SGI Media Server™ for Broadcast Models MSB 325, 385

Features

- Open-architecture and scalable media server with industry-leading bandwidth for maximum performance and flexibility
- Truly IT-oriented system with robust 64-bit operating system designed for mission-critical applications
- Support for all major broadcast video and file formats such as MPEG2, DVCPRO, DVCPRO50, D10/IMX and MXF
- Built-in Gigabit Ethernet networking for maximum efficiency when transferring files
- Expandable with future industry-standard video and I/O components
- High-performance RAID and JBOD local storage options
- Tightly integrated NAS and SAN solutions with SGI® InfiniteStorage Shared Filesystem, CXFS™
- Global SGI Professional Services and world-class Support Infrastructure

Turning Workflow into Dataflow

A broadcaster's desire for increased efficiency, and technical innovation has brought a change to workflow. Servers based on dedicated proprietary technology no longer meet the needs of organizations that want to take advantage of the latest in Information Technology (IT) and move to distributed news production and centralcasting models.

Today, scalability, format agility, and integration with ingest, browse, rough-cut and news edit, graphics, automation, media management, and archive systems are more important than in the past. Moving to robust open systems as the basis for media serving allows for streamlining of the broadcaster's workflow.

SGI Media Server for broadcast is a unique offering, designed with an understanding of needs for managing both video and data in a broadcast facility. When file-based video is managed as data, it can be distributed over data networks with speed and efficiency. Superior LAN/WAN media distribution is a key element of SGI Media Server for broadcast. Built-in support of industry-standard networking protocols such as 100Base-TX Ethernet and Gigabit Ethernet is standard. This approach to open-architecture, high-bandwidth networking reduces bottlenecks, allowing faster to-air operations, and ensures interoperability with third-party devices such as NLEs and archive systems. The high throughput of SGI Media Server for broadcast facilitates simultaneous ingest and data-network-based file transfers without compromising the server's playout performance.

Broadcast Applications

SGI Media Server for broadcast supports all popular broadcast digital formats, including MPEG2, DVCPRO, DVCPRO50 as well as D10/IMX and MXF. All these standards are made available in the form of a single expandable video server solution providing a maximum in flexibility to the most demanding broadcast operations. Traditional broadcast operations such as multichannel ingest and playout under automation control are supported with industry-standard protocols. SGI Media Server for broadcast is ideally suited for any traditional broadcast applications including acquisition, play-to-air, commercial insertion, and server-based news editing.

Configuration and Implementation

SGI Media Server for broadcast supports up to eight standard-definition, 50Mb per second video channels, with up to eight embedded audio channels per video channel. Other audio options include AES/EBU digital and XLR analog audio. Flexibility in the choice of disk storage offers optimal configuration, whether it is with protected RAID or cost-effective JBOD disk subsystems. SGI Media Server for broadcast can also be seamlessly integrated into a SAN with the SGI InfiniteStorage Shared Filesystem, CXFS, on which all systems instantly share data without mounts or copies – even across operating systems.

Integration and Application Services

SGI Professional Services offers broadcast-system-integration services that include customer qualification, site planning assistance, hardware installation, network configuration, connection of peripheral devices, software configuration, and integration with third-party systems. Take advantage of SGI Professional Services to help deliver a solution tailored to your strategic requirements. Contact your local SGI field office for further information.

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Technical Specifications

SGI Media Server for Broadcast
Up to 2 (MSB 325) or 8 (MSB 385) standard definition (PAL/NTSC) video channels per server

Video Formats (Encoding/Decoding)
- MPEG-2, selectable as
  - 4:2:2 from 15Mbps to 50Mbps I-frame (CBR/VBR)
  - 4:2:2 from 8Mbps to 25Mbps long GOP (VBR)
  - 4:2:0 from 3Mbps to 15Mbps long GOP (VBR)
- SMPTE365M, IMX (MPEG 4:2:2 I-frame with Constant Byte GOP encoding)
  - 30/40/50Mbps
- DVCPRO (25Mbps) and DVCPRO50 (50Mbps)

File Formats
- MXF OP-1a support for the following
  - IMX 30/40/50Mbps (record and play-out)
  - DVCPRO 25/50Mbps (play-out)
  - DVCPRO 25/50Mbps (record and play-out) (VST 2.2 or later)
- DIF support for the following
  - DVCPRO 25/50Mbps (record and play-out)
- SGI file format support for the following (record and play-out)
  - 4:2:2 from 15Mbps to 50Mbps I-frame
  - 4:2:2 from 8Mbps to 25Mbps long GOP
  - 4:2:0 from 3Mbps to 15Mbps long GOP
  - SMPTE365M, IMX (30/40/50Mbps CBG)
- SMPTE360M (GXF)
  - Play-out directly
  - Record via transcoding the SGI file format

Audio Formats
- Support for up to 8 audio channels per video channel from a choice of:
  - 4 16/20-bit uncompressed embedded audio pairs (SMPTE272M)
  - 2 24-bit digital AES/EBU audio pairs
  - 1 analog XLR audio pair

Audio/Video Connections
- 270Mbps Serial Digital Interface (SDI) SMPTE259M (1x in, 2x out)
- Composite analog out (video monitoring only)
- Composite analog in for Genlock
- Digital AES/EBU Audio (BNC, 2x in, 2x out)
- Analog Audio (XLR, 2x in, 2x out)

Local Storage
- RAID or JBOD storage solutions with guaranteed rate of I/O performance

Central Storage
- SGI InfiniteStorage NAS and CXFS SAN solutions available

Time Code
- Separate Time code for each video channel (VITC and LTC)
- Single LTC input via RS-232 converter for overall MSB system clock

Control
- Harris Louth™ VDCP via RS-422
- SGI MVCP networking control protocol via 100Base-TX Ethernet

Networking
- 100/1000Base-TX networking support for faster than real-time transfer of video as data

MSB Configurations
Processor Data:

• Microprocessor	64-bit MIPS® R16000™ 700MHz
• Primary caches	32KB two-way set-associative on-chip instruction cache
• Secondary caches	4MB ECC cache/processor

SGI Media Server Configuration:

• CPU configuration	2 (MSB 325) or 4 (MSB 385)
• Memory configuration	2GB (MSB 325) or 4GB (MSB 385)
• I/O bandwidth	1.07GB/sec sustained, 2.4GB/sec peak
• Memory bandwidth	3.2GB/sec peak sustained, 3.2GB/sec peak

Integrated Storage:

• SCSI	1 internal 160MB/sec Ultra3 SCSI channel
• Storage bay	2 3.5" fixed-media hot-pluggable disk drive bays
• Device capacity	Ultra3 SCSI: 18GB, 73GB
• DVD/CD-ROM	24x IDE internal DVD (optional)

Redundancy:
- N+1 redundant cooling
- N+1 redundant power supply (optional)

External PCI Expansion Module (4U):

• Bus type	64-bit/66MHz PCI
• PCI slots	Additional 12 slots (2 slots per bus)

Local Mass Storage:

• External Interfaces	Ultra3 SCSI (1 ext. channel standard) and Fiber Channel (optional)
• Maximum bandwidth	160MB/sec Ultra3 SCSI, 200MB/sec Fiber Channel
• SCSI JBOD	SGI® TP900 SCSI JBOD storage system up to 8 Ultra3 SCSI drives per enclosure
• Fiber Channel RAID	SGI® TP9100-2G RAID3

Dimensions and Weight:

• Compute module	3.44"H, 27"D[1] , 17.06"W (fits industry-standard 19" racks) (8.74cm H, 68.58cm D, 43.33cm W) with bezel; 44.5 lb maximum (20.23 kg)
• PCI Expansion Module	6.64"H, 27.74"D, 17.50"W (16.87cm H, 70.46cm D, 44.45cm W); 70 lb maximum (31.82 kg)

Environmental (Nonoperating)

• Temperature	-40°C to +60°C
• Humidity	10% to 95% RH, noncondensing
• Altitude	40,000 MSL

Environmental (Operating)

• Temperature	+5°C to 45°C (5,000 MSL), +5°C to 35°C (10,000 MSL)
• Humidity	10% to 95% noncondensing
• Altitude	10,000 MSL
• Noise	48 dBa sound pressure, 6.1 bels sound power

Electrical and Power

• Voltage	120/240V AC auto-sensing worldwide power supply
• Power Supply	500W TPS module
• Frequency	50/60Hz
• Heat dissipation	1,315BTU/hr, maximum
• Electrical service	100/240VAC @15A, single-phase cord
• Service type	U.S., Japan, NEMA 5-15P (110V), 6-15P (220V)
Regulatory	SGI Media Server is classified FCC, CISPR, ICES, AS/NZS, VCCI, CNS Class A; CE CSA NRTL, CSA CB

[1] An additional 8" front-end clearance is required for drive door to open properly.