



WIDEVINE[®]

CYPHER FOR DIGITAL MEDIA

LIVE STREAMING USER INTERFACE

VERSION: 1.0

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1. PURPOSE

The purpose of this document is describe the configuration and usage of the Widevine Live Streaming Manager (User Interface).

2. OVERVIEW

The Live Streaming Manager is a software stack that manages the configuration of Widevine Live Packagers.

There are 2 options on how the Live Streaming Manager may be configured.

1. Per Live Packager server instance
 - a. Each Live Packager will host its own Live Streaming Manager interface.
2. A Live Streaming Manager server that is capable of managing multiple Live Packagers.

3. ACCESSING THE LIVE STREAMING MANAGER

The Live Streaming Manager is available at:

<http://<server.ip>/LiveStreamManager/>

4. USER INTERFACE

The following sections describe the usage and management of programs with the Live Streaming Manager.

4.1. STATUS

The Status screen displays the current status of the selected Live Packager (by device id).

Selecting the Device pulldown will allow viewing status of other configured Live Packagers.

Every Live Packager within the same installation premises will have a unique device id, starting from 0. The screenshot below is displaying the status of a pair of Live Packagers operating in High-Availability mode (active-standby pair).

Aside from the notifications, there are 2 potential actions.

- a. Restart Live Packager services.
- b. Failover from current active Packager to standby Packager
 - i. This is a manual execution of failover services.
 - ii. Applicable only to HA solutions.

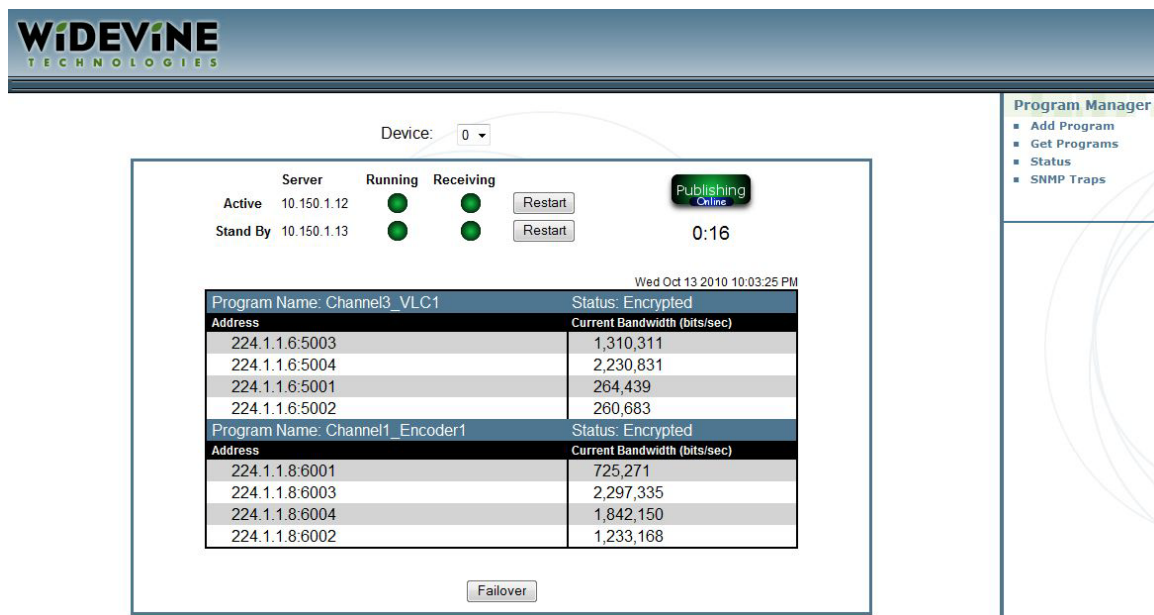


FIGURE 1 - STATUS

4.2. ADD PROGRAM

This function is to add a new program consisting of 1 or more bitrates in the form of a IP and Port.

Requirements for adding a program:

1. The Publish URL must be unique per program.
 - a. The same Publish URL cannot be used in more than 1 program.
2. The IP (multicast or unicast) must be unique per program.
3. The port numbers that identify each stream bitrate must be unique across ALL programs.
4. The stream bitrate is the measured peak bitrate (not average bitrate).

Other considerations:

1. The combination of segment duration and playback window determines the total length of the available live content (and disk storage requirements).

Add Program

Device ID:

Name:

Owner:

Provider:

Policy:

Segment Duration: (seconds)

Playback Window: (number of segments)

Key Rotation Interval: (seconds)

Publish URL:

Retrieval URL:

Batch Size:

Stream Information				
	IP Address	Port Number	Bitrate (bits/sec)	Group
x	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
x	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
x	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
x	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
+				

FIGURE 2 – ADD PROGRAM

Configuration:

1. Name
 - a. The name of the program (channel).
2. Owner
 - a. The content owner of the program.
3. Provider
 - a. This is a Widevine-assigned value.
4. Policy

- a. Defines the policy to be associated with the program
 - b. The policy must already exist prior to being specified here.
5. Segment Duration
 - a. Defines the length of a transport stream segment (in seconds).
6. Playback Window
 - a. The number of segments to generate and maintain in a playlist file.
7. Key Rotation Interval
 - a. Current functionality disabled
8. Publish URL
 - a. The URL for uploading the segmented transport stream files and playlists.
 - b. These actions are performed using HTTP PUT and HTTP DELETE.
 - c. The URL path must be valid with a trailing forward slash.
 - d. Sample values:

Without authentication
<http://origin.widevine.com/channel01/>

With basic authentication
<http://widevine:abc123@origin.widevine.com/channel01/>
 - e. The full URL with master playlist index file (prog_index.m3u8) is as follows:
http://origin.widevine.com/channel01/prog_index.m3u8
9. Retrieval URL
 - a. This is the actual URL that devices will use to retrieve content.
10. Batch Size
 - a. Unused value.
 - b. Leave at default (3).
11. Stream Information
 - a. IP Address
 - i. It is standard to have 1 unique multicast IP Address for all bitrates in a program.
 - b. Port Number
 - i. The Port Number must be unique across all programs.
 - c. Bitrate
 - i. The stream bitrate is the measured peak bitrate (not average bitrate), in bits per second.
 - d. Group
 - i. All stream bitrates need to be in the same group
 - ii. This value is a numeric integer.

4.3. GET PROGRAMS

This function is to obtain program information.

Selecting a provider while leaving the program name blank will return all programs for that provider.

Provider: widevine ▼

Program Name:

FIGURE 3 – GET PROGRAM

DRM	
Program ID:	1000310
Program Name:	Channel3_VLC1
Program Owner:	JeanVo
Key Rotation Interval:	20
Enabled:	True
Segment	
Duration:	10
Playback Window:	60
Publish Info	
Publish Url:	http://10.150.4.1/live/channel3/
Retrieval Url:	http://10.150.4.1/live/channel3/
Batch Size:	2
Streams	
224.1.1.6:5003	1500000 (b/s)
224.1.1.6:5004	2500000 (b/s)
224.1.1.6:5001	500000 (b/s)
224.1.1.6:5002	750000 (b/s)
<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

DRM	
Program ID:	1000308
Program Name:	Channel1_Encoder1
Program Owner:	JeanVo
Key Rotation Interval:	20
Enabled:	True
Segment	
Duration:	15
Playback Window:	30
Publish Info	
Publish Url:	http://10.150.4.1/live/channel1/
Retrieval Url:	http://10.150.4.1/live/channel1/
Batch Size:	1
Streams	
224.1.1.8:6001	660000 (b/s)
224.1.1.8:6003	2200000 (b/s)
224.1.1.8:6004	3300000 (b/s)
224.1.1.8:6002	1200000 (b/s)
<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

FIGURE 4 – GET PROGRAM RESULTS

4.4. EDIT PROGRAM

This function is to modify certain program parameters.

Edit Program

Device ID: 0

Name: Channel3_VLC1

Owner: JeanVo

Provider: JeanVo

Enabled: ☒

Segment Duration: (seconds)

Playback Window: (number of segments)

Key Rotation Interval: (seconds)

Publish URL:

Retrieval URL:

Batch Size:

Stream Information				
	IP Address	Port Number	Bitrate (bits/sec)	Group
x	<input type="text" value="224.1.1.6"/>	<input type="text" value="5003"/>	<input type="text" value="1500000"/>	<input type="text" value="0"/>
x	<input type="text" value="224.1.1.6"/>	<input type="text" value="5004"/>	<input type="text" value="2500000"/>	<input type="text" value="0"/>
x	<input type="text" value="224.1.1.6"/>	<input type="text" value="5001"/>	<input type="text" value="500000"/>	<input type="text" value="0"/>
x	<input type="text" value="224.1.1.6"/>	<input type="text" value="5002"/>	<input type="text" value="750000"/>	<input type="text" value="0"/>
+				

FIGURE 5 – EDIT PROGRAM

Please refer to [Add Program](#) for a description of the parameters.

4.5. SNMP TRAPS

This section displays most recent SNMP traps.

3rd party monitoring of these SNMP traps is configuration. A Widevine MIB file is available to identify the SNMP messaging being sent to external monitoring tools.



SNMP Traps			
2010-10-13 17:13:03	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.8:6002 for program 1000308 appears inactive"
2010-10-13 17:13:03	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.8:6004 for program 1000308 appears inactive"
2010-10-13 17:13:03	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.8:6003 for program 1000308 appears inactive"
2010-10-13 17:13:03	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.8:6001 for program 1000308 appears inactive"
2010-10-13 16:51:05	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.10.0	INTEGER: 1
2010-10-13 16:51:05	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.21.0	INTEGER: 1
2010-10-13 16:51:01	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9005 for program 1000309 appears inactive"
2010-10-13 16:51:01	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9004 for program 1000309 appears inactive"
2010-10-13 16:51:01	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9003 for program 1000309 appears inactive"
2010-10-13 16:51:01	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9002 for program 1000309 appears inactive"
2010-10-13 16:51:01	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9001 for program 1000309 appears inactive"
2010-10-13 16:50:21	10.150.1.12	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9005 for program 1000309 appears inactive"
2010-10-13 16:50:21	10.150.1.12	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9004 for program 1000309 appears inactive"
2010-10-13 16:50:21	10.150.1.12	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9003 for program 1000309 appears inactive"
2010-10-13 16:50:21	10.150.1.12	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9002 for program 1000309 appears inactive"
2010-10-13 16:50:21	10.150.1.12	SNMPv2-SMI::enterprises.10524.2.1.4.1.29.0	STRING: "Source 224.1.1.9:9001 for program 1000309 appears inactive"
2010-10-13 16:49:18	10.150.1.13	SNMPv2-SMI::enterprises.10524.2.1.4.1.28.0	STRING: "Error getting ECM for program

FIGURE 6 – SNMP TRAPS