Blackmagicdesign

Blackmagic
Streaming XML File Format

Blackmagic Web Presenter

Blackmagic Streaming XML Format

Overview

The Blackmagic Streaming XML allows users to specify streaming services in addition to the default services provided by the Web Presenter.

The Streaming XML can be loaded into the Web Presenter with Web Presenter Setup. Refer to the 'Using Web Presenter Setup' section earlier in this manual

The Streaming XML can also be loaded by copying the contents into the Stream XML block with the Blackmagic Web Presenter Ethernet Protocol.

The following is a minimal example of a Streaming XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<streaming>
        <service>
                <name>My Streaming Service</name>
                <servers>
                        <server>
                                <name>My Streaming Server</name>
                                <url>rtmp://my.streaming-server.com/live</url>
                        </server>
                </servers>
                <profiles>
                        <profile>
                                <name>My Streaming Quality</name>
                                <config resolution="1080p" fps="60" codec="H264">
                                        <bitrate>7500000</bitrate>
                                </config>
                        </profile>
                </profiles>
        </service>
</streaming>
```

Streaming XML Definition

The Streaming XML file follows standard XML format and shall begin with XML declaration.

```
<?xml version="1.0" encoding="UTF-8"?>
```

Streaming Element

The Streaming XML file shall be contained by the <streaming> element. The <streaming> element will consist of 1 or more <service> child elements.

The following is an example of a <streaming> element block that defines 2 streaming services.

```
<streaming>
      <service>
            <name>Service 1</name>
            <!-- Streaming settings for "Service 1" -->
      </service>
      <service>
            <name>Service 2</name>
            <!-- Streaming settings for "Service 2" -->
      </service>
</streaming>
```

Service Element

The <service> element provides a description of the streaming service. If multiple streaming services are used, it is possible to define multiple <service> elements within each <streaming> element block.

The following is an example of a <service> element block in the Stream XML file.

```
<streaming>
      <service customizable-url="true">
            <name>My Streaming Service</name>
            <key>abc1-def2-ghi3-jkl4-mno5</key>
            <servers>
                  <!-- Streaming server settings -->
            </servers>
            <profiles default="Streaming High">
                  <!-- Streaming quality settings-->
            </profiles>
            <credentials>
                  <!-- Streaming username and password settings -->
            </credentials>
      </service>
      <!-- <service> elements blocks for other streaming services -->
</streaming>
```

Attributes

Attribute	Optional/Required	Description
customizable-url	Optional	The service supports specifying custom URLs - supported = "true" or unsupported = "false" (default)

Child Elements

Element	Optional/Required	Description
<name>	Required	The name of the streaming service
<key>	Optional	The stream key for the streaming service
<servers>	Optional	The RTMP/SRT server settings of the streaming service (see below). May be omitted if customizable-url is true.
<profiles>	Required	The quality settings of the streaming service (see below)
<credentials>	Optional	The username and password of the streaming service (see below)

Servers Element

The <servers> element consists of 1 or more <server> child elements for defining the streaming server(s). The <servers> element is a required child of the <service> element. Defining multiple servers allows specifying localized and/or backup servers within a single XML description

The following is an example of a <servers> element block that defines a primary and secondary URL for the SRT server.

```
<service>
      ...
      <servers>
            <server group="Primary">
                  <name>My Streaming Service Server</name>
                  <url>srt://srt.my-streaming-service.com:2010</url>
                  <srt-extensions>
                        ...
                  </srt-extensions>
            </server>
            <server group="Secondary">
                  <name>My Streaming Service Backup Server</name>
                  <url>srt://srt-backup.my-streaming-service.com:2010</url>
                  <srt-extensions>
                        ...
                  </srt-extensions>
            </server>
            <!-- Additional <server> element blocks defining other
servers for streaming service -->
      </servers>
      ...
</service>
```

Attributes

Attribute	Optional/Required	Description
group	Optional	The logical grouping for the server

Child Elements

Element	Optional/Required	Description
<name>	Required	The name of the RTMP/SRT streaming server
<url>	Required	The URL of the RTMP/SRT streaming server
<srt-extensions>	Optional	Extended service block specific to SRT streaming server (see below)

SRT Extensions Element

The <srt-extensions> element consists of 1 or more child elements that define SRT specific parameters.

The following is an example of a <srt-extensions> element block for a primary stream identifier.

```
<service>
    ...
    <servers>
        <server group="Primary">
            ...
            <srt-extensions>
                <stream-id>
                    <item key="copy" value="0"/>
                </stream-id>
            </srt-extensions>
        </server>
    </servers>
    ...
</service>
```

Child Elements

Element	Optional/Required	Description
<stream-id>	Required	Provides element with custom parameters for the stream ID. Each child element of stream-id has 1 or more item elements with a key/value pair.

Profiles Element

The <profiles> element consists of 1 or more <profile> child elements that define streaming quality. The <profiles> element is a required child of the <service> element. Defining multiple profiles allows specifying custom bitrates for different streaming qualities.

The following is an example of a <profiles> element block that defines 3 profiles.

```
<service>
       ...
       <profiles default="Streaming High">
              <profile>
                     <name>Streaming High</name>
                     <!-- Define <config> elements to specify target
bitrates for Streaming High profile -->
              </profile>
              <profile>
                     <name>Streaming Medium</name>
                     <!-- Define <config> elements to specify target
bitrates for Streaming Medium profile -->
              </profile>
       </profiles>
       ...
</service>
```

Attributes

Attribute	Optional/Required	Description
default	Optional	The name of the default profile

Child Elements

Element	Optional/Required	Description
<name>	Required	The name of the profile
<config>	Required	Video mode dependent quality settings for profile (see below)

Config Element

The <config> element defines a mapping between the video resolution and frame rate and the target bitrate for the quality level. The <config> element is a child of the <profile> element.

The following is an example of a <config> element block for setting the target bitrate for a high quality stream with 720p60 and 1080p60 video inputs.

```
<profile>
      <name>Streaming High</name>
      <config resolution="720p" fps="60" codec="H264">
            <bitrate>6000000</bitrate>
            <audio-bitrate>128000</audio-bitrate>
      </config>
      <config resolution="1080p" fps="60" codec="H264">
            <bitrate>8000000</bitrate>
            <audio-bitrate>128000</audio-bitrate>
      </config>
      <!-- <config> elements for other resolutions and frame rates -->
</profile>
```

Attributes

Attribute	Optional/Required	Description
resolution	Required	The resolution of the streaming video mode
fps	Required	The frame rate of the streaming video mode (frames per second)
codec	Optional	The codec for encoding the streaming video - "H264" (default) or "H265"

Child Elements

Element	Optional/Required	Description
<bitrate>	Required	The target bitrate of the streaming video (bits per second)
<audio-bitrate>	Optional	The target bitrate of the streaming audio (bits per second)

The supported streaming quality bitrates can be found in section `Using Web Presenter Setup` section earlier in this manual.

> **TIP** For each <config> element block, choose a maximum resolution and fps to cover all video modes for the target bitrate. For example, defining a <config> element with resolution="1080p" and fps = "30" will apply for video modes 1080p23.98, 1080p24, 1080p25, 1080p29.97 and 1080p30.

For audio bitrate, only 128 Kb/s is supported.

Credentials Element

The <credentials> element allows specifying an RTMP session username and password if required by the service. The <credentials> element is an optional child to service element.

The following is an example of a <credentials> element block that defines a username and password for the streaming service.

```
<service>
        ...
        <credentials>
                <username>myusername</username>
                <password>abcd1234</password>
        </credentials>
        ...
</service>
```

Child Elements

Element	Optional/Required	Description
<username>	Required	RTMP session username
<password>	Required	RTMP/SRT session password