# WIDEVINE®

CYPHER FOR DIGITAL MEDIA


VOD PACKAGER


VERSION: 1.1

WIDEVINE®

## Revision History

| Version | Date | Description | By |
|---------|------|-------------|-----|
| 1.0 | 08/30/2010 | Updates for 4.4.5 release | Alex Lee |
| 1.1 | 10/11/2010 | Updates for 4.5.0 release<br>- Clarified usage of Adaptive_Stream<br>- Output file extension recommendations | Alex Lee |
| | | | |
| | | | |

CONTENTS

Fly, Encrypts Streaming Media, and Content Security from Hollywood to the Home are either registered trademarks or trademarks of Widevine Technologies, Inc. and its subsidiaries in the United States and/or other countries. All other trademarks and trade names are the property of their respective owners. No express or implied warranties are provided for herein. All specifications are subject to change and any expected future products, features or functionality will be provided on an if and when available basis. Widevine reserves the right to substitute hardware component vendors and quantities in order to meet the customer specific environment and based on component availability.  Note that the descriptions of Widevine Technologies' patents and other intellectual property herein are intended to provide illustrative, non-exhaustive examples of some of the areas to which the patents and applications are currently believed to pertain, and is not intended for use in a legal proceeding to interpret or limit the scope or meaning of the patents or their claims, or indicate that a Widevine patent claim(s) is materially required to perform or implement any of the listed items.  Widevine patents include but are not limited to: U.S. Patent No. 7,007,170 B2; 6,449,719 B1; 6,965,993 B2; 7,043,473; 7,150,045; 7,165,175; 7,299,292; and Korean Patent No. 10-0749947-0000; 00-747755-0000; and Taiwan Patent No. R.O.C I268080

## 1. PURPOSE

This document will cover the integration points concerned with the encryption of content between the Customer AMS and Widevine Cypher®.
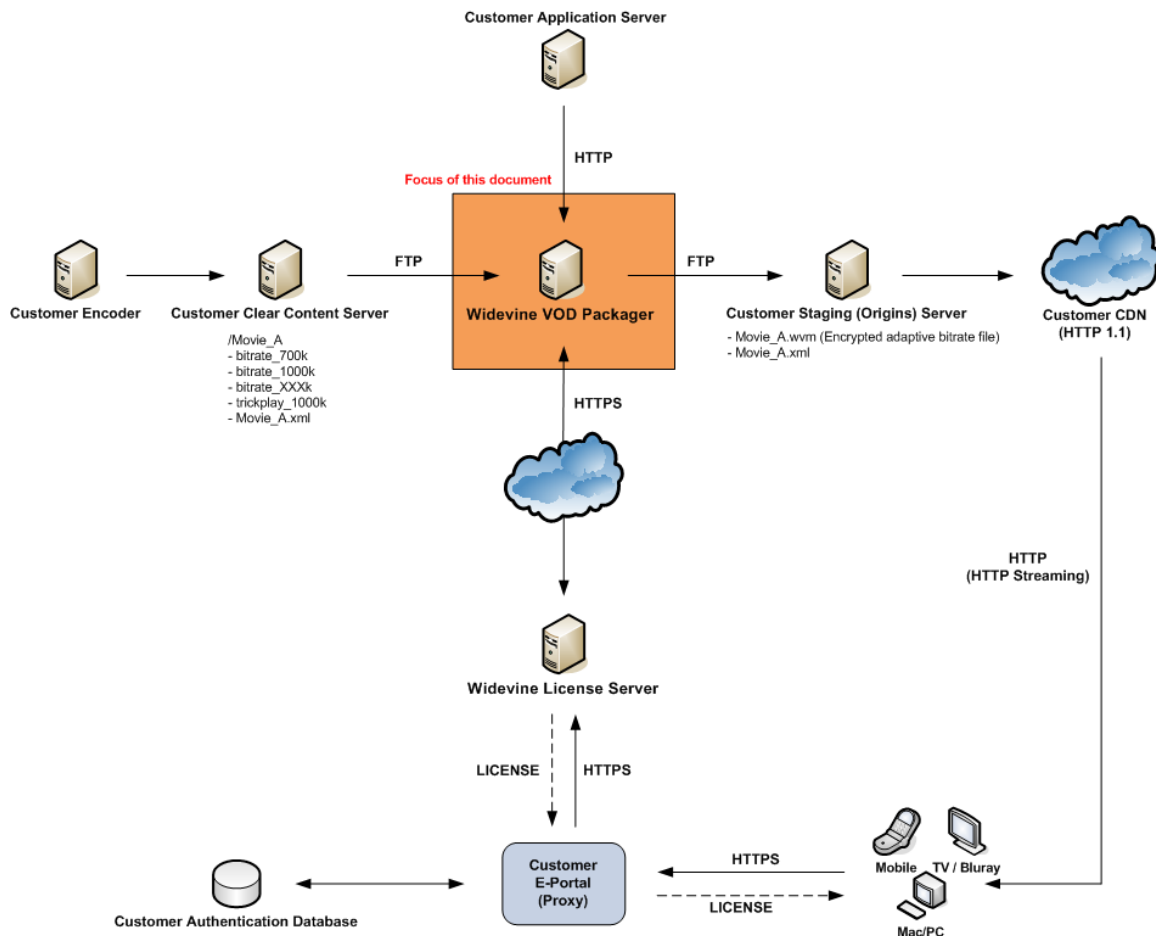


**FIGURE 1 – CYPHER DIGITAL MEDIA FOR VOD COMPONENT DIAGRAM**

## 2.   TERMS AND ABBREVIATIONS

- **AMS -** Tasked with encoding, encryption and distributing content
- **Asset -** Physical media such as an MPEG, Flash or WMV encoded movie**.**
- **Client Device -** The equipment within a household used to view the television Services and Assets.
- **Command -** An XML message from an Entity to Widevine Cypher®.
- **Content Owner -** Creator of content
- **Content Provider -** Organization who provides a content owners content to client devices
- **VOD Packager** - Encryption appliance that pre-encrypts media files
- **ECM** - **E**ntitlement **C**ontrol **M**essage: Encrypted data that contains access constraints and content keys
- **Package -** A bundle of assets and metadata.
- **Packager –** a Widevine appliance that encrypts and packages content for video optimization (eg. Adaptive streaming, DVD like trick-play etc).
- **Response -** An XML message from Widevine Cypher® to Entity with the same SessionID and SequenceNumber as the command to which it is responding.
- **Subscriber -** A device or its user.
- **Transaction** - A couplet of command and response XML messages with the same SessionID and SequenceNumbers.

## 3.   PACKAGER

The Packager API is a library and an external interface to allow third party content management systems to encrypt content with Widevine Cypher®.

### 3.1.   VOD DEALER

VOD Dealer is the Widevine application for packaging. This component can:

- Ingest assets using FTP / local path

- Encrypt assets and package them for video optimization

- Distribute assets using FTP / local path

## 4. AMS/VOD DEALER INTERFACE

### 4.1. AMS SENDS VOD DEALER PACKAGE NOTIFICATION

The AMS should transmit an XML message using an HTTP Post. The VOD Dealer will ftp the Asset(s) from the source directory provided in the message.  The notification informs the VOD Dealer a new package is available.  A response will be sent to indicate the receipt of the PackageNotify message.

http://<VOD-Dealer>/widevine/voddealer/cgi-bin/packagenotify.cgi

### 4.2. MESSAGE (AMS → VOD DEALER)

An XML example of VOD Dealer notification:

```
<PackageNotify
      name="package1"
      owner="widevine"
      provider="movie_studio01"
      sourceUrl="ftp://unam123@10.200.0.81/new/package1"
      targetUrl="ftp://unam123@10.200.0.81/completed/package1"
      statusTo="www.address.com/statusupdate.cgi">
</PackageNotify>
```

### 4.3. RESPONSE (VOD DEALER → AMS)

An XML example of response to the PackageNotify message:

```
<PackageNotifyResponse
     name='package1'
     owner='widevine'
     provider='movie_studio01'
     id='1234'>
</PackageNotifyResponse>
```

### 4.4. ERROR RESPONSE (VOD DEALER → AMS)

An XML example of error response to the PackageNotify message:

```
<PackageNotifyResponse
     name='package1'
     owner='widevine'
     provider='movie_studio01'
     status='error'
     errorText='Asset not Registered'>
</PackageNotifyResponse>
```

## 4.5. PACKAGENOTIFY ATTRIBUTES

| Element | Attribute | Definition | Values | Required |
|---|---|---|---|---|
| PackageNotify | Name | Name of the package. Must be specified if 'owner' and 'provider' are specified. | String | Optional (if metadata is used). Required if 'owner' or 'provider' is specified. |
| | Owner | Unique identifier of the content owner. Must be specified if 'name' and 'provider' are specified. | String | Optional (if metadata is used). Required if 'name' or 'provider' is specified. |
| | Provider | Unique identifier for the provider of the Asset. Must be specified if 'name' and 'owner' are specified. | String | Optional (if metadata is used). Required if 'name' or 'owner' is specified. |
| | sourceUrl | URL to obtain the assets. This is a directory containing the asset(s) and metadata. If the metadata is not found, an error is returned. | String | Required |
| | targetUrl | URL (of a directory) to push the assets and metadata to after processing. If not specified, the destination URL should be configured in the VOD Dealer. | String | Required |
| | statusTo | An optional URL to send a status update for events such as processing complete or failed. | String | Optional |
| | requestId | Optional string provided for tracking purposes. If | String | Optional |

| | | | | |
|---|---|---|---|---|
| | | provided the string will be echoed in the PackageNotifyResponse, PackageQueryResponse, and PackageStatusResponse. | | |
| | Id | Unique identifier for this request. This identifier must be present in the XML response to this notification message. This identifier must also exist in the subsequent acknowledgement message. | Integer | Output |
| | policy | Name of policy to use. A default policy exists for the 'provider". This is used to specify an alternate policy. | | Optional (Required if metadata is not used) |
| | licenseStartDate | Start date for the license window. Format: YYYY-MM-DDTHH:MM:SS. | String | Optional |
| | licenseEndDate | End date for the license window. Format: YYYY-MM-DDTHH:MM:SS. | String | Optional |
| | outputFile | Name of the encrypted output file<br><br>Use a .wvm extension if useForDevice=N<br>Use a .m4v (or .mp4) extension if useForDevice=Y | String | Optional (Required if metadata is not used) |
| | useForDevice | Y or N states that the files should be encrypted for device.<br>Note: VOD Dealer Encryption Type must be set to DEVICE. | Boolean | Optional (default: N) |

| SourceFiles. File | name | File Name used with SourceURL to obtain the content file.  More than one of these attributes may be specified, once for each bitrate. | String | Optional (Required if metadata is not used) |
|---|---|---|---|---|
| | size | Size of the content file in bytes. If specified, the file size is verified. | Numeric (64 bits) | Optional |
| | UseForTrickPlay | Y or N states that the file should be used for trick play | Boolean | Optional (default: N) |
| Chaptering | | See Chaptering | | |

4.6. PACKAGENOTIFYRESPONSE ATTRIBUTES

| Attribute | Definition | Values | Required |
|---|---|---|---|
| name | Name of the package as it was sent in the notification message | ASCII | Required |
| owner | Unique identifier of the content owner | String | Required |
| provider | Unique identifier for the provider of the Asset | String | Required |
| status | The status of processing the package. | See Package Status | Required |
| errorText | Errors List<br>• PackageNotify request is invalid. Please check parameters.<br>• Metadata is missing from package directory.<br>• Asset not registered.<br>• FTP_ERR: [<error code>] <error message> | String | Optional |
| requestId | String provided in PackageNotify. | String | Optional |
| id | Unique identifier for this request.  This identifier must be present in the XML response to this notification message. This identifier must also exist in the subsequent acknowledgement message. | Integer | Required |

WIDEVINE®

## 4.7. EXAMPLE OF PACKAGENOTIFY WITHOUT ASSET METADATA XML FILE

Using FTP content locations

```
<PackageNotify
  name="package1"
  owner="widevine"
  provider="movie_studio01"
  sourceUrl="ftp://uname123@10.200.0.81/new/package1"
  targetUrl="ftp://uname123@10.200.0.81/completed/package1"
  statusTo="www.address.com/statusupdate.cgi"
  policy="default"
  outputFile="movie.wvm"
  licenseStartDate="2010-06-01T10:00:00Z"
  licenseEndDate="2010-09-01T10:00:00Z">
  <SourceFiles>
    <File name="movie_700.mp4" size="210002"/>
    <File name="movie_1000.mp4" size="4640002"/>
    <File name="movie_1500.mp4" size="12230002"/>
    <File name="movie_1000_TP.mp4" size="4640002" UseForTrickPlay="y"/>
  </SourceFiles>
  <Chaptering Mode="List">
    <ThumbnailParams>
      <Resolution Horizontal="160" Vertical="90"/>
      <Quality Value="30"/>
      <Detail Value="30"/>
    </ThumbnailParams>
    <ChapterList>
      <Chapter Title="Chapter 1" TimeIndex="00:00:30.0000"/>
      <Chapter Title="Chapter 2" TimeIndex="00:01:00.0000"/>
      <Chapter Title="Chapter 3" TimeIndex="00:01:30.0000"/>
    </ChapterList>
  </Chaptering>
</PackageNotify>
```

Using local filesystem references

```
<PackageNotify
  name="package1"
  owner="widevine"
  provider="movie_studio01"
  sourceUrl="file:///usr/content/clear/package1"
  targetUrl="file:///usr/content/encrypted/package1"
  statusTo="www.address.com/statusupdate.cgi"
  policy="default"
  outputFile="movie.wvm"
  licenseStartDate="2010-06-01T10:00:00Z"
  licenseEndDate="2010-09-01T10:00:00Z">
  <SourceFiles>
```

```
     <File name="movie_700.mp4" size="210002"/>
     <File name="movie_1000.mp4" size="4640002"/>
     <File name="movie_1500.mp4" size="12230002"/>
     <File name="movie_1000_TP.mp4" size="4640002" UseForTrickPlay="y"/>
   </SourceFiles>
   <Chaptering Mode="List">
     <ThumbnailParams>
       <Resolution Horizontal="160" Vertical="90"/>
       <Quality Value="30"/>
       <Detail Value="30"/>
     </ThumbnailParams>
     <ChapterList>
       <Chapter Title="Chapter 1" TimeIndex="00:00:30.0000"/>
       <Chapter Title="Chapter 2" TimeIndex="00:01:00.0000"/>
       <Chapter Title="Chapter 3" TimeIndex="00:01:30.0000"/>
     </ChapterList>
   </Chaptering>
</PackageNotify>
```

4.8. EXAMPLE OF PACKAGENOTIFY (DEVICE) WITHOUT ASSET METADATA XML FILE

```
<PackageNotify
  name="package1"
  owner="widevine"
  provider="movie_studio01"
  policy="iphone"
   sourceUrl="ftp://anonymous:robin@10.150.1.113/pub/iPhone/"
   targetUrl="ftp://anonymous:robin@10.150.1.36/iPhoneDir/iPhone/"
   statusTo="http://10.150.1.113/widevine/test/test.cgi"
   useForDevice="Y">
  <SourceFiles>
    <File name="movie1.mp4" size="76352251"/>
   </SourceFiles>
</PackageNotify>
```

# 5. COPY CONTROL INFORMATION

Copy Control information must be specified in the VOD Manager GUI, Service Manager GUI, AddService() API or it will be processed by the VOD Dealer when the CCI information is included as part of the ADI CableLabs metadata file.

## 5.1. CCI – COPY CONTROL INFORMATION

The Copy Protection bytes are defined as follows:

Byte 0:

| CCI Bits # | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|
| | AC | HB | HDCP | CIT | APS1 | APS0 | EMI1 | EMI0 |

Byte 1:

| CCI Bits # | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|
| | X | X | X | X | X | X | DC1 | DC0 |

## 5.2. EMI – DIGITAL COPY CONTROL BITS

Comparable to CGMS-A standards.

| EMI Value | Description |
|---|---|
| 00*b* | Copying not restricted |
| 01*b* | No further copying is permitted |
| 10*b* | One generation copying is permitted |
| 11*b* | Copying is prohibited |

## 5.3.    APS – ANALOG PROTECTION SYSTEM

Comparable to Macrovision standards.

| APS | Macrovision Mode | Description |
|---|---|---|
| 00*b* | 0 | Copy protection encoding off (Macrovision off) |
| 01*b* | 1 | AGC process on, split burst off |
| 10*b* | 2 | AGC process on, 2 line split burst on |
| 11*b* | 3 | AGC process on, 4 line split burst on |

## 5.4.    CIT – CONSTRAINED IMAGE TRIGGER

| CIT | Description |
|---|---|
| 0*b* | No Image Constraint Asserted |
| 1*b* | Image Constraint Required |

## 5.5.    HDCP– HIGH BANDWIDTH DIGITAL CONTENT PROTECTION

If enabled, encryption of transmission between source and receiver is required.

| HDCP | Description |
|---|---|
| 0*b* | HDCP off |
| 1*b* | HDCP on |

## 5.6.    HB – HEART-BEAT MESSAGE FROM CLIENT TO SERVER

If enabled, send heart-beat messages if the client supports this feature.

| HB | Description |
|---|---|
| 0*b* | Heart-beat is off |
| 1*b* | Heart-beat is on |

## 5.7.        AC – ANALOG COMPONENT OUTPUT CONTROL

Part of Extended ExCCI standards.

| AC | Description |
|---|---|
| 0b | Analog component signal output not allowed |
| 1b | Analog component signal output allowed |

## 5.8.        DC – DIGITAL SIGNAL OUTPUT CONTROL

Part of Extended ExCCI standards.

| AC | Description |
|---|---|
| 00b | No digital signal output allowed |
| 01b | Only uncompressed digital signal output allowed |
| 10b | Only compressed digital signal output allowed |
| 11b | Both compressed and uncompressed digital output allowed |

WIDEVINE®

# 6. AMS RECEIVES PACKAGE STATUS

The AMS may receive an asynchronous response after the package was processed or if a failure occurred. The message should include the status indicating the package was successfully processed or failed. The AMS should send a response to indicate the receipt of the PackageStatus message.

## 6.1. MESSAGE (VOD DEALER → AMS)

XML example of the status sent from VOD Dealer:

```
<PackageStatus
      name='package1'
      owner='widevine'
      provider='movie_studio01'
      assetid='1000421'
      status='successful'
      id='1234'>
</PackageStatus>
```

## 6.2. RESPONSE (AMS → VOD DEALER)

XML example of AMS response to PackageStatus message:

```
<PackageStatusResponse
      name="package1"
      provider="widevine"
      id="1234">
</PackageStatusResponse>
```

## 6.3.    PACKAGESTATUS ATTRIBUTES

| Attribute | Definition | Values | Required |
|-----------|-----------|--------|----------|
| name | Name of the package as it was sent in the notification message | ASCII | Required |
| owner | Unique identifier of the content owner | String | Required |
| provider | Unique identifier for the provider of the Asset | String | Required |
| status | The status of processing the package. | See Package Status | Required |
| errorText | Description of the error which could be prefixed by one of the following: XML_ERR, VAL_ERR, REG_ERR, FTP_ERR, and ENC_ERR. XML_ERR: represents a xml error VAL_ERR: represents an error in the file validation.  The actual file size or checksum and the reported file size of checksum will be in the 'errorText' REG_ERR: represents a registration error FTP_ERR: represents an ftp error.  Message format '[<error code>] <error message>'. ENC_ERR: respresents a encryptin error | String | Optional |
| requestId | String provided in PackageNotify. | String | Optional |
| assetid | Unique identifier for this asset. | Integer | Required |
| id | Unique identifier for this request.  This identifier must be present in the XML response to this notification message. This identifier must also exist in the subsequent acknowledgement message. | Integer | Required |

WIDEVINE®

## 7. AMS QUERIES PACKAGE STATUS

The AMS may query the status of a package by specifying the id.  The VOD Dealer will send a response to indicate the current status of the package.

http://<VOD-Dealer>/widevine/voddealer/cgi-bin/packagequery.cgi

### 7.1. MESSAGE (AMS → VOD DEALER)

XML example of the status sent from AMS:

```
<PackageQuery
      id="1234"
</PackageQuery>
```

OR

```
<PackageQuery
      name="package_name"
</PackageQuery>
```

### 7.1.1. RESPONSE (VOD DEALER → AMS)

XML example of AMS response to PackageQuery message:

```
<PackageQueryResponse
      name='package1'
      owner='widevine'
      provider='movie_studio01'
      assetid='1000421'
      id='1234'
      status='processing'>
</PackageQueryResponse>
```

### 7.1.2.    ERROR RESPONSE (VOD DEALER → AMS)

XML example of error response to PackageQuery message:

```
<PackageQueryResponse
     id='1234'
     status='error'
     errorText='Package does not exist'>
</PackageQueryResponse>
```

7.1.3.       PACKAGEQUERY ATTRIBUTES

| Attribute | Definition | Values | Required |
|---|---|---|---|
| name | Name of the package as it was sent in the notification message | String | Output |
| owner | Unique identifier of the content owner | String | Output |
| provider | Unique identifier for the provider of the Asset | String | Output |
| status | The status of processing the package. | See Package Status | Output |
| errorText | Description of the error which could be prefixed by one of the following: XML_ERR, VAL_ERR, REG_ERR, FTP_ERR, and ENC_ERR. <br>• XML_ERR: represents a xml error<br>• VAL_ERR: represents an error in the file validation.  The actual file size or checksum  and the reported file size of checksum will be in the 'errorText'<br>• REG_ERR: represents a registration error<br>• FTP_ERR: represents an ftp error. Message format '[<error code>] <error message>'.<br>• ENC_ERR: respresents a encryption error | String | Output |
| requestId | String provided in PackageNotify. | String | Output |
| assetid | Unique identifier for this asset. | Integer | Output |
| id | Unique identifier for this request.  This identifier must be present in the XML response to this notification message. This identifier must also exist in the subsequent acknowledgement message. | Integer | Required |

## 8.     AMS CANCEL PACKAGE

AMS request may be canceled using a PackageCancel request. When the VODDealer receives a PackageCancel message for a package in a state other than any of the final package states such as 'successful', 'importFailed', 'exportFailed', 'processingFailed', 'packageDeleteFailed', 'error' and 'unknown', the package will stop processing after the current state transition. If a package is in the 'successful' or 'error' state, the cancel will be ignored.

http://<VOD-Dealer>/widevine/voddealer/cgi-bin/packagecancel.cgi

### 8.1.1.     MESSAGE (AMS → VOD DEALER)

XML example of the status sent from AMS:

```
<PackageCancel
     id="1234"
</PackageCancel>
```

### 8.1.2.     RESPONSE (VOD DEALER → AMS)

XML example of AMS response to PackageCancel message:

```
<PackageCancelResponse
     id='1234' >
</PackageCancelResponse>
```

### 8.1.3.    ERROR RESPONSE (VOD DEALER → AMS)

XML example of error response to PackageCancel message:

```
<PackageCancelResponse
     id='1234'
     status='error'
     errorText='Package does not exist'>
</PackageCancelResponse>
```

### 8.1.4.    PACKAGECANCEL ATTRIBUTES

| Attribute | Definition | Values | Required |
|-----------|-----------|--------|----------|
| id | Unique identifier for this request.  This identifier must be present in the XML response to this notification message.  This identifier must also exist in the subsequent acknowledgement message. | Integer | Required |

## 9.	VOD DEALER EXPORTS PACKAGE

### 9.1.	PUSH TO AMS METHOD

The VODDealer can be configured to push packages when complete by by specifying the ftp location of the destination in the PackageNotify message.

### 9.2.	PULL FROM VOD DEALER METHOD (DEPRECATED)

The AMS may pull the package (using ftp) from the VOD Dealer after the AMS determines the packages are complete.

**WIDEVINE**®

## 10. PACKAGE STATUS

The following table defines the various package status fields.

| Status (if query by id) | GUI status (if query by name) | Description |
|---|---|---|
| | Not Processed | Package exists on ftp server but has not been processed. |
| queued | Pull Queue | Package has been added to the pull queue. |
| processing importStarted importCompleted | Pulling | Package is being pulled from source. |
| | Validating | Package is being validated. The file sizes and checksums are being checked. |
| | Encrypt Queue | Package has been added to the encrypt queue. |
| encryptionStarted encryptionCompleted | Encrypting | Assets in the package are being encrypted. |
| | Updating Metadata | Package metadata is being updated |
| importFailed | Pull Failed | Problem importing file(s) from source. |
| | Validation Failed | File size or checksum in metadata does not match physical file. |
| processingFailed | Encryption Failed | Problem occurred during encryption. |
| | Metadata Update Failed | Problem updating the metadata |
| exporting exportStarted exportCompleted | Push Queue | Package has been added to the push queue |
| | Pushing | Package is being pushed to destination |
| exportFailed | Export Failed | Problem exporting file(s) to destination. |
| exportRetry | | Export failed and will retry. Please take action to fix ftp problem. |
| successful | Completed | Package had been process without error |
| unknown | General Error | Unknown error was returned. |
| canceled | | Request has been canceled. |
| packageDeleteStarted | | Starting delete of package from source ftp server. |
| packageDeleteCompleted | | Successfully completed delete of package from source ftp server. |
| packageDeleteFailed | | Package delete failed. |
| error | | Error returned from PackageNotify or PackageQuery. Check errorText attribute. |

## 11. SAMPLE MESSAGES

### 11.1. PACKAGE NOTIFICATION

```
POST /widevine/voddealer/cgi-bin/packagenotify.cgi HTTP/1.0
Content-type: application/x-www-form-urlencoded
Content-length: 187
Host: localhost
User-agent: Python-urllib/1.15
<PackageNotify name='robin8' owner='WV' provider='ROBIN'
sourceUrl='ftp://anonymous:robin@10.150.1.36/Directories/TEST4'
targetUrl='ftp://anonymous:robin@10.150.1.36/Directories/TEST3' />
HTTP/1.1 200 OK
Date: Wed, 08 Aug 2007 23:36:14 GMT
Server: Apache/2.0.52 (Red Hat)
Connection: close
Content-Type: text/xml

<PackageNotifyResponse name='robin8' owner='WV' provider='ROBIN'
id='1186616175721'>
</PackageNotifyResponse>
```

## 11.2.    PACKAGE STATUS

```
POST /widevine/test.cgi HTTP/1.1
User-Agent: Java/1.4.2_08
Host: 10.150.1.113
Accept: text/html, image/gif, image/jpeg, *; q=.2, */*; q=.2
Connection: keep-alive
Content-Type: application/x-www-form-urlencoded
Content-Length: 110

<PackageStatus name='robin13' owner='WV' provider='ROBIN'
status='queued' id='1186617636148'>
</PackageStatus>

HTTP/1.1 200 OK
Date: Thu, 09 Aug 2007 00:00:36 GMT
Server: Apache/2.0.52 (Red Hat)
Connection: close
Transfer-Encoding: chunked
Content-Type: text/plain; charset=UTF-8

7b
Status Data
<PackageStatus name='robin13' owner='WV' provider='ROBIN'
status='queued' id='1186617636148'>
</PackageStatus>

0
```

WIDEVINE®

## 11.3.    PACKAGE QUERY

```
POST /widevine/voddealer/cgi-bin/packagequery.cgi HTTP/1.0
Content-type: application/x-www-form-urlencoded
Content-length: 34
Host: localhost
User-agent: Python-urllib/1.15

<PackageQuery id='1186617636148'/>

HTTP/1.1 200 OK
Date: Thu, 09 Aug 2007 00:07:22 GMT
Server: Apache/2.0.52 (Red Hat)
Connection: close
Content-Type: text/xml

<PackageQueryResponse name='robin13' owner='WV' provider='ROBIN'
status='successful' id='1186617636148'>
</PackageQueryResponse>
```

## 11.4.    PACKAGE CANCEL

```
POST /widevine/voddealer/cgi-bin/packagecancel.cgi HTTP/1.0
Content-type: application/x-www-form-urlencoded
Content-length: 35
Host: localhost
User-agent: Python-urllib/1.15

<PackageCancel id='1186617636148'/>

HTTP/1.1 200 OK
Date: Thu, 09 Aug 2007 00:07:22 GMT
Server: Apache/2.0.52 (Red Hat)
Connection: close
Content-Type: text/xml

<PackageCancelResponse id='1186617636148'>
</PackageCancelResponse>
```

## 12. METADATA DEFINITIONS

### 12.1. ELEMENT <AMS>

| Metadata Name | Description | Type | Required vs Optional |
|---|---|---|---|
| Asset_Class | A system-level type for the asset. | String | Req |
| Asset_Name | A string containing the identifying name of the asset. This value must be unique for each Asset in the Package. | String – Ex. "this_asset_name" | Req |
| Creation_Date | | String – "yyyy-mm-dd" | Req |
| Provider_ID | A unique identifier for the provider of the Asset. | String – Ex. widevine | Req |
| Version_Major | An integer representing the major version number. | Integer | Req |
| Version_Minor | An integer representing the minor version number. | Integer | Req |
| Asset_ID | An identifier for the asset that is unique within a provider's asset ID space. Each Asset_ID must be unique in the XML. | String | Req |

WIDEVINE®

## 12.2. ELEMENT <APP_DATA>

| Metadata name | Description | Type | Required vs Optional |
|---|---|---|---|
| License_Start_Date | Start of the license window.  This setting is governed by the asset record (per provider). | String – "yyyy-mm-ddThh:mm:ss" | Opt |
| License_End_Date | End of the license window.  This setting is governed by the asset record (per provider). | String – "yyyy-mm-ddThh:mm:ss" | Opt |
| License_Policy | Name of the policy to use for asset. Default is "default". It is recommended to specify a policy. | String | Opt |
| Region_List | Comma separated list of regions that are able to play the asset. Access_Criteria has to be 1. | String – "US,CA" | Opt |
| Asset_Owner | Owner of the asset. | String <App_Data Name="Asset_Owner" Value="WV"/> | Req |
| DCP | A value representing dcp for the asset(s).  Accepted values 0 – 15.<br><br>Recommended to set DCP values at the policy level. | Integer <App_Data Name="DCP" Value="7"/> | Opt |
| Access_Criteria | Valid values are:<br>0 – Unrestricted<br>1 – Restrict playback by region (Region_List)<br>2 – Restrict playback by purchase (Not available)<br>3 – Restrict playback by Subscription (Not available)<br>4 – Block playback of this asset.<br><br>It is recommended to set Access_Criteria at the policy level. | Integer <App_Data Name="Access_Criteria" Value="1"/> | Opt |
| Copy_Control_Protection | A value representing copy protection for the asset(s).  Refer to Copy Control Information | Integer <App_Data Name="Copy_Control_ Proctection" | Opt |

**WIDEVINE**

| | | Value="31"/> | |
|---|---|---|---|
| Output_File_Name | The name of the output file. Example: test_file.vod.<br><br>Only used with Adaptive_Stream=Y. | String <App_Data Name="Output_File_N ame" Value="test_file.wvm" /> | Req |
| Use_For_Device | Indicates this movie should be used for device file creation. Accepted values "Y" or "N". Default is "N". | String <App_Data Name="Use_For_Devic e" Value="Y" /> | Opt |
| Device_Output_File | The name of the output file for device encryption.<br>Use_For_Device must equal Y. | String <App_Data Name="Device_Output _File" Value="test.mp4" /> | Opt |
| Use_For_Normal_Play | Indicates this movie should be used for normal play. Accepted values "Y" or "N". Default is "Y". if Use_For_Trick_Play=Y the default is "N ". | String <App_Data Name="Use_For_Norm al_Play" Value="Y"/> | Opt |
| Adaptive_Stream | States if this is a adaptive streaming package. Accepted values "Y" or "N".<br>This field is required to enable the Output_File_Name parameter. | String <App_Data Name="Adaptive_Strea m" Value="Y"/> | Req* |
| Use_For_Trick_Play | Indicates this movie should be used for trick play instead of the first movie in the list. Accepted values "Y" or "N". Default is "N". | String <App_Data Name="Use_For_Trick_ Play" Value="Y"/> | Opt |
| Widevine_Asset_ID | Asset ID returned when asset is registered. This is returned in output metadata. | String <App_Data Name="Widevine_Asse t_ID" Value="100001"/> | Opt |
| Content_CheckSum | Checksum of the content file. | String | Opt |
| Content_FileSize | Size of the content file. | String | Req |
| Type | This should always be Movie. | String – "Movie" | Req |

## 12.3.   ELEMENT <CONTENT>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Value | The name of the content file. | String – Ex."asset.mpg" | Req |

## 12.4.   ELEMENT <CHAPTERING>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Mode | Specifies the type of chaptering.  Auto \| List | String | Req |

## 12.5.   ELEMENT <CHAPTERING><INTERVAL>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Value | Specifies chapter interval in seconds. Mandatory if Mode is Auto. This value must be in the range 60 through 3600 (1 minute to 1 hour). | Integer | Req |

**WIDEVINE**

12.6. ELEMENT <CHAPTERING><THUMBNAILPARAMS><RESOLUTION>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Horizontal | Horizontal resolution.<br>The resolution values (Horizontal and Vertical) ought to be chosen as to match the aspect ratio of the content from which the thumbnails are being generated to avoid thumbnail image distortion. | Integer | Req |
| Vertical | Vertical resolution.<br>The resolution values (Horizontal and Vertical) ought to be chosen as to match the aspect ratio of the content from which the thumbnails are being generated to avoid thumbnail image distortion. | Integer | Req |

12.7. ELEMENT <CHAPTERING><THUMBNAILPARAMS><QUALITY>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Value | Specifies the quality (sharpness) of the generated thumbnail images. It is a value in the 0..100 range. The lower the value, the higher the level of compression, and the lower the thumbnail image quality. | Integer<br>Recommended value (30) | Req |

WIDEVINE®

12.8.    ELEMENT <CHAPTERING><THUMBNAILPARAMS><DETAIL>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Value | Specifies the minimum amount of detail required for a thumbnail image. It is used to avoid using video frames such as all-black transition frames as thumbnails. When a thumbnail image is generated from a video frame, its level of detail is compared against the specified Detail value to determine if it meets the requirement. If not, the time index is increased and the process is repeated until a frame with the required level of detail is found. It is a value in the 0..100 range. The higher the value, the higher the level of detail required. A value of 0 means any video frame will do as a valid thumbnail, while a value of 100 would disqualify most frames and should probably not be used. A value around 15 is normally good for avoiding black frames, but some trial and error in combination with different quality values may be required to obtain optimal results | Integer Recommended value (30) | Req |

WIDEVINE®

## 12.9.    ELEMENT <CHAPTERING><CHAPTERLIST><CHAPTER>

| Attribute | Description | Type | Required vs Optional |
|---|---|---|---|
| Title | Name of the chapter. | String | Opt |
| TimeIndex | Specifies the chapter time index, in hh:mm:ss.ms format | String | Req |

## 13. SAMPLE METADATA FILE

### 13.1. SINGLE ASSET XML – REQUIRED AND RECOMMENDED VALUES

```xml
<?xml version="1.0" encoding="ISO-8859-1" ?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_packge"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001" />
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04" Creation_Date="2007-
09-07" Provider_ID="widevine" Version_Major="1" Version_Minor="0"
Asset_ID="WV0000000000002" />
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="Region_List" Value="US" />
<App_Data Name="Asset_Owner" Value="widevine" />
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Copy_Control_Protection" Value="0" />
<App_Data Name="Content_CheckSum" Value="3234234321321" />
<App_Data Name="Content_FileSize" Value="23433" />
<App_Data Name="Type" Value="movie" />
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
</Metadata>
<Content Value="theoffice04.flv" />
</Asset>
</Asset>
</ADI>
```

## 13.2. ADAPTIVE STREAMING XML (MULTIPLE BITRATES)

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
</Asset>
</ADI>
```

## 13.3. DEVICE FILE XML

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Use_For_Device" Value="Y"/>
<App_Data Name="Device_Output_File" Value="theoffice04.mp4"/>

<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
</Asset>
</ADI>
```

## 13.4. ADAPTIVE STREAMING XML WITH DEVICE FILE

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Use_For_Device" Value="Y"/>
<App_Data Name="Device_Output_File" Value="theoffice04.mp4"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
</Asset>
</ADI>
```

## 13.5. ADAPTIVE STREAMING XML WITHOUT TRICK PLAY

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
<App_Data Name="Trick_Play" Value="N"/>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
</Asset>
</ADI>
```

## 13.6. ADAPTIVE STREAMING XML WITH TRICK PLAY

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_trick"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000004"/>
<App_Data Name="Use_For_Trick_Play" Value="Y"/>
<App_Data Name="Use_For_Normal_Play" Value="N"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
```

```
<Content Value="trick.mp4"/>
</Asset>

</Asset>
</ADI>
```

## 13.7.    ADAPTIVE STREAMING XML WITH CHAPTER INFORMATION (MODE LIST)

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
<Chaptering Mode="List">
<ThumbnailParams>
<Resolution Horizontal="160" Vertical="90"/>
<Quality Value="30"/>
<Detail Value="30"/>
</ThumbnailParams>
<ChapterList>
<Chapter Title="Chapter 1" TimeIndex="00:00:30.0000"/>
<Chapter Title="Chapter 2" TimeIndex="00:01:00.0000"/>
<Chapter Title="Chapter 3" TimeIndex="00:01:30.0000"/>
</ChapterList>
</Chaptering>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
```

```
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_trick"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000004"/>
<App_Data Name="Use_For_Trick_Play" Value="Y"/>
<App_Data Name="Use_For_Normal_Play" Value="N"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="trick.mp4"/>
</Asset>

</Asset>
</ADI>
```

WIDEVINE®

## 13.8. ADAPTIVE STREAMING XML WITH CHAPTER INFORMATION (MODE AUTO)

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<ADI>
<Asset>
<Metadata>
<AMS Asset_Class="package" Asset_Name="theoffice04_package"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000001"/>
<App_Data Name="Adaptive_Stream" Value="Y"/>
<App_Data Name="License_Start_Date" Start="2008-10-09T10:00:00Z"/>
<App_Data Name="License_End_Date" Start="2009-10-09T10:00:00Z"/>
<App_Data Name="License_Policy" Value="policy01" />
<App_Data Name="Region_List" Value="US"/>
<App_Data Name="Asset_Owner" Value="widevine"/>
<App_Data Name="DCP" Value="1"/>
<App_Data Name="Access_Criteria" Value="1"/>
<App_Data Name="Copy_Control_Protection" Value="31"/>
<App_Data Name="Output_File_Name" Value="theoffice04.wvm"/>
<Chaptering Mode="Auto">
<Interval Value="600"/>
<ThumbnailParams>
<Resolution Horizontal="160" Vertical="90"/>
<Quality Value="30"/>
<Detail Value="30"/>
</ThumbnailParams>
</Chaptering>
</Metadata>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_low"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000002"/>
<App_Data Name="Content_CheckSum" Value="3234efab234321321"/>
<App_Data Name="Content_FileSize" Value="23433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_lowbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
<AMS Asset_Class="movie" Asset_Name="theoffice04_high"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000003"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="theoffice04_highbitrate.mp4"/>
</Asset>
<Asset>
<Metadata>
```

```
<AMS Asset_Class="movie" Asset_Name="theoffice04_trick"
Creation_Date="2007-09-07" Provider_ID="widevine" Version_Major="1"
Version_Minor="0" Asset_ID="WV0000000000004"/>
<App_Data Name="Use_For_Trick_Play" Value="Y"/>
<App_Data Name="Use_For_Normal_Play" Value="N"/>
<App_Data Name="Content_CheckSum" Value="32ab12e34234321321"/>
<App_Data Name="Content_FileSize" Value="1223433"/>
<App_Data Name="Type" Value="movie"/>
</Metadata>
<Content Value="trick.mp4"/>
</Asset>

</Asset>
</ADI>
```

## 14.  FTP ERRORS

| FTP Error Description | FTP Error Code | Error Text |
|---|---|---|
| FTP Server not running | NA | Connection refused |
| Can't open data connection | 425 | Connection timed out |
| | | No route to host |
| | | Connection refused |
| | | Failed to establish connection. |
| | | Read timed out |
| Requested action not taken. File unavailable (e.g. file not found, no access) | 550 | <file name>: Disk quota exceeded |
| Connection closed; transfer aborted | 426 | |
| Timeout for receiving data from server | n/a | |
| Not logged in, wrong username or password | 530 | |
| Requested file action not taken. File unavailable (e.g. file busy) | 450 | |
| Requested action aborted. local error in processing. | 451 | Failure writing to local file. |
| | | Transfer aborted. Input/output error |
| Need account for storing files | 532 | |
| Requested action not taken. File name not allowed | 553 | Could not create file. |
| Requested file action aborted. Exceeded storage allocation (for current directory or dataset) | 552 | Transfer aborted. Disk quota exceeded |
| Syntax error, command unrecognized. This may include errors such as command line too long | 500 | OOPS: child died |
| Misc. FTP error | 5XX | |