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Media Server

Media Server is an IDOL component for image and video analysis. It replaces both Image Server and Video Server. You can install Media Server using the IDOL installer or a standalone installer (available from the Big Data Download Center).

New in this Release

This section lists the enhancements to HPE Media Server version 11.2.0.

Media Server Core

- HPE Media Server can use a graphics card (GPU) to accelerate some processing tasks. Using a GPU in addition to a CPU can significantly increase the speed of training and analysis tasks that use Convolutional Neural Networks. For information about the requirements that must be met before Media Server can use a GPU, refer to the *Media Server Administration Guide*. This feature is available only for the Linux x86-64 platform.
- The sampling of video frames for analysis has been improved. During analysis with `IngestRate=1`, Media Server automatically adjusts the sample interval based on the time required to analyze frames. This ensures that the frames selected for analysis are more evenly distributed, especially when the time taken to analyze different frames varies significantly. In most cases the new behavior uses more memory but provides better results. The `SampleInterval` parameter now specifies the minimum amount of time between any two analyzed frames. If `IngestRate=1` and Media Server can not analyze frames as fast as they are ingested, it automatically increases the sample interval and processes fewer frames. The behavior of Media Server 11.2.0 with `IngestRate=0` is the same as Media Server 11.1.0.
- The `process` action supports progress reporting when you process files (but not video streams). To see how much of a file Media Server has processed, and the estimated amount of time required to complete processing, use:
`action=QueueInfo&QueueName=Process&QueueAction=Progress&Token=...`
- The `BuildFace`, `BuildObject`, `TrainFace`, and `TrainObject` actions support progress reporting.
- Media Server supports a new configuration parameter, `ScheduledSync`, which specifies when to synchronize with the training database. You can choose to load the latest training data at regular intervals, when Media Server starts, or disable scheduled synchronization completely.
- The latest activity page, available through `action=activity`, supports connecting to Media Server over HTTPS.
- The latest activity page, available through `action=activity`, displays time information in 24-hour format.
- Media Server writes a message to the engine log stream when a `Process` action is stopped with the `QueueInfo` action (`action=QueueInfo&QueueAction=Stop`).
- Asynchronous action queues can be stored in memory. This can increase performance but queued actions can be lost unless the server is stopped cleanly.
- The `SSLMethod` configuration parameter now supports TLSv1.2. For example:
`[SSLOption0]
SSLMethod=TLSV1.2`
- The OpenSSL version was upgraded from 1.0.2d to 1.0.2i.

Ingest

- The image ingest engine supports the parameters `StartPage` and `MaximumPages`, so that you can ingest selected pages from a multi-page image or document.
- The image ingest engine extracts metadata from image and document files and includes this in the Proxy track.

Analysis

- Media Server uses significantly less memory to store recognition data for faces. In each gigabyte of RAM, Media Server can load the data required to search across approximately four million faces. As a result of this the database schema has changed and an upgrade is necessary (see the notes section for more information).
- Vehicle make and model recognition have been improved.
 - Media Server has been pre-trained to recognize the make of some of the most common vehicles. This means that when Media Server identifies the make of a vehicle it can perform model recognition against a much smaller number of models.
 - There is a new API for training vehicle model recognition.
- Face detection accuracy has improved.
- Face recognition accuracy has improved.
- A new pre-trained object detector for detecting people has been released and is available from the Big Data Download Center.
- A new pre-trained image classifier for classifying road scenes has been released and is available from the Big Data Download Center.
- The face recognition, face demographics, facial expression, clothing analysis, object detection, and vehicle recognition tasks support the parameter `NumParallel`. The image classification task supports the parameter `NumParallel` regardless of the type of classifier that you use. The `NumParallel` parameter specifies the number of frames to analyze concurrently when processing video.
- Face detection can detect faces that are partially outside an image or video frame. Records in the `Data` or `Result` track produced by a face detection task include a new field, `percentageInImage`, which specifies how much of the face is visible in the image.
- Face detection returns eye locations and a bounding ellipse for all faces where `outOfPlaneAngleX` is less than 90 (all faces except those that are viewed in profile).
- The `BuildAllObjects` action has been added, so that you can train Media Server to recognize many objects with a single action.
- The text segmentation analysis task has a new configuration parameter, `MaximumDuration`, which specifies the maximum duration to allow for a single segment.
- Optical character recognition has a new configuration parameter, `Spacing`. This specifies whether to allow multiple spaces between words in the output from OCR, or reduce all gaps between words to a single space.
- The output from optical character recognition preserves information about the structure of text when the text is extracted from an image of a table.

- Number plate recognition can read number plates from:
 - Belarus.
 - Hungary.
 - Montenegro.
 - Bosnia and Herzegovina.
 - Latvia.
 - Romania.
 - Bulgaria.
 - Lebanon.
 - Slovakia.
 - China.
 - Lithuania.
 - Tunisia.
 - Croatia.
 - Macedonia.
 - Estonia.
 - Moldova.
- Number plate recognition supports additional plate types and has improved accuracy for number plates in the United States and United Arab Emirates.
- Number plate recognition supports a new configuration parameter, `MaxPlatesPerFrame`. This limits the number of results that HPE Media Server can produce for a single image or video frame. For example, if you know that there will only be one number plate in the scene at a time, set `MaxPlatesPerFrame=1`.
- The color clustering analysis task can be configured to cluster colors around colors that are defined in a dictionary. If you configure a dictionary, Media Server also returns a name (such as "light blue" or "red") for each color cluster.
- The color clustering analysis task produces a new track named `ClusteredImage`. This contains the source image, containing only colors that match the center of a color cluster, and cropped to the analyzed region. If the analyzed region is not rectangular any pixels outside the region are transparent (or black if you use an image format that does not support transparency).

Encoding

- MP4 files produced by the MPEG encoder and the `CreateClip` action have header information at the beginning of the file, so that applications can start playing a file before it has finished downloading.
- When you configure an MPEG or Rolling Buffer encoding task and set the `VideoSize` parameter, you can specify the width or height for the encoded video and Media Server will automatically calculate the other dimension, maintaining the original aspect ratio.
- The image encoder has a new configuration parameter, `CompressionQuality`, so that you can specify the amount of compression to use for JPEG images.
- The image encoder saves images in the format associated with the input records. You can change the format of image records using an `ImageFormat` transformation task.

Event Stream Processing

- Media Server includes a new ESP engine (`Type=AndAny`). This compares two tracks and produces an output track that contains records from the first track for which there is at least one record in the second track within a specified time interval (before or after the record in the first track). This provides a simpler alternative to the `And` engine when you do not need to include information from the second track in the output.
- Media Server includes a new ESP engine (`Type=AndThenAny`). This compares two tracks and produces an output track that contains records from the first track which are followed within a

specified time interval by at least one record in the second track. This provides a simpler alternative to the AndThen engine when you do not need to include information from the second track in the output.

Transformation

- The image format transformation engine has a new configuration parameter, `CompressionQuality`, so that you can specify the amount of compression to use for JPEG images.

Scene Analysis Training Utility

- You can disable one or more categories in a scene analysis configuration, so that they do not produce alarms and you can focus on training other categories.
- When you set a scene mask, the scene analysis training utility shows regions of interest from all categories.

Resolved Issues

This section lists the resolved issues in HPE Media Server version 11.2.0.

- An issue with licensing meant that the Combine ESP engine could not be used.
- Media Server could stop processing or terminate unexpectedly when running number plate recognition.
- Number plate recognition failed to read certain types of UAE number plates.
- When ingesting single-channel audio, Media Server sent audio to Speech Server at a reduced volume.
- Scene analysis could fail to detect some objects, because the minimum and maximum object size were not always set correctly by the training utility when a scene analysis configuration included more than one category.
- An issue in the scene analysis training utility could prevent configurations from being optimized correctly.
- The server would not correctly retrieve a license from a License Server with SSL enabled.
- The `GetLicenseInfo` action did not return the correct value for the `<autn:expirydays>` tag.

Supported Operating System Platforms

The following operating system platforms are supported by HPE Media Server 11.2.0.

- Windows x86 64
- Linux x86 64

The documented platforms are the recommended and most fully tested platforms for HPE Media Server. The following sections provide more information about the most fully tested versions of these platforms.

Windows

- Windows Server 2012
- Windows Server 2008
- Windows 7

Linux

- Ubuntu 14.04
- Ubuntu 12.04
- CentOS 6

Supported Platforms with GPU support

The following operating system platforms are supported by HPE Media Server 11.2.0 with GPU support.

- Linux x86 64

The most fully tested versions of these platforms are:

Linux

- Ubuntu 14.04

Notes

This section contains information that is important if you are upgrading from an earlier version of HPE Media Server.

New Database Schema

- The Media Server database schema has changed. If you are using an internal database, the schema upgrade is performed automatically when you start the new version of Media Server. If you are using an external PostgreSQL or MySQL database you must run an upgrade script, which is included in the Media Server 11.2.0 installation. For more information about upgrading the database schema, refer to the *Media Server Administration Guide*.

API and Configuration Changes

- The default values for the following configuration parameters have been updated:

Feature	Configuration parameter	Default value Media Server 11.1	Default value Media Server 11.2
Number plate recognition	MaxCharHeight	Unlimited	96
	Sensitivity	6	10

- The LibAv log type (which could be specified by the configuration parameter LogTypeCSVs) has been renamed to Ingest, and now includes log messages related to ingestion of images and video.
- The configuration parameter FrameRateMax, for the image encoder, has been deprecated.
- The response for the actions ListFaces and ListObjects has changed. For information about the new response format, refer to the *HPE Media Server Reference*.
- Face detection can now detect faces that are partially outside the image or video frame. As a result, face detection can return left and top co-ordinates that are negative. In cases where a face fills the source image, the values for width and height might also exceed the image dimensions.
- The face state analysis task now outputs records even if HPE Media Server is not able to determine a person's facial expression, whether their eyes are open, or whether they are wearing spectacles.
- The output of number plate recognition has changed. The platecentre element has been removed. The readregion element, which describes the region that contains the main number plate text, has been added.
- If a Media Server output task is running in bounded event mode and receives a record in the event track that has a duration of zero, Media Server now outputs any records that have a matching start time and duration. In earlier versions of Media Server, the output would only contain the record from the event track.
- Media Server now fails to start if the Enable parameter, in the [Modules] section of the configuration file, has an invalid value.

Documentation

The following documentation was updated for this release.

- *Media Server Administration Guide*
- *Media Server Reference*