noisypeak

the **apex** of video over ip solutions

Datasheet

noisypeak **redundancy and failover software** (NP-RFS)

transcoding **hardware**

High density, best quality H.264 and HEVC Live and VOD encoders. Fully redundant for TV platforms.

cloud transcoding

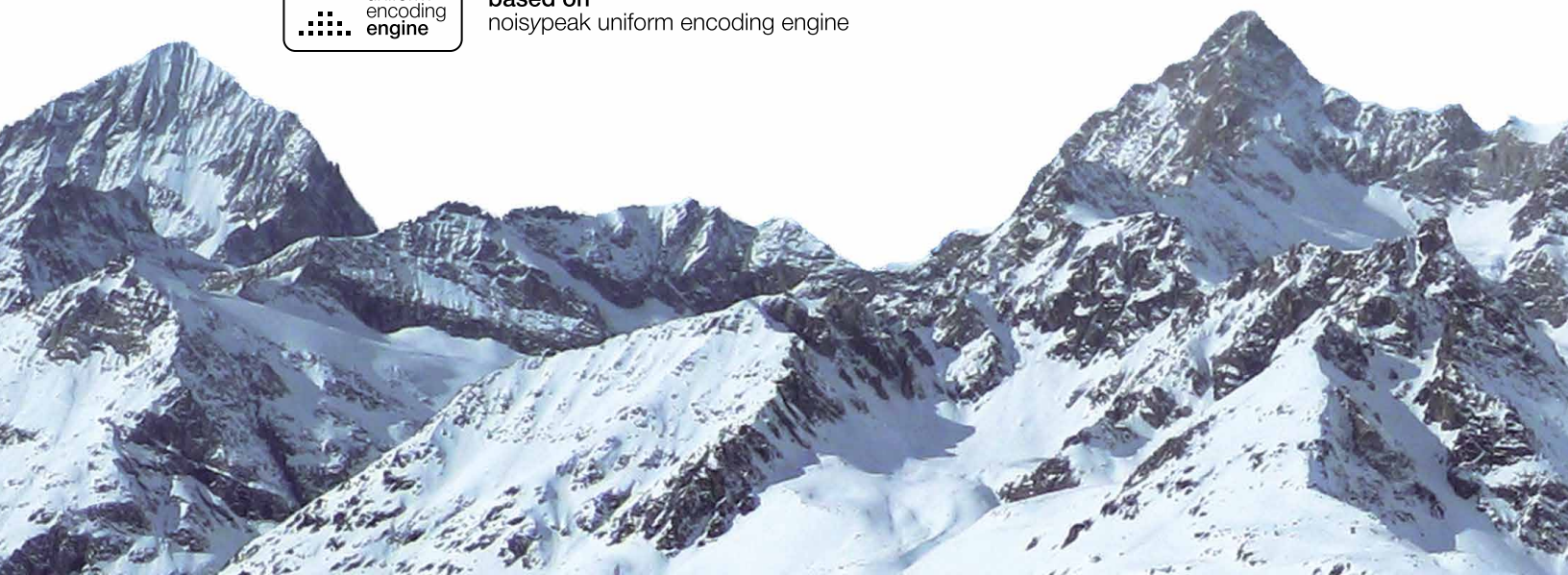
Cloud Live TV and VOD transcoding. Any format / any container, including HLS, MSS, DASH in H.264 and HEVC.

video **recording**

Live TV video recorder, for Live TV archiving or VOD preparation. Managed by full SOAP/JSON API's to 3rd party systems.

uniform encoding **engine**

based on
noisypeak uniform encoding engine



Noisypeak Redundancy and Failover Software (NP-RFS)

NP-RFS is designed to build and run industry grade transcoding solutions. The system supports 1+1, n+1, and n+m configurations to maximize flexibility and number of redundancy scenarios for projects of any size.

Key characteristics of the solutions:

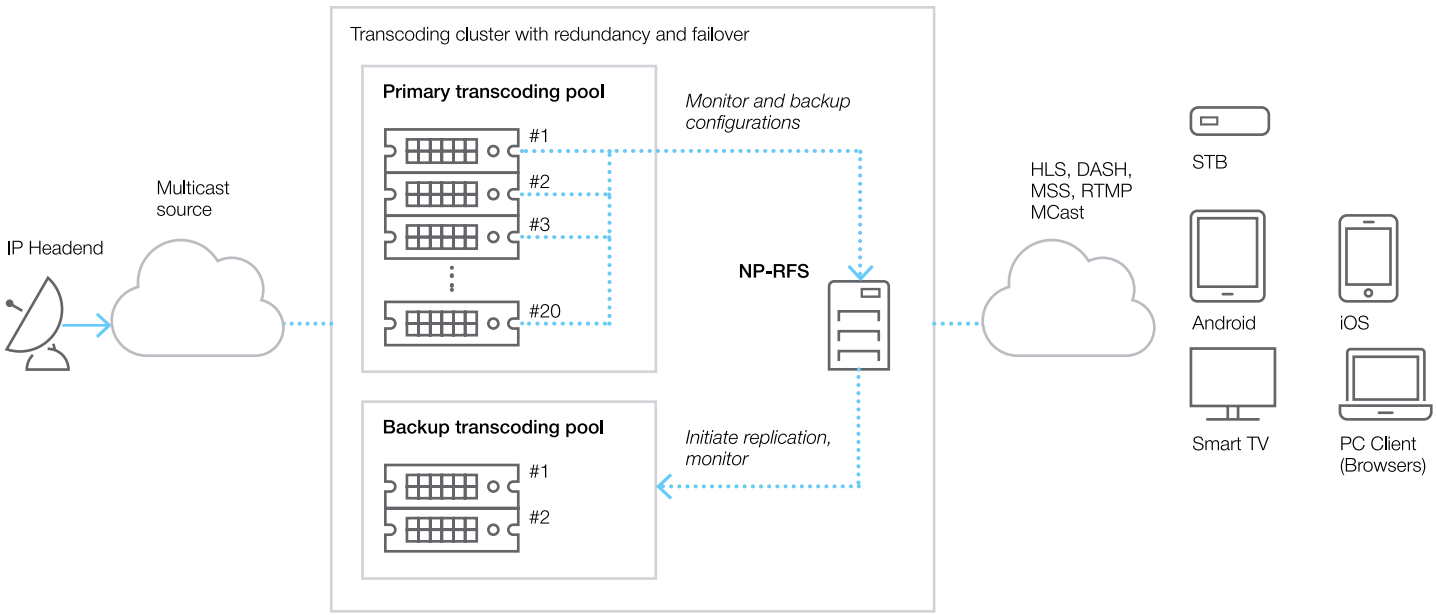
- Works with standard NP rackmount platforms:
  - No modification of firmware/hardware is required
  - Supports NP Cell, NP Cell EX, NP Blade
- Automatically redirects traffic, transcoding, packetizing to standby units
- Automatic or manual management of recovery to primary units as they return back from failure state

Mode of operation	Number of transcoders	Description
1+1	2 transcoders per cluster	Master and Slave mode to switch over in case of Master failure
n+1	3 and more transcoders per cluster where 2+1 is reasonable minimum.	One transcoder is dedicated as Backup, 2 transcoders are active. In case of active transcoder failure all its channels will be moved to Backup
n+m	3 and more transcoders per cluster where 4 + 2 is reasonable minimum.	Two and more transcoders dedicated as Backup. In case of Primary transcoders failure up to “m” transcoders can be replaced automatically.

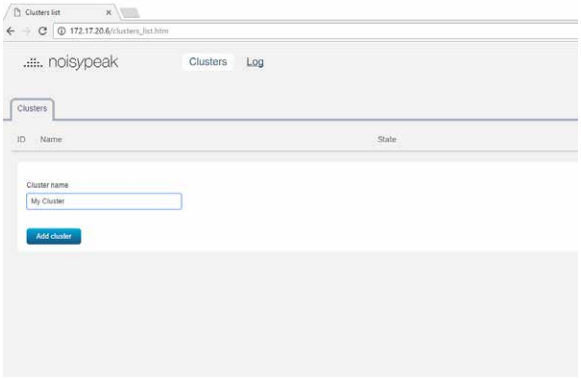
Description of the solution

- The system operates with the group of transcoders named “clusters”.
- Clusters can contain from 2 to 100 devices.
- Software can create and manage up to 20 clusters per software instance.
- Each transcoder is added with Primary (master) or Backup (slave) function.
- NP-RFS constantly monitor Primary units and replicate configuration of each device into centralized storage
- In case of Master failure NP-RFS selects available Backup and perform switch-over of transcoding function to it.
- Switch-over can be initialed manually (for example to perform hardware maintenance of the Primary transcoder(s).
- To prevent collison of Primary and Backup simultaneous operations NP-RFS controls enabling of publishing.

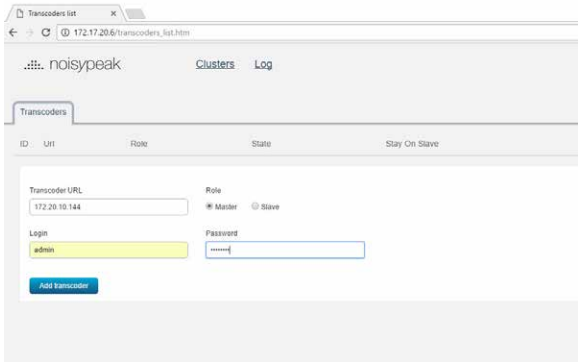
Transcoding cluster with redundancy and failover



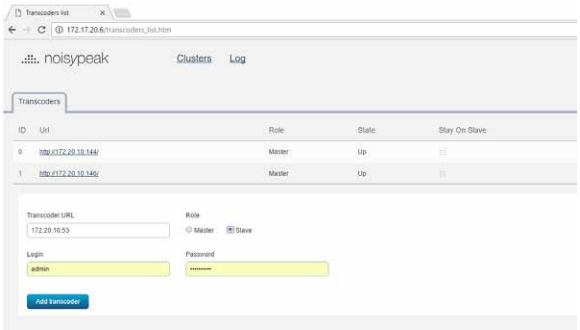
Noisypeak NP-RFS GUI



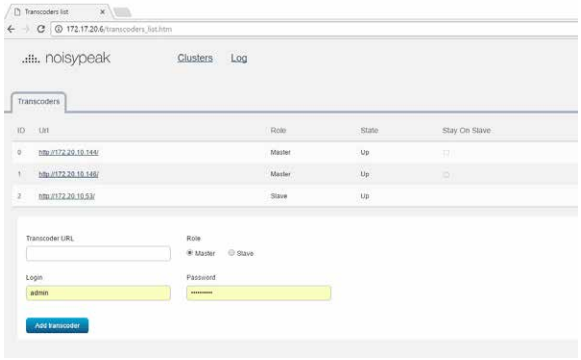
NP-RSF is operating with cluster concept where transcoders are logically grouped (primary and backup).



Transcoders standard credentials are used to gain API based control.



The role of each transcoder is defined "Master" (primary) or "Slave" (backup)



Stay on Slave can be activated to control how the system shall behave in case Master (primary) returns back on-line

noisypeak **feature set**

input
4K HDMI
RTP/UDP SPTS/MPTS
TS files- file2live, file2vod
HLS, HTTP progressive
12GSDI/HD-SDI, HDMI trough Magewell®, Blackmagic® add on modules
SDP/Onvif for IP security cams
Dynamic input adjustment for codec and protocols Audio AAC/AAC LATM, MP2/3, AC3, EAC3
RTMP
SDI
NDI
SRT

output
UDP unicast/multicast SPTS, MBTS/SPTS, MPTS MPEG-DASH Live and VOD
HLS up to v7 with multi-language support
SCTE35 detection and pass-through (CUE-In/CUE-Out messages)
Microsoft® Smooth Streaming
RTMP (w. Akamai® support)
TS and MP4 files
WebDAV or Windows® share (Samba), FTP
Multi format simultaneous publishing
DVB PID pass-through
DVB Burn-in subtitles
Closed captions - CEA-708, EIA-608, WebVTT
HLS secondary destination point
WebDAV authorization
SCTE35 detection and splicing
HLS/SPTS streams selection (user can skip some streams)
Video passthrough
MPEG DASH timelined manifest
SDI
NDI

DRM
Apple® Fairplay
Nagra® PRM
Microsoft® Playready
Verimatrix®
Google® DRM for MPEG-DASH/CENC
AES128 static key

video encoding
Up to 16K video processing
AV1, HEVC/H.265, AVC/H.264, MPEG2, VP9
Static Images preview generation
Logotype, texts string overlays
Baseline, Main and High profiles
CABAC/CABVLC
Picture in Picture up to 4 streams
Framerates: fixed to source framerate
Linear time-code generation
Single input to multi-stream output
Look ahead buffer
NAL HRD conformance parameters:
a. HRD buffer length
b. HRD initial delay
GOP structure adjustment:
a. frame-accurate closed GOP length
b. B-frames count
c. re-frames count
d. IDR interval
e. Slice count
h.264 AVCC/Annex B at the input
h.264 Annex B for multicast/hls output
h.264 AVCC for RTMP output
Video post-processing:
a. Scaling
b. Cropping
c. Deinterlacing
d. Letterboxing

audio encoding
Support of multi-audio channels MP2/MP3
AAC-LC up to 512kb/s
HE-AAC up to 128kb/s
Gain control
Advanced sample rate transform
Audio leveling
Shoutcast output
Audio-only transcoding (radio)
Different audio templates for each output of single channel
Audio passthrough

management
Management of up to 50 encoders in uniform Web interface
Zabbix® integration
Prometheus/Grafana integration
SNMP management
API management

high-availability
Redundancy management system that support:
n+1, n+m, 1+1
Input source redundancy in standard image
Publishing server redundancy

typical encoding profiles

4K/UHD (HEVC)		
#	Bitrate	Resolution
1	8000	3840x2160
2	4500	1920x1080
3	2500	1280x720
4	1600	1024x576
5	1100	720x404
6	700	640x360

HD		
#	Bitrate	Resolution
1	6000	1920x1080
2	4500	1280x720
3	2500	1024x576
4	1600	720x404
5	1100	640x360
6	700	480x270

SD		
#	Bitrate	Resolution
1	1600	720x404
2	1100	640x360
3	700	480x270
4	400	312x176

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