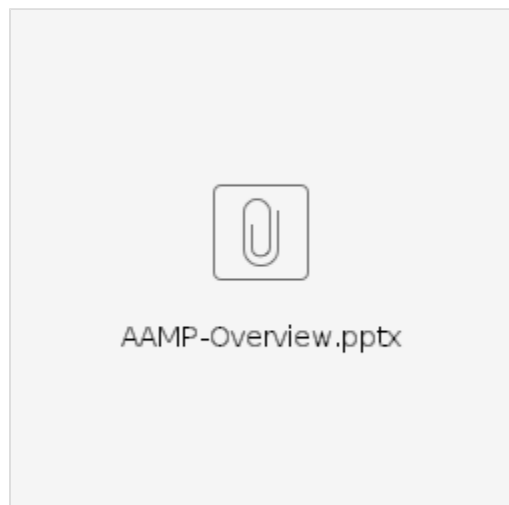# IPTV Triage Guidelines

This document is intended to support QA & Field triage teams to do initial analysis for the failures.

Logging of Interest

Logging String	Description
systemId is Widevine	Widevine content protection identified from PSSH
systemId is PLAYREADY	Playready content protection identified from PSSH
initAampDRMSystem :: enter	Init/create open cdm system
generateAampDRMSession :: enter	Open cdm session creation called
Setting Widevine as preferred drm	Preferred DRM Set to Widevine
MDS server spcific conent metadata found in initdata	Valid content metadata found in PSSH
acquireLicense SUCCESS	License acquisition success
processKey: Key Usable	Acquired key was processed in open cdm and the key is ready to be used.
Found drm session READY with same keyID	Using the already created session since the keyID is not changed for the current tune.

AAMP Overview

AAMP-Overview.pptx

Topics

[Crash & Hang Issue Analysis](#)

[DASH Playback Analysis](#)

[HLS Playback Analysis](#)

[Trick Play Flow and Analysis](#)

[Failures from outside of RDK](#)

Useful Links

1. AAMP Playback Flow : [AAMP Playback Code Flow](#)
2. Producing stack traces from google breakpad minidump manually : [Google Breakpad](#)

General Tune Failures

Unrecoverable Failures - (the playback may fail on this case)

S.No	AAMP Error Map Code	Media Error Code	Error Description	Failure on Tune Start	Failure on Mid Tune	Reason for failures	HLS	DASH
1	AAMP_TUNE_INIT_FAILED	10	AAMP: init failed	X		1. Manifest request failure. 2. Invalid or insufficient data in manifest playlist (content length if "0"). 3. If av track duration is "0". 4. If seek target is out of range.	X	X
2	AAMP_TUNE_INIT_FRAGMENT_DOWNLOAD_FAILURE	10	AAMP: init fragment download failed **String that will be logged** (*) AAMP: init fragment download failed : Http Error Code (*) AAMP: init fragment download failed : Curl Error Code	X	X	Failed to download the initialization fragment, results in tune failure. (*) Failure with VOD/cDVR playback, the HTTP error code reflects actual CDN response interms of Curl or HTTP error values. (*) Failure with Linear playback via FOG, the HTTP error code reflects FOG reported failure, which does not necessarily imply a CDN download failure.	X	X
3	AAMP_TUNE_INVALID_MANIFEST_FAILURE	10	AAMP: Invalid Manifest, parse failed	X		If the format of Manifest is invalid, then it will result in tune falure.	X	X
4	AAMP_TUNE_AUTHORISATION_FAILURE	40	AAMP: Authorization failure (or) AAMP: Authorization failure majorError	X		User is not entitled for the requested stream/content. In HLS : majorError = 3329 and minorError in (12012, 12013) In DASH : Depends on sec-client error codes	X	X
5	AAMP_TUNE_UNTRACKED_DRM_ERROR	50	**If 3321:** AAMP: Individualization server down majorerror (or) AAMP: DRM Failure majorError (or) **If AES(HLS):** AAMP: DRM Failure	X		This can come in the case of unknown DRM errors, we can check the logs for understanding the DRM major and minor errorcodes to map the failure. This can be seen with AVE and AES DRMs.	X	
6	AAMP_TUNE_DRM_INIT_FAILED	50	AAMP: DRM Initialization Failed	X		Widevine/PlayReady DRM session initialization failed. A platform or implementation issue can cause this error.		X
7	AAMP_TUNE_DRM_DATA_BIND_FAILED	50	AAMP: InitData-DRM Binding Failed	X		Failed to bind init data with DRM, could be due to invalid or incomplete initdata		X
8	AAMP_TUNE_DRM_CHALLENGE_FAILED	50	AAMP: DRM License Challenge Generation Failed	X	X	Failed to generate DRM license request. Might be due to outdated data in /opt/drm		X
9	AAMP_TUNE_INVALID_DRM_KEY	50	AAMP: Invalid Key Error, from DRM	X	X	Failed to extact license key from license response. It could be because of wrong response data or invalid key. HLS with AES DRM. DASH with WV and PR.	X	X
10	AAMP_TUNE_DRM_KEY_UPDATE_FAILED	50	AAMP: Failed to process DRM key	X	X	Failed to process DRM key. Error code returned from the update API provides more details.	X	
11	AAMP_TUNE_UNSUPPORTED_STREAM_TYPE	50	AAMP: Unsupported Stream Type	X	X	DRM sessions can be created for audio or video only. Unsupported media type received for session creation.		X
12	AAMP_TUNE_UNSUPPORTED_AUDIO_TYPE	50	AAMP: No supported Audio Types in Manifest	X		If the audio type in manifest is unknown by the player, then the playback will be failed.		X
13	AAMP_TUNE_DEVICE_NOT_PROVISIONED	52	AAMP: Device not provisioned	X		Device is not provisioned, see se-client error SEC_CLIENT_RESULT_MAC_AUTH_NOT_PROVISIONED		X
14	AAMP_TUNE_FAILED_PTS_ERROR	80	AAMP: Playback failed due to PTS error	X	X	If the injected fragment is discarded by the decoder due to PTS and other errors, then the playback will be failed with this error.	X	X
15	AAMP_TUNE_FAILURE_UNKNOWN	100	AAMP: Unknown Failure	X	X	Otherthan the above described faiures will be logged with unknown failures.	X	X

Recoverable - (on retry handling these case can be recoverable and the playback can play)

S.No	AAMP Error Map Code	Media Error Code	Error Description	Failure on Tune Start	Failure on Mid Tune	Reason for failures	HLS	DASH
1	AAMP_TUNE_MANIFEST_REQ_FAILED	10	AAMP: Manifest Download failed **String that will be logged** (*) AAMP: Manifest Download failed : Http Error Code (*) AAMP: Manifest Download failed : Curl Error Code	X	X	If manifest download failed and retry count exceeds MAX_MANIFEST_DOWNLOAD_RETRY(3)	X	X

2	AAMP_TUNE_FRAGMENT_DOWNLOAD_FAILURE	10	AAMP: fragment download failures **String that will be logged** (*) AAMP: fragment download failures : Http Error Code (*) AAMP: fragment download failures : Curl Error Code	X	X	If fragment download failed and retry count exceeds MAX_SEG_DOWNLOAD_FAIL_COUNT(10) (*) Failure with VOD/cDVR playback, the HTTP error code reflects actual CDN response interms of Curl or HTTP error values. (*) Failure with Linear playback via FOG, the HTTP error code reflects FOG reported failure, which does not necessarily imply a CDN download failure.	X	X
3	AAMP_TUNE_CONTENT_NOT_FOUND	20	AAMP: Resource was not found at the URL(HTTP 404)	X	X	If the manifest / fragment download failed with HTTP 404 error, then this error will be logged. May be the requested manifest / fragment might not be availble in the server.	X	X
4	AAMP_TUNE_LICENCE_TIMEOUT	50	AAMP: DRM License Request Timed out	X	X	License requset to server got timed out.		X
5	AAMP_TUNE_LICENCE_REQUEST_FAILED	50	AAMP: DRM License Request Failed	X	X	License request failed with server returned error code. HLS with AES DRM. DASH with WV and PR.	X	X
6	AAMP_TUNE_FAILED_TO_GET_KEYID	50	AAMP: Failed to parse key id from PSSH	X	X	Failed to parse key id from init data.		X
7	AAMP_TUNE_FAILED_TO_GET_ACCESS_TOKEN	50	AAMP: Failed to get access token from Auth Service	X		Failed to get access token from Auth Service; Access token is required to get license for Comcast streams from MDS servers.		X
8	AAMP_TUNE_CORRUPT_DRM_METADATA	50	AAMP: DRM Metadata error majorError	X		Multiple times same Metadata is set to AVE-DRM session or a bad Metadata for a stream set. DRM Major errorcode : 3314	X	
9	AAMP_TUNE_DRM_DECRYPT_FAILED	50	AAMP: DRM Decryption Failed for Fragments	X	X	If fragment decryption and retry count exceeds MAX_SEG_DRM_DECRYPT_FAIL_COUNT(10) or more fragments.	X	
10	AAMP_TUNE_CORRUPT_DRM_DATA	51	AAMP: DRM failure due to Corrupt DRM files (or) **If 3322, 3328 :** AAMP: DRM Failure possibly due to corrupt drm data; majorError **If 3307 :** AAMP: DRM Failure possibly due to corrupt CertStore majorError	X		Class of AVE DRM library errors that suggest cached DRM files are corrupted. (/opt/persistent/adobe - might be corrupted) DRM Major errorcode : 3322, 3328, 3307 This should trigger automatic "self healing" for next tune.	X	
11	AAMP_TUNE_GST_PIPELINE_ERROR	80	GstPipeline Error:Decrypt Error GstPipeline Error:Your GStreamer installation is missing a plug-in GstPipeline Error:video decode error GstPipeline Error:HDCP Authentication Failure	X	X	Triggered by GST_MESSAGE_ERROR, with human readable description extracted using gst_message_parse_error. Check the logs for better understanding.	X	X
12	AAMP_TUNE_PLAYBACK_STALLED	7600	AAMP: Playback was stalled due to lack of new fragments	X	X	AAMP playback stalled because of the non-availability of sufficient fragments.	X	X