Antik Media Streamer

End-to-End TV Everywhere delivery system.

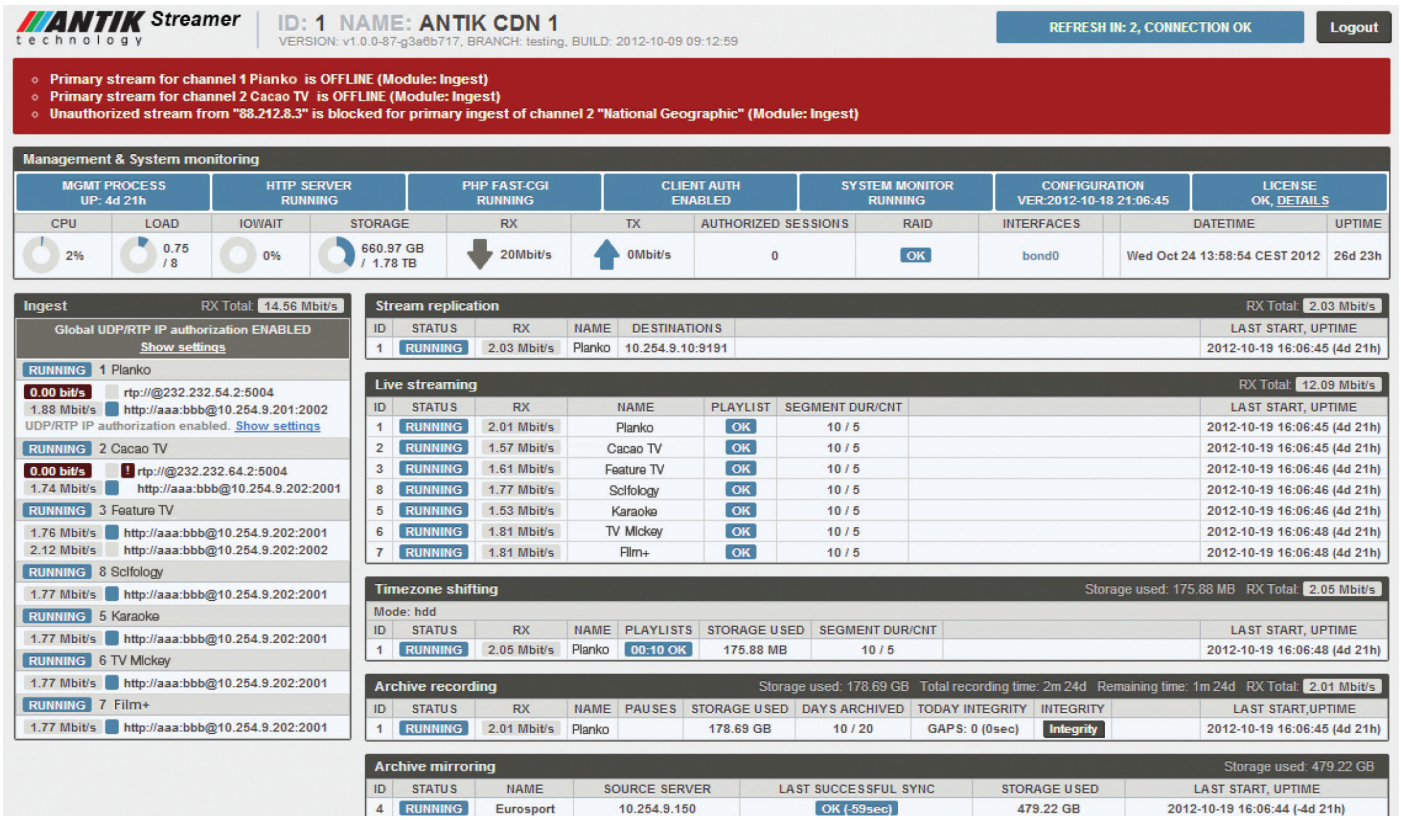
Antik Media Streamer provides you with end-to-end way to create, deliver secure and manage your local or global content delivery network. It uses robust HTTP Live Streaming (HLS) protocol to reach your customers even in areas with limited quality of public internet.

Thanks to the years of Antik Media Streamer development you can benefit from modules covering all the areas of live streaming, VOD, state-of-art catch-up TV (archive of linear TV) over public internet as well as timezone shifting together with durable fully adjustable replication and mirroring modules combined with stream protection.

Antik Media streamer can be succesfully used inside of managed networks of telco operators to provide their customers with interactive OTT content (VOD, catchup TV) as well as for global OTT content providers who can benefit from the robustness of Antik live streaming with mirroring and replication technology to achieve 24/7 access of huge number of users distributed around the world.

Key features

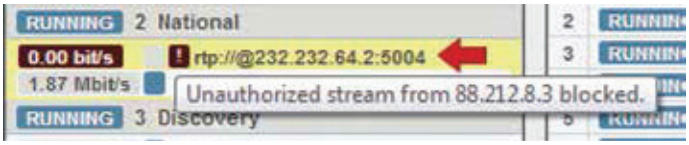
- Ingest Module
- Management & System Monitoring Module
- Stream Replication
- Live Streaming
- Time-Zone Shifting Module
- Catch-Up TV Module
- Archive Snapshots Module
- TV Stream Cache & Restreaming
- Load Balancer
- Archive Mirroring Module
- Streaming mutual features
- AES 128 scrambling module (Antik KeyRider)
- Debian 7.5 supported



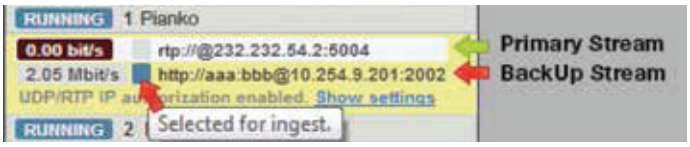
HLS
Powerful scalable HTTP Live Streaming Solution for global live content delivery. Ideal for low-speed and unstable access network conditions and OTT distribution thanks to state-of-art segment streaming feature. Continuous stream is segmented in to 10 seconds segments and provided using fast storage through http protocol. It allows client device to quickly pre-buffer video and audio data which allows to work in unstabble networks without dropouts.

Ingest Modul

- Receives streams from various sources
- Duplicates the stream to other Antik modules simultaneously (live streaming, replication, archiving, time-zone shifting) to save bandwith.
- Supported input protocols: UDP, RTP, HTTP
- Basic authentification supported (if using http stream) on input



Security feature *allows to define allowed/not allowed stream sources (in case of UDP/RTP push).*



Stream back-up set-up *– continues watchdog automatically starts to use back-up stream in case of drop-out of the main stream.*

Media Gateway *– together with Replication modul.*

Management & System Monitoring Modul

- Controls all Antik Streamer modules
- Automatically controls all running processes within Streamer
- Monitors CPU/System/HDD load, network throughput, HDD usage, actual number of authorised clients, RAID status, server uptime, configuration file consistency,
- Modules licensing status, current module version information
- Global System warning messages
- Uses Ajax for Web Monitoring – doesnt need page reload to see actual information

Stream Replication

- Allows to replicate input streams to CDN edge servers using UDP and HLS protocol
- One stream can be replicated to more destinations (Antik Stream Cache, see p. 21)
- Dramatically increases durability and stability of the system
- Capable of Multicasting stream into closed network
- Monitoring interface visualises:
  - destination IPs
  - input stream bitrates (coming from ingest module)
  - replicator uptime

Live Streaming

Live streaming — RX Total: 11.85 Mbit/s

ID	STATUS	RX	NAME	PLAYLIST	SEGMENT DUR/CNT	LAST START, UPTIME
1	RUNNING	1.89 Mbit/s	Pianko	OK	10 / 5	2012-10-16 12:45:58 (43min)
2	RUNNING	1.73 Mbit/s	Scifology	OK	10 / 5	2012-10-16 12:45:59 (43min)
3	RUNNING	1.65 Mbit/s	TV MUSIC	OK	10 / 5	2012-10-16 12:46:01 (43min)
8	RUNNING	1.65 Mbit/s	Cacao	OK	10 / 5	2012-10-16 12:46:01 (43min)
5	RUNNING	1.65 Mbit/s	Children TV	OK	10 / 5	2012-10-16 12:46:01 (43min)

- **Powerful scalable HTTP Live Streaming Solution for global live content delivery. Ideal for low-speed and unstable access network conditions and OTT distribution thanks to state-of-art segment streaming feature.**
- **Allows unicast streaming using HLS protocol**
- **Allows to stream up to 2Gbps of traffic per individual server (based on your server hw e.g. when using 1mbps stream system can serve up to 1000 users simultaneously, increase of streaming capacity is possible.)**
- **Allows to pre-buffer the content into client device memory**
- **Fast-zapping support – using burst data transfer which can pre-fill buffer rapidly to decrease zapping time**
- **Full recovery of the stream in case of network drop-out (up to 30s) – non-visible for the viewer**
- **Includes segmenter which push segments into RAM to increase system performance**
- **Allows to setup length and number of segments stored in playlist of the server**
- **Monitoring interface visualises:**
  - **total data inflow into modul**
  - **input stream bitrates (coming from ingest module)**
  - **count and length of segment in playlist**
  - **playlist status**
  - **segmenter process uptimedestination IPs input stream bitrates (coming from ingest module) replicator uptime**

Time-Zone Shifting Modul

Timezone shifting — Storage used: 174.10 MB RX Total: 2.05 Mbit/s

ID	STATUS	RX	NAME	PLAYLISTS	STORAGE USED	SEGMENT DUR/CNT	LAST START, UPTIME
1	RUNNING	2.05 Mbit/s	Pianko	00:10 OK	174.10 MB	10 / 5	2012-10-16 12:46:02 (43min)

- **Shifts the playback time of live stream**
- **Modul is targetted to be used in case of streaming to global time zone different than the timezone of content origin**
- **More shifted streams from one source - Allows multiple time off-sets of the same content (TV channel) us - ing the same data to save storage**
- **Support long playback time off-sets (storage size is the only limit)**
- **Uses HLS protocol for streaming, so all the features described in Live Streaming can be utilized**
- **Monitoring interface:**
  - **zone-shifter process status and uptime**
  - **input stream bitrate**
  - **availibity of each shifted playlist**
  - **unused content still available in storage**
  - **storage usage**
  - **count and length of segment in playlist**

Catch-Up TV Modul (TV Archive)

- Records all content of the specific stream and allows access to it using EPG information
- Includes segmenter which creates 10s files – directly enables to use HLS protocol for content delivery
- High availability – even curently played program can be accessed (less than 2 minutes from original playback time)
- Uses HLS protocol for streaming, so all the features described in Live Streaming can be utilized
- Allows to define time breaks in broadcasting to save space during black screen period
- Large scale archiving (depends on storage capacity)
- Intelligent erasing mode – identify oldest records and deletes them to free-up diskspace for new recordings
- Integrity analyser detects content drop-outs and enables them to other CDN components

- Uses HLS protocol for streaming, so all the features described in Live Streaming can be utilized
- Monitoring interface visualises:
  - Catch-up segmenter process status and uptime
  - Input stream bitrate
  - disk storage usage
  - number of days archived in the individual stream
  - unused content still available in storage
  - record integrity within actual day
  - detailed fine-grain integrity information for each recording day – includes timeline to visualise archived content and drop-outs
  - count and length of segment in playlist
  - actual total bitrate
  - estimated remaining archiving time according to actual bitrate

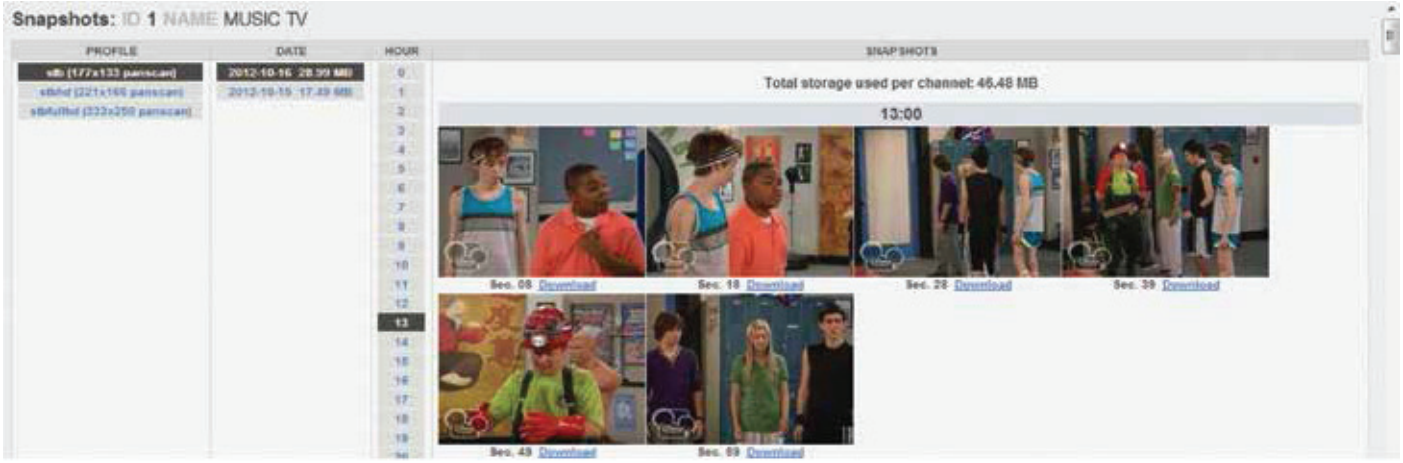
Load Balancer

Managing CDN server cluster, checking in periodical intervals their status and forwarding clients to each server depending on required service. In case of failure of some CDN server, Load Balancer will redirect end customers to working CDN server. Allows authentication of end customer devices and managing access to the content and services. Contains statistical functions for analysis utilization rate and recording data about watched content for billing purposes and for audience measurement. Contains also monitoring interface for the CDN server cluster surveillance.

- Regularly checking status of CDN servers
- Active failover protection in case of HW failure
- Advanced login features allowing connectivity with billing system
- Managing CDN server cluster
- Client authentication and authorization with advanced per session generated passwords.
- MPEG4 SD/HD AVC to MPEG4 SP/ASP
- CIF, or QCIF 2x to 12x depending on format conversion

Archive Snapshots Module

- Creates snapshots for each video segment which was recorded by Catch-up TV module
- Allows comfortable end-user seeking in archived TV content
- Recorded pictures can be easily used for other Streamer modules
- Different snapshot profiles – profile name, picture size, resize method (LetterBox, Pan&Scan, Fill-In), background color (for LetterBox resize method), picture format
- (gif, bmp, jpeg), picture quality, jpeg compression quality, brighten effect
- Monitoring interface visualises:
  - profile list
  - snapshoter process status and uptime
  - last processed segment for each channel
  - snapshot browser – to visualise all snapshots recorded



Archive Mirroring Module

- Archive mirroring from other CDN server – to overcome content distribution problems on large distances or variable quality networks when continuous live stream is unavailable
- It can be effectively used to achieve high scalability using mirroring together with Load Balancer Module
- Monitoring interface visualises:
  - mirroring process status uptime
  - source server IPs
  - time of last successful synchronization
  - unused content still available in storage
  - disk space usage
  - mirroring progress bar

Antik streamer mutual features

- Global configuration using one XML interface – easy to back-up
- API for communication with Load Balancer
- Automated update of information about status
- Different server load parameters – which enable effectively balance the load between different CDN HW components
- Provides warnings/error message which could be used in one single Central Monitoring App
- Authentification/Authorisation per session information for client device access to content