



Datasheet

NEO Server Appliance

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appear.net

Version 1.3



SERVER BASED COMPRESSION SOLUTION

The availability and capacity of the internet is increasing, as is the prevalence of powerful computers, integrated TVs, tablets and cell phones.

These factors combined allow viewers to receive video content from broadcasters anywhere, in virtually any form and as content becomes a commodity, viewers begin to take it for granted. For content and network infrastructure providers, this same convenience presents a greater challenge: delivering the best possible live video experience across multiple formats, regardless of the distribution networks and viewing devices used.

With increasingly powerful servers and the advent of new graphics acceleration technologies, servers are now efficient not only for offline compression, but also for live compression.

However, live compression and distribution remains a demanding workload, and running servers at full capacity in a 24/7/365 environment remains a difficult task. To meet this challenge, Appear designed the NEO Series.

Our NEO Server Appliance offers unparalleled video and audio quality, and competes with the highest quality products on the market. Delivered ready-to-run with simple front-panel setup and easy-to-use web interface, you'll be transcoding and streaming in no time.

«The NEO Series provides customers with the ultimate flexibility to deliver high quality video across any devices»

HIGHLIGHTS

The NEO Server Appliance has been designed with broadcasters, operators and telcos in mind, addressing the every-day challenges involved in delivering premium IPTV and OTT services.

INPUT

NEO Server Appliance, with its IP interfaces, can receive MPEG TS IP RTP/UDP and SRT streams. For other sources like satellite or terrestrial, the XC5000 is an ideal companion as an input processing stage before the NEO Server Appliance.

OUTPUT

NEO Server Appliance can deliver both MPEG TS IP RTP/UDP output (e.g. for IPTV delivery) and most common HTTP push formats (e.g. for delivery to downstream ABR packagers). It can also transmit streams in SRT format.

RESCALING

In order to convert traditional broadcast resolutions to multiple OTT resolutions, a flexible rescaling engine is integrated. This engine also capable of converting interlaced content to progressive format.

MONITORING & CONTROL

NEO Server Appliance offers user friendly configuration through the in-built WEB interface and comprehensive health monitoring and logging through Prometheus, Grafana and Elastic engines. The appliance is fully controllable through a REST/JSON API.

FRONT PANEL

An LCD front panel and keypad is available for easy access to configuration of control port IP address, and readout of top level alarm status.

```
ob == "MIRROR_Y":
d.use_x = False
d.use_y = True
d.use_z = False
on == "MIRROR_Z":
d.use_x = False
d.use_y = False
d.use_z = True
```

```
n at the end -add back the deselected mirror modifier object
ect= 1
elect=1
cene.objects.active = modifier_ob
ed" + str(modifier_ob)) # modifier ob is the active ob
b.select = 0
ntext.selected_objects[0]
[no.name].select = 0
```



SPECIFICATIONS – The NEO Server Appliance

Input & Output	Input	: MPEG TS over IP/UDP/RTP (SPTS/MPTS)
	Output	: MPEG-TS over IP/UDP/RTP (SPTS) : SRT : HLS (pull) : HLS (push) to Akamai (Akamai Media Services Live certified) : HLS (push) to AWS Media Package : CMAF Ingest Interface 1 (push) : DASH (pull)
	Input Redundancy	: Reception of SMPTE 2022-7 TS sources for seamless switching : Priority based service redundancy
	Output Redundancy	: Delivery of cloned SMPTE 2022-7 TS outputs
Video Processing	Decoding	: MPEG-2 : AVC (H.264) : HEVC (H.265)
	Encoding	: AVC (H.264) up to HP@L4.2 : HEVC (H.265) up to Main 10 @ Level 5.2*
	ABR resolutions	: Most common ABR resolutions
	Broadcast Resolutions	: SD: 720x576i25, 720x480i29.97 : HD: 1920x1080i25/29.97, 1280x720p50/59.94
	Rate Control	: CBR
	Rescaling	: Flexible rescaling : Deinterlacing (576i/480i/1080i to progressive) : Intra domain frame rate conversion
	GOP Control	: Key Frame Aligned ABR profiles : Dynamic GOP (Broadcast profiles)
	Colorimetry	: Pass through (no conversion) incl WCG
	HDR signaling	: Pass through (no conversion) of HDR10, HLG, HLG-ATF, PQ10
	Ad-insertion	: SCTE35 passthrough with frame accurate IDR frame insertion at splice points
Audio Processing	Aspect ratio	: Pass through : Display aspect ratio is maintained even when pixel aspect ratio is changed in rescaling process.
	Baseband Processing (AVC Only)	: Logo insertion : Subtitling burn-in
	Decoding	: MPEG 1 Layer 2 (Stereo) : AAC LC (Stereo and 5.1) : HE-AACv1 (Stereo and 5.1) : HE-AACv2 (Stereo) : Dolby Digital (Stereo and 5.1) : Dolby Digital Plus (Stereo, 5.1 and 7.1)
	Encoding	: MPEG 1 Layer 2 (Stereo) : AAC LC (Stereo and 5.1) : HE-AACv1 (Stereo and 5.1) : HE-AACv2 (Stereo) : Dolby Digital (Stereo and 5.1) : Dolby Digital Plus (Stereo, 5.1 and 7)
Processing	: Level adjustment [-20,20] dB : Lip Sync Adjustment [-200, 500] ms	

Transport Stream Processing	PTS Handling	: Transparent PTS maintained through Transcoder
	ETE Latency	: 7 Seconds AVC
	ETE Latency	: 2.5 seconds HEVC
	Subt Pass Thru	: Subtitle Components (DVB Subt and EBU Subt) can be passed through. PTS is maintained, and latency is compensated for.
	Audio Pass Thru	: Audio components can be passed thru (component selection). PTS is maintained, and latency is compensated for.
System Features	SCTE 35 Pass Thru	: SCTE35 components can be passed through. PTS maintained, and latency compensated for.
	PSI/SI output	: PAT, PMT and SDT
	Management & Monitoring	: Integrated UI (Web server) : RESTful API for external NMS integration : Prometheus : Grafana : SNMP v2 Traps
	Log aggregation	: Elastic
	Scaling options	: Cluster of NEO servers, orchestrated by NEO management software (including N+1 redundancy) : Stand alone NEO servers with redundancy handled by third party NMS
Transcode density example****	NEO 10	: 4 HD Services into 4 ABR profiles** : 12 SD services into 4 ABR profiles*** : 8 HD 1080i services into AVC HD 1080i : 11 HD 720p services into AVC HD 720p
	NEO 20	: 9 HD Services into 4 ABR profiles** : 28 SD services into 4 ABR profiles*** : 16 HD 1080i services into AVC HD 1080i : 22 HD 720p services into AVC HD 720p
	NEO HEVC HW Accelerator * (Option for NEO 10 / NEO 20)	: 1 UHD HEVC service into 4 HEVC ABR profile : up to 8 UHD HEVC services into UHD HEVC (high density mode) : 8 AVC 1080i25 into 1080p50 HEVC (high quality mode)
Physical	Dimensions	: 1RU : Height: 42.8mm (1.69") : Width: 482mm (19.98") : Depth: 808.5mm (31.8")
	Weight	: 21.9kg (48.3lbs.)
	Power Supply	: Dual hot-swappable : AC 100/240 V (50/60Hz) or DC 48V (option) : Rating 1100W (Actual power consumption depends on configuration).

* : HEVC encoding requires a NEO HW acceleration modul

** : 1080i input transcoded to AVC ABR ladder with 2x1080p25, 1x720p25, 1x576p25

*** : 576i input transcoded to AVC ABR ladder with 1x576p25, 1x480p25, 1x320p25, 1x240p25

**** : Contact Appear for dimensioning of other use cases

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