



Packet Ship *Timeline* IPTV Recorder

Application Note

AN-TL-1102
v.1.2

Integrating Timeline IPTV Recorder
with the Streamline video server

Documents
ps-captured 1.2.1 release
ps-streamd 3.1.3 release



Contents

Introduction..... 3

 Installation of ot-xmlmesh.....3

 Timeline configuration.....4

 Streamline configuration.....5

 Streaming URLs.....6



Introduction

This Application Note describes how to integrate the Timeline IPTV Recorder (ps-captured) with the Streamline video server (ps-streamd) so that streaming clients can request recorded programmes directly from the video server.

Installation of ot-xmlmesh

XMLMesh is an XML messaging integration system which is used in Packet Ship products to connect different daemons together without requiring individual configuration of port numbers etc. in each daemon. Users of previous Streamline versions (2.x) will be used to XMLMesh being the 'glue' that bound together ps-rtspd, ps-masterd and ps-pumpd, but in Streamline 3.1 "Antigua" these three have been combined into one daemon, ps-streamd, and XMLMesh is no longer required. For integration with other products, however, it still is.

The XMLMesh server is provided in the Timeline distribution as an ot-xmlmesh package. Installation is trivial and it doesn't need to be configured unless you want to use it for other purposes.

Installation on Debian

To install ot-xmlmesh on a Debian machine, choose whether you need a 32-bit or 64-bit architecture and install with dpkg in the usual way:

```
# dpkg -i ot-xmlmesh_2.4.3-2_i386.deb
or
# dpkg -i ot-xmlmesh_2.4.3-2_amd64.deb
```

Installation on CentOS / Red Hat

To install ot-xmlmesh on a Red-Hat-based machine, choose whether you need a 32-bit or 64-bit architecture and install with rpm in the usual way:

```
# rpm -i ot-xmlmesh-2.4.3-2.i386.rpm
or
# rpm -i ot-xmlmesh-2.4.3-2.x86_64.rpm
```

XMLMesh logging

If you are interested, you can check that ot-xmlmesh is running by looking at /var/log/obtools/xmlmesh.log, but there's not much to see!



Timeline configuration

In order to receive requests from the Streamline video server to lookup programmes by channel and time, the Timeline IPTV Recorder, `ps-captured`, needs to have the relevant XMLMesh interfaces enabled.

XMLMesh connection

To enable the XMLMesh connection from the `ps-captured` daemon, you need to uncomment the `<server>` element in the `<xmlmesh>` block around line 117 of `/etc/packetship/ps-captured.cfg.xml` (as shipped):

```
<!-- XML Mesh connection, 'host' and 'port' (29167) -->
<xmlmesh>
  <server host="localhost" port="29167"/>
</xmlmesh>
```

capture-playlist message handler

To enable the specific message Streamline uses to query `ps-captured` to find files for a particular programme, you need to enable the `<capture-playlist>` message handler around line 151 of `/etc/packetship/ps-captured.cfg.xml` (as shipped):

```
<!-- Capture playlist lookup from video server -->
<capture-playlist>
  <xmlmesh subject="packetship.capture.playlist"/>
</capture-playlist>
```

Restarting

After making the configuration changes, you will need to restart the `ps-captured` daemon:

```
# /etc/init.d/ps-captured restart
```



Streamline configuration

In order to let the Streamline video server (ps-streamd) know that captured content is available from Timeline, you also need to enable its XMLMesh interface, and configure a `<capture>` directory provider:

XMLMesh connection

To enable the XMLMesh connection from the ps-streamd daemon, you need to uncomment the whole `<xmlmesh>` element in the `<soap>` controller around line 231 of `/etc/packetship/ps-streamd.cfg.xml` (as shipped):

```
<!-- XML Mesh connection -->
<xmlmesh>

    <!-- Connection to server, host and port -->
    <server host="localhost" port="29167"/>

    <!-- Whether to notify end of stream to XMLMesh -->
    <notify end="no"/>

</xmlmesh>
```

If you don't want the video server to respond to stream control messages on XMLMesh, then you should also delete the entire `<messages>` block that follows.

Capture directory provider

To enable lookup of stream URLs in the Timeline captured content, you need to enable the `<capture>` directory provider by uncommenting the entire `<capture>` element around line 319 of `/etc/packetship/ps-streamd.cfg.xml` (as shipped):

```
<!-- Capture lookup directory provider -->
<capture>

    <!-- Prefix to match -->
    <asset prefix = "tv"/>

    <!-- Time to delay behind live stream ... (30) -->
    <live delay="30"/>

</capture>
```

The `<asset prefix>` is the prefix to use for stream URLs as described below.

The `<live delay>` gives the distance between the live recording point and the output stream when the 'near live' stream is requested (without an event ID or start time). If this is too short there is not enough time for the stream to be written and re-read from disk, and the streaming server may incorrectly report a stream end.

Restarting

After making the configuration changes, you will need to restart the ps-streamd daemon:

```
# /etc/init.d/ps-streamd restart
```



Streaming URLs

Once both `ps-captured` and `ps-streamd` have been configured as above and restarted, you should be able to fetch recorded content using URLs containing the channel ID (capture ID) and start time. We use RTSP as an example here, but the same format will work with any supported controller (e.g. HLS, HTTP). We also assume the asset prefix is “tv/” as in the default configuration.

Near real-time

To access the latest possible recording point (subject to the <live delay> configuration), simply quote the channel ID (capture ID in `captured.cfg.xml`) – e.g.

```
rtsp://server/tv/BBC1
```

This form is most useful to switch into pause / rewind live TV. How close the recording is to real-time will depend on buffer sizes and the controller in use.

Specified event

To access a particular recorded programme from a retrospective EPG, use an event ID (as reported in the EPG data) – e.g.

```
rtsp://server/tv/BBC1/event/1284
```

Fixed start time

To access content starting at a particular time in the captured content, use 'from' with an ISO timestamp:

```
rtsp://server/tv/BBC1/from/20110115T113000
```

Start and end time

To access a period of content starting and ending at a particular time in the captured content, use 'from' and 'to', each with an ISO timestamp:

```
rtsp://server/tv/BBC1/from/20110115T113000/to/20110115T120000
```

Start and duration

To access a period of content starting at a particular time for a given duration in the captured content, use 'from' with an ISO timestamp and 'for' with a duration, either as a number of seconds, or as a number and unit (with no space):

```
rtsp://server/tv/BBC1/start/20110115T113000/for/1800  
rtsp://server/tv/BBC1/start/20110115T113000/for/30mins
```