



Videoscape Quickstart Configuration Guide

Overview

Introduction

This document provides configuration guidelines for Cisco® Videoscape Quickstart.

Release Details

This section lists component version numbers and other details verified for this release.

Release Type:	Official Release
Release Version:	Quickstart
Videoscape Media Suite (VMS) Version:	VMS 4.1
Cisco Transcode Manager (CTM) Version:	CTM 4.1
Content Delivery System-Internet Streaming (CDS-IS) Version:	CDS-IS 2.5.11
Videoscape Quickstart Soft Client Version:	Quickstart (1.0)

Core Functions

Videoscape Quickstart establishes core functions for the On-the-Go subscriber experience for TV Everywhere:

- 1 Content Preparation – Create multiple representations of the same VOD asset to support Adaptive Bit Rate Streaming received from multiple locations
- 2 Subscriber Authentication – Authenticate or deny access of a user to the on-line video portal
- 3 Entitlement – Enforce entitlement policies defined by the operator
- 4 Content Protection – Deliver encrypted version of VOD assets being offered through the on-line portal
- 5 Content Distribution – Stream or download a VOD asset to a portable device

Document Version

This is the first formal release of this document.

Terms and Acronyms

The following table lists terms and acronyms used throughout this document.

Term or Acronym	Description
ABR	Adaptive Bit Rate
Armada	Legacy name of the application suite, formerly developed by Inlet, Inc., on which the CTM 4.1 suite is built.
CDN	Content Delivery Network
CDS-IS	Content Delivery System for Internet Streaming
CDSM	Content Delivery System Manager
CTM	Cisco Transcode Manager
DRM	Digital Rights Management
OpenCASE	Legacy name of the application suite, formerly developed by Extend Media, Inc., on which the Videoscape Quickstart Soft Client is built.
SE	CDS-IS Service Engine
SR	CDS-IS Service Router
VMS	Videoscape Media Suite
VOD	Video-on-Demand

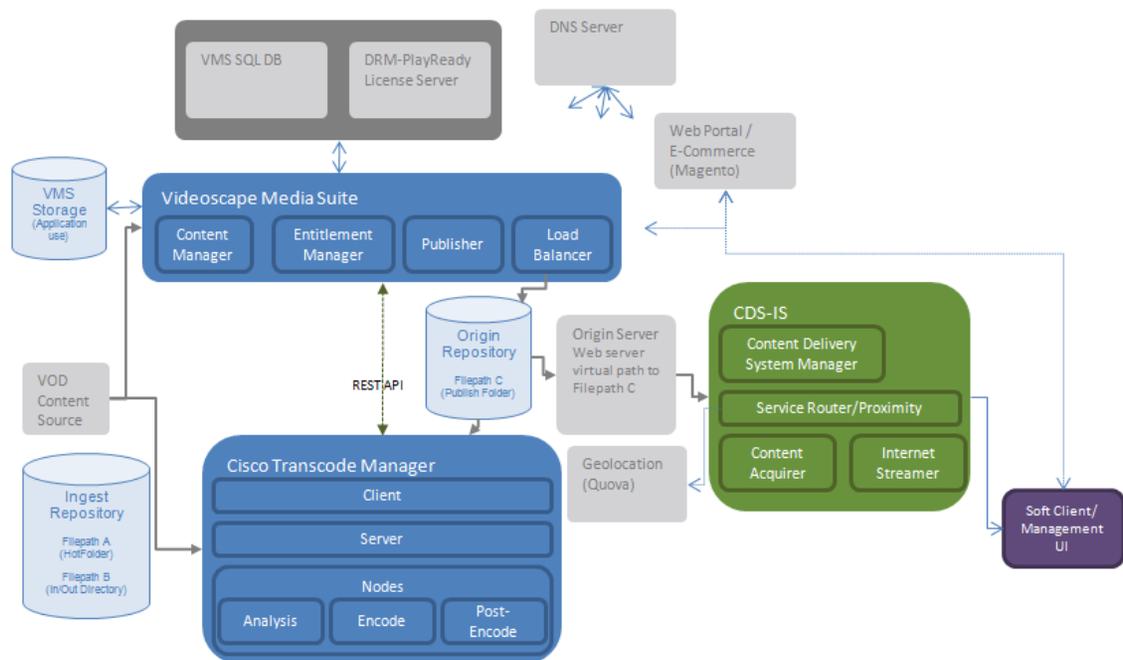
Installation Overview

Introduction

With the flexible design provided by Videoscape Quickstart architecture, your site may not require installation of all of the Quickstart components.

This guide intends to help you configure Videoscape Quickstart components and interfaces to operate correctly.

Videoscape Quickstart Architecture



Prerequisites

This guide assumes the following steps have already been performed:

- 1 All hardware has been rack-installed.
- 2 All cable and power connections are completed.
- 3 All hardware devices within each Quickstart component should be networked such that routing between any component is possible. (IP reachable+ resolve DNS names)
- 4 DNS setup is complete.

Notes:

- Need to delegate subdomain to Service Router.
- Need to assign names that are compatible with script(s).

Installation Overview

- 5 Network storage setup is complete.

Notes for Repository Setup:

- Ingest and Origin storage devices should be defined to support your performance and size specifications. Quickstart assumes that all storage devices are network reachable via VMS and at a minimum Ingest storage is reachable via CTM.
- VMS does not support NFS as a file transfer protocol. Refer to the VMS - OpenCase User's Guide for a complete list of supported storage related protocols (commonly used FTP/SFTP and Windows File transfer)
- CTM currently supports only a single set of network storage access credentials, which are defined within the Windows Services application for the CTM node(s). Ensure Access credentials are understood such that VMS and CTM are capable of accessing necessary storage devices.
- Database type needs to be SQL.

- 6 Origin server setup is complete.

Notes:

- For full QuickStart support, the origin server should support distribution of VOD assets as well as ABR (Smooth Streaming and HLS) content via HTTP.
- The Origin server should be setup to access/service (with proper credentials) folders that VMS will use to store/publish video related content.
- The access to shared storage by VMS, CTM, and the Origin server need to use the same authentication.

- 7 Installation of the components applicable to your implementation is complete:

- VMS 4.1 - Visit the following website for instructions:
<http://www.cisco.com/web/videoscape/docs.html#~tab-1>
- CTM 4.1 - Visit the following website for instructions:
http://www.cisco.com/en/US/partner/products/ps11788/tsd_products_support_series_home.html
- CDS-IS 2.5.11- Visit the following website for instructions:
http://www.cisco.com/en/US/partner/products/ps7127/tsd_products_support_series_home.html

- 8 Microsoft PlayReady Server installation is complete.

Notes:

- Microsoft PlayReady is a third-party application that you must acquire directly from Microsoft. Follow the instructions provided by Microsoft to install the associated hardware and software.
- The Microsoft PlayReady Server should be defined to support your performance and size specifications. Quickstart assumes that the Microsoft PlayReady Server is network-reachable via VMS.

- 9 Portal setup for the third-party store front is complete.

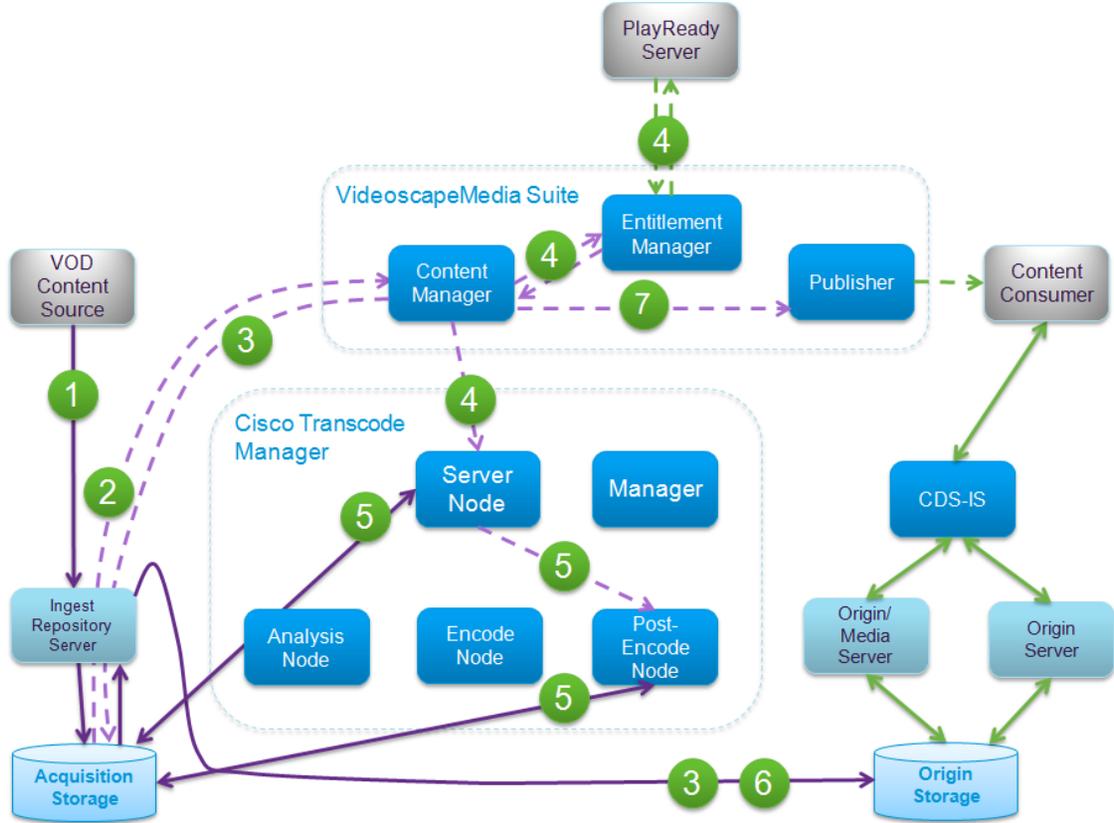
Videoscape Quickstart Workflows

Most of the configuration details for Videoscape Quickstart are defined in VMS. The flexibility of Videoscape Quickstart supports countless configurations. This section includes two examples of workflows that you can define to implement two of the core functions supported with Videoscape Quickstart.

Encrypt Workflow

The Encrypt workflow described in this section supports the Content Protection functionality to deliver encrypted version of VOD assets being offered through the on-line portal.

Encrypt Workflow Diagram



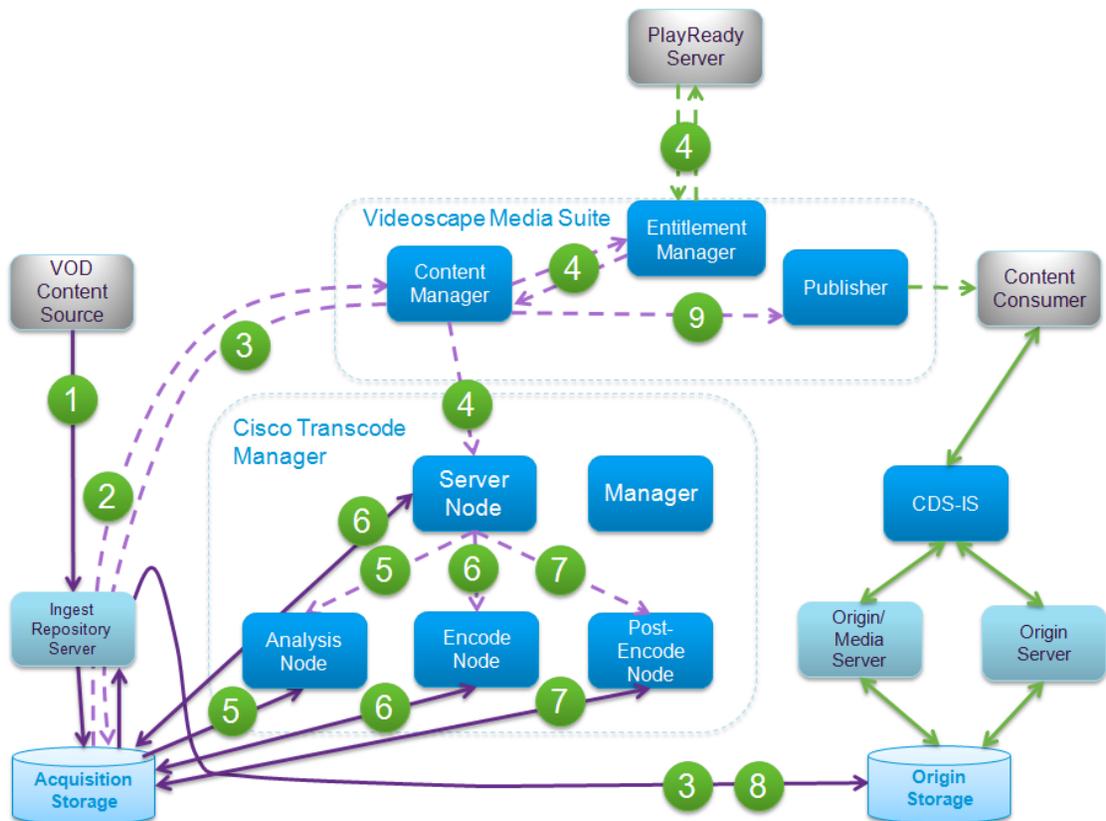
Encrypt Workflow Description

- 1 Content provider uploads content and metadata to Ingest Repository Server (hot-folder location).
- 2 VMS detects deposit of content and metadata; then, ingests metadata into the Content Manager for further processing.
- 3 VMS moves thumbnails and supporting media to the Origin Storage location for delivery via an Origin Server.
- 4 VMS requests a work-order via the Server Node API interface to encrypt (only) the video content. VMS queries the PlayReady server for license information. The License Server and DRM details are exchanged in the transaction.
- 5 An available Post-Encode Node retrieves the pre-encoded video content files (metadata and multiple layer/profiles files) and encrypts the content. Manifest files will need to be updated to include DRM details by the Server Node. If required, the Post-Encode Node will publish the transcoded content to the appropriate location in Acquisition Storage.
- 6 VMS moves the content, which is now a productized asset, to the Origin Storage. The content is now ready for client requests through CDS-IS and the Origin/Media Servers.
- 7 VMS includes the new assets in its output catalog feed. The Publisher will receive this feed and, after normalization, indexing, and remapping, includes the asset in the final feed output to client devices and commerce portals.

Transcode Workflow

The Transcode workflow described in this section supports the Content Preparation functionality to create multiple representations of the same VOD asset to support ABR streaming received from multiple locations.

Transcode Workflow Diagram



Transcode Workflow Description

- 1 Content provider uploads content and metadata to Ingest Repository Server (hot-folder location).
- 2 VMS detects deposit of content and metadata; then, ingests metadata into the Content Manager for further processing.
- 3 VMS moves thumbnails and supporting media to the Origin Storage location for delivery via an Origin Server.
- 4 VMS requests a work-order via the Server Node API interface to encrypt (only) the video content. VMS queries the PlayReady server for license information. The License Server and DRM details are exchanged in the transaction.
- 5 An Analysis Node retrieves the source video content file and performs pre-encode analysis on the content to optimize the transcoding process.
- 6 An available Encode Node transcodes the content to the target formats. (ABR content may require multiple parallel transcodes.)

Videoscape Quickstart Workflows

- 7 The Server Node creates associated manifest files for ABR representations. If required, the Post-Encode Node will perform that function as well as publish the transcoded content to the appropriate location in Acquisition Storage.
- 8 VMS moves the content, which is now a productized asset, to the Origin Storage. The content is now ready for client requests through CDS-IS and the Origin/Media Servers.
- 9 VMS includes the new assets in its output catalog feed. The Publisher will receive this feed and, after normalization, indexing, and remapping, includes the asset in the final feed output to client devices and commerce portals.

Content Preparation

Example Walk-through for Videoscape Quickstart Workflow Setup

This section provides a walk-through of the setup of a Videoscape Quickstart workflow for performing a single transcode function for output of ABR Smooth-Streaming. Steps refer to the product documentation for VMS and CTM where appropriate, inserting notes only where configuration for Quickstart application might differ or special attention needs to be highlighted. These steps attempt to walk through an example setup and steps applicable to setting up a sample workflow are indicated by the keyword "EXAMPLE" within each step.

Notes:

- In VMS, a Process Archive (PAR) file defines the individual nodes of a workflow, and can call upon available Enterprise Service Bus (ESB) services to perform actions or tasks, or to establish any required decision points. The PAR file used in the example that follows is the reference file provided with the name: **single_A.par**.
- In CTM, the **CTM_WO_T-SS.zip** file is a transcode work order template file that supports Smooth Streaming.
- Refer to the Videoscape Quickstart Architecture diagram on page 4 as you read this section.

Configuring CTM

EXAMPLE: Within the CTM management server, select menu option: **Templates->Import Templates** and point this to the provided sample Smooth Streaming transcode template file: "IIS H.264 VoD Smooth Streaming". This should unzip the sample CTM smooth streaming transcode work order "T-SS" and make it available for use.

Configuring VMS

Step 1: Import PAR file into VMS

EXAMPLE: Given the sample PAR file 'single_A.par' (for a single call from VMS to CTM for transcode), import this file into VMS to create a usable Workflow Template. When prompted to provide reference name for template, use "single_A", this will be referenced in text below to refer to this sample workflow template.

Follow steps provided within VMS User's Guide – "Configuring Workflows" -> "Configuring Custom Workflows".

Step 2: Configure Repository Nodes within VMS

Within the VMS tool, configure repository nodes as needed to reference all storage devices required to access Ingest and Origin storage locations. Repository node setup will define a name, URL path, protocol, domain, username, and password required to access each network storage device.

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Configuring Repository Nodes" and "Repositories" -> "Managing Hot Folders".

It is also required that 'HotFolders' be defined such that when new content arrives for VMS to ingest that it gets recognized and processed.

EXAMPLE: As per the reference topology diagram two repository devices would be defined and a HotFolder established on 'INGEST_REPOSITORY':

- 1 Ingest repository - used for VMS HotFolder Ingest and also for CTM ingest storage (Filepaths A and B)
EXAMPLE: Please define an Ingest repository storage device and assign name "INGEST_REPOSITORY". Under the physical directory path create a folder named "SS".
- 2 Origin repository - used for publish of files by VMS for access by origin-server by HTTP requests (Filepath C)
EXAMPLE: Please define an Origin repository storage device and assign reference name "ORIGIN_REPOSITORY". Under the physical directory path create a folder named "SS".
- 3 Within VMS, configure the "SS" directory on the ingest repository as a Hot-Folder with name "HotFolder_SS" and place into "Active state".

Step 3: Define Required Action Templates/profiles

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Configuring Actions".

EXAMPLE: For the provided sample PAR file, two user-defined Action Profiles must be created/defined:

- 1 'ArmadaService' Action Template/Profile - The purpose of this action template is to define the parameters required for VMS to interface with CTM for the purpose of work-order submission and messaging. The semantics for creating and populating an 'ArmadaService' action template follows the same steps as other in VMS Action Templates; however, the applicable template type and fields are detailed below as per the reference topology diagram.
EXAMPLE: Define an Armada Action Template with reference name "ArmadaService_InOut_Template" with details defined as shown below:

ESB_Category = "OC_ESB_PROCESSOR_ARMADA"

Host = Server name or IP address of CTM manager

Port = 8062

Callback URL = http://<VMSweb-server

name>/opencase/ContentProcessor/resource/rest/armada/callback

LocalPath = Local map to remote directory ex: "\\<FilePath A\.."

Repository Path = VMS reference to remote file system ex: "/<FilePathA>/..."

inputDirectory = "in"

outputDirectory = "out"

Once an AmadaService Action Template is defined on VMS, an 'Action Profile' must then be created which references this action template. This follows that same basic procedures within VMS as stated in the User's Guide; however, one important note is that upon creating and populating an ArmadaService Action Profile, VMS will query the CTM device for all available 'Work Orders' and provide these for selection within a drop-down menu format. Only a single work order may be called from within an Action Profile, but the selected work order within an Action Profile can be updated if desired.

EXAMPLE: Create an Action Profile which utilized Action Template "ArmadaService_InOut_Template. Within the details of this action template, select the sample work order "T-SS" imported onto the CTM sever manager.

- 'Publish' Action Profile – The Publish action template exists natively within VMS (as "Repository Manager Service") and thus requires only creation of an Action Profile based from this template. Repository Manager Profile is required to define the root destination path for which video assets and related files should be placed relative to the Origin Repository storage. In effect, this must coordinate to directory paths which are serviced by the Origin server.

In reference to the provided topology diagram, "Destination" entry for the Action Profile should reference "/<Filepath C>/..."

VMS Action Template Parameters to Interface with CTM

Use the guidelines below to create an Action Template in VMS to configure the interface with CTM.

Field	Description
Name	The name of the action template. No spaces should be used.
Description	A description for this action template.
ESB Service Address	The ESB that will perform the action for the workflow node. This is populated from the initial ESB selection when you created the action template placeholder. In this instance, the ESB will be: OC_ESB_PROCESSOR_ARMADA:ArmadaService
REST Service Host	The name of the server hosting the Armada Web Service.
REST Service Port	The port of the server hosting the Armada Web Service.

Content Preparation

Field	Description
Callback Endpoint URL	The URL to be POSTed to once the work order/template completes, either successfully, or due to an error. Use the following naming convention: http://{server}:{port}/opencase/ContentProcessor/resource/rest/armada / callback
Repository Path	The name of the repository that was mounted (including the packaging subfolder).
Local Path	The local path for the content folder on the Windows server. All file and folder names are case sensitive as they will be interpreted by a Linux server.
Input Directory	The packaging input directory within the local path. This location will contain source material that will be transcoded into multiple streams.
Output Directory	The packaging output directory within the local path. This location will contain the multiple video files that were created by the transcoding process.

Step 4: Create Bind Profiles

Bind profiles are used within VMS to associate incoming content with bundles. Care should be taken at this step when configuring 'BindID' and 'Bundle Associations' as these will determine how incoming get associated with new or existing bundles.

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Creating Bind Profiles" for general creation guidelines.

EXAMPLE: Create a Bind Profile with reference name "LogV_Bind_SS" with the detailed parameters as defined below:

- Type = Logical Video
- Find where filename first token by "_" equals bind ID
- Bind ID = Filename first token by "_"
- Metadata where 'ext' equals ".xml"
- Videos where 'ext' equals ".ismv"
- Manifest where 'ext' matches ".ism | .ismc"
- Images/Thumbnails where 'ext' equals ".jpg"
- Images/Artwork where 'ext' equals ".jpg"

Step 5: Create DRM Profile

DRM profiles within VMS are setup to interface with an external Windows server installed with the PlayReady DRM License server application. Under QuickStart, VMS is responsible for obtaining DRM related information from the license server and passing this information down to the CTM via a temporary .xat file referenced within the REST API call between VMS and CTM.

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Creating DRM Profiles" for general creation guidelines.

EXAMPLE: Create a DRM profile with reference name "DRM_Play_Once", within profile settings select "Streaming" and take all other defaults.

Step 6: Creating Entitlement Checks

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Creating Entitlement Checks" for general creation guidelines.

Step 7: Creating Policies

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Creating Policies" for general creation guidelines.

EXAMPLE: Create a sample policy with reference name "POLICY_Free". Adjust the settings as per settings mentioned below:

- **Offer-Window** = Active Immediate/Never Deactivate
- **Affiliation** = SS
- **DRM Profile** = "DRM_Play_Once"
- **Entitlement Check** = None

Step 8: Create Workflows

Follow steps provided within VMS User's Guide - "Classic OpenCase Workflow Overview" -> "Creating Workflows" for general creation guidelines.

EXAMPLE: For QuickStart, the semantics for creating Workflow definitions within VMS follows the same general process as the User's Guide (referenced below). The steps below will detail how to populate the relevant fields in example 'single_A.par' workflow template that was imported during Step 1.

- a From VMS main page, navigate to 'Workflow-> Manage-> Workflow Definitions', and click "Add New"
- b Name the workflow template "Sample_single_A", under Workflow Template select "single_A", and click 'Create and Edit'.
- c Within the workflow definition, select the "Configure" button at top left corner of screen. This should bring up a visual picture of the workflow.

Content Preparation

- d Each un-shaded block in the workflow diagram requires some user input. User-defined values can be edited by clicking on each block in diagram. Once entered and saved, each block should turn a green color. Please populate each block as indicated below and save (by clicking the 'Save' button at top of workflow definition screen):

File Type Router:

Read XML = extension equals "xml"

Publish = extension equals "jpg"

ArmadaStreaming Transcode = extension matches
"wmv | mpg | mp4 | avi"

Armada Streaming Transcode:

Set Action Profile = "Armada_Transcode_SS"

Publish:

Set Browse to Repository "ORIGIN_REPOSITORY", and select folder "SS".

Bind to Content Manager:

Select "LogV_Bind_SS".

Productize:

Select policy "POLICY_free"

Once populating all of the above, click the Save button in upper left corner of window. All boxes turn green.

- a From within the same 'Mange Workflows -> Sample_single_A', select the "Depoloyment->Deploy" option. This will require that a "Trigger Event" be setup to activate workflow via the "Summary" view of the Workflow definition. Under "Trigger Event" select "Source -> "HotFolderNewContent", in second pull-down menu select Hotfolder name "HotFolder_SS" option from drop-down menu.
- b Following completion of Step E above, select the "Activate" button on the top menu bar of the workflow definition.
- c VMS workflow should poll the HotFolder "<INGEST_REPOSITORY>/SS/" for new content. Once assets are placed into the folder, they should get picked up by VMS, encoded by CTM and final product placed into origin repository folder "<INGEST_REPOSITORY>/SS/".

Step 9: Execute Content Workflow

Populate the VMS hotfolder with necessary assets per the VMS workflow definition.

Note: An XML file is a mandatory component within the the hotfolder. The sample xml files (ie, Logical Video) can be used (see appendix D of VMS user guide).

Step 10: Content Preparation Verification

Complete the following procedures below to verify the content preparation setup.

Note: Use the following link to refer to the VMS user guide for instructions:

http://www.cisco.com/web/videoscape/docs/opencase/MediaSuite_User_4.1.pdf

- 1 Verify that the minimal assets as defined within the VMS bind profile exist in the Hotfolder.
- 2 Execute a workflow in VMS.
- 3 Monitor the workflow to verify that the minimal assets are processed.

Note: The files will be processed individually.

- a Check the **In Progress** tab to determine if any jobs are still running. Wait for these to complete.
- b Check the **Error** tab to for failed jobs.
- c Check the **Complete** tab to determine if the expected jobs completed successful.

Content Delivery

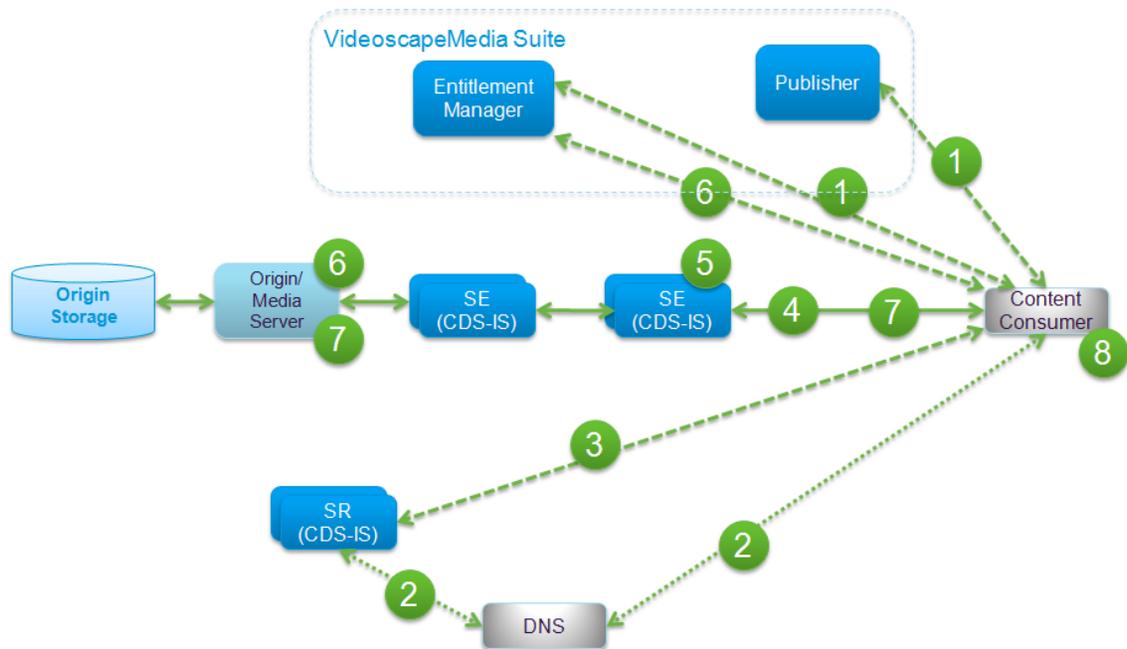
Introduction

This section provides an example of the content delivery process, a checklist of the configuration requirements to complete your Videoscape Quickstart setup, and a list of processes to perform to verify setup.

Content Distribution Workflow

The CDS-IS workflow described in this section supports the Content Distribution functionality to stream or download a VOD asset to a portable device.

Content Distribution Workflow Diagram



Content Distribution Workflow Description

- 1 Following Subscriber Authentication, the user selects an asset for viewing. If utilizing URL signing mechanism for content access protection, the published asset manifest URL points to Entitlement Server. Entitlement Server, based on pre-provisioned URL signing parameters, returns a Manifest URL with CDS specific parameters.
- 2 Client resolves Manifest URL to CDS-IS Service Router.
- 3 Client connects to Service Router. Service Router performs streamer selection based on set of provisioned service routing logic and redirects Client to most appropriate streamer.

- 4 Client connects to streamer and requests the Manifest file.
- 5 Streamer validates request, optionally performing URL signing validation and geo-blocking check. Assuming dynamic caching model, Streamer leverages CDS hierarchy to propagate request up to and including Origin/Media Server.
- 6 Manifest file is downloaded to the Client. Video Player detects DRM protection for asset, and initiates a second transaction to VMS Entitlement Manager to retrieve DRM license. Additional, optional VMS entitlement checks are applied as defined based on your configuration.
- 7 Client requests ABR fragments based on profiles contained within Manifest file and player specific adaptation logic. Standard ABR fragment propagation is utilized across the CDS system.
- 8 Leveraging DRM license, the Client decrypts content and initiates playout.

Configuring the Soft Client Streaming Player

Overview

Streaming Player is a browser-based player that offers the ability to render a catalog of products; it supports both Flash and Silverlight streaming. Product catalogs and auxiliary functionality are provided by an AJAX-based catalog browser using the JavaScript player widget. The widgets include a media player widget (that itself includes Silverlight player), and a catalog browser widget. These self-contained widgets can be deployed either as a group or individually.

Supported Browsers

The following browsers are supported for all Web player implementations recommended in this guide:

- Internet Explorer 7 and 8 on Windows XP and Vista
- Firefox 3.x on Windows XP, Vista, and Mac OS X
- Safari 3.2 x on Mac OS X

Silverlight MediaElement for Streaming Player

The formats listed below are supported in the MediaElement user interface component, Silverlight's Streaming Player.

Video Audio

WMV1: Windows Media Video 7 WMA 7: Windows Media Audio 7

WMV2: Windows Media Video 8 WMA 8: Windows Media Audio 8

WMV3: Windows Media Video 9 WMA 9: Windows Media Audio 9

WMVA: Windows Media Video Advanced Profile, non-VC-1

WMA 10: Windows Media Audio 10

Streaming Player QuickStart 1.0

The component also supports Silverlight smooth streaming. Due to the logic involved with seeking past or before advertisements, the ASX playlist is not directly supported. Instead, playlist management is handled by the SPA to better adhere to advertisement requirements.

The following formats are not supported:

- Interlaced video content
- Windows Media Screen
- Windows Media Audio Professional
- Windows Media Voice
- Combination of Windows Media Video and MP3 (WMV video + MP3 audio)
- Windows Media Video using odd (that is, not divisible by two) dimensioned frames (for example, 127 x 135)

The following Web protocols and schemes are supported:

- http
- https
- mms (mms URLs fall back to http)
- rtsp (rtsp URLs fall back to http)
- rtspt (rtspt URLs fall back to http)

Note: It is possible to stream live and on-demand content from a Windows Media Server; however calling the pause method has no effect.

- WMVC1: Windows Media Video Advanced Profile, VC-1
- MP3: ISO/MPEG Layer-3
- Input: ISO/MPEG Layer-3 data stream
- Channel configurations: mono, stereo
- Sampling frequencies: 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 kHz
- Bit rates: 8-320 kbps, variable bit rate
- Limitations: "free format mode" (see ISO/IEC 11172-3, sub clause 2.4.2.3) is not supported.

Configuring the Soft Client Download Player

Overview

The Soft Client download player for Videoscape Quickstart is a pure Silverlight-based application, which supports downloading and playback of Silverlight-based content. When properly authorized, you can include content that is protected by PlayReady DRM. The download player is comprised of a series of components, each of which handles such functionality as playback, download and library management, all of which can be fully customized for your company's business needs. The entire application can then be packaged into an offline application for download and installation on a personal computer, where it is available as an auxiliary viewing experience to any streaming browser-based service. Users can then take content offline, or watch HD content that may not be suitable for streaming. Content download is initiated from your website. In cases where the download player is not resident on a user's computer, installation is automatically launched when a product is purchased from your website, previous to the downloading of the product. This installation and download process occurs in one complete action with the user being intuitively guided through the entire process.

The OfflinePlayer Application

The OfflinePlayer application is a Silverlight application that employs reusable components provided in the ExtendLib library. The configuration file, which is modifiable from within the XAP file, provides a list of plug-ins used by the OfflinePlayer application as well as configuration parameters. The OfflinePlayer application offers the following advantages:

- Defines an API for JavaScript and Silverlight applications communications
- Provides a database for storing products
- Offers services for installing the OfflinePlayer application for offline use
- Offers product downloading services, product querying and filtering, and logging facilities
- Stores the core application configuration and model

ExtendLib

This library provides a lightweight, high level framework for developing for the Silverlight platform. It contains the following set of reusable components:

- API services for JavaScript and external Silverlight applications communications
- A set of reusable visual controls that can be placed in XAML or in code
- Cryptographic services to protect your data
- A framework for developing data-driven services
- An I/O framework for managing disk access

Content Delivery

- A lightweight MVC (Model-View-Controller) framework for constructing robust interface components
- Network classes to simplify communication and downloads on the internet
- A plug-in framework to modularize development
- Touch services for operating with touch screen-enabled devices
- Various utility, validation, and XML classes to improve productivity

Plug-Ins

Each plug-in completes a feature in the OfflinePlayer application.

Data parser plug-ins are responsible for converting from one external format, such as ATOM or MediaRSS, into the internal database format understood by the application. Frontend plug-ins provide a visual element to the OfflinePlayer application. Frontend plug-ins include such elements as data grids, the Gallery view, media players, and control panels. The front end can be broken down into multiple plug-ins to make the system more flexible. Finally, arbitrary plug-ins, such as the shader library, are used to further decouple the system into reusable components that help to develop the core components.

Plug-In	Description
VMS Publisher Data Converter Plug-In	Converts ATOM and MediaRSS feeds into the internal the OfflinePlayer application database format.
Soft Client Data Converter Plug-In	<p>Converts Soft ClientXML bundle types into the internal the OfflinePlayer application database format. Bundle types vary but they include DVDs, albums, television shows and seasons, and standard videos.</p> <p>The Soft Client Data Converter Plug-in is the recommended plug-in and data format to use with the OfflinePlayer application, since it can leverage the most functionality.</p>
Magento Data Converter Plug-In	<p>Magento is a third-party storefront web service. Magento provides an e-commerce solution for enterprises. This module parses a custom generated XML file that contains recommended products for a given product ID. The recommended list is then displayed to the user in the front-end module.</p>
Application Frontend Plug-Ins	<p>Controls the root visual layout of the OfflinePlayer application. There are also several child plug-ins that define the interface for various pages, such as the Gallery view and the Settings Page.</p>
Splash Screen Plug-In	<p>The front-end plug-in displayed when the OfflinePlayer application launches. The splash screen is displayed while all other plug-ins are downloading and installing, and while the database and all internal system components are initializing. Once these processes are complete, the main front-end plug-in replaces the splash screen plug-in.</p>
Installation Screen Plug-In	<p>A front-end interface to display an installation wizard to the end user. Once installed and started for the first time, the OfflinePlayer application downloads all other modules or offline use.</p>
Shaders Plug-In	<p>Provides a set of reusable shader effects that can be used to augment the quality of the interface. This optional plug-in demonstrates how any plug-in can be created and inserted into Media Experience for use by other modules.</p>
Subscription Plug-In	<p>Monitors all products whose Subscribed flag is set to true. Product updates are checked over a period of time, which is a configurable parameter in the configuration file. During each update, the module checks the server for new updates. If one is available, the product is updated and any new assets are downloaded to the user's machine.</p>

Customizing the Offline Player

The Offline Player application manages application initialization, communication between JavaScript and Silverlight applications, the database, offline installation, and product downloads.

The OfflinePlayer application runs in either a browser or as an out-of-browser application. We recommend running the OfflinePlayer application in a browser during development. In addition, you should understand how the logic differs between browser mode and out-of-browser mode. When running the OfflinePlayer application in a browser during development, the following logic applies:

- The window controls (that is, the minimize, maximize, close, and window resizing controls on the header and footer) are non-functional in this environment.
- All content downloads to Isolated Storage, rather than to the user's My Videos directory.

By default this storage is only 1MB large and is unsuitable for the size of content typically downloaded. You must increase this setting during development; however, in out-of-browser mode, this setting is not available on the interface.

Initializing OfflinePlayer

The OfflinePlayer application initializes the interface by assigning the RootVisual element a Grid. The child of the Grid control defines the interface for Media Experience. This child is managed at a later stage.

Note: A Grid is used (rather than directly updating the RootVisual element) because Silverlight does not support changing the RootVisual element at runtime. To avoid this problem, the OfflinePlayer application uses a Grid control and modifies the child of the Grid. Once initialized, the OfflinePlayer application loads the configuration file (located inside the XAP file at resource/config.xml.) The config.xml file contains a set of application parameters that override defaults, and a series of plug-ins used by the OfflinePlayer application. In cases where Media Experience is launched in out-of-browser mode, it loads the configuration file from Isolated Storage, overriding any of the existing values. If the OfflinePlayer application is launched in a browser, any parameters passed in from the web page override any configuration settings. The settings from the web get serialized to Isolated Storage so that when Media Experience is installed later, it contains the same settings that were configured from the web.

The OfflinePlayer application checks installation requirements, dependent on whether a plug-in is missing from Isolated Storage. If a plug-in is missing, the loading process is interrupted until the necessary files are downloaded. Once the plug-ins have finished downloading, the OfflinePlayer application recommences loading by performing the following tasks:

- Load all the downloaded plug-ins into memory
- Load the database from disk

- Resume download of any products with a downloading status
- Insert the front-end plug-in (which is assigned to the OfflinePlayer application as the first child in the Grid control) and display this to the user

Content Delivery Setup Checklist

If necessary, refer to the instructions for each component listed to complete the setup process.

- 1 **CDS-IS** – Create a delivery service and associated with an asset from the Origin Server. Refer to the provisioning process in the CDS-IS at http://www.cisco.com/en/US/products/ps7127/tsd_products_support_series_home.html.
- 2 **VMS** – Set up user accounts. Refer to the VMS user guide at http://www.cisco.com/web/videoscape/docs/opencase/MediaSuite_User_4.1.pdf.
- 3 **Portal/Store Front** – Complete the portal setup procedures provided with the third-party store front application you are using.
Note: Contact Advanced Services or your account manager for a list of recommended third-party portal applications.
- 4 **Videoscape Quickstart Soft Client** – Videoscape Quickstart provides a Soft Client SDK that can be used as a reference platform to develop the service provider's video player application. For more information visit http://www.cisco.com/en/US/products/ps11502/tsd_products_support_series_home.html.

Content Delivery Verification

Execute the following processes to verify the Content Delivery setup.

- 1 **Authentication/authorization** – From a client device, verify that a user can login and view assets.
- 2 **Entitlement** - From a client device, verify that a user can purchase assets successfully.
- 3 **Content Distribution** - From a client device, verify that the device can play a video asset.

Appendix

Installing the Soft Client Components for Videoscape Quickstart

Note: assume load balancer for VMS is in place.

- 1 Install a web server, such as an Apache web server.
- 2 Create a directory where the browser widget will reside.
- 3 Copy zip file for Soft Client (BrowserWidgets_QuickStart_1.0.0.56426.zip) from the URL below to a working location that you can access:
URL=<http://www.cisco.com/cisco/software/release.html?mdfid=283711398&softwareid=284086747&release=1.0.0.56426&reind=AVAILABLE&rellifecycle=&reltype=latest&i=rm>
- 4 Complete the steps below to install offline:
 - a Use a utility, such as 7zip (<http://www.7-zip.org/download.html>), to modify the file in the zipped state:
BrowserWidgetsSDK.zip (open zip)
 - BrowserWidgetsSDK.zip\offline\binaries\ SilverlightOfflinePlayer.xap (open inside)
 - BrowserWidgetsSDK.zip\offline\binaries\ SilverlightOfflinePlayer.xap\resource\ config.xml (edit)
 - <HomePage>http://sbc-esx21-vm3.video.com/browserwidget__
Note: This field represents the exact web path where you will unzip browser widgets. Use the host name of the web server you set up in step 9a above.
Example: <Fully Qualified Domain Name of server>/<path to dir(ie,broweserwidget)>
Sample: serverA.example.com/dir/dir/
 - <LicenseRequestUrl>
<![CDATA[<http://sbc-esx21-vm1.video.com/opencase/EntitlementManager/resource/rest/playready/license>]]></LicenseRequestUrl>
 - <DomainRequestUrl>
<![CDATA[<http://sbc-esx21-vm1.video.com/opencase/EntitlementManager/resource/rest/playready/domain>]]></DomainRequestUrl>
 - <SubscriptionUpdateUrl>
http://sbc-esx21-vm1.video.com/opencase/ContentManager/resource/rest/bundle/{PRODUCT_ID}/lastModified</SubscriptionUpdateUrl>__
 - <SaveUserBundleDataUrl>
<![CDATA[<http://sbc-esx21-vm1.video.com/opencase/EntitlementManager/resource/rest/userData/saveUserBundleData/>]]></SaveUserBundleDataUrl>

- **<FetchUserBundleDataUrl>**
 <![CDATA[http://sbc-esx21-vm1.video.com/opencase/EntitlementManager/resource/rest/userData/fetchUserBundleData?bundleUUID={BUNDLE_ID}&entitlementUUID={ENTITLEMENT_ID}&metadataName={NAME}]]></FetchUserBundleDataUrl>
 - **<DeleteUserBundleDataUrl>**
 <![CDATA[http://sbc-esx21-vm1.video.com/opencase/EntitlementManager/resource/rest/userData/deleteUserBundleData?bundleUUID={BUNDLE_ID}&entitlementUUID={ENTITLEMENT_ID}&metadataName={NAME}]]></DeleteUserBundleDataUrl>
- b Close the file.
 - c Select **Yes** when prompted to save.
- 5 Complete the steps below to install inline:
- a Launch video within the webpage you are viewing.
 - b Open **BrowserWidgetsSDK.zip\lib\com\extend\Config.js**
 - c Edit the file as follows for the Settings for CMS feed.

Note: You can only have a single feed from CMS to BrowserWidget

 - host: "http://sbc-esx21-vm1.video.com/opencase/___", <FQDN of VMS load balancer>
 - Host is the baseline URL for all paths in file
 - singlePageFeed: true
 - pddRequestPath: ""
 - playlistRequestPath: ""
 - d Copy the CMS feed path from the Opencase UI.

Example:
 cddRequestPath : "ContentManager/resource/rest/feed/0aa349b7-ecfc-4d3d-b376-7d9f10276a2c"

Notes: UI for VMS, log into VMS UI, and then to Entitlement>Catalog>Feeds. A screen lists feeds. Click/open the feed you want this widget to display. Copy the field called "URL" from "ContentManager" to right and paste it into this guy; categoryContentsRequestPath : "",
 - e For the Login widget related configuration values, you will need to point to your third-party store front.
 - loginUrl : "http://sbc-esx21-vm1.video.com/<3rdPartyStore>/login__",
 - logoutUrl : "http://sbc-esx21-vm1.video.com/<3rdPartyStore>/logout__",
 - provisionUrl : "http://sbc-esx21-vm1.video.com/<3rdPartyStore>/provision__",
 - f Close the file.
 - g Select **Yes** when prompted to save.

- 6 Copy this modified zip file into the directory you created on the web server.
- 7 Unzip the file on the web server and enter URL of web path into your browser window portal of soft client will appear.

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.



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May 2012 Printed in USA

Part Number OL-26112-01