Vantage
Application Note

Using Vantage Multiscreen DRM Actions

This App Note applies to Vantage Version 7.1 and later

Note: This guide is written for video professionals who are familiar with using Vantage. To implement applications in Vantage, you should know how to create workflows and submit jobs. If you aren't familiar with Vantage, we suggest that you review the *Vantage User's Guide* and *Vantage Domain Management Guide* as needed.

telestream

Overview

Multiscreen actions, executed by the Multiscreen Service, are used to produce high quality, industry-standard, adaptive rate streaming formats, including digital rights management (DRM).

- DRM Action
- Multiscreen Flip Action

This document addresses the DRM action configuration and parameters.

DRM Action

The DRM action is part of the Multiscreen group, and is executed by the Multiscreen Service. You use the DRM action to execute a script that utilizes input data and generates a JSON string. The string contains the information required to encrypt streaming media with DRM (digital rights management) in Multiscreen workflows.

Scripts are authored by Telestream and cryptographically signed so they may not be modified. Telestream Professional Services offers complete workflow consulting, system design and implementation solutions for Telestream enterprise products including Vantage,

Multiscreen Flip Action

The Multiscreen Flip action is an optional, licensed feature. Multiscreen Flip actions are executed by the Multiscreen Service. The Multiscreen service may run on a Vantage Lightspeed Server or a standard Vantage server.

The Multiscreen Flip action allows you to encode and package decoded digital baseband media into industry-standard adaptive rate streaming formats, including DASH, CMAF, Apple HLS, Microsoft HSS, and others.

Software Requirements

You will need the following software for Vantage with integrated Multiscreen functionality.

Telestream Software

Your Vantage domain consisting of the following components should be installed, licensed, and operating properly.

- Transcode Multiscreen.

- Vantage version 8.0 UP3 and later.

- Windows Server 2012 R2 or Windows Server 2016 (64-bit) Standard or Data Center Edition Please refer to the Vantage specification sheet for the Vantage version you have or are installing.

Licensing

The Multiscreen Flip action is an optional, licensed feature.

Server Communication

Executing DRM action requires an internet connection without any special port settings. Connectivity to the DRM service/licensing server is also required.

telestream

Using Multiscreen DRM in Vantage

Multiscreen Action Configuration

DRM Action

The DRM action is part of the Multiscreen group, and is executed by the Multiscreen Service. You use the DRM action to execute a script that utilizes input data and generates a JSON string which contains the information required to encrypt streaming media with DRM in Multiscreen workflows.

Scripts are created externally in a supported language and added to a Vantage domain via the Domain Management Console > Workflow Design Items > Scripts. The specified script is executed in the DRM action, generating the output into a text variable for use in a downstream Multiscreen action. Multiscreen Flip uses the output of the script when encoding the media.

Action Inspector Wizard

Double-click the inspector button (the round *i* button), which displays on the upper left corner of each action, to open the Inspector Wizard and select a script. You can also right-click the inspector button and select Configure. In the Inspector Wizard, you specify input values and output variables.
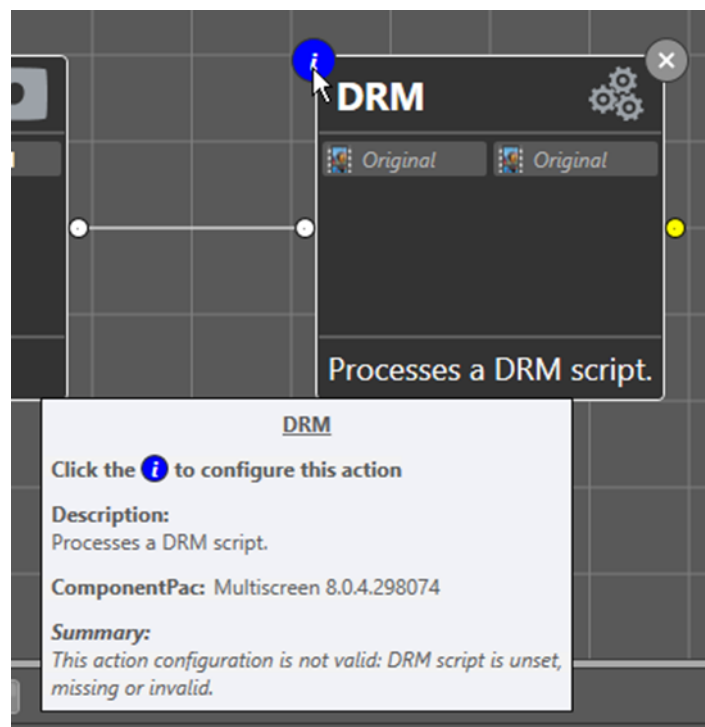
Selecting a Script

Use the first panel to select a a script. (If no DRM scripts are present in the domain, the DRM action displays an error message to alert you of the requirement.)
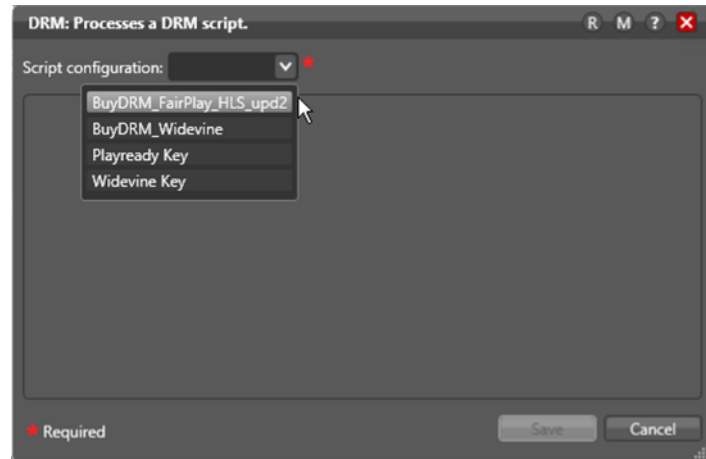
Script Configuration

Specifies the script configuration to execute. Script configurations must be created by adding scripts and configuring them or by importing script configurations to this domain that were previously exported.

Specifying Input Values

<Input Variable>. Each input variable defined in the script configuration is displayed in the Inspector so that you can provide an input value for each job. Manually enter a static value to assign the variable for every job, or click Browse and assign a variable to use, which must be assigned a dynamic value by an upstream action.

Specifying Output Variable

<Output Variable>. Each Output variable defined in the script configuration is displayed in the Inspector so that you can provide an output variable for each job. Assign a variable to contain the output, to be used in downstream actions.

Script Configuration

There are four script configurations in the Multiscreen DRM actions that allow you to configure various fields.

- BuyDRM Fairplay HLS Upd2 Parameters
- BuyDRM Widevine Parameters
- Playready Key
- Widevine Key

BuyDRM Fairplay HLS Upd2 Parameters

url: BuyDRM KeyOS™ Multikey license service location. Required field. For example, https://packager.licensekeyserver.com/pck/

serverKey: Uniquely identifies KeyOS Server. Required field. hexadecimal in UUID format. For example, 12345678-CA97-400F-AA2A-123456789ABC

userKey: Uniquely identifies KeyOS Customer. Required field. hexadecimal in UUID format. For example, 12345678-CA97-400F-AA2A-123456789ABC

MediaId: This field uniquely identifies media managed by the KeyOS Platform. It can be used for VOD, live streams, etc. Optional field. hexadecimal format. For example, 819998D72BD14EDE870D6978DEC1B296

keyId: This field's purpose is to enable encoding platform to specify exact KeyID which in turn allows KeyOS to support a blend of business models. Optional field. hexadecimal format. For example, 819998D72BD14EDE870D6978DEC1B296

duration: Media duration in seconds. For example, 30 (media duration 30 seconds).

keyRotation: The duration in seconds at which the key will be rotated.

uriMode:

- 0: Default URI. Sets the #EXT-X-KEY:URI attribute to the value of the user supplied URI property.
- 1: Relative URI. Sets the #EXT-X-KEY:URI attribute to the playlist relative path of the key file.
- 2: Data URI. Sets the #EXT-X-KEY:URI attribute to a 'data' URI (RFC 2397) containing the decryption key.

SuppressCryptKeyFile: Encryption key file will be generated if checked. It should be for debugging only.

preroll: This value determines the duration in seconds of an unencrypted section at the start of the package. The preroll period allows playback to begin before the license acquisition process is complete. The default value is 0 and means no preroll.

encryptionMethod:

- 0: none,
- 1: AES-128,
- 2: Sample AES.

Outputs

stdout: BuyDRM encryption key information in JSON format.

BuyDRM Widevine Parameters

url: BuyDRM KeyOS Multikey license service location. Required field. For example, https://packager.licensekeyserver.com/pck/

serverKey: Uniquely identifies KeyOS Server. Required field. hexadecimal in UUID format. For example, 12345678-CA97-400F-AA2A-123456789ABC

userKey: Uniquely identifies KeyOS Customer. Required field. hexadecimal in UUID format. For example, 12345678-CA97-400F-AA2A-123456789ABC

keyId: This field's purpose is to enable encoding platform to specify exact KeyID which in turn allows KeyOS™ to support a blend of business models. Optional field. hexadecimal format. For example, 819998D72BD14EDE870D6978DEC1B296

contentId: The content ID is the unique file ID within the KeyOS infrastructure. Optional field. hexadecimal format. For example, 819998D72BD14EDE870D6978DEC1B296

mediaId: This field uniquely identifies media managed by the KeyOS Platform. It can be used for VOD, live streams, etc. Optional field. hexadecimal format. For example, 819998D72BD14EDE870D6978DEC1B296

playready_url: The PlayReady KeyOS MultiKey License Service location. Required when PlayReady is checked. For example, https://pr-keyos.licensekeyserver.com/core/ rightsmanager.asmx

isWidevine: Return Widevine encryption key information if checked.

isPlayReady: Return PlayReady encryption key information if checked.

Outputs

stdout: BuyDRM encryption key information in JSON format.
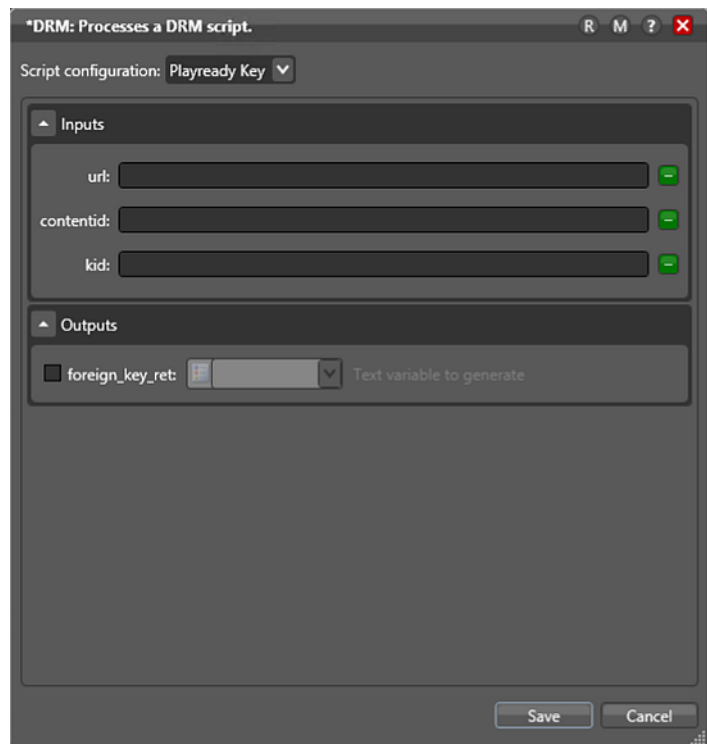
Playready Key

Inputs

url: The Widevine DRM Proxy service location. url: For example, http:// 10.0.4.245:8080/ newforeignkey

contentid: The content ID for the given asset. Required field. string format. For example, content123

kid: The 128 bits Key ID (KID). A value that identifies the key for a protected media file. Required field. Hexadecimal format. For example, 10000200200200200200200 0200200224

Outputs

foreign_key_ret: The text format output variable defined in the Workflow design Items > Script in Vantage Management Console. It holds the result text string of the Playready Key script.

Widevine Key

Inputs

contentid: The content ID for the given asset. Required field. string format. For example, content123

url: The Widevine DRM license service location. Required field. For example, https://license.uat.widevine.com/cenc/getcontentkey/widevine_test

Outputs

ps_ret: The text format output variable defined in Workflow design Items > Script in Vantage Management Console. It holds the resulting text string of the Playready Key script.
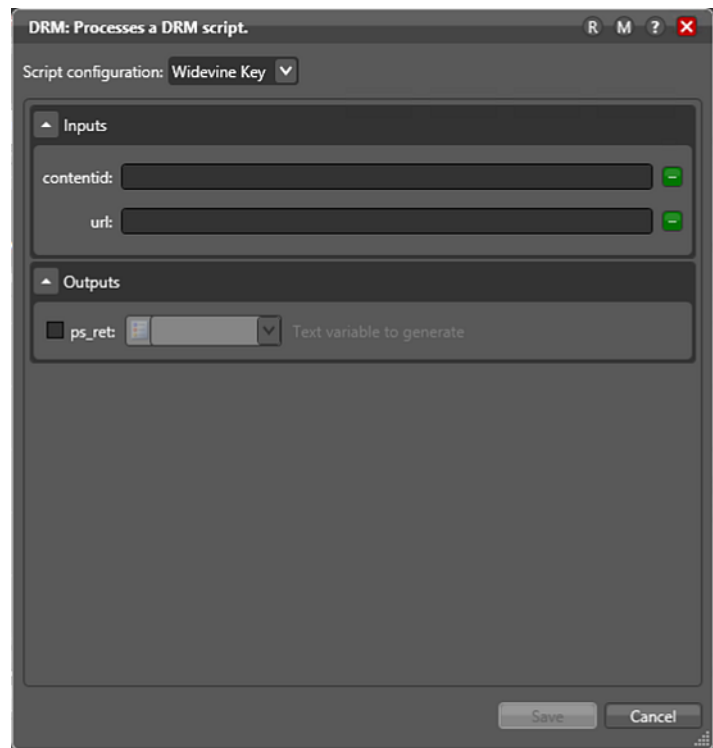
Copyright and Trademark Notice