BBright
Visionary Technologies

Multi-TS

HEVC - AVC - MPEG-2 High Density
Multichannel Compressed Playout

Multi-TS is an easy to use and cost effective compressed video playout server for professional broadcast or streaming applications such as for satellite, terrestrial, cable networks, or telco/IPTV operators and playout facilities.

Multi-TS supports H.265 / H.264 / MPEG-2 TS files, either for PIP, SD, HD, full-HD or UHD channels. Video and audio PID's can be selected and remapped for multiple SPTS over UDP or RTP multicast streaming.

Secured by HDD drives in RAID configuration, redundant power supplies and carrier-grade built quality, the Multi-TS can work in any network or head-end situations for 24 - 7 linear playout with an optional integrated scheduler and playout event automation.

BBright's advanced technology and field proven know-how enable the Multi-TS server to deliver uncompromised compressed playout reliability for multiple and mixed resolution linear channels with a scalable license scheme.

Multiple SPTS Multicast, Scalable by Licence
HDR formats support

Advanced TS and GOP Processing
Integrated Scheduler and Playout Automation

FEATURES

■ **Video (by channel)**
- PIP, **SD**, **HD**, **full-HD**, **Ultra HD** (3840 x 2160) and **4K**
- Frame rates : 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 fps
- Max. combined TSoIP bit rate: 500 Mbps / CBR streaming
- Bit rate adaptation by null-packet stuffing
- **PCR, Continuity Counter correction, PTS/DTS processing**
- **GOP cleaning** for HEVC and AVC .ts files
- **PID re-mapping: 1x Video - 10x Audio - 5x Subtitles**
- Un-processed TS (raw) playback mode also available
- Looping playlist mode / master + slave channel(s) playout
- Playout event scheduler with integrated automation [option]

■ **File Ingest and Support**
- SPTS and MPTS ingest through GbE port (FTP / NAS) or USB
- Video Codec
  - **HEVC / H.265**, with HDR10-PQ, HLG and Advanced HDR by Technicolor **HDR** compatibility
  - **MPEG-4 AVC / H.264**
  - **MPEG-2**
- Video container: **.ts** file

■ **Audio**
- Audio Codec support:
  - AAC, HE-AAC (v1 and v2), AAC-LC / MPEG-1 Layer II
  - Dolby™ AC-3, E-AC-3, AC-4 (pass-through)

■ **Dual TSoIP Outputs**
- Multiple SPTS Multicast over IP in UDP or RTP / MPTS in raw
- Stream duplications on secondary Multicast address
- FEC CoP 3 and VLAN support

CHASSIS

■ 1RU chassis with up to 6 front loading 2.5in HDD slots

■ Carrier-grade built quality and reliability for broadcast

■ Redundant power supplies (hot swappable), 100-240 VAC, 50-60Hz, 400W max. [200W typical usage]

■ Two USB 3.0 and two USB 2.0 interfaces

■ Two IP-bonded GbE ports for GUI control/ingest

■ Two independent GbE ports for TSoIP streaming

■ Front-to-rear airflow

■ Dimensions, W: 437 mm, D: 520 mm, H: 43 mm (1RU)

■ Weight, 10kg

CONTROL and AUTOMATION

■ Intuitive Web-based G.U.I. with **channel's playout thumbnails**
  - Manual playlist or playout event scheduler management
  - Channel renaming and reordering
  - Alarms and logs, software and channel license update

■ REST API control and SNMP v2c supervision

■ **1 + 1** Main and Back-up server's **content redundancy**

■ Playout control by text-based, xml, json traffic import [option]

■ UID, RESET and POWER front buttons with five status LED's

FRONT PANEL LAYOUT

wavetel
a simac group company
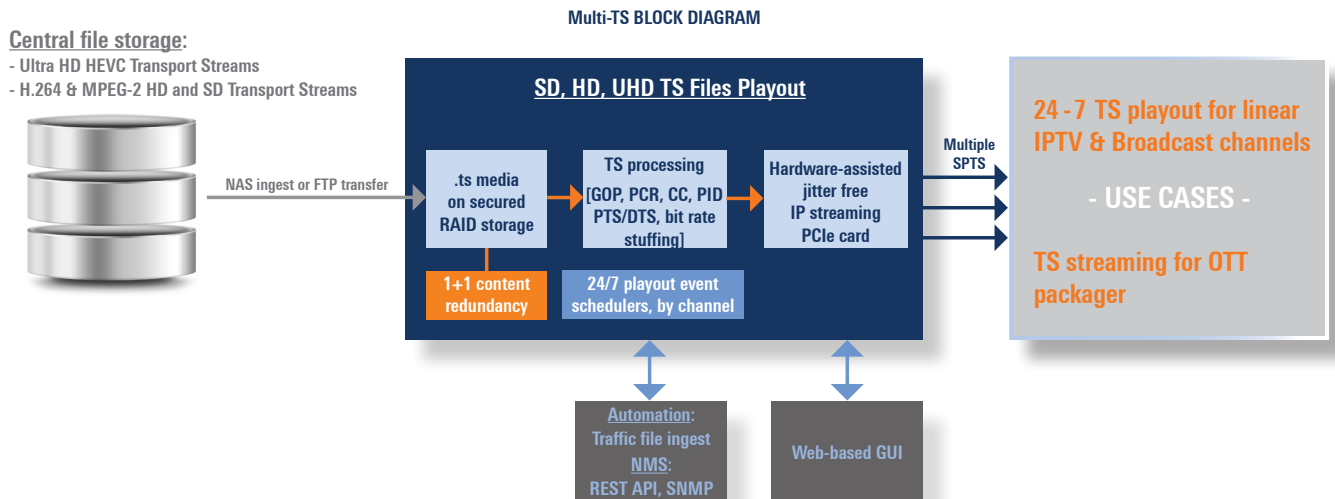
INTERNAL ARCHITECTURE

Transport Stream file ingest on the data/content HDD's is typically performed via FTP transfer/NAS connection, or alternatively via an USB attached device. Multiple channel playout, file ingest and also content redundancy between Main and Back-up servers can all run in parallel.

TS files can be played simply un-modified (RAW mode) or with bit rate stuffing, PID re-mapping and PCR, Continuity Counter, PTS / DTS processing. HEVC and AVC TS GOP cleaning ensure seamless transitions at playlist playback loop.

Channel's thumbnails/proxy, audio bar graphs and HDR flags provide immediate playout feedback monitoring to the operator.

The scheduler option allows, by channel, a 24-7 playout event programmation, either by the web-based GUI or by importing channel specific traffic files (text-based, json, or xml formats). A looping playlist can also autofill the playout scheduler for a given period of time. One or several slave playout channel(s) can play in synchronization with a master channel.
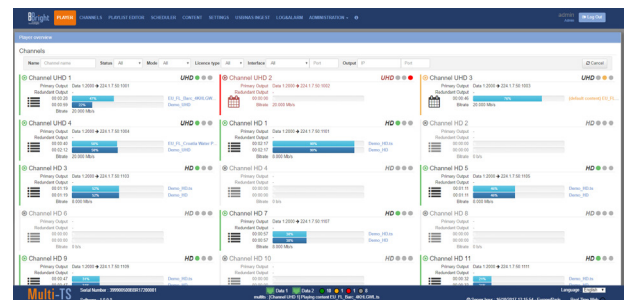
A specific Gbit Ethernet output card, with dual interfaces, is dedicated for low-jitter TSoIP streaming and avoids bursty packet transmission to the downstream equipment.

Multi-TS BLOCK DIAGRAM

Central file storage:
- Ultra HD HEVC Transport Streams
- H.264 & MPEG-2 HD and SD Transport Streams

NAS ingest or FTP transfer

SD, HD, UHD TS Files Playout

.ts media on secured RAID storage → TS processing [GOP, PCR, CC, PID PTS/DTS, bit rate stuffing] → Hardware-assisted jitter free IP streaming PCIe card

1+1 content redundancy

24/7 playout event schedulers, by channel

Multiple SPTS

24-7 TS playout for linear IPTV & Broadcast channels

- USE CASES -

TS streaming for OTT packager

Automation: Traffic file ingest
NMS: REST API, SNMP

Web-based GUI

CHANNEL CAPABILITY (standard version: 3 TB)

Channel type / TS bit rate	4 Mbps	8 Mbps	18Mbps	40Mbps
SD channels	up to **20x**		-	-
HD channels		up to **20x**	-	-
UHD channels	-	-	up to either **12x**	or **8x**

WEB G.U.I. SCREENSHOT

HARDWARE CONFIGURATION and OPTIONS

■ **System and Storage Versions**
- Factory pre-installed appliance configuration:
  - LINUX based
  - Two 1 TB enterprise grade HDD for operating system, firmware and licenses; [1+1] RAID 1 configuration
  - Four 1 TB enterprise grade HDD for content ingest and playout; [n+1] RAID 5 configuration
- **Individual SPTS output licenses set by video resolution:** for PIP, SD, HD and Full-HD, or UHD channels
- **Optional scheduler** : individual playout schedules, by channel

ORDERING INFORMATION and AVAILABILITY

■ Part number: **Multi-TS** **(3 TB storage)**
■ Part number: **Scheduler (option)**

Multiple channel TS playout is available for shipment

Please contact sales for ordering details relative to product configuration or other requested options