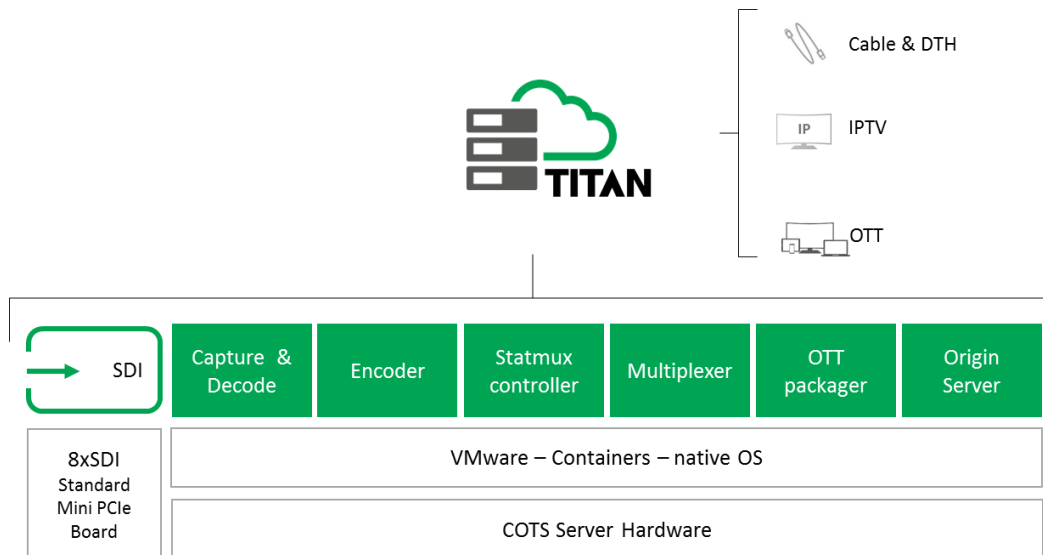


TITAN Live



Software-Based Live Video Compression for the Converged Headend

TITAN[®] Live is a high video quality, high density software compression solution, designed for Cable, DTH, OTT Live delivery of SD, HD and Ultra HD content. TITAN Live is a True virtualized software based solution, pure CPU solution, hardware agnostic, running on any OS: Linux, Windows and Virtual Machine.

TITAN[®] Live is based on ATEME 5th Generation STREAM[®] compression engine, delivers the highest video quality at minimum bitrates with accelerated parallel processing.

Addressing main screens and multiscreen applications, from small resolutions up to UHDp60, TITAN[®] Live addresses current and future requirements.

TITAN[®] Live is a complete distribution solution: encoder, transcoder, multiplexer, Statmux, packager and origin.

With powerful user interface, management system and extensive set of APIs, TITAN Live can easily integrate with any ecosystem, reducing time-to-market and OPEX.

Key features

- High Video Quality – High Density
- Pure CPU solution, Linux, Windows, VM
- Ultra High Density with E3/VCA support
- Mobile to UHD resolutions
- HEVC, H264, MPEG2
- Low-Latency mode
- Channel branding – logo insertion
- Optimized statistical multiplexing over IP
- Flexible Redundancy Scheme 1+1, N+1, N+M

Benefits

- Increase QAM-network density with High Video quality at minimum bitrate
- OPEX savings, with complete integrated distribution solution
- Reduce data-center CAPEX with software only, high density solution

Video

Video Compression

MPEG2 MP@HL, MP@ML
H264 HP@L4.2, MP@L4.1; 4:2:0/4:2:2 10-bit
HEVC Main10@L5.1 (UHD)

Resolutions

UHD 3840 x 2160
HD 1080 x (1920, 1440, 1280, 960), 720 x (1280, 960, 640)
SD NTSC 480 x (720, 704, 640, 544, 528, 480, 352), PAL 576 x (720, 704, 544, 528, 480, 352)

Frame rates

Progressive 59.94, 50, 29.97, 25
Interlaced 29.97, 25

Video Processing

Resizer, High quality de-interlacer
3:2 pulldown/inverse telecine, Frame rate conversion
Contrast and chroma enhancement
Image cropping/resizing, Logo insertion

Video Quality

Psychovisual Filter Enhancements (Object tracking/ Motion masking/
HVS Quantization adaptation)
Scene/Flash/Fade/Cross-fade/Stationary detection
Fully adaptive GOP/reference pictures
Natural motion tracking (Weighted hierarchical motion estimation)
Triple-pass rate-control
Statmux: any codec, any resolution
Still picture mode

Encoding bit rate

Up to 50Mbps

Rate control

CBR, Capped VBR, Statmuxed VBR

Aspect Ratio

AFD, WSS

Subtitling/Teletext

WST, SCTE27, Closed Caption, DVB TELETEXT Vchip, OP47, WebVTT
Teletext/OP47 to WebVTT/DVB-Subtitle conversion

Metadata/VBI

VPS, VPI, VITC, ATC, SMPTE2031

Digital Program Insertion

SCTE 35 passthrough
SCTE35 insertion via SCTE104 triggers
ESAM (SCC API)

Audio

Compression formats

MPEG-1 Layer II
AAC-LC, AAC-HEv1/v2
Dolby® Digital, Dolby® Digital Plus
Sampling frequency: 32, 44.1, 48 KHz
Dolby® Digital, Dolby® Digital Plus, Dolby-E Passthru

Audio preprocessing/editing

Any to Any downmix/upmix,
Loudness control (ATSC A/85, EBU R128)

Packager

UDP/RTP (IGMPv2/v3 multicast, unicast)
MPEG-2 TS (SPTS & MPTS),
Apple® HTTP Live Streaming,
Microsoft® Smooth Streaming (fragmented MP4 PIFF format),
RTMP
DASH ISO Streaming format
HDS
Multibitrate TS (ATS with EBP)

DRM

Scrambling with Fixed/Synchronized Rotative Keys Encryption
DASH CENC, HLS AES 128 CBC, MSS: AES 128 CTR (Playready)
Interface with leading DRM providers including:
Microsoft Playready, Verimatrix VCAS, Irdeto, NagraVision
Vualto, Viaccess-Orca Purple DRM, BuyDRM, Conax.

CDN integration

Akamai certified
Compatible with leading CDNs

Multiplexer

Grooming and remultiplexing
Stream routing any input – any output
PID filtering / remapping

Input Interfaces

TS/IP Input

UDP/RTP (IGMPv2/v3 multicast, unicast)
MPEG-2 TS (SPTS/MPTS)
Video decoding: MPEG-2/MPEG-4 AVC
Audio decoding: MPEG-1 Layer II, AAC-LC, AAC-HE v1/v2,
Dolby Digital, Dolby Digital+, Dolby-E

SDI Input

8x 3G-SDI Mini BNC (SMPTE-424M and SMPTE 425, Level A
or Level B)
Audio embedded in SDI

RTMP Input

Output Interfaces

4 GbE ports, additional 1 GbE/10GbE ports can be added
through extension cards

Configuration and Management

HTML Web Graphic User Interface
SNMP (MIB v2c) with remote SNMP supervisor Northbound REST API¹
N+1 Redundancy management via ATEME Management System

Virtualization

Compatible with Virtual Machines/Dockers

Physical

Guaranteed performance on SMCI, DELL, HP 1RU/blade servers
Run on any 1-RU COTS server
Increased density through Intel VCA card