Researchers

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HBO GO @HBOGO · Apr 6
Thanks for your patience #GOT fans. The service is now restored. For any further issues please email: contacthbogo@hbo.com

Expand

HBO GO @HBOGO · Apr 6
The service has returned to several platforms and we’re working hard towards full recovery, which we expect soon.

Expand

HBO GO @HBOGO · Apr 6
We’re sorry for all of the trouble, but if you’re an @HBO subscriber, the @GameOfThrones premiere replays at 11 PM EST.

Expand

HBO GO @HBOGO · Apr 6
Having trouble accessing @HBO GO? Send a raven. @GameOfThrones will be available soon on HBO On Demand with some cable providers.

Expand

HBO GO @HBOGO · Apr 6
Looks like there’s trouble in the realm. Apologies for the inconvenience. We’ll be providing updates, so please stay tuned. #GameofThrones

Expand
Accessing HBO GO
Project Architecture

Floodlight Controller

OF Switch

Primary Server

Proxy Server

Client

Open Flow

REST API

Transfer Protocol

HTTP
OpenFlow

- Programmable OpenFlow-enabled SDN architecture facilitates a fine-grained control over the traffic flows
- Floodlight controller provides proactive flow insertion mechanism using Static Flow entry pusher module
- Switch by switch static flows are added to create forwarding paths
OpenFlow

- Primary Server
- OF Switch
- Floodlight Controller
- OF Switch
- OF Switch
- Proxy Server
- Client
- Client
Project Architecture

- Floodlight Controller
- Primary Server
- OF Switch
- Proxy Server
- Client

Connections:
- Open Flow
- REST API
- Transfer Protocol
- HTTP
MPEG-DASH

- Allows clients to dynamically adapt to changing network conditions by selecting appropriate bit rates
- Segments the video file into chunks and streams the content by downloading the segments using HTTP GET requests
- Stores segment information (bit rates, URLs, video resolutions) in a media presentation description (mpd) file
Project Topology

OF Switch

Proxy Server

Primary Server
Primary server adds static flows to destination proxy servers local to clients via Open Flow Switches
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Multicast Over Software Defined Network

- Add static flows to destination proxy servers local to clients via Open Flow Switches
- Send a requested video file to a multicast IP address over UDP
- Update the URLs in the mpd file to those of the local proxy servers
MPEG-DASH Client sends a request to the Primary Server
Primary Server sends requested video to the optimal proxy server for the client.
Client begins to stream the video
Future Scope

• Currently this project is applicable to pre-recorded video content
• Addition of live video streaming
• Allow for redirection of DASH clients to proxy servers after streaming has begun
Open Source Application

- Available at: https://github.com/rhej3/SDNvideo
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