# Hewlett Packard
Enterprise

# HPE Media Server

Software Version: 11.1.0

## Media Server Release Notes

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# Contents

# 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.

# New in this Release

This section lists the enhancements to Media Server version 11.1.0.

### Media Server Core

- Media Server can process image files.

- Media Server can process office document file formats, such as PDF files and Microsoft Office documents, that can contain both embedded images and text.

- The `SourceData` parameter has been added to the `process` action. You can use this parameter to upload a media file through an HTTP POST request.

- In the latest activity page, available through `action=activity`, the host name and ACI port of the Media Server are populated automatically.

- Asynchronous action queues can be stored in a MySQL database.

- The `ShowPermissions` action now shows the rules that define whether a particular origin IP has a particular type of permission. This information is returned only if you send the `ShowPermissions` action from a client IP that is configured in the `AdminClients` configuration parameter.

### Ingest

- Media Server includes a new ingest task (`Type=Image`) for ingesting image and document files.

- Media Server can ingest video streamed using the RTMP and MMS protocols.

- The configuration parameter `StartOffset` has been added to the `LibAv` ingest task. You can use this parameter with the `MaximumDuration` parameter to specify part of a video file to process.

### Analysis

- Media Server includes new analysis tasks:

  - Audio match analysis (`Type=AudioMatch`) uses an IDOL Speech Server to identify occurrences of known audio clips in ingested audio or video. One use case for audio matching is to detect copyright infringement.

  - Clothing analysis (`Type=Clothing`) provides the location of the clothing covering the upper body of a person detected by face detection.

  - Image Hash analysis (`Type=ImageHash`) generates a hash that describes the approximate color distribution of an image or video frame. The hash is suitable for indexing into IDOL Server. You can use image hashes to detect duplicate images, because identical images will have identical hashes.

  - Language identification (`Type=LanguageID`) uses an IDOL Speech Server to determine the language of speech in audio or video.

- Object detection (`Type=ObjectDetection`) detects instances of objects that belong to pre-defined classes, such as "car" or "van". The task returns a bounding box for each detected object.

- News segmentation (`Type=NewsSegmentation`) analyzes news broadcasts and identifies the times at which news stories begin and end. It also extracts the key terms from each story.

- Media Server can read additional types of barcode:

| | | |
|---|---|---|
| Codabar | EAN-13 | Patch Code |
| Code-128 | EAN-8 | PDF417 |
| Code-39 | I25 | UPC-A |
| Code-93 | IATA 2/5 | UPC-E |
| Datalogic 2/5 | Industrial 2/5 | |
| Data Matrix | Matrix 2/5 | |

- Media Server uses a new algorithm for face demographics analysis that uses convolutional neural networks. The new algorithm provides better accuracy with similar speed.

- The OCR analysis task supports the `OCRMode` configuration parameter, which specifies whether the input images are pages of machine-printed text, or images of scenes that contain text.

- The OCR analysis task handles all text extracted from PDF files and office documents. The output of the task includes the text produced by running OCR on embedded images, and also the embedded text extracted directly from the file.

- Speaker identification uses the new speaker identification functionality introduced in IDOL Speech Server 11.0. The new functionality allows Speech Server to be faster, more efficient in terms of memory use, and more scalable.

- The accuracy of optical character recognition in number plate recognition has been improved.

- The face detection and OCR analysis tasks support the configuration parameter `NumParallel`. This specifies the number of frames to analyze concurrently when processing video.

- The color cluster and image classification tasks support a new configuration parameter, `RestrictToInputRegion`. This specifies whether to analyze a region of the input image or video frame that is described in the input record, instead of the entire image. For example, if you use object detection to detect an object, you can use color analysis to analyze only the region where the object is located.

- The image classification task supports a new configuration parameter, `ClassificationThreshold`. This specifies the minimum confidence score necessary for Media Server to output a classification result.

- Media Server can synchronize with the training database (load the latest training) before beginning an analysis task. The configuration parameter `SyncDatabase` has been added to the analysis tasks for face recognition, object recognition, vehicle model identification, and image classification.

- The action `UnsyncClassifiers` has been added. This removes all image classification training from memory. If image classification is not required, you can use this action to reduce memory use.

- Media Server includes new training actions, `NullFaceImageData` and `NullObjectImageData`, which remove face and object images from your training database but do not remove the training.

This means that the face or object can still be recognized but the training images are no longer stored in the database.

- You can stop the actions `TrainFace`, `TrainObject`, `BuildFace`, and `BuildObject` using `action=QueueInfo&QueueAction=Stop`.

- Analysis tasks that interact with Speech Server now send asynchronous actions to Speech Server, making the system more robust in case of network issues.

- Speech-to-text and speaker identification tasks set an action ID for actions sent to Speech Server. The action ID is the same as the action ID provided (or generated) for the `process` action that started the task. This means you can identify the Speech Server tasks that were started by a specific `process` action sent to Media Server.

- The Scene Analysis Training Utility no longer includes masked areas when calculating the auto-luminance threshold.

- Number plate recognition can read number plates from:
  - Canada.
  - Singapore
  - Syria.
  - United States - Washington, DC.

- Media Server can read new number plates now in use in Abu Dhabi.

- Media Server now has separate number plate formats files for each of the emirates in the United Arab Emirates.

- The accuracy of number plate recognition has been improved for UAE number plates.

- The accuracy of number plate recognition has been improved for Thai number plates.

- The performance of number plate recognition has been improved in some locations where number plate recognition expects to see plates from multiple countries or states.

- The configuration parameter `BlackAndWhiteCamera` has been added to number plate recognition. This specifies whether the camera providing the source video captures grayscale video.

- The configuration parameter `MaxRead` has been restored to number plate recognition (it was removed in Video Server 10.11.0).

### Encoding

- The rolling buffer encoder no longer writes a message to the log file every time a frame is dropped. Media Server now provides a summary of dropped frames at regular intervals.

- The `CreateClip` action can now return a video clip in an MP4 container file. The action has a new parameter named `OutputFormat`.

- The `Path` parameter, for the `CreateClip` action, is now optional. If you do not set a path, the file is returned in the action response.

### Event Stream Processing

- Media Server includes a new ESP task (`Type=Combine`), which identifies related events in different tracks and creates an output track where the information from both tracks is combined into a single output record. This differs from the `And` task because it produces a single output record for each

record in the first input track, and this output record contains copies of all related records from the second input track. In comparison, the `And` task creates one output record for each pair of related records.

## Transformation

- Media Server includes new transformation tasks:

  - Cropping (`Type=crop`) produces cropped images based on region data supplied by analysis tasks. For example, if you run face detection you can use this task to produce cropped images that show detected faces.

  - Blurring (`Type=blur`) produces images with blurred regions, based on region data supplied by analysis tasks. For example, if you run face detection you can use this task to produce images where detected faces are blurred and therefore unrecognizable.

## Output

- Media Server includes a new ODBC output task (`Type=ODBC`). The new task can run more complex queries and output data to more than one table.
- Media Server includes new output modes:

  - `Page` mode produces documents that represent a page of an image or document.

  - `AtEnd` mode produces documents that represent media assets (one document is produced for each `process` action).

- Media Server includes a new XSL template, `toCFS_MMAP.xsl`. This template transforms records into documents that are suitable for indexing into an IDOL Server, through CFS. The documents that are created by this transformation have standardized field names that are used by other IDOL components, such as the HPE MMAP application.

- The `IdolDb` configuration parameter has been added to the CFS output task. The value of this parameter appears in the output and can be used to populate the `DREDBNAME` document field (but you must configure your XSL transformation to do this).

- The configuration parameter `DestinationURL`, for the HTTP POST output task, now accepts a string that includes macros.

# Resolved Issues

This section lists the resolved issues in Media Server version 11.1.0.

- Media Server could terminate unexpectedly when ingesting video files or streams.

- Media Server could terminate unexpectedly when ingesting an RTSP video stream and the stream stopped.

- The `process` action would not finish when attempting to process a file that contained an audio stream but no audio packets.

- The keyframe analysis task did not preserve the aspect ratio of source images when writing images to its `ResultWithSource` track.

- The `ODBCdeprecated` output task did not replace binary data in pre-XML files with a GUID.

- After category settings were optimized, the Scene Analysis Training Utility could create configurations with invalid values.

- When category settings were optimized, the Scene Analysis Training Utility could set the texture threshold too high, which could result in missed alarms.

- The Scene Analysis Training Utility could terminate unexpectedly if the configuration file `mediaserver-sceneanalysis-session.cfg` did not exist.

- Scene Analysis would enforce the texture threshold when the background update was `0` (zero), meaning that objects were not detected. The Scene Analysis Training Utility now allows you to set a texture threshold of `0` (zero), and does not enforce the texture threshold when the background update is 0 (zero).

- Number plate recognition would fail when the `Location` parameter was set to `PH` (for the Philippines) because the formats file was not named correctly.

- Media Server saved failed requests from an HTTP POST output task to the Media Server installation folder.

- The `IsasTuDataOption` configuration parameter was not read unless the parameter name was lower case.

- An error in the `toIDX` XSL transformation meant that the start time and end time of a video were not populated in documents sent to IDOL Server.

- In some cases, when an error occurred, Media Server did not print the configuration used by a `process` action to the `engine` log stream.

- The `ShowPermissions` action did not return details for `ProxyClients`, `ServiceStatusClients`, and `ServiceControlClients` if these values were not explicitly set in the configuration file.

# Supported Operating System Platforms

The following operating system platforms are supported by Media Server 11.1.0.

- Windows x86 64
- Linux x86 64

The documented platforms are the recommended and most fully tested platforms for 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

# Notes

- Keyframe analysis (when running as the only analysis task) no longer consumes a visual channel from your Media Server license.

- The behavior of the actions `TrainFace` and `TrainObject` has changed. If the action returns an error or all of your training images fail (for example Media Server cannot detect a face or object features), then Media Server does not add the face or object to the database.

- The output of the face demographics, OCR, and image classification analysis tasks has changed. Refer to the *Media Server Administration Guide* for information about the values that can be returned.

- The following data structures that are returned by Media Server have been renamed. As a result, any XSL transformations and Lua scripts that use these will need updating.

| Media Server 11.0 | Media Server 11.1 |
|---|---|
| BarcodeAndImage | BarcodeResultAndImage |
| ClothingAndImage | ClothingResultAndImage |
| DemographicsAndImage | DemographicsResultAndImage |
| FaceAndImage | FaceResultAndImage |
| FaceRecognitionAndImage | FaceRecognitionResultAndImage |
| FaceStateAndImage | FaceStateResultAndImage |
| ObjectAndImage | ObjectResultAndImage |
| ObjectClassAndImage | ObjectClassResultAndImage |
| OCRAndImage | OCRResultAndImage |

- Speaker identification uses the new speaker identification functionality introduced in IDOL Speech Server 11.0. You must update any Media Server configuration that performs speaker identification. To continue using legacy speaker identification, set the configuration parameter `UseLegacyAction=TRUE`. To use the new speaker identification functionality, replace the configuration parameter `AstPath` with `TemplateSet`, which specifies the path to the audio template set file to use for identifying speakers.

- The vehicle model identification analysis task supports a new configuration parameter, `MatchQuality`, which specifies the minimum confidence that is required for a result to be included in the output. The default value is `0.5`. To achieve results similar to previous versions of Media Server, set this parameter to `1.0`. The default value prioritizes capturing more results over identification accuracy.

- The following changes have been made to configuration parameters for number plate recognition:
  - `InverseOption` has been removed.

  - `Location` no longer accepts the value `AE` (for the United Arab Emirates), because Media Server now includes a formats file for each emirate in the United Arab Emirates. If you have set `Location=AE` in any of your configuration files, you must update the parameter value.

  - `MinValidScore` now accepts values from 80 to 100. If you have set this parameter to a value lower than 80, you should update your configuration(s).

  - `ThreadCount` has been renamed to `NumParallel`.

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

| Feature | Configuration parameter | Default value Media Server 11.0 | Default value Media Server 11.1 |
|---|---|---|---|
| Face detection | `MinSize` | 24 | 48 |
| Face recognition | `RecognitionThreshold` | 0 | 50 |
| Keyframe analysis | `KeyAtMostSec` | 0 | 1 |
| Number plate recognition | `MinRead` | 3 | 2 |
| | `Sensitivity` | 5 | 6 |
| Vehicle identification | `DetectEveryFrame` | False | True |

- The following features have been deprecated:
  - The Color Cluster (Region) analysis engine.

  - The Broadcast Monitoring output engine.

  - The ODBC output engine has been deprecated and renamed to `ODBCdeprecated`, because Media Server includes a new ODBC output engine that can output data to more than one table. HPE recommends that you modify your configurations and XSL templates and use the new ODBC output engine. However, if you want to continue using the deprecated ODBC output engine, modify your configurations by replacing `Type=ODBC` with `Type=ODBCdeprecated`. The `ODBCdeprecated` output engine may be removed in future.

  - The `FrameRate` configuration parameter, previously available on many analysis tasks, has been deprecated or removed. For some analysis tasks you can set the new parameter `SampleInterval` instead, but in most cases HPE recommends that you use the default value.

  - The `KeyAtLeastSec` and `KeyAtMostSec` configuration parameters, for keyframe analysis, have been deprecated. HPE recommends that you use the new parameters `ForceAfter` and `QuietPeriod` instead.

  - The `Perspective` configuration parameter, for object recognition, has been deprecated. HPE recommends that you use the new parameters `Geometry` and `Geometry3` instead.

- Media Server 11.1.0 includes changes to macros to improve usability and consistency.

  - The `%hostname%` and `%platform%` macros have been renamed `%system.hostname%` and `%system.platform%`. The old names are deprecated and may be removed in future.

  - The system time macros have been renamed `%currentTime.`*`TIME_FORMAT`*`%`, for example `%currentTime.iso8601%`. The old names are deprecated and may be removed in future.

  - When time format macros are used in file paths, illegal characters such as colons are now replaced with underscores rather than spaces.

  - Macros that take data from UUID and Text data types are now consistent with the record XML. For example, you can use `%record.id%` instead of `%record.id.uuid%`.

  - The deprecated macros `%segment.`*`TIME_FORMAT`*`%`, for example `%segment.year%` have been removed.

- The `[Modules] Enable` configuration parameter supports the values `demographics` and `facestate`. The value `faceanalyze`, which is equivalent to setting both `demographics` and `facestate`, is deprecated.
- Media Server OCR no longer supports the Ido language.

# Documentation

The following documentation was updated for this release.

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