

Antik Cache Server

HLS Live Cache is highly optimized caching server tailored for HLS live streaming protocol. It can be used either at the headend to provide linear scalability of streaming throughput, or stream delivery to distant locations to save bandwidth between locations.



Input		Cache		Output	
RX	129.6Mbit/s	Started	1 month ago	TX	4.9Gbit/s / 0.0bit/s
All requests	19.8/s	Cached items	614	All requests	729.5/s
Error requests	0.5/s	Cached bytes	1.2GB	Error requests	124.3/s
		Goroutines	2577	Open requests	344

Input log - success	Input log - error	Output error log
now, TTL: 5s, Size: 231.0B, Download: 0.046s, 40.4kbit/s /live/tv_nova_atk_1200/playlist.m3u8	2 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.036s, 0.0bit/s /live/doma_atk_1200/20161124_205300.ts	now 188.210.63.6:50863 invalid extension: /this_is_keep_alive_message
now, TTL: 5s, Size: 232.0B, Download: 0.036s, 51.7kbit/s /live/stv_2_hd_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 80.7.87.156:36076 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	2 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.041s, 0.0bit/s /live/stv_1_atk_1200/20161124_205300.ts	now 77.56.212.38:44388 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 233.0B, Download: 0.035s, 52.8kbit/s /live/barrandov_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 178.23.96.177:46242 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 4.5MB, Download: 0.112s, 324.3Mbit/s /live/wau_hd_atk_1200/20161124_205430.ts	5 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.047s, 0.0bit/s /live/wau_atk_1200/20161124_205300.ts	now 176.249.121.134:43938 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 233.0B, Download: 0.035s, 52.7kbit/s /live/stv_1_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 188.155.168.8:42578 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.2MB, Download: 0.096s, 182.0Mbit/s /live/stv_2_atk_1200/20161124_205430.ts	37 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 30.000s, 0.0bit/s /live/tv_a_atk_1200/20161124_205250.ts	now 86.15.202.215:39582 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.036s, 51.3kbit/s /live/wau_hd_atk_1200/playlist.m3u8	error performing request: Get canceled	now 31.16.253.124:36510 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.2MB, Download: 0.096s, 182.0Mbit/s /live/stv_2_atk_1200/20161124_205430.ts	8 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.041s, 0.0bit/s /live/doma_atk_1200/20161124_205300.ts	now 94.210.14.201:38030 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 176.26.96.226:46966 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	9 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.037s, 0.0bit/s /live/tv_a_atk_1200/20161124_205250.ts	now 81.107.141.88:44961 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 78.22.193.43:51689 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	12 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.042s, 0.0bit/s /live/doma_atk_1200/20161124_205250.ts	now 82.41.110.243:56578 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 86.133.65.146:44986 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	14 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 0.036s, 0.0bit/s /live/stv_2_atk_1200/20161124_205250.ts	now 85.164.191.224:43587 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8	http status: 503 Service Unavailable	now 90.254.190.77:50133 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	51 seconds ago, TTL: 1m20s, Size: 0.0B, Download: 30.000s, 0.0bit/s /live/tv_a_atk_1200/20161124_205240.ts	now 149.18.20.113:34450 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8	error performing request: Get canceled	now 82.170.181.169:44026 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts	net/http: request canceled	now 84.227.217.123:57418 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8		now 90.204.0.76:49597 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts		now 31.10.147.247:14369 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8		now 46.7.125.23:40122 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts		now 83.134.160.144:51916 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8		now 86.190.88.157:50481 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 1m20s, Size: 2.3MB, Download: 0.076s, 245.9Mbit/s /live/barrandov_atk_1200/20161124_205430.ts		now 95.147.190.100:45189 invalid extension: /this_is_keep_alive_message
1 second ago, TTL: 5s, Size: 232.0B, Download: 0.035s, 52.8kbit/s /live/stv_2_atk_1200/playlist.m3u8		now 94.174.4.52:41405 invalid extension: /this_is_keep_alive_message

Key features

Concurrent cache filling and streaming of the same file

- Traditional cache servers need to download whole file from it's origin to start transmitting it to the clients. That time is wasted. Result is increased latency for clients which is directly affecting quality of service. Concurrent filling and streaming feature allows to stream file to the clients before it was completely downloaded from the origin server. It behaves like a stream-through proxy with caching. Filling and streaming is fully decoupled so cache can fill as fast as it is allowed by maximum download speed of server or network.

Request grouping

- When using HLS protocol, many clients are requesting the same file at the same time. With traditional cache servers this can lead to multiple download of the same file from origin. With our cache server each file is downloaded exactly once, even if many requests are made simultaneously.

High performance, short duration RAM caching

- To achieve high performance (10Gbit/s), RAM caching is used. Each file is cached for less than 2 minutes. Most HLS streams are using 30-60s of data. It means that whole dataset for live streaming must fit into memory.

Hardware requirements variability

- Depending on required throughput, it can be used on both - low cost or high performance multicore servers.

Requirements

OS: Linux Debian 8 64bit

CPU: any amd64 architecture based CPU (from Core i5 to Xeon CPUs)

RAM: 16GB + enough to fit entire dataset for live streaming (content of all HLS playlists)

HDD: any storage >10GB

ETH: from 100Mbit to 10Gbit (or more depending on CPU)

