DATASHEET

Synamedia

vDCM Multiplexer

Transport Stream Processing Platform
for Content and Service Providers

Feature-Rich, High-Performance Multiplexer and Transport Gateway

Synamedia's vDCM Multiplexer is a virtualised software-based platform for carrying out high-performance multiplexing, remultiplexing, and advanced stream processing operations. Supporting IP and ASI (appliance version) input and output formats, the platform easily integrates with existing architecture and new future-proof setups. Part of Synamedia's market-leading vDCM, the platform is designed to run either on-premises as a software-defined appliance or on a public or private cloud to give you deployment flexibility.

Key Functionalities

Unparalleled mix of stream processing and transport gateway functions

- Supports all input-to-output routing combinations, including ASI-to-IP conversion
- Delivers wide range of multiplexing capabilities at PID and service levels
- Works with all stream manipulation functions, including PSI/SI/PSIP table acquisition, generation, insertion and playout

Advanced features for increasing operational efficiency

- Optimises bandwidth usage with advanced statistical multiplexing for precise cross-channel bandwidth allocation over time
- Maintains an achievable end-to-end service availability of 99.999%
- Provides built-in, stand-alone redundancy support at transport and service levels with configurable triggers and switch-over rules
- Offers rich set of configurable alarms at input, bit rate and data levels

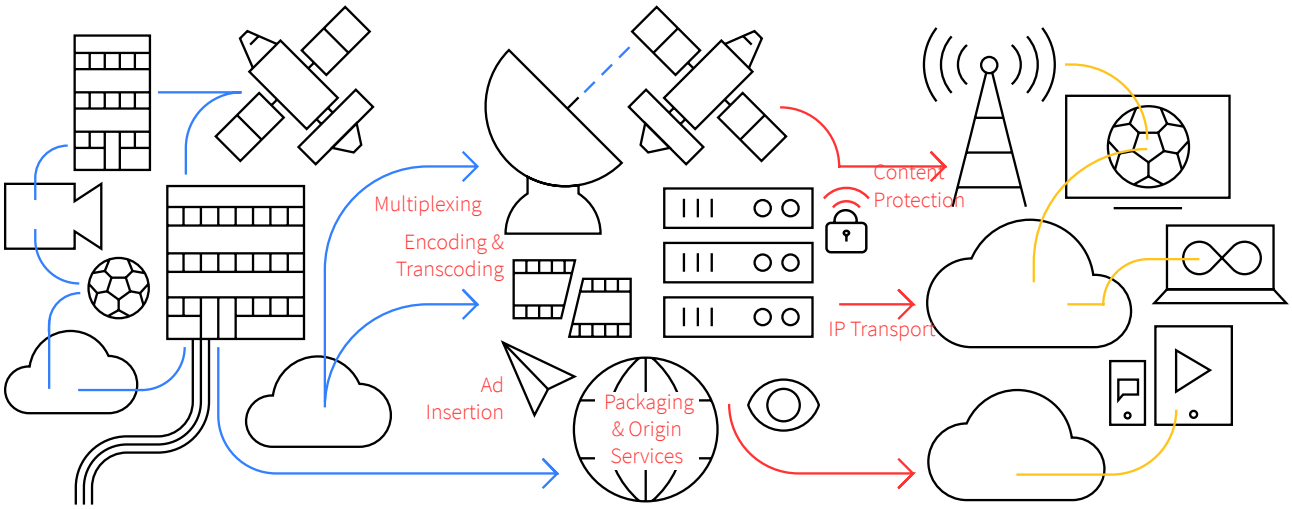
Flexible and adaptable offering covering all deployment models and requirements

- Runs as a software-defined appliance or in public/private cloud environments
- Employs licenced-based model to scale easily and activate new functions

Technical Advantages

- IP and ASI input and output support, including ASI-to-IP conversion
- Ultra-high throughput up to 20Gbps
- IP delivery support via Zixi, SRT and RIST
- Statistical multiplexing and smart rate control functions
- Forward error correction (FEC) and hitless merge capabilities
- Redundancy management at transport and service levels

Video Network Chain



Product Specifications

I/O Interfaces	
Ethernet	• RJ-45, 100BASE-T Ethernet, and 1000BASE-T Ethernet (2 ports for SS, 4 standard ports for MS)
Input Protocols	• ASI • MPEG-2 TS over IP/UDP and IP/UDP/RTP up to 10 Gig-E • MPEG-2 TS from file (disk) • SRT • RIST • Zixi • RF input (ATSC1.0, iSDB-T, DVB-T/T2, ITU J.83 A/B/C)
Output Protocols	• ASI • MPEG-2 TS (MPTS or SPTS) over IP/UDP and IP/UDP/RTP up to 10 Gig-E • SRT • RTMP(S) • Zixi • DEPI (Aux Video Core)
Input Processing	• Input bit-rate monitoring • Continuity counter-error detection • Forward error correction and hitless merge according to SMPTE 2022-1, 2022-2, 2022-6 and 2022-7
Output Processing	• De-jittering with short-/long-term regulation
Specific Features	
Gateway	• ASI-to-IP conversion • Address flipping • Maximum throughput of 25GBps
Multiplexing and Remultiplexing	• PID filtering and remapping • Fixed output PID remapping • PSI/SI/PSIP acquisition, generation and insertion • Dynamic PSI/SI/PSIP regeneration with advanced descriptor handling support • Service and component merging • PID tracking • Aux PID synchronisation with video • Content routing from any input to any output port • Output mirroring

Specific Features (continued)	
Statistical Multiplexing	• Statmux controller supporting up to 100 services per pool (20) • Applies to MPEG-2, H.264, HEVC, UHD, HD, and SD • Holistic encoder buffer-level analysis for precise bandwidth allocation • Improved reactivity to scene changes • Realignment MUX
Blackout Switching	• Automatic blackout switching at transport stream and elementary stream levels
Clock Synchronisation	Network Time Protocol Version 4 (NTPv4) Precision Time Protocol (PTP) - IEEE 1588-2019
Operations	
Redundancy	• 1:1 IP interface backup • IP port mirroring • Input service and transport stream redundancy • Hitless merge for MPEG-2 transport stream input and for SMPTE2022-6 input (SMPTE-2022-7) • User-configurable triggers • 1:1 and N:M node redundancy
Monitoring	• Integrated Grafana dashboards • Elasticsearch, Logstash and Kibana (ELK) stack support • Alarm notifications, including SNMP traps • Syslog • Easily controlled local web GUI • VSM support for line-up configuration, resource pool redundancy for hybrid setups (mix of hardware DCM and software Synamedia DCM), capacity modelling, and centralized monitoring • Fully documented open API enabling third-party component integration
Configuration GUI	• Statmux pool definition and management rules • Multiplexing configuration, including dynamic rules definition and descriptor edition • Alarm configuration • Triggers and switch-over rules configuration for service redundancy • Optional centralised management with Synamedia's VSM

Platform Support and Compatibility

Deployment	
Appliance	See details below
Private Cloud	Virtual machine, Docker container
Public Cloud	Multi-cloud supporting all major cloud providers

vDCM Appliance Chassis Specifications

Physical and Power	
Size	SFF chassis: 1.69 x 17.11 x 27.83 in, 4.29 x 43.46 x 70.7 cm
Weight	28.74 lb/13.04 kg minimum, 35.86 lb/ 16.78 kg maximum
Power Supply	AC input 100-240 VAC
Consumption	800W (power supply) – 500W (for VN-Node XS)
Environmental	
Operating Temperature	50-95°F (10-35°C)
Storage Temperature	-40-140°F (-40-60°C)
Cooling	Smart array controller and seven fans
Operating Humidity	8-90% (non-condensing)
Operating Altitude	0-3,050 m (0-10,000 ft)

Regulatory Compliance	
Compliance	CE Markings per directives 2004/108/EC and 2006/95/EC
Safety	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment -Safety -Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment -Safety -Part 1: General Requirements)
EMC Compliance	EN 55032:2015/AC:2016 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010 +A1:2015 EN 61000-4-2:2009 EN 61000-4-3:2006 +A1:2008 +A2:2010 EN 61000-4-4:2012 EN 61000-4-5:2014 EN 61000-4-6:2014 EN 61000-4-8:2010 EN 61000-4-11:2004

Ordering Information

For ordering information, please contact your sales representative.

Services & Support

Synamedia provides a broad portfolio of services and support to increase your network's business value and return on investment. We take a customer-centric approach, aligning our level of support to your technological requirements and network complexity. That way, you can successfully operate our products and solutions to ensure that you achieve optimal performance throughout your network's life cycle.

Warranty & Contact Information

Read our detailed warranty information.

Learn more about Synamedia's video network distribution solutions.

For more information, contact your account manager or visit our site.

About Synamedia Video Network Solutions

Synamedia's video network solutions enable media, web and pay TV providers to deliver pristine-quality broadcast and broadband video securely over any network to any screen. Anchored by the industry's most comprehensive processing platform and built with high-quality standards, our solutions ensure outstanding performance and reliability for over 1,000 customers worldwide. Synamedia's solution portfolio covers the entire video network chain – from distribution, through processing, to delivery – enabling you to offer outstanding value-added and personalised experiences while saving costs.