



IPTV DAN MODERN BROADCASTING

Jaringan Komputer 2

APA ITU IPTV

Masih dalam pengembangan

Siaran TV digital menggunakan teknologi jaringan computer, seperti Internet Protokol (http, rtsp, igmp)

Sebuah siaran televisi identic dengan QoS (selalu on, reliable)

Bisa berupa siaran “live” atau “di-rekam sebelumnya” (on-demand)

Biasanya diatur dengan system jaringan tertutup

Contoh : Indihome, MNC, FirsMedia, Virgin TV dll.

IPTV TRANSMISSION



IPTV supports two kinds of services:



1. Multicast IPTV, which consists of an emitter which sends the same content to multiple

receivers the same time.



Unicast IPTV, which also consists of an emitter which sends TV content to multiple receivers.

In contrast to multicast IPTV every receiver receives different content. This kind of service can be used to send personalized TV content, e.g. video on demand.

REAL-TIME TRANSPORT STREAMING PROTOCOL



The Real-time Transport Streaming Protocol (RTSP) enables a client to control a media server by



issuing commands. Necessary for Unicast .



RTSP reuses many design principle from HTTP:

URL identifies resources;
requests contain a method name and various parameters;
replies contain a status code and parameters;
messages are text based.



RTSP is a stateful protocol. The server maintains state of the client.



With RTSP, every message contains a session identifier, enabling the server to link received commands to a given multimedia session

Multicast IPTV enables a TV content provider to send TV content to many subscribers at the same time router only once.

Similarly to regular TV, multicast IPTV supports multiple channels and sends them at the same time.

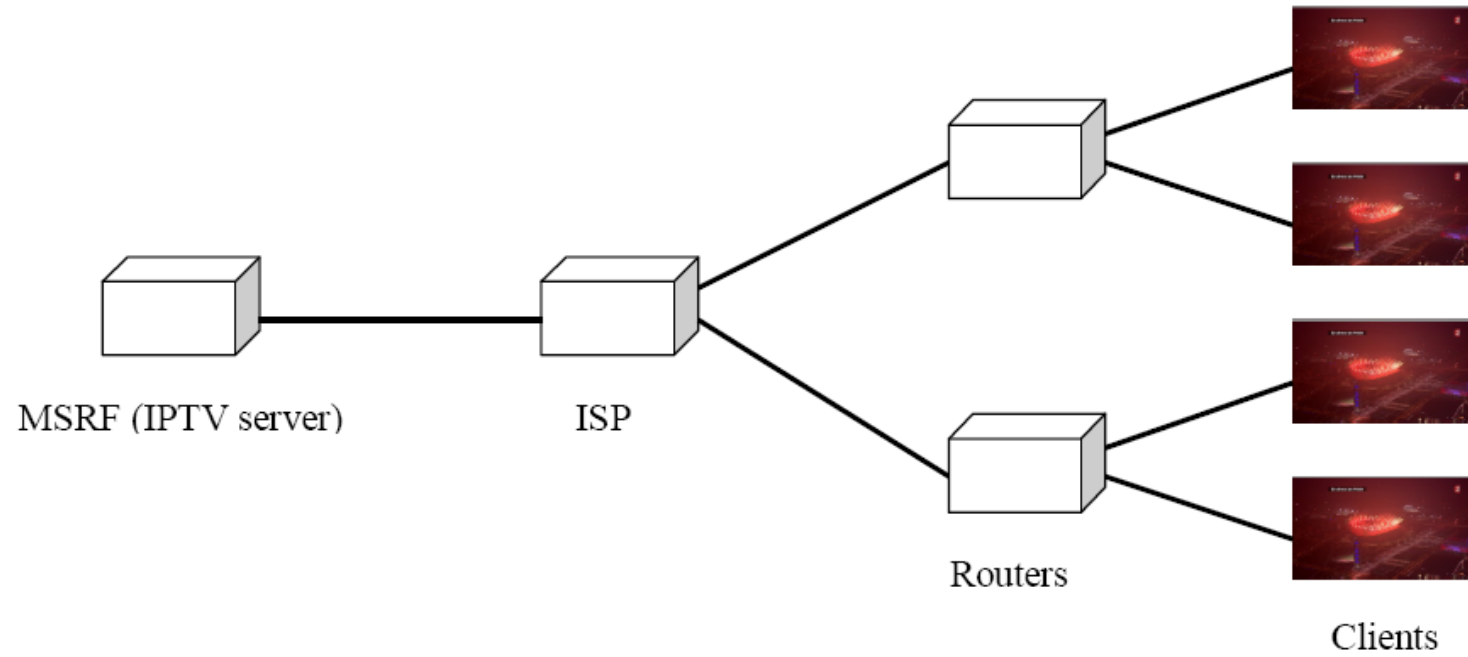
IPTV does not broadcast to a user *all* channels at the same time.

IPTV divides channels into groups and sends to each user the group that contains the requested channel.

The user can switch between channels at any time.

MULTICAST

MULTICAST SERVICE



UNICAST

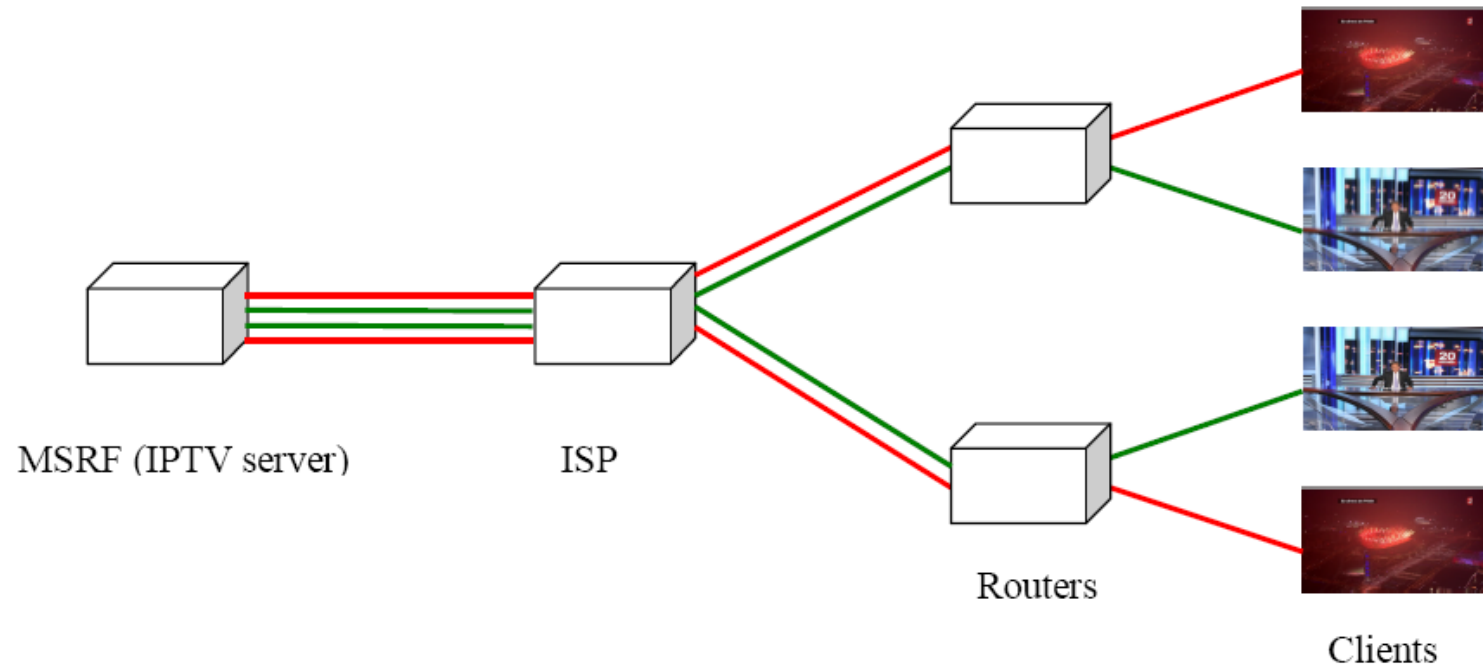
Unicast IPTV sends a given TV content to a given user. Video on Demand is a typical service of

- IPTV, which enables a user to request a specific movie and to receive it on his TV set.

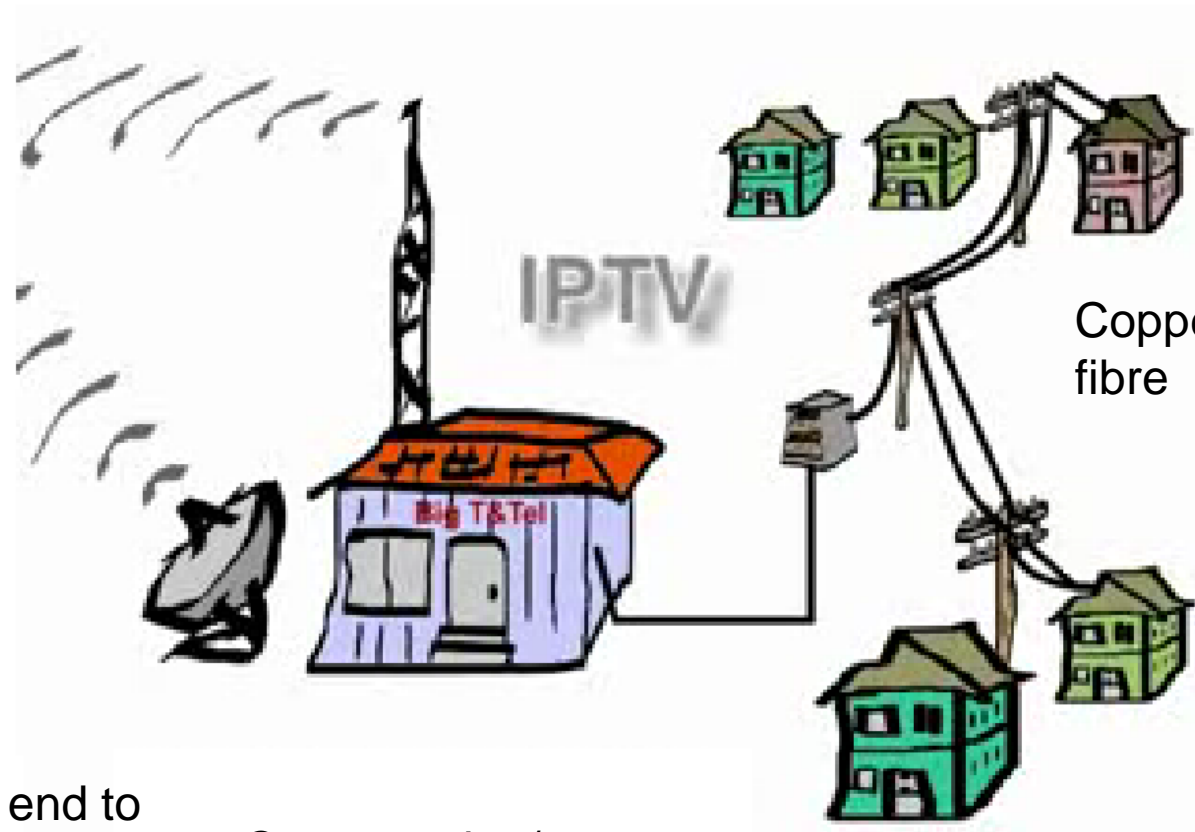
Contrary to multicast IPTV, unicast IPTV does not save bandwidth, since the server must send the content once for each user.

Unicasting can be extremely demanding on the server if multiple streams must be generated by the media server and transmitted over the network.

UNICAST SERVICE



How to capture/create IPTV

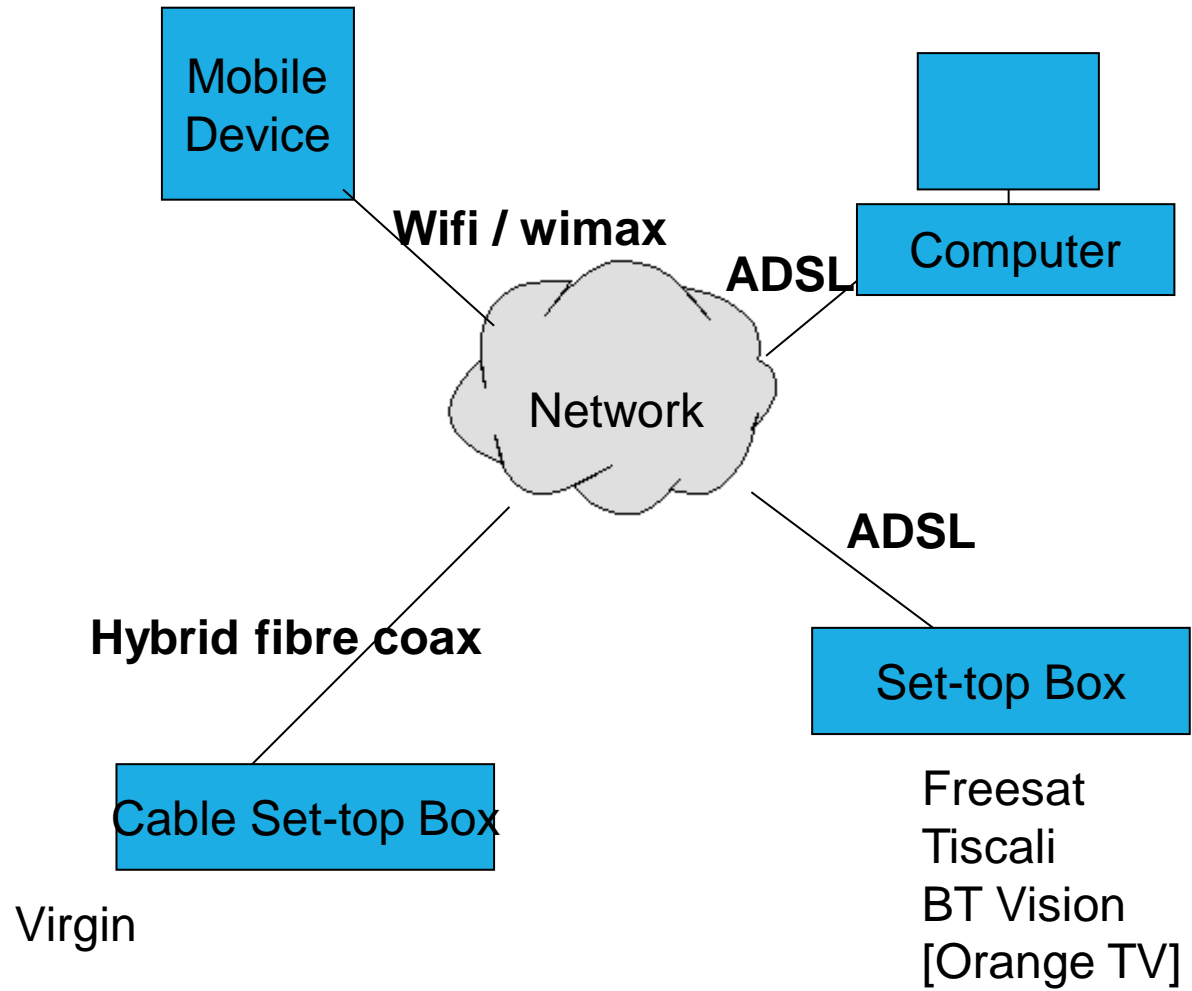


Head end to
Capture TV

Compression/
Encoding/
Encryption

Copper wire /
fibre

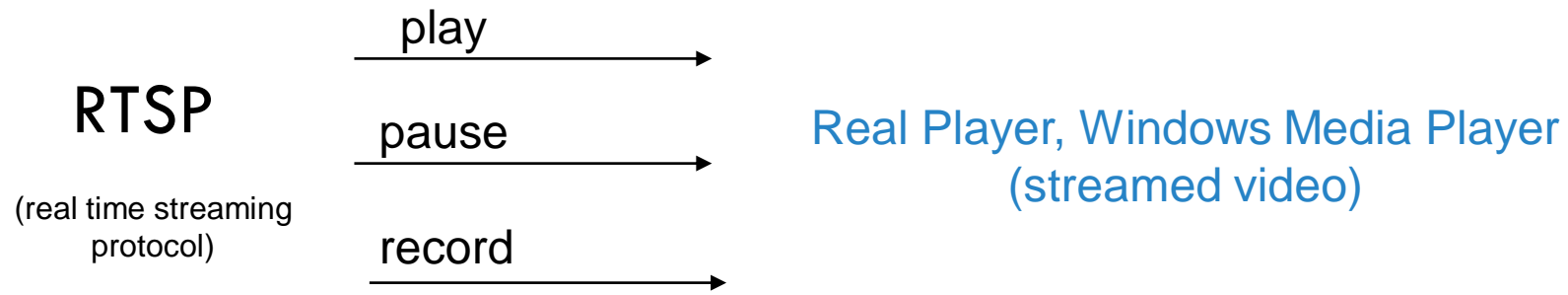
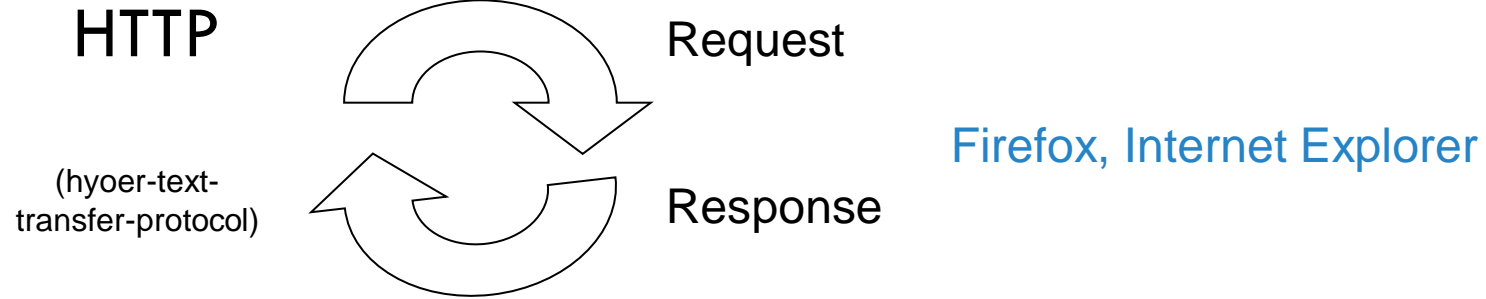
IPTV over the network cloud




Protocols

- http
- rtsp
- igmp

IPTV- KEY PROTOCOLS



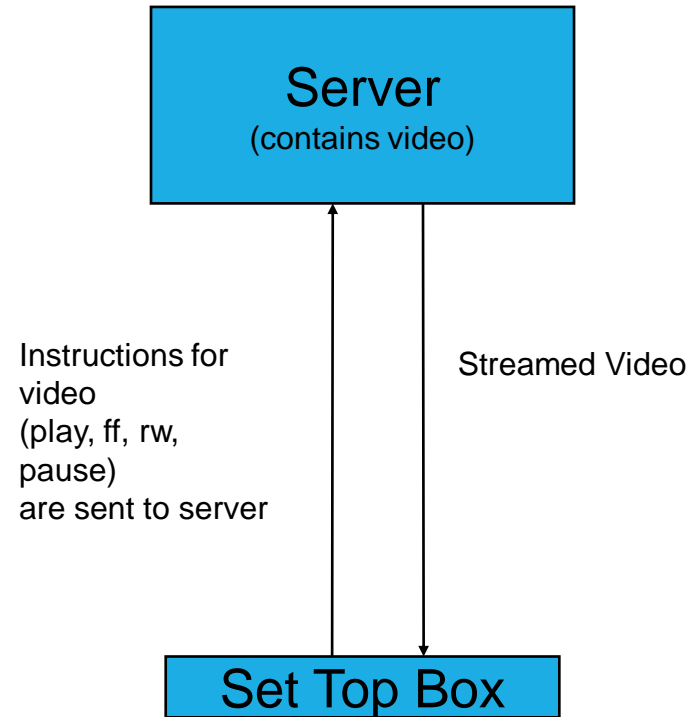
- IGMP**
(internet group management protocol)
- connecting to multicast stream (TV channel)
 - changing from one channel to another



Common IPTV/VOD models

4A – COMMON MODELS

Server Side Video / Client Side Application



Disadvantages

- Slower to load video
- Longer round trip to server battling against bandwidth

Advantages

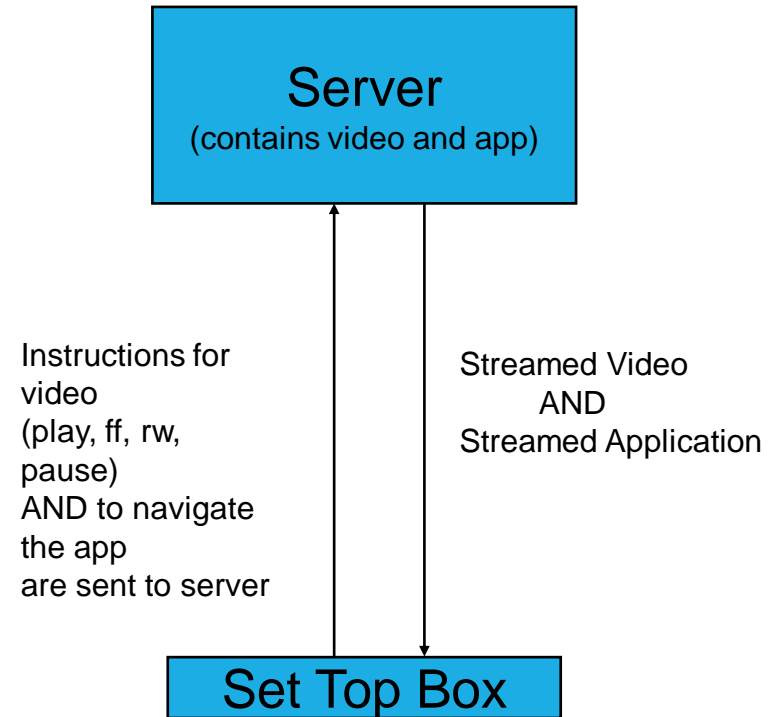
- Greater capacity for video on servers than set-top/pc

Contains:

- application code previously downloaded

4B — COMMON MODELS

Server Side Video / Server Side App



contains:
- no storage in the box

Disadvantages

- Slower to load video/app
- Longer round trip to server battling against bandwidth /contention ratio

Advantages

- Greater capacity for video
- Larger app size for more functionality

4C — COMMON MODELS

Client Side App / Client Side Video



Set Top Box/PVR

contains:

- application code previously downloaded
- video previously downloaded

Disadvantages

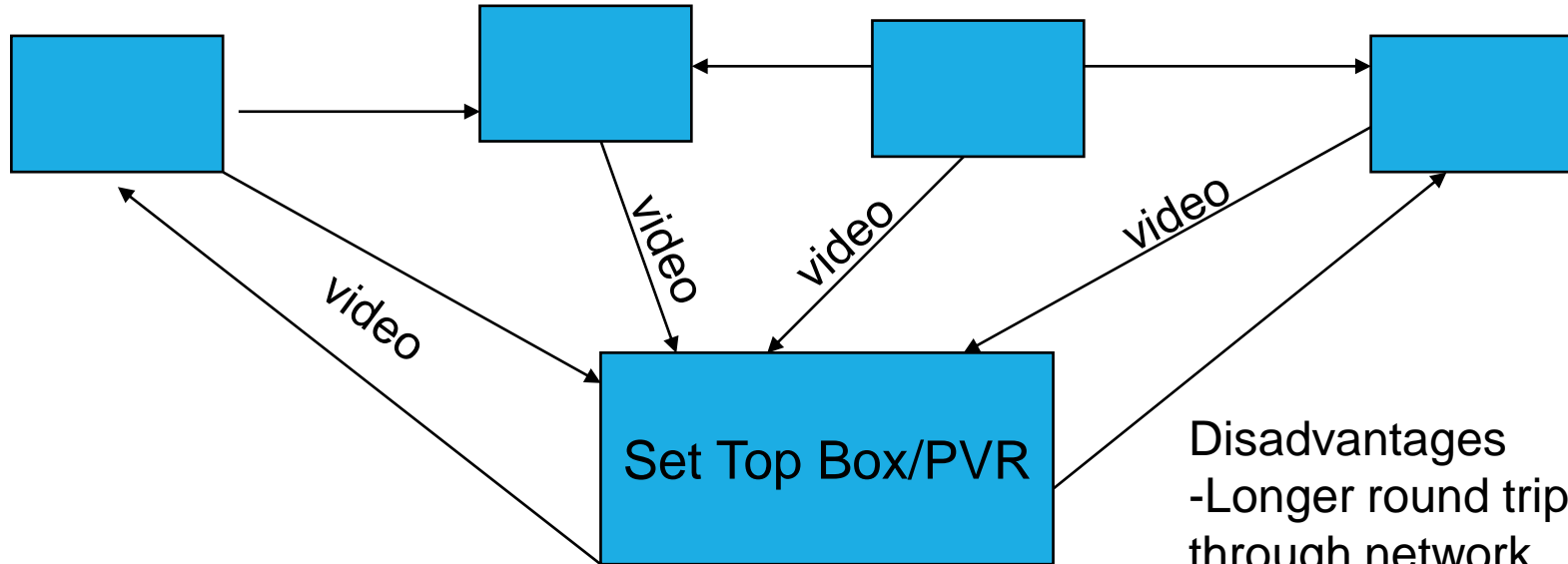
-Inability to leverage server for capacity.

Advantages

-Quick seamless transitions between video and scenes.
-Store app locally and take box from a to b (i.e. to a friends house)

4D – COMMON MODELS

Peer-to-Peer Video / Client Side Application



Disadvantages
-Longer round trip to through network

contains:
- application code previously downloaded
- video streamed from other pcs/boxes

Advantages
-Leverage other PC/set-tops with the same video for speedy download

Middlewares on devices

