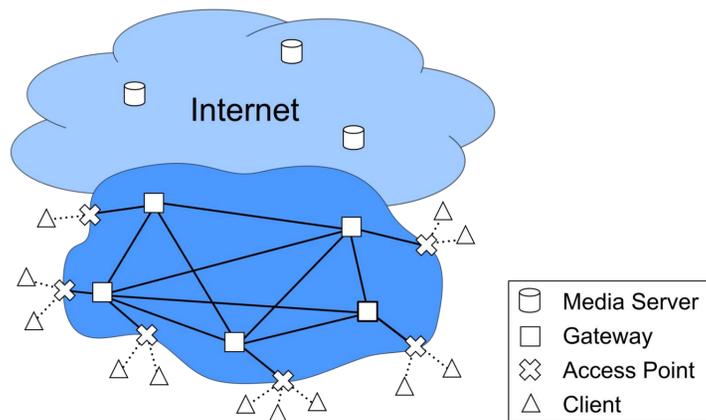


## Overview

Video streaming has high resource requirements concerning transmission and decoding of the streams. Especially mobile devices often cannot comply with such resource demands. Due to an **increasing heterogeneity** of mobile devices a dynamic video adaptation approach is needed. Therefore, we developed a multimedia gateway which uses compressed domain transcoding for video adaptation.

## Scenario

In our target scenario there is an access network containing several access points by which mobile clients can connect to the Internet. Media servers are located on the Internet and video adaptation is provided by gateways located in the access network.

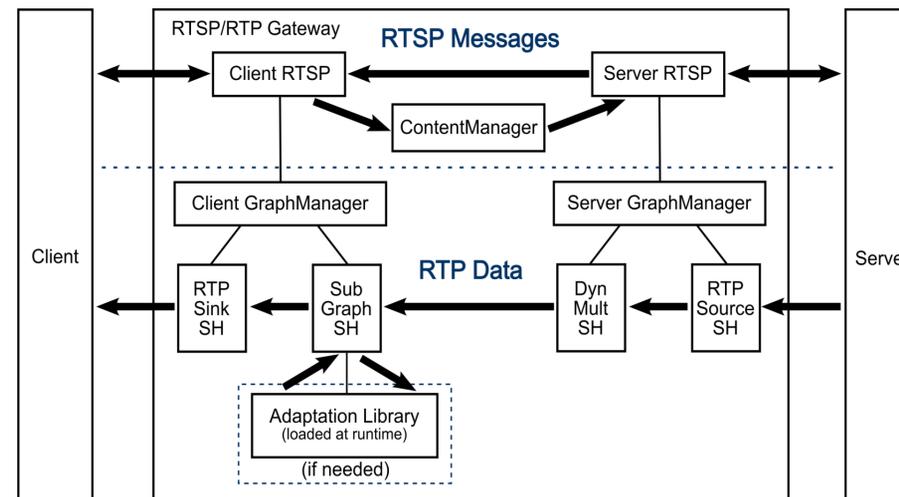


## Gateway Discovery

Clients can discover their surrounding gateways by **passively listen** to service announcements as well as by **actively sending** service requests. Therefore we adapted the Service Location Protocol (SLP) by adding the ability of proactive service announcements from the gateways.

## Gateway Implementation

We have developed an RTSP/RTP Proxy which follows the paradigm of **separated control** and **data paths**. This proxy is able to load adaptation libraries into the client data path at runtime for stream adaptation, according to the requirements of the client.



## Features:

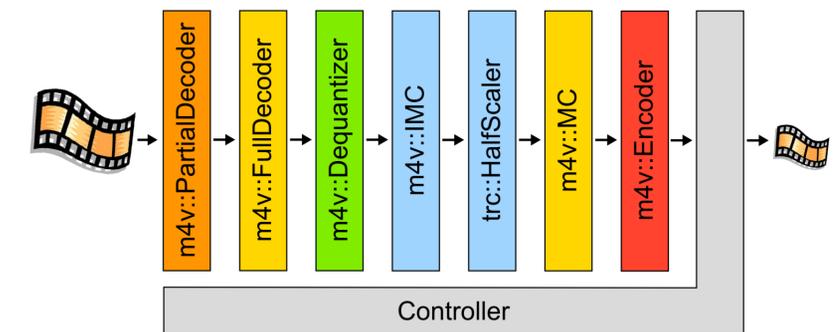
- RTSP/RTP proxy
- Support for adaptation libraries
- Capability exchange
- Gateway discovery based on SLP
- Flexible reflection

## Capability Exchange

Before session setup a client may send its requirements to the gateway. Therefore we defined client **profiles** based on CC/PP, which include information about the client's hardware and software **capabilities** as well as the user's **preferences**. The profile is transmitted to the gateway in the body of an RTSP message.

## Multidimensional Transcoding

Video adaptation is achieved by using our multi-dimensional transcoding architecture. Different **transcoding modules** can be combined to support multidimensional video adaptation.



## Adaptation Dimensions:

- Temporal adaptation
- Spatial adaptation
- Detail quality adaptation

## Client Application

For our client application, we developed a new input module for the popular multimedia player MPlayer, which uses the same code basis as the gateway.



## Contact

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