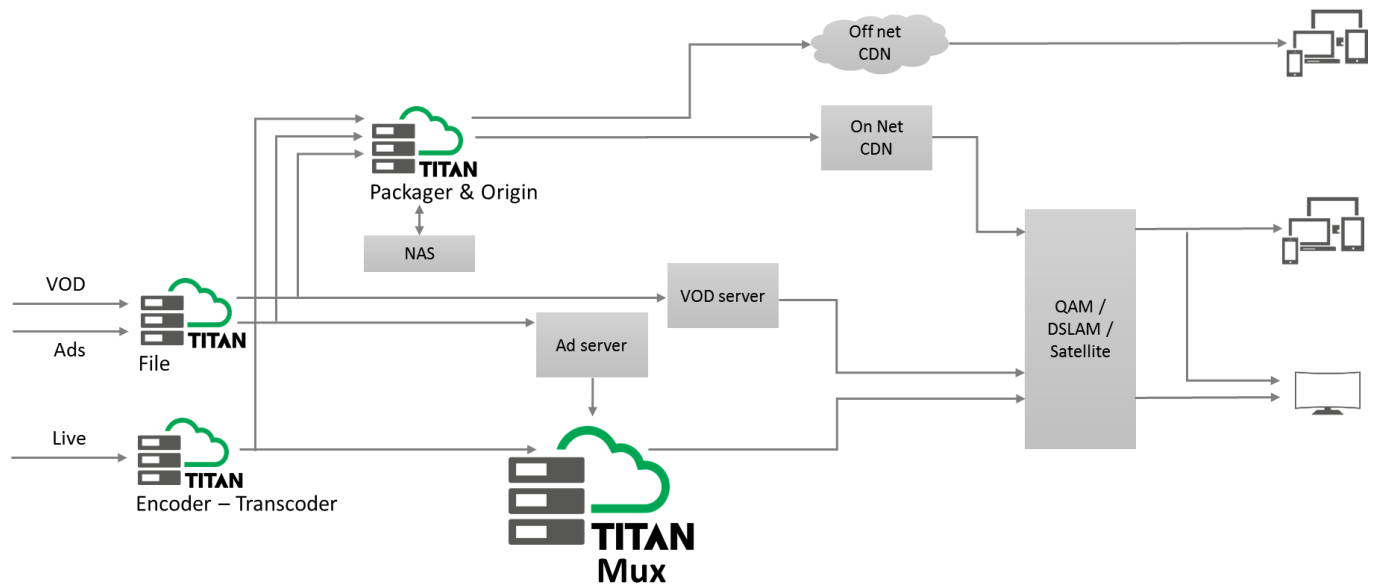


# TITAN Mux



## Multi-Function Software Stream Processing

TITAN Mux is a scalable stream processing solution for broadcast, cable, satellite over the top and network applications. TITAN mux can be easily incorporated into any existing headend for supporting digital turnaround services. The TITAN Mux scalable design reduces deployment time, enables adding new services on the fly and support any video, audio and data service.

TITAN Mux can be controlled by ATEME management system, and easily integrate with any NMS using REST API. TITAN Mux is a true hardware and OS agnostic solution running on any server, any form factor, bare-metal OS as well Virtual Machines.

TITAN Mux includes support for IP input-output and support for legacy ASI headend using PCIe ASI cards.

TITAN Mux eliminates operational headaches and ensures high scalability and flexibility and availability.

### Key features

- Multiplexing of any MPEG service
- On-the-fly configuration
- Any redundancy scheme support
- Conditional Access support
- Ad-Insertion Support

### Benefits

- Software and Virtual machine scalability
- Future-Proof Software-Based Architecture
- Reduce integration OPEX and challenges
- Enabler of End-to-End IP Video Ecosystem

## Input/Output Interfaces

### TS/IP

UDP, RTP (IGMPv3 multicast, unicast)  
CBR, VBR  
ST2022-1/2 (any FEC dimensions)  
Up to 256 SPTS/MPTS, 1 GB per physical connector

### TS/DVB-ASI\*

MPEG2-TS, 188 or 204 bytes  
Up to 256 SPTS/MPTS, 210 mbps per physical connector

## Multiplexing/Remultiplexing

### PCR de-jittering

Ultra low bandwidth software PLL  
Admissible peak jitter up to 100ms

### PID Merging

Merge any PID into any program  
PCR/DTS/PTS adjustment

### PID Filtering/Tracking/Remapping

Dynamically follows input to produce a static output  
Comprehensive set of tracking rules (type, codec, etc.)

### PSI/SI/PSIP Edition

Extract/Block/Pass/Edit any tables and descriptors  
Custom edition of any inner/outer loop descriptors

### Any to Any Conformance

MPEG, DVB, ATSC, ISDB conformance and conversion

### Rate Limiting

Rate limiting on a PID/service basis for a guaranteed output QoS  
Advanced overflow prevention

### Data Injection

Injection of any table/PID  
Constant or Opportunistic bit rate insertion

## Scrambling

### BISS

BISS 1/E scrambling (multiple injected IDs)\*  
BISS 1/E descrambling (multiple injected IDs)

### SimulCrypt

Fully compliant with the ETSI 103197 SimulCrypt specification  
EMM/ECM/Private Data interface  
DVB-CSA/AES scrambling support  
Nagra/Conax, Verimatrix, Irdeto, NDS, Viaccess integration\*

## Ad Insertion/Content Replacement\*

Video codec: MPEG2, H.264, HEVC  
Audio codec: MPEG1-L2, AAC, AC3/AC3+, DolbyE  
Data: Teletext, OP47, Dvb-Sub  
SCTE 30 Interface  
Frame accurate splicing

## Statistical Multiplexing

Any resolution: from sub-SD to UHD  
Any codec: MPEG2, H.264, HEVC  
Remote/Local/Mixed StatMux with the TITAN Live transcoder.  
Dynamic VBR Reservation  
Encoder Aggregation support

## Advanced Monitoring

PCR jitter analysis  
ETSI 101290 input analysis and reporting (level 1, 2 and 3)  
Visualization of input/output MPEG stream structure  
Advanced Elementary Stream analysis

## Redundancy

Input interface redundancy  
ST2022-7 input/output redundancy (Class SBR, High-Skew link)  
Input TS/Service redundancy  
RIP/OSPF based network redundancy\*  
Standalone unit 1:1 redundancy\*

## Configuration and Management

IPv4, IPv6  
Full VLAN & routes support  
HTML Web Graphic User Interface  
Comprehensive set of alarms  
SNMP (MIB v2c) with remote SNMP supervisor  
Northbound REST API  
N+1 Redundancy management via ATEME Management System

## Virtualization

VMware ESXi 5.5 and 6.0  
KVM/QEMU, Containers\*

## Software

Deliverable as a full ISO image  
Deliverable as a Redhat Packet Manager (.rpm) package\*  
Deliverable as a Debian (.deb) package\*

## Physical

Minimum configuration: 1x Intel E5-24xx, 4GB RAM  
Any number of Ethernet connectors  
ASI support through COTS board  
Guaranteed performance on DELL, HP and Cisco UCS blade server  
Run on any COTS server or blade server

\*contact ATEME for availability