integer
**Required**: False

**outlineSize**

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/ embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 10

**outlineColor**

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- **Type**: string
- **Required**: False

**fontSize**

When set to auto fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

- **Type**: string
- **Required**: False

**shadowXOffset**

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False

**alignment**

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. This option is not valid for source captions that are STL or 608/embedded. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- **Type**: string
- **Required**: False

**shadowColor**

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.
Properties

**Type**: string
**Required**: False

**fontColor**

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

**Type**: string
**Required**: False

**font**

External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.

**Type**: InputLocation (p. 87)
**Required**: False

**DvbSubDestinationShadowColor (enum)**

BLACK
NONE
WHITE

**DvbSubDestinationTeletextGridControl (enum)**

FIXED
SCALED

**DvbSubSourceSettings**

**pid**

When using DVB-Sub with Burn-In or SMPTE-TT, use this PID for the source content. Unused for DVB-Sub passthrough. All DVB-Sub content is passed through, regardless of selectors.

**Type**: integer
**Required**: False
**Minimum**: 1

**DvbTdtSettings**

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

**Type**: integer
**Required**: False
**Minimum**: 1000
Maximum: 30000

Eac3AttenuationControl (enum)
  ATTENUATE_3_DB
  NONE

Eac3BitstreamMode (enum)
  COMMENTARY
  COMPLETE_MAIN
  EMERGENCY
  HEARING_IMPAIRED
  VISUALLY_IMPAIRED

Eac3CodingMode (enum)
  CODING_MODE_1_0
  CODING_MODE_2_0
  CODING_MODE_3_2

Eac3DcFilter (enum)
  DISABLED
  ENABLED

Eac3DrcLine (enum)
  FILM_LIGHT
  FILM_STANDARD
  MUSIC_LIGHT
  MUSIC_STANDARD
  NONE
  SPEECH

Eac3DrcRf (enum)
  FILM_LIGHT
  FILM_STANDARD
  MUSIC_LIGHT
  MUSIC_STANDARD
  NONE
  SPEECH

Eac3LfeControl (enum)
  LFE
  NO_LFE

Eac3LfeFilter (enum)
  DISABLED
ENABLED

**Eac3MetadataControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED

**Eac3PassthroughControl (enum)**

- NO_PASSTHROUGH
- WHEN_POSSIBLE

**Eac3PhaseControl (enum)**

- NO_SHIFT
- SHIFT_90_DEGREES

**Eac3Settings**

**dialnorm**

Sets the dialnorm for the output. If blank and input audio is Dolby Digital Plus, dialnorm will be passed through.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
- **Maximum:** 31

**passthroughControl**

When set to whenPossible, input DD+ audio will be passed through if it is present on the input. This detection is dynamic over the life of the transcode. Inputs that alternate between DD+ and non-DD+ content will have a consistent DD+ output as the system alternates between passthrough and encoding.

- **Type:** string
- **Required:** False

**metadataControl**

When set to followInput, encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

- **Type:** string
- **Required:** False

**drcLine**

Sets the Dolby dynamic range compression profile.

- **Type:** string
- **Required:** False
bitrate

Average bitrate in bits/second. Valid bitrates depend on the coding mode.

Type: number
Required: False

surroundExMode

When encoding 3/2 audio, sets whether an extra center back surround channel is matrix encoded into the left and right surround channels.

Type: string
Required: False

ltRtSurroundMixLevel

Left total/Right total surround mix level. Only used for 3/2 coding mode.

Type: number
Required: False

lfeControl

When encoding 3/2 audio, setting to lfe enables the LFE channel

Type: string
Required: False

codingMode

Dolby Digital Plus coding mode. Determines number of channels.

Type: string
Required: False

surroundMode

When encoding 2/0 audio, sets whether Dolby Surround is matrix encoded into the two channels.

Type: string
Required: False

attenuationControl

When set to attenuate3Db, applies a 3 dB attenuation to the surround channels. Only used for 3/2 coding mode.

Type: string
Required: False

lfeFilter

When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid with codingMode32 coding mode.
Properties

Type: string
Required: False

ltRtCenterMixLevel
Left total/Right total center mix level. Only used for 3/2 coding mode.
Type: number
Required: False

dcFilter
When set to enabled, activates a DC highpass filter for all input channels.
Type: string
Required: False

phaseControl
When set to shift90Degrees, applies a 90-degree phase shift to the surround channels. Only used for 3/2 coding mode.
Type: string
Required: False

stereoDownmix
Stereo downmix preference. Only used for 3/2 coding mode.
Type: string
Required: False

bitstreamMode
Specifies the bitstream mode (bsmod) for the emitted E-AC-3 stream. See ATSC A/52-2012 (Annex E) for background on these values.
Type: string
Required: False

loRoSurroundMixLevel
Left only/Right only surround mix level. Only used for 3/2 coding mode.
Type: number
Required: False

drcRf
Sets the profile for heavy Dolby dynamic range compression, ensures that the instantaneous signal peaks do not exceed specified levels.
Type: string
Required: False
**LoRoCenterMixLevel**

Left only/Right only center mix level. Only used for 3/2 coding mode.

- **Type:** number
- **Required:** False

**Eac3StereoDownmix (enum)**

- DPL2
- LO_RO
- LT_RT
- NOT_INDICATED

**Eac3SurroundExMode (enum)**

- DISABLED
- ENABLED
- NOT_INDICATED

**Eac3SurroundMode (enum)**

- DISABLED
- ENABLED
- NOT_INDICATED

**EmbeddedConvert608To708 (enum)**

- DISABLED
- UPCONVERT

**EmbeddedDestinationSettings**

**EmbeddedPlusScte20DestinationSettings**

**EmbeddedScte20Detection (enum)**

- AUTO
- OFF

**EmbeddedSourceSettings**

**scte20Detection**

Set to "auto" to handle streams with intermittent and/or non-aligned SCTE-20 and Embedded captions.

- **Type:** string
- **Required:** False

**source608ChannelNumber**

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.
Properties

**Type**: integer  
**Required**: False  
**Minimum**: 1  
**Maximum**: 4

**convert608To708**

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.

**Type**: string  
**Required**: False

**source608TrackNumber**

This field is unused and deprecated.

**Type**: integer  
**Required**: False  
**Minimum**: 1  
**Maximum**: 5

**EncoderSettings**

**timecodeConfig**

Contains settings used to acquire and adjust timecode information from inputs.

**Type**: TimecodeConfig (p. 118)  
**Required**: True

**outputGroups**

**Type**: Array of type OutputGroup (p. 110)  
**Required**: True

**audioDescriptions**

**Type**: Array of type AudioDescription (p. 34)  
**Required**: True

**captionDescriptions**

Settings for caption decriptions

**Type**: Array of type CaptionDescription (p. 44)  
**Required**: False

**availConfiguration**

Event-wide configuration settings for ad avail insertion.

**Type**: AvailConfiguration (p. 39)
Properties

**Required:** False

**globalConfiguration**

Configuration settings that apply to the event as a whole.

- **Type:** GlobalConfiguration (p. 65)
- **Required:** False

**videoDescriptions**

- **Type:** Array of type VideoDescription (p. 120)
- **Required:** True

**blackoutSlate**

Settings for blackout slate.

- **Type:** BlackoutSlate (p. 39)
- **Required:** False

**availBlanking**

Settings for ad avail blanking.

- **Type:** AvailBlanking (p. 38)
- **Required:** False

**FecOutputIncludeFec (enum)**

- COLUMN
- COLUMN_AND_ROW

**FecOutputSettings**

**rowLength**

Parameter L from SMPTE 2022-1. The width of the FEC protection matrix. Must be between 1 and 20, inclusive. If only Column FEC is used, then larger values increase robustness. If Row FEC is used, then this is the number of transport stream packets per row error correction packet, and the value must be between 4 and 20, inclusive, if includeFec is columnAndRow. If includeFec is column, this value must be 1 to 20, inclusive.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
- **Maximum:** 20

**columnDepth**

Parameter D from SMPTE 2022-1. The height of the FEC protection matrix. The number of transport stream packets per column error correction packet. Must be between 4 and 20, inclusive.

- **Type:** integer
Required: False
Minimum: 4
Maximum: 20

**includeFec**

Enables column only or column and row based FEC

Type: string
Required: False

**FixedAfd (enum)**

AFD_0000
AFD_0010
AFD_0011
AFD_0100
AFD_1000
AFD_1001
AFD_1010
AFD_1011
AFD_1101
AFD_1110
AFD_1111

**GatewayTimeoutException**

message

Type: string
Required: False

**GlobalConfiguration**

**inputLossBehavior**

Settings for system actions when input is lost.

Type: InputLossBehavior (p. 88)
Required: False

**supportLowFramerateInputs**

Adjusts video input buffer for streams with very low video framerates. This is commonly set to enabled for music channels with less than one video frame per second.

Type: string
Required: False

**initialAudioGain**

Value to set the initial audio gain for the Live Event.
Type: integer
Required: False
Minimum: -60
Maximum: 60

**inputEndAction**

Indicates the action to take when an input completes (e.g. end-of-file.) Options include immediately switching to the next sequential input (via "switchInput"), switching to the next input and looping back to the first input when last input ends (via "switchAndLoopInputs") or not switching inputs and instead transcoding black / color / slate images per the "Input Loss Behavior" configuration until an activateInput REST command is received (via "none").

Type: string
Required: False

**outputTimingSource**

Indicates whether the rate of frames emitted by the Live encoder should be paced by its system clock (which optionally may be locked to another source via NTP) or should be locked to the clock of the source that is providing the input stream.

Type: string
Required: False

**GlobalConfigurationInputEndAction (enum)**

- NONE
- SWITCH_AND_LOOP_INPUTS

**GlobalConfigurationLowFramerateInputs (enum)**

- DISABLED
- ENABLED

**GlobalConfigurationOutputTimingSource (enum)**

- INPUT_CLOCK
- SYSTEM_CLOCK

**H264AdaptiveQuantization (enum)**

- HIGH
- HIGHER
- LOW
- MAX
- MEDIUM
- OFF

**H264ColorMetadata (enum)**

- IGNORE
H264EntropyEncoding (enum)

  - CABAC
  - CAVLC

H264FlickerAq (enum)

  - DISABLED
  - ENABLED

H264FramerateControl (enum)

  - INITIALIZE_FROM_SOURCE
  - SPECIFIED

H264GopBReference (enum)

  - DISABLED
  - ENABLED

H264GopSizeUnits (enum)

  - FRAMES
  - SECONDS

H264Level (enum)

  - H264_LEVEL_1
  - H264_LEVEL_1_1
  - H264_LEVEL_1_2
  - H264_LEVEL_1_3
  - H264_LEVEL_2
  - H264_LEVEL_2_1
  - H264_LEVEL_2_2
  - H264_LEVEL_3
  - H264_LEVEL_3_1
  - H264_LEVEL_3_2
  - H264_LEVEL_4
  - H264_LEVEL_4_1
  - H264_LEVEL_4_2
  - H264_LEVEL_5
  - H264_LEVEL_5_1
  - H264_LEVEL_5_2
  - H264_LEVEL_AUTO

H264LookAheadRateControl (enum)

  - HIGH
  - LOW
MEDIUM

**H264ParControl (enum)**

- INITIALIZE_FROM_SOURCE
- SPECIFIED

**H264Profile (enum)**

- BASELINE
- HIGH
- HIGH_10BIT
- HIGH_422
- HIGH_422_10BIT
- MAIN

**H264RateControlMode (enum)**

- CBR
- VBR

**H264ScanType (enum)**

- INTERLACED
- PROGRESSIVE

**H264SceneChangeDetect (enum)**

- DISABLED
- ENABLED

**H264Settings**

**minIInterval**

Only meaningful if sceneChangeDetect is set to enabled. Enforces separation between repeated (cadence) I-frames and I-frames inserted by Scene Change Detection. If a scene change I-frame is within I-interval frames of a cadence I-frame, the GOP is shrunk and/or stretched to the scene change I-frame. GOP stretch requires enabling lookahead as well as setting I-interval. The normal cadence resumes for the next GOP. Note: Maximum GOP stretch = GOP size + Min-I-interval - 1

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 30

**slices**

Number of slices per picture. Must be less than or equal to the number of macroblock rows for progressive pictures, and less than or equal to half the number of macroblock rows for interlaced pictures. This field is optional; when no value is specified the encoder will choose the number of slices based on encode resolution.
Properties

Type: integer
Required: False
Minimum: 1
Maximum: 32

parNumerator

Pixel Aspect Ratio numerator.

Type: integer
Required: False

gopSizeUnits

Indicates if the gopSize is specified in frames or seconds. If seconds the system will convert the gopSize into a frame count at run time.

Type: string
Required: False

maxBitrate

Maximum bitrate in bits/second (for VBR mode only).

Type: integer
Required: False
Minimum: 1000

bitrate

Average bitrate in bits/second. Required for VBR, CBR, and ABR. For MS Smooth outputs, bitrates must be unique when rounded down to the nearest multiple of 1000.

Type: integer
Required: False
Minimum: 1000

bufFillPct

Percentage of the buffer that should initially be filled (HRD buffer model).

Type: integer
Required: False
Minimum: 0
Maximum: 100

temporalAq

If set to enabled, adjust quantization within each frame based on temporal variation of content complexity.

Type: string
Required: False
afdSignaling
Indicates that AFD values will be written into the output stream. If afdSignaling is "auto", the system will try to preserve the input AFD value (in cases where multiple AFD values are valid). If set to "fixed", the AFD value will be the value configured in the fixedAfd parameter.

  Type: string  
  Required: False

timecodeInsertion
Determines how timecodes should be inserted into the video elementary stream. - 'disabled': Do not include timecodes - 'picTimingSei': Pass through picture timing SEI messages from the source specified in Timecode Config

  Type: string  
  Required: False

bufSize
Size of buffer (HRD buffer model) in bits/second.

  Type: integer  
  Required: False  
  Minimum: 0

softness
Softness. Selects quantizer matrix, larger values reduce high-frequency content in the encoded image.

  Type: integer  
  Required: False  
  Minimum: 0  
  Maximum: 128

framerateControl
This field indicates how the output video frame rate is specified. If "specified" is selected then the output video frame rate is determined by framerateNumerator and framerateDenominator, else if "initializeFromSource" is selected then the output video frame rate will be set equal to the input video frame rate of the first input.

  Type: string  
  Required: False

fixedAfd
Four bit AFD value to write on all frames of video in the output stream. Only valid when afdSignaling is set to 'Fixed'.

  Type: string  
  Required: False

level
H.264 Level.
### Properties

**lookAheadRateControl**

Amount of lookahead. A value of low can decrease latency and memory usage, while high can produce better quality for certain content.

- **Type**: string
- **Required**: False

**profile**

H.264 Profile.

- **Type**: string
- **Required**: False

**framerateNumerator**

Framerate numerator - framerate is a fraction, e.g. 24000 / 1001 = 23.976 fps.

- **Type**: integer
- **Required**: False

**gopClosedCadence**

Frequency of closed GOPs. In streaming applications, it is recommended that this be set to 1 so a decoder joining mid-stream will receive an IDR frame as quickly as possible. Setting this value to 0 will break output segmenting.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**framerateDenominator**

Framerate denominator.

- **Type**: integer
- **Required**: False

**entropyEncoding**

Entropy encoding mode. Use cabac (must be in Main or High profile) or cavlc.

- **Type**: string
- **Required**: False

**spatialAq**

If set to enabled, adjust quantization within each frame based on spatial variation of content complexity.

- **Type**: string
- **Required**: False
**adaptiveQuantization**

Adaptive quantization. Allows intra-frame quantizers to vary to improve visual quality.

- **Type:** string
- **Required:** False

**colorMetadata**

Includes colorspace metadata in the output.

- **Type:** string
- **Required:** False

**gopSize**

GOP size (keyframe interval) in units of either frames or seconds per gopSizeUnits. Must be greater than zero.

- **Type:** number
- **Required:** False
- **Minimum:** 1.0

**numRefFrames**

Number of reference frames to use. The encoder may use more than requested if using B-frames and/or interlaced encoding.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
- **Maximum:** 6

**gopBReference**

If enabled, use reference B frames for GOP structures that have B frames > 1.

- **Type:** string
- **Required:** False

**sceneChangeDetect**

Scene change detection. Inserts I-frames on scene changes when enabled.

- **Type:** string
- **Required:** False

**parControl**

This field indicates how the output pixel aspect ratio is specified. If "specified" is selected then the output video pixel aspect ratio is determined by parNumerator and parDenominator, else if "initializeFromSource" is selected then the output pixel aspect ratio will be set equal to the input video pixel aspect ratio of the first input.

- **Type:** string
- **Required:** False
**parDenominator**

Pixel Aspect Ratio denominator.

- **Type:** integer
- **Required:** False
- **Minimum:** 1

**syntax**

Produces a bitstream compliant with SMPTE RP-2027.

- **Type:** string
- **Required:** False

**scanType**

Sets the scan type of the output to progressive or top-field-first interlaced.

- **Type:** string
- **Required:** False

**gopNumBFrames**

Number of B-frames between reference frames.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 7

**flickerAq**

If set to enabled, adjust quantization within each frame to reduce flicker or ‘pop’ on I-frames.

- **Type:** string
- **Required:** False

**rateControlMode**

Rate control mode.

- **Type:** string
- **Required:** False

**H264SpatialAq (enum)**

- DISABLED
- ENABLED

**H264Syntax (enum)**

- DEFAULT
- RP2027
H264TemporalAq (enum)
- DISABLED
- ENABLED

H264TimecodeInsertionBehavior (enum)
- DISABLED
- PIC_TIMING_SEI

HlsAdMarkers (enum)
- ADOBE
- ELEMENTAL
- ELEMENTAL_SCTE35

HlsAkamaiHttpTransferMode (enum)
- CHUNKED
- NON_CHUNKED

**HlsAkamaiSettings**

**httpTransferMode**
Specify whether or not to use chunked transfer encoding to Akamai. User should contact Akamai to enable this feature.

- **Type**: string
- **Required**: False

**salt**
Salt for authenticated Akamai.

- **Type**: string
- **Required**: False

**numRetries**
Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**restartDelay**
If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type**: integer
- **Required**: False
Properties

**connectionRetryInterval**
Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**filecacheDuration**
Size in seconds of file cache for streaming outputs.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 600

**token**
Token parameter for authenticated akamai. If not specified, _gda_ is used.

- **Type**: string
- **Required**: False

**HlsBasicPutSettings**

**numRetries**
Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**restartDelay**
If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 15

**connectionRetryInterval**
Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
filecacheDuration

Size in seconds of file cache for streaming outputs.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 600

**HlsCaptionLanguageSetting (enum)**

- INSERT
- NONE
- OMIT

**HlsCdnSettings**

**hlsAkamaiSettings**

- **Type**: HlsAkamaiSettings (p. 74)
- **Required**: False

**hlsWebdavSettings**

- **Type**: HlsWebdavSettings (p. 85)
- **Required**: False

**hlsBasicPutSettings**

- **Type**: HlsBasicPutSettings (p. 75)
- **Required**: False

**hlsMediaStoreSettings**

- **Type**: HlsMediaStoreSettings (p. 83)
- **Required**: False

**HlsClientCache (enum)**

- DISABLED
- ENABLED

**HlsCodecSpecification (enum)**

- RFC_4281
- RFC_6381

**HlsDirectoryStructure (enum)**

- SINGLE_DIRECTORY
- SUBDIRECTORY_PER_STREAM
**HlsEncryptionType (enum)**

- AES128
- SAMPLE_AES

**HlsGroupSettings**

**segmentsPerSubdirectory**

Number of segments to write to a subdirectory before starting a new one. directoryStructure must be subdirectoryPerStream for this setting to have an effect.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**ivInManifest**

For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If set to "include", IV is listed in the manifest, otherwise the IV is not in the manifest.

- **Type**: string
- **Required**: False

**outputSelection**

Generates the .m3u8 playlist file for this HLS output group. The segmentsOnly option will output segments without the .m3u8 file.

- **Type**: string
- **Required**: False

**encryptionType**

Encrypts the segments with the given encryption scheme. Exclude this parameter if no encryption is desired.

- **Type**: string
- **Required**: False

**indexNSegments**

Number of segments to keep in the playlist (.m3u8) file. mode must be "vod" for this setting to have an effect, and this number should be less than or equal to keepSegments.

- **Type**: integer
- **Required**: False
- **Minimum**: 3

**destination**

A directory or HTTP destination for the HLS segments, manifest files, and encryption keys (if enabled).
Type: OutputLocationRef (p. 111)
Required: True

constantIv
For use with encryptionType. This is a 128-bit, 16-byte hex value represented by a 32-character text string. If ivSource is set to "explicit" then this parameter is required and is used as the IV for encryption.

Type: string
Required: False

timedMetadataId3Frame
Indicates ID3 frame that has the timecode.

Type: string
Required: False

baseUrlManifest
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

Type: string
Required: False

captionLanguageSetting
Applies only to 608 Embedded output captions. insert: Include CLOSED-CAPTIONS lines in the manifest. Specify at least one language in the CC1 Language Code field. One CLOSED-CAPTION line is added for each Language Code you specify. Make sure to specify the languages in the order in which they appear in the original source (if the source is embedded format) or the order of the caption selectors (if the source is other than embedded). Otherwise, languages in the manifest will not match up properly with the output captions. none: Include CLOSED-CAPTIONS=NONE line in the manifest. omit: Omit any CLOSED-CAPTIONS line from the manifest.

Type: string
Required: False

minSegmentLength
When set, minimumSegmentLength is enforced by looking ahead and back within the specified range for a nearby avail and extending the segment size if needed.

Type: integer
Required: False
Minimum: 0

mode
If set to "vod", keeps and indexes all segments starting with the first segment. If set to "live" segments will age out and only the last keepSegments number of segments will be retained.

Type: string
ivSource
For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with
the key for encrypting blocks. If this setting is “followsSegmentNumber”, it will cause the IV to change
every segment (to match the segment number). If this is set to “explicit”, you must enter a constant IV
value.

Type: string
Required: False

manifestCompression
When set to gzip, compresses HLS playlist.

Type: string
Required: False

keyProviderSettings
The key provider settings.

Type: KeyProviderSettings (p. 91)
Required: False

tsFileMode
When set to “singleFile”, emits the program as a single media resource (.ts) file, and uses #EXT-X-
BYTERANGE tags to index segment for playback. Playback of VOD mode content during event is not
guaranteed due to HTTP server caching.

Type: string
Required: False

manifestDurationFormat
Indicates whether the output manifest should use floating point or integer values for segment duration.

Type: string
Required: False

keyFormatVersions
Either a single positive integer version value or a slash delimited list of version values (1/2/3).

Type: string
Required: False

streamInfResolution
Include or exclude RESOLUTION attribute for video in EXT-X-STREAM-INF tag of variant manifest.

Type: string
Required: False
timestampDeltaMilliseconds
Provides an extra millisecond delta offset to fine tune the timestamps.

  Type: integer
  Required: False
  Minimum: 0

segmentationMode
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

  Type: string
  Required: False

baseUrlContent
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

  Type: string
  Required: False

clientCache
When set to "disabled", sets the #EXT-X-ALLOW-CACHE:no tag in the manifest, which prevents clients from saving media segments for later replay.

  Type: string
  Required: False

captionLanguageMappings
Mapping of up to 4 caption channels to caption languages. Is only meaningful if captionLanguageSetting is set to "insert".

  Type: Array of type CaptionLanguageMapping (p. 46)
  Required: False

codecSpecification
Specification to use (RFC-6381 or the default RFC-4281) during m3u8 playlist generation.

  Type: string
  Required: False

keepSegments
Number of segments to retain in the destination directory. mode must be "live" for this setting to have an effect.

  Type: integer
  Required: False
  Minimum: 1
timedMetadataId3Period

Timed Metadata interval in seconds.

**Type:** integer
**Required:** False
**Minimum:** 0

programDateTime

Includes or excludes EXT-X-PROGRAM-DATE-TIME tag in .m3u8 manifest files. The value is calculated as follows: either the program date and time are initialized using the input timecode source, or the time is initialized using the input timecode source and the date is initialized using the timestampOffset.

**Type:** string
**Required:** False

directoryStructure

Place segments in subdirectories.

**Type:** string
**Required:** False

keyFormat

The value specifies how the key is represented in the resource identified by the URI. If parameter is absent, an implicit value of "identity" is used. A reverse DNS string can also be given.

**Type:** string
**Required:** False

inputLossAction

Parameter that control output group behavior on input loss.

**Type:** string
**Required:** False

adMarkers

Choose one or more ad marker types to pass SCTE35 signals through to this group of Apple HLS outputs.

**Type:** Array of type string
**Required:** False

programDateTimePeriod

Period of insertion of EXT-X-PROGRAM-DATE-TIME entry, in seconds.

**Type:** integer
**Required:** False
**Minimum:** 0
**Maximum:** 3600
segmentLength

Length of MPEG-2 Transport Stream segments to create (in seconds). Note that segments will end on the next keyframe after this number of seconds, so actual segment length may be longer.

Type: integer
Required: False
Minimum: 1

hlsCdnSettings

Parameters that control interactions with the CDN.

Type: HlsCdnSettings (p. 76)
Required: False

HlsInputSettings

retries

The number of consecutive times that attempts to read a manifest or segment must fail before the input is considered unavailable.

Type: integer
Required: False
Minimum: 0

bandwidth

When specified the HLS stream with the m3u8 BANDWIDTH that most closely matches this value will be chosen, otherwise the highest bandwidth stream in the m3u8 will be chosen. The bitrate is specified in bits per second, as in an HLS manifest.

Type: integer
Required: False
Minimum: 0

retryInterval

The number of seconds between retries when an attempt to read a manifest or segment fails.

Type: integer
Required: False
Minimum: 0

bufferSegments

When specified, reading of the HLS input will begin this many buffer segments from the end (most recently written segment). When not specified, the HLS input will begin with the first segment specified in the m3u8.

Type: integer
Required: False
Minimum: 0
HlsIvInManifest (enum)
  EXCLUDE
  INCLUDE

HlsIvSource (enum)
  EXPLICIT
  FOLLOW_SEGMENT_NUMBER

HlsManifestCompression (enum)
  GZIP
  NONE

HlsManifestDurationFormat (enum)
  FLOATING_POINT
  INTEGER

HlsMediaStoreSettings

mediaStoreStorageClass
  When set to temporal, output files are stored in non-persistent memory for faster reading and writing.

  Type: string
  Required: False

numRetries
  Number of retry attempts that will be made before the Live Event is put into an error state.

  Type: integer
  Required: False
  Minimum: 0

restartDelay
  If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

  Type: integer
  Required: False
  Minimum: 0
  Maximum: 15

connectionRetryInterval
  Number of seconds to wait before retrying connection to the CDN if the connection is lost.

  Type: integer
  Required: False
Minimum: 0

filecacheDuration
Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

HlsMediaStoreStorageClass (enum)
TEMPORAL

HlsMode (enum)
LIVE
VOD

HlsOutputSelection (enum)
MANIFESTS_AND_SEGMENTS
SEGMENTS_ONLY

HlsOutputSettings

segmentModifier
String concatenated to end of segment filenames.

Type: string
Required: False

hlsSettings
Settings regarding the underlying stream. These settings are different for audio-only outputs.

Type: HlsSettings (p. 85)
Required: True

nameModifier
String concatenated to the end of the destination filename. Accepts "Format Identifiers \"formatIdentifierParameters.

Type: string
Required: False

HlsProgramDateTime (enum)
EXCLUDE
INCLUDE
HlsSegmentationMode (enum)

- USE_INPUT_SEGMENTATION
- USE_SEGMENT_DURATION

HlsSettings

audioOnlyHlsSettings

Type: AudioOnlyHlsSettings (p. 37)
Required: False

standardHlsSettings

Type: StandardHlsSettings (p. 117)
Required: False

HlsStreamInfResolution (enum)

- EXCLUDE
- INCLUDE

HlsTimedMetadataId3Frame (enum)

- NONE
- PRIV
- TDRL

HlsTsFileMode (enum)

- SEGMENTED_FILES
- SINGLE_FILE

HlsWebdavHttpTransferMode (enum)

- CHUNKED
- NON_CHUNKED

HlsWebdavSettings

httpTransferMode

Specify whether or not to use chunked transfer encoding to WebDAV.

Type: string
Required: False

numRetries

Number of retry attempts that will be made before the Live Event is put into an error state.

Type: integer
Required: False
Minimum: 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

Type: integer
Required: False
Minimum: 0
Maximum: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

Type: integer
Required: False
Minimum: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

**InputAttachment**

**inputId**

The ID of the input

Type: string
Required: False

**inputSettings**

Settings of an input (caption selector, etc.)

Type: InputSettings (p. 89)
Required: False

**InputChannelLevel**

**inputChannel**

The index of the input channel used as a source.

Type: integer
Required: True
Minimum: 0
Maximum: 15

gain

Remixing value. Units are in dB and acceptable values are within the range from -60 (mute) and 6 dB.

Type: integer
Required: True
Minimum: -60
Maximum: 6

InputCodec (enum)
codec in increasing order of complexity

MPEG2
AVC
HEVC

InputDeblockFilter (enum)

DISABLED
ENABLED

InputDenoiseFilter (enum)

DISABLED
ENABLED

InputFilter (enum)

AUTO
DISABLED
FORCED

InputLocation

passwordParam

key used to extract the password from EC2 Parameter store

Type: string
Required: False

uri

Uniform Resource Identifier - This should be a path to a file accessible to the Live system (eg. a http:// URI) depending on the output type. For example, a rtmpEndpoint should have a uri similar to: "rtmp:// fmsserver/live".
**username**

Username if credentials are required to access a file or publishing point. This can be either a plaintext username, or a reference to an AWS parameter store name from which the username can be retrieved. **AWS Parameter store format: “ssm://<parameter name>”**

**InputLossActionForHlsOut (enum)**

- EMIT_OUTPUT
- PAUSE_OUTPUT

**InputLossActionForMsSmoothOut (enum)**

- EMIT_OUTPUT
- PAUSE_OUTPUT

**InputLossActionForUdpOut (enum)**

- DROP_PROGRAM
- DROP_TS
- EMIT_PROGRAM

**InputLossBehavior**

**inputLossImageType**

Indicates whether to substitute a solid color or a slate into the output after input loss exceeds blackFrameMsec.

**inputLossImageColor**

When input loss image type is "color" this field specifies the color to use. Value: 6 hex characters representing the values of RGB.

**inputLossImageSlate**

When input loss image type is "slate" these fields specify the parameters for accessing the slate.
blackFrameMsec
On input loss, the number of milliseconds to substitute black into the output before switching to the frame specified by inputLossImageType. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

Type: integer
Required: False
Minimum: 0
Maximum: 1000000

repeatFrameMsec
On input loss, the number of milliseconds to repeat the previous picture before substituting black into the output. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

Type: integer
Required: False
Minimum: 0
Maximum: 1000000

InputLossImageType (enum)
- COLOR
- SLATE

InputMaximumBitrate (enum)
Maximum input bitrate in megabits per second. Bitrates up to 50 Mbps are supported currently.

- MAX_10_MBPS
- MAX_20_MBPS
- MAX_50_MBPS

InputResolution (enum)
Input resolution based on lines of vertical resolution in the input; SD is less than 720 lines, HD is 720 to 1080 lines, UHD is greater than 1080 lines

- SD
- HD
- UHD

InputSettings

sourceEndBehavior
Loop input if it is a file. This allows a file input to be streamed indefinitely.

Type: string
Required: False

audioSelectors
Used to select the audio stream to decode for inputs that have multiple available.
Type: Array of type AudioSelector (p. 38)  
Required: False

deblockFilter
Enable or disable the deblock filter when filtering.
  
  Type: string  
  Required: False

networkInputSettings
Input settings.
  
  Type: NetworkInputSettings (p. 108)  
  Required: False

inputFilter
Turns on the filter for this input. MPEG-2 inputs have the deblocking filter enabled by default. 1) auto - filtering will be applied depending on input type/quality 2) disabled - no filtering will be applied to the input 3) forced - filtering will be applied regardless of input type
  
  Type: string  
  Required: False

videoSelector
Informs which video elementary stream to decode for input types that have multiple available.
  
  Type: VideoSelector (p. 122)  
  Required: False

filterStrength
Adjusts the magnitude of filtering from 1 (minimal) to 5 (strongest).
  
  Type: integer  
  Required: False  
  Minimum: 1  
  Maximum: 5

captionSelectors
Used to select the caption input to use for inputs that have multiple available.
  
  Type: Array of type CaptionSelector (p. 47)  
  Required: False

denoiseFilter
Enable or disable the denoise filter when filtering.
**Type**: string  
**Required**: False

**InputSourceEndBehavior (enum)**

- CONTINUE
- LOOP

**InputSpecification**

**codec**

Input codec

- **Type**: string  
- **Required**: False

**resolution**

Input resolution, categorized coarsely

- **Type**: string  
- **Required**: False

**maximumBitrate**

Maximum input bitrate, categorized coarsely

- **Type**: string  
- **Required**: False

**InternalServerError**

**message**

- **Type**: string  
- **Required**: False

**InvalidRequest**

**message**

- **Type**: string  
- **Required**: False

**KeyProviderSettings**

**staticKeySettings**

- **Type**: StaticKeySettings (p. 117)
Required: False

LimitExceeded

message

Type: string
Required: False

ListChannelsResultModel

channels

Type: Array of type ChannelSummary (p. 50)
Required: False

nextToken

Type: string
Required: False

M2tsAbsentInputAudioBehavior (enum)

DROP
ENCODE_SILENCE

M2tsArib (enum)

DISABLED
ENABLED

M2tsAribCaptionsPidControl (enum)

AUTO
USE_CONFIGURED

M2tsAudioBufferModel (enum)

ATSC
DVB

M2tsAudioInterval (enum)

VIDEO_AND_FIXED_INTERVALS
VIDEO_INTERVAL

M2tsAudioStreamType (enum)

ATSC
DVB
**M2tsBufferModel (enum)**

MULTIPLEX
NONE

**M2tsCcDescriptor (enum)**

DISABLED
ENABLED

**M2tsEbifControl (enum)**

NONE
PASSTHROUGH

**M2tsEbplPlacement (enum)**

VIDEO_AND_AUDIO_PIDS
VIDEO_PID

**M2tsEsRateInPes (enum)**

EXCLUDE
INCLUDE

**M2tsKlv (enum)**

NONE
PASSTHROUGH

**M2tsPcrControl (enum)**

CONFIGURED_PCR_PERIOD
PCR_EVERY_PES_PACKET

**M2tsRateMode (enum)**

CBR
VBR

**M2tsScte35Control (enum)**

NONE
PASSTHROUGH

**M2tsSegmentationMarkers (enum)**

EBP
EBP_LEGACY
NONE
PSI_SEGSTART
RAI_ADAPT
**M2tsSegmentationStyle (enum)**

- MAINTAIN_CADENCE
- RESET_CADENCE

**M2tsSettings**

**audioStreamType**

When set to atsc, uses stream type = 0x81 for AC3 and stream type = 0x87 for EAC3. When set to dvb, uses stream type = 0x06.

- **Type**: string
- **Required**: False

**ecmPid**

Packet Identifier (PID) for ECM in the transport stream. Only enabled when Simulcrypt is enabled. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

**dvbTeletextPid**

Packet Identifier (PID) for input source DVB Teletext data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

**aribCaptionsPidControl**

If set to auto, pid number used for ARIB Captions will be auto-selected from unused pids. If set to useConfigured, ARIB Captions will be on the configured pid number.

- **Type**: string
- **Required**: False

**bitrate**

The output bitrate of the transport stream in bits per second. Setting to 0 lets the muxer automatically determine the appropriate bitrate.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**segmentationTime**

The length in seconds of each segment. Required unless markers is set to None.
Type: number
Required: False
Minimum: 1.0

rateMode
When vbr, does not insert null packets into transport stream to fill specified bitrate. The bitrate setting acts as the maximum bitrate when vbr is set.

Type: string
Required: False

audioPids
Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20).8182 (or 0x1ff6).

Type: string
Required: False

fragmentTime
The length in seconds of each fragment. Only used with EBP markers.

Type: number
Required: False
Minimum: 0.0

ebpAudioInterval
When videoAndFixedIntervals is selected, audio EBP markers will be added to partitions 3 and 4. The interval between these additional markers will be fixed, and will be slightly shorter than the video EBP marker interval. Only available when EBP Cablelabs segmentation markers are selected. Partitions 1 and 2 will always follow the video interval.

Type: string
Required: False

ebpLookaheadMs
When set, enforces that Encoder Boundary Points do not come within the specified time interval of each other by looking ahead at input video. If another EBP is going to come in within the specified time interval, the current EBP is not emitted, and the segment is "stretched" to the next marker. The lookahead value does not add latency to the system. The Live Event must be configured elsewhere to create sufficient latency to make the lookahead accurate.

Type: integer
Required: False
Minimum: 0
Maximum: 10000

audioFramesPerPes
The number of audio frames to insert for each PES packet.
Properties

**scte35Pid**

Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type*: string

*Required*: False

**pcrPeriod**

Maximum time in milliseconds between Program Clock Reference (PCRs) inserted into the transport stream.

*Type*: integer

*Required*: False

*Minimum*: 0

*Maximum*: 500

**pmtInterval**

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

*Type*: integer

*Required*: False

*Minimum*: 0

*Maximum*: 1000

**programNum**

The value of the program number field in the Program Map Table.

*Type*: integer

*Required*: False

*Minimum*: 0

*Maximum*: 65535

**segmentationStyle**

The segmentation style parameter controls how segmentation markers are inserted into the transport stream. With avails, it is possible that segments may be truncated, which can influence where future segmentation markers are inserted. When a segmentation style of "resetCadence" is selected and a segment is truncated due to an avail, we will reset the segmentation cadence. This means the subsequent segment will have a duration of $segmentationTime seconds. When a segmentation style of "maintainCadence" is selected and a segment is truncated due to an avail, we will not reset the segmentation cadence. This means the subsequent segment will likely be truncated as well. However, all segments after that will have a duration of $segmentationTime seconds. Note that EBP lookahead is a slight exception to this rule.

*Type*: string
Required: False

**ebif**

If set to passthrough, passes any EBIF data from the input source to this output.

- **Type:** string
- **Required:** False

**audioBufferModel**

When set to dvb, uses DVB buffer model for Dolby Digital audio. When set to atsc, the ATSC model is used.

- **Type:** string
- **Required:** False

**dvbNitSettings**

Inserts DVB Network Information Table (NIT) at the specified table repetition interval.

- **Type:** DvbNitSettings (p. 52)
- **Required:** False

**absentInputAudioBehavior**

When set to drop, output audio streams will be removed from the program if the selected input audio stream is removed from the input. This allows the output audio configuration to dynamically change based on input configuration. If this is set to encodeSilence, all output audio streams will output encoded silence when not connected to an active input stream.

- **Type:** string
- **Required:** False

**timedMetadataPid**

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**timedMetadataBehavior**

When set to passthrough, timed metadata will be passed through from input to output.

- **Type:** string
- **Required:** False

**etvSignalPid**

Packet Identifier (PID) for input source ETV Signal data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
Properties

Required: False

pmtPid
Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20). 8182 (or 0x1ff6).

   Type: string
   Required: False

bufferModel
If set to multiplex, use multiplex buffer model for accurate interleaving. Setting to bufferModel to none can lead to lower latency, but low-memory devices may not be able to play back the stream without interruptions.

   Type: string
   Required: False

scte35Control
Optionally pass SCTE-35 signals from the input source to this output.

   Type: string
   Required: False

ebpPlacement
Controls placement of EBP on Audio PIDs. If set to videoAndAudioPids, EBP markers will be placed on the video PID and all audio PIDs. If set to videoPid, EBP markers will be placed on only the video PID.

   Type: string
   Required: False

arib
When set to enabled, uses ARIB-compliant field muxing and removes video descriptor.

   Type: string
   Required: False

nullPacketBitrate
Value in bits per second of extra null packets to insert into the transport stream. This can be used if a downstream encryption system requires periodic null packets.

   Type: number
   Required: False
   Minimum: 0.0

dvbSdtSettings
Inserts DVB Service Description Table (SDT) at the specified table repetition interval.

   Type: DvbSdtSettings (p. 53)
Properties

Required: False

pcrPid

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

transportStreamId

The value of the transport stream ID field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

pcrControl

When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

Type: string
Required: False

videoPid

Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

esRateInPes

Include or exclude the ES Rate field in the PES header.

Type: string
Required: False

segmentationMarkers

Inserts segmentation markers at each segmentationTime period. raiSegstart sets the Random Access Indicator bit in the adaptation field. raiAdapt sets the RAI bit and adds the current timecode in the private data bytes. psiSegstart inserts PAT and PMT tables at the start of segments. ebp adds Encoder Boundary Point information to the adaptation field as per OpenCable specification OC-SP-EBP-I01-130118. ebpLegacy adds Encoder Boundary Point information to the adaptation field using a legacy proprietary format.

Type: string
Required: False
**dvbTdtSettings**

Inserts DVB Time and Date Table (TDT) at the specified table repetition interval.

**Type:** DvbTdtSettings (p. 57)

**Required:** False

**klv**

If set to passthrough, passes any KLV data from the input source to this output.

**Type:** string

**Required:** False

**ccDescriptor**

When set to enabled, generates captionServiceDescriptor in PMT.

**Type:** string

**Required:** False

**patInterval**

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

**Type:** integer

**Required:** False

**Minimum:** 0

**Maximum:** 1000

**etvPlatformPid**

Packet Identifier (PID) for input source ETV Platform data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

**Type:** string

**Required:** False

**dvbSubPids**

Packet Identifier (PID) for input source DVB Subtitle data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

**Type:** string

**Required:** False

**aribCaptionsPid**

Packet Identifier (PID) for ARIB Captions in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

**Type:** string
**scte27Pids**

Packet Identifier (PID) for input source SCTE-27 data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20).8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**klvDataPids**

Packet Identifier (PID) for input source KLV data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**M2tsTimedMetadataBehavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8PcrControl (enum)**

- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

**M3u8Scte35Behavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8Settings**

**pmtPid**

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value.

- **Type:** string
- **Required:** False

**ecmPid**

ThePlatform-protected transport streams using 'microsoft' as Target Client include an ECM stream. This ECM stream contains the size, IV, and PTS of every sample in the transport stream. This stream PID is specified here. This PID has no effect on non ThePlatform-protected streams.

- **Type:** string
- **Required:** False
**scte35Behavior**

If set to passthrough, passes any SCTE-35 signals from the input source to this output.

- **Type**: string
- **Required**: False

**pcrPid**

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value.

- **Type**: string
- **Required**: False

**audioPids**

Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values.

- **Type**: string
- **Required**: False

**audioFramesPerPes**

The number of audio frames to insert for each PES packet.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**scte35Pid**

Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value.

- **Type**: string
- **Required**: False

**transportStreamId**

The value of the transport stream ID field in the Program Map Table.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 65535

**videoPid**

Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value.
Properties

**Type**: string
**Required**: False

**pcrControl**

When set to `pcrEveryPesPacket`, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

**Type**: string
**Required**: False

**pmtInterval**

The number of milliseconds between instances of this table in the output transport stream. A value of `0` writes out the PMT once per segment file.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 1000

**pcrPeriod**

Maximum time in milliseconds between Program Clock References (PCRs) inserted into the transport stream.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 500

**programNum**

The value of the program number field in the Program Map Table.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 65535

**patInterval**

The number of milliseconds between instances of this table in the output transport stream. A value of `0` writes out the PMT once per segment file.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 1000

**timedMetadataPid**

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).
Properties

**Type**: string  
**Required**: False

**timedMetadataBehavior**
When set to passthrough, timed metadata is passed through from input to output.

**Type**: string  
**Required**: False

**M3u8TimedMetadataBehavior (enum)**

- NO_PASSTHROUGH  
- PASSTHROUGH

**Mp2CodingMode (enum)**

- CODING_MODE_1_0  
- CODING_MODE_2_0

**Mp2Settings**

**codingMode**
The MPEG2 Audio coding mode. Valid values are codingMode10 (for mono) or codingMode20 (for stereo).

**Type**: string  
**Required**: False

**bitrate**
Average bitrate in bits/second.

**Type**: number  
**Required**: False

**sampleRate**
Sample rate in Hz.

**Type**: number  
**Required**: False

**MsSmoothGroupSettings**

**eventId**
MS Smooth event ID to be sent to the IIS server. Should only be specified if eventIdMode is set to useConfigured.

**Type**: string
Required: False

**fragmentLength**
Length of mp4 fragments to generate (in seconds). Fragment length must be compatible with GOP size and framerate.

*Type:* integer  
*Required:* False  
*Minimum:* 1

**timestampOffset**
Timestamp offset for the event. Only used if timestampOffsetMode is set to useConfiguredOffset.

*Type:* string  
*Required:* False

**segmentationMode**
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

*Type:* string  
*Required:* False

**numRetries**
Number of retry attempts.

*Type:* integer  
*Required:* False  
*Minimum:* 0

**eventStopBehavior**
When set to sendEos, send EOS signal to IIS server when stopping the event.

*Type:* string  
*Required:* False

**acquisitionPointId**
The value of the "Acquisition Point Identity" element used in each message placed in the sparse track. Only enabled if sparseTrackType is not "none".

*Type:* string  
*Required:* False

**sparseTrackType**
If set to scte35, use incoming SCTE-35 messages to generate a sparse track in this group of MS-Smooth outputs.

*Type:* string
**Required**: False

**timestampOffsetMode**
Type of timestamp date offset to use. - useEventStartDate: Use the date the event was started as the offset - useConfiguredOffset: Use an explicitly configured date as the offset

  * **Type**: string
  * **Required**: False

**destination**
Smooth Streaming publish point on an IIS server. Elemental Live acts as a "Push" encoder to IIS.

  * **Type**: OutputLocationRef (p. 111)
  * **Required**: True

**audioOnlyTimecodeControl**
If set to passthrough for an audio-only MS Smooth output, the fragment absolute time will be set to the current timecode. This option does not write timecodes to the audio elementary stream.

  * **Type**: string
  * **Required**: False

**connectionRetryInterval**
Number of seconds to wait before retrying connection to the IIS server if the connection is lost. Content will be cached during this time and the cache will be delivered to the IIS server once the connection is re-established.

  * **Type**: integer
  * **Required**: False
  * **Minimum**: 0

**filecacheDuration**
Size in seconds of file cache for streaming outputs.

  * **Type**: integer
  * **Required**: False
  * **Minimum**: 0

**certificateMode**
If set to verifyAuthenticity, verify the https certificate chain to a trusted Certificate Authority (CA). This will cause https outputs to self-signed certificates to fail unless those certificates are manually added to the OS trusted keystore.

  * **Type**: string
  * **Required**: False

**inputLossAction**
Parameter that control output group behavior on input loss.
**sendDelayMs**

Outputs that are "output locked" can use this delay. Assign a delay to the output that is "secondary". Do not assign a delay to the "primary" output. The delay means that the primary output will always reach the downstream system before the secondary, which helps ensure that the downstream system always uses the primary output. (If there were no delay, the downstream system might flip-flop between whichever output happens to arrive first.) If the primary fails, the downstream system will switch to the secondary output. When the primary is restarted, the downstream system will switch back to the primary (because once again it is always arriving first).

**eventIdMode**

Specifies whether or not to send an event ID to the IIS server. If no event ID is sent and the same Live Event is used without changing the publishing point, clients might see cached video from the previous run. Options: - "useConfigured" - use the value provided in eventId - "useTimestamp" - generate and send an event ID based on the current timestamp - "noEventId" - do not send an event ID to the IIS server.

**restartDelay**

Number of seconds before initiating a restart due to output failure, due to exhausting the numRetries on one segment, or exceeding filecacheDuration.

**streamManifestBehavior**

When set to send, send stream manifest so publishing point doesn't start until all streams start.

**MsSmoothOutputSettings**

**nameModifier**

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.
NetworkInputServerValidation (enum)

- CHECK_CRYPTOGRAPHY_AND_VALIDATE_NAME
- CHECK_CRYPTOGRAPHY_ONLY

NetworkInputSettings

hlsInputSettings
Specifies HLS input settings when the uri is for a HLS manifest.

- Type: HlsInputSettings (p. 82)
- Required: False

serverValidation
Check HTTPS server certificates. When set to checkCryptographyOnly, cryptography in the certificate will be checked, but not the server's name. Certain subdomains (notably S3 buckets that use dots in the bucket name) do not strictly match the corresponding certificate's wildcard pattern and would otherwise cause the event to error. This setting is ignored for protocols that do not use https.

- Type: string
- Required: False

Output

videoDescriptionName
The name of the VideoDescription used as the source for this output.

- Type: string
- Required: False

captionDescriptionNames
The names of the CaptionDescriptions used as caption sources for this output.

- Type: Array of type string
- Required: False

outputName
The name used to identify an output.

- Type: string
- Required: False

outputSettings
Output type-specific settings.

- Type: OutputSettings (p. 111)
Required: True

audioDescriptionNames

The names of the AudioDescriptions used as audio sources for this output.

Type: Array of type string
Required: False

OutputDestination

settings

Destination settings for output; one for each redundant encoder.

Type: Array of type OutputDestinationSettings (p. 109)
Required: False

id

User-specified id. This is used in an output group or an output.

Type: string
Required: False

OutputDestinationSettings

passwordParam

key used to extract the password from EC2 Parameter store

Type: string
Required: False

streamName

Stream name for RTMP destinations (URLs of type rtmp://)

Type: string
Required: False

url

A URL specifying a destination

Type: string
Required: False

username

username for destination
Properties

**Type**: string
**Required**: False

**OutputGroup**

**outputs**

**Type**: Array of type *Output* (p. 108)
**Required**: True

**outputGroupSettings**

Settings associated with the output group.

**Type**: *OutputGroupSettings* (p. 110)
**Required**: True

**name**

Custom output group name optionally defined by the user. Only letters, numbers, and the underscore character allowed; only 32 characters allowed.

**Type**: string
**Required**: False

**OutputGroupSettings**

**archiveGroupSettings**

**Type**: *ArchiveGroupSettings* (p. 32)
**Required**: False

**rtmpGroupSettings**

**Type**: *RtmpGroupSettings* (p. 112)
**Required**: False

**udpGroupSettings**

**Type**: *UdpGroupSettings* (p. 119)
**Required**: False

**msSmoothGroupSettings**

**Type**: *MsSmoothGroupSettings* (p. 104)
**Required**: False

**hlsGroupSettings**

**Type**: *HlsGroupSettings* (p. 77)
### Properties

**OutputLocationRef**

**destinationRefId**

- Type: string
- Required: False

**OutputSettings**

**rtmpOutputSettings**

- Type: RtmpOutputSettings (p. 113)
- Required: False

**archiveOutputSettings**

- Type: ArchiveOutputSettings (p. 32)
- Required: False

**msSmoothOutputSettings**

- Type: MsSmoothOutputSettings (p. 107)
- Required: False

**udpOutputSettings**

- Type: UdpOutputSettings (p. 119)
- Required: False

**hlsOutputSettings**

- Type: HlsOutputSettings (p. 84)
- Required: False

**PassThroughSettings**

**RemixSettings**

**channelMappings**

Mapping of input channels to output channels, with appropriate gain adjustments.

- Type: Array of type AudioChannelMapping (p. 33)
- Required: True

**channelsOut**

Number of output channels to be produced. Valid values: 1, 2, 4, 6, 8
Type: integer
Required: False
Minimum: 1
Maximum: 8

channelsIn
Number of input channels to be used.

Type: integer
Required: False
Minimum: 1
Maximum: 16

ResourceConflict

message

Type: string
Required: False

RtmpCacheFullBehavior (enum)

DISCONNECT_IMMEDIATELY
WAIT_FOR_SERVER

RtmpCaptionData (enum)

ALL
FIELD1_608
FIELD1_AND_FIELD2_608

RtmpCaptionInfoDestinationSettings

RtmpGroupSettings

captionData

Controls the types of data that passes to onCaptionInfo outputs. If set to 'all' then 608 and 708 carried DTVCC data will be passed. If set to 'field1AndField2608' then DTVCC data will be stripped out, but 608 data from both fields will be passed. If set to 'field1608' then only the data carried in 608 from field 1 video will be passed.

Type: string
Required: False

authenticationScheme

Authentication scheme to use when connecting with CDN

Type: string
Required: False

cacheLength

Cache length, in seconds, is used to calculate buffer size.

Type: integer
Required: False
Minimum: 30

restartDelay

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

Type: integer
Required: False
Minimum: 0

cacheFullBehavior

Controls behavior when content cache fills up. If remote origin server stalls the RTMP connection and does not accept content fast enough the 'Media Cache' will fill up. When the cache reaches the duration specified by cacheLength the cache will stop accepting new content. If set to disconnectImmediately, the RTMP output will force a disconnect. Clear the media cache, and reconnect after restartDelay seconds. If set to waitForServer, the RTMP output will wait up to 5 minutes to allow the origin server to begin accepting data again.

Type: string
Required: False

RtmpOutputCertificateMode (enum)

SELF_SIGNED
VERIFY_AUTHENTICITY

RtmpOutputSettings

certificateMode

If set to verifyAuthenticity, verify the tls certificate chain to a trusted Certificate Authority (CA). This will cause rtmps outputs with self-signed certificates to fail.

Type: string
Required: False

numRetries

Number of retry attempts.

Type: integer
Required: False
Minimum: 0
destination

The RTMP endpoint excluding the stream name (eg. rtmp://host/appname). For connection to Akamai, a username and password must be supplied. URI fields accept format identifiers.

  Type: OutputLocationRef (p. 111)
  Required: True

collectionRetryInterval

Number of seconds to wait before retrying a connection to the Flash Media server if the connection is lost.

  Type: integer
  Required: False
  Minimum: 1

Scte20Convert608To708 (enum)

  DISABLED
  UPCONVERT

Scte20PlusEmbeddedDestinationSettings

Scte20SourceSettings

source608ChannelNumber

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

  Type: integer
  Required: False
  Minimum: 1
  Maximum: 4

convert608To708

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.

  Type: string
  Required: False

Scte27DestinationSettings

Scte27SourceSettings

pid

The pid field is used in conjunction with the caption selector languageCode field as follows: - Specify PID and Language: Extracts captions from that PID; the language is "informational". - Specify PID and omit Language: Extracts the specified PID. - Omit PID and specify Language: Extracts the specified language,
whichever PID that happens to be. - Omit PID and omit Language: Valid only if source is DVB-Sub that is being passed through; all languages will be passed through.

**Type:** integer  
**Required:** False  
**Minimum:** 1

### Scte35AposNoRegionalBlackoutBehavior (enum)

- FOLLOW  
- IGNORE

### Scte35AposWebDeliveryAllowedBehavior (enum)

- FOLLOW  
- IGNORE

### Scte35SpliceInsert

#### adAvailOffset

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

**Type:** integer  
**Required:** False  
**Minimum:** -1000  
**Maximum:** 1000

#### webDeliveryAllowedFlag

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates

**Type:** string  
**Required:** False

#### noRegionalBlackoutFlag

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates

**Type:** string  
**Required:** False

### Scte35SpliceInsertNoRegionalBlackoutBehavior (enum)

- FOLLOW  
- IGNORE

### Scte35SpliceInsertWebDeliveryAllowedBehavior (enum)

- FOLLOW  
- IGNORE
**Properties**

**Scte35TimeSignalApos**

**adAvailOffset**

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

- **Type**: integer
- **Required**: False
- **Minimum**: -1000
- **Maximum**: 1000

**webDeliveryAllowedFlag**

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

- **Type**: string
- **Required**: False

**noRegionalBlackoutFlag**

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

- **Type**: string
- **Required**: False

**SmoothGroupAudioOnlyTimecodeControl (enum)**

- **PASSTHROUGH**
- **USE_CONFIGURED_CLOCK**

**SmoothGroupCertificateMode (enum)**

- **SELF_SIGNED**
- **VERIFY_AUTHENTICITY**

**SmoothGroupEventIdMode (enum)**

- **NO_EVENT_ID**
- **USE_CONFIGURED**
- **USE_TIMESTAMP**

**SmoothGroupEventStopBehavior (enum)**

- **NONE**
- **SEND_EOS**

**SmoothGroupSegmentationMode (enum)**

- **USE_INPUT_SEGMENTATION**
- **USE_SEGMENT_DURATION**
SmoothGroupSparseTrackType (enum)

- NONE
- SCTE_35

SmoothGroupStreamManifestBehavior (enum)

- DO_NOT_SEND
- SEND

SmoothGroupTimestampOffsetMode (enum)

- USE_CONFIGURED_OFFSET
- USE_EVENT_START_DATE

SmpteTtDestinationSettings

StandardHlsSettings

m3u8Settings

- Type: M3u8Settings (p. 101)
- Required: True

audioRenditionSets

List all the audio groups that are used with the video output stream. Input all the audio GROUP-IDs that are associated to the video, separate by ','.  

- Type: string
- Required: False

StaticKeySettings

staticKeyValue

Static key value as a 32 character hexadecimal string.  

- Type: string
- Required: True

keyProviderServer

The URL of the license server used for protecting content.  

- Type: InputLocation (p. 87)
- Required: False
**TeletextDestinationSettings**

**TeletextSourceSettings**

**pageNumber**

Specifies the teletext page number within the data stream from which to extract captions. Range of 0x100 (256) to 0x8FF (2303). Unused for passthrough. Should be specified as a hexadecimal string with no "0x" prefix.

*Type:* string  
*Required:* False

**TimecodeConfig**

**syncThreshold**

Threshold in frames beyond which output timecode is resynchronized to the input timecode. Discrepancies below this threshold are permitted to avoid unnecessary discontinuities in the output timecode. No timecode sync when this is not specified.

*Type:* integer  
*Required:* False  
*Minimum:* 1  
*Maximum:* 1000000

**source**

Identifies the source for the timecode that will be associated with the events outputs. - Embedded (embedded): Initialize the output timecode with timecode from the the source. If no embedded timecode is detected in the source, the system falls back to using "Start at 0" (zerobased). - System Clock (systemclock): Use the UTC time. - Start at 0 (zerobased): The time of the first frame of the event will be 00:00:00:00.

*Type:* string  
*Required:* True

**TimecodeConfigSource (enum)**

- EMBEDDED  
- SYSTEMCLOCK  
- ZEROBASED

**TtmlDestinationSettings**

**styleControl**

When set to passthrough, passes through style and position information from a TTML-like input source (TTML, SMPTE-TT, CFF-TT) to the CFF-TT output or TTML output.

*Type:* string  
*Required:* False
**TtmlDestinationStyleControl (enum)**

PASSTHROUGH
USE_CONFIGURED

**UdpContainerSettings**

**m2tsSettings**

*Type: M2tsSettings (p. 94)*
*Required: False*

**UdpGroupSettings**

**inputLossAction**

Specifies behavior of last resort when input video is lost, and no more backup inputs are available. When dropTs is selected the entire transport stream will stop being emitted. When dropProgram is selected the program can be dropped from the transport stream (and replaced with null packets to meet the TS bitrate requirement). Or, when emitProgram is chosen the transport stream will continue to be produced normally with repeat frames, black frames, or slate frames substituted for the absent input video.

*Type: string*
*Required: False*

**timedMetadataId3Frame**

Indicates ID3 frame that has the timecode.

*Type: string*
*Required: False*

**timedMetadataId3Period**

Timed Metadata interval in seconds.

*Type: integer*
*Required: False*
*Minimum: 0*

**UdpOutputSettings**

**bufferMsec**

UDP output buffering in milliseconds. Larger values increase latency through the transcoder but simultaneously assist the transcoder in maintaining a constant, low-jitter UDP/RTP output while accommodating clock recovery, input switching, input disruptions, picture reordering, etc.

*Type: integer*
*Required: False*
*Minimum: 0*
*Maximum: 10000*
**destination**

Destination address and port number for RTP or UDP packets. Can be unicast or multicast RTP or UDP (eg. rtp://239.10.10.5001 or udp://10.100.100.100:5002).

- **Type**: OutputLocationRef (p. 111)
- **Required**: True

**containerSettings**

- **Type**: UdpContainerSettings (p. 119)
- **Required**: True

**fecOutputSettings**

Settings for enabling and adjusting Forward Error Correction on UDP outputs.

- **Type**: FecOutputSettings (p. 64)
- **Required**: False

**UdpTimedMetadataId3Frame (enum)**

- NONE
- PRIV
- TDRL

**Validation>Error**

**errorMessage**

- **Type**: string
- **Required**: False

**elementPath**

- **Type**: string
- **Required**: False

**VideoCodecSettings**

**h264Settings**

- **Type**: H264Settings (p. 68)
- **Required**: False

**VideoDescription**

**respondToAfd**

Indicates how to respond to the AFD values in the input stream. Setting to "respond" causes input video to be clipped, depending on AFD value, input display aspect ratio and output display aspect ratio.

- **Type**: string
**Properties**

**Required**: False

**scalingBehavior**

When set to "stretchToOutput", automatically configures the output position to stretch the video to the specified output resolution. This option will override any position value.

- **Type**: string
  - **Required**: False

**name**

The name of this VideoDescription. Outputs will use this name to uniquely identify this Description. Description names should be unique within this Live Event.

- **Type**: string
  - **Required**: True

**width**

Output video width (in pixels). Leave out to use source video width. If left out, height must also be left out. Display aspect ratio is always preserved by letterboxing or pillarboxing when necessary.

- **Type**: integer
  - **Required**: False

**sharpness**

Changes the width of the anti-alias filter kernel used for scaling. Only applies if scaling is being performed and antiAlias is set to true. 0 is the softest setting, 100 the sharpest, and 50 recommended for most content.

- **Type**: integer
  - **Required**: False
  - **Minimum**: 0
  - **Maximum**: 100

**codecSettings**

Video codec settings.

- **Type**: VideoCodecSettings (p. 120)
  - **Required**: False

**height**

Output video height (in pixels). Leave blank to use source video height. If left blank, width must also be unspecified.

- **Type**: integer
  - **Required**: False

**VideoDescriptionRespondToAfd** (enum)

NONE
Properties

PASSTHROUGH
RESPOND

VideoDescriptionScalingBehavior (enum)

DEFAULT
STRETCH_TO_OUTPUT

VideoSelector

colorSpace
Specifies the colorspace of an input. This setting works in tandem with colorSpaceConversion to determine if any conversion will be performed.

Type: string
Required: False

selectorSettings
The video selector settings.

Type: VideoSelectorSettings (p. 123)
Required: False

colorSpaceUsage
Applies only if colorSpace is a value other than follow. This field controls how the value in the colorSpace field will be used. fallback means that when the input does include color space data, that data will be used, but when the input has no color space data, the value in colorSpace will be used. Choose fallback if your input is sometimes missing color space data, but when it does have color space data, that data is correct. force means to always use the value in colorSpace. Choose force if your input usually has no color space data or might have unreliable color space data.

Type: string
Required: False

VideoSelectorColorSpace (enum)

FOLLOW
REC_601
REC_709

VideoSelectorColorSpaceUsage (enum)

FALLBACK
FORCE

VideoSelectorPid

pid
Selects a specific PID from within a video source.
Channels channelId

Type: integer
Required: False
Minimum: 0
Maximum: 8191

VideoSelectorProgramId

programId

Selects a specific program from within a multi-program transport stream. If the program doesn't exist, the first program within the transport stream will be selected by default.

Type: integer
Required: False
Minimum: 0
Maximum: 65536

VideoSelectorSettings

videoSelectorPid

Type: VideoSelectorPid (p. 122)
Required: False

videoSelectorProgramId

Type: VideoSelectorProgramId (p. 123)
Required: False

WebvttDestinationSettings

Channels channelId

URI

/prod/channels/ channelId

HTTP Methods

GET

Operation ID: DescribeChannel

Gets details about a channel

Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channelId</td>
<td>String</td>
<td>True</td>
<td>channel ID</td>
</tr>
</tbody>
</table>
Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Channel (p. 136)</td>
<td>Channel details</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 158)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 158)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 159)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 158)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 158)</td>
<td>The channel you’re requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 159)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 158)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

**PUT**

Operation ID: UpdateChannel

Updates a channel.

**Path Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channelId</td>
<td>String</td>
<td>True</td>
<td>channel ID</td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>UpdateChannelResultModel (p. 135)</td>
<td>Channel is successfully updated.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 158)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>422</td>
<td>ChannelConfigurationValidationError (p. 158)</td>
<td>The Channel failed validation and could not be created.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 158)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 159)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 158)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 159)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 158)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>
DELETE

Operation ID: DeleteChannel

Starts deletion of channel. The associated outputs are also deleted.

Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>channelId</td>
<td>String</td>
<td>True</td>
<td>channel ID</td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Channel (p. 136)</td>
<td>Deletion was successfully initiated.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 158)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 158)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 159)</td>
<td>Bad Gateway Error</td>
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<td>409</td>
<td>ResourceConflict (p. 158)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

Schemas

Request Bodies

Example PUT

```json
{
  "inputAttachments (p. 249)": [
    {
      "inputId (p. 215)": "string",
      "inputSettings (p. 215)": {
        "sourceEndBehavior (p. 218)": enum,
        "audioSelectors (p. 218)": [
          {
            "name (p. 169)": "string",
            "selectorSettings (p. 169)": {
              ...}
```
"audioLanguageSelection (p. 169)": {
  "languageSelectionPolicy (p. 167)": enum,
  "languageCode (p. 167)": "string"
},
"audioPidSelection (p. 169)": {
  "pid (p. 168)": integer
}
},
"deblockFilter (p. 219)": enum,
"networkInputSettings (p. 219)": {
  "hlsInputSettings (p. 236)": {
    "retries (p. 211)": integer,
    "bandwidth (p. 211)": integer,
    "retryInterval (p. 211)": integer,
    "bufferSegments (p. 211)": integer
  },
  "serverValidation (p. 237)": enum
},
"inputFilter (p. 219)": enum,
"videoSelector (p. 219)": {
  "colorSpace (p. 252)": enum,
  "selectorSettings (p. 252)": {
    "videoSelectorPid (p. 253)": {
      "pid (p. 252)": integer
    },
    "videoSelectorProgramId (p. 253)": {
      "programId (p. 253)": integer
    }
  },
  "colorSpaceUsage (p. 252)": enum
},
"filterStrength (p. 219)": integer,
"captionSelectors (p. 219)": [
  {
    "name (p. 178)": "string",
    "languageCode (p. 178)": "string",
    "selectorSettings (p. 178)": {
      "embeddedSourceSettings (p. 178)": {
        "scte20Detection (p. 191)": enum,
        "source608ChannelNumber (p. 191)": integer,
        "convert608To708 (p. 191)": enum,
        "source608TrackNumber (p. 192)": integer
      },
      "scte20SourceSettings (p. 178)": {
        "source608ChannelNumber (p. 243)": integer,
        "convert608To708 (p. 243)": integer
      },
      "dvbSubSourceSettings (p. 178)": {
        "pid (p. 186)": integer
      },
      "aribSourceSettings (p. 178)": {
      },
      "teletextSourceSettings (p. 178)": {
        "pageNumber (p. 247)": "string"
      },
      "scte27SourceSettings (p. 179)": {
        "pid (p. 243)": integer
      }
    }
  }
]}
"denoiseFilter (p. 219)": enum
"roleArn (p. 249)": "string",
"destinations (p. 249)": [
  {
    "settings (p. 238)": [
      {
        "passwordParam (p. 238)": "string",
        "streamName (p. 238)": "string",
        "url (p. 238)": "string",
        "username (p. 238)": "string"
      }
    ],
    "id (p. 238)": "string"
  },
  "name (p. 249)": "string",
  "encoderSettings (p. 250)": {
    "timecodeConfig (p. 192)": {
      "syncThreshold (p. 247)": integer,
      "source (p. 247)": enum
    },
    "outputGroups (p. 192)": [
      {
        "outputs (p. 238)": [
          {
            "videoDescriptionName (p. 237)": "string",
            "captionDescriptionNames (p. 237)": [
              "string"
            ],
            "outputName (p. 237)": "string",
            "rtmpOutputSettings (p. 240)": {
              "certificateMode (p. 242)": enum,
              "numRetries (p. 242)": integer,
              "destination (p. 242)": {
                "destinationRefId (p. 239)": "string"
              },
              "connectionRetryInterval (p. 243)": integer
            },
            "archiveOutputSettings (p. 240)": {
              "extension (p. 163)": "string",
              "containerSettings (p. 164)": {
                "m2tsSettings (p. 163)": {
                  "audioStreamType (p. 222)": enum,
                  "ecmPid (p. 223)": "string",
                  "dvbTeletextPid (p. 223)": "string",
                  "aribCaptionsPidControl (p. 223)": enum,
                  "bitrate (p. 223)": integer,
                  "segmentationTime (p. 223)": number,
                  "rateMode (p. 223)": enum,
                  "audioPids (p. 224)": "string",
                  "fragmentTime (p. 224)": number,
                  "ebpAudioInterval (p. 224)": enum,
                  "ebpLookaheadMs (p. 224)": integer,
                  "audioFramesPerPes (p. 224)": integer,
                  "scte35Pid (p. 224)": "string",
                  "pcrPeriod (p. 225)": integer,
                  "pmtInterval (p. 225)": integer,
                  "programNum (p. 225)": integer,
                  "segmentationStyle (p. 225)": enum,
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                    "networkId (p. 181)": integer,
                    "repInterval (p. 181)": integer
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          }
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      }
    ]
  }
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"absentInputAudioBehavior (p. 226)": enum,
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"arib (p. 227)": enum,
"nullPacketBitrate (p. 227)": number,
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  "serviceProviderName (p. 182)": "string",
  "repInterval (p. 182)": integer,
  "outputSdt (p. 182)": enum
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"ccDescriptor (p. 229)": enum,
"patInterval (p. 229)": integer,
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"klvDataPids (p. 230)": "string"
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"msSmoothOutputSettings (p. 240)": {
  "nameModifier (p. 236)": "string"
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"udpOutputSettings (p. 240)": {
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  "destination (p. 249)": {
    "destinationRefId (p. 239)": "string"
  }
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"containerSettings (p. 249)": {
  "mtsSettings (p. 248)": {
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    "dvbTeletextPid (p. 223)": "string",
    "aribCaptionsPidControl (p. 223)": enum,
    "bitrate (p. 223)": integer,
    "segmentationTime (p. 223)": number,
    "rateMode (p. 223)": enum,
    "audioPids (p. 224)": "string",
    "fragmentTime (p. 224)": number,
    "ebpAudioInterval (p. 224)": enum,
    "ebpLookaheadMs (p. 224)": integer,
    "audioFramesPerPes (p. 224)": integer,
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    "pcrPid (p. 225)": integer,
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    "programNum (p. 225)": integer,
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"audioBufferModel (p. 225)": enum,
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  "serviceProviderName (p. 182)": "string",
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  "outputSdt (p. 182)": enum
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"scte27Pids (p. 229)": "string",
"klvDataPids (p. 230)": "string"
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"fecOutputSettings (p. 249)": {
  "rowLength (p. 193)": integer,
  "columnDepth (p. 193)": integer,
  "includeFec (p. 193)": enum
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"hlsOutputSettings (p. 240)": {
  "segmentModifier (p. 213)": "string",
  "hlsSettings (p. 213)": {
    "audioOnlyHlsSettings (p. 214)": {
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      "audioGroupId (p. 168)": "string",
      "audioOnlyImage (p. 168)": {
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        "uri (p. 216)": "string",
        "username (p. 217)": "string"
      }
    },
    "standardHlsSettings (p. 214)": {
      "m3u8Settings (p. 246)": {
        "pmtPid (p. 230)": "string",
        "ecmPid (p. 230)": "string",
        "scte35Behavior (p. 230)": enum,
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        "audioPids (p. 231)": "string",
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"audioDescriptionNames (p. 237)": [
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]
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"outputGroupSettings (p. 239)": {
"archiveGroupSettings (p. 239)": {
"destination (p. 163)": {
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"rolloverInterval (p. 163)": integer
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"rtmpGroupSettings (p. 239)": {
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"authenticationScheme (p. 241)": enum,
"cacheLength (p. 241)": integer,
"restartDelay (p. 242)": integer,
"cacheFullBehavior (p. 242)": enum
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"udpGroupSettings (p. 239)": {
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"timedMetadataId3Period (p. 248)": integer
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"msSmoothGroupSettings (p. 239)": {
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"timestampOffset (p. 234)": "string",
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"numRetries (p. 234)": integer,
"eventStopBehavior (p. 234)": enum,
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"sparseTrackType (p. 234)": enum,
"timestampOffsetMode (p. 234)": enum,
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"filecacheDuration (p. 235)": integer,
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"sendDelayMs (p. 235)": integer,
"eventIdMode (p. 236)": enum,
"restartDelay (p. 236)": integer,
"streamManifestBehavior (p. 236)": enum
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"constantIv (p. 207)": "string",
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"manifestCompression (p. 208)": enum,
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    "keyProviderServer (p. 246)": {
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      "uri (p. 216)": "string",
      "username (p. 217)": "string"
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  }
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"manifestDurationFormat (p. 208)": enum,
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"captionLanguageMappings (p. 209)": [ ]
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"keepSegments (p. 209)": integer,
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"audioTypeControl (p. 165)": enum,
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"channelsIn (p. 240)": integer
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"languageCode (p. 166)": "string",
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"sampleRate (p. 160)": number,
"rateControlMode (p. 160)": enum,
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"codingMode (p. 162)": enum,
"metadataControl (p. 162)": enum,
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"lfeFilter (p. 162)": enum,
"bitstreamMode (p. 163)": enum
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  "metadataControl (p. 188)": enum,
  "drcLine (p. 188)": enum,
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  "lfeControl (p. 189)": enum,
  "codingMode (p. 189)": enum,
  "surroundMode (p. 189)": enum,
  "attenuationControl (p. 189)": enum,
  "lfeFilter (p. 189)": enum,
  "ltRtCenterMixLevel (p. 189)": number,
  "dcFilter (p. 190)": enum,
  "phaseControl (p. 190)": enum,
  "stereoDownmix (p. 190)": enum,
  "bitstreamMode (p. 190)": enum,
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  "drcRf (p. 190)": enum,
  "loRoCenterMixLevel (p. 190)": number
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  "sampleRate (p. 233)": number
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  "targetLkfs (p. 167)": number,
  "algorithmControl (p. 167)": enum,
  "algorithm (p. 168)": enum
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"captionDescriptions (p. 192)": [
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    "languageDescription (p. 175)": "string",
    "name (p. 175)": "string",
    "languageCode (p. 176)": "string",
    "destinationSettings (p. 176)": {
      "scte27DestinationSettings (p. 176)": {
      }
    },
    "burnInDestinationSettings (p. 176)": {
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      "backgroundColor (p. 172)": enum,
      "yPosition (p. 172)": integer,
      "teletextGridControl (p. 172)": enum,
      "backgroundOpacity (p. 172)": integer,
      "fontOpacity (p. 173)": integer,
      "fontResolution (p. 173)": integer,
      "shadowOpacity (p. 173)": integer,
      "shadowXOffset (p. 173)": integer,
      "outlineSize (p. 173)": integer,
      "outlineColor (p. 173)": enum,
      "fontSize (p. 174)": "string",
      "shadowXOffset (p. 174)": integer,
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      "shadowColor (p. 174)": enum,
      "fontColor (p. 174)": enum,
      "font (p. 174)": {
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    }
  }
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"username (p. 217)" : "string"
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"smpTeTTDestinationSettings (p. 176)" : {
},
"webVttDestinationSettings (p. 176)" : {
},
"ttmlDestinationSettings (p. 176)" : {
"styleControl (p. 247)" : enum
},
"embeddedPlusScte20DestinationSettings (p. 176)" : {
},
"dvbSubDestinationSettings (p. 177)" : {
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"yPosition (p. 183)" : integer,
"teletextGridColumnControl (p. 183)" : enum,
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"fontResolution (p. 184)" : integer,
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"alignment (p. 185)" : enum,
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"username (p. 217)" : "string"
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"ariBDestinationSettings (p. 177)" : {
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"scte20PlusEmbeddedDestinationSettings (p. 177)" : {
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}
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"availSettings (p. 170)" : {
"scte35TimeSignalApos (p. 170)" : {
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"noRegionalBlackoutFlag (p. 245)" : enum
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"scte35SpliceInsert (p. 170)" : {
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"webDeliveryAllowedFlag (p. 244)" : enum,
"noRegionalBlackoutFlag (p. 244)" : enum
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"globalConfiguration (p. 192)" : {
"inputLossBehavior (p. 194)" : {

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"inputLossImageColor (p. 217)" : "string",
"inputLossImageSlate (p. 217)" : {
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  "uri (p. 216)" : "string",
  "username (p. 217)" : "string"
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"blackFrameMsec (p. 218)" : integer,
"repeatFrameMsec (p. 218)" : integer
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"supportLowFramerateInputs (p. 194)" : enum,
"initialAudioGain (p. 194)" : integer,
"inputEndAction (p. 194)" : enum,
"outputTimingSource (p. 195)" : enum
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"videoDescriptions (p. 193)" : [
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    "respondToAfd (p. 250)" : enum,
    "scalingBehavior (p. 251)" : enum,
    "name (p. 251)" : "string",
    "width (p. 251)" : integer,
    "sharpness (p. 251)" : integer,
    "codecSettings (p. 251)" : {
      "h264Settings (p. 250)" : {
        "minIInterval (p. 197)" : integer,
        "slices (p. 197)" : integer,
        "parNumerator (p. 197)" : integer,
        "gopSizeUnits (p. 198)" : enum,
        "maxBitrate (p. 198)" : integer,
        "bitrate (p. 198)" : integer,
        "bufFillPct (p. 198)" : integer,
        "temporalAq (p. 198)" : enum,
        "afdSignaling (p. 198)" : enum,
        "timecodeInsertion (p. 199)" : enum,
        "bufSize (p. 199)" : integer,
        "softness (p. 199)" : integer,
        "framerateControl (p. 199)" : enum,
        "fixedAfd (p. 199)" : enum,
        "level (p. 199)" : enum,
        "lookAheadRateControl (p. 199)" : enum,
        "profile (p. 200)" : enum,
        "frameRateNumerator (p. 200)" : integer,
        "gopClosedCadence (p. 200)" : integer,
        "frameRateDenominator (p. 200)" : integer,
        "entropyEncoding (p. 200)" : enum,
        "spatialAq (p. 200)" : enum,
        "adaptiveQuantization (p. 200)" : enum,
        "colorMetadata (p. 201)" : enum,
        "gopSize (p. 201)" : number,
        "numRefFrames (p. 201)" : integer,
        "gopBReference (p. 201)" : enum,
        "sceneChangeDetect (p. 201)" : enum,
        "parControl (p. 201)" : enum,
        "parDenominator (p. 201)" : integer,
        "syntax (p. 202)" : enum,
        "scanType (p. 202)" : enum,
        "gopNumBFrames (p. 202)" : integer,
        "flickerAq (p. 202)" : enum,
        "rateControlMode (p. 202)" : enum
      }
    }
  }
},
"height (p. 251)" : integer
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"uri (p. 216)": "string",
"username (p. 217)": "string"
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"state (p. 171)": enum,
"blackoutSlateImage (p. 171)": {
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  "uri (p. 216)": "string",
  "username (p. 217)": "string"
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"availBlanking (p. 193)": {
  "state (p. 169)": enum,
  "availBlankingImage (p. 170)": {
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    "uri (p. 216)": "string",
    "username (p. 217)": "string"
  }
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"inputSpecification (p. 250)": {
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  "resolution (p. 220)": enum,
  "maximumBitrate (p. 220)": enum
}
}

Response Bodies

Example Channel

```json
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      "inputSettings (p. 215)": {
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        "audioSelectors (p. 218)": [
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            "name (p. 169)": "string",
            "selectorSettings (p. 169)": {
              "audioLanguageSelection (p. 169)": {
                "languageSelectionPolicy (p. 167)": enum,
                "languageCode (p. 167)": "string"
              },
              "audioPidSelection (p. 169)": {
                "pid (p. 168)": integer
              }
            }
          }
        ],
        "deblockFilter (p. 219)": enum,
        "networkInputSettings (p. 219)": {
          "hlsInputSettings (p. 236)": {
            "retries (p. 211)": integer,
            "bandwidth (p. 211)": integer,
            "retryInterval (p. 211)": integer,
            "bufferSegments (p. 211)": integer
          },
          "serverValidation (p. 237)": enum
        }
      }
    }
  ],
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  "networkInputSettings (p. 219)": {
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      "retries (p. 211)": integer,
      "bandwidth (p. 211)": integer,
      "retryInterval (p. 211)": integer,
      "bufferSegments (p. 211)": integer
    },
    "serverValidation (p. 237)": enum
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  "inputFilter (p. 219)": enum,
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  "selectorSettings (p. 252)": {
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      "pid (p. 252)": integer
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    "videoSelectorProgramId (p. 253)": {
      "programId (p. 253)": integer
    }
  },
  "colorSpaceUsage (p. 252)": enum
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"filterStrength (p. 219)": integer,
"captionSelectors (p. 219)": [
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    "languageCode (p. 178)": "string",
    "selectorSettings (p. 178)": {
      "embeddedSourceSettings (p. 178)": {
        "scte20Detection (p. 191)": enum,
        "source608ChannelNumber (p. 191)": integer,
        "convert608To708 (p. 191)": enum,
        "source608TrackNumber (p. 192)": integer
      },
      "scte20SourceSettings (p. 178)": {
        "source608ChannelNumber (p. 243)": integer,
        "convert608To708 (p. 243)": enum
      },
      "dvbSubSourceSettings (p. 178)": {
        "pid (p. 186)": integer
      },
      "aribSourceSettings (p. 178)": {
        "pid (p. 186)": integer
      },
      "teletextSourceSettings (p. 178)": {
        "pageNumber (p. 247)": "string"
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      "scte27SourceSettings (p. 179)": {
        "pid (p. 243)": integer
      }
    }
  }
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    "settings (p. 238)": [
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        "streamName (p. 238)": "string",
        "url (p. 238)": "string",
        "username (p. 238)": "string"
      }
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    "id (p. 238)": "string"
  }
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    "syncThreshold (p. 247)": integer,
    "source (p. 247)": enum
  }
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    "captionDescriptionNames (p. 237)": [
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        "connectionRetryInterval (p. 243)": integer
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        "containerSettings (p. 164)": {
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            "aribCaptionsPidControl (p. 223)": enum,
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            "audioBufferModel (p. 225)": enum,
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      }
    }
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  "m2tsSettings (p. 248)": {
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  }
}
Schemas

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},
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  "ccDescriptor (p. 229)": enum,
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  "dvbSubPids (p. 229)": "string",
  "aribCaptionsPid (p. 229)": "string",
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  "klvDataPids (p. 230)": "string"
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    "includeFec (p. 193)": enum
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        "audioGroupId (p. 168)": "string",
        "audioOnlyImage (p. 168)": {
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          "uri (p. 216)": "string",
          "username (p. 217)": "string"
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      "standardHlsSettings (p. 214)": {
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          "pmtPid (p. 230)": "string",
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        "audioRenditionSets (p. 246)": "string"
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    "nameModifier (p. 213)": "string"
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},
  "audioDescriptionNames (p. 237)": [
    "string"
]
```
### Schemas

#### outputGroupSettings (p. 239):

- **archiveGroupSettings (p. 239):**
  - **destination (p. 163):**
    - **destinationRefId (p. 239):** "string"
  - **rolloverInterval (p. 163):** integer
- **rtmpGroupSettings (p. 239):**
  - **captionData (p. 241):** enum, "authenticationScheme (p. 241):" enum, "cacheLength (p. 241):" integer, "restartDelay (p. 242):" integer, "cacheFullBehavior (p. 242):" enum
- **udpGroupSettings (p. 239):**
  - **inputLossAction (p. 248):" enum, "timedMetadataId3Frame (p. 248):" enum, "timedMetadataId3Period (p. 248):" integer
- **msSmoothGroupSettings (p. 239):**
  - **eventId (p. 233):" string, "fragmentLength (p. 233):" integer, "timestampOffset (p. 234):" "string," segmentationMode (p. 234):" enum, "numRetries (p. 234):" integer, "eventStopBehavior (p. 234):" enum, "acquisitionPointId (p. 234):" "string," sparseTrackType (p. 234):" enum, "timestampOffsetMode (p. 234):" enum, "destination (p. 235):" {
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- **hlsGroupSettings (p. 239):**
  - **segmentsPerSubdirectory (p. 206):" integer, "ivInManifest (p. 206):" enum, "outputSelection (p. 206):" enum, "encryptionType (p. 206):" enum, "indexNSegments (p. 206):" integer, "destination (p. 206):" {
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    - **staticKeySettings (p. 220):"**
      - **staticKeyValue (p. 246):" string," keyProviderServer (p. 246):" 
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          "inputChannelLevels (p. 164)": [
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              "gain (p. 216)": integer
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              "sampleRate (p. 160)": number,
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              "metadataControl (p. 162)": enum,
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              "lfeFilter (p. 189)": enum,
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              "dcFilter (p. 190)": enum,
              "phaseControl (p. 190)": enum,
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              "drcRF (p. 190)": enum,
              "loRoCenterMixLevel (p. 190)": number
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          }
        }
      }
    }
  }
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  "algorithm (p. 168)": enum
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    "languageDescription (p. 175)": "string",
    "name (p. 175)": "string",
    "languageCode (p. 176)": "string",
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        "yPosition (p. 172)": integer,
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          "username (p. 217)": "string"
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      "smpteTtDestinationSettings (p. 176)": {
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      "webvttDestinationSettings (p. 176)": {
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      "ttmlDestinationSettings (p. 176)": {
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      "embeddedPlusScte20DestinationSettings (p. 176)": {
      },
      "dvbSubDestinationSettings (p. 177)": {
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        "yPosition (p. 183)": integer,
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  "uri (p. 216)": "string",
  "username (p. 217)": "string"
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"aribDestinationSettings (p. 177)": {
},
"scte20PlusEmbeddedDestinationSettings (p. 177)": {
}
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    "noRegionalBlackoutFlag (p. 245)": enum
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  "scte35SpliceInsert (p. 170)": {
    "adAvailOffset (p. 244)": integer,
    "webDeliveryAllowedFlag (p. 244)": enum,
    "noRegionalBlackoutFlag (p. 244)": enum
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      "uri (p. 216)": "string",
      "username (p. 217)": "string"
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    "repeatFrameMsec (p. 218)": integer
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    "width (p. 251)": integer,
"sharpness (p. 251)": integer,
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  "h264Settings (p. 250)": {
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    "parNumerator (p. 197)": integer,
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    "gopClosedCadence (p. 200)": integer,
    "framerateDenominator (p. 200)": integer,
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    "sceneChangeDetect (p. 201)": enum,
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    "flickerAq (p. 202)": enum,
    "rateControlMode (p. 202)": enum
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    "uri (p. 216)": "string",
    "username (p. 217)": "string"
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  "state (p. 171)": enum,
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    "uri (p. 216)": "string",
    "username (p. 217)": "string"
  }
},
"availBlanking (p. 193)": {
  "state (p. 169)": enum,
  "availBlankingImage (p. 170)": {
    "passwordParam (p. 216)": "string",
    "uri (p. 216)": "string",
    "username (p. 217)": "string"
  }
}
Example UpdateChannelResultModel

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  "channel (p. 250)": {
    "inputAttachments (p. 179)": [
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        "inputId (p. 215)": "string",
        "inputSettings (p. 215)": {
          "sourceEndBehavior (p. 218)": enum,
          "audioSelectors (p. 218)": [
            {
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              "selectorSettings (p. 169)": {
                "audioLanguageSelection (p. 169)": {
                  "languageSelectionPolicy (p. 167)": enum,
                  "languageCode (p. 167)": "string"
                },
                "audioPidSelection (p. 169)": {
                  "pid (p. 168)": integer
                }
              }
            }
          ]
        },
        "deblockFilter (p. 219)": enum,
        "networkInputSettings (p. 219)": {
          "hlsInputSettings (p. 236)": {
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            "bandwidth (p. 211)": integer,
            "retryInterval (p. 211)": integer,
            "bufferSegments (p. 211)": integer
          },
          "serverValidation (p. 237)": enum
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        "inputFilter (p. 219)": enum,
        "videoSelector (p. 219)": {
          "colorSpace (p. 252)": enum,
          "selectorSettings (p. 252)": {
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              "pid (p. 252)": integer
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            "videoSelectorProgramId (p. 253)": {
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            }
          },
          "colorSpaceUsage (p. 252)": enum
        },
        "filterStrength (p. 219)": integer
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    ]
  }
}
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    "languageCode (p. 178)": "string",
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        "convert608To708 (p. 191)": enum,
        "source608TrackNumber (p. 192)": integer
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    "attenuationControl (p. 189)": enum,
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    "drcRf (p. 190)": enum,
    "loRoCenterMixLevel (p. 190)": number
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"availBlanking (p. 193)": {
"state (p. 169)": enum,
"availBlankingImage (p. 170)": {
"passwordParam (p. 216)": "string",
"uri (p. 216)": "string",
"username (p. 217)": "string"
}
},
"pipelinesRunningCount (p. 179)": integer,
"state (p. 179)": enum,
"id (p. 180)": "string",
"egressEndpoints (p. 180)": [
{"sourceIp (p. 180)": "string"
}
],
"arn (p. 180)": "string",
"inputSpecification (p. 180)": {
"codec (p. 220)": enum,
"resolution (p. 220)": enum,
"maximumBitrate (p. 220)": enum
}
}
}

Example InvalidRequest

{
  "message (p. 220)": "string"
}

Example AccessDenied

{
  "message (p. 163)": "string"
}

Example ResourceNotFound

{
  "message (p. 241)": "string"
}

Example ResourceConflict

{
  "message (p. 241)": "string"
}

Example ChannelConfigurationValidationError

{
  "validationErrors (p. 180)": [
    {
      "errorMessage (p. 250)": "string",
      "elementPath (p. 250)": "string"
    }
  ],
  "message (p. 180)": "string"
}

Example LimitExceeded

{
  "message (p. 221)": "string"
}

Example InternalServiceError

{
  "message (p. 220)": "string"
}
Example BadGatewayException

```
{
  "message (p. 170)": "string"
}
```

Example GatewayTimeoutException

```
{
  "message (p. 194)": "string"
}
```

Properties

**AacCodingMode (enum)**

- AD_RECEIVER_MIX
- CODING_MODE_1_0
- CODING_MODE_1_1
- CODING_MODE_2_0
- CODING_MODE_5_1

**AacInputType (enum)**

- BROADCASTER_MIXED_AD
- NORMAL

**AacProfile (enum)**

- HEV1
- HEV2
- LC

**AacRateControlMode (enum)**

- CBR
- VBR

**AacRawFormat (enum)**

- LATM_LOAS
- NONE

**AacSettings**

**vbrQuality**

VBR Quality Level - Only used if rateControlMode is VBR.

- **Type**: string
- **Required**: False
**codingMode**

Mono, Stereo, or 5.1 channel layout. Valid values depend on rate control mode and profile. The adReceiverMix setting receives a stereo description plus control track and emits a mono AAC encode of the description track, with control data emitted in the PES header as per ETSI TS 101 154 Annex E.

- **Type:** string
- **Required:** False

**profile**

AAC Profile.

- **Type:** string
- **Required:** False

**bitrate**

Average bitrate in bits/second. Valid values depend on rate control mode and profile.

- **Type:** number
- **Required:** False

**inputType**

Set to "broadcasterMixedAd" when input contains pre-mixed main audio + AD (narration) as a stereo pair. The Audio Type field (audioType) will be set to 3, which signals to downstream systems that this stream contains "broadcaster mixed AD". Note that the input received by the encoder must contain pre-mixed audio; the encoder does not perform the mixing. The values in audioTypeControl and audioType (in AudioDescription) are ignored when set to broadcasterMixedAd. Leave set to "normal" when input does not contain pre-mixed audio + AD.

- **Type:** string
- **Required:** False

**rawFormat**

Sets LATM / LOAS AAC output for raw containers.

- **Type:** string
- **Required:** False

**sampleRate**

Sample rate in Hz. Valid values depend on rate control mode and profile.

- **Type:** number
- **Required:** False

**rateControlMode**

Rate Control Mode.

- **Type:** string
**Required:** False

**spec**

Use MPEG-2 AAC audio instead of MPEG-4 AAC audio for raw or MPEG-2 Transport Stream containers.

**Type:** string  
**Required:** False

**AacSpec (enum)**

MPEG2  
MPEG4

**AacVbrQuality (enum)**

HIGH  
LOW  
MEDIUM_HIGH  
MEDIUM_LOW

**Ac3BitstreamMode (enum)**

COMMENTARY  
COMPLETE_MAIN  
DIALOGUE  
EMERGENCY  
HEARING_IMPAIRED  
MUSIC_AND_EFFECTS  
VISUALLY_IMPAIRED  
VOICE_OVER

**Ac3CodingMode (enum)**

CODING_MODE_1_0  
CODING_MODE_1_1  
CODING_MODE_2_0  
CODING_MODE_3_2_LFE

**Ac3DrcProfile (enum)**

FILM_STANDARD  
NONE

**Ac3LfeFilter (enum)**

DISABLED  
ENABLED

**Ac3MetadataControl (enum)**

FOLLOW_INPUT
USE_CONFIGURED

**Ac3Settings**

**drcProfile**

If set to filmStandard, adds dynamic range compression signaling to the output bitstream as defined in the Dolby Digital specification.

- **Type**: string
- **Required**: False

**dialnorm**

Sets the dialnorm for the output. If excluded and input audio is Dolby Digital, dialnorm will be passed through.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 31

**codingMode**

Dolby Digital coding mode. Determines number of channels.

- **Type**: string
- **Required**: False

**metadataControl**

When set to "followInput", encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

- **Type**: string
- **Required**: False

**bitrate**

Average bitrate in bits/second. Valid bitrates depend on the coding mode.

- **Type**: number
- **Required**: False

**lfeFilter**

When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid in codingMode32Lfe mode.

- **Type**: string
- **Required**: False
Properties

bitstreamMode

Specifies the bitstream mode (bsmod) for the emitted AC-3 stream. See ATSC A/52-2012 for background on these values.

- **Type**: string
- **Required**: False

AccessDenied

message

- **Type**: string
- **Required**: False

AfdSignaling (enum)

- AUTO
- FIXED
- NONE

ArchiveContainerSettings

m2tsSettings

- **Type**: M2tsSettings (p. 222)
- **Required**: False

ArchiveGroupSettings

destination

A directory and base filename where archive files should be written. If the base filename portion of the URI is left blank, the base filename of the first input will be automatically inserted.

- **Type**: OutputLocationRef (p. 239)
- **Required**: True

rolloverInterval

Number of seconds to write to archive file before closing and starting a new one.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

ArchiveOutputSettings

extension

Output file extension. If excluded, this will be auto-selected from the container type.
Properties

Type: string
Required: False

containerSettings

Settings specific to the container type of the file.

Type: ArchiveContainerSettings (p. 163)
Required: True

nameModifier

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

Type: string
Required: False

AribDestinationSettings

AribSourceSettings

AudioChannelMapping

outputChannel

The index of the output channel being produced.

Type: integer
Required: True
Minimum: 0
Maximum: 7

inputChannelLevels

Indices and gain values for each input channel that should be remixed into this output channel.

Type: Array of type InputChannelLevel (p. 215)
Required: True

AudioCodecSettings

aacSettings

Type: AacSettings (p. 159)
Required: False

ac3Settings

Type: Ac3Settings (p. 162)
Properties

Required: False

eac3Settings

Type: Eac3Settings (p. 188)
Required: False

passThroughSettings

Type: PassThroughSettings (p. 240)
Required: False

mp2Settings

Type: Mp2Settings (p. 233)
Required: False

AudioDescription

languageCodeControl

Choosing followInput will cause the ISO 639 language code of the output to follow the ISO 639 language code of the input. The languageCode will be used when useConfigured is set, or when followInput is selected but there is no ISO 639 language code specified by the input.

Type: string
Required: False

audioTypeControl

Determines how audio type is determined. followInput: If the input contains an ISO 639 audioType, then that value is passed through to the output. If the input contains no ISO 639 audioType, the value in Audio Type is included in the output. useConfigured: The value in Audio Type is included in the output. Note that this field and audioType are both ignored if inputType is broadcasterMixedAd.

Type: string
Required: False

remixSettings

Settings that control how input audio channels are remixed into the output audio channels.

Type: RemixSettings (p. 240)
Required: False

audioType

Applies only if audioTypeControl is useConfigured. The values for audioType are defined in ISO-IEC 13818-1.

Type: string
Required: False
name

The name of this AudioDescription. Outputs will use this name to uniquely identify this AudioDescription. Description names should be unique within this Live Event.

Type: string
Required: True

languageCode

Indicates the language of the audio output track. Only used if languageControlMode is useConfigured, or there is no ISO 639 language code specified in the input.

Type: string
Required: False

codecSettings

Audio codec settings.

Type: AudioCodecSettings (p. 164)
Required: False

streamName

Used for MS Smooth and Apple HLS outputs. Indicates the name displayed by the player (eg. English, or Director Commentary).

Type: string
Required: False

audioNormalizationSettings

Advanced audio normalization settings.

Type: AudioNormalizationSettings (p. 167)
Required: False

audioSelectorName

The name of the AudioSelector used as the source for this AudioDescription.

Type: string
Required: True

AudioDescriptionAudioTypeControl (enum)

FOLLOW_INPUT
USE_CONFIGURED

AudioDescriptionLanguageCodeControl (enum)

FOLLOW_INPUT
USE_CONFIGURED
AudioLanguageSelection

languageSelectionPolicy
When set to "strict", the transport stream demux strictly identifies audio streams by their language descriptor. If a PMT update occurs such that an audio stream matching the initially selected language is no longer present then mute will be encoded until the language returns. If "loose", then on a PMT update the demux will choose another audio stream in the program with the same stream type if it can't find one with the same language.

Type: string
Required: False

languageCode
Selects a specific three-letter language code from within an audio source.

Type: string
Required: True

AudioLanguageSelectionPolicy (enum)
LOOSE
STRICT

AudioNormalizationAlgorithm (enum)
ITU_1770_1
ITU_1770_2

AlgorithmNormalizationAlgorithmControl (enum)
CORRECT_AUDIO

AudioNormalizationSettings

targetLkfs
Target LKFS(loudness) to adjust volume to. If no value is entered, a default value will be used according to the chosen algorithm. The CALM Act (1770-1) recommends a target of -24 LKFS. The EBU R-128 specification (1770-2) recommends a target of -23 LKFS.

Type: number
Required: False
Minimum: -59.0
Maximum: 0.0

algorithmControl
When set to correctAudio the output audio is corrected using the chosen algorithm. If set to measureOnly, the audio will be measured but not adjusted.

Type: string
Required: False
**algorithm**

Audio normalization algorithm to use. itu17701 conforms to the CALM Act specification, itu17702 conforms to the EBU R-128 specification.

*Type: string*
*Required: False*

**AudioOnlyHlsSettings**

**audioTrackType**

Four types of audio-only tracks are supported: Audio-Only Variant Stream The client can play back this audio-only stream instead of video in low-bandwidth scenarios. Represented as an EXT-X-STREAM-INF in the HLS manifest. Alternate Audio, Auto Select, Default Alternate rendition that the client should try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=YES, AUTOSELECT=YES Alternate Audio, Auto Select, Not Default Alternate rendition that the client may try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=YES Alternate Audio, not Auto Select Alternate rendition that the client will not try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=NO

*Type: string*
*Required: False*

**audioGroupId**

Specifies the group to which the audio Rendition belongs.

*Type: string*
*Required: False*

**audioOnlyImage**

For use with an audio only Stream. Must be a .jpg or .png file. If given, this image will be used as the cover-art for the audio only output. Ideally, it should be formatted for an iPhone screen for two reasons. The iPhone does not resize the image, it crops a centered image on the top/bottom and left/right. Additionally, this image file gets saved bit-for-bit into every 10-second segment file, so will increase bandwidth by {image file size} * {segment count} * {user count}.*

*Type: InputLocation (p. 216)*
*Required: False*

**AudioOnlyHlsTrackType (enum)**

- ALTERNATE_AUDIO_AUTO_SELECT
- ALTERNATE_AUDIO_AUTO_SELECT_DEFAULT
- ALTERNATE_AUDIO_NOT_AUTO_SELECT
- AUDIO_ONLY_VARIANT_STREAM

**AudioPidSelection**

**pid**

Selects a specific PID from within a source.
**Type**: integer  
**Required**: True  
**Minimum**: 0  
**Maximum**: 8191

**AudioSelector**

**name**

The name of this AudioSelector. AudioDescriptions will use this name to uniquely identify this Selector. Selector names should be unique per input.

**Type**: string  
**Required**: True

**selectorSettings**

The audio selector settings.

**Type**: AudioSelectorSettings (p. 169)  
**Required**: False

**AudioSelectorSettings**

**audioLanguageSelection**

**Type**: AudioLanguageSelection (p. 167)  
**Required**: False

**audioPidSelection**

**Type**: AudioPidSelection (p. 168)  
**Required**: False

**AudioType** (enum)

- CLEAN_EFFECTS
- HEARING_IMPAIRED
- UNDEFINED
- VISUAL_IMPAIRED_COMMENTARY

**AuthenticationScheme** (enum)

- AKAMAI
- COMMON

**AvailBlanking**

**state**

When set to enabled, causes video, audio and captions to be blanked when insertion metadata is added.
Properties

**Type**: string  
**Required**: False

**availBlankingImage**
Blanking image to be used. Leave empty for solid black. Only bmp and png images are supported.

**Type**: InputLocation (p. 216)  
**Required**: False

**AvailBlankingState (enum)**

- DISABLED
- ENABLED

**AvailConfiguration**

**availSettings**
Ad avail settings.

**Type**: AvailSettings (p. 170)  
**Required**: False

**AvailSettings**

**scte35TimeSignalApos**

**Type**: Scte35TimeSignalApos (p. 245)  
**Required**: False

**scte35SpliceInsert**

**Type**: Scte35SpliceInsert (p. 244)  
**Required**: False

**BadGatewayException**

**message**

**Type**: string  
**Required**: False

**BlackoutSlate**

**networkEndBlackoutImage**
Path to local file to use as Network End Blackout image. Image will be scaled to fill the entire output raster.

**Type**: InputLocation (p. 216)
Required: False

**networkEndBlackout**
Setting to enabled causes the encoder to blackout the video, audio, and captions, and raise the "Network Blackout Image" slate when an SCTE104/35 Network End Segmentation Descriptor is encountered. The blackout will be lifted when the Network Start Segmentation Descriptor is encountered. The Network End and Network Start descriptors must contain a network ID that matches the value entered in "Network ID".

  Type: string
  Required: False

**networkId**
Provides Network ID that matches EIDR ID format (e.g., "10.XXXX/XXXX-XXXX-XXXX-XXXX-XXXX-C").

  Type: string
  Required: False

**state**
When set to enabled, causes video, audio and captions to be blanked when indicated by program metadata.

  Type: string
  Required: False

**blackoutSlateImage**
Blackout slate image to be used. Leave empty for solid black. Only bmp and png images are supported.

  Type: [InputLocation](p. 216)
  Required: False

**BlackoutSlateNetworkEndBlackout** (enum)
- DISABLED
- ENABLED

**BlackoutSlateState** (enum)
- DISABLED
- ENABLED

**BurnInAlignment** (enum)
- CENTERED
- LEFT
- SMART

**BurnInBackgroundColor** (enum)
- BLACK
**BurnInDestinationSettings**

**xPosition**

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**backgroundColor**

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

- **Type**: string
- **Required**: False

**yPosition**

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**teletextGridControl**

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

- **Type**: string
- **Required**: False

**backgroundOpacity**

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 255
fontOpacity
Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontResolution
Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 96
Maximum: 600

shadowOpacity
Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

shadowYOffset
Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False

outlineSize
Specifies font outline size in pixels. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 10

outlineColor
Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.
Properties

**Type**: string  
**Required**: False

**fontSize**

When set to 'auto' fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

**Type**: string  
**Required**: False

**shadowXOffset**

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

**Type**: integer  
**Required**: False

**alignment**

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. All burn-in and DVB-Sub font settings must match.

**Type**: string  
**Required**: False

**shadowColor**

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

**Type**: string  
**Required**: False

**fontColor**

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

**Type**: string  
**Required**: False

**font**

External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.
**Properties**

**Type:** InputLocation (p. 216)  
**Required:** False

**BurnInFontColor (enum)**

BLACK  
BLUE  
GREEN  
RED  
WHITE  
YELLOW

**BurnInOutlineColor (enum)**

BLACK  
BLUE  
GREEN  
RED  
WHITE  
YELLOW

**BurnInShadowColor (enum)**

BLACK  
NONE  
WHITE

**BurnInTeletextGridControl (enum)**

FIXED  
SCALED

**CaptionDescription**

**captionSelectorName**

Specifies which input caption selector to use as a caption source when generating output captions. This field should match a captionSelector name.

**Type:** string  
**Required:** True

**languageDescription**

Human readable information to indicate captions available for players (eg. English, or Spanish).

**Type:** string  
**Required:** False

**name**

Name of the caption description. Used to associate a caption description with an output. Names must be unique within an event.
Properties

Type: string  
Required: True

languageCode


Type: string  
Required: False

destinationSettings

Additional settings for captions destination that depend on the destination type.

Type: CaptionDestinationSettings (p. 176)  
Required: False

CaptionDestinationSettings

scte27DestinationSettings

Type: Scte27DestinationSettings (p. 243)  
Required: False

burnInDestinationSettings

Type: BurnInDestinationSettings (p. 172)  
Required: False

teletextDestinationSettings

Type: TeletextDestinationSettings (p. 247)  
Required: False

smpteTtDestinationSettings

Type: SmpteTtDestinationSettings (p. 246)  
Required: False

webvttDestinationSettings

Type: WebvttDestinationSettings (p. 253)  
Required: False

ttmlDestinationSettings

Type: TtmlDestinationSettings (p. 247)  
Required: False

embeddedPlusScte20DestinationSettings

Type: EmbeddedPlusScte20DestinationSettings (p. 191)
Required: False

dvbSubDestinationSettings
Type: DvbSubDestinationSettings (p. 183)
Required: False

embeddedDestinationSettings
Type: EmbeddedDestinationSettings (p. 191)
Required: False

rtmpCaptionInfoDestinationSettings
Type: RtmpCaptionInfoDestinationSettings (p. 241)
Required: False

aribDestinationSettings
Type: AribDestinationSettings (p. 164)
Required: False

scte20PlusEmbeddedDestinationSettings
Type: Scte20PlusEmbeddedDestinationSettings (p. 243)
Required: False

CaptionLanguageMapping

languageDescription
Textual description of language
Type: string
Required: True

captionChannel
Channel to insert closed captions. Each channel mapping must have a unique channel number (maximum of 4)
Type: integer
Required: True
Minimum: 1
Maximum: 4

languageCode
Three character ISO 639-2 language code (see http://www.loc.gov/standards/iso639-2)
Type: string
Required: True
**CaptionSelector**

**name**

Name identifier for a caption selector. This name is used to associate this caption selector with one or more caption descriptions. Names must be unique within an event.

  - **Type**: string
  - **Required**: True

**languageCode**

When specified this field indicates the three letter language code of the caption track to extract from the source.

  - **Type**: string
  - **Required**: False

**selectorSettings**

Caption selector settings.

  - **Type**: CaptionSelectorSettings (p. 178)
  - **Required**: False

**CaptionSelectorSettings**

**embeddedSourceSettings**

  - **Type**: EmbeddedSourceSettings (p. 191)
  - **Required**: False

**scte20SourceSettings**

  - **Type**: Scte20SourceSettings (p. 243)
  - **Required**: False

**dvbSubSourceSettings**

  - **Type**: DvbSubSourceSettings (p. 186)
  - **Required**: False

**aribSourceSettings**

  - **Type**: AribSourceSettings (p. 164)
  - **Required**: False

**teletextSourceSettings**

  - **Type**: TeletextSourceSettings (p. 247)
  - **Required**: False
scte27SourceSettings

Type: Scte27SourceSettings (p. 243)
Required: False

Channel

inputAttachments

List of input attachments for channel.

Type: Array of type InputAttachment (p. 215)
Required: False

roleArn

The Amazon Resource Name (ARN) of the role assumed when running the Channel.

Type: string
Required: False

destinations

A list of destinations of the channel. For UDP outputs, there is one destination per output. For other types (HLS, for example), there is one destination per packager.

Type: Array of type OutputDestination (p. 238)
Required: False

name

The name of the channel. (user-mutable)

Type: string
Required: False

encoderSettings

Type: EncoderSettings (p. 192)
Required: False

pipelinesRunningCount

The number of currently healthy pipelines.

Type: integer
Required: False

state

Type: string
Required: False
id
The unique id of the channel.

Type: string
Required: False

egressEndpoints
The endpoints where outgoing connections initiate from

Type: Array of type ChannelEgressEndpoint (p. 180)
Required: False

arn
The unique arn of the channel.

Type: string
Required: False

inputSpecification

Type: InputSpecification (p. 220)
Required: False

ChannelConfigurationValidationError

validationErrors
A collection of validation error responses from attempting to create a channel with a bouquet of settings.

Type: Array of type ValidationError (p. 250)
Required: False

message

Type: string
Required: False

ChannelEgressEndpoint

sourceIp
Public IP of where a channel's output comes from

Type: string
Required: False

ChannelState (enum)

CREATING
CREATE_FAILED
IDLE
STARTING
RUNNING
RECOVERING
STOPPING
DELETING
DELETED

DvbNitSettings

networkName

The network name text placed in the networkNameDescriptor inside the Network Information Table. Maximum length is 256 characters.

Type: string
Required: True

networkId

The numeric value placed in the Network Information Table (NIT).

Type: integer
Required: True
Minimum: 0
Maximum: 65536

repInterval

The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Minimum: 25
Maximum: 10000

DvbSdtOutputSdt (enum)

SDT_FOLLOW
SDT_FOLLOW_IF_PRESENT
SDT_MANUAL
SDT_NONE

DvbSdtSettings

serviceName

The service name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
**Required:** False

**serviceProviderName**

The service provider name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

*Type:* string  
*Required:* False

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

*Type:* integer  
*Required:* False  
*Minimum:* 25  
*Maximum:* 2000

**outputSdt**

Selects method of inserting SDT information into output stream. The sdtFollow setting copies SDT information from input stream to output stream. The sdtFollowIfPresent setting copies SDT information from input stream to output stream if SDT information is present in the input, otherwise it will fall back on the user-defined values. The sdtManual setting means user will enter the SDT information. The sdtNone setting means output stream will not contain SDT information.

*Type:* string  
*Required:* False

**DvbSubDestinationAlignment (enum)**

- CENTERED
- LEFT
- SMART

**DvbSubDestinationBackgroundColor (enum)**

- BLACK
- NONE
- WHITE

**DvbSubDestinationFontColor (enum)**

- BLACK
- BLUE
- GREEN
- RED
- WHITE
- YELLOW

**DvbSubDestinationOutlineColor (enum)**

- BLACK
DvbSubDestinationSettings

xPosition

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

backgroundColor

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

yPosition

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

teletextGridControl

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

Type: string
Required: False

backgroundOpacity

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.
Properties

**fontOpacity**

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 255

**fontResolution**

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 96
- **Maximum**: 600

**shadowOpacity**

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 255

**shadowYOffset**

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False

**outlineSize**

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/ embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 10
outlineColor

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

fontSize

When set to auto fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

shadowXOffset

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False

alignment

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. This option is not valid for source captions that are STL or 608/embedded. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

shadowColor

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

fontColor

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False
font

External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.

Type: InputLocation (p. 216)
Required: False

DvbSubDestinationShadowColor (enum)

BLACK
NONE
WHITE

DvbSubDestinationTeletextGridControl (enum)

FIXED
SCALED

DvbSubSourceSettings

pid

When using DVB-Sub with Burn-In or SMPTE-TT, use this PID for the source content. Unused for DVB-Sub passthrough. All DVB-Sub content is passed through, regardless of selectors.

Type: integer
Required: False
Minimum: 1

DvbTdtSettings

repInterval

The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Minimum: 1000
Maximum: 30000

Eac3AttenuationControl (enum)

ATTENUATE_3_DB
NONE

Eac3BitstreamMode (enum)

COMMENTARY
COMPLETE_MAIN
Properties

EMERGENCY
HEARING_IMPAIRED
VISUALLY_IMPAIRED

**Eac3CodingMode (enum)**

CODING_MODE_1_0
CODING_MODE_2_0
CODING_MODE_3_2

**Eac3DcFilter (enum)**

DISABLED
ENABLED

**Eac3DrcLine (enum)**

FILM_LIGHT
FILM_STANDARD
MUSIC_LIGHT
MUSIC_STANDARD
NONE
SPEECH

**Eac3DrcRf (enum)**

FILM_LIGHT
FILM_STANDARD
MUSIC_LIGHT
MUSIC_STANDARD
NONE
SPEECH

**Eac3LfeControl (enum)**

LFE
NO_LFE

**Eac3LfeFilter (enum)**

DISABLED
ENABLED

**Eac3MetadataControl (enum)**

FOLLOW_INPUT
USE_CONFIGURED

**Eac3PassthroughControl (enum)**

NO_PASSTHROUGH
WHEN_POSSIBLE
Eac3PhaseControl (enum)

- NO_SHIFT
- SHIFT_90_DEGREES

Eac3Settings

dianorm
Sets the dialnorm for the output. If blank and input audio is Dolby Digital Plus, dialnorm will be passed through.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 31

passthroughControl
When set to whenPossible, input DD+ audio will be passed through if it is present on the input. This detection is dynamic over the life of the transcode. Inputs that alternate between DD+ and non-DD+ content will have a consistent DD+ output as the system alternates between passthrough and encoding.

- **Type**: string
- **Required**: False

metadataControl
When set to followInput, encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

- **Type**: string
- **Required**: False

drcLine
Sets the Dolby dynamic range compression profile.

- **Type**: string
- **Required**: False

bitrate
Average bitrate in bits/second. Valid bitrates depend on the coding mode.

- **Type**: number
- **Required**: False

surroundExMode
When encoding 3/2 audio, sets whether an extra center back surround channel is matrix encoded into the left and right surround channels.
Type: string
Required: False

### ltRtSurroundMixLevel

Left total/Right total surround mix level. Only used for 3/2 coding mode.

Type: number
Required: False

### lfeControl

When encoding 3/2 audio, setting to lfe enables the LFE channel

Type: string
Required: False

### codingMode

Dolby Digital Plus coding mode. Determines number of channels.

Type: string
Required: False

### surroundMode

When encoding 2/0 audio, sets whether Dolby Surround is matrix encoded into the two channels.

Type: string
Required: False

### attenuationControl

When set to attenuate3Db, applies a 3 dB attenuation to the surround channels. Only used for 3/2 coding mode.

Type: string
Required: False

### lfeFilter

When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid with codingMode32 coding mode.

Type: string
Required: False

### ltRtCenterMixLevel

Left total/Right total center mix level. Only used for 3/2 coding mode.

Type: number
Required: False
dcFilter
When set to enabled, activates a DC highpass filter for all input channels.

Type: string
Required: False

phaseControl
When set to shift90Degrees, applies a 90-degree phase shift to the surround channels. Only used for 3/2 coding mode.

Type: string
Required: False

stereoDownmix
Stereo downmix preference. Only used for 3/2 coding mode.

Type: string
Required: False

bitstreamMode
Specifies the bitstream mode (bsmod) for the emitted E-AC-3 stream. See ATSC A/52-2012 (Annex E) for background on these values.

Type: string
Required: False

loRoSurroundMixLevel
Left only/Right only surround mix level. Only used for 3/2 coding mode.

Type: number
Required: False

drcRf
Sets the profile for heavy Dolby dynamic range compression, ensures that the instantaneous signal peaks do not exceed specified levels.

Type: string
Required: False

loRoCenterMixLevel
Left only/Right only center mix level. Only used for 3/2 coding mode.

Type: number
Required: False

Eac3StereoDownmix (enum)
DPL2
Properties

**LO_RO**
LT_RT
NOT_INDICATED

**Eac3SurroundExMode (enum)**

- DISABLED
- ENABLED
- NOT_INDICATED

**Eac3SurroundMode (enum)**

- DISABLED
- ENABLED
- NOT_INDICATED

**EmbeddedConvert608To708 (enum)**

- DISABLED
- UPCONVERT

**EmbeddedDestinationSettings**

**EmbeddedPlusScte20DestinationSettings**

**EmbeddedScte20Detection (enum)**

- AUTO
- OFF

**EmbeddedSourceSettings**

**scte20Detection**

Set to "auto" to handle streams with intermittent and/or non-aligned SCTE-20 and Embedded captions.

- **Type**: string
- **Required**: False

**source608ChannelNumber**

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 4

**convert608To708**

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.
Properties

**Type**: string  
**Required**: False

**source608TrackNumber**

This field is unused and deprecated.

**Type**: integer  
**Required**: False  
**Minimum**: 1  
**Maximum**: 5

**EncoderSettings**

**timecodeConfig**

Contains settings used to acquire and adjust timecode information from inputs.

**Type**: TimecodeConfig (p. 247)  
**Required**: True

**outputGroups**

**Type**: Array of type OutputGroup (p. 238)  
**Required**: True

**audioDescriptions**

**Type**: Array of type AudioDescription (p. 165)  
**Required**: True

**captionDescriptions**

Settings for caption descriptions

**Type**: Array of type CaptionDescription (p. 175)  
**Required**: False

**availConfiguration**

Event-wide configuration settings for ad avail insertion.

**Type**: AvailConfiguration (p. 170)  
**Required**: False

**globalConfiguration**

Configuration settings that apply to the event as a whole.

**Type**: GlobalConfiguration (p. 194)  
**Required**: False
videoDescriptions

Type: Array of type VideoDescription (p. 250)
Required: True

blackoutSlate

Settings for blackout slate.

Type: BlackoutSlate (p. 170)
Required: False

availBlanking

Settings for ad avail blanking.

Type: AvailBlanking (p. 169)
Required: False

FecOutputIncludeFec (enum)

COLUMN
COLUMN_AND_ROW

FecOutputSettings

rowLength

Parameter L from SMPTE 2022-1. The width of the FEC protection matrix. Must be between 1 and 20, inclusive. If only Column FEC is used, then larger values increase robustness. If Row FEC is used, then this is the number of transport stream packets per row error correction packet, and the value must be between 4 and 20, inclusive, if includeFec is columnAndRow. If includeFec is column, this value must be 1 to 20, inclusive.

Type: integer
Required: False
Minimum: 1
Maximum: 20

columnDepth

Parameter D from SMPTE 2022-1. The height of the FEC protection matrix. The number of transport stream packets per column error correction packet. Must be between 4 and 20, inclusive.

Type: integer
Required: False
Minimum: 4
Maximum: 20

includeFec

Enables column only or column and row based FEC

Type: string
Required: False

**FixedAfd (enum)**

- AFD_0000
- AFD_0010
- AFD_0011
- AFD_0100
- AFD_1000
- AFD_1001
- AFD_1010
- AFD_1011
- AFD_1101
- AFD_1110
- AFD_1111

**GatewayTimeoutException**

**message**

Type: string
Required: False

**GlobalConfiguration**

**inputLossBehavior**

Settings for system actions when input is lost.

Type: `InputLossBehavior (p. 217)`
Required: False

**supportLowFramerateInputs**

Adjusts video input buffer for streams with very low video framerates. This is commonly set to enabled for music channels with less than one video frame per second.

Type: string
Required: False

**initialAudioGain**

Value to set the initial audio gain for the Live Event.

Type: integer
Required: False
Minimum: -60
Maximum: 60

**inputEndAction**

Indicates the action to take when an input completes (e.g. end-of-file.) Options include immediately switching to the next sequential input (via "switchInput"), switching to the next input and looping...
back to the first input when last input ends (via "switchAndLoopInputs") or not switching inputs and instead transcoding black / color / slate images per the "Input Loss Behavior" configuration until an activateInput REST command is received (via "none").

    Type: string
    Required: False

**outputTimingSource**

Indicates whether the rate of frames emitted by the Live encoder should be paced by its system clock (which optionally may be locked to another source via NTP) or should be locked to the clock of the source that is providing the input stream.

    Type: string
    Required: False

**GlobalConfigurationInputEndAction (enum)**

- NONE
- SWITCH_AND_LOOP_INPUTS

**GlobalConfigurationLowFramerateInputs (enum)**

- DISABLED
- ENABLED

**GlobalConfigurationOutputTimingSource (enum)**

- INPUT_CLOCK
- SYSTEM_CLOCK

**H264AdaptiveQuantization (enum)**

- HIGH
- HIGHER
- LOW
- MAX
- MEDIUM
- OFF

**H264ColorMetadata (enum)**

- IGNORE
- INSERT

**H264EntropyEncoding (enum)**

- CABAC
- CAVLC

**H264FlickerAq (enum)**

- DISABLED


AWS Elemental MediaLive API Reference API Reference
Properties

ENABLED

H264FramerateControl (enum)

INITIALIZE_FROM_SOURCE
SPECIFIED

H264GopBReference (enum)

DISABLED
ENABLED

H264GopSizeUnits (enum)

FRAMES
SECONDS

H264Level (enum)

H264_LEVEL_1
H264_LEVEL_1_1
H264_LEVEL_1_2
H264_LEVEL_1_3
H264_LEVEL_2
H264_LEVEL_2_1
H264_LEVEL_2_2
H264_LEVEL_3
H264_LEVEL_3_1
H264_LEVEL_3_2
H264_LEVEL_4
H264_LEVEL_4_1
H264_LEVEL_4_2
H264_LEVEL_5
H264_LEVEL_5_1
H264_LEVEL_5_2
H264_LEVEL_AUTO

H264LookAheadRateControl (enum)

HIGH
LOW
MEDIUM

H264ParControl (enum)

INITIALIZE_FROM_SOURCE
SPECIFIED

H264Profile (enum)

BASELINE
Properties

HIGH
HIGH_10BIT
HIGH_422
HIGH_422_10BIT
MAIN

H264RateControlMode (enum)

CBR
VBR

H264ScanType (enum)

INTERLACED
PROGRESSIVE

H264SceneChangeDetect (enum)

DISABLED
ENABLED

H264Settings

minIInterval

Only meaningful if sceneChangeDetect is set to enabled. Enforces separation between repeated (cadence) I-frames and I-frames inserted by Scene Change Detection. If a scene change I-frame is within I-interval frames of a cadence I-frame, the GOP is shrunk and/or stretched to the scene change I-frame. GOP stretch requires enabling lookahead as well as setting I-interval. The normal cadence resumes for the next GOP. Note: Maximum GOP stretch = GOP size + Min-I-interval - 1

Type: integer
Required: False
Minimum: 0
Maximum: 30

slices

Number of slices per picture. Must be less than or equal to the number of macroblock rows for progressive pictures, and less than or equal to half the number of macroblock rows for interlaced pictures. This field is optional; when no value is specified the encoder will choose the number of slices based on encode resolution.

Type: integer
Required: False
Minimum: 1
Maximum: 32

parNumerator

Pixel Aspect Ratio numerator.
Type: integer  
Required: False

gopSizeUnits
Indicates if the gopSize is specified in frames or seconds. If seconds the system will convert the gopSize into a frame count at run time.

Type: string  
Required: False

maxBitrate
Maximum bitrate in bits/second (for VBR mode only).

Type: integer  
Required: False  
Minimum: 1000

bitrate
Average bitrate in bits/second. Required for VBR, CBR, and ABR. For MS Smooth outputs, bitrates must be unique when rounded down to the nearest multiple of 1000.

Type: integer  
Required: False  
Minimum: 1000

bufFillPct
Percentage of the buffer that should initially be filled (HRD buffer model).

Type: integer  
Required: False  
Minimum: 0  
Maximum: 100

temporalAq
If set to enabled, adjust quantization within each frame based on temporal variation of content complexity.

Type: string  
Required: False

afdSignaling
Indicates that AFD values will be written into the output stream. If afdSignaling is "auto", the system will try to preserve the input AFD value (in cases where multiple AFD values are valid). If set to "fixed", the AFD value will be the value configured in the fixedAfD parameter.

Type: string  
Required: False
**timecodeInsertion**

Determines how timecodes should be inserted into the video elementary stream. - 'disabled': Do not include timecodes - 'picTimingSei': Pass through picture timing SEI messages from the source specified in Timecode Config

- **Type:** string
- **Required:** False

**bufSize**

Size of buffer (HRD buffer model) in bits/second.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**softness**

Softness. Selects quantizer matrix, larger values reduce high-frequency content in the encoded image.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 128

**framerateControl**

This field indicates how the output video frame rate is specified. If "specified" is selected then the output video frame rate is determined by framerateNumerator and framerateDenominator, else if "initializeFromSource" is selected then the output video frame rate will be set equal to the input video frame rate of the first input.

- **Type:** string
- **Required:** False

**fixedAfD**

Four bit AFD value to write on all frames of video in the output stream. Only valid when afdSignaling is set to 'Fixed'.

- **Type:** string
- **Required:** False

**level**

H.264 Level.

- **Type:** string
- **Required:** False

**lookAheadRateControl**

Amount of lookahead. A value of low can decrease latency and memory usage, while high can produce better quality for certain content.
Properties

Type: string
Required: False

profile
H.264 Profile.
Type: string
Required: False

framerateNumerator
Framerate numerator - framerate is a fraction, e.g. 24000 / 1001 = 23.976 fps.
Type: integer
Required: False

gopClosedCadence
Frequency of closed GOPs. In streaming applications, it is recommended that this be set to 1 so a decoder joining mid-stream will receive an IDR frame as quickly as possible. Setting this value to 0 will break output segmenting.
Type: integer
Required: False
Minimum: 0

framerateDenominator
Framerate denominator.
Type: integer
Required: False

entropyEncoding
Entropy encoding mode. Use cabac (must be in Main or High profile) or cavlc.
Type: string
Required: False

spatialAq
If set to enabled, adjust quantization within each frame based on spatial variation of content complexity.
Type: string
Required: False

adaptiveQuantization
Adaptive quantization. Allows intra-frame quantizers to vary to improve visual quality.
Type: string
Required: False
### colorMetadata

Includes colorspace metadata in the output.

Type: string  
Required: False

### gopSize

GOP size (keyframe interval) in units of either frames or seconds per `gopSizeUnits`. Must be greater than zero.

Type: number  
Required: False  
Minimum: 1.0

### numRefFrames

Number of reference frames to use. The encoder may use more than requested if using B-frames and/or interlaced encoding.

Type: integer  
Required: False  
Minimum: 1  
Maximum: 6

### gopBReference

If enabled, use reference B frames for GOP structures that have B frames > 1.

Type: string  
Required: False

### sceneChangeDetect

Scene change detection. Inserts I-frames on scene changes when enabled.

Type: string  
Required: False

### parControl

This field indicates how the output pixel aspect ratio is specified. If "specified" is selected then the output video pixel aspect ratio is determined by `parNumerator` and `parDenominator`, else if "initializeFromSource" is selected then the output pixel aspect ratio will be set equal to the input video pixel aspect ratio of the first input.

Type: string  
Required: False

### parDenominator

Pixel Aspect Ratio denominator.

Type: integer
Syntax

Produces a bitstream compliant with SMPTE RP-2027.

Type: string
Required: False

ScanType

Sets the scan type of the output to progressive or top-field-first interlaced.

Type: string
Required: False

GopNumBFrames

Number of B-frames between reference frames.

Type: integer
Required: False
Minimum: 0
Maximum: 7

FlickerAq

If set to enabled, adjust quantization within each frame to reduce flicker or 'pop' on I-frames.

Type: string
Required: False

RateControlMode

Rate control mode.

Type: string
Required: False

H264SpatialAq (enum)

DISABLED
ENABLED

H264Syntax (enum)

DEFAULT
RP2027

H264TemporalAq (enum)

DISABLED
ENABLED

**H264TimecodeInsertionBehavior (enum)**

- DISABLED
- PIC_TIMING_SEI

**HlsAdMarkers (enum)**

- ADOBE
- ELEMENTAL
- ELEMENTAL_SCTE35

**HlsAkamaiHttpTransferMode (enum)**

- CHUNKED
- NON_CHUNKED

**HlsAkamaiSettings**

**httpTransferMode**

Specify whether or not to use chunked transfer encoding to Akamai. User should contact Akamai to enable this feature.

- **Type:** string
- **Required:** False

**salt**

Salt for authenticated Akamai.

- **Type:** string
- **Required:** False

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
**Properties**

**Maximum**

Maximum: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

Type: integer
Required: False
Minimum: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

**token**

Token parameter for authenticated akamai. If not specified, `_gda_` is used.

Type: string
Required: False

**HlsBasicPutSettings**

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

Type: integer
Required: False
Minimum: 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

Type: integer
Required: False
Minimum: 0
Maximum: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

Type: integer
Required: False
Minimum: 0
filecacheDuration

Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

HlsCaptionLanguageSetting (enum)

INSERT
NONE
OMIT

HlsCdnSettings

hlsAkamaiSettings

Type: HlsAkamaiSettings (p. 203)
Required: False

hlsWebdavSettings

Type: HlsWebdavSettings (p. 214)
Required: False

hlsBasicPutSettings

Type: HlsBasicPutSettings (p. 204)
Required: False

hlsMediaStoreSettings

Type: HlsMediaStoreSettings (p. 212)
Required: False

HlsClientCache (enum)

DISABLED
ENABLED

HlsCodecSpecification (enum)

RFC_4281
RFC_6381

HlsDirectoryStructure (enum)

SINGLE_DIRECTORY
SUBDIRECTORY_PER_STREAM
HlsEncryptionType (enum)

- AES128
- SAMPLE_AES

HlsGroupSettings

segmentsPerSubdirectory

Number of segments to write to a subdirectory before starting a new one. directoryStructure must be subdirectoryPerStream for this setting to have an effect.

- Type: integer
- Required: False
- Minimum: 1

ivInManifest

For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If set to "include", IV is listed in the manifest, otherwise the IV is not in the manifest.

- Type: string
- Required: False

outputSelection

Generates the .m3u8 playlist file for this HLS output group. The segmentsOnly option will output segments without the .m3u8 file.

- Type: string
- Required: False

encryptionType

Encrypts the segments with the given encryption scheme. Exclude this parameter if no encryption is desired.

- Type: string
- Required: False

indexNSegments

Number of segments to keep in the playlist (.m3u8) file. mode must be "vod" for this setting to have an effect, and this number should be less than or equal to keepSegments.

- Type: integer
- Required: False
- Minimum: 3

destination

A directory or HTTP destination for the HLS segments, manifest files, and encryption keys (if enabled).
Type: OutputLocationRef (p. 239)  
Required: True

constantIV

For use with encryptionType. This is a 128-bit, 16-byte hex value represented by a 32-character text string. If ivSource is set to "explicit" then this parameter is required and is used as the IV for encryption.

Type: string  
Required: False

timedMetadataId3Frame

Indicates ID3 frame that has the timecode.

Type: string  
Required: False

baseUrlManifest

A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

Type: string  
Required: False

captionLanguageSetting

Applies only to 608 Embedded output captions. insert: Include CLOSED-CAPTIONS lines in the manifest. Specify at least one language in the CC1 Language Code field. One CLOSED-CAPTION line is added for each Language Code you specify. Make sure to specify the languages in the order in which they appear in the original source (if the source is embedded format) or the order of the caption selectors (if the source is other than embedded). Otherwise, languages in the manifest will not match up properly with the output captions. none: Include CLOSED-CAPTIONS=NONE line in the manifest. omit: Omit any CLOSED-CAPTIONS line from the manifest.

Type: string  
Required: False

minSegmentLength

When set, minimumSegmentLength is enforced by looking ahead and back within the specified range for a nearby avail and extending the segment size if needed.

Type: integer  
Required: False  
Minimum: 0

mode

If set to "vod", keeps and indexes all segments starting with the first segment. If set to "live" segments will age out and only the last keepSegments number of segments will be retained.

Type: string
**Properties**

**ivSource**  
For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If this setting is "followsSegmentNumber", it will cause the IV to change every segment (to match the segment number). If this is set to "explicit", you must enter a constant IV value.

*Type:* string  
*Required:* False

**manifestCompression**  
When set to gzip, compresses HLS playlist.

*Type:* string  
*Required:* False

**keyProviderSettings**  
The key provider settings.

*Type:* [KeyProviderSettings](#)  
*Required:* False

**tsFileMode**  
When set to "singleFile", emits the program as a single media resource (.ts) file, and uses #EXT-X-BYTERANGE tags to index segment for playback. Playback of VOD mode content during event is not guaranteed due to HTTP server caching.

*Type:* string  
*Required:* False

**manifestDurationFormat**  
Indicates whether the output manifest should use floating point or integer values for segment duration.

*Type:* string  
*Required:* False

**keyFormatVersions**  
Either a single positive integer version value or a slash delimited list of version values (1/2/3).

*Type:* string  
*Required:* False

**streamInfResolution**  
Include or exclude RESOLUTION attribute for video in EXT-X-STREAM-INF tag of variant manifest.

*Type:* string  
*Required:* False
timestampDeltaMilliseconds
Provides an extra millisecond delta offset to fine tune the timestamps.

  Type: integer
  Required: False
  Minimum: 0

segmentationMode
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

  Type: string
  Required: False

baseUrlContent
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

  Type: string
  Required: False

clientCache
When set to "disabled", sets the #EXT-X-ALLOW-CACHE:no tag in the manifest, which prevents clients from saving media segments for later replay.

  Type: string
  Required: False

captionLanguageMappings
Mapping of up to 4 caption channels to caption languages. Is only meaningful if captionLanguageSetting is set to "insert".

  Type: Array of type CaptionLanguageMapping (p. 177)
  Required: False

codecSpecification
Specification to use (RFC-6381 or the default RFC-4281) during m3u8 playlist generation.

  Type: string
  Required: False

keepSegments
Number of segments to retain in the destination directory. mode must be "live" for this setting to have an effect.

  Type: integer
  Required: False
  Minimum: 1
timedMetadataId3Period

Timed Metadata interval in seconds.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

programDateTime

Includes or excludes EXT-X-PROGRAM-DATE-TIME tag in .m3u8 manifest files. The value is calculated as follows: either the program date and time are initialized using the input timecode source, or the time is initialized using the input timecode source and the date is initialized using the timestampOffset.

- **Type**: string
- **Required**: False

directoryStructure

Place segments in subdirectories.

- **Type**: string
- **Required**: False

keyFormat

The value specifies how the key is represented in the resource identified by the URI. If parameter is absent, an implicit value of "identity" is used. A reverse DNS string can also be given.

- **Type**: string
- **Required**: False

inputLossAction

Parameter that control output group behavior on input loss.

- **Type**: string
- **Required**: False

adMarkers

Choose one or more ad marker types to pass SCTE35 signals through to this group of Apple HLS outputs.

- **Type**: Array of type string
- **Required**: False

programDateTimePeriod

Period of insertion of EXT-X-PROGRAM-DATE-TIME entry, in seconds.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 3600
segmentLength
Length of MPEG-2 Transport Stream segments to create (in seconds). Note that segments will end on the
next keyframe after this number of seconds, so actual segment length may be longer.

  Type: integer
  Required: False
  Minimum: 1

hlsCdnSettings
Parameters that control interactions with the CDN.

  Type: HlsCdnSettings (p. 205)
  Required: False

HlsInputSettings

retries
The number of consecutive times that attempts to read a manifest or segment must fail before the input
is considered unavailable.

  Type: integer
  Required: False
  Minimum: 0

bandwidth
When specified the HLS stream with the m3u8 BANDWIDTH that most closely matches this value will be
chosen, otherwise the highest bandwidth stream in the m3u8 will be chosen. The bitrate is specified in
bits per second, as in an HLS manifest.

  Type: integer
  Required: False
  Minimum: 0

retryInterval
The number of seconds between retries when an attempt to read a manifest or segment fails.

  Type: integer
  Required: False
  Minimum: 0

bufferSegments
When specified, reading of the HLS input will begin this many buffer segments from the end (most
recently written segment). When not specified, the HLS input will begin with the first segment specified
in the m3u8.

  Type: integer
  Required: False
  Minimum: 0
HlsIVInManifest (enum)

- EXCLUDE
- INCLUDE

HlsIVSource (enum)

- EXPLICIT
- FOLLOWS_SEGMENT_NUMBER

HlsManifestCompression (enum)

- GZIP
- NONE

HlsManifestDurationFormat (enum)

- FLOATING_POINT
- INTEGER

HlsMediaStoreSettings

mediaStoreStorageClass

When set to temporal, output files are stored in non-persistent memory for faster reading and writing.

- Type: string
- Required: False

numRetries

Number of retry attempts that will be made before the Live Event is put into an error state.

- Type: integer
- Required: False
- Minimum: 0

restartDelay

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- Type: integer
- Required: False
- Minimum: 0
- Maximum: 15

connectionRetryInterval

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- Type: integer
- Required: False
Minimum: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 600

**HlsMediaStoreStorageClass (enum)**

- TEMPORAL

**HlsMode (enum)**

- LIVE
- VOD

**HlsOutputSelection (enum)**

- MANIFESTS_AND_SEGMENTS
- SEGMENTS_ONLY

**HlsOutputSettings**

**segmentModifier**

String concatenated to end of segment filenames.

- **Type:** string
- **Required:** False

**hlsSettings**

Settings regarding the underlying stream. These settings are different for audio-only outputs.

- **Type:** HlsSettings (p. 214)
- **Required:** True

**nameModifier**

String concatenated to the end of the destination filename. Accepts \"Format Identifiers \".*#formatIdentifierParameters.

- **Type:** string
- **Required:** False

**HlsProgramDateTime (enum)**

- EXCLUDE
- INCLUDE
HlsSegmentationMode (enum)

USE_INPUT_SEGMENTATION
USE_SEGMENT_DURATION

HlsSettings

audioOnlyHlsSettings

Type: AudioOnlyHlsSettings (p. 168)
Required: False

standardHlsSettings

Type: StandardHlsSettings (p. 246)
Required: False

HlsStreamInfResolution (enum)

EXCLUDE
INCLUDE

HlsTimedMetadataId3Frame (enum)

NONE
PRIV
TDRL

HlsTsFileMode (enum)

SEGMENTED_FILES
SINGLE_FILE

HlsWebdavHttpTransferMode (enum)

CHUNKED
NON_CHUNKED

HlsWebdavSettings

httpTransferMode

Specify whether or not to use chunked transfer encoding to WebDAV.

Type: string
Required: False

numRetries

Number of retry attempts that will be made before the Live Event is put into an error state.

Type: integer
Properties

**Required**: False
**Minimum**: 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

**Type**: integer
**Required**: False
**Minimum**: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

**Type**: integer
**Required**: False
**Minimum**: 0
**Maximum**: 600

**InputAttachment**

**inputId**

The ID of the input

**Type**: string
**Required**: False

**inputSettings**

Settings of an input (caption selector, etc.)

**Type**: InputSettings (p. 218)
**Required**: False

**InputChannelLevel**

**inputChannel**

The index of the input channel used as a source.

**Type**: integer
**Properties**

**Required**: True  
**Minimum**: 0  
**Maximum**: 15

**gain**

Remixing value. Units are in dB and acceptable values are within the range from -60 (mute) and 6 dB.

**Type**: integer  
**Required**: True  
**Minimum**: -60  
**Maximum**: 6

**InputCodec (enum)**

codec in increasing order of complexity

MPEG2  
AVC  
HEVC

**InputDeblockFilter (enum)**

DISABLED  
ENABLED

**InputDenoiseFilter (enum)**

DISABLED  
ENABLED

**InputFilter (enum)**

AUTO  
DISABLED  
FORCED

**InputLocation**

passwordParam

key used to extract the password from EC2 Parameter store

**Type**: string  
**Required**: False

**uri**

Uniform Resource Identifier - This should be a path to a file accessible to the Live system (eg. a http:// URI) depending on the output type. For example, a rtmpEndpoint should have a uri similar to: "rtmp:// fmsserver/live".
**Type**: string  
**Required**: True

**username**

Username if credentials are required to access a file or publishing point. This can be either a plaintext username, or a reference to an AWS parameter store name from which the username can be retrieved. AWS Parameter store format: "ssm://<parameter name>"

**Type**: string  
**Required**: False

**InputLossActionForHlsOut (enum)**

EMIT_OUTPUT  
PAUSE_OUTPUT

**InputLossActionForMsSmoothOut (enum)**

EMIT_OUTPUT  
PAUSE_OUTPUT

**InputLossActionForUdpOut (enum)**

DROP_PROGRAM  
DROP_TS  
EMIT_PROGRAM

**InputLossBehavior**

**inputLossImageType**

Indicates whether to substitute a solid color or a slate into the output after input loss exceeds blackFrameMsec.

**Type**: string  
**Required**: False

**inputLossImageColor**

When input loss image type is "color" this field specifies the color to use. Value: 6 hex characters representing the values of RGB.

**Type**: string  
**Required**: False

**inputLossImageSlate**

When input loss image type is "slate" these fields specify the parameters for accessing the slate.

**Type**: InputLocation (p. 216)  
**Required**: False
blackFrameMsec
On input loss, the number of milliseconds to substitute black into the output before switching to the frame specified by inputLossImageType. A value \( x \), where \( 0 \leq x \leq 1,000,000 \) and a value of 1,000,000 will be interpreted as infinite.

Type: integer
Required: False
Minimum: 0
Maximum: 1000000

repeatFrameMsec
On input loss, the number of milliseconds to repeat the previous picture before substituting black into the output. A value \( x \), where \( 0 \leq x \leq 1,000,000 \) and a value of 1,000,000 will be interpreted as infinite.

Type: integer
Required: False
Minimum: 0
Maximum: 1000000

InputLossImageType (enum)
COLOR
SLATE

InputMaximumBitrate (enum)
Maximum input bitrate in megabits per second. Bitrates up to 50 Mbps are supported currently.

MAX_10_MBPS
MAX_20_MBPS
MAX_50_MBPS

InputResolution (enum)
Input resolution based on lines of vertical resolution in the input; SD is less than 720 lines, HD is 720 to 1080 lines, UHD is greater than 1080 lines

SD
HD
UHD

InputSettings
sourceEndBehavior
Loop input if it is a file. This allows a file input to be streamed indefinitely.

Type: string
Required: False

audioSelectors
Used to select the audio stream to decode for inputs that have multiple available.
**Properties**

**Type**: Array of type [AudioSelector](p. 169)  
**Required**: False

**debblockFilter**

Enable or disable the deblock filter when filtering.

**Type**: string  
**Required**: False

**networkInputSettings**

Input settings.

**Type**: [NetworkInputSettings](p. 236)  
**Required**: False

**inputFilter**

Turns on the filter for this input. MPEG-2 inputs have the deblocking filter enabled by default. 1) auto - filtering will be applied depending on input type/quality 2) disabled - no filtering will be applied to the input 3) forced - filtering will be applied regardless of input type

**Type**: string  
**Required**: False

**videoSelector**

Informs which video elementary stream to decode for input types that have multiple available.

**Type**: [VideoSelector](p. 252)  
**Required**: False

**filterStrength**

Adjusts the magnitude of filtering from 1 (minimal) to 5 (strongest).

**Type**: integer  
**Required**: False  
**Minimum**: 1  
**Maximum**: 5

**captionSelectors**

Used to select the caption input to use for inputs that have multiple available.

**Type**: Array of type [CaptionSelector](p. 178)  
**Required**: False

**denoiseFilter**

Enable or disable the denoise filter when filtering.

**Type**: string
Properties

**Required**: False

**InputSourceEndBehavior (enum)**
- CONTINUE
- LOOP

**InputSpecification**

**codec**
Input codec
- **Type**: string
- **Required**: False

**resolution**
Input resolution, categorized coarsely
- **Type**: string
- **Required**: False

**maximumBitrate**
Maximum input bitrate, categorized coarsely
- **Type**: string
- **Required**: False

**InternalServiceError**

**message**
- **Type**: string
- **Required**: False

**InvalidRequest**

**message**
- **Type**: string
- **Required**: False

**KeyProviderSettings**

**staticKeySettings**
- **Type**: StaticKeySettings (p. 246)
- **Required**: False
LimitExceeded

message

Type: string
Required: False

M2tsAbsentInputAudioBehavior (enum)

DROP
ENCODE_SILENCE

M2tsArib (enum)

DISABLED
ENABLED

M2tsAribCaptionsPidControl (enum)

AUTO
USE_CONFIGURED

M2tsAudioBufferModel (enum)

ATSC
DVB

M2tsAudioInterval (enum)

VIDEO_AND_FIXED INTERVALS
VIDEO INTERVAL

M2tsAudioStreamType (enum)

ATSC
DVB

M2tsBufferModel (enum)

MULTIPLEX
NONE

M2tsCcDescriptor (enum)

DISABLED
ENABLED

M2tsEbifControl (enum)

NONE
PASSTHROUGH
M2tsEbpPlacement (enum)

- VIDEO_AND_AUDIO_PIDS
- VIDEO_PID

M2tsEsRateInPes (enum)

- EXCLUDE
- INCLUDE

M2tsKlv (enum)

- NONE
- PASSTHROUGH

M2tsPcrControl (enum)

- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

M2tsRateMode (enum)

- CBR
- VBR

M2tsScte35Control (enum)

- NONE
- PASSTHROUGH

M2tsSegmentationMarkers (enum)

- EBP
- EBP_LEGACY
- NONE
- PSI_SEGSTART
- RAI_ADAPT
- RAI_SEGSTART

M2tsSegmentationStyle (enum)

- MAINTAIN_CADENCE
- RESET_CADENCE

M2tsSettings

- audioStreamType

  When set to atsc, uses stream type = 0x81 for AC3 and stream type = 0x87 for EAC3. When set to dvb, uses stream type = 0x06.

  Type: string
**Properties**

**ecmPid**
Packet Identifier (PID) for ECM in the transport stream. Only enabled when Simulcrypt is enabled. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**dvbTeletextPid**
Packet Identifier (PID) for input source DVB Teletext data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**aribCaptionsPidControl**
If set to auto, pid number used for ARIB Captions will be auto-selected from unused pids. If set to useConfigured, ARIB Captions will be on the configured pid number.

- **Type:** string
- **Required:** False

**bitrate**
The output bitrate of the transport stream in bits per second. Setting to 0 lets the muxer automatically determine the appropriate bitrate.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**segmentationTime**
The length in seconds of each segment. Required unless markers is set to None.

- **Type:** number
- **Required:** False
- **Minimum:** 1.0

**rateMode**
When vbr, does not insert null packets into transport stream to fill specified bitrate. The bitrate setting acts as the maximum bitrate when vbr is set.

- **Type:** string
- **Required:** False
**Properties**

**audioPids**

Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**fragmentTime**

The length in seconds of each fragment. Only used with EBP markers.

*Type:* number  
*Required:* False  
*Minimum:* 0.0

**ebpAudioInterval**

When videoAndFixedIntervals is selected, audio EBP markers will be added to partitions 3 and 4. The interval between these additional markers will be fixed, and will be slightly shorter than the video EBP marker interval. Only available when EBP Cablelabs segmentation markers are selected. Partitions 1 and 2 will always follow the video interval.

*Type:* string  
*Required:* False

**ebpLookaheadMs**

When set, enforces that Encoder Boundary Points do not come within the specified time interval of each other by looking ahead at input video. If another EBP is going to come in within the specified time interval, the current EBP is not emitted, and the segment is "stretched" to the next marker. The lookahead value does not add latency to the system. The Live Event must be configured elsewhere to create sufficient latency to make the lookahead accurate.

*Type:* integer  
*Required:* False  
*Minimum:* 0  
*Maximum:* 10000

**audioFramesPerPes**

The number of audio frames to insert for each PES packet.

*Type:* integer  
*Required:* False  
*Minimum:* 0

**scte35Pid**

Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False
pcrPeriod

Maximum time in milliseconds between Program Clock Reference (PCRs) inserted into the transport stream.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 500

pmtInterval

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 1000

programNum

The value of the program number field in the Program Map Table.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 65535

segmentationStyle

The segmentation style parameter controls how segmentation markers are inserted into the transport stream. With avails, it is possible that segments may be truncated, which can influence where future segmentation markers are inserted. When a segmentation style of "resetCadence" is selected and a segment is truncated due to an avail, we will reset the segmentation cadence. This means the subsequent segment will have a duration of $segmentationTime seconds. When a segmentation style of "maintainCadence" is selected and a segment is truncated due to an avail, we will not reset the segmentation cadence. This means the subsequent segment will likely be truncated as well. However, all segments after that will have a duration of $segmentationTime seconds. Note that EBP lookahead is a slight exception to this rule.

- **Type**: string
- **Required**: False

ebif

If set to passthrough, passes any EBIF data from the input source to this output.

- **Type**: string
- **Required**: False

audioBufferModel

When set to dvb, uses DVB buffer model for Dolby Digital audio. When set to atsc, the ATSC model is used.
**Properties**

**Type**: string

**Required**: False

**dvbNitSettings**

Inserts DVB Network Information Table (NIT) at the specified table repetition interval.

**Type**: DvbNitSettings (p. 181)

**Required**: False

**absentInputAudioBehavior**

When set to drop, output audio streams will be removed from the program if the selected input audio stream is removed from the input. This allows the output audio configuration to dynamically change based on input configuration. If this is set to encodeSilence, all output audio streams will output encoded silence when not connected to an active input stream.

**Type**: string

**Required**: False

**timedMetadataPid**

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are `32` (or `0x20`).`8182` (or `0x1ff6`).

**Type**: string

**Required**: False

**timedMetadataBehavior**

When set to passthrough, timed metadata will be passed through from input to output.

**Type**: string

**Required**: False

**etvSignalPid**

Packet Identifier (PID) for input source ETV Signal data to this output. Can be entered as a decimal or hexadecimal value. Valid values are `32` (or `0x20`).`8182` (or `0x1ff6`).

**Type**: string

**Required**: False

**pmtPid**

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are `32` (or `0x20`).`8182` (or `0x1ff6`).

**Type**: string

**Required**: False
bufferModel

If set to multiplex, use multiplex buffer model for accurate interleaving. Setting to bufferModel to none can lead to lower latency, but low-memory devices may not be able to play back the stream without interruptions.

  Type: string
  Required: False

scte35Control

Optionally pass SCTE-35 signals from the input source to this output.

  Type: string
  Required: False

ebpPlacement

Controls placement of EBP on Audio PIDs. If set to videoAndAudioPids, EBP markers will be placed on the video PID and all audio PIDs. If set to videoPid, EBP markers will be placed on only the video PID.

  Type: string
  Required: False

arib

When set to enabled, uses ARIB-compliant field muxing and removes video descriptor.

  Type: string
  Required: False

nullPacketBitrate

Value in bits per second of extra null packets to insert into the transport stream. This can be used if a downstream encryption system requires periodic null packets.

  Type: number
  Required: False
  Minimum: 0.0

dvbSdtSettings

Inserts DVB Service Description Table (SDT) at the specified table repetition interval.

  Type: DvbSdtSettings (p. 181)
  Required: False

pcrPid

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20) to 8182 (or 0x1ff6).

  Type: string
Properties

Required: False

**transportStreamId**

The value of the transport stream ID field in the Program Map Table.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 65535

**pcrControl**

When set to `pcrEveryPesPacket`, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

- **Type**: string
- **Required**: False

**videoPid**

Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..<wbr/>8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

**esRateInPes**

Include or exclude the ES Rate field in the PES header.

- **Type**: string
- **Required**: False

**segmentationMarkers**

Inserts segmentation markers at each segmentationTime period. `raiSegstart` sets the Random Access Indicator bit in the adaptation field. `raiAdapt` sets the RAI bit and adds the current timecode in the private data bytes. `psiSegstart` inserts PAT and PMT tables at the start of segments. `ebp` adds Encoder Boundary Point information to the adaptation field as per OpenCable specification OC-SP-EBP-I01-130118. `ebpLegacy` adds Encoder Boundary Point information to the adaptation field using a legacy proprietary format.

- **Type**: string
- **Required**: False

**dvbTdtSettings**

Inserts DVB Time and Date Table (TDT) at the specified table repetition interval.

- **Type**: `DvbTdtSettings` (p. 186)
- **Required**: False
Properties

klv
If set to passthrough, passes any KLV data from the input source to this output.

  * **Type**: string
  * **Required**: False

ccDescriptor
When set to enabled, generates captionServiceDescriptor in PMT.

  * **Type**: string
  * **Required**: False

patInterval
The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

  * **Type**: integer
  * **Required**: False
  * **Minimum**: 0
  * **Maximum**: 1000

etvPlatformPid
Packet Identifier (PID) for input source ETV Platform data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

  * **Type**: string
  * **Required**: False

dvbSubPids
Packet Identifier (PID) for input source DVB Subtitle data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

  * **Type**: string
  * **Required**: False

aribCaptionsPid
Packet Identifier (PID) for ARIB Captions in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

  * **Type**: string
  * **Required**: False

tscte27Pids
Packet Identifier (PID) for input source SCTE-27 data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).
**Properties**

**Type**: string  
**Required**: False

**klvDataPids**

Packet Identifier (PID) for input source KLV data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (0x20) - 8182 (0x1ff6).

**Type**: string  
**Required**: False

**M2tsTimedMetadataBehavior** (enum)

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8PcrControl** (enum)

- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

**M3u8Scte35Behavior** (enum)

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8Settings**

**pmtPid**

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value.

**Type**: string  
**Required**: False

**ecmPid**

ThePlatform-protected transport streams using 'microsoft' as Target Client include an ECM stream. This ECM stream contains the size, IV, and PTS of every sample in the transport stream. This stream PID is specified here. This PID has no effect on non ThePlatform-protected streams.

**Type**: string  
**Required**: False

**scte35Behavior**

If set to passthrough, passes any SCTE-35 signals from the input source to this output.

**Type**: string  
**Required**: False
pcrPid
Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value.

  Type: string
  Required: False

audioPids
Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values.

  Type: string
  Required: False

audioFramesPerPes
The number of audio frames to insert for each PES packet.

  Type: integer
  Required: False
  Minimum: 0

scte35Pid
Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value.

  Type: string
  Required: False

transportStreamId
The value of the transport stream ID field in the Program Map Table.

  Type: integer
  Required: False
  Minimum: 0
  Maximum: 65535

videoPid
Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value.

  Type: string
  Required: False

pcrControl
When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.
Type: string
Required: False

pmtInterval

The number of milliseconds between instances of this table in the output transport stream. A value of \"0\" writes out the PMT once per segment file.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

pcrPeriod

Maximum time in milliseconds between Program Clock References (PCRs) inserted into the transport stream.

Type: integer
Required: False
Minimum: 0
Maximum: 500

programNum

The value of the program number field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

patInterval

The number of milliseconds between instances of this table in the output transport stream. A value of \"0\" writes out the PMT once per segment file.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

timedMetadataPid

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

Type: string
Required: False

timedMetadataBehavior

When set to passthrough, timed metadata is passed through from input to output.

Type: string
Required: False

**M3u8TimedMetadataBehavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**Mp2CodingMode (enum)**

- CODING_MODE_1_0
- CODING_MODE_2_0

**Mp2Settings**

**codingMode**

The MPEG2 Audio coding mode. Valid values are codingMode10 (for mono) or codingMode20 (for stereo).

- **Type**: string
  - **Required**: False

**bitrate**

Average bitrate in bits/second.

- **Type**: number
  - **Required**: False

**sampleRate**

Sample rate in Hz.

- **Type**: number
  - **Required**: False

**MsSmoothGroupSettings**

**eventId**

MS Smooth event ID to be sent to the IIS server. Should only be specified if eventIdMode is set to useConfigured.

- **Type**: string
  - **Required**: False

**fragmentLength**

Length of mp4 fragments to generate (in seconds). Fragment length must be compatible with GOP size and framerate.

- **Type**: integer
  - **Required**: False
Minimum: 1

timestampOffset
Timestamp offset for the event. Only used if timestampOffsetMode is set to useConfiguredOffset.

Type: string
Required: False

segmentationMode
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

Type: string
Required: False

numRetries
Number of retry attempts.

Type: integer
Required: False
Minimum: 0

eventStopBehavior
When set to sendEos, send EOS signal to IIS server when stopping the event

Type: string
Required: False

acquisitionPointId
The value of the "Acquisition Point Identity" element used in each message placed in the sparse track. Only enabled if sparseTrackType is not "none".

Type: string
Required: False

sparseTrackType
If set to scte35, use incoming SCTE-35 messages to generate a sparse track in this group of MS-Smooth outputs.

Type: string
Required: False

timestampOffsetMode
Type of timestamp date offset to use. - useEventStartDate: Use the date the event was started as the offset - useConfiguredOffset: Use an explicitly configured date as the offset

Type: string
Required: False
**destination**

Smooth Streaming publish point on an IIS server. Elemental Live acts as a "Push" encoder to IIS.

*Type: OutputLocationRef (p. 239)*
*Required: True*

**audioOnlyTimecodeControl**

If set to passthrough for an audio-only MS Smooth output, the fragment absolute time will be set to the current timecode. This option does not write timecodes to the audio elementary stream.

*Type: string*
*Required: False*

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the IIS server if the connection is lost. Content will be cached during this time and the cache will be delivered to the IIS server once the connection is re-established.

*Type: integer*
*Required: False*
*Minimum: 0*

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

*Type: integer*
*Required: False*
*Minimum: 0*

**certificateMode**

If set to verifyAuthenticity, verify the https certificate chain to a trusted Certificate Authority (CA). This will cause https outputs to self-signed certificates to fail unless those certificates are manually added to the OS trusted keystore.

*Type: string*
*Required: False*

**inputLossAction**

Parameter that control output group behavior on input loss.

*Type: string*
*Required: False*

**sendDelayMs**

Outputs that are "output locked" can use this delay. Assign a delay to the output that is "secondary". Do not assign a delay to the "primary" output. The delay means that the primary output will always reach the downstream system before the secondary, which helps ensure that the downstream system always uses the primary output. (If there were no delay, the downstream system might flip-flop between whichever output happens to arrive first.) If the primary fails, the downstream system will switch to the
secondary output. When the primary is restarted, the downstream system will switch back to the primary (because once again it is always arriving first)

**eventIdMode**

Specifies whether or not to send an event ID to the IIS server. If no event ID is sent and the same Live Event is used without changing the publishing point, clients might see cached video from the previous run. Options: - "useConfigured" - use the value provided in eventId - "useTimestamp" - generate and send an event ID based on the current timestamp - "noEventId" - do not send an event ID to the IIS server.

**restartDelay**

Number of seconds before initiating a restart due to output failure, due to exhausting the numRetries on one segment, or exceeding filecacheDuration.

**streamManifestBehavior**

When set to send, send stream manifest so publishing point doesn't start until all streams start.

**MsSmoothOutputSettings**

**nameModifier**

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

**NetworkInputServerValidation (enum)**

- CHECK_CRYPTOGRAPHY_AND_VALIDATE_NAME
- CHECK_CRYPTOGRAPHY_ONLY

**NetworkInputSettings**

**hlsInputSettings**

Specifies HLS input settings when the uri is for a HLS manifest.
**Properties**

**Type**: HlsInputSettings (p. 211)  
**Required**: False

**serverValidation**

Check HTTPS server certificates. When set to checkCryptographyOnly, cryptography in the certificate will be checked, but not the server's name. Certain subdomains (notably S3 buckets that use dots in the bucket name) do not strictly match the corresponding certificate's wildcard pattern and would otherwise cause the event to error. This setting is ignored for protocols that do not use https.

**Type**: string  
**Required**: False

**Output**

**videoDescriptionName**

The name of the VideoDescription used as the source for this output.

**Type**: string  
**Required**: False

**captionDescriptionNames**

The names of the CaptionDescriptions used as caption sources for this output.

**Type**: Array of type string  
**Required**: False

**outputName**

The name used to identify an output.

**Type**: string  
**Required**: False

**outputSettings**

Output type-specific settings.

**Type**: OutputSettings (p. 240)  
**Required**: True

**audioDescriptionNames**

The names of the AudioDescriptions used as audio sources for this output.

**Type**: Array of type string  
**Required**: False
OutputDestination

settings
Destination settings for output; one for each redundant encoder.

Type: Array of type OutputDestinationSettings (p. 238)
Required: False

id
User-specified id. This is used in an output group or an output.

Type: string
Required: False

OutputDestinationSettings

passwordParam
key used to extract the password from EC2 Parameter store

Type: string
Required: False

streamName
Stream name for RTMP destinations (URLs of type rtmp://)

Type: string
Required: False

url
A URL specifying a destination

Type: string
Required: False

username
username for destination

Type: string
Required: False

OutputGroup

outputs
Type: Array of type Output (p. 237)
Required: True

**outputGroupSettings**

Settings associated with the output group.

- **Type**: OutputGroupSettings (p. 239)
- **Required**: True

**name**

Custom output group name optionally defined by the user. Only letters, numbers, and the underscore character allowed; only 32 characters allowed.

- **Type**: string
- **Required**: False

**OutputGroupSettings**

**archiveGroupSettings**

- **Type**: ArchiveGroupSettings (p. 163)
- **Required**: False

**rtmpGroupSettings**

- **Type**: RtmpGroupSettings (p. 241)
- **Required**: False

**udpGroupSettings**

- **Type**: UdpGroupSettings (p. 248)
- **Required**: False

**msSmoothGroupSettings**

- **Type**: MsSmoothGroupSettings (p. 233)
- **Required**: False

**hlsGroupSettings**

- **Type**: HlsGroupSettings (p. 206)
- **Required**: False

**OutputLocationRef**

**destinationRefid**

- **Type**: string
- **Required**: False
OutputSettings

rtmpOutputSettings
  Type: RtmpOutputSettings (p. 242)
  Required: False

archiveOutputSettings
  Type: ArchiveOutputSettings (p. 163)
  Required: False

msSmoothOutputSettings
  Type: MsSmoothOutputSettings (p. 236)
  Required: False

udpOutputSettings
  Type: UdpOutputSettings (p. 248)
  Required: False

hlsOutputSettings
  Type: HlsOutputSettings (p. 213)
  Required: False

PassThroughSettings

RemixSettings

channelMappings
Mapping of input channels to output channels, with appropriate gain adjustments.
  Type: Array of type AudioChannelMapping (p. 164)
  Required: True

channelsOut
Number of output channels to be produced. Valid values: 1, 2, 4, 6, 8
  Type: integer
  Required: False
  Minimum: 1
  Maximum: 8

channelsIn
Number of input channels to be used.
  Type: integer
  Required: False
Minimum: 1
Maximum: 16

ResourceConflict

message

Type: string
Required: False

ResourceNotFound

message

Type: string
Required: False

RtmpCacheFullBehavior (enum)

DISCONNECT_IMMEDIATELY
WAIT_FOR_SERVER

RtmpCaptionData (enum)

ALL
FIELD1_608
FIELD1_AND_FIELD2_608

RtmpCaptionInfoDestinationSettings

RtmpGroupSettings

captionData

Controls the types of data that passes to onCaptionInfo outputs. If set to 'all' then 608 and 708 carried DTVCC data will be passed. If set to 'field1AndField2608' then DTVCC data will be stripped out, but 608 data from both fields will be passed. If set to 'field1608' then only the data carried in 608 from field 1 video will be passed.

Type: string
Required: False

authenticationScheme

Authentication scheme to use when connecting with CDN

Type: string
Required: False

cacheLength

Cache length, in seconds, is used to calculate buffer size.
**Properties**

**Type**: integer
**Required**: False
**Minimum**: 30

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

**Type**: integer
**Required**: False
**Minimum**: 0

**cacheFullBehavior**

Controls behavior when content cache fills up. If remote origin server stalls the RTMP connection and does not accept content fast enough the 'Media Cache' will fill up. When the cache reaches the duration specified by cacheLength the cache will stop accepting new content. If set to disconnectImmediately, the RTMP output will force a disconnect. Clear the media cache, and reconnect after restartDelay seconds. If set to waitForServer, the RTMP output will wait up to 5 minutes to allow the origin server to begin accepting data again.

**Type**: string
**Required**: False

**RtmpOutputCertificateMode (enum)**

SELF_SIGNED
VERIFY_AUTHENTICITY

**RtmpOutputSettings**

**certificateMode**

If set to verifyAuthenticity, verify the tls certificate chain to a trusted Certificate Authority (CA). This will cause rtmps outputs with self-signed certificates to fail.

**Type**: string
**Required**: False

**numRetries**

Number of retry attempts.

**Type**: integer
**Required**: False
**Minimum**: 0

**destination**

The RTMP endpoint excluding the stream name (eg. rtmp://host/appname). For connection to Akamai, a username and password must be supplied. URI fields accept format identifiers.

**Type**: OutputLocationRef (p. 239)
**Properties**

### Required: True

**connectionRetryInterval**

Number of seconds to wait before retrying a connection to the Flash Media server if the connection is lost.

- **Type:** integer
- **Required:** False
- **Minimum:** 1

**Scte20Convert608To708 (enum)**

- DISABLED
- UPCONVERT

**Scte20PlusEmbeddedDestinationSettings**

**Scte20SourceSettings**

**source608ChannelNumber**

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
- **Maximum:** 4

**convert608To708**

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.

- **Type:** string
- **Required:** False

**Scte27DestinationSettings**

**Scte27SourceSettings**

**pid**

The pid field is used in conjunction with the caption selector languageCode field as follows:

- Specify PID and Language: Extracts captions from that PID; the language is "informational".
- Specify PID and omit Language: Extracts the specified PID.
- Omit PID and specify Language: Extracts the specified language, whichever PID that happens to be.
- Omit PID and omit Language: Valid only if source is DVB-Sub that is being passed through; all languages will be passed through.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
Scte35AposNoRegionalBlackoutBehavior (enum)

  FOLLOW
  IGNORE

Scte35AposWebDeliveryAllowedBehavior (enum)

  FOLLOW
  IGNORE

Scte35SpliceInsert

adAvailOffset

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

  Type: integer
  Required: False
  Minimum: -1000
  Maximum: 1000

webDeliveryAllowedFlag

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates

  Type: string
  Required: False

noRegionalBlackoutFlag

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates

  Type: string
  Required: False

Scte35SpliceInsertNoRegionalBlackoutBehavior (enum)

  FOLLOW
  IGNORE

Scte35SpliceInsertWebDeliveryAllowedBehavior (enum)

  FOLLOW
  IGNORE
Scte35TimeSignalApos

adAvailOffset

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

Type: integer
Required: False
Minimum: -1000
Maximum: 1000

webDeliveryAllowedFlag

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates

Type: string
Required: False

noRegionalBlackoutFlag

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates

Type: string
Required: False

SmoothGroupAudioOnlyTimecodeControl (enum)

PASSTHROUGH
USE_CONFIGURED_CLOCK

SmoothGroupCertificateMode (enum)

SELF_SIGNED
VERIFY_AUTHENTICITY

SmoothGroupEventIdMode (enum)

NO_EVENT_ID
USE_CONFIGURED
USE_TIMESTAMP

SmoothGroupEventStopBehavior (enum)

NONE
SEND_EOS

SmoothGroupSegmentationMode (enum)

USE_INPUT_SEGMENTATION
USE_SEGMENT_DURATION
**SmoothGroupSparseTrackType (enum)**

- NONE
- SCTE_35

**SmoothGroupStreamManifestBehavior (enum)**

- DO_NOT_SEND
- SEND

**SmoothGroupTimestampOffsetMode (enum)**

- USE_CONFIGURED_OFFSET
- USE_EVENT_START_DATE

**SmpteTtDestinationSettings**

**StandardHlsSettings**

**m3u8Settings**

- **Type**: M3u8Settings (p. 230)
- **Required**: True

**audioRenditionSets**

List all the audio groups that are used with the video output stream. Input all the audio GROUP-IDs that are associated to the video, separate by ','.

- **Type**: string
- **Required**: False

**StaticKeySettings**

**staticKeyValue**

Static key value as a 32 character hexadecimal string.

- **Type**: string
- **Required**: True

**keyProviderServer**

The URL of the license server used for protecting content.

- **Type**: InputLocation (p. 216)
- **Required**: False
TeletextDestinationSettings

TeletextSourceSettings

pageNumber

Specifies the teletext page number within the data stream from which to extract captions. Range of 0x100 (256) to 0x8FF (2303). Unused for passthrough. Should be specified as a hexadecimal string with no "0x" prefix.

Type: string
Required: False

TimecodeConfig

syncThreshold

Threshold in frames beyond which output timecode is resynchronized to the input timecode. Discrepancies below this threshold are permitted to avoid unnecessary discontinuities in the output timecode. No timecode sync when this is not specified.

Type: integer
Required: False
Minimum: 1
Maximum: 1000000

source

Identifies the source for the timecode that will be associated with the events outputs. -Embedded (embedded): Initialize the output timecode with timecode from the the source. If no embedded timecode is detected in the source, the system falls back to using "Start at 0" (zerobased). -System Clock (systemclock): Use the UTC time. -Start at 0 (zerobased): The time of the first frame of the event will be 00:00:00:00.

Type: string
Required: True

TimecodeConfigSource (enum)

EMBEDDED
SYSTEMCLOCK
ZEROBASED

TtmlDestinationSettings

styleControl

When set to passthrough, passes through style and position information from a TTML-like input source (TTML, SMPTE-TT, CFF-TT) to the CFF-TT output or TTML output.

Type: string
Required: False
**TtmlDestinationStyleControl** (enum)

- PASSTHROUGH
- USE_CONFIGURED

**UdpContainerSettings**

**m2tsSettings**

_Type_: M2tsSettings (p. 222)
_REQUIRED_: False

**UdpGroupSettings**

**inputLossAction**

Specifies behavior of last resort when input video is lost, and no more backup inputs are available. When dropTs is selected the entire transport stream will stop being emitted. When dropProgram is selected the program can be dropped from the transport stream (and replaced with null packets to meet the TS bitrate requirement). Or, when emitProgram is chosen the transport stream will continue to be produced normally with repeat frames, black frames, or slate frames substituted for the absent input video.

_Type_: string
_REQUIRED_: False

**timedMetadataId3Frame**

Indicates ID3 frame that has the timecode.

_Type_: string
_REQUIRED_: False

**timedMetadataId3Period**

Timed Metadata interval in seconds.

_Type_: integer
_REQUIRED_: False
_MINIMUM_: 0

**UdpOutputSettings**

**bufferMsec**

UDP output buffering in milliseconds. Larger values increase latency through the transcoder but simultaneously assist the transcoder in maintaining a constant, low-jitter UDP/RTP output while accommodating clock recovery, input switching, input disruptions, picture reordering, etc.

_Type_: integer
_REQUIRED_: False
_MINIMUM_: 0
_MAXIMUM_: 10000
**destination**

Destination address and port number for RTP or UDP packets. Can be unicast or multicast RTP or UDP (e.g. rtp://239.10.10.10:5001 or udp://10.100.100.100:5002).

   Type: OutputLocationRef (p. 239)
   Required: True

**containerSettings**

   Type: UdpContainerSettings (p. 248)
   Required: True

**fecOutputSettings**

Settings for enabling and adjusting Forward Error Correction on UDP outputs.

   Type: FecOutputSettings (p. 193)
   Required: False

**UdpTimedMetadataId3Frame (enum)**

NONE
PRIV
TDRL

**UpdateChannel**

**inputAttachments**

   Type: Array of type InputAttachment (p. 215)
   Required: False

**roleArn**

An optional Amazon Resource Name (ARN) of the role to assume when running the Channel. If you do not specify this on an update call but the role was previously set that role will be removed.

   Type: string
   Required: False

**destinations**

A list of output destinations for this channel.

   Type: Array of type OutputDestination (p. 238)
   Required: False

**name**

The name of the channel.

   Type: string
Required: False

codeSettings
The encoder settings for this channel.
Type: EncoderSettings (p. 192)
Required: False

inputSpecification
Specification of input for this channel (max. bitrate, resolution, codec, etc.)
Type: InputSpecification (p. 220)
Required: False

UpdateChannelResultModel

channel
Type: Channel (p. 179)
Required: False

ValidationError

errorMessage
Type: string
Required: False

elementPath
Type: string
Required: False

VideoCodecSettings

h264Settings
Type: H264Settings (p. 197)
Required: False

VideoDescription

respondToAfd
Indicates how to respond to the AFD values in the input stream. Setting to "respond" causes input video to be clipped, depending on AFD value, input display aspect ratio and output display aspect ratio.
Type: string
Required: False
scalingBehavior

When set to "stretchToOutput", automatically configures the output position to stretch the video to the specified output resolution. This option will override any position value.

   Type: string
   Required: False

name

The name of this VideoDescription. Outputs will use this name to uniquely identify this Description. Description names should be unique within this Live Event.

   Type: string
   Required: True

width

Output video width (in pixels). Leave out to use source video width. If left out, height must also be left out. Display aspect ratio is always preserved by letterboxing or pillarboxing when necessary.

   Type: integer
   Required: False

sharpness

Changes the width of the anti-alias filter kernel used for scaling. Only applies if scaling is being performed and antiAlias is set to true. 0 is the softest setting, 100 the sharpest, and 50 recommended for most content.

   Type: integer
   Required: False
   Minimum: 0
   Maximum: 100

codecSettings

Video codec settings.

   Type: VideoCodecSettings (p. 250)
   Required: False

height

Output video height (in pixels). Leave blank to use source video height. If left blank, width must also be unspecified.

   Type: integer
   Required: False

VideoDescriptionRespondToAfd (enum)

   NONE
   PASSTHROUGH
RESPOND

**VideoDescriptionScalingBehavior (enum)**

- DEFAULT
- STRETCH_TO_OUTPUT

**VideoSelector**

**colorSpace**

Specifies the colorspace of an input. This setting works in tandem with colorSpaceConversion to determine if any conversion will be performed.

- **Type**: string
- **Required**: False

**selectorSettings**

The video selector settings.

- **Type**: VideoSelectorSettings (p. 253)
- **Required**: False

**colorSpaceUsage**

Applies only if colorSpace is a value other than follow. This field controls how the value in the colorSpace field will be used. fallback means that when the input does include color space data, that data will be used, but when the input has no color space data, the value in colorSpace will be used. Choose fallback if your input is sometimes missing color space data, but when it does have color space data, that data is correct. force means to always use the value in colorSpace. Choose force if your input usually has no color space data or might have unreliable color space data.

- **Type**: string
- **Required**: False

**VideoSelectorColorSpace (enum)**

- FOLLOW
- REC_601
- REC_709

**VideoSelectorColorSpaceUsage (enum)**

- FALLBACK
- FORCE

**VideoSelectorPid**

**pid**

Selects a specific PID from within a video source.
Type: integer  
Required: False  
Minimum: 0  
Maximum: 8191

**VideoSelectorProgramId**

**programId**

Selects a specific program from within a multi-program transport stream. If the program doesn't exist, the first program within the transport stream will be selected by default.

Type: integer  
Required: False  
Minimum: 0  
Maximum: 65536

**VideoSelectorSettings**

**videoSelectorPid**

Type: VideoSelectorPid (p. 252)  
Required: False

**videoSelectorProgramId**

Type: VideoSelectorProgramId (p. 253)  
Required: False

**WebvttDestinationSettings**

**Channels channelId Start**

**URI**

/prod/channels/ **channelId** /start

**HTTP Methods**

**POST**

Operation ID: StartChannel  
Starts an existing channel

**Path Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channelId</td>
<td>String</td>
<td>True</td>
<td>channel ID</td>
</tr>
</tbody>
</table>
Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Channel (p. 254)</td>
<td>Successfully initiated start of the channel.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 265)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 265)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 266)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 265)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 265)</td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 266)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 265)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 265)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

Schemas

Response Bodies

Example Channel

```json
{
  "inputAttachments (p. 286)": [
    {
      "inputId (p. 322)": "string",
      "inputSettings (p. 322)": {
        "sourceEndBehavior (p. 325)": enum,
        "audioSelectors (p. 325)": [
          {
            "name (p. 276)": "string",
            "selectorSettings (p. 276)": {
              "audioLanguageSelection (p. 276)": enum,
              "languageSelectionPolicy (p. 274)": enum,
              "languageCode (p. 274)": "string"
            },
            "audioPidSelection (p. 276)": {
              "pid (p. 275)": integer
            }
          }
        }
      },
      "deblockFilter (p. 325)": enum,
      "networkInputSettings (p. 326)": {
        "hlsInputSettings (p. 343)": {
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patInterval (p. 336): integer,
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                username (p. 323): "string"
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    "outputTimingSource (p. 301)": enum
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                "rateControlMode (p. 309)" : enum
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],
"arn (p. 287)": "String",
"inputSpecification (p. 287)": {
    "codec (p. 327)": enum,
    "resolution (p. 327)": enum,
    "maximumBitrate (p. 327)": enum
}
}

Example InvalidRequest

{
    "message (p. 327)": "string"
}

Example AccessDenied

{
    "message (p. 270)": "string"
}

Example ResourceNotFound

{
    "message (p. 348)": "string"
}

Example ResourceConflict

{
    "message (p. 347)": "string"
}

Example LimitExceeded

{
    "message (p. 327)": "string"
}

Example InternalServiceError

{
    "message (p. 327)": "string"}
Properties

AacCodingMode (enum)

- AD_RECEIVER_MIX
- CODING_MODE_1_0
- CODING_MODE_1_1
- CODING_MODE_2_0
- CODING_MODE_5_1

AacInputType (enum)

- BROADCASTER_MIXED_AD
- NORMAL

AacProfile (enum)

- HEV1
- HEV2
- LC

AacRateControlMode (enum)

- CBR
- VBR

AacRawFormat (enum)

- LATM_LOAS
- NONE

AacSettings

vbrQuality

VBR Quality Level - Only used if rateControlMode is VBR.

Type: string
**Properties**

**Required**: False

**codingMode**
Mono, Stereo, or 5.1 channel layout. Valid values depend on rate control mode and profile. The adReceiverMix setting receives a stereo description plus control track and emits a mono AAC encode of the description track, with control data emitted in the PES header as per ETSI TS 101 154 Annex E.

  - **Type**: string
  - **Required**: False

**profile**
AAC Profile.

  - **Type**: string
  - **Required**: False

**bitrate**
Average bitrate in bits/second. Valid values depend on rate control mode and profile.

  - **Type**: number
  - **Required**: False

**inputType**
Set to "broadcasterMixedAd" when input contains pre-mixed main audio + AD (narration) as a stereo pair. The Audio Type field (audioType) will be set to 3, which signals to downstream systems that this stream contains "broadcaster mixed AD". Note that the input received by the encoder must contain pre-mixed audio; the encoder does not perform the mixing. The values in audioTypeControl and audioType (in AudioDescription) are ignored when set to broadcasterMixedAd. Leave set to "normal" when input does not contain pre-mixed audio + AD.

  - **Type**: string
  - **Required**: False

**rawFormat**
Sets LATM / LOAS AAC output for raw containers.

  - **Type**: string
  - **Required**: False

**sampleRate**
Sample rate in Hz. Valid values depend on rate control mode and profile.

  - **Type**: number
  - **Required**: False

**rateControlMode**
Rate Control Mode.
**Properties**

_**Type**:_ string  
_**Required**:_ False

**spec**

Use MPEG-2 AAC audio instead of MPEG-4 AAC audio for raw or MPEG-2 Transport Stream containers.

_**Type**:_ string  
_**Required**:_ False

**AacSpec (enum)**

- MPEG2
- MPEG4

**AacVbrQuality (enum)**

- HIGH
- LOW
- MEDIUM_HIGH
- MEDIUM_LOW

**Ac3BitstreamMode (enum)**

- COMMENTARY
- COMPLETE_MAIN
- DIALOGUE
- EMERGENCY
- HEARING_IMPAIRED
- MUSIC_AND_EFFECTS
- VISUALLY_IMPAIRED
- VOICE_OVER

**Ac3CodingMode (enum)**

- CODING_MODE_1_0
- CODING_MODE_1_1
- CODING_MODE_2_0
- CODING_MODE_3_2_LFE

**Ac3DrcProfile (enum)**

- FILM_STANDARD
- NONE

**Ac3LfeFilter (enum)**

- DISABLED
- ENABLED

**Ac3MetadataControl (enum)**

- FOLLOW_INPUT
USE_CONFIGURED

**Ac3Settings**

**drcProfile**
If set to filmStandard, adds dynamic range compression signaling to the output bitstream as defined in the Dolby Digital specification.

*Type: string*
*Required: False*

**dialnorm**
Sets the dialnorm for the output. If excluded and input audio is Dolby Digital, dialnorm will be passed through.

*Type: integer*
*Required: False*
*Minimum: 1*
*Maximum: 31*

**codingMode**
Dolby Digital coding mode. Determines number of channels.

*Type: string*
*Required: False*

**metadataControl**
When set to "followInput", encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

*Type: string*
*Required: False*

**bitrate**
Average bitrate in bits/second. Valid bitrates depend on the coding mode.

*Type: number*
*Required: False*

**lfeFilter**
When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid in codingMode32Lfe mode.

*Type: string*
*Required: False*
**Properties**

**bitstreamMode**

Specifies the bitstream mode (bsmod) for the emitted AC-3 stream. See ATSC A/52-2012 for background on these values.

- **Type**: string
- **Required**: False

**AccessDenied**

**message**

- **Type**: string
- **Required**: False

**AfdSignaling (enum)**

- AUTO
- FIXED
- NONE

**ArchiveContainerSettings**

**m2tsSettings**

- **Type**: M2tsSettings (p. 329)
- **Required**: False

**ArchiveGroupSettings**

**destination**

A directory and base filename where archive files should be written. If the base filename portion of the URI is left blank, the base filename of the first input will be automatically inserted.

- **Type**: OutputLocationRef (p. 346)
- **Required**: True

**rolloverInterval**

Number of seconds to write to archive file before closing and starting a new one.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**ArchiveOutputSettings**

**extension**

Output file extension. If excluded, this will be auto-selected from the container type.
Type: string  
Required: False

containerSettings
Settings specific to the container type of the file.
  Type: ArchiveContainerSettings (p. 270)  
  Required: True

nameModifier
String concatenated to the end of the destination filename. Required for multiple outputs of the same type.
  Type: string  
  Required: False

AribDestinationSettings

AribSourceSettings

AudioChannelMapping

outputChannel
The index of the output channel being produced.
  Type: integer  
  Required: True  
  Minimum: 0  
  Maximum: 7

inputChannelLevels
Indices and gain values for each input channel that should be remixed into this output channel.
  Type: Array of type InputChannelLevel (p. 322)  
  Required: True

AudioCodecSettings

aacSettings
  Type: AacSettings (p. 266)  
  Required: False

ac3Settings
  Type: Ac3Settings (p. 269)
Properties

Required: False

eac3Settings

Type: Eac3Settings (p. 294)
Required: False

passThroughSettings

Type: PassThroughSettings (p. 347)
Required: False

mp2Settings

Type: Mp2Settings (p. 340)
Required: False

AudioDescription

languageCodeControl

Choosing followInput will cause the ISO 639 language code of the output to follow the ISO 639 language code of the input. The languageCode will be used when useConfigured is set, or when followInput is selected but there is no ISO 639 language code specified by the input.

Type: string
Required: False

audioTypeControl

Determines how audio type is determined. followInput: If the input contains an ISO 639 audioType, then that value is passed through to the output. If the input contains no ISO 639 audioType, the value in Audio Type is included in the output. useConfigured: The value in Audio Type is included in the output. Note that this field and audioType are both ignored if inputType is broadcasterMixedAd.

Type: string
Required: False

remixSettings

Settings that control how input audio channels are remixed into the output audio channels.

Type: RemixSettings (p. 347)
Required: False

audioType

Applies only if audioTypeControl is useConfigured. The values for audioType are defined in ISO-IEC 13818-1.

Type: string
Required: False
name

The name of this AudioDescription. Outputs will use this name to uniquely identify this AudioDescription. Description names should be unique within this Live Event.

  Type: string
  Required: True

languageCode

Indicates the language of the audio output track. Only used if languageControlMode is useConfigured, or there is no ISO 639 language code specified in the input.

  Type: string
  Required: False

codecSettings

Audio codec settings.

  Type: AudioCodecSettings (p. 271)
  Required: False

streamName

Used for MS Smooth and Apple HLS outputs. Indicates the name displayed by the player (eg. English, or Director Commentary).

  Type: string
  Required: False

audioNormalizationSettings

Advanced audio normalization settings.

  Type: AudioNormalizationSettings (p. 274)
  Required: False

audioSelectorName

The name of the AudioSelector used as the source for this AudioDescription.

  Type: string
  Required: True

AudioDescriptionAudioTypeControl (enum)

  FOLLOW_INPUT
  USE_CONFIGURED

AudioDescriptionLanguageCodeControl (enum)

  FOLLOW_INPUT
  USE_CONFIGURED
**AudioLanguageSelection**

**languageSelectionPolicy**

When set to "strict", the transport stream demux strictly identifies audio streams by their language descriptor. If a PMT update occurs such that an audio stream matching the initially selected language is no longer present then mute will be encoded until the language returns. If "loose", then on a PMT update the demux will choose another audio stream in the program with the same stream type if it can't find one with the same language.

- **Type**: string
- **Required**: False

**languageCode**

Selects a specific three-letter language code from within an audio source.

- **Type**: string
- **Required**: True

**AudioLanguageSelectionPolicy (enum)**

- LOOSE
- STRICT

**AudioNormalizationAlgorithm (enum)**

- ITU_1770_1
- ITU_1770_2

**AudioNormalizationAlgorithmControl (enum)**

- CORRECT_AUDIO

**AudioNormalizationSettings**

**targetLkfs**

Target LKFS(loudness) to adjust volume to. If no value is entered, a default value will be used according to the chosen algorithm. The CALM Act (1770-1) recommends a target of -24 LKFS. The EBU R-128 specification (1770-2) recommends a target of -23 LKFS.

- **Type**: number
- **Required**: False
- **Minimum**: -59.0
- **Maximum**: 0.0

**algorithmControl**

When set to correctAudio the output audio is corrected using the chosen algorithm. If set to measureOnly, the audio will be measured but not adjusted.

- **Type**: string
- **Required**: False
**algorithm**

Audio normalization algorithm to use. `itu17701` conforms to the CALM Act specification, `itu17702` conforms to the EBU R-128 specification.

- Type: string
- Required: False

**AudioOnlyHlsSettings**

**audioTrackType**

Four types of audio-only tracks are supported: Audio-Only Variant Stream The client can play back this audio-only stream instead of video in low-bandwidth scenarios. Represented as an EXT-X-STREAM-INF in the HLS manifest. Alternate Audio, Auto Select, Default Alternate rendition that the client should try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with `DEFAULT=YES`, `AUTOSELECT=YES` Alternate Audio, Auto Select, Not Default Alternate rendition that the client may try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with `DEFAULT=NO`, `AUTOSELECT=YES` Alternate Audio, not Auto Select Alternate rendition that the client will not try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with `DEFAULT=NO`, `AUTOSELECT=NO`

- Type: string
- Required: False

**audioGroupId**

Specifies the group to which the audio Rendition belongs.

- Type: string
- Required: False

**audioOnlyImage**

For use with an audio only Stream. Must be a .jpg or .png file. If given, this image will be used as the cover-art for the audio only output. Ideally, it should be formatted for an iPhone screen for two reasons. The iPhone does not resize the image, it crops a centered image on the top/bottom and left/right. Additionally, this image file gets saved bit-for-bit into every 10-second segment file, so will increase bandwidth by {image file size} * {segment count} * {user count}.

- Type: InputLocation (p. 323)
- Required: False

**AudioOnlyHlsTrackType (enum)**

- ALTERNATE_AUDIO_AUTO_SELECT
- ALTERNATE_AUDIO_AUTO_SELECT_DEFAULT
- ALTERNATE_AUDIO_NOT_AUTO_SELECT
- AUDIO_ONLY_VARIANT_STREAM

**AudioPidSelection**

**pid**

Selects a specific PID from within a source.
Type: integer
Required: True
Minimum: 0
Maximum: 8191

AudioSelector

name

The name of this AudioSelector. AudioDescriptions will use this name to uniquely identify this Selector. Selector names should be unique per input.

Type: string
Required: True

selectorSettings

The audio selector settings.

Type: AudioSelectorSettings (p. 276)
Required: False

AudioSelectorSettings

audioLanguageSelection

Type: AudioLanguageSelection (p. 274)
Required: False

audioPidSelection

Type: AudioPidSelection (p. 275)
Required: False

AudioType (enum)

CLEAN_EFFECTS
HEARING_IMPAIRED
UNDEFINED
VISUAL_IMPAIRED_COMMENTARY

AuthenticationScheme (enum)

AKAMAI
COMMON

AvailBlanking

state

When set to enabled, causes video, audio and captions to be blanked when insertion metadata is added.
Properties

**Type**: string
**Required**: False

**availBlankingImage**
Blanking image to be used. Leave empty for solid black. Only bmp and png images are supported.

**Type**: InputLocation (p. 323)
**Required**: False

**AvailBlankingState** (enum)
- DISABLED
- ENABLED

**AvailConfiguration**

**availSettings**
Ad avail settings.

**Type**: AvailSettings (p. 277)
**Required**: False

**AvailSettings**

**scte35TimeSignalApos**

**Type**: Scte35TimeSignalApos (p. 351)
**Required**: False

**scte35SpliceInsert**

**Type**: Scte35SpliceInsert (p. 351)
**Required**: False

**BadGatewayException**

**message**

**Type**: string
**Required**: False

**BlackoutSlate**

**networkEndBlackoutImage**
Path to local file to use as Network End Blackout image. Image will be scaled to fill the entire output raster.

**Type**: InputLocation (p. 323)
**networkEndBlackout**

Setting to enabled causes the encoder to blackout the video, audio, and captions, and raise the "Network Blackout Image" slate when an SCTE104/35 Network End Segmentation Descriptor is encountered. The blackout will be lifted when the Network Start Segmentation Descriptor is encountered. The Network End and Network Start descriptors must contain a network ID that matches the value entered in "Network ID".

**Type:** string  
**Required:** False

**networkId**

Provides Network ID that matches EIDR ID format (e.g., "10.XXXX/XXXX-XXXX-XXXX-XXXX-XXXX-C").

**Type:** string  
**Required:** False

**state**

When set to enabled, causes video, audio and captions to be blanked when indicated by program metadata.

**Type:** string  
**Required:** False

**blackoutSlateImage**

Blackout slate image to be used. Leave empty for solid black. Only bmp and png images are supported.

**Type:** InputLocation (p. 323)  
**Required:** False

**BlackoutSlateNetworkEndBlackout (enum)**

- DISABLED
- ENABLED

**BlackoutSlateState (enum)**

- DISABLED
- ENABLED

**BurnInAlignment (enum)**

- CENTERED
- LEFT
- SMART

**BurnInBackgroundColor (enum)**

- BLACK
Properties

**NONE**

**WHITE**

**BurnInDestinationSettings**

**xPosition**

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**backgroundColor**

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

- **Type:** string
- **Required:** False

**yPosition**

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**teletextGridControl**

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

- **Type:** string
- **Required:** False

**backgroundOpacity**

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 255
Properties

fontOpacity
Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontResolution
Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 96
Maximum: 600

shadowOpacity
Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

shadowYOffset
Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False

outlineSize
Specifies font outline size in pixels. This option is not valid for source captions that are either 608/ embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 10

outlineColor
Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.
**Type:** string  
**Required:** False

**fontSize**
When set to 'auto' fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

**Type:** string  
**Required:** False

**shadowXOffset**
Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

**Type:** integer  
**Required:** False

**alignment**
If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. All burn-in and DVB-Sub font settings must match.

**Type:** string  
**Required:** False

**shadowColor**
Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

**Type:** string  
**Required:** False

**fontColor**
Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

**Type:** string  
**Required:** False

**font**
External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.
Properties

**Type**: InputLocation (p. 323)

**Required**: False

**BurnInFontColor** (enum)

- BLACK
- BLUE
- GREEN
- RED
- WHITE
- YELLOW

**BurnInOutlineColor** (enum)

- BLACK
- BLUE
- GREEN
- RED
- WHITE
- YELLOW

**BurnInShadowColor** (enum)

- BLACK
- NONE
- WHITE

**BurnInTeletextGridControl** (enum)

- FIXED
- SCALED

### CaptionDescription

**captionSelectorName**

Specifies which input caption selector to use as a caption source when generating output captions. This field should match a captionSelector name.

**Type**: string

**Required**: True

**languageDescription**

Human readable information to indicate captions available for players (eg. English, or Spanish).

**Type**: string

**Required**: False

**name**

Name of the caption description. Used to associate a caption description with an output. Names must be unique within an event.
Properties

Type: string
Required: True

languageCode

Type: string
Required: False

destinationSettings
Additional settings for captions destination that depend on the destination type.

Type: CaptionDestinationSettings (p. 283)
Required: False

CaptionDestinationSettings

scte27DestinationSettings

Type: Scte27DestinationSettings (p. 350)
Required: False

burnInDestinationSettings

Type: BurnInDestinationSettings (p. 279)
Required: False

teletextDestinationSettings

Type: TeletextDestinationSettings (p. 353)
Required: False

smpteTtDestinationSettings

Type: SmpteTtDestinationSettings (p. 353)
Required: False

webvttDestinationSettings

Type: WebvttDestinationSettings (p. 359)
Required: False

ttmlDestinationSettings

Type: TtmlDestinationSettings (p. 354)
Required: False

embeddedPlusScte20DestinationSettings

Type: EmbeddedPlusScte20DestinationSettings (p. 298)
Properties

Required: False

dvbSubDestinationSettings
Type: DvbSubDestinationSettings (p. 289)
Required: False

embeddedDestinationSettings
Type: EmbeddedDestinationSettings (p. 298)
Required: False

rtmpCaptionInfoDestinationSettings
Type: RtmpCaptionInfoDestinationSettings (p. 348)
Required: False

aribDestinationSettings
Type: AribDestinationSettings (p. 271)
Required: False

scte20PlusEmbeddedDestinationSettings
Type: Scte20PlusEmbeddedDestinationSettings (p. 350)
Required: False

CaptionLanguageMapping

languageDescription
Textual description of language
Type: string
Required: True

captionChannel
Channel to insert closed captions. Each channel mapping must have a unique channel number (maximum of 4)
Type: integer
Required: True
Minimum: 1
Maximum: 4

languageCode
Three character ISO 639-2 language code (see http://www.loc.gov/standards/iso639-2)
Type: string
Required: True
**CaptionSelector**

**name**

Name identifier for a caption selector. This name is used to associate this caption selector with one or more caption descriptions. Names must be unique within an event.

*Type:* string  
*Required:* True

**languageCode**

When specified this field indicates the three letter language code of the caption track to extract from the source.

*Type:* string  
*Required:* False

**selectorSettings**

Caption selector settings.

*Type:* CaptionSelectorSettings (p. 285)  
*Required:* False

**CaptionSelectorSettings**

**embeddedSourceSettings**

*Type:* EmbeddedSourceSettings (p. 298)  
*Required:* False

**scte20SourceSettings**

*Type:* Scte20SourceSettings (p. 350)  
*Required:* False

**dvbSubSourceSettings**

*Type:* DvbSubSourceSettings (p. 293)  
*Required:* False

**aribSourceSettings**

*Type:* AribSourceSettings (p. 271)  
*Required:* False

**teletextSourceSettings**

*Type:* TeletextSourceSettings (p. 353)  
*Required:* False
**scte27SourceSettings**

*Type: Scte27SourceSettings (p. 350)*  
*Required: False*

**Channel**

**inputAttachments**

List of input attachments for channel.  
*Type: Array of type InputAttachment (p. 322)*  
*Required: False*

**roleArn**

The Amazon Resource Name (ARN) of the role assumed when running the Channel.  
*Type: string*  
*Required: False*

**destinations**

A list of destinations of the channel. For UDP outputs, there is one destination per output. For other types (HLS, for example), there is one destination per packager.  
*Type: Array of type OutputDestination (p. 344)*  
*Required: False*

**name**

The name of the channel. (user-mutable)  
*Type: string*  
*Required: False*

**encoderSettings**

*Type: EncoderSettings (p. 299)*  
*Required: False*

**pipelinesRunningCount**

The number of currently healthy pipelines.  
*Type: integer*  
*Required: False*

**state**

*Type: string*  
*Required: False*
id

The unique id of the channel.

Type: string
Required: False

egressEndpoints

The endpoints where outgoing connections initiate from

Type: Array of type ChannelEgressEndpoint (p. 287)
Required: False

arn

The unique arn of the channel.

Type: string
Required: False

inputSpecification

Type: InputSpecification (p. 327)
Required: False

ChannelEgressEndpoint

sourceIp

Public IP of where a channel's output comes from

Type: string
Required: False

ChannelState (enum)

CREATING
CREATE_FAILED
IDLE
STARTING
RUNNING
RECOVERING
STOPPING
DELETING
DELETED

DvbNitSettings

networkName

The network name text placed in the networkNameDescriptor inside the Network Information Table. Maximum length is 256 characters.
Properties

Type: string
Required: True

networkId

The numeric value placed in the Network Information Table (NIT).

Type: integer
Required: True
Minimum: 0
Maximum: 65536

replInterval

The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Minimum: 25
Maximum: 10000

DvbSdtOutputSdt (enum)

SDT_FOLLOW
SDT_FOLLOW_IF_PRESENT
SDT_MANUAL
SDT_NONE

DvbSdtSettings

serviceName

The service name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
Required: False

serviceProviderName

The service provider name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
Required: False

replInterval

The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Properties

outputSdt

Selects method of inserting SDT information into output stream. The sdtFollow setting copies SDT information from input stream to output stream. The sdtFollowIfPresent setting copies SDT information from input stream to output stream if SDT information is present in the input, otherwise it will fall back on the user-defined values. The sdtManual setting means user will enter the SDT information. The sdtNone setting means output stream will not contain SDT information.

Type: string
Required: False

DvbSubDestinationAlignment (enum)

CENTERED
LEFT
SMART

DvbSubDestinationBackgroundColor (enum)

BLACK
NONE
WHITE

DvbSubDestinationFontColor (enum)

BLACK
BLUE
GREEN
RED
WHITE
YELLOW

DvbSubDestinationOutlineColor (enum)

BLACK
BLUE
GREEN
RED
WHITE
YELLOW

DvbSubDestinationSettings

xPosition

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. This option is
Properties

backgroundColor

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

yPosition

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

teletextGridControl

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

Type: string
Required: False

backgroundOpacity

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontOpacity

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
fontResolution

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 96
Maximum: 600

shadowOpacity

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

shadowYOffset

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False

outlineSize

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 10

outlineColor

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

fontSize

When set to auto fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

Type: string
Properties

**Required**: False

**shadowXOffset**

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

  - **Type**: integer
  - **Required**: False

**alignment**

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. This option is not valid for source captions that are STL or 608/embedded. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

  - **Type**: string
  - **Required**: False

**shadowColor**

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

  - **Type**: string
  - **Required**: False

**fontColor**

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

  - **Type**: string
  - **Required**: False

**font**

External font file used for caption burn-in. File extension must be ‘ttf’ or ‘tte’. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.

  - **Type**: InputLocation (p. 323)
  - **Required**: False

**DvbSubDestinationShadowColor (enum)**

BLACK
NONE
**DvbSubDestinationTeletextGridControl (enum)**

- FIXED
- SCALED

**DvbSubSourceSettings**

**pid**

When using DVB-Sub with Burn-In or SMPTE-TT, use this PID for the source content. Unused for DVB-Sub passthrough. All DVB-Sub content is passed through, regardless of selectors.

- **Type:** integer
- **Required:** False
- **Minimum:** 1

**DvbTdtSettings**

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

- **Type:** integer
- **Required:** False
- **Minimum:** 1000
- **Maximum:** 30000

**Eac3AttenuationControl (enum)**

- ATTENUATE_3_DB
- NONE

**Eac3BitstreamMode (enum)**

- COMMENTARY
- COMPLETE_MAIN
- EMERGENCY
- HEARING_IMPAIRED
- VISUALLY_IMPAIRED

**Eac3CodingMode (enum)**

- CODING_MODE_1_0
- CODING_MODE_2_0
- CODING_MODE_3_2

**Eac3DcFilter (enum)**

- DISABLED
- ENABLED
Eac3DrcLine (enum)

- FILM_LIGHT
- FILM_STANDARD
- MUSIC_LIGHT
- MUSIC_STANDARD
- NONE
- SPEECH

Eac3DrcRf (enum)

- FILM_LIGHT
- FILM_STANDARD
- MUSIC_LIGHT
- MUSIC_STANDARD
- NONE
- SPEECH

Eac3LfeControl (enum)

- LFE
- NO_LFE

Eac3LfeFilter (enum)

- DISABLED
- ENABLED

Eac3MetadataControl (enum)

- FOLLOW_INPUT
- USE_CONFIGURED

Eac3PassthroughControl (enum)

- NO_PASSTHROUGH
- WHEN_POSSIBLE

Eac3PhaseControl (enum)

- NO_SHIFT
- SHIFT_90_DEGREES

Eac3Settings

dialnorm

Sets the dialnorm for the output. If blank and input audio is Dolby Digital Plus, dialnorm will be passed through.

Type: integer
Required: False
Minimum: 1
Maximum: 31

**passthroughControl**

When set to whenPossible, input DD+ audio will be passed through if it is present on the input. This detection is dynamic over the life of the transcode. Inputs that alternate between DD+ and non-DD+ content will have a consistent DD+ output as the system alternates between passthrough and encoding.

*Type: string*
*Required: False*

**metadataControl**

When set to followInput, encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

*Type: string*
*Required: False*

**drcLine**

Sets the Dolby dynamic range compression profile.

*Type: string*
*Required: False*

**bitrate**

Average bitrate in bits/second. Valid bitrates depend on the coding mode.

*Type: number*
*Required: False*

**surroundExMode**

When encoding 3/2 audio, sets whether an extra center back surround channel is matrix encoded into the left and right surround channels.

*Type: string*
*Required: False*

**ltRtSurroundMixLevel**

Left total/Right total surround mix level. Only used for 3/2 coding mode.

*Type: number*
*Required: False*

**lfeControl**

When encoding 3/2 audio, setting to lfe enables the LFE channel
Properties

Type: string  
Required: False

codingMode
Dolby Digital Plus coding mode. Determines number of channels.

Type: string  
Required: False

surroundMode
When encoding 2/0 audio, sets whether Dolby Surround is matrix encoded into the two channels.

Type: string  
Required: False

attenuationControl
When set to attenuate3Db, applies a 3 dB attenuation to the surround channels. Only used for 3/2 coding mode.

Type: string  
Required: False

lfeFilter
When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid with codingMode32 coding mode.

Type: string  
Required: False

ltRtCenterMixLevel
Left total/Right total center mix level. Only used for 3/2 coding mode.

Type: number  
Required: False

dcFilter
When set to enabled, activates a DC highpass filter for all input channels.

Type: string  
Required: False

phaseControl
When set to shift90Degrees, applies a 90-degree phase shift to the surround channels. Only used for 3/2 coding mode.

Type: string  
Required: False
**stereoDownmix**

Stereo downmix preference. Only used for 3/2 coding mode.

*Type:* string  
*Required:* False

**bitstreamMode**

Specifies the bitstream mode (bsmod) for the emitted E-AC-3 stream. See ATSC A/52-2012 (Annex E) for background on these values.

*Type:* string  
*Required:* False

**loRoSurroundMixLevel**

Left only/Right only surround mix level. Only used for 3/2 coding mode.

*Type:* number  
*Required:* False

**drcRf**

Sets the profile for heavy Dolby dynamic range compression, ensures that the instantaneous signal peaks do not exceed specified levels.

*Type:* string  
*Required:* False

**loRoCenterMixLevel**

Left only/Right only center mix level. Only used for 3/2 coding mode.

*Type:* number  
*Required:* False

**Eac3StereoDownmix (enum)**

- DPL2
- LO_RO
- LT_RT
- NOT_INDICATED

**Eac3SurroundExMode (enum)**

- DISABLED
- ENABLED
- NOT_INDICATED

**Eac3SurroundMode (enum)**

- DISABLED
EmbeddedConvert608To708 (enum)
  DISABILITY
  UPCONVERT

EmbeddedDestinationSettings

EmbeddedPlusScte20DestinationSettings

EmbeddedScte20Detection (enum)
  AUTO
  OFF

EmbeddedSourceSettings

scte20Detection
Set to "auto" to handle streams with intermittent and/or non-aligned SCTE-20 and Embedded captions.
  Type: string
  Required: False

source608ChannelNumber
Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.
  Type: integer
  Required: False
  Minimum: 1
  Maximum: 4

convert608To708
If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.
  Type: string
  Required: False

source608TrackNumber
This field is unused and deprecated.
  Type: integer
  Required: False
  Minimum: 1
Maximum: 5

**EncoderSettings**

**timecodeConfig**
Contains settings used to acquire and adjust timecode information from inputs.

*Type: TimecodeConfig (p. 353)*
*Required: True*

**outputGroups**

*Type: Array of type OutputGroup (p. 345)*
*Required: True*

**audioDescriptions**

*Type: Array of type AudioDescription (p. 272)*
*Required: True*

**captionDescriptions**
Settings for caption descriptions

*Type: Array of type CaptionDescription (p. 282)*
*Required: False*

**availConfiguration**
Event-wide configuration settings for ad avail insertion.

*Type: AvailConfiguration (p. 277)*
*Required: False*

**globalConfiguration**
Configuration settings that apply to the event as a whole.

*Type: GlobalConfiguration (p. 301)*
*Required: False*

**videoDescriptions**

*Type: Array of type VideoDescription (p. 356)*
*Required: True*

**blackoutSlate**
Settings for blackout slate.

*Type: BlackoutSlate (p. 277)*
*Required: False*
**availBlanking**

Settings for ad avail blanking.

- **Type:** `AvailBlanking` (p. 276)
- **Required:** False

**FecOutputIncludeFec (enum)**

- COLUMN
- COLUMN_AND_ROW

**FecOutputSettings**

**rowLength**

Parameter L from SMPTE 2022-1. The width of the FEC protection matrix. Must be between 1 and 20, inclusive. If only Column FEC is used, then larger values increase robustness. If Row FEC is used, then this is the number of transport stream packets per row error correction packet, and the value must be between 4 and 20, inclusive, if `includeFec` is columnAndRow. If `includeFec` is column, this value must be 1 to 20, inclusive.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
- **Maximum:** 20

**columnDepth**

Parameter D from SMPTE 2022-1. The height of the FEC protection matrix. The number of transport stream packets per column error correction packet. Must be between 4 and 20, inclusive.

- **Type:** integer
- **Required:** False
- **Minimum:** 4
- **Maximum:** 20

**includeFec**

Enables column only or column and row based FEC

- **Type:** string
- **Required:** False

**FixedAfd (enum)**

- AFD_0000
- AFD_0010
- AFD_0011
- AFD_0100
- AFD_1000
- AFD_1001
- AFD_1010
- AFD_1011
AFD_1101
AFD_1110
AFD_1111

GatewayTimeoutException

message

Type: string
Required: False

GlobalConfiguration

inputLossBehavior

Settings for system actions when input is lost.

Type: InputLossBehavior (p. 324)
Required: False

supportLowFramerateInputs

Adjusts video input buffer for streams with very low video framerates. This is commonly set to enabled for music channels with less than one video frame per second.

Type: string
Required: False

initialAudioGain

Value to set the initial audio gain for the Live Event.

Type: integer
Required: False
Minimum: -60
Maximum: 60

inputEndAction

Indicates the action to take when an input completes (e.g. end-of-file.) Options include immediately switching to the next sequential input (via "switchInput"), switching to the next input and looping back to the first input when last input ends (via "switchAndLoopInputs") or not switching inputs and instead transcoding black / color / slate images per the "Input Loss Behavior" configuration until an activateInput REST command is received (via "none").

Type: string
Required: False

outputTimingSource

Indicates whether the rate of frames emitted by the Live encoder should be paced by its system clock (which optionally may be locked to another source via NTP) or should be locked to the clock of the source that is providing the input stream.
Type: string
Required: False

GlobalConfigurationInputEndAction (enum)
NONE
SWITCH_AND_LOOP_INPUTS

GlobalConfigurationLowFramerateInputs (enum)
DISABLED
ENABLED

GlobalConfigurationOutputTimingSource (enum)
INPUT_CLOCK
SYSTEM_CLOCK

H264AdaptiveQuantization (enum)
HIGH
HIGHER
LOW
MAX
MEDIUM
OFF

H264ColorMetadata (enum)
IGNORE
INSERT

H264EntropyEncoding (enum)
CABAC
CAVLC

H264FlickerAq (enum)
DISABLED
ENABLED

H264FramerateControl (enum)
INITIALIZE_FROM_SOURCE
SPECIFIED

H264GopBReference (enum)
DISABLED
ENABLED
H264GopSizeUnits (enum)

  FRAMES
  SECONDS

H264Level (enum)

  H264_LEVEL_1
  H264_LEVEL_1_1
  H264_LEVEL_1_2
  H264_LEVEL_1_3
  H264_LEVEL_2
  H264_LEVEL_2_1
  H264_LEVEL_2_2
  H264_LEVEL_3
  H264_LEVEL_3_1
  H264_LEVEL_3_2
  H264_LEVEL_4
  H264_LEVEL_4_1
  H264_LEVEL_4_2
  H264_LEVEL_5
  H264_LEVEL_5_1
  H264_LEVEL_5_2
  H264_LEVEL_AUTO

H264LookAheadRateControl (enum)

  HIGH
  LOW
  MEDIUM

H264ParControl (enum)

  INITIALIZE_FROM_SOURCE
  SPECIFIED

H264Profile (enum)

  BASELINE
  HIGH
  HIGH_10BIT
  HIGH_422
  HIGH_422_10BIT
  MAIN

H264RateControlMode (enum)

  CBR
  VBR

H264ScanType (enum)

  INTERLACED
H264SceneChangeDetect (enum)

DISABLED
ENABLED

H264Settings

minIInterval

Only meaningful if sceneChangeDetect is set to enabled. Enforces separation between repeated (cadence) I-frames and I-frames inserted by Scene Change Detection. If a scene change I-frame is within I-interval frames of a cadence I-frame, the GOP is shrunk and/or stretched to the scene change I-frame. GOP stretch requires enabling lookahead as well as setting I-interval. The normal cadence resumes for the next GOP. Note: Maximum GOP stretch = GOP size + Min-I-interval - 1

Type: integer
Required: False
Minimum: 0
Maximum: 30

slices

Number of slices per picture. Must be less than or equal to the number of macroblock rows for progressive pictures, and less than or equal to half the number of macroblock rows for interlaced pictures. This field is optional; when no value is specified the encoder will choose the number of slices based on encode resolution.

Type: integer
Required: False
Minimum: 1
Maximum: 32

parNumerator

Pixel Aspect Ratio numerator.

Type: integer
Required: False

gopSizeUnits

Indicates if the gopSize is specified in frames or seconds. If seconds the system will convert the gopSize into a frame count at run time.

Type: string
Required: False

maxBitrate

Maximum bitrate in bits/second (for VBR mode only).

Type: integer
Required: False  
Minimum: 1000

**bitrate**

Average bitrate in bits/second. Required for VBR, CBR, and ABR. For MS Smooth outputs, bitrates must be unique when rounded down to the nearest multiple of 1000.

Type: integer  
Required: False  
Minimum: 1000

**bufFillPct**

Percentage of the buffer that should initially be filled (HRD buffer model).

Type: integer  
Required: False  
Minimum: 0  
Maximum: 100

**temporalAq**

If set to enabled, adjust quantization within each frame based on temporal variation of content complexity.

Type: string  
Required: False

**afdSignaling**

Indicates that AFD values will be written into the output stream. If afdSignaling is “auto”, the system will try to preserve the input AFD value (in cases where multiple AFD values are valid). If set to “fixed”, the AFD value will be the value configured in the fixedAfd parameter.

Type: string  
Required: False

**timecodeInsertion**

Determines how timecodes should be inserted into the video elementary stream. - ‘disabled’: Do not include timecodes - ‘picTimingSel’: Pass through picture timing SEI messages from the source specified in Timecode Config

Type: string  
Required: False

**bufSize**

Size of buffer (HRD buffer model) in bits/second.

Type: integer  
Required: False  
Minimum: 0
softness

Softness. Selects quantizer matrix, larger values reduce high-frequency content in the encoded image.

  Type: integer  
  Required: False  
  Minimum: 0  
  Maximum: 128

framerateControl

This field indicates how the output video frame rate is specified. If "specified" is selected then the output video frame rate is determined by framerateNumerator and framerateDenominator, else if "initializeFromSource" is selected then the output video frame rate will be set equal to the input video frame rate of the first input.

  Type: string  
  Required: False

fixedAfd

Four bit AFD value to write on all frames of video in the output stream. Only valid when afdSignaling is set to 'Fixed'.

  Type: string  
  Required: False

level

H.264 Level.

  Type: string  
  Required: False

lookAheadRateControl

Amount of lookahead. A value of low can decrease latency and memory usage, while high can produce better quality for certain content.

  Type: string  
  Required: False

profile

H.264 Profile.

  Type: string  
  Required: False

framerateNumerator

Framerate numerator - framerate is a fraction, e.g. 24000 / 1001 = 23.976 fps.

  Type: integer
Required: False

gopClosedCadence

Frequency of closed GOPs. In streaming applications, it is recommended that this be set to 1 so a decoder joining mid-stream will receive an IDR frame as quickly as possible. Setting this value to 0 will break output segmenting.

Type: integer
Required: False
Minimum: 0

framerateDenominator

Framerate denominator.

Type: integer
Required: False

entropyEncoding

Entropy encoding mode. Use cabac (must be in Main or High profile) or cavlc.

Type: string
Required: False

spatialAq

If set to enabled, adjust quantization within each frame based on spatial variation of content complexity.

Type: string
Required: False

adaptiveQuantization

Adaptive quantization. Allows intra-frame quantizers to vary to improve visual quality.

Type: string
Required: False

colorMetadata

Includes colorspace metadata in the output.

Type: string
Required: False

gopSize

GOP size (keyframe interval) in units of either frames or seconds per gopSizeUnits. Must be greater than zero.

Type: number
Required: False
Properties

Minimum: 1.0

numRefFrames
Number of reference frames to use. The encoder may use more than requested if using B-frames and/or interlaced encoding.

  Type: integer
  Required: False
  Minimum: 1
  Maximum: 6

gopBReference
If enabled, use reference B frames for GOP structures that have B frames > 1.

  Type: string
  Required: False

sceneChangeDetect
Scene change detection. Inserts I-frames on scene changes when enabled.

  Type: string
  Required: False

parControl
This field indicates how the output pixel aspect ratio is specified. If "specified" is selected then the output video pixel aspect ratio is determined by parNumerator and parDenominator, else if "initializeFromSource" is selected then the output pixel aspect ratio will be set equal to the input video pixel aspect ratio of the first input.

  Type: string
  Required: False

parDenominator
Pixel Aspect Ratio denominator.

  Type: integer
  Required: False
  Minimum: 1

syntax
Produces a bitstream compliant with SMPTE RP-2027.

  Type: string
  Required: False

scanType
Sets the scan type of the output to progressive or top-field-first interlaced.
Type: string
Required: False

gopNumBFrames
Number of B-frames between reference frames.
Type: integer
Required: False
Minimum: 0
Maximum: 7

flickerAq
If set to enabled, adjust quantization within each frame to reduce flicker or 'pop' on I-frames.
Type: string
Required: False

rateControlMode
Rate control mode.
Type: string
Required: False

H264SpatialAq (enum)
DISABLED
ENABLED

H264Syntax (enum)
DEFAULT
RP2027

H264TemporalAq (enum)
DISABLED
ENABLED

H264TimecodeInsertionBehavior (enum)
DISABLED
PIC_TIMING_SEI

HlsAdMarkers (enum)
ADOBE
ELEMENTAL
ELEMENTAL_SCTE35
**HlsAkamaiHttpTransferMode (enum)**

- CHUNKED
- NON_CHUNKED

**HlsAkamaiSettings**

**httpTransferMode**

Specify whether or not to use chunked transfer encoding to Akamai. User should contact Akamai to enable this feature.

- **Type:** string
- **Required:** False

**salt**

Salt for authenticated Akamai.

- **Type:** string
- **Required:** False

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type:** integer
**token**

Token parameter for authenticated akamai. If not specified, _gda_ is used.

- **Type:** string
- **Required:** False

### HlsBasicPutSettings

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 600

### HlsCaptionLanguageSetting (enum)

- INSERT
- NONE
- OMIT
**HlsCdnSettings**

**hlsAkamaiSettings**

- **Type:** HlsAkamaiSettings (p. 310)
- **Required:** False

**hlsWebdavSettings**

- **Type:** HlsWebdavSettings (p. 321)
- **Required:** False

**hlsBasicPutSettings**

- **Type:** HlsBasicPutSettings (p. 311)
- **Required:** False

**hlsMediaStoreSettings**

- **Type:** HlsMediaStoreSettings (p. 319)
- **Required:** False

**HlsClientCache (enum)**

- DISABLED
- ENABLED

**HlsCodecSpecification (enum)**

- RFC_4281
- RFC_6381

**HlsDirectoryStructure (enum)**

- SINGLE_DIRECTORY
- SUBDIRECTORY_PER_STREAM

**HlsEncryptionType (enum)**

- AES128
- SAMPLE_AES

**HlsGroupSettings**

**segmentsPerSubdirectory**

Number of segments to write to a subdirectory before starting a new one. `directoryStructure` must be `subdirectoryPerStream` for this setting to have an effect.

- **Type:** integer
- **Required:** False
- **Minimum:** 1
ivInManifest

For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If set to "include", IV is listed in the manifest, otherwise the IV is not in the manifest.

Type: string
Required: False

destination

A directory or HTTP destination for the HLS segments, manifest files, and encryption keys (if enabled).

Type: OutputLocationRef (p. 346)
Required: True

customIv

For use with encryptionType. This is a 128-bit, 16-byte hex value represented by a 32-character text string. If ivSource is set to "explicit" then this parameter is required and is used as the IV for encryption.

Type: string
Required: False

timedMetadataId3Frame

Indicates ID3 frame that has the timecode.

Type: string
Required: False

baseUrlManifest
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

Type: string
Required: False

captionLanguageSetting
Applies only to 608 Embedded output captions. insert: Include CLOSED-CAPTIONS lines in the manifest. Specify at least one language in the CC1 Language Code field. One CLOSED-CAPTION line is added for each Language Code you specify. Make sure to specify the languages in the order in which they appear in the original source (if the source is embedded format) or the order of the caption selectors (if the source is other than embedded). Otherwise, languages in the manifest will not match up properly with the output captions. none: Include CLOSED-CAPTIONS=NONE line in the manifest. omit: Omit any CLOSED-CAPTIONS line from the manifest.

Type: string
Required: False

minSegmentLength
When set, minimumSegmentLength is enforced by looking ahead and back within the specified range for a nearby avail and extending the segment size if needed.

Type: integer
Required: False
Minimum: 0

mode
If set to "vod", keeps and indexes all segments starting with the first segment. If set to "live" segments will age out and only the last keepSegments number of segments will be retained.

Type: string
Required: False

ivSource
For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If this setting is "followsSegmentNumber", it will cause the IV to change every segment (to match the segment number). If this is set to "explicit", you must enter a constant IV value.

Type: string
Required: False

manifestCompression
When set to gzip, compresses HLS playlist.

Type: string
keyProviderSettings

The key provider settings.

Type: KeyProviderSettings (p. 327)
Required: False

tsFileMode

When set to "singleFile", emits the program as a single media resource (.ts) file, and uses #EXT-X-BYTE-RANGE tags to index segment for playback. Playback of VOD mode content during event is not guaranteed due to HTTP server caching.

Type: string
Required: False

manifestDurationFormat

Indicates whether the output manifest should use floating point or integer values for segment duration.

Type: string
Required: False

keyFormatVersions

Either a single positive integer version value or a slash delimited list of version values (1/2/3).

Type: string
Required: False

streamInfResolution

Include or exclude RESOLUTION attribute for video in EXT-X-STREAM-INF tag of variant manifest.

Type: string
Required: False

timestampDeltaMilliseconds

Provides an extra millisecond delta offset to fine tune the timestamps.

Type: integer
Required: False
Minimum: 0

segmentationMode

When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

Type: string
Required: False
Properties

baseUrlContent
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

  Type: string  
  Required: False

clientCache
When set to "disabled", sets the #EXT-X-ALLOW-CACHE:no tag in the manifest, which prevents clients from saving media segments for later replay.

  Type: string  
  Required: False

captionLanguageMappings
Mapping of up to 4 caption channels to caption languages. Is only meaningful if captionLanguageSetting is set to "insert".

  Type: Array of type CaptionLanguageMapping (p. 284)  
  Required: False

codecSpecification
Specification to use (RFC-6381 or the default RFC-4281) during m3u8 playlist generation.

  Type: string  
  Required: False

keepSegments
Number of segments to retain in the destination directory. mode must be "live" for this setting to have an effect.

  Type: integer  
  Required: False  
  Minimum: 1

timedMetadataId3Period
Timed Metadata interval in seconds.

  Type: integer  
  Required: False  
  Minimum: 0

programDateTime
Includes or excludes EXT-X-PROGRAM-DATE-TIME tag in .m3u8 manifest files. The value is calculated as follows: either the program date and time are initialized using the input timecode source, or the time is initialized using the input timecode source and the date is initialized using the timestampOffset.

  Type: string
Required: False

directoryStructure
Place segments in subdirectories.
  Type: string
  Required: False

keyFormat
The value specifies how the key is represented in the resource identified by the URI. If parameter is absent, an implicit value of "identity" is used. A reverse DNS string can also be given.
  Type: string
  Required: False

inputLossAction
Parameter that control output group behavior on input loss.
  Type: string
  Required: False

adMarkers
Choose one or more ad marker types to pass SCTE35 signals through to this group of Apple HLS outputs.
  Type: Array of type string
  Required: False

programDateTimePeriod
Period of insertion of EXT-X-PROGRAM-DATE-TIME entry, in seconds.
  Type: integer
  Required: False
  Minimum: 0
  Maximum: 3600

segmentLength
Length of MPEG-2 Transport Stream segments to create (in seconds). Note that segments will end on the next keyframe after this number of seconds, so actual segment length may be longer.
  Type: integer
  Required: False
  Minimum: 1

hlsCdnSettings
Parameters that control interactions with the CDN.
  Type: HlsCdnSettings (p. 312)
**Required**: False

### HlsInputSettings

**retries**

The number of consecutive times that attempts to read a manifest or segment must fail before the input is considered unavailable.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**bandwidth**

When specified the HLS stream with the m3u8 BANDWIDTH that most closely matches this value will be chosen, otherwise the highest bandwidth stream in the m3u8 will be chosen. The bitrate is specified in bits per second, as in an HLS manifest.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**retryInterval**

The number of seconds between retries when an attempt to read a manifest or segment fails.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**bufferSegments**

When specified, reading of the HLS input will begin this many buffer segments from the end (most recently written segment). When not specified, the HLS input will begin with the first segment specified in the m3u8.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

#### HlsIvInManifest (enum)

- EXCLUDE
- INCLUDE

#### HlsIvSource (enum)

- EXPLICIT
- FOLLOW_SEGMENTS

#### HlsManifestCompression (enum)

- GZIP
NONE

HlsManifestDurationFormat (enum)

FLOATING_POINT
INTEGER

HlsMediaStoreSettings

mediaStoreStorageClass

When set to temporal, output files are stored in non-persistent memory for faster reading and writing.

Type: string
Required: False

numRetries

Number of retry attempts that will be made before the Live Event is put into an error state.

Type: integer
Required: False
Minimum: 0

restartDelay

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

Type: integer
Required: False
Minimum: 0
Maximum: 15

connectionRetryInterval

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

Type: integer
Required: False
Minimum: 0

filecacheDuration

Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

HlsMediaStoreStorageClass (enum)

TEMPORAL
HlsMode (enum)

- LIVE
- VOD

HlsOutputSelection (enum)

- MANIFESTS_AND_SEGMENTS
- SEGMENTS_ONLY

HlsOutputSettings

segmentModifier

String concatenated to end of segment filenames.

  Type: string
  Required: False

hlsSettings

Settings regarding the underlying stream. These settings are different for audio-only outputs.

  Type: HlsSettings (p. 320)
  Required: True

nameModifier

String concatenated to the end of the destination filename. Accepts \"Format Identifiers \"#formatIdentifierParameters.

  Type: string
  Required: False

HlsProgramDateTime (enum)

- EXCLUDE
- INCLUDE

HlsSegmentationMode (enum)

- USE_INPUT_SEGMENTATION
- USE_SEGMENT_DURATION

HlsSettings

audioOnlyHlsSettings

  Type: AudioOnlyHlsSettings (p. 275)
  Required: False
standardHlsSettings
  Type: StandardHlsSettings (p. 353)
  Required: False

HlsStreamInfResolution (enum)
  EXCLUDE
  INCLUDE

HlsTimedMetadataId3Frame (enum)
  NONE
  PRIV
  TDRL

HlsTsFileMode (enum)
  SEGMENTED_FILES
  SINGLE_FILE

HlsWebdavHttpTransferMode (enum)
  CHUNKED
  NON_CHUNKED

HlsWebdavSettings

httpTransferMode
  Specify whether or not to use chunked transfer encoding to WebDAV.
  Type: string
  Required: False

numRetries
  Number of retry attempts that will be made before the Live Event is put into an error state.
  Type: integer
  Required: False
  Minimum: 0

restartDelay
  If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.
  Type: integer
  Required: False
  Minimum: 0
Maximum: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 600

**InputAttachment**

**inputId**

The ID of the input

- **Type**: string
- **Required**: False

**inputSettings**

Settings of an input (caption selector, etc.)

- **Type**: InputSettings (p. 325)
- **Required**: False

**InputChannelLevel**

**inputChannel**

The index of the input channel used as a source.

- **Type**: integer
- **Required**: True
- **Minimum**: 0
- **Maximum**: 15

**gain**

Remixing value. Units are in dB and acceptable values are within the range from -60 (mute) and 6 dB.

- **Type**: integer
- **Required**: True
**Minimum**: -60

**Maximum**: 6

**InputCodec (enum)**

codec in increasing order of complexity

- MPEG2
- AVC
- HEVC

**InputDeblockFilter (enum)**

- DISABLED
- ENABLED

**InputDenoiseFilter (enum)**

- DISABLED
- ENABLED

**InputFilter (enum)**

- AUTO
- DISABLED
- FORCED

**InputLocation**

**passwordParam**

key used to extract the password from EC2 Parameter store

- **Type**: string
- **Required**: False

**uri**

Uniform Resource Identifier - This should be a path to a file accessible to the Live system (eg. a http:// URI) depending on the output type. For example, a rtmpEndpoint should have a uri similar to: "rtmp:// fmsserver/live".

- **Type**: string
- **Required**: True

**username**

Username if credentials are required to access a file or publishing point. This can be either a plaintext username, or a reference to an AWS parameter store name from which the username can be retrieved. AWS Parameter store format: "ssm://<parameter name>"

- **Type**: string
Properties

**Required:** False

**InputLossActionForHlsOut (enum)**

- EMIT_OUTPUT
- PAUSE_OUTPUT

**InputLossActionForMsSmoothOut (enum)**

- EMIT_OUTPUT
- PAUSE_OUTPUT

**InputLossActionForUdpOut (enum)**

- DROP_PROGRAM
- DROP_TS
- EMIT_PROGRAM

**InputLossBehavior**

**inputLossImageType**

Indicates whether to substitute a solid color or a slate into the output after input loss exceeds blackFrameMsec.

- **Type:** string
- **Required:** False

**inputLossImageColor**

When input loss image type is "color" this field specifies the color to use. Value: 6 hex characters representing the values of RGB.

- **Type:** string
- **Required:** False

**inputLossImageSlate**

When input loss image type is "slate" these fields specify the parameters for accessing the slate.

- **Type:** InputLocation (p. 323)
- **Required:** False

**blackFrameMsec**

On input loss, the number of milliseconds to substitute black into the output before switching to the frame specified by inputLossImageType. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
Properties

Maximum: 1000000

repeatFrameMsec

On input loss, the number of milliseconds to repeat the previous picture before substituting black into the output. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

Type: integer
Required: False
Minimum: 0
Maximum: 1000000

InputLossImageType (enum)

COLOR
SLATE

InputMaximumBitrate (enum)

Maximum input bitrate in megabits per second. Bitrates up to 50 Mbps are supported currently.

MAX_10_MBPS
MAX_20_MBPS
MAX_50_MBPS

InputResolution (enum)

Input resolution based on lines of vertical resolution in the input; SD is less than 720 lines, HD is 720 to 1080 lines, UHD is greater than 1080 lines

SD
HD
UHD

InputSettings

sourceEndBehavior

Loop input if it is a file. This allows a file input to be streamed indefinitely.

Type: string
Required: False

audioSelectors

Used to select the audio stream to decode for inputs that have multiple available.

Type: Array of type AudioSelector (p. 276)
Required: False

deblockFilter

Enable or disable the deblock filter when filtering.
**Type**: string  
**Required**: False

**networkInputSettings**

Input settings.

**Type**: NetworkInputSettings (p. 343)  
**Required**: False

**inputFilter**

Turns on the filter for this input. MPEG-2 inputs have the deblocking filter enabled by default. 1) auto - filtering will be applied depending on input type/quality 2) disabled - no filtering will be applied to the input 3) forced - filtering will be applied regardless of input type

**Type**: string  
**Required**: False

**videoSelector**

Informs which video elementary stream to decode for input types that have multiple available.

**Type**: VideoSelector (p. 357)  
**Required**: False

**filterStrength**

Adjusts the magnitude of filtering from 1 (minimal) to 5 (strongest).

**Type**: integer  
**Required**: False  
**Minimum**: 1  
**Maximum**: 5

**captionSelectors**

Used to select the caption input to use for inputs that have multiple available.

**Type**: Array of type CaptionSelector (p. 285)  
**Required**: False

**denoiseFilter**

Enable or disable the denoise filter when filtering.

**Type**: string  
**Required**: False

**InputSourceEndBehavior (enum)**

CONTINUE
Properties

**InputSpecification**

**codec**
Input codec

- **Type:** string
- **Required:** False

**resolution**
Input resolution, categorized coarsely

- **Type:** string
- **Required:** False

**maximumBitrate**
Maximum input bitrate, categorized coarsely

- **Type:** string
- **Required:** False

**InternalServiceError**

**message**

- **Type:** string
- **Required:** False

**InvalidRequest**

**message**

- **Type:** string
- **Required:** False

**KeyProviderSettings**

**staticKeySettings**

- **Type:** [StaticKeySettings](p. 353)
- **Required:** False

**LimitExceeded**

**message**

- **Type:** string
Properties

Required: False

M2tsAbsentInputAudioBehavior (enum)

DROP
ENCODE_SILENCE

M2tsArib (enum)

DISABLED
ENABLED

M2tsAribCaptionsPidControl (enum)

AUTO
USE_CONFIGURED

M2tsAudioBufferModel (enum)

ATSC
DVB

M2tsAudioInterval (enum)

VIDEO_AND_FIXED_INTERVALS
VIDEO_INTERVAL

M2tsAudioStreamType (enum)

ATSC
DVB

M2tsBufferModel (enum)

MULTIPLEX
NONE

M2tsCcDescriptor (enum)

DISABLED
ENABLED

M2tsEbfControl (enum)

NONE
PASSTHROUGH

M2tsEbpPlacement (enum)

VIDEO_AND_AUDIO_PIDS
VIDEO_PID
**M2tsEsRateInPes (enum)**
- EXCLUDE
- INCLUDE

**M2tsKlv (enum)**
- NONE
- PASSTHROUGH

**M2tsPcrControl (enum)**
- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

**M2tsRateMode (enum)**
- CBR
- VBR

**M2tsScte35Control (enum)**
- NONE
- PASSTHROUGH

**M2tsSegmentationMarkers (enum)**
- EBP
- EBP_LEGACY
- NONE
- PSI_SEGSTART
- RAI_ADAPT
- RAI_SEGSTART

**M2tsSegmentationStyle (enum)**
- MAINTAIN_CADENCE
- RESET_CADENCE

**M2tsSettings**

**audioStreamType**

When set to atsc, uses stream type = 0x81 for AC3 and stream type = 0x87 for EAC3. When set to dvb, uses stream type = 0x06.

*Type*: string
*Required*: False
**ecmPid**

Packet Identifier (PID) for ECM in the transport stream. Only enabled when Simulcrypt is enabled. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**dvbTeletextPid**

Packet Identifier (PID) for input source DVB Teletext data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**aribCaptionsPidControl**

If set to auto, pid number used for ARIB Captions will be auto-selected from unused pids. If set to useConfigured, ARIB Captions will be on the configured pid number.

*Type:* string  
*Required:* False

**bitrate**

The output bitrate of the transport stream in bits per second. Setting to 0 lets the muxer automatically determine the appropriate bitrate.

*Type:* integer  
*Required:* False  
*Minimum:* 0

**segmentationTime**

The length in seconds of each segment. Required unless markers is set to None_.

*Type:* number  
*Required:* False  
*Minimum:* 1.0

**rateMode**

When vbr, does not insert null packets into transport stream to fill specified bitrate. The bitrate setting acts as the maximum bitrate when vbr is set.

*Type:* string  
*Required:* False

**audioPids**

Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).
Properties

**Type:** string  
**Required:** False

**fragmentTime**

The length in seconds of each fragment. Only used with EBP markers.

**Type:** number  
**Required:** False  
**Minimum:** 0.0

**ebpAudioInterval**

When videoAndFixedIntervals is selected, audio EBP markers will be added to partitions 3 and 4. The interval between these additional markers will be fixed, and will be slightly shorter than the video EBP marker interval. Only available when EBP Cablelabs segmentation markers are selected. Partitions 1 and 2 will always follow the video interval.

**Type:** string  
**Required:** False

**ebpLookaheadMs**

When set, enforces that Encoder Boundary Points do not come within the specified time interval of each other by looking ahead at input video. If another EBP is going to come in within the specified time interval, the current EBP is not emitted, and the segment is "stretched" to the next marker. The lookahead value does not add latency to the system. The Live Event must be configured elsewhere to create sufficient latency to make the lookahead accurate.

**Type:** integer  
**Required:** False  
**Minimum:** 0  
**Maximum:** 10000

**audioFramesPerPes**

The number of audio frames to insert for each PES packet.

**Type:** integer  
**Required:** False  
**Minimum:** 0

**scte35Pid**

Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

**Type:** string  
**Required:** False

**pcrPeriod**

Maximum time in milliseconds between Program Clock Reference (PCRs) inserted into the transport stream.
**Type**: integer  
**Required**: False  
**Minimum**: 0  
**Maximum**: 500  

### pmtInterval

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

**Type**: integer  
**Required**: False  
**Minimum**: 0  
**Maximum**: 1000

### programNum

The value of the program number field in the Program Map Table.

**Type**: integer  
**Required**: False  
**Minimum**: 0  
**Maximum**: 65535

### segmentationStyle

The segmentation style parameter controls how segmentation markers are inserted into the transport stream. With avails, it is possible that segments may be truncated, which can influence where future segmentation markers are inserted. When a segmentation style of "resetCadence" is selected and a segment is truncated due to an avail, we will reset the segmentation cadence. This means the subsequent segment will have a duration of $segmentationTime seconds. When a segmentation style of "maintainCadence" is selected and a segment is truncated due to an avail, we will not reset the segmentation cadence. This means the subsequent segment will likely be truncated as well. However, all segments after that will have a duration of $segmentationTime seconds. Note that EBP lookahead is a slight exception to this rule.

**Type**: string  
**Required**: False

### ebif

If set to passthrough, passes any EBIF data from the input source to this output.

**Type**: string  
**Required**: False

### audioBufferModel

When set to dvb, uses DVB buffer model for Dolby Digital audio. When set to atsc, the ATSC model is used.

**Type**: string  
**Required**: False
**dvbNitSettings**

Inserts DVB Network Information Table (NIT) at the specified table repetition interval.

- **Type:** DvbNitSettings (p. 287)
- **Required:** False

**absentInputAudioBehavior**

When set to drop, output audio streams will be removed from the program if the selected input audio stream is removed from the input. This allows the output audio configuration to dynamically change based on input configuration. If this is set to encodeSilence, all output audio streams will output encoded silence when not connected to an active input stream.

- **Type:** string
- **Required:** False

**timedMetadataPid**

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**timedMetadataBehavior**

When set to passthrough, timed metadata will be passed through from input to output.

- **Type:** string
- **Required:** False

**etvSignalPid**

Packet Identifier (PID) for input source ETV Signal data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**pmtPid**

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**bufferModel**

If set to multiplex, use multiplex buffer model for accurate interleaving. Setting to bufferModel to none can lead to lower latency, but low-memory devices may not be able to play back the stream without interruptions.

- **Type:** string
**scte35Control**

Optionally pass SCTE-35 signals from the input source to this output.

- **Type:** string
- **Required:** False

**ebpPlacement**

Controls placement of EBP on Audio PIDs. If set to videoAndAudioPids, EBP markers will be placed on the video PID and all audio PIDs. If set to videoPid, EBP markers will be placed on only the video PID.

- **Type:** string
- **Required:** False

**arib**

When set to enabled, uses ARIB-compliant field muxing and removes video descriptor.

- **Type:** string
- **Required:** False

**nullPacketBitrate**

Value in bits per second of extra null packets to insert into the transport stream. This can be used if a downstream encryption system requires periodic null packets.

- **Type:** number
- **Required:** False
- **Minimum:** 0.0

**dvbSdtSettings**

Inserts DVB Service Description Table (SDT) at the specified table repetition interval.

- **Type:** DvbSdtSettings (p. 288)
- **Required:** False

**pcrPid**

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

- **Type:** string
- **Required:** False

**transportStreamId**

The value of the transport stream ID field in the Program Map Table.

- **Type:** integer
Properties

**Required**: False

**Minimum**: 0

**Maximum**: 65535

**pcrControl**

When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

- **Type**: string
- **Required**: False

**videoPid**

Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

**esRateInPes**

Include or exclude the ES Rate field in the PES header.

- **Type**: string
- **Required**: False

**segmentationMarkers**

Inserts segmentation markers at each segmentationTime period. raiSegstart sets the Random Access Indicator bit in the adaptation field. raiAdapt sets the RAI bit and adds the current timecode in the private data bytes. psiSegstart inserts PAT and PMT tables at the start of segments. ebp adds Encoder Boundary Point information to the adaptation field as per OpenCable specification OC-SP-EBP-I01-130118. ebpLegacy adds Encoder Boundary Point information to the adaptation field using a legacy proprietary format.

- **Type**: string
- **Required**: False

**dvbTdtSettings**

Inserts DVB Time and Date Table (TDT) at the specified table repetition interval.

- **Type**: `DvbTdtSettings (p. 293)`
- **Required**: False

**klv**

If set to passthrough, passes any KLV data from the input source to this output.

- **Type**: string
- **Required**: False
Properties

ccDescriptor
When set to enabled, generates captionServiceDescriptor in PMT.

- **Type**: string
- **Required**: False

patInterval
The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 1000

etvPlatformPid
Packet Identifier (PID) for input source ETV Platform data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

dvbSubPids
Packet Identifier (PID) for input source DVB Subtitle data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20).8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

aribCaptionsPid
Packet Identifier (PID) for ARIB Captions in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

scte27Pids
Packet Identifier (PID) for input source SCTE-27 data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20).8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

klvDataPids
Packet Identifier (PID) for input source KLV data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20).8182 (or 0x1ff6).
**Properties**

**Type**: string  
**Required**: False

**M2tsTimedMetadataBehavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8PcrControl (enum)**

- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

**M3u8Scte35Behavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**M3u8Settings**

**pmtPid**

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value.

- **Type**: string  
- **Required**: False

**ecmPid**

ThePlatform-protected transport streams using 'microsoft' as Target Client include an ECM stream. This ECM stream contains the size, IV, and PTS of every sample in the transport stream. This stream PID is specified here. This PID has no effect on non ThePlatform-protected streams.

- **Type**: string  
- **Required**: False

**scte35Behavior**

If set to passthrough, passes any SCTE-35 signals from the input source to this output.

- **Type**: string  
- **Required**: False

**pcrPid**

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value.

- **Type**: string  
- **Required**: False
audioPids
Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values.

Type: string
Required: False

audioFramesPerPes
The number of audio frames to insert for each PES packet.

Type: integer
Required: False
Minimum: 0

scte35Pid
Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value.

Type: string
Required: False

transportStreamId
The value of the transport stream ID field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

videoPid
Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value.

Type: string
Required: False

pcrControl
When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

Type: string
Required: False

pmtInterval
The number of milliseconds between instances of this table in the output transport stream. A value of "0" writes out the PMT once per segment file.
Properties

Type: integer
Required: False
Minimum: 0
Maximum: 1000

`pcrPeriod`

Maximum time in milliseconds between Program Clock References (PCRs) inserted into the transport stream.

Type: integer
Required: False
Minimum: 0
Maximum: 500

`programNum`

The value of the program number field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

`patInterval`

The number of milliseconds between instances of this table in the output transport stream. A value of \"0\" writes out the PMT once per segment file.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

`timedMetadataPid`

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

`timedMetadataBehavior`

When set to passthrough, timed metadata is passed through from input to output.

Type: string
Required: False

`M3u8TimedMetadataBehavior` (enum)

NO_PASSTHROUGH
PASSTHROUGH
Properties

Mp2CodingMode (enum)

CODING_MODE_1_0
CODING_MODE_2_0

Mp2Settings

codingMode

The MPEG2 Audio coding mode. Valid values are codingMode10 (for mono) or codingMode20 (for stereo).

Type: string
Required: False

bitrate

Average bitrate in bits/second.

Type: number
Required: False

sampleRate

Sample rate in Hz.

Type: number
Required: False

MsSmoothGroupSettings

eventId

MS Smooth event ID to be sent to the IIS server. Should only be specified if eventIdMode is set to useConfigured.

Type: string
Required: False

fragmentLength

Length of mp4 fragments to generate (in seconds). Fragment length must be compatible with GOP size and framerate.

Type: integer
Required: False
Minimum: 1

timestampOffset

Timestamp offset for the event. Only used if timestampOffsetMode is set to useConfiguredOffset.

Type: string
Required: False

**segmentationMode**
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.

*Type: string*
*Required: False*

**numRetries**
Number of retry attempts.

*Type: integer*
*Required: False*
*Minimum: 0*

**eventStopBehavior**
When set to sendEos, send EOS signal to IIS server when stopping the event

*Type: string*
*Required: False*

**acquisitionPointId**
The value of the "Acquisition Point Identity" element used in each message placed in the sparse track. Only enabled if sparseTrackType is not "none".

*Type: string*
*Required: False*

**sparseTrackType**
If set to scte35, use incoming SCTE-35 messages to generate a sparse track in this group of MS-Smooth outputs.

*Type: string*
*Required: False*

**timestampOffsetMode**
Type of timestamp date offset to use. - useEventStartDate: Use the date the event was started as the offset - useConfiguredOffset: Use an explicitly configured date as the offset

*Type: string*
*Required: False*

**destination**
Smooth Streaming publish point on an IIS server. Elemental Live acts as a "Push" encoder to IIS.

*Type: OutputLocationRef (p. 346)*
**Required**: True

**audioOnlyTimecodeControl**

If set to passthrough for an audio-only MS Smooth output, the fragment absolute time will be set to the current timecode. This option does not write timecodes to the audio elementary stream.

*Type*: string

*Required*: False

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the IIS server if the connection is lost. Content will be cached during this time and the cache will be delivered to the IIS server once the connection is re-established.

*Type*: integer

*Required*: False

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

*Type*: integer

*Required*: False

*Minimum*: 0

**certificateMode**

If set to verifyAuthenticity, verify the https certificate chain to a trusted Certificate Authority (CA). This will cause https outputs to self-signed certificates to fail unless those certificates are manually added to the OS trusted keystore.

*Type*: string

*Required*: False

**inputLossAction**

Parameter that control output group behavior on input loss.

*Type*: string

*Required*: False

**sendDelayMs**

Outputs that are "output locked" can use this delay. Assign a delay to the output that is "secondary". Do not assign a delay to the "primary" output. The delay means that the primary output will always reach the downstream system before the secondary, which helps ensure that the downstream system always uses the primary output. (If there were no delay, the downstream system might flip-flop between whichever output happens to arrive first.) If the primary fails, the downstream system will switch to the secondary output. When the primary is restarted, the downstream system will switch back to the primary (because once again it is always arriving first).

*Type*: integer
Properties

**eventIdMode**

Specifies whether or not to send an event ID to the IIS server. If no event ID is sent and the same Live Event is used without changing the publishing point, clients might see cached video from the previous run. Options: 
- "useConfigured" - use the value provided in eventId
- "useTimestamp" - generate and send an event ID based on the current timestamp
- "noEventId" - do not send an event ID to the IIS server.

- **Type**: string
- **Required**: False

**restartDelay**

Number of seconds before initiating a restart due to output failure, due to exhausting the numRetries on one segment, or exceeding filecacheDuration.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**streamManifestBehavior**

When set to send, send stream manifest so publishing point doesn’t start until all streams start.

- **Type**: string
- **Required**: False

**MsSmoothOutputSettings**

**nameModifier**

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

- **Type**: string
- **Required**: False

**NetworkInputServerValidation (enum)**

- CHECK_CRYPTOGRAPHY_AND_VALIDATE_NAME
- CHECK_CRYPTOGRAPHY_ONLY

**NetworkInputSettings**

**hlsInputSettings**

Specifies HLS input settings when the uri is for a HLS manifest.

- **Type**: HlsInputSettings (p. 318)
- **Required**: False
serverValidation

Check HTTPS server certificates. When set to checkCryptographyOnly, cryptography in the certificate will be checked, but not the server's name. Certain subdomains (notably S3 buckets that use dots in the bucket name) do not strictly match the corresponding certificate's wildcard pattern and would otherwise cause the event to error. This setting is ignored for protocols that do not use https.

**Type**: string  
**Required**: False

### Output

**videoDescriptionName**

The name of the VideoDescription used as the source for this output.

**Type**: string  
**Required**: False

**captionDescriptionNames**

The names of the CaptionDescriptions used as caption sources for this output.

**Type**: Array of type string  
**Required**: False

**outputName**

The name used to identify an output.

**Type**: string  
**Required**: False

**outputSettings**

Output type-specific settings.

**Type**: OutputSettings (p. 346)  
**Required**: True

**audioDescriptionNames**

The names of the AudioDescriptions used as audio sources for this output.

**Type**: Array of type string  
**Required**: False

### OutputDestination

**settings**

Destination settings for output; one for each redundant encoder.

**Type**: Array of type OutputDestinationSettings (p. 345)
Properties

Required: False

**id**

User-specified id. This is used in an output group or an output.

Type: string
Required: False

**OutputDestinationSettings**

**passwordParam**

key used to extract the password from EC2 Parameter store

Type: string
Required: False

**streamName**

Stream name for RTMP destinations (URLs of type rtmp://)

Type: string
Required: False

**url**

A URL specifying a destination

Type: string
Required: False

**username**

username for destination

Type: string
Required: False

**OutputGroup**

**outputs**

Type: Array of type Output (p. 344)
Required: True

**outputGroupSettings**

Settings associated with the output group.

Type: OutputGroupSettings (p. 346)
Required: True
name
Custom output group name optionally defined by the user. Only letters, numbers, and the underscore character allowed; only 32 characters allowed.

  Type: string
  Required: False

OutputGroupSettings

archiveGroupSettings

  Type: ArchiveGroupSettings (p. 270)
  Required: False

rtmpGroupSettings

  Type: RtmpGroupSettings (p. 348)
  Required: False

udpGroupSettings

  Type: UdpGroupSettings (p. 354)
  Required: False

msSmoothGroupSettings

  Type: MsSmoothGroupSettings (p. 340)
  Required: False

hlsGroupSettings

  Type: HlsGroupSettings (p. 312)
  Required: False

OutputLocationRef
destinationRefId

  Type: string
  Required: False

OutputSettings

rtmpOutputSettings

  Type: RtmpOutputSettings (p. 349)
  Required: False

archiveOutputSettings

  Type: ArchiveOutputSettings (p. 270)
Required: False

**msSmoothOutputSettings**
Type: MsSmoothOutputSettings (p. 343)
Required: False

**udpOutputSettings**
Type: UdpOutputSettings (p. 355)
Required: False

**hlsOutputSettings**
Type: HlsOutputSettings (p. 320)
Required: False

**PassThroughSettings**

**RemixSettings**

**channelMappings**
Mapping of input channels to output channels, with appropriate gain adjustments.
Type: Array of type AudioChannelMapping (p. 271)
Required: True

**channelsOut**
Number of output channels to be produced. Valid values: 1, 2, 4, 6, 8
Type: integer
Required: False
Minimum: 1
Maximum: 8

**channelsIn**
Number of input channels to be used.
Type: integer
Required: False
Minimum: 1
Maximum: 16

**ResourceConflict**

**message**
Type: string
Required: False
ResourceNotFound

message

Type: string
Required: False

RtmpCacheFullBehavior (enum)

DISCONNECT_IMMEDIATELY
WAIT_FOR_SERVER

RtmpCaptionData (enum)

ALL
FIELD1_608
FIELD1_AND_FIELD2_608

RtmpCaptionInfoDestinationSettings

RtmpGroupSettings

captionData

Controls the types of data that passes to onCaptionInfo outputs. If set to 'all' then 608 and 708 carried DTVCC data will be passed. If set to 'field1AndField2608' then DTVCC data will be stripped out, but 608 data from both fields will be passed. If set to 'field1608' then only the data carried in 608 from field 1 video will be passed.

Type: string
Required: False

authenticationScheme

Authentication scheme to use when connecting with CDN

Type: string
Required: False

cacheLength

Cache length, in seconds, is used to calculate buffer size.

Type: integer
Required: False
Minimum: 30

restartDelay

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

Type: integer
### cacheFullBehavior

Controls behavior when content cache fills up. If remote origin server stalls the RTMP connection and does not accept content fast enough the 'Media Cache' will fill up. When the cache reaches the duration specified by cacheLength the cache will stop accepting new content. If set to disconnectImmediately, the RTMP output will force a disconnect. Clear the media cache, and reconnect after restartDelay seconds. If set to waitForServer, the RTMP output will wait up to 5 minutes to allow the origin server to begin accepting data again.

- **Type**: string
- **Required**: False

### RtmpOutputCertificateMode (enum)

- **SELF_SIGNED**
- **VERIFY_AUTHENTICITY**

### RtmpOutputSettings

#### certificateMode

If set to verifyAuthenticity, verify the tls certificate chain to a trusted Certificate Authority (CA). This will cause rtmps outputs with self-signed certificates to fail.

- **Type**: string
- **Required**: False

#### numRetries

Number of retry attempts.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

#### destination

The RTMP endpoint excluding the stream name (eg. rtmp://host/appname). For connection to Akamai, a username and password must be supplied. URI fields accept format identifiers.

- **Type**: OutputLocationRef (p. 346)
- **Required**: True

#### connectionRetryInterval

Number of seconds to wait before retrying a connection to the Flash Media server if the connection is lost.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
**Scte20Convert608To708 (enum)**
- DISABLED
- UPCONVERT

**Scte20PlusEmbeddedDestinationSettings**

**Scte20SourceSettings**

**source608ChannelNumber**
Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 4

**convert608To708**
If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.

- **Type**: string
- **Required**: False

**Scte27DestinationSettings**

**Scte27SourceSettings**

**pid**
The pid field is used in conjunction with the caption selector languageCode field as follows: - Specify PID and Language: Extracts captions from that PID; the language is "informational". - Specify PID and omit Language: Extracts the specified PID. - Omit PID and specify Language: Extracts the specified language, whichever PID that happens to be. - Omit PID and omit Language: Valid only if source is DVB-Sub that is being passed through; all languages will be passed through.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**Scte35AposNoRegionalBlackoutBehavior (enum)**
- FOLLOW
- IGNORE

**Scte35AposWebDeliveryAllowedBehavior (enum)**
- FOLLOW
- IGNORE
**Scte35SpliceInsert**

**adAvailOffset**

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

- **Type**: integer
- **Required**: False
- **Minimum**: -1000
- **Maximum**: 1000

**webDeliveryAllowedFlag**

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates

- **Type**: string
- **Required**: False

**noRegionalBlackoutFlag**

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates

- **Type**: string
- **Required**: False

**Scte35SpliceInsertNoRegionalBlackoutBehavior (enum)**

- FOLLOW
- IGNORE

**Scte35SpliceInsertWebDeliveryAllowedBehavior (enum)**

- FOLLOW
- IGNORE

**Scte35TimeSignalApos**

**adAvailOffset**

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

- **Type**: integer
- **Required**: False
- **Minimum**: -1000
- **Maximum**: 1000

**webDeliveryAllowedFlag**

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates

- **Type**: string
- **Required**: False
noRegionalBlackoutFlag

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates

SmoothGroupAudioOnlyTimecodeControl (enum)

PASSTHROUGH
USE_CONFIGURED_CLOCK

SmoothGroupCertificateMode (enum)

SELF_SIGNED
VERIFY_AUTHENTICITY

SmoothGroupEventIdMode (enum)

NO_EVENT_ID
USE_CONFIGURED
USE_TIMESTAMP

SmoothGroupEventStopBehavior (enum)

NONE
SEND_EOS

SmoothGroupSegmentationMode (enum)

USE_INPUT_SEGMENTATION
USE_SEGMENT_DURATION

SmoothGroupSparseTrackType (enum)

NONE
SCTE_35

SmoothGroupStreamManifestBehavior (enum)

DO_NOT_SEND
SEND

SmoothGroupTimestampOffsetMode (enum)

USE_CONFIGURED_OFFSET
USE_EVENT_START_DATE
**SmpteTtDestinationSettings**

**StandardHlsSettings**

**m3u8Settings**

Type: M3u8Settings (p. 337)  
Required: True

**audioRenditionSets**

List all the audio groups that are used with the video output stream. Input all the audio GROUP-IDs that are associated to the video, separate by ','.  
Type: string  
Required: False

**StaticKeySettings**

**staticKeyValue**

Static key value as a 32 character hexadecimal string.  
Type: string  
Required: True

**keyProviderServer**

The URL of the license server used for protecting content.  
Type: InputLocation (p. 323)  
Required: False

**TeletextDestinationSettings**

**TeletextSourceSettings**

**pageNumber**

Specifies the teletext page number within the data stream from which to extract captions. Range of 0x100 (256) to 0x8FF (2303). Unused for passthrough. Should be specified as a hexadecimal string with no "0x" prefix.  
Type: string  
Required: False

**TimecodeConfig**

**syncThreshold**

Threshold in frames beyond which output timecode is resynchronized to the input timecode. Discrepancies below this threshold are permitted to avoid unnecessary discontinuities in the output timecode. No timecode sync when this is not specified.
Type: integer  
Required: False  
Minimum: 1  
Maximum: 1000000

**source**

Identifies the source for the timecode that will be associated with the events outputs.  
- Embedded (embedded): Initialize the output timecode with timecode from the the source. If no embedded timecode is detected in the source, the system falls back to using "Start at 0" (zerobased).  
- System Clock (systemclock): Use the UTC time.  
- Start at 0 (zerobased): The time of the first frame of the event will be 00:00:00:00.

Type: string  
Required: True

**TtmlDestinationSettings**

**styleControl**

When set to passthrough, passes through style and position information from a TTML-like input source (TTML, SMPTE-TT, CFF-TT) to the CFF-TT output or TTML output.

Type: string  
Required: False

**UdpContainerSettings**

**m2tsSettings**

Type: M2tsSettings (p. 329)  
Required: False

**UdpGroupSettings**

**inputLossAction**

Specifies behavior of last resort when input video is lost, and no more backup inputs are available. When dropTs is selected the entire transport stream will stop being emitted. When dropProgram is selected the program can be dropped from the transport stream (and replaced with null packets to meet the TS
bitrate requirement). Or, when emitProgram is chosen the transport stream will continue to be produced normally with repeat frames, black frames, or slate frames substituted for the absent input video.

    Type: string
    Required: False

**timedMetadataId3Frame**

Indicates ID3 frame that has the timecode.

    Type: string
    Required: False

**timedMetadataId3Period**

Timed Metadata interval in seconds.

    Type: integer
    Required: False
    Minimum: 0

**UdpOutputSettings**

**bufferMsec**

UDP output buffering in milliseconds. Larger values increase latency through the transcoder but simultaneously assist the transcoder in maintaining a constant, low-jitter UDP/RTP output while accommodating clock recovery, input switching, input disruptions, picture reordering, etc.

    Type: integer
    Required: False
    Minimum: 0
    Maximum: 10000

**destination**

Destination address and port number for RTP or UDP packets. Can be unicast or multicast RTP or UDP (eg. rtp://239.10.10.10:5001 or udp://10.100.100.100:5002).

    Type: OutputLocationRef (p. 346)
    Required: True

**containerSettings**

    Type: UdpContainerSettings (p. 354)
    Required: True

**fecOutputSettings**

Settings for enabling and adjusting Forward Error Correction on UDP outputs.

    Type: FecOutputSettings (p. 300)
    Required: False
**UdpTimedMetadataId3Frame (enum)**

- NONE
- PRIV
- TDRL

**VideoCodecSettings**

**h264Settings**

Type: H264Settings (p. 304)

Required: False

**VideoDescription**

**respondToAfd**

Indicates how to respond to the AFD values in the input stream. Setting to "respond" causes input video to be clipped, depending on AFD value, input display aspect ratio and output display aspect ratio.

Type: string

Required: False

**scalingBehavior**

When set to "stretchToOutput", automatically configures the output position to stretch the video to the specified output resolution. This option will override any position value.

Type: string

Required: False

**name**

The name of this VideoDescription. Outputs will use this name to uniquely identify this Description. Description names should be unique within this Live Event.

Type: string

Required: True

**width**

Output video width (in pixels). Leave out to use source video width. If left out, height must also be left out. Display aspect ratio is always preserved by letterboxing or pillarboxing when necessary.

Type: integer

Required: False

**sharpness**

Changes the width of the anti-alias filter kernel used for scaling. Only applies if scaling is being performed and antiAlias is set to true. 0 is the softest setting, 100 the sharpest, and 50 recommended for most content.
Properties

Type: integer
Required: False
Minimum: 0
Maximum: 100

codecSettings
Video codec settings.

Type: VideoCodecSettings (p. 356)
Required: False

height
Output video height (in pixels). Leave blank to use source video height. If left blank, width must also be unspecified.

Type: integer
Required: False

VideoDescriptionRespondToAfd (enum)

NONE
PASSTHROUGH
RESPOND

VideoDescriptionScalingBehavior (enum)

DEFAULT
STRETCH_TO_OUTPUT

VideoSelector
colorSpace
Specifies the colorspace of an input. This setting works in tandem with colorSpaceConversion to determine if any conversion will be performed.

Type: string
Required: False

selectorSettings
The video selector settings.

Type: VideoSelectorSettings (p. 358)
Required: False

colorSpaceUsage
Applies only if colorSpace is a value other than follow. This field controls how the value in the colorSpace field will be used. fallback means that when the input does include color space data, that data will be
used, but when the input has no color space data, the value in colorSpace will be used. Choose fallback if your input is sometimes missing color space data, but when it does have color space data, that data is correct. force means to always use the value in colorSpace. Choose force if your input usually has no color space data or might have unreliable color space data.

Type: string
Required: False

**VideoSelectorColorSpace (enum)**

FOLLOW
REC_601
REC_709

**VideoSelectorColorSpaceUsage (enum)**

FALLBACK
FORCE

**VideoSelectorPid**

pid

Selects a specific PID from within a video source.

Type: integer
Required: False
Minimum: 0
Maximum: 8191

**VideoSelectorProgramId**

programId

Selects a specific program from within a multi-program transport stream. If the program doesn't exist, the first program within the transport stream will be selected by default.

Type: integer
Required: False
Minimum: 0
Maximum: 65536

**VideoSelectorSettings**

videoSelectorPid

Type: VideoSelectorPid (p. 358)
Required: False

videoSelectorProgramId

Type: VideoSelectorProgramId (p. 358)
## Channels channelId Stop

### URIs

```
/Prod/channels/ channelId /stop
```

### HTTP Methods

**POST**

Operation ID: StopChannel

Stops a running channel

### Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channelId</td>
<td>String</td>
<td>True</td>
<td>channel ID</td>
</tr>
</tbody>
</table>

### Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Channel (p. 360)</td>
<td>Successfully initiated stop of the channel.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 370)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 371)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 371)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 371)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 371)</td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 371)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 371)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 371)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>
Schemas

Response Bodies

Example Channel

```json
{
  "inputAttachments (p. 391)": [
    {
      "inputId (p. 427)": "string",
      "inputSettings (p. 427)": {
        "sourceEndBehavior (p. 430)": enum,
        "audioSelectors (p. 430)": [
          {
            "name (p. 381)": "string",
            "selectorSettings (p. 381)": {
              "audioLanguageSelection (p. 381)": {
                "languageSelectionPolicy (p. 379)": enum,
                "languageCode (p. 379)": "string"
              },
              "audioPidSelection (p. 382)": {
                "pid (p. 381)": integer
              }
            }
          }
        ],
        "deblockFilter (p. 431)": enum,
        "networkInputSettings (p. 431)": {
          "hlsInputSettings (p. 448)": {
            "retries (p. 423)": integer,
            "bandwidth (p. 423)": integer,
            "retryInterval (p. 423)": integer,
            "bufferSegments (p. 423)": integer
          },
          "serverValidation (p. 449)": enum
        },
        "inputFilter (p. 431)": enum,
        "videoSelector (p. 431)": {
          "colorSpace (p. 463)": enum,
          "selectorSettings (p. 463)": {
            "videoSelectorPid (p. 464)": {
              "pid (p. 463)": integer
            },
            "videoSelectorProgramId (p. 464)": {
              "programId (p. 464)": integer
            }
          },
          "colorSpaceUsage (p. 463)": enum
        },
        "filterStrength (p. 431)": integer,
        "captionSelectors (p. 431)": [
          {
            "name (p. 390)": "string",
            "languageCode (p. 390)": "string",
            "selectorSettings (p. 390)": {
              "embeddedSourceSettings (p. 390)": {
                "scte20Detection (p. 403)": enum,
                "source608ChannelNumber (p. 403)": integer,
                "convert608To708 (p. 403)": enum,
                "source608TrackNumber (p. 404)": integer
              },
              "scte20SourceSettings (p. 390)": {
                "source608ChannelNumber (p. 455)": integer,
                "source608ProgramNumber (p. 455)": integer
              }
            }
          }
        ]
    }
  ]
}
```
"convert608To708 (p. 455)": enum
,"dvbSubSourceSettings (p. 391)": {
"pid (p. 398)": integer
},
"aribSourceSettings (p. 391)": {
},
"teletextSourceSettings (p. 391)": {
"pageNumber (p. 459)": "string"
},
"scte27SourceSettings (p. 391)": {
"pid (p. 455)": integer
}
],
"denoiseFilter (p. 431)": enum
},
"roleArn (p. 391)": "string",
"destinations (p. 391)": [
{"settings (p. 450)": [
{"passwordParam (p. 450)": "string",
"streamName (p. 450)": "string",
"url (p. 450)": "string",
"username (p. 450)": "string"}
],
"id (p. 450)": "string"
},
"name (p. 391)": "string",
"encoderSettings (p. 392)": {
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    "cacheFullBehavior (p. 454)": enum
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  "yPosition (p. 384)": integer,
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  "fontOpacity (p. 385)": integer,
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  "shadowYOffset (p. 385)": integer,
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  "shadowXOffset (p. 386)": integer,
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  "shadowColor (p. 386)": enum,
  "fontColor (p. 387)": enum,
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    "username (p. 429)": "string"
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  "styleControl (p. 459)": enum
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  "shadowYOffset (p. 396)": integer,
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            "webDeliveryAllowedFlag (p. 457)": enum,
            "noRegionalBlackoutFlag (p. 457)": enum
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        "scte35SpliceInsert (p. 383)": {
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            "noRegionalBlackoutFlag (p. 456)": enum
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                "username (p. 429)": "string"
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            "repeatFrameMsec (p. 430)": integer
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                    "gopClosedCadence (p. 412)": integer,
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                    "spatialAq (p. 412)": enum,
                    "adaptiveQuantization (p. 412)": enum,
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"flickerAq (p. 414)": enum,
"rateControlMode (p. 414)": enum
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    "username (p. 429)": "string"
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  "state (p. 383)": enum,
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    "username (p. 429)": "string"
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  }
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  "resolution (p. 432)": enum,
  "maximumBitrate (p. 432)": enum
}
}

Example InvalidRequest

{
  "message (p. 432)": "string"
}
Properties

AacCodingMode (enum)

AD_RECEIVER_MIX
CODING_MODE_1_0
CODING_MODE_1_1
CODING_MODE_2_0
CODING_MODE_5_1
AacInputType (enum)
BROADCASTER_MIXED_AD
NORMAL

AacProfile (enum)
HEV1
HEV2
LC

AacRateControlMode (enum)
CBR
VBR

AacRawFormat (enum)
LATM_LOAS
NONE

AacSettings

vbrQuality
VBR Quality Level - Only used if rateControlMode is VBR.
Type: string
Required: False

codingMode
Mono, Stereo, or 5.1 channel layout. Valid values depend on rate control mode and profile. The adReceiverMix setting receives a stereo description plus control track and emits a mono AAC encode of the description track, with control data emitted in the PES header as per ETSI TS 101 154 Annex E.
Type: string
Required: False

profile
AAC Profile.
Type: string
Required: False

bitrate
Average bitrate in bits/second. Valid values depend on rate control mode and profile.
Type: number
Required: False
inputType
Set to "broadcasterMixedAd" when input contains pre-mixed main audio + AD (narration) as a stereo pair. The Audio Type field (audioType) will be set to 3, which signals to downstream systems that this stream contains "broadcaster mixed AD". Note that the input received by the encoder must contain pre-mixed audio; the encoder does not perform the mixing. The values in audioTypeControl and audioType (in AudioDescription) are ignored when set to broadcasterMixedAd. Leave set to "normal" when input does not contain pre-mixed audio + AD.

  Type: string
  Required: False

rawFormat
Sets LATM / LOAS AAC output for raw containers.

  Type: string
  Required: False

sampleRate
Sample rate in Hz. Valid values depend on rate control mode and profile.

  Type: number
  Required: False

rateControlMode
Rate Control Mode.

  Type: string
  Required: False

spec
Use MPEG-2 AAC audio instead of MPEG-4 AAC audio for raw or MPEG-2 Transport Stream containers.

  Type: string
  Required: False

AacSpec (enum)

  MPEG2
  MPEG4

AacVbrQuality (enum)

  HIGH
  LOW
  MEDIUM_HIGH
  MEDIUM_LOW

Ac3BitstreamMode (enum)

  COMMENTARY
COMPLETE_MAIN
DIALOGUE
EMERGENCY
HEARING_IMPAIRED
MUSIC_AND_EFFECTS
VISUALLY_IMPAIRED
VOICE_OVER

**Ac3CodingMode (enum)**

- CODING_MODE_1_0
- CODING_MODE_1_1
- CODING_MODE_2_0
- CODING_MODE_3_2_LFE

**Ac3DrcProfile (enum)**

- FILM_STANDARD
- NONE

**Ac3LfeFilter (enum)**

- DISABLED
- ENABLED

**Ac3MetadataControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED

**Ac3Settings**

**drcProfile**

If set to filmStandard, adds dynamic range compression signaling to the output bitstream as defined in the Dolby Digital specification.

Type: string
Required: False

**dialnorm**

Sets the dialnorm for the output. If excluded and input audio is Dolby Digital, dialnorm will be passed through.

Type: integer
Required: False
Minimum: 1
Maximum: 31

**codingMode**

Dolby Digital coding mode. Determines number of channels.
Properties

Type: string
Required: False

metadataControl
When set to “followInput”, encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

Type: string
Required: False

bitrate
Average bitrate in bits/second. Valid bitrates depend on the coding mode.

Type: number
Required: False

lfeFilter
When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid in codingMode32Lfe mode.

Type: string
Required: False

bitstreamMode
Specifies the bitstream mode (bsmod) for the emitted AC-3 stream. See ATSC A/52-2012 for background on these values.

Type: string
Required: False

AccessDenied

message

Type: string
Required: False

AfdSignaling (enum)

AUTO
FIXED
NONE

ArchiveContainerSettings

m2tsSettings

Type: M2tsSettings (p. 434)
**Required**: False

**ArchiveGroupSettings**

**destination**

A directory and base filename where archive files should be written. If the base filename portion of the URI is left blank, the base filename of the first input will be automatically inserted.

- **Type**: OutputLocationRef (p. 451)
- **Required**: True

**rolloverInterval**

Number of seconds to write to archive file before closing and starting a new one.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**ArchiveOutputSettings**

**extension**

Output file extension. If excluded, this will be auto-selected from the container type.

- **Type**: string
- **Required**: False

**containerSettings**

Settings specific to the container type of the file.

- **Type**: ArchiveContainerSettings (p. 375)
- **Required**: True

**nameModifier**

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

- **Type**: string
- **Required**: False

**AribDestinationSettings**

**AribSourceSettings**

**AudioChannelMapping**

**outputChannel**

The index of the output channel being produced.
Type: integer  
Required: True  
Minimum: 0  
Maximum: 7

**inputChannelLevels**

Indices and gain values for each input channel that should be remixed into this output channel.

Type: Array of type InputChannelLevel (p. 427)  
Required: True

**AudioCodecSettings**

**aacSettings**

Type: AacSettings (p. 372)  
Required: False

**ac3Settings**

Type: Ac3Settings (p. 374)  
Required: False

**eac3Settings**

Type: Eac3Settings (p. 400)  
Required: False

**passThroughSettings**

Type: PassThroughSettings (p. 452)  
Required: False

**mp2Settings**

Type: Mp2Settings (p. 445)  
Required: False

**AudioDescription**

**languageCodeControl**

Choosing followInput will cause the ISO 639 language code of the output to follow the ISO 639 language code of the input. The languageCode will be used when useConfigured is set, or when followInput is selected but there is no ISO 639 language code specified by the input.

Type: string  
Required: False
audioTypeControl

Determines how audio type is determined. followInput: If the input contains an ISO 639 audioType, then that value is passed through to the output. If the input contains no ISO 639 audioType, the value in Audio Type is included in the output. useConfigured: The value in Audio Type is included in the output. Note that this field and audioType are both ignored if inputType is broadcasterMixedAd.

    Type: string
    Required: False

remixSettings

Settings that control how input audio channels are remixed into the output audio channels.

    Type: RemixSettings (p. 452)
    Required: False

audioType

Applies only if audioTypeControl is useConfigured. The values for audioType are defined in ISO-IEC 13818-1.

    Type: string
    Required: False

name

The name of this AudioDescription. Outputs will use this name to uniquely identify this AudioDescription. Description names should be unique within this Live Event.

    Type: string
    Required: True

inglanguageCode

Indicates the language of the audio output track. Only used if languageControlMode is useConfigured, or there is no ISO 639 language code specified in the input.

    Type: string
    Required: False

codecSettings

Audio codec settings.

    Type: AudioCodecSettings (p. 377)
    Required: False

streamName

Used for MS Smooth and Apple HLS outputs. Indicates the name displayed by the player (eg. English, or Director Commentary).

    Type: string
    Required: False
**audioNormalizationSettings**

Advanced audio normalization settings.

*Type: AudioNormalizationSettings (p. 380)*

*Required: False*

**audioSelectorName**

The name of the AudioSelector used as the source for this AudioDescription.

*Type: string*

*Required: True*

**AudioDescriptionAudioTypeControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED

**AudioDescriptionLanguageCodeControl (enum)**

- FOLLOW_INPUT
- USE_CONFIGURED

**AudioLanguageSelection**

**languageSelectionPolicy**

When set to "strict", the transport stream demux strictly identifies audio streams by their language descriptor. If a PMT update occurs such that an audio stream matching the initially selected language is no longer present then mute will be encoded until the language returns. If "loose", then on a PMT update the demux will choose another audio stream in the program with the same stream type if it can't find one with the same language.

*Type: string*

*Required: False*

**languageCode**

Selects a specific three-letter language code from within an audio source.

*Type: string*

*Required: True*

**AudioLanguageSelectionPolicy (enum)**

- LOOSE
- STRICT

**AudioNormalizationAlgorithm (enum)**

- ITU_1770_1
- ITU_1770_2
AudioNormalizationAlgorithmControl (enum)

- CORRECT_AUDIO

AudioNormalizationSettings

targetLkfs

Target LKFS (loudness) to adjust volume to. If no value is entered, a default value will be used according to the chosen algorithm. The CALM Act (1770-1) recommends a target of -24 LKFS. The EBU R-128 specification (1770-2) recommends a target of -23 LKFS.

- Type: number
- Required: False
- Minimum: -59.0
- Maximum: 0.0

algorithmControl

When set to correctAudio the output audio is corrected using the chosen algorithm. If set to measureOnly, the audio will be measured but not adjusted.

- Type: string
- Required: False

algorithm

Audio normalization algorithm to use. itu17701 conforms to the CALM Act specification, itu17702 conforms to the EBU R-128 specification.

- Type: string
- Required: False

AudioOnlyHlsSettings

audioTrackType

Four types of audio-only tracks are supported: Audio-Only Variant Stream The client can play back this audio-only stream instead of video in low-bandwidth scenarios. Represented as an EXT-X-STREAM-INF in the HLS manifest. Alternate Audio, Auto Select, Default Alternate rendition that the client should try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=YES, AUTOSELECT=YES Alternate Audio, Auto Select, Not Default Alternate rendition that the client may try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=YES Alternate Audio, not Auto Select Alternate rendition that the client will not try to play back by default. Represented as an EXT-X-MEDIA in the HLS manifest with DEFAULT=NO, AUTOSELECT=NO

- Type: string
- Required: False

audioGroupId

Specifies the group to which the audio Rendition belongs.

- Type: string
**Required**: False

**audioOnlyImage**

For use with an audio only Stream. Must be a .jpg or .png file. If given, this image will be used as the cover-art for the audio only output. Ideally, it should be formatted for an iPhone screen for two reasons. The iPhone does not resize the image, it crops a centered image on the top/bottom and left/right. Additionally, this image file gets saved bit-for-bit into every 10-second segment file, so will increase bandwidth by \(\text{image file size} \times \text{segment count} \times \text{user count}\).

**Type**: InputLocation (p. 428)

**Required**: False

**AudioOnlyHlsTrackType (enum)**

- ALTERNATE_AUDIO_AUTO_SELECT
- ALTERNATE_AUDIO_AUTO_SELECT_DEFAULT
- ALTERNATE_AUDIO_NOT_AUTO_SELECT
- AUDIO_ONLY_VARIANT_STREAM

**AudioPidSelection**

**pid**

Selects a specific PID from within a source.

**Type**: integer

**Required**: True

**Minimum**: 0

**Maximum**: 8191

**AudioSelector**

**name**

The name of this AudioSelector. AudioDescriptions will use this name to uniquely identify this Selector. Selector names should be unique per input.

**Type**: string

**Required**: True

**selectorSettings**

The audio selector settings.

**Type**: AudioSelectorSettings (p. 381)

**Required**: False

**AudioSelectorSettings**

**audioLanguageSelection**

**Type**: AudioLanguageSelection (p. 379)

**Required**: False
audioPidSelection

Type: AudioPidSelection (p. 381)  
Required: False

AudioType (enum)

CLEAN_EFFECTS
HEARING_IMPAIRED
UNDEFINED
VISUAL_IMPAIRED_COMMENTARY

AuthenticationScheme (enum)

AKAMAI
COMMON

AvailBlanking

state

When set to enabled, causes video, audio and captions to be blanked when insertion metadata is added.

Type: string  
Required: False

availBlankingImage

Blanking image to be used. Leave empty for solid black. Only bmp and png images are supported.

Type: InputLocation (p. 428)  
Required: False

AvailBlankingState (enum)

DISABLED
ENABLED

AvailConfiguration

availSettings

Ad avail settings.

Type: AvailSettings (p. 382)  
Required: False

AvailSettings

scte35TimeSignalApos

Type: Scte35TimeSignalApos (p. 457)  
Required: False
scte35SpliceInsert
Type: Scte35SpliceInsert (p. 456)
Required: False

BadGatewayException

message
Type: string
Required: False

BlackoutSlate

networkEndBlackoutImage
Path to local file to use as Network End Blackout image. Image will be scaled to fill the entire output raster.
Type: InputLocation (p. 428)
Required: False

networkEndBlackout
Setting to enabled causes the encoder to blackout the video, audio, and captions, and raise the "Network Blackout Image" slate when an SCTE104/35 Network End Segmentation Descriptor is encountered. The blackout will be lifted when the Network Start Segmentation Descriptor is encountered. The Network End and Network Start descriptors must contain a network ID that matches the value entered in "Network ID".
Type: string
Required: False

networkId
Provides Network ID that matches EIDR ID format (e.g., "10.XXXX/XXXX-XXXX-XXXX-XXXX-XXXX-C").
Type: string
Required: False

state
When set to enabled, causes video, audio and captions to be blanked when indicated by program metadata.
Type: string
Required: False

blackoutSlateImage
Blackout slate image to be used. Leave empty for solid black. Only bmp and png images are supported.
Type: InputLocation (p. 428)
Required: False
BlackoutSlateNetworkEndBlackout (enum)

DISABLED
ENABLED

BlackoutSlateState (enum)

DISABLED
ENABLED

BurnInAlignment (enum)

CENTERED
LEFT
SMART

BurnInBackgroundColor (enum)

BLACK
NONE
WHITE

BurnInDestinationSettings

xPosition

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

backgroundColor

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

yPosition

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
teletextGridControl

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

Type: string
Required: False

backgroundOpacity

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontOpacity

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

fontResolution

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 96
Maximum: 600

shadowOpacity

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter out is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 255

shadowYOffset

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
outlineSize

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0
Maximum: 10

outlineColor

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

fontSize

When set to 'auto' fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

shadowXOffset

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False

alignment

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

shadowColor

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False
fontColor

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

font

External font file used for caption burn-in. File extension must be 'ttf' or 'tte'. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.

Type: InputLocation (p. 428)
Required: False

BurnInFontColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

BurnInOutlineColor (enum)
BLACK
BLUE
GREEN
RED
WHITE
YELLOW

BurnInShadowColor (enum)
BLACK
NONE
WHITE

BurnInTeletextGridControl (enum)
FIXED
SCALED

CaptionDescription
captionSelectorName

Specifies which input caption selector to use as a caption source when generating output captions. This field should match a captionSelector name.
Properties

**Type**: string  
**Required**: True

**languageDescription**

Human readable information to indicate captions available for players (e.g. English, or Spanish).

**Type**: string  
**Required**: False

**name**

Name of the caption description. Used to associate a caption description with an output. Names must be unique within an event.

**Type**: string  
**Required**: True

**languageCode**


**Type**: string  
**Required**: False

**destinationSettings**

Additional settings for captions destination that depend on the destination type.

**Type**: CaptionDestinationSettings (p. 388)  
**Required**: False

**CaptionDestinationSettings**

**scte27DestinationSettings**

**Type**: Scte27DestinationSettings (p. 455)  
**Required**: False

**burnInDestinationSettings**

**Type**: BurnInDestinationSettings (p. 384)  
**Required**: False

**teletextDestinationSettings**

**Type**: TeletextDestinationSettings (p. 459)  
**Required**: False

**smpteTtDestinationSettings**

**Type**: SmpteTtDestinationSettings (p. 458)
webvttDestinationSettings
Type: WebvttDestinationSettings (p. 464)
Required: False

ttmlDestinationSettings
Type: TtmlDestinationSettings (p. 459)
Required: False

embeddedPlusScte20DestinationSettings
Type: EmbeddedPlusScte20DestinationSettings (p. 403)
Required: False

dvbSubDestinationSettings
Type: DvbSubDestinationSettings (p. 395)
Required: False

embeddedDestinationSettings
Type: EmbeddedDestinationSettings (p. 403)
Required: False

rtmpCaptionInfoDestinationSettings
Type: RtmpCaptionInfoDestinationSettings (p. 453)
Required: False

aribDestinationSettings
Type: AribDestinationSettings (p. 376)
Required: False

scte20PlusEmbeddedDestinationSettings
Type: Scte20PlusEmbeddedDestinationSettings (p. 455)
Required: False

CaptionLanguageMapping

languageDescription
Textual description of language
Type: string
Required: True
**Properties**

- **captionChannel**
  Channel to insert closed captions. Each channel mapping must have a unique channel number (maximum of 4).
  - **Type**: integer
  - **Required**: True
  - **Minimum**: 1
  - **Maximum**: 4

- **languageCode**
  Three character ISO 639-2 language code (see [http://www.loc.gov/standards/iso639-2](http://www.loc.gov/standards/iso639-2)).
  - **Type**: string
  - **Required**: True

**CaptionSelector**

- **name**
  Name identifier for a caption selector. This name is used to associate this caption selector with one or more caption descriptions. Names must be unique within an event.
  - **Type**: string
  - **Required**: True

- **languageCode**
  When specified this field indicates the three letter language code of the caption track to extract from the source.
  - **Type**: string
  - **Required**: False

- **selectorSettings**
  Caption selector settings.
  - **Type**: CaptionSelectorSettings (p. 390)
  - **Required**: False

**CaptionSelectorSettings**

- **embeddedSourceSettings**
  - **Type**: EmbeddedSourceSettings (p. 403)
  - **Required**: False

- **scte20SourceSettings**
  - **Type**: Scte20SourceSettings (p. 455)
Required: False

dvbSubSourceSettings
Type: DvbSubSourceSettings (p. 398)
Required: False

aribSourceSettings
Type: AribSourceSettings (p. 376)
Required: False

teletextSourceSettings
Type: TeletextSourceSettings (p. 459)
Required: False

scte27SourceSettings
Type: Scte27SourceSettings (p. 455)
Required: False

Channel

inputAttachments
List of input attachments for channel.
Type: Array of type InputAttachment (p. 427)
Required: False

roleArn
The Amazon Resource Name (ARN) of the role assumed when running the Channel.
Type: string
Required: False

destinations
A list of destinations of the channel. For UDP outputs, there is one destination per output. For other types (HLS, for example), there is one destination per packager.
Type: Array of type OutputDestination (p. 450)
Required: False

name
The name of the channel. (user-mutable)
Type: string
Properties

**Required:** False

**encoderSettings**

Type: EncoderSettings (p. 404)
Required: False

**pipelinesRunningCount**

The number of currently healthy pipelines.

Type: integer
Required: False

**state**

Type: string
Required: False

**id**

The unique id of the channel.

Type: string
Required: False

**egressEndpoints**

The endpoints where outgoing connections initiate from

Type: Array of type ChannelEgressEndpoint (p. 392)
Required: False

**arn**

The unique arn of the channel.

Type: string
Required: False

**inputSpecification**

Type: InputSpecification (p. 432)
Required: False

**ChannelEgressEndpoint**

**sourceIp**

Public IP of where a channel's output comes from

Type: string
Required: False
Properties

ChannelState (enum)

CREATING
CREATE_FAILED
IDLE
STARTING
RUNNING
RECOVERING
STOPPING
DELETING
DELETED

DvbNitSettings

networkName
The network name text placed in the networkNameDescriptor inside the Network Information Table. Maximum length is 256 characters.

Type: string
Required: True

networkId
The numeric value placed in the Network Information Table (NIT).

Type: integer
Required: True
Minimum: 0
Maximum: 65536

repInterval
The number of milliseconds between instances of this table in the output transport stream.

Type: integer
Required: False
Minimum: 25
Maximum: 10000

DvbSdtOutputSdt (enum)

SDT_FOLLOW
SDT_FOLLOW_IF_PRESENT
SDT_MANUAL
SDT_NONE

DvbSdtSettings

serviceName
The service name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

Type: string
**serviceProviderName**

The service provider name placed in the serviceDescriptor in the Service Description Table. Maximum length is 256 characters.

*Type:* string  
*Required:* False

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

*Type:* integer  
*Required:* False  
*Minimum:* 25  
*Maximum:* 2000

**outputSdt**

Selects method of inserting SDT information into output stream. The sdtFollow setting copies SDT information from input stream to output stream. The sdtFollowIfPresent setting copies SDT information from input stream to output stream if SDT information is present in the input, otherwise it will fall back on the user-defined values. The sdtManual setting means user will enter the SDT information. The sdtNone setting means output stream will not contain SDT information.

*Type:* string  
*Required:* False

**DvbSubDestinationAlignment (enum)**

- CENTERED
- LEFT
- SMART

**DvbSubDestinationBackgroundColor (enum)**

- BLACK
- NONE
- WHITE

**DvbSubDestinationFontColor (enum)**

- BLACK
- BLUE
- GREEN
- RED
- WHITE
- YELLOW

**DvbSubDestinationOutlineColor (enum)**

- BLACK
DvbSubDestinationSettings

xPosition

Specifies the horizontal position of the caption relative to the left side of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the left of the output. If no explicit xPosition is provided, the horizontal caption position will be determined by the alignment parameter. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

backgroundColor

Specifies the color of the rectangle behind the captions. All burn-in and DVB-Sub font settings must match.

Type: string
Required: False

yPosition

Specifies the vertical position of the caption relative to the top of the output in pixels. A value of 10 would result in the captions starting 10 pixels from the top of the output. If no explicit yPosition is provided, the caption will be positioned towards the bottom of the output. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

Type: integer
Required: False
Minimum: 0

teletextGridControl

Controls whether a fixed grid size will be used to generate the output subtitles bitmap. Only applicable for Teletext inputs and DVB-Sub/Burn-in outputs.

Type: string
Required: False

backgroundOpacity

Specifies the opacity of the background rectangle. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.
Properties

<table>
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<th>Type</th>
<th>Required</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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<tr>
<td>outlineSize</td>
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<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

**fontOpacity**

Specifies the opacity of the burned-in captions. 255 is opaque; 0 is transparent. All burn-in and DVB-Sub font settings must match.

**fontResolution**

Font resolution in DPI (dots per inch); default is 96 dpi. All burn-in and DVB-Sub font settings must match.

**shadowOpacity**

Specifies the opacity of the shadow. 255 is opaque; 0 is transparent. Leaving this parameter blank is equivalent to setting it to 0 (transparent). All burn-in and DVB-Sub font settings must match.

**shadowYOffset**

Specifies the vertical offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels above the text. All burn-in and DVB-Sub font settings must match.

**outlineSize**

Specifies font outline size in pixels. This option is not valid for source captions that are either 608/ embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.
outlineColor

Specifies font outline color. This option is not valid for source captions that are either 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- Type: string
- Required: False

fontSize

When set to auto fontSize will scale depending on the size of the output. Giving a positive integer will specify the exact font size in points. All burn-in and DVB-Sub font settings must match.

- Type: string
- Required: False

shadowXOffset

Specifies the horizontal offset of the shadow relative to the captions in pixels. A value of -2 would result in a shadow offset 2 pixels to the left. All burn-in and DVB-Sub font settings must match.

- Type: integer
- Required: False

alignment

If no explicit xPosition or yPosition is provided, setting alignment to centered will place the captions at the bottom center of the output. Similarly, setting a left alignment will align captions to the bottom left of the output. If x and y positions are given in conjunction with the alignment parameter, the font will be justified (either left or centered) relative to those coordinates. Selecting "smart" justification will left-justify live subtitles and center-justify pre-recorded subtitles. This option is not valid for source captions that are STL or 608/embedded. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- Type: string
- Required: False

shadowColor

Specifies the color of the shadow cast by the captions. All burn-in and DVB-Sub font settings must match.

- Type: string
- Required: False

fontColor

Specifies the color of the burned-in captions. This option is not valid for source captions that are STL, 608/embedded or teletext. These source settings are already pre-defined by the caption stream. All burn-in and DVB-Sub font settings must match.

- Type: string
- Required: False
**font**

External font file used for caption burn-in. File extension must be ‘ttf’ or ‘tte’. Although the user can select output fonts for many different types of input captions, embedded, STL and teletext sources use a strict grid system. Using external fonts with these caption sources could cause unexpected display of proportional fonts. All burn-in and DVB-Sub font settings must match.

**Type:** `InputLocation` (p. 428)
**Required:** False

**DvbSubDestinationShadowColor (enum)**

- BLACK
- NONE
- WHITE

**DvbSubDestinationTeletextGridControl (enum)**

- FIXED
- SCALED

**DvbSubSourceSettings**

**pid**

When using DVB-Sub with Burn-In or SMPTE-TT, use this PID for the source content. Unused for DVB-Sub passthrough. All DVB-Sub content is passed through, regardless of selectors.

**Type:** integer
**Required:** False
**Minimum:** 1

**DvbTdtSettings**

**repInterval**

The number of milliseconds between instances of this table in the output transport stream.

**Type:** integer
**Required:** False
**Minimum:** 1000
**Maximum:** 30000

**Eac3AttenuationControl (enum)**

- ATTENUATE_3_DB
- NONE

**Eac3BitstreamMode (enum)**

- COMMENTARY
- COMPLETE_MAIN
EMERGENCY
HEARING_IMPAIRED
VISUALLY_IMPAIRED

Eac3CodingMode (enum)

CODING_MODE_1_0
CODING_MODE_2_0
CODING_MODE_3_2

Eac3DcFilter (enum)

DISABLED
ENABLED

Eac3DrcLine (enum)

FILM_LIGHT
FILM_STANDARD
MUSIC_LIGHT
MUSIC_STANDARD
NONE
SPEECH

Eac3DrcRf (enum)

FILM_LIGHT
FILM_STANDARD
MUSIC_LIGHT
MUSIC_STANDARD
NONE
SPEECH

Eac3LfeControl (enum)

LFE
NO_LFE

Eac3LfeFilter (enum)

DISABLED
ENABLED

Eac3MetadataControl (enum)

FOLLOW_INPUT
USE_CONFIGURED

Eac3PassthroughControl (enum)

NO_PASSTHROUGH
WHEN_POSSIBLE
Eac3PhaseControl (enum)

- NO_SHIFT
- SHIFT_90_DEGREES

Eac3Settings

dialnorm
Sets the dialnorm for the output. If blank and input audio is Dolby Digital Plus, dialnorm will be passed through.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 31

passthroughControl
When set to whenPossible, input DD+ audio will be passed through if it is present on the input. This detection is dynamic over the life of the transcode. Inputs that alternate between DD+ and non-DD+ content will have a consistent DD+ output as the system alternates between passthrough and encoding.

- **Type**: string
- **Required**: False

metadataControl
When set to followInput, encoder metadata will be sourced from the DD, DD+, or DolbyE decoder that supplied this audio data. If audio was not supplied from one of these streams, then the static metadata settings will be used.

- **Type**: string
- **Required**: False

drcLine
Sets the Dolby dynamic range compression profile.

- **Type**: string
- **Required**: False

bitrate
Average bitrate in bits/second. Valid bitrates depend on the coding mode.

- **Type**: number
- **Required**: False

surroundExMode
When encoding 3/2 audio, sets whether an extra center back surround channel is matrix encoded into the left and right surround channels.
Properties

**ltRtSurroundMixLevel**
Left total/Right total surround mix level. Only used for 3/2 coding mode.

*Type:* number  
*Required:* False

**lfeControl**
When encoding 3/2 audio, setting to lfe enables the LFE channel

*Type:* string  
*Required:* False

**codingMode**
Dolby Digital Plus coding mode. Determines number of channels.

*Type:* string  
*Required:* False

**surroundMode**
When encoding 2/0 audio, sets whether Dolby Surround is matrix encoded into the two channels.

*Type:* string  
*Required:* False

**attenuationControl**
When set to attenuate3Db, applies a 3 dB attenuation to the surround channels. Only used for 3/2 coding mode.

*Type:* string  
*Required:* False

**lfeFilter**
When set to enabled, applies a 120Hz lowpass filter to the LFE channel prior to encoding. Only valid with codingMode32 coding mode.

*Type:* string  
*Required:* False

**ltRtCenterMixLevel**
Left total/Right total center mix level. Only used for 3/2 coding mode.

*Type:* number  
*Required:* False
**dcFilter**
When set to enabled, activates a DC highpass filter for all input channels.

- **Type**: string
- **Required**: False

**phaseControl**
When set to shift90Degrees, applies a 90-degree phase shift to the surround channels. Only used for 3/2 coding mode.

- **Type**: string
- **Required**: False

**stereoDownmix**
Stereo downmix preference. Only used for 3/2 coding mode.

- **Type**: string
- **Required**: False

**bitstreamMode**
Specifies the bitstream mode (bsmod) for the emitted E-AC-3 stream. See ATSC A/52-2012 (Annex E) for background on these values.

- **Type**: string
- **Required**: False

**loRoSurroundMixLevel**
Left only/Right only surround mix level. Only used for 3/2 coding mode.

- **Type**: number
- **Required**: False

**drcRf**
Sets the profile for heavy Dolby dynamic range compression, ensures that the instantaneous signal peaks do not exceed specified levels.

- **Type**: string
- **Required**: False

**loRoCenterMixLevel**
Left only/Right only center mix level. Only used for 3/2 coding mode.

- **Type**: number
- **Required**: False

**Eac3StereoDownmix (enum)**

DPL2
Eac3SurroundExMode (enum)

- DISABLED
- ENABLED
- NOT_INDICATED

Eac3SurroundMode (enum)

- DISABLED
- ENABLED
- NOT_INDICATED

EmbeddedConvert608To708 (enum)

- DISABLED
- UPCONVERT

EmbeddedDestinationSettings

EmbeddedPlusScte20DestinationSettings

EmbeddedScte20Detection (enum)

- AUTO
- OFF

EmbeddedSourceSettings

scte20Detection

Set to "auto" to handle streams with intermittent and/or non-aligned SCTE-20 and Embedded captions.

Type: string
Required: False

source608ChannelNumber

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

Type: integer
Required: False
Minimum: 1
Maximum: 4

convert608To708

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.
source608TrackNumber
This field is unused and deprecated.

Type: integer
Required: False
Minimum: 1
Maximum: 5

**EncoderSettings**

timecodeConfig
Contains settings used to acquire and adjust timecode information from inputs.

Type: TimecodeConfig (p. 459)
Required: True

outputGroups
Type: Array of type OutputGroup (p. 450)
Required: True

audioDescriptions
Type: Array of type AudioDescription (p. 377)
Required: True

captionDescriptions
Settings for caption decriptions
Type: Array of type CaptionDescription (p. 387)
Required: False

availConfiguration
Event-wide configuration settings for ad avail insertion.

Type: AvailConfiguration (p. 382)
Required: False

captionDescriptions
Configuration settings that apply to the event as a whole.

Type: GlobalConfiguration (p. 406)
Required: False
videoDescriptions

- **Type**: Array of type `VideoDescription` (p. 461)
- **Required**: True

blackoutSlate

Settings for blackout slate.

- **Type**: `BlackoutSlate` (p. 383)
- **Required**: False

availBlanking

Settings for ad avail blanking.

- **Type**: `AvailBlanking` (p. 382)
- **Required**: False

FecOutputIncludeFec (enum)

- `COLUMN`
- `COLUMN_AND_ROW`

FecOutputSettings

rowLength

Parameter L from SMPTE 2022-1. The width of the FEC protection matrix. Must be between 1 and 20, inclusive. If only Column FEC is used, then larger values increase robustness. If Row FEC is used, then this is the number of transport stream packets per row error correction packet, and the value must be between 4 and 20, inclusive, if includeFec is columnAndRow. If includeFec is column, this value must be 1 to 20, inclusive.

- **Type**: integer
  - **Required**: False
  - **Minimum**: 1
  - **Maximum**: 20

columnDepth

Parameter D from SMPTE 2022-1. The height of the FEC protection matrix. The number of transport stream packets per column error correction packet. Must be between 4 and 20, inclusive.

- **Type**: integer
  - **Required**: False
  - **Minimum**: 4
  - **Maximum**: 20

includeFec

Enables column only or column and row based FEC

- **Type**: string
Required: False

**FixedAfd (enum)**

AFD_0000
AFD_0010
AFD_0011
AFD_0100
AFD_1000
AFD_1001
AFD_1010
AFD_1011
AFD_1101
AFD_1110
AFD_1111

**GatewayTimeoutException**

**message**

Type: string  
Required: False

**GlobalConfiguration**

**inputLossBehavior**

Settings for system actions when input is lost.

Type: [InputLossBehavior](p. 429)  
Required: False

**supportLowFramerateInputs**

Adjusts video input buffer for streams with very low video framerates. This is commonly set to enabled for music channels with less than one video frame per second.

Type: string  
Required: False

**initialAudioGain**

Value to set the initial audio gain for the Live Event.

Type: integer  
Required: False  
Minimum: -60  
Maximum: 60

**inputEndAction**

Indicates the action to take when an input completes (e.g. end-of-file.) Options include immediately switching to the next sequential input (via "switchInput"), switching to the next input and looping...
back to the first input when last input ends (via "switchAndLoopInputs") or not switching inputs and
instead transcoding black / color / slate images per the "Input Loss Behavior" configuration until an
activateInput REST command is received (via "none").

Type: string
Required: False

outputTimingSource

Indicates whether the rate of frames emitted by the Live encoder should be paced by its system clock
(which optionally may be locked to another source via NTP) or should be locked to the clock of the
source that is providing the input stream.

Type: string
Required: False

GlobalConfigurationInputEndAction (enum)

NONE
SWITCH_AND_LOOP_INPUTS

GlobalConfigurationLowFramerateInputs (enum)

DISABLED
ENABLED

GlobalConfigurationOutputTimingSource (enum)

INPUT_CLOCK
SYSTEM_CLOCK

H264AdaptiveQuantization (enum)

HIGH
HIGHER
LOW
MAX
MEDIUM
OFF

H264ColorMetadata (enum)

IGNORE
INSERT

H264EntropyEncoding (enum)

CABAC
CAVLC

H264FlickerAq (enum)

DISABLED
ENABLED

**H264FramerateControl (enum)**

INITIALIZE_FROM_SOURCE
SPECIFIED

**H264GopBReference (enum)**

DISABLED
ENABLED

**H264GopSizeUnits (enum)**

FRAMES
SECONDS

**H264Level (enum)**

H264_LEVEL_1
H264_LEVEL_1_1
H264_LEVEL_1_2
H264_LEVEL_1_3
H264_LEVEL_2
H264_LEVEL_2_1
H264_LEVEL_2_2
H264_LEVEL_3
H264_LEVEL_3_1
H264_LEVEL_3_2
H264_LEVEL_4
H264_LEVEL_4_1
H264_LEVEL_4_2
H264_LEVEL_5
H264_LEVEL_5_1
H264_LEVEL_5_2
H264_LEVEL_AUTO

**H264LookAheadRateControl (enum)**

HIGH
LOW
MEDIUM

**H264ParControl (enum)**

INITIALIZE_FROM_SOURCE
SPECIFIED

**H264Profile (enum)**

BASELINE
HIGH
HIGH_10BIT
HIGH_422
HIGH_422_10BIT
MAIN

H264RateControlMode (enum)
CBR
VBR

H264ScanType (enum)
INTERLACED
PROGRESSIVE

H264SceneChangeDetect (enum)
DISABLED
ENABLED

H264Settings

minIInterval
Only meaningful if sceneChangeDetect is set to enabled. Enforces separation between repeated (cadence) I-frames and I-frames inserted by Scene Change Detection. If a scene change I-frame is within I-interval frames of a cadence I-frame, the GOP is shrunk and/or stretched to the scene change I-frame. GOP stretch requires enabling lookahead as well as setting I-interval. The normal cadence resumes for the next GOP. Note: Maximum GOP stretch = GOP size + Min-I-interval - 1

Type: integer
Required: False
Minimum: 0
Maximum: 30

slices
Number of slices per picture. Must be less than or equal to the number of macroblock rows for progressive pictures, and less than or equal to half the number of macroblock rows for interlaced pictures. This field is optional; when no value is specified the encoder will choose the number of slices based on encode resolution.

Type: integer
Required: False
Minimum: 1
Maximum: 32

parNumerator
Pixel Aspect Ratio numerator.
Type: integer  
Required: False

gopSizeUnits
Indicates if the gopSize is specified in frames or seconds. If seconds the system will convert the gopSize into a frame count at run time.

Type: string  
Required: False

maxBitrate
Maximum bitrate in bits/second (for VBR mode only).

Type: integer  
Required: False  
Minimum: 1000

bitrate
Average bitrate in bits/second. Required for VBR, CBR, and ABR. For MS Smooth outputs, bitrates must be unique when rounded down to the nearest multiple of 1000.

Type: integer  
Required: False  
Minimum: 1000

bufFillPct
Percentage of the buffer that should initially be filled (HRD buffer model).

Type: integer  
Required: False  
Minimum: 0  
Maximum: 100

temporalAq
If set to enabled, adjust quantization within each frame based on temporal variation of content complexity.

Type: string  
Required: False

afdSignaling
Indicates that AFD values will be written into the output stream. If afdSignaling is "auto", the system will try to preserve the input AFD value (in cases where multiple AFD values are valid). If set to "fixed", the AFD value will be the value configured in the fixedAfd parameter.

Type: string  
Required: False
timecodeInsertion

Determines how timecodes should be inserted into the video elementary stream. - 'disabled': Do not include timecodes - 'picTimingSei': Pass through picture timing SEI messages from the source specified in Timecode Config

    Type: string
    Required: False

bufSize

Size of buffer (HRD buffer model) in bits/second.

    Type: integer
    Required: False
    Minimum: 0

softness

Softness. Selects quantizer matrix, larger values reduce high-frequency content in the encoded image.

    Type: integer
    Required: False
    Minimum: 0
    Maximum: 128

framerateControl

This field indicates how the output video frame rate is specified. If "specified" is selected then the output video frame rate is determined by framerateNumerator and framerateDenominator, else if "initializeFromSource" is selected then the output video frame rate will be set equal to the input video frame rate of the first input.

    Type: string
    Required: False

fixedAfd

Four bit AFD value to write on all frames of video in the output stream. Only valid when afdSignaling is set to 'Fixed'.

    Type: string
    Required: False

level

H.264 Level.

    Type: string
    Required: False

lookAheadRateControl

Amount of lookahead. A value of low can decrease latency and memory usage, while high can produce better quality for certain content.
Properties

Type: string
Required: False

profile

H.264 Profile.
Type: string
Required: False

framerateNumerator

Framerate numerator - framerate is a fraction, e.g. 24000 / 1001 = 23.976 fps.
Type: integer
Required: False

gopClosedCadence

Frequency of closed GOPs. In streaming applications, it is recommended that this be set to 1 so a decoder joining mid-stream will receive an IDR frame as quickly as possible. Setting this value to 0 will break output segmenting.
Type: integer
Required: False
Minimum: 0

framerateDenominator

Framerate denominator.
Type: integer
Required: False

entropyEncoding

Entropy encoding mode. Use cabac (must be in Main or High profile) or cavlc.
Type: string
Required: False

spatialAq

If set to enabled, adjust quantization within each frame based on spatial variation of content complexity.
Type: string
Required: False

adaptiveQuantization

Adaptive quantization. Allows intra-frame quantizers to vary to improve visual quality.
Type: string
Required: False
**colorMetadata**

Includes colorspace metadata in the output.

Type: string  
Required: False

**gopSize**

GOP size (keyframe interval) in units of either frames or seconds per gopSizeUnits. Must be greater than zero.

Type: number  
Required: False  
Minimum: 1.0

**numRefFrames**

Number of reference frames to use. The encoder may use more than requested if using B-frames and/or interlaced encoding.

Type: integer  
Required: False  
Minimum: 1  
Maximum: 6

**gopBReference**

If enabled, use reference B frames for GOP structures that have B frames > 1.

Type: string  
Required: False

**sceneChangeDetect**

Scene change detection. Inserts I-frames on scene changes when enabled.

Type: string  
Required: False

**parControl**

This field indicates how the output pixel aspect ratio is specified. If "specified" is selected then the output video pixel aspect ratio is determined by parNumerator and parDenominator, else if "initializeFromSource" is selected then the output pixel aspect ratio will be set equal to the input video pixel aspect ratio of the first input.

Type: string  
Required: False

**parDenominator**

Pixel Aspect Ratio denominator.

Type: integer
Required: False
Minimum: 1

**syntax**

Produces a bitstream compliant with SMPTE RP-2027.

  **Type:** string
  **Required:** False

**scanType**

Sets the scan type of the output to progressive or top-field-first interlaced.

  **Type:** string
  **Required:** False

**gopNumBFrames**

Number of B-frames between reference frames.

  **Type:** integer
  **Required:** False
  **Minimum:** 0
  **Maximum:** 7

**flickerAq**

If set to enabled, adjust quantization within each frame to reduce flicker or 'pop' on I-frames.

  **Type:** string
  **Required:** False

**rateControlMode**

Rate control mode.

  **Type:** string
  **Required:** False

**H264SpatialAq (enum)**

  - DISABLED
  - ENABLED

**H264Syntax (enum)**

  - DEFAULT
  - RP2027

**H264TemporalAq (enum)**

  - DISABLED
ENABLED

**H264TimecodeInsertionBehavior (enum)**

- DISABLED
- PIC_TIMING_SEI

**HlsAdMarkers (enum)**

- ADOBE
- ELEMENTAL
- ELEMENTAL_SCTE35

**HlsAkamaiHttpTransferMode (enum)**

- CHUNKED
- NON_CHUNKED

**HlsAkamaiSettings**

- **httpTransferMode**
  
  Specify whether or not to use chunked transfer encoding to Akamai. User should contact Akamai to enable this feature.
  
  - **Type**: string
  - **Required**: False

- **salt**
  
  Salt for authenticated Akamai.
  
  - **Type**: string
  - **Required**: False

- **numRetries**
  
  Number of retry attempts that will be made before the Live Event is put into an error state.
  
  - **Type**: integer
  - **Required**: False
  - **Minimum**: 0

- **restartDelay**
  
  If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.
  
  - **Type**: integer
  - **Required**: False
  - **Minimum**: 0
Maximum: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 600

**token**

Token parameter for authenticated akamai. If not specified, _gda_ is used.

- **Type:** string
- **Required:** False

**HlsBasicPutSettings**

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
Properties

filecacheDuration

Size in seconds of file cache for streaming outputs.

Type: integer
Required: False
Minimum: 0
Maximum: 600

HlsCaptionLanguageSetting (enum)

INSERT
NONE
OMIT

HlsCdnSettings

hlsAkamaiSettings

Type: HlsAkamaiSettings (p. 415)
Required: False

hlsWebdavSettings

Type: HlsWebdavSettings (p. 426)
Required: False

hlsBasicPutSettings

Type: HlsBasicPutSettings (p. 416)
Required: False

hlsMediaStoreSettings

Type: HlsMediaStoreSettings (p. 424)
Required: False

HlsClientCache (enum)

DISABLED
ENABLED

HlsCodecSpecification (enum)

RFC_4281
RFC_6381

HlsDirectoryStructure (enum)

SINGLE_DIRECTORY
SUBDIRECTORY_PER_STREAM
HlsEncryptionType (enum)

- AES128
- SAMPLE_AES

HlsGroupSettings

segmentsPerSubdirectory

Number of segments to write to a subdirectory before starting a new one. directoryStructure must be subdirectoryPerStream for this setting to have an effect.

- Type: integer
- Required: False
- Minimum: 1

ivInManifest

For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If set to "include", IV is listed in the manifest, otherwise the IV is not in the manifest.

- Type: string
- Required: False

outputSelection

Generates the .m3u8 playlist file for this HLS output group. The segmentsOnly option will output segments without the .m3u8 file.

- Type: string
- Required: False

encryptionType

Encrypts the segments with the given encryption scheme. Exclude this parameter if no encryption is desired.

- Type: string
- Required: False

indexNSegments

Number of segments to keep in the playlist (.m3u8) file. mode must be "vod" for this setting to have an effect, and this number should be less than or equal to keepSegments.

- Type: integer
- Required: False
- Minimum: 3

destination

A directory or HTTP destination for the HLS segments, manifest files, and encryption keys (if enabled).
**Properties**

**Type**: `OutputLocationRef (p. 451)`  
**Required**: True

**constantIv**

For use with encryptionType. This is a 128-bit, 16-byte hex value represented by a 32-character text string. If `ivSource` is set to "explicit" then this parameter is required and is used as the IV for encryption.

- **Type**: string  
- **Required**: False

**timedMetadataId3Frame**

Indicates ID3 frame that has the timecode.

- **Type**: string  
- **Required**: False

**baseUrlManifest**

A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base manifest is delivered from a different URL than the main .m3u8 file.

- **Type**: string  
- **Required**: False

**captionLanguageSetting**

Applies only to 608 Embedded output captions. insert: Include CLOSED-CAPTIONS lines in the manifest. Specify at least one language in the CC1 Language Code field. One CLOSED-CAPTION line is added for each Language Code you specify. Make sure to specify the languages in the order in which they appear in the original source (if the source is embedded format) or the order of the caption selectors (if the source is other than embedded). Otherwise, languages in the manifest will not match up properly with the output captions. none: Include CLOSED-CAPTIONS=None line in the manifest. omit: Omit any CLOSED-CAPTIONS line from the manifest.

- **Type**: string  
- **Required**: False

**minSegmentLength**

When set, minimumSegmentLength is enforced by looking ahead and back within the specified range for a nearby avail and extending the segment size if needed.

- **Type**: integer  
- **Required**: False  
- **Minimum**: 0

**mode**

If set to "vod", keeps and indexes all segments starting with the first segment. If set to "live" segments will age out and only the last keepSegments number of segments will be retained.

- **Type**: string
Properties

**Required**: False

**ivSource**
For use with encryptionType. The IV (Initialization Vector) is a 128-bit number used in conjunction with the key for encrypting blocks. If this setting is “followsSegmentNumber”, it will cause the IV to change every segment (to match the segment number). If this is set to "explicit", you must enter a constant IV value.

*Type*: string  
*Required*: False

**manifestCompression**
When set to gzip, compresses HLS playlist.

*Type*: string  
*Required*: False

**keyProviderSettings**
The key provider settings.

*Type*: KeyProviderSettings (p. 432)  
*Required*: False

**tsFileMode**
When set to "singleFile", emits the program as a single media resource (.ts) file, and uses #EXT-X-BYTERANGE tags to index segment for playback. Playback of VOD mode content during event is not guaranteed due to HTTP server caching.

*Type*: string  
*Required*: False

**manifestDurationFormat**
Indicates whether the output manifest should use floating point or integer values for segment duration.

*Type*: string  
*Required*: False

**keyFormatVersions**
Either a single positive integer version value or a slash delimited list of version values (1/2/3).

*Type*: string  
*Required*: False

**streamInfResolution**
Include or exclude RESOLUTION attribute for video in EXT-X-STREAM-INF tag of variant manifest.

*Type*: string  
*Required*: False
Properties

timestampDeltaMilliseconds
Provides an extra millisecond delta offset to fine tune the timestamps.

  Type: integer
  Required: False
  Minimum: 0

segmentationMode
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers
from the input streams.

  Type: string
  Required: False

baseUrlContent
A partial URI prefix that will be prepended to each output in the media .m3u8 file. Can be used if base
manifest is delivered from a different URL than the main .m3u8 file.

  Type: string
  Required: False

clientCache
When set to "disabled", sets the #EXT-X-ALLOW-CACHE:no tag in the manifest, which prevents clients
from saving media segments for later replay.

  Type: string
  Required: False

captionLanguageMappings
Mapping of up to 4 caption channels to caption languages. Is only meaningful if captionLanguageSetting
is set to "insert".

  Type: Array of type CaptionLanguageMapping (p. 389)
  Required: False

codecSpecification
Specification to use (RFC-6381 or the default RFC-4281) during m3u8 playlist generation.

  Type: string
  Required: False

keepSegments
Number of segments to retain in the destination directory. mode must be "live" for this setting to have
an effect.

  Type: integer
  Required: False
  Minimum: 1
timedMetadataId3Period
Timed Metadata interval in seconds.
  Type: integer
  Required: False
  Minimum: 0

programDateTime
Includes or excludes EXT-X-PROGRAM-DATE-TIME tag in .m3u8 manifest files. The value is calculated as follows: either the program date and time are initialized using the input timecode source, or the time is initialized using the input timecode source and the date is initialized using the timestampOffset.
  Type: string
  Required: False

directoryStructure
Place segments in subdirectories.
  Type: string
  Required: False

keyFormat
The value specifies how the key is represented in the resource identified by the URI. If parameter is absent, an implicit value of "identity" is used. A reverse DNS string can also be given.
  Type: string
  Required: False

inputLossAction
Parameter that control output group behavior on input loss.
  Type: string
  Required: False

adMarkers
Choose one or more ad marker types to pass SCTE35 signals through to this group of Apple HLS outputs.
  Type: Array of type string
  Required: False

programDateTimePeriod
Period of insertion of EXT-X-PROGRAM-DATE-TIME entry, in seconds.
  Type: integer
  Required: False
  Minimum: 0
  Maximum: 3600
**segmentLength**

Length of MPEG-2 Transport Stream segments to create (in seconds). Note that segments will end on the next keyframe after this number of seconds, so actual segment length may be longer.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**hlsCdnSettings**

Parameters that control interactions with the CDN.

- **Type**: HlsCdnSettings (p. 417)
- **Required**: False

**HlsInputSettings**

**retries**

The number of consecutive times that attempts to read a manifest or segment must fail before the input is considered unavailable.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**bandwidth**

When specified the HLS stream with the m3u8 BANDWIDTH that most closely matches this value will be chosen, otherwise the highest bandwidth stream in the m3u8 will be chosen. The bitrate is specified in bits per second, as in an HLS manifest.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**retryInterval**

The number of seconds between retries when an attempt to read a manifest or segment fails.

- **Type**: integer
- **Required**: False
- **Minimum**: 0

**bufferSegments**

When specified, reading of the HLS input will begin this many buffer segments from the end (most recently written segment). When not specified, the HLS input will begin with the first segment specified in the m3u8.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
HlsIvInManifest (enum)
   EXCLUDE
   INCLUDE

HlsIvSource (enum)
   EXPLICIT
   FOLLOW_SEGMENTS

HlsManifestCompression (enum)
   GZIP
   NONE

HlsManifestDurationFormat (enum)
   FLOATING_POINT
   INTEGER

HlsMediaStoreSettings

mediaStoreStorageClass
When set to temporal, output files are stored in non-persistent memory for faster reading and writing.

   Type: string
   Required: False

numRetries
Number of retry attempts that will be made before the Live Event is put into an error state.

   Type: integer
   Required: False
   Minimum: 0

restartDelay
If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

   Type: integer
   Required: False
   Minimum: 0
   Maximum: 15

connectionRetryInterval
Number of seconds to wait before retrying connection to the CDN if the connection is lost.

   Type: integer
   Required: False
filecacheDuration

Size in seconds of file cache for streaming outputs.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 600

HlsMediaStoreStorageClass (enum)

- TEMPORAL

HlsMode (enum)

- LIVE
- VOD

HlsOutputSelection (enum)

- MANIFESTS_AND_SEGMENTS
- SEGMENTS_ONLY

HlsOutputSettings

segmentModifier

String concatenated to end of segment filenames.

- **Type**: string
- **Required**: False

hlsSettings

Settings regarding the underlying stream. These settings are different for audio-only outputs.

- **Type**: HlsSettings (p. 426)
- **Required**: True

nameModifier

String concatenated to the end of the destination filename. Accepts "Format Identifiers "#formatIdentifierParameters.".

- **Type**: string
- **Required**: False

HlsProgramDateTime (enum)

- EXCLUDE
- INCLUDE
**HlsSegmentationMode (enum)**

- USE_INPUT_SEGMENTATION
- USE_SEGMENT_DURATION

**HlsSettings**

**audioOnlyHlsSettings**

- **Type:** AudioOnlyHlsSettings (p. 380)
- **Required:** False

**standardHlsSettings**

- **Type:** StandardHlsSettings (p. 458)
- **Required:** False

**HlsStreamInfResolution (enum)**

- EXCLUDE
- INCLUDE

**HlsTimedMetadataId3Frame (enum)**

- NONE
- PRIV
- TDRL

**HlsTsFileMode (enum)**

- SEGMENTED_FILES
- SINGLE_FILE

**HlsWebdavHttpTransferMode (enum)**

- CHUNKED
- NON_CHUNKED

**HlsWebdavSettings**

**httpTransferMode**

Specify whether or not to use chunked transfer encoding to WebDAV.

- **Type:** string
- **Required:** False

**numRetries**

Number of retry attempts that will be made before the Live Event is put into an error state.

- **Type:** integer
**Properties**

**Required**: False  
**Minimum**: 0

**restartDelay**

If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart.

- **Type**: integer  
  - **Required**: False  
  - **Minimum**: 0  
  - **Maximum**: 15

**connectionRetryInterval**

Number of seconds to wait before retrying connection to the CDN if the connection is lost.

- **Type**: integer  
  - **Required**: False  
  - **Minimum**: 0

**filecacheDuration**

Size in seconds of file cache for streaming outputs.

- **Type**: integer  
  - **Required**: False  
  - **Minimum**: 0  
  - **Maximum**: 600

**InputAttachment**

**inputId**

The ID of the input

- **Type**: string  
  - **Required**: False

**inputSettings**

Settings of an input (caption selector, etc.)

- **Type**: InputSettings (p. 430)  
  - **Required**: False

**InputChannelLevel**

**inputChannel**

The index of the input channel used as a source.

- **Type**: integer
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required</strong></td>
<td>True</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

**gain**

Remixing value. Units are in dB and acceptable values are within the range from -60 (mute) and 6 dB.

- **Type**: integer
- **Required**: True
- **Minimum**: -60
- **Maximum**: 6

**InputCodec (enum)**

codec in increasing order of complexity

- MPEG2
- AVC
- HEVC

**InputDeblockFilter (enum)**

- DISABLED
- ENABLED

**InputDenoiseFilter (enum)**

- DISABLED
- ENABLED

**InputFilter (enum)**

- AUTO
- DISABLED
- FORCED

**InputLocation**

**passwordParam**

Key used to extract the password from EC2 Parameter store

- **Type**: string
- **Required**: False

**uri**

Uniform Resource Identifier - This should be a path to a file accessible to the Live system (eg. a http:// URI) depending on the output type. For example, a rtmpEndpoint should have a uri similar to: “rtmp:// fmsserver/live”. 
**Properties**

**Type**: string  
**Required**: True

**username**

Username if credentials are required to access a file or publishing point. This can be either a plaintext username, or a reference to an AWS parameter store name from which the username can be retrieved.  
AWS Parameter store format: "ssm://<parameter name>"

**Type**: string  
**Required**: False

**InputLossActionForHlsOut (enum)**

- **EMIT_OUTPUT**
- **PAUSE_OUTPUT**

**InputLossActionForMsSmoothOut (enum)**

- **EMIT_OUTPUT**
- **PAUSE_OUTPUT**

**InputLossActionForUdpOut (enum)**

- **DROP_PROGRAM**
- **DROP_TS**
- **EMIT_PROGRAM**

**InputLossBehavior**

**inputLossImageType**

Indicates whether to substitute a solid color or a slate into the output after input loss exceeds blackFrameMsec.

**Type**: string  
**Required**: False

**inputLossImageColor**

When input loss image type is "color" this field specifies the color to use. Value: 6 hex characters representing the values of RGB.

**Type**: string  
**Required**: False

**inputLossImageSlate**

When input loss image type is "slate" these fields specify the parameters for accessing the slate.

**Type**: `InputLocation (p. 428)`  
**Required**: False
blackFrameMsec

On input loss, the number of milliseconds to substitute black into the output before switching to the frame specified by inputLossImageType. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 1000000

repeatFrameMsec

On input loss, the number of milliseconds to repeat the previous picture before substituting black into the output. A value x, where 0 <= x <= 1,000,000 and a value of 1,000,000 will be interpreted as infinite.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 1000000

InputLossImageType (enum)

- COLOR
- SLATE

InputMaximumBitrate (enum)

Maximum input bitrate in megabits per second. Bitrates up to 50 Mbps are supported currently.

- MAX_10_MBPS
- MAX_20_MBPS
- MAX_50_MBPS

InputResolution (enum)

Input resolution based on lines of vertical resolution in the input; SD is less than 720 lines, HD is 720 to 1080 lines, UHD is greater than 1080 lines

- SD
- HD
- UHD

InputSettings

sourceEndBehavior

Loop input if it is a file. This allows a file input to be streamed indefinitely.

- **Type**: string
- **Required**: False

audioSelectors

Used to select the audio stream to decode for inputs that have multiple available.
Properties

**Type**: Array of type `AudioSelector` (p. 381)
**Required**: False

**deblockFilter**
Enable or disable the deblock filter when filtering.

**Type**: string
**Required**: False

**networkInputSettings**
Input settings.

**Type**: `NetworkInputSettings` (p. 448)
**Required**: False

**inputFilter**
Turns on the filter for this input. MPEG-2 inputs have the deblocking filter enabled by default. 1) auto - filtering will be applied depending on input type/quality 2) disabled - no filtering will be applied to the input 3) forced - filtering will be applied regardless of input type

**Type**: string
**Required**: False

**videoSelector**
Informs which video elementary stream to decode for input types that have multiple available.

**Type**: `VideoSelector` (p. 463)
**Required**: False

**filterStrength**
Adjusts the magnitude of filtering from 1 (minimal) to 5 (strongest).

**Type**: integer
**Required**: False
**Minimum**: 1
**Maximum**: 5

**captionSelectors**
Used to select the caption input to use for inputs that have multiple available.

**Type**: Array of type `CaptionSelector` (p. 390)
**Required**: False

**denoiseFilter**
Enable or disable the denoise filter when filtering.

**Type**: string
**InputSourceEndBehavior (enum)**

- CONTINUE
- LOOP

**InputSpecification**

**codec**

Input codec

- **Type**: string
- **Required**: False

**resolution**

Input resolution, categorized coarsely

- **Type**: string
- **Required**: False

**maximumBitrate**

Maximum input bitrate, categorized coarsely

- **Type**: string
- **Required**: False

**InternalServiceError**

**message**

- **Type**: string
- **Required**: False

**InvalidRequest**

**message**

- **Type**: string
- **Required**: False

**KeyProviderSettings**

**staticKeySettings**

- **Type**: StaticKeySettings (p. 458)
- **Required**: False
LimitExceeded

message

  Type: string
  Required: False

M2tsAbsentInputAudioBehavior (enum)

  DROP
  ENCODE_SILENCE

M2tsArib (enum)

  DISABLED
  ENABLED

M2tsAribCaptionsPidControl (enum)

  AUTO
  USE_CONFIGURED

M2tsAudioBufferModel (enum)

  ATSC
  DVB

M2tsAudioInterval (enum)

  VIDEO_AND_FIXED_INTERVALS
  VIDEO_INTERVAL

M2tsAudioStreamType (enum)

  ATSC
  DVB

M2tsBufferModel (enum)

  MULTIPLEX
  NONE

M2tsCcDescriptor (enum)

  DISABLED
  ENABLED

M2tsEbifControl (enum)

  NONE
  PASSTHROUGH
**M2tsEbpPlacement (enum)**

- VIDEO_AND_AUDIO_PIDS
- VIDEO_PID

**M2tsEsRateInPes (enum)**

- EXCLUDE
- INCLUDE

**M2tsKlv (enum)**

- NONE
- PASSTHROUGH

**M2tsPcrControl (enum)**

- CONFIGURED_PCR_PERIOD
- PCR_EVERY_PES_PACKET

**M2tsRateMode (enum)**

- CBR
- VBR

**M2tsScte35Control (enum)**

- NONE
- PASSTHROUGH

**M2tsSegmentationMarkers (enum)**

- EBP
- EBP_LEGACY
- NONE
- PSI_SEGSTART
- RAI_ADAPT
- RAI_SEGSTART

**M2tsSegmentationStyle (enum)**

- MAINTAIN_CADENCE
- RESET_CADENCE

**M2tsSettings**

*audioStreamType*

When set to atsc, uses stream type = 0x81 for AC3 and stream type = 0x87 for EAC3. When set to dvb, uses stream type = 0x06.

*Type:* string
Required: False

ecmPid

Packet Identifier (PID) for ECM in the transport stream. Only enabled when Simulcrypt is enabled. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

Type: string
Required: False

dvbTeletextPid

Packet Identifier (PID) for input source DVB Teletext data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20).8182 (or 0x1ff6).

Type: string
Required: False

aribCaptionsPidControl

If set to auto, pid number used for ARIB Captions will be auto-selected from unused pids. If set to useConfigured, ARIB Captions will be on the configured pid number.

Type: string
Required: False

bitrate

The output bitrate of the transport stream in bits per second. Setting to 0 lets the muxer automatically determine the appropriate bitrate.

Type: integer
Required: False
Minimum: 0

segmentationTime

The length in seconds of each segment. Required unless markers is set to None_.

Type: number
Required: False
Minimum: 1.0

rateMode

When vbr, does not insert null packets into transport stream to fill specified bitrate. The bitrate setting acts as the maximum bitrate when vbr is set.

Type: string
Required: False
Properties

audioPids
Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

fragmentTime
The length in seconds of each fragment. Only used with EBP markers.

Type: number
Required: False
Minimum: 0.0

ebpAudioInterval
When videoAndFixedIntervals is selected, audio EBP markers will be added to partitions 3 and 4. The interval between these additional markers will be fixed, and will be slightly shorter than the video EBP marker interval. Only available when EBP Cablelabs segmentation markers are selected. Partitions 1 and 2 will always follow the video interval.

Type: string
Required: False

ebpLookaheadMs
When set, enforces that Encoder Boundary Points do not come within the specified time interval of each other by looking ahead at input video. If another EBP is going to come in within the specified time interval, the current EBP is not emitted, and the segment is "stretched" to the next marker. The lookahead value does not add latency to the system. The Live Event must be configured elsewhere to create sufficient latency to make the lookahead accurate.

Type: integer
Required: False
Minimum: 0
Maximum: 10000

audioFramesPerPes
The number of audio frames to insert for each PES packet.

Type: integer
Required: False
Minimum: 0

scte35Pid
Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False
pcrPeriod

Maximum time in milliseconds between Program Clock Reference (PCRs) inserted into the transport stream.

Type: integer
Required: False
Minimum: 0
Maximum: 500

pmtInterval

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

programNum

The value of the program number field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

segmentationStyle

The segmentation style parameter controls how segmentation markers are inserted into the transport stream. With avails, it is possible that segments may be truncated, which can influence where future segmentation markers are inserted. When a segmentation style of "resetCadence" is selected and a segment is truncated due to an avail, we will reset the segmentation cadence. This means the subsequent segment will have a duration of $segmentationTime seconds. When a segmentation style of "maintainCadence" is selected and a segment is truncated due to an avail, we will not reset the segmentation cadence. This means the subsequent segment will likely be truncated as well. However, all segments after that will have a duration of $segmentationTime seconds. Note that EBP lookahead is a slight exception to this rule.

Type: string
Required: False

ebif

If set to passthrough, passes any EBIF data from the input source to this output.

Type: string
Required: False

audioBufferModel

When set to dvb, uses DVB buffer model for Dolby Digital audio. When set to atsc, the ATSC model is used.
Type: string
Required: False

dvbNitSettings

Inserts DVB Network Information Table (NIT) at the specified table repetition interval.

Type: DvbNitSettings (p. 393)
Required: False

absentInputAudioBehavior

When set to drop, output audio streams will be removed from the program if the selected input audio stream is removed from the input. This allows the output audio configuration to dynamically change based on input configuration. If this is set to encodeSilence, all output audio streams will output encoded silence when not connected to an active input stream.

Type: string
Required: False

timedMetadataPid

Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

timedMetadataBehavior

When set to passthrough, timed metadata will be passed through from input to output.

Type: string
Required: False

etvSignalPid

Packet Identifier (PID) for input source ETV Signal data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

pmtPid

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False
bufferModel

If set to multiplex, use multiplex buffer model for accurate interleaving. Setting to bufferModel to none can lead to lower latency, but low-memory devices may not be able to play back the stream without interruptions.

Type: string
Required: False

scte35Control

Optionally pass SCTE-35 signals from the input source to this output.

Type: string
Required: False

ebpPlacement

Controls placement of EBP on Audio PIDs. If set to videoAndAudioPids, EBP markers will be placed on the video PID and all audio PIDs. If set to videoPid, EBP markers will be placed on only the video PID.

Type: string
Required: False

arib

When set to enabled, uses ARIB-compliant field muxing and removes video descriptor.

Type: string
Required: False

nullPacketBitrate

Value in bits per second of extra null packets to insert into the transport stream. This can be used if a downstream encryption system requires periodic null packets.

Type: number
Required: False
Minimum: 0.0

dvbSdtSettings

Inserts DVB Service Description Table (SDT) at the specified table repetition interval.

Type: DvbSdtSettings (p. 393)
Required: False

pcrPid

Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
**Required**: False

**transportStreamId**

The value of the transport stream ID field in the Program Map Table.

- **Type**: integer
- **Required**: False
- **Minimum**: 0
- **Maximum**: 65535

**pcrControl**

When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.

- **Type**: string
- **Required**: False

**videoPid**

Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

- **Type**: string
- **Required**: False

**esRateInPes**

Include or exclude the ES Rate field in the PES header.

- **Type**: string
- **Required**: False

**segmentationMarkers**

Inserts segmentation markers at each segmentationTime period. raiSegstart sets the Random Access Indicator bit in the adaptation field. raiAdapt sets the RAI bit and adds the current timecode in the private data bytes. psiSegstart inserts PAT and PMT tables at the start of segments. ebp adds Encoder Boundary Point information to the adaptation field as per OpenCable specification OC-SP-EBP-I01-130118. ebpLegacy adds Encoder Boundary Point information to the adaptation field using a legacy proprietary format.

- **Type**: string
- **Required**: False

**dvbTdtSettings**

Inserts DVB Time and Date Table (TDT) at the specified table repetition interval.

- **Type**: DvbTdtSettings (p. 398)
- **Required**: False
**Properties**

**klv**

If set to passthrough, passes any KLV data from the input source to this output.

*Type:* string  
*Required:* False

**ccDescriptor**

When set to enabled, generates captionServiceDescriptor in PMT.

*Type:* string  
*Required:* False

**patInterval**

The number of milliseconds between instances of this table in the output transport stream. Valid values are 0, 10..1000.

*Type:* integer  
*Required:* False  
*Minimum:* 0  
*Maximum:* 1000

**etvPlatformPid**

Packet Identifier (PID) for input source ETV Platform data to this output. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**dvbSubPids**

Packet Identifier (PID) for input source DVB Subtitle data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**aribCaptionsPid**

Packet Identifier (PID) for ARIB Captions in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

*Type:* string  
*Required:* False

**scte27Pids**

Packet Identifier (PID) for input source SCTE-27 data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).
klvDataPids

Packet Identifier (PID) for input source KLV data to this output. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values. Each PID specified must be in the range of 32 (or 0x20)..8182 (or 0x1ff6).

M2tsTimedMetadataBehavior (enum)

NO_PASSTHROUGH
PASSTROUGH

M3u8PcrControl (enum)

CONFIGURED_PCR_PERIOD
PCR_EVERY_PES_PACKET

M3u8Scte35Behavior (enum)

NO_PASSTHROUGH
PASSTROUGH

M3u8Settings

pmtPid

Packet Identifier (PID) for the Program Map Table (PMT) in the transport stream. Can be entered as a decimal or hexadecimal value.

ecmPid

ThePlatform-protected transport streams using 'microsoft' as Target Client include an ECM stream. This ECM stream contains the size, IV, and PTS of every sample in the transport stream. This stream PID is specified here. This PID has no effect on non ThePlatform-protected streams.

scte35Behavior

If set to passthrough, passes any SCTE-35 signals from the input source to this output.
**pcrPid**
Packet Identifier (PID) of the Program Clock Reference (PCR) in the transport stream. When no value is given, the encoder will assign the same value as the Video PID. Can be entered as a decimal or hexadecimal value.

*Type:* string  
*Required:* False

**audioPids**
Packet Identifier (PID) of the elementary audio stream(s) in the transport stream. Multiple values are accepted, and can be entered in ranges and/or by comma separation. Can be entered as decimal or hexadecimal values.

*Type:* string  
*Required:* False

**audioFramesPerPes**
The number of audio frames to insert for each PES packet.

*Type:* integer  
*Required:* False  
*Minimum:* 0

**scte35Pid**
Packet Identifier (PID) of the SCTE-35 stream in the transport stream. Can be entered as a decimal or hexadecimal value.

*Type:* string  
*Required:* False

**transportStreamId**
The value of the transport stream ID field in the Program Map Table.

*Type:* integer  
*Required:* False  
*Minimum:* 0  
*Maximum:* 65535

**videoPid**
Packet Identifier (PID) of the elementary video stream in the transport stream. Can be entered as a decimal or hexadecimal value.

*Type:* string  
*Required:* False

**pcrControl**
When set to pcrEveryPesPacket, a Program Clock Reference value is inserted for every Packetized Elementary Stream (PES) header. This parameter is effective only when the PCR PID is the same as the video or audio elementary stream.
Type: string
Required: False

pmtInterval
The number of milliseconds between instances of this table in the output transport stream. A value of "0" writes out the PMT once per segment file.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

pcrPeriod
Maximum time in milliseconds between Program Clock References (PCRs) inserted into the transport stream.

Type: integer
Required: False
Minimum: 0
Maximum: 500

programNum
The value of the program number field in the Program Map Table.

Type: integer
Required: False
Minimum: 0
Maximum: 65535

patInterval
The number of milliseconds between instances of this table in the output transport stream. A value of "0" writes out the PMT once per segment file.

Type: integer
Required: False
Minimum: 0
Maximum: 1000

timedMetadataPid
Packet Identifier (PID) of the timed metadata stream in the transport stream. Can be entered as a decimal or hexadecimal value. Valid values are 32 (or 0x20)..8182 (or 0x1ff6).

Type: string
Required: False

timedMetadataBehavior
When set to passthrough, timed metadata is passed through from input to output.

Type: string
**Properties**

**Required**: False

**M3u8TimedMetadataBehavior (enum)**

- NO_PASSTHROUGH
- PASSTHROUGH

**Mp2CodingMode (enum)**

- CODING_MODE_1_0
- CODING_MODE_2_0

**Mp2Settings**

**codingMode**

The MPEG2 Audio coding mode. Valid values are codingMode10 (for mono) or codingMode20 (for stereo).

- **Type**: string
- **Required**: False

**bitrate**

Average bitrate in bits/second.

- **Type**: number
- **Required**: False

**sampleRate**

Sample rate in Hz.

- **Type**: number
- **Required**: False

**MsSmoothGroupSettings**

**eventId**

MS Smooth event ID to be sent to the IIS server. Should only be specified if eventIdMode is set to useConfigured.

- **Type**: string
- **Required**: False

**fragmentLength**

Length of mp4 fragments to generate (in seconds). Fragment length must be compatible with GOP size and framerate.

- **Type**: integer
- **Required**: False
**Properties**

**Minimum**: 1

**timestampOffset**
Timestamp offset for the event. Only used if timestampOffsetMode is set to useConfiguredOffset.
- **Type**: string
- **Required**: False

**segmentationMode**
When set to useInputSegmentation, the output segment or fragment points are set by the RAI markers from the input streams.
- **Type**: string
- **Required**: False

**numRetries**
Number of retry attempts.
- **Type**: integer
- **Required**: False
  - **Minimum**: 0

**eventStopBehavior**
When set to sendEos, send EOS signal to IIS server when stopping the event.
- **Type**: string
- **Required**: False

**acquisitionPointId**
The value of the "Acquisition Point Identity" element used in each message placed in the sparse track. Only enabled if sparseTrackType is not "none".
- **Type**: string
- **Required**: False

**sparseTrackType**
If set to scte35, use incoming SCTE-35 messages to generate a sparse track in this group of MS-Smooth outputs.
- **Type**: string
- **Required**: False

**timestampOffsetMode**
Type of timestamp date offset to use. - useEventStartDate: Use the date the event was started as the offset - useConfiguredOffset: Use an explicitly configured date as the offset
- **Type**: string
- **Required**: False
**destination**
Smooth Streaming publish point on an IIS server. Elemental Live acts as a "Push" encoder to IIS.

  * Type: OutputLocationRef (p. 451)
  * Required: True

**audioOnlyTimecodeControl**
If set to passthrough for an audio-only MS Smooth output, the fragment absolute time will be set to the current timecode. This option does not write timecodes to the audio elementary stream.

  * Type: string
  * Required: False

**connectionRetryInterval**
Number of seconds to wait before retrying connection to the IIS server if the connection is lost. Content will be cached during this time and the cache will be be delivered to the IIS server once the connection is re-established.

  * Type: integer
  * Required: False
  * Minimum: 0

**filecacheDuration**
Size in seconds of file cache for streaming outputs.

  * Type: integer
  * Required: False
  * Minimum: 0

**certificateMode**
If set to verifyAuthenticity, verify the https certificate chain to a trusted Certificate Authority (CA). This will cause https outputs to self-signed certificates to fail unless those certificates are manually added to the OS trusted keystore.

  * Type: string
  * Required: False

**inputLossAction**
Parameter that control output group behavior on input loss.

  * Type: string
  * Required: False

**sendDelayMs**
Outputs that are "output locked" can use this delay. Assign a delay to the output that is "secondary". Do not assign a delay to the "primary" output. The delay means that the primary output will always reach the downstream system before the secondary, which helps ensure that the downstream system always uses the primary output. (If there were no delay, the downstream system might flip-flop between whichever output happens to arrive first.) If the primary fails, the downstream system will switch to the
secondary output. When the primary is restarted, the downstream system will switch back to the primary (because once again it is always arriving first)

    Type: integer
    Required: False
    Minimum: 0
    Maximum: 10000

eventIdMode

Specifies whether or not to send an event ID to the IIS server. If no event ID is sent and the same Live Event is used without changing the publishing point, clients might see cached video from the previous run. Options: - "useConfigured" - use the value provided in eventId - "useTimestamp" - generate and send an event ID based on the current timestamp - "noEventId" - do not send an event ID to the IIS server.

    Type: string
    Required: False

restartDelay

Number of seconds before initiating a restart due to output failure, due to exhausting the numRetries on one segment, or exceeding filecacheDuration.

    Type: integer
    Required: False
    Minimum: 0

streamManifestBehavior

When set to send, send stream manifest so publishing point doesn't start until all streams start.

    Type: string
    Required: False

MsSmoothOutputSettings

nameModifier

String concatenated to the end of the destination filename. Required for multiple outputs of the same type.

    Type: string
    Required: False

NetworkInputServerValidation (enum)

    CHECK_CRYPTOGRAPHY_AND_VALIDATE_NAME
    CHECK_CRYPTOGRAPHY_ONLY

NetworkInputSettings

hlsInputSettings

Specifies HLS input settings when the uri is for a HLS manifest.
Properties

serverValidation

Check HTTPS server certificates. When set to checkCryptographyOnly, cryptography in the certificate will be checked, but not the server's name. Certain subdomains (notably S3 buckets that use dots in the bucket name) do not strictly match the corresponding certificate's wildcard pattern and would otherwise cause the event to error. This setting is ignored for protocols that do not use https.

Type: string
Required: False

Output

videoDescriptionName

The name of the VideoDescription used as the source for this output.

Type: string
Required: False

captionDescriptionNames

The names of the CaptionDescriptions used as caption sources for this output.

Type: Array of type string
Required: False

outputName

The name used to identify an output.

Type: string
Required: False

outputSettings

Output type-specific settings.

Type: OutputSettings (p. 452)
Required: True

audioDescriptionNames

The names of the AudioDescriptions used as audio sources for this output.

Type: Array of type string
Required: False
OutputDestination

settings

Destination settings for output; one for each redundant encoder.

Type: Array of type OutputDestinationSettings (p. 450)
Required: False

id

User-specified id. This is used in an output group or an output.

Type: string
Required: False

OutputDestinationSettings

passwordParam

key used to extract the password from EC2 Parameter store

Type: string
Required: False

streamName

Stream name for RTMP destinations (URLs of type rtmp://)

Type: string
Required: False

url

A URL specifying a destination

Type: string
Required: False

username

username for destination

Type: string
Required: False

OutputGroup

outputs

Type: Array of type Output (p. 449)
**Required**: True

**outputGroupSettings**

Settings associated with the output group.

**Type**: OutputGroupSettings (p. 451)
**Required**: True

**name**

Custom output group name optionally defined by the user. Only letters, numbers, and the underscore character allowed; only 32 characters allowed.

**Type**: string
**Required**: False

**OutputGroupSettings**

**archiveGroupSettings**

**Type**: ArchiveGroupSettings (p. 376)
**Required**: False

**rtmpGroupSettings**

**Type**: RtmpGroupSettings (p. 453)
**Required**: False

**udpGroupSettings**

**Type**: UdpGroupSettings (p. 460)
**Required**: False

**msSmoothGroupSettings**

**Type**: MsSmoothGroupSettings (p. 445)
**Required**: False

**hlsGroupSettings**

**Type**: HlsGroupSettings (p. 418)
**Required**: False

**OutputLocationRef**

**destinationRefId**

**Type**: string
**Required**: False
OutputSettings

rtmpOutputSettings

Type: RtmpOutputSettings (p. 454)
Required: False

archiveOutputSettings

Type: ArchiveOutputSettings (p. 376)
Required: False

msSmoothOutputSettings

Type: MsSmoothOutputSettings (p. 448)
Required: False

udpOutputSettings

Type: UdpOutputSettings (p. 460)
Required: False

hlsOutputSettings

Type: HlsOutputSettings (p. 425)
Required: False

PassThroughSettings

RemixSettings

channelMappings

Mapping of input channels to output channels, with appropriate gain adjustments.

Type: Array of type AudioChannelMapping (p. 376)
Required: True

channelsOut

Number of output channels to be produced. Valid values: 1, 2, 4, 6, 8

Type: integer
Required: False
Minimum: 1
Maximum: 8

channelsIn

Number of input channels to be used.

Type: integer
Required: False
Minimum: 1
Maximum: 16

ResourceConflict

message
Type: string
Required: False

ResourceNotFound

message
Type: string
Required: False

RtmpCacheFullBehavior (enum)
DISCONNECT_IMMEDIATELY
WAIT_FOR_SERVER

RtmpCaptionData (enum)
ALL
FIELD1_608
FIELD1_AND_FIELD2_608

RtmpCaptionInfoDestinationSettings

RtmpGroupSettings
captionData
Controls the types of data that passes to onCaptionInfo outputs. If set to 'all' then 608 and 708 carried DTVCC data will be passed. If set to 'field1AndField2608' then DTVCC data will be stripped out, but 608 data from both fields will be passed. If set to 'field1608' then only the data carried in 608 from field 1 video will be passed.

Type: string
Required: False

authenticationScheme
Authentication scheme to use when connecting with CDN

Type: string
Required: False

cacheLength
Cache length, in seconds, is used to calculate buffer size.
Properties

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>Type: integer, Required: False, Minimum: 30</td>
</tr>
<tr>
<td>restartDelay</td>
<td>If a streaming output fails, number of seconds to wait until a restart is initiated. A value of 0 means never restart. Type: integer, Required: False, Minimum: 0</td>
</tr>
<tr>
<td>cacheFullBehavior</td>
<td>Controls behavior when content cache fills up. If remote origin server stalls the RTMP connection and does not accept content fast enough the 'Media Cache' will fill up. When the cache reaches the duration specified by cacheLength the cache will stop accepting new content. If set to disconnectImmediately, the RTMP output will force a disconnect. Clear the media cache, and reconnect after restartDelay seconds. If set to waitForServer, the RTMP output will wait up to 5 minutes to allow the origin server to begin accepting data again. Type: string, Required: False</td>
</tr>
<tr>
<td>rtmpOutputCertificateMode</td>
<td>(enum) SELF_SIGNED, VERIFY_AUTHENTICITY</td>
</tr>
<tr>
<td>rtmpOutputCertificateMode</td>
<td>If set to verifyAuthenticity, verify the tls certificate chain to a trusted Certificate Authority (CA). This will cause rtmps outputs with self-signed certificates to fail. Type: string, Required: False</td>
</tr>
<tr>
<td>numRetries</td>
<td>Number of retry attempts.</td>
</tr>
<tr>
<td>numRetries</td>
<td>Type: integer, Required: False, Minimum: 0</td>
</tr>
<tr>
<td>destination</td>
<td>The RTMP endpoint excluding the stream name (eg. rtmp://host/appname). For connection to Akamai, a username and password must be supplied. URI fields accept format identifiers. Type: OutputLocationRef (p. 451)</td>
</tr>
</tbody>
</table>
**Required**: True

**connectionRetryInterval**

Number of seconds to wait before retrying a connection to the Flash Media server if the connection is lost.

- **Type**: integer
- **Required**: False
- **Minimum**: 1

**Scte20Convert608To708 (enum)**

- DISABLED
- UPCONVERT

**Scte20PlusEmbeddedDestinationSettings**

**Scte20SourceSettings**

**source608ChannelNumber**

Specifies the 608/708 channel number within the video track from which to extract captions. Unused for passthrough.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
- **Maximum**: 4

**convert608To708**

If upconvert, 608 data is both passed through via the "608 compatibility bytes" fields of the 708 wrapper as well as translated into 708. 708 data present in the source content will be discarded.

- **Type**: string
- **Required**: False

**Scte27DestinationSettings**

**Scte27SourceSettings**

**pid**

The pid field is used in conjunction with the caption selector languageCode field as follows:
- Specify PID and Language: Extracts captions from that PID; the language is "informational".
- Specify PID and omit Language: Extracts the specified PID.
- Omit PID and specify Language: Extracts the specified language, whichever PID that happens to be.
- Omit PID and omit Language: Valid only if source is DVB-Sub that is being passed through; all languages will be passed through.

- **Type**: integer
- **Required**: False
- **Minimum**: 1
Scte35AposNoRegionalBlackoutBehavior (enum)

FOLLOW
IGNORE

Scte35AposWebDeliveryAllowedBehavior (enum)

FOLLOW
IGNORE

**Scte35SpliceInsert**

**adAvailOffset**

When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

**Type:** integer

**Required:** False

**Minimum:** -1000

**Maximum:** 1000

**webDeliveryAllowedFlag**

When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

**Type:** string

**Required:** False

**noRegionalBlackoutFlag**

When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

**Type:** string

**Required:** False

Scte35SpliceInsertNoRegionalBlackoutBehavior (enum)

FOLLOW
IGNORE

Scte35SpliceInsertWebDeliveryAllowedBehavior (enum)

FOLLOW
IGNORE
**Scte35TimeSignalApos**

**adAvailOffset**
When specified, this offset (in milliseconds) is added to the input Ad Avail PTS time. This only applies to embedded SCTE 104/35 messages and does not apply to OOB messages.

- **Type**: integer
- **Required**: False
- **Minimum**: -1000
- **Maximum**: 1000

**webDeliveryAllowedFlag**
When set to ignore, Segment Descriptors with webDeliveryAllowedFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

- **Type**: string
- **Required**: False

**noRegionalBlackoutFlag**
When set to ignore, Segment Descriptors with noRegionalBlackoutFlag set to 0 will no longer trigger blackouts or Ad Avail slates.

- **Type**: string
- **Required**: False

**SmoothGroupAudioOnlyTimecodeControl (enum)**
- PASSTHROUGH
- USE_CONFIGURED_CLOCK

**SmoothGroupCertificateMode (enum)**
- SELF_SIGNED
- VERIFY_AUTHENTICITY

**SmoothGroupEventIdMode (enum)**
- NO_EVENT_ID
- USE_CONFIGURED
- USE_TIMESTAMP

**SmoothGroupEventStopBehavior (enum)**
- NONE
- SEND_EOS

**SmoothGroupSegmentationMode (enum)**
- USE_INPUT_SEGMENTATION
- USE_SEGMENT_DURATION
SmoothGroupSparseTrackType (enum)

- NONE
- SCTE_35

SmoothGroupStreamManifestBehavior (enum)

- DO_NOT_SEND
- SEND

SmoothGroupTimestampOffsetMode (enum)

- USE_CONFIGURED_OFFSET
- USE_EVENT_START_DATE

SmpteTtDestinationSettings

StandardHlsSettings

m3u8Settings

Type: M3u8Settings (p. 442)
Required: True

audioRenditionSets

List all the audio groups that are used with the video output stream. Input all the audio GROUP-IDs that are associated to the video, separate by "."

Type: string
Required: False

StaticKeySettings

staticKeyValue

Static key value as a 32 character hexadecimal string.

Type: string
Required: True

keyProviderServer

The URL of the license server used for protecting content.

Type: InputLocation (p. 428)
Required: False
TeletextDestinationSettings

TeletextSourceSettings

pageNumber

Specifies the teletext page number within the data stream from which to extract captions. Range of 0x100 (256) to 0x8FF (2303). Unused for passthrough. Should be specified as a hexadecimal string with no "0x" prefix.

Type: string
Required: False

TimecodeConfig

syncThreshold

Threshold in frames beyond which output timecode is resynchronized to the input timecode. Discrepancies below this threshold are permitted to avoid unnecessary discontinuities in the output timecode. No timecode sync when this is not specified.

Type: integer
Required: False
Minimum: 1
Maximum: 1000000

source

Identifies the source for the timecode that will be associated with the events outputs. - Embedded (embedded): Initialize the output timecode with timecode from the the source. If no embedded timecode is detected in the source, the system falls back to using "Start at 0" (zerobased). - System Clock (systemclock): Use the UTC time. - Start at 0 (zerobased): The time of the first frame of the event will be 00:00:00:00.

Type: string
Required: True

TimecodeConfigSource (enum)

- EMBEDDED
- SYSTEMCLOCK
- ZEROBASED

TtmlDestinationSettings

styleControl

When set to passthrough, passes through style and position information from a TTML-like input source (TTML, SMPTE-TT, CFF-TT) to the CFF-TT output or TTML output.

Type: string
Required: False
**TtmlDestinationStyleControl (enum)**

- PASSTHROUGH
- USE_CONFIGURED

**UdpContainerSettings**

**m2tsSettings**

- **Type:** M2tsSettings (p. 434)
- **Required:** False

**UdpGroupSettings**

**inputLossAction**

Specifies behavior of last resort when input video is lost, and no more backup inputs are available. When dropTs is selected the entire transport stream will stop being emitted. When dropProgram is selected the program can be dropped from the transport stream (and replaced with null packets to meet the TS bitrate requirement). Or, when emitProgram is chosen the transport stream will continue to be produced normally with repeat frames, black frames, or slate frames substituted for the absent input video.

- **Type:** string
- **Required:** False

**timedMetadataId3Frame**

Indicates ID3 frame that has the timecode.

- **Type:** string
- **Required:** False

**timedMetadataId3Period**

Timed Metadata interval in seconds.

- **Type:** integer
- **Required:** False
- **Minimum:** 0

**UdpOutputSettings**

**bufferMsec**

UDP output buffering in milliseconds. Larger values increase latency through the transcoder but simultaneously assist the transcoder in maintaining a constant, low-jitter UDP/RTP output while accommodating clock recovery, input switching, input disruptions, picture reordering, etc.

- **Type:** integer
- **Required:** False
- **Minimum:** 0
- **Maximum:** 10000
**destination**

Destination address and port number for RTP or UDP packets. Can be unicast or multicast RTP or UDP (eg. rtp://239.10.10.10:5001 or udp://10.100.100.100:5002).

- **Type**: OutputLocationRef (p. 451)
- **Required**: True

**containerSettings**

- **Type**: UdpContainerSettings (p. 460)
- **Required**: True

**fecOutputSettings**

Settings for enabling and adjusting Forward Error Correction on UDP outputs.

- **Type**: FecOutputSettings (p. 405)
- **Required**: False

**UdpTimedMetadataId3Frame** (enum)

- NONE
- PRIV
- TDRL

**VideoCodecSettings**

**h264Settings**

- **Type**: H264Settings (p. 409)
- **Required**: False

**VideoDescription**

**respondToAfd**

Indicates how to respond to the AFD values in the input stream. Setting to "respond" causes input video to be clipped, depending on AFD value, input display aspect ratio and output display aspect ratio.

- **Type**: string
- **Required**: False

**scalingBehavior**

When set to "stretchToOutput", automatically configures the output position to stretch the video to the specified output resolution. This option will override any position value.

- **Type**: string
- **Required**: False
name

The name of this VideoDescription. Outputs will use this name to uniquely identify this Description. Description names should be unique within this Live Event.

Type: string
Required: True

width

Output video width (in pixels). Leave out to use source video width. If left out, height must also be left out. Display aspect ratio is always preserved by letterboxing or pillarboxing when necessary.

Type: integer
Required: False

sharpness

Changes the width of the anti-alias filter kernel used for scaling. Only applies if scaling is being performed and antiAlias is set to true. 0 is the softest setting, 100 the sharpest, and 50 recommended for most content.

Type: integer
Required: False
Minimum: 0
Maximum: 100

codecSettings

Video codec settings.

Type: VideoCodecSettings (p. 461)
Required: False

height

Output video height (in pixels). Leave blank to use source video height. If left blank, width must also be unspecified.

Type: integer
Required: False

VideoDescriptionRespondToAfd (enum)

NONE
PASSTHROUGH
RESPOND

VideoDescriptionScalingBehavior (enum)

DEFAULT
STRETCH_TO_OUTPUT
VideoSelector

colorSpace

Specifies the colorspace of an input. This setting works in tandem with colorSpaceConversion to determine if any conversion will be performed.

Type: string
Required: False

selectorSettings

The video selector settings.

Type: VideoSelectorSettings (p. 464)
Required: False

colorSpaceUsage

Applies only if colorSpace is a value other than follow. This field controls how the value in the colorSpace field will be used. fallback means that when the input does include color space data, that data will be used, but when the input has no color space data, the value in colorSpace will be used. Choose fallback if your input is sometimes missing color space data, but when it does have color space data, that data is correct. force means to always use the value in colorSpace. Choose force if your input usually has no color space data or might have unreliable color space data.

Type: string
Required: False

VideoSelectorColorSpace (enum)

FOLLOW
REC_601
REC_709

VideoSelectorColorSpaceUsage (enum)

FALLBACK
FORCE

VideoSelectorPid

pid

Selects a specific PID from within a video source.

Type: integer
Required: False
Minimum: 0
Maximum: 8191
VideoSelectorProgramId

programId

Selects a specific program from within a multi-program transport stream. If the program doesn't exist, the first program within the transport stream will be selected by default.

Type: integer
Required: False
Minimum: 0
Maximum: 65536

VideoSelectorSettings

videoSelectorPid

Type: VideoSelectorPid (p. 463)
Required: False

videoSelectorProgramId

Type: VideoSelectorProgramId (p. 464)
Required: False

WebvttDestinationSettings

InputSecurityGroups

URI
/prod/inputSecurityGroups

HTTP Methods

GET

Operation ID: ListInputSecurityGroups

Produces a list of Input Security Groups for an account

Query Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nextToken</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
<tr>
<td>maxResults</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
</tbody>
</table>
Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>ListInputSecurityGroupsResultModel (p. 466)</td>
<td>An array of Input Security Groups</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 466)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 467)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 467)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 466)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 467)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 467)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

POST

Operation ID: CreateInputSecurityGroup

Creates a Input Security Group

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>InvalidRequest (p. 466)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 467)</td>
<td>Unexpected internal service error.</td>
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<tr>
<td>502</td>
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<td>403</td>
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<tr>
<td>429</td>
<td>LimitExceeded (p. 467)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

Schemas

Request Bodies

Example POST

```
{
   "whitelistRules (p. 468)": [
```
Schemas

```json
{
    "cidr (p. 469)": "string"
}
```

Response Bodies

Example ListInputSecurityGroupsResultModel

```json
{
    "inputSecurityGroups (p. 469)": [
        {
            "inputs (p. 468)": [
                "string"
            ],
            "state (p. 468)": enum,
            "id (p. 468)": "string",
            "arn (p. 468)": "string",
            "whitelistRules (p. 468)": [
                {
                    "cidr (p. 469)": "string"
                }
            ],
            "nextToken (p. 470)": "string"
        }
    
Example CreateInputSecurityGroupResultModel

```json
{
    "securityGroup (p. 467)": {
        "inputs (p. 468)": [
            "string"
        ],
        "state (p. 468)": enum,
        "id (p. 468)": "string",
        "arn (p. 468)": "string",
        "whitelistRules (p. 468)": [
            {
                "cidr (p. 469)": "string"
            }
        }
    }
```

Example InvalidRequest

```json
{
    "message (p. 469)": "string"
}
```

Example AccessDenied

```json
{
    "message (p. 467)": "string"
}
```
Example LimitExceeded

```
{
    "message (p. 469)": "string"
}
```

Example InternalServiceError

```
{
    "message (p. 469)": "string"
}
```

Example BadGatewayException

```
{
    "message (p. 467)": "string"
}
```

Example GatewayTimeoutException

```
{
    "message (p. 467)": "string"
}
```

Properties

AccessDenied

message

Type: string
Required: False

BadGatewayException

message

Type: string
Required: False

CreateInputSecurityGroupResultModel

securityGroup

Type: InputSecurityGroup (p. 468)
Required: False

GatewayTimeoutException

message

Type: string
Required: False

**InputSecurityGroup**

*inputs*

The list of inputs currently using this Input Security Group.

- **Type**: Array of type string
- **Required**: False

*state*

The current state of the Input Security Group.

- **Type**: string
- **Required**: False

*id*

The Id of the Input Security Group

- **Type**: string
- **Required**: False

*arn*

Unique ARN of Input Security Group

- **Type**: string
- **Required**: False

*whitelistRules*

Whitelist rules and their sync status

- **Type**: Array of type InputWhitelistRule (p. 469)
- **Required**: False

**InputSecurityGroupState (enum)**

- IDLE
- IN_USE
- UPDATING
- DELETED

**InputSecurityGroupWhitelistRequest**

*whitelistRules*

List of IPv4 CIDR addresses to whitelist
Properties

Type: Array of type InputWhitelistRuleCidr (p. 469)
Required: False

InputWhitelistRule

cidr
The IPv4 CIDR that's whitelisted.

Type: string
Required: False

InputWhitelistRuleCidr

cidr
The IPv4 CIDR to whitelist

Type: string
Required: False

InternalServiceError

message

Type: string
Required: False

InvalidRequest

message

Type: string
Required: False

LimitExceeded

message

Type: string
Required: False

ListInputSecurityGroupsResultModel

inputSecurityGroups
List of input security groups

Type: Array of type InputSecurityGroup (p. 468)
Required: False
nextToken

Type: string
Required: False

InputSecurityGroups inputSecurityGroupId

URI

/prod/inputSecurityGroups/inputSecurityGroupId

HTTP Methods

GET

Operation ID: DescribeInputSecurityGroup

Produces a summary of an Input Security Group

Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputSecurityGroupId</td>
<td>String</td>
<td>True</td>
<td>The id of the Input Security Group to describe</td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>InputSecurityGroup (p. 472)</td>
<td>An Input Security Group</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 473)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 473)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 474)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 473)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFoundException (p. 473)</td>
<td>The channel you’re requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 474)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 473)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

PUT

Operation ID: UpdateInputSecurityGroup

**Path Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputSecurityGroupId</td>
<td>String</td>
<td>True</td>
<td>The id of the Input Security Group to describe</td>
</tr>
</tbody>
</table>

**Responses**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>InvalidRequest (p. 473)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 473)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 474)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 473)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>None</td>
<td>The channel you’re requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 474)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 473)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

**DELETE**

Operation ID: DeleteInputSecurityGroup

Deletes an Input Security Group

**Path Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputSecurityGroupId</td>
<td>String</td>
<td>True</td>
<td>The id of the Input Security Group to describe</td>
</tr>
</tbody>
</table>

**Responses**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Empty (p. 473)</td>
<td>An Input Security Group</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 473)</td>
<td>This request was invalid.</td>
</tr>
</tbody>
</table>
### Status Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td><code>InternalServerError (p. 473)</code></td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td><code>BadGatewayException (p. 474)</code></td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td><code>AccessDenied (p. 473)</code></td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td><code>ResourceNotFound (p. 473)</code></td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td><code>GatewayTimeoutException (p. 474)</code></td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td><code>LimitExceeded (p. 473)</code></td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

### Schemas

#### Request Bodies

**Example PUT**

```json
{
   "whitelistRules (p. 475)": [
      { "cidr (p. 475)": "string"
   ]
}
```

#### Response Bodies

**Example InputSecurityGroup**

```json
{
   "inputs (p. 474)": [
      "string"
   ],
   "state (p. 474)": enum,
   "id (p. 475)": "string",
   "arn (p. 475)": "string",
   "whitelistRules (p. 475)": [
      { "cidr (p. 475)": "string"
   ]
}
```

**Example UpdateInputSecurityGroupResultModel**

```json
{
   "securityGroup (p. 476)": {
      "inputs (p. 474)": [
         "string"
      ]
   }
}
```
Schemas

```
]
"state (p. 474)”: enum,
"id (p. 475)”: “string”,
"arn (p. 475)”: “string”,
"whitelistRules (p. 475)”: [ 
  { "cidr (p. 475)”: “string" 
  }]
}
```

Example Empty

```
{
}
```

Example InvalidRequest

```
{
  "message (p. 476)”: "string"
}
```

Example AccessDenied

```
{
  "message (p. 474)”: "string"
}
```

Example ResourceNotFound

```
{
  "message (p. 476)”: "string"
}
```

Example ResourceConflict

```
{
  "message (p. 476)”: "string"
}
```

Example LimitExceeded

```
{
  "message (p. 476)”: "string"
}
```

Example InternalServiceError

```
{
  "message (p. 476)": "string"
}
```
Example BadGatewayException

```json
{
  "message (p. 474)" : "string"
}
```

Example GatewayTimeoutException

```json
{
  "message (p. 474)" : "string"
}
```

Properties

AccessDenied

message

  Type: string
  Required: False

BadGatewayException

message

  Type: string
  Required: False

Empty

GatewayTimeoutException

message

  Type: string
  Required: False

InputSecurityGroup

inputs

The list of inputs currently using this Input Security Group.

  Type: Array of type string
  Required: False

state

The current state of the Input Security Group.

  Type: string
  Required: False
id
The Id of the Input Security Group

  *Type*: string
  *Required*: False

arn
Unique ARN of Input Security Group

  *Type*: string
  *Required*: False

whitelistRules
Whitelist rules and their sync status

  *Type*: Array of type InputWhitelistRule
  *Required*: False

InputSecurityGroupState (enum)

  IDLE
  IN_USE
  UPDATING
  DELETED

InputSecurityGroupWhitelistRequest

whitelistRules
List of IPv4 CIDR addresses to whitelist

  *Type*: Array of type InputWhitelistRuleCidr
  *Required*: False

InputWhitelistRule

cidr
The IPv4 CIDR that's whitelisted.

  *Type*: string
  *Required*: False

InputWhitelistRuleCidr

cidr
The IPv4 CIDR to whitelist

  *Type*: string
  *Required*: False
InternalServiceError

message

  Type: string
  Required: False

InvalidRequest

message

  Type: string
  Required: False

LimitExceeded

message

  Type: string
  Required: False

ResourceConflict

message

  Type: string
  Required: False

ResourceNotFound

message

  Type: string
  Required: False

UpdateInputSecurityGroupResultModel

securityGroup

  Type: InputSecurityGroup (p. 474)
  Required: False

Inputs

URI

  /prod/inputs
HTTP Methods

GET

Operation ID: ListInputs

Produces list of inputs that have been created

Query Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nextToken</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
<tr>
<td>maxResults</td>
<td>String</td>
<td>False</td>
<td></td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>ListInputsResultModel</td>
<td>An array of inputs</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 479)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 480)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 480)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 479)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 480)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 479)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

POST

Operation ID: CreateInput

Create an input

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>CreateInputResultModel</td>
<td>Creation of channel is started.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 479)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 480)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 480)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 479)</td>
<td>You do not have permission to list channels.</td>
</tr>
</tbody>
</table>
### Schemas

#### Request Bodies

**Example POST**

```json
{
    "inputSecurityGroups (p. 480)": [
        "string"
    ],
    "sources (p. 480)": [
        {
            "passwordParam (p. 484)": "string",
            "url (p. 484)": "string",
            "username (p. 484)": "string"
        }
    ],
    "requestId (p. 481)": "string",
    "destinations (p. 481)": [
        {
            "streamName (p. 483)": "string"
        }
    ],
    "name (p. 481)": "string",
    "type (p. 481)": enum
}
```

#### Response Bodies

**Example ListInputsResultModel**

```json
{
    "nextToken (p. 485)": "string",
    "inputs (p. 485)": [
        {
            "attachedChannels (p. 481)": [
                "string"
            ],
            "sources (p. 482)": [
                {
                    "passwordParam (p. 483)": "string",
                    "url (p. 483)": "string",
                    "username (p. 483)": "string"
                }
            ],
            "destinations (p. 482)": [
                {
                    "ip (p. 483)": "string",
                    "url (p. 483)": "string"
                }
            ]
        }
    ]
}
```
### Example CreateInputResultModel

```json
{
   "input (p. 481)": {
      "attachedChannels (p. 481)": [ "string" ],
      "sources (p. 482)": [ {
         "passwordParam (p. 483)": "string",
         "url (p. 483)": "string",
         "username (p. 483)": "string"
      } ],
      "destinations (p. 482)": [ {
         "port (p. 483)": "string",
         "ip (p. 483)": "string",
         "url (p. 483)": "string"
      } ],
      "name (p. 482)": "string",
      "securityGroups (p. 482)": [ "string" ],
      "state (p. 482)": enum,
      "id (p. 482)": "string",
      "type (p. 482)": enum,
      "arn (p. 482)": "string"
   }
}
```

### Example InvalidRequest

```json
{
   "message (p. 484)": "string"
}
```

### Example AccessDenied

```json
{
   "message (p. 480)": "string"
}
```

### Example LimitExceeded

```json
{
}
```
Properties

AccessDenied

message

Type: string
Required: False

BadGatewayException

message

Type: string
Required: False

CreateInput

inputSecurityGroups

A list of security groups referenced by IDs to attach to the input.

Type: Array of type string
Required: False

sources

settings required for PULL-type inputs; one per redundancy group Only one of sources and destinations can be specified
Properties

**Type**: Array of type `InputSourceRequest (p. 484)`
**Required**: False

**requestId**
Unique identifier of the request to ensure the request is handled exactly once in case of retries

**Type**: string
**Required**: False

**destinations**
settings required for PUSH-type inputs; one per redundancy group. Only one of sources and destinations can be specified. Note: there are currently no settings required for PUSH-type inputs

**Type**: Array of type `InputDestinationRequest (p. 483)`
**Required**: False

**name**
Name of the input.

**Type**: string
**Required**: False

**type**

**Type**: string
**Required**: False

**CreateInputResultModel**

**input**

**Type**: `Input (p. 481)`
**Required**: False

**GatewayTimeoutException**

**message**

**Type**: string
**Required**: False

**Input**

**attachedChannels**
List of channel IDs that that input is attached to (currently an input can only be attached to one channel)

**Type**: Array of type string
Properties

**Required:** False

**sources**
List of sources of input (PULL-type)

**Type:** Array of type `InputSource (p. 483)`

**Required:** False

**destinations**
List of destinations of input (PULL-type)

**Type:** Array of type `InputDestination (p. 483)`

**Required:** False

**name**
user-assigned name (mutable)

**Type:** string

**Required:** False

**securityGroups**
List of IDs for all the security groups attached to the input.

**Type:** Array of type string

**Required:** False

**state**

**Type:** string

**Required:** False

**id**
generated ID of input (unique for user account, immutable)

**Type:** string

**Required:** False

**type**

**Type:** string

**Required:** False

**arn**
Unique ARN of input (generated, immutable)

**Type:** string

**Required:** False
**InputDestination**

**port**

port for input

  *Type:* string  
  *Required:* False

**ip**

system-generated static IP address of endpoint. Remains fixed for the lifetime of the input

  *Type:* string  
  *Required:* False

**url**

This represents the endpoint that the customer stream will be pushed to.

  *Type:* string  
  *Required:* False

**InputDestinationRequest**

**streamName**

A unique name for the location the RTMP stream is being pushed to.

  *Type:* string  
  *Required:* False

**InputSource**

**passwordParam**

key used to extract the password from EC2 Parameter store

  *Type:* string  
  *Required:* False

**url**

This represents the customer's source URL where stream is pulled from.

  *Type:* string  
  *Required:* False

**username**

username for input source

  *Type:* string  
  *Required:* False
InputSourceRequest

passwordParam
key used to extract the password from EC2 Parameter store

  Type: string
  Required: False

url
This represents the customer's source URL where stream is pulled from.

  Type: string
  Required: False

username
username for input source

  Type: string
  Required: False

InputState (enum)
CREATING
DETACHED
ATTACHED
DELETING
DELETED

InputType (enum)
UDP_PUSH
RTP_PUSH
RTMP_PUSH
RTMP_PULL
URL_PULL

InternalServerError

message

  Type: string
  Required: False

InvalidRequest

message

  Type: string
Inputs inputId

URI
/prod/inputs/ inputId

HTTP Methods
GET

Operation ID: DescribeInput

Produces details about an input

Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputId</td>
<td>String</td>
<td>True</td>
<td>Unique ID of the input</td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Input (p. 488)</td>
<td>Input details</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 489)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 489)</td>
<td>Unexpected internal service error.</td>
</tr>
</tbody>
</table>
**HTTP Methods**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>502</td>
<td>BadGatewayException (p. 489)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 489)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 489)</td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 489)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 489)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
</tbody>
</table>

**PUT**
Operation ID: UpdateInput

Updates an input.

**Path Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputId</td>
<td>String</td>
<td>True</td>
<td>Unique ID of the input</td>
</tr>
</tbody>
</table>

**Responses**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>UpdateInputResultModel (p. 489)</td>
<td>The input update is successfully initiated.</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 489)</td>
<td>This request was invalid.</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 489)</td>
<td>Unexpected internal service error.</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 489)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 489)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 489)</td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 489)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 489)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

**DELETE**

Operation ID: DeleteInput

Deletes the input end point
Path Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputId</td>
<td>String</td>
<td>True</td>
<td>Unique ID of the input</td>
</tr>
</tbody>
</table>

Responses

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Response Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Empty (p. 489)</td>
<td>Successful deletion</td>
</tr>
<tr>
<td>400</td>
<td>InvalidRequest (p. 489)</td>
<td>This request was invalid</td>
</tr>
<tr>
<td>500</td>
<td>InternalServiceError (p. 489)</td>
<td>Unexpected internal service error</td>
</tr>
<tr>
<td>502</td>
<td>BadGatewayException (p. 489)</td>
<td>Bad Gateway Error</td>
</tr>
<tr>
<td>403</td>
<td>AccessDenied (p. 489)</td>
<td>You do not have permission to list channels.</td>
</tr>
<tr>
<td>404</td>
<td>ResourceNotFound (p. 489)</td>
<td>The channel you're requesting to describe does not exist.</td>
</tr>
<tr>
<td>504</td>
<td>GatewayTimeoutException (p. 489)</td>
<td>Gateway Timeout Error</td>
</tr>
<tr>
<td>429</td>
<td>LimitExceeded (p. 489)</td>
<td>Request limit exceeded on list channel calls to channel service.</td>
</tr>
<tr>
<td>409</td>
<td>ResourceConflict (p. 489)</td>
<td>The channel is unable to create due to an issue with channel resources.</td>
</tr>
</tbody>
</table>

Schemas

Request Bodies

Example PUT

```json
{
  "inputSecurityGroups (p. 494)": [
    "string"
  ],
  "sources (p. 494)": [
    {
      "passwordParam (p. 492)": "string",
      "url (p. 492)": "string",
      "username (p. 493)": "string"
    }
  ],
  "destinations (p. 494)": [
    {
      "streamName (p. 492)": "string"
    }
  ],
  "name (p. 494)": "string"
}
```
Response Bodies

Example Input

```json
{
    "attachedChannels (p. 490)": [
        "string"
    ],
    "sources (p. 490)": [
    {
        "passwordParam (p. 492)": "string",
        "url (p. 492)": "string",
        "username (p. 492)": "string"
    }
    ],
    "destinations (p. 490)": [
        "port (p. 491)": "string",
        "ip (p. 491)": "string",
        "url (p. 492)": "string"
    ],
    "name (p. 491)": "string",
    "securityGroups (p. 491)": [
        "string"
    ],
    "state (p. 491)": enum,
    "id (p. 491)": "string",
    "type (p. 491)": enum,
    "arn (p. 491)": "string"
}
```

Example UpdateInputResultModel

```json
{
    "input (p. 494)": {
        "attachedChannels (p. 490)": [
            "string"
        ],
        "sources (p. 490)": [
        {
            "passwordParam (p. 492)": "string",
            "url (p. 492)": "string",
            "username (p. 492)": "string"
        }
        ],
        "destinations (p. 490)": [
        {
            "port (p. 491)": "string",
            "ip (p. 491)": "string",
            "url (p. 492)": "string"
        }
        ],
        "name (p. 491)": "string",
        "securityGroups (p. 491)": [
            "string"
        ],
        "state (p. 491)": enum,
        "id (p. 491)": "string",
        "type (p. 491)": enum,
        "arn (p. 491)": "string"
}
```
Example Empty
{
}

Example InvalidRequest
{
   "message (p. 493)" : "string"
}

Example AccessDenied
{
   "message (p. 490)" : "string"
}

Example ResourceNotFound
{
   "message (p. 494)" : "string"
}

Example ResourceConflict
{
   "message (p. 493)" : "string"
}

Example LimitExceeded
{
   "message (p. 493)" : "string"
}

Example InternalServiceError
{
   "message (p. 493)" : "string"
}

Example BadGatewayException
{
   "message (p. 490)" : "string"
}

Example GatewayTimeoutException
{
}
Properties

AccessDenied

message

  Type: string
  Required: False

BadGatewayException

message

  Type: string
  Required: False

Empty

GatewayTimeoutException

message

  Type: string
  Required: False

Input

attachedChannels

List of channel IDs that that input is attached to (currently an input can only be attached to one channel)

  Type: Array of type string
  Required: False

sources

List of sources of input (PULL-type)

  Type: Array of type InputSource (p. 492)
  Required: False

destinations

List of destinations of input (PULL-type)

  Type: Array of type InputDestination (p. 491)
  Required: False
name

user-assigned name (mutable)

  Type: string
  Required: False

securityGroups

List of IDs for all the security groups attached to the input.

  Type: Array of type string
  Required: False

state

  Type: string
  Required: False

id

generated ID of input (unique for user account, immutable)

  Type: string
  Required: False

type

  Type: string
  Required: False

arn

Unique ARN of input (generated, immutable)

  Type: string
  Required: False

InputDestination

port

port for input

  Type: string
  Required: False

ip

system-generated static IP address of endpoint. Remains fixed for the lifetime of the input

  Type: string
  Required: False
url

This represents the endpoint that the customer stream will be pushed to.

*Type:* string
*Required:* False

**InputDestinationRequest**

**streamName**

A unique name for the location the RTMP stream is being pushed to.

*Type:* string
*Required:* False

**InputSource**

**passwordParam**

key used to extract the password from EC2 Parameter store

*Type:* string
*Required:* False

url

This represents the customer's source URL where stream is pulled from.

*Type:* string
*Required:* False

**InputSourceRequest**

**passwordParam**

key used to extract the password from EC2 Parameter store

*Type:* string
*Required:* False

url

This represents the customer's source URL where stream is pulled from.

*Type:* string
Required: False

**username**

username for input source

Type: string

**InputState (enum)**

CREATING
DETACHED
ATTACHED
DELETING
DELETED

**InputType (enum)**

UDP_PUSH
RTP_PUSH
RTMP_PUSH
RTMP_PULL
URL_PULL

**InternalServiceError**

message

Type: string

Required: False

**InvalidRequest**

message

Type: string

Required: False

**LimitExceeded**

message

Type: string

Required: False

**ResourceConflict**

message

Type: string
Required: False

**ResourceNotFound**

**message**

*Type:* string  
*Required:* False

**UpdateInput**

**inputSecurityGroups**

A list of security groups referenced by IDs to attach to the input.

*Type:* Array of type string  
*Required:* False

**sources**

The source URLs for a PULL-type input. Every PULL type input needs exactly two source URLs for redundancy. Only specify sources for PULL type Inputs. Leave Destinations empty.

*Type:* Array of type InputSourceRequest (p. 492)  
*Required:* False

**destinations**

Destination settings for PUSH type inputs.

*Type:* Array of type InputDestinationRequest (p. 492)  
*Required:* False

**name**

Name of the input.

*Type:* string  
*Required:* False

**UpdateInputResultModel**

**input**

*Type:* Input (p. 490)  
*Required:* False
Document History

The following table describes important changes to this documentation.

- **API version: latest**

<table>
<thead>
<tr>
<th>Change</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>New AWS Elemental MediaLive service release</td>
<td>Initial documentation for the AWS Elemental MediaLive service.</td>
<td>November 27, 2017</td>
</tr>
</tbody>
</table>
AWS Glossary

For the latest AWS terminology, see the AWS Glossary in the AWS General Reference.