Lightspeed K20 Server
Operating Specifications

Introduction

This document outlines the tested operating specifications for Telestream® Lightspeed K20 Server™

Hardware Specifications

Telestream Lightspeed K20 Servers ship with the following hardware configuration:

- *1RU server with 1800W Dual redundant power supplies (80+ Platinum Level 94%+)*
- *Dual Ten Core Intel Ivy Bridge CPU 2.5Ghz (E5-2670 v2) with HTT (40 virtual cores)*
- *32GB RAM (4 X 8GB 1600Mhz Registered ECC DDR3)*
- *Two (2) NVidia Tesla K20 Kepler-based GPU cards with 5GB RAM each*
- *OS – Windows Server 2008 R2 or Windows Server 2012 R2, Standard 64bit (120GB SSD partition)*
- *Media Cache – 2.0TB RAID-0 (Two enterprise class 1TB SATA 6Gb/s 10K RPM drives)*
- *Dual Port 10GbE (Intel X540 10GBase-T compatible with 10GBASE-T, 100GBASE-TX, and 1000BASE-T)*
- *Two (2) USB 2.0 ports*
- *Two (2) available PCI slots, 1 (x16) PCI-E 3.0 & 1 (x8) PCI-E 3.0 low-profile slot (see qualified options below)*
- *VGA video connector*
- *RoHS Compliant*
- *Physical Dimensions – Height 1.7" (43mm) x Width 17.2" (437mm) x Depth 28.2" (716mm)*
- *Gross Weight 52lbs (23.6 kg)*

Telestream Lightspeed K20 Servers are qualified with the following optional hardware:

- Fibre Channel Cards:
  - ATTO Celerity FC-81EN Single-Channel 8Gb/s HBA
  - ATTO Celerity FC-82EN Dual-Channel 8Gb/s HBA
- Ethernet Network Interface Cards:
  - Intel PRO/1000 PT Quad Port Server adapter
  - ATTO FastFrame NS-11 Single-Channel SFP+ 10GbE
  - ATTO FastFrame NS-12 Dual-Channel SFP+ 10GbE

Power and Temperature requirements:

- Operating Temperature: 10°C to 35°C (50°F to 90°F)
- Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)
- Maximum power is 6.8 amps (750 watts) with both GPUs and CPUs running at 100%
- Cooling: Servers generate 2560 BTU/h with both GPUs and CPUs running at 100%

Thermal testing:

- With all GPUs and CPUs running at 100% load for three hours
  - External temperature stable at 30° C
  - GPU temperature stable at 50° C
  - CPU temperatures stable at 70° C or lower
  - Successful completion of transcoding jobs in this environment (see Stress Tests below)

Certifications:

- FCC, CE, UL or CSA, CB, VCCI, Ctick
- *Certifications are valid for the following regions:* North America, EU, Japan, AUS/NZ

Stress Testing

Sustained CPU/GPU Transcoding, Hard Drive Stress Test:
Two Lightspeed K20 Servers (running Transcode Multiscreen) in an Array successfully performed 100,000 transcode jobs with 100% up-time.

> *Notes: Performed by Vantage Transcode Pro on two Lightspeed K20 Servers with SQL Standard. Each job included a 5-second transcode to 3Mb MP4 from an MOV ProRes source; jobs were set to expire after one hour to avoid excessive database growth.*

Sustained GPU Transcoding Stress Test:
One Lightspeed K20 Server (running Transcode Multiscreen) successfully performed non-stop transcoding of 3-hour input files for one week. Each input file was converted to 10 independent output video streams and 14 output packages (150 hours of output video per input). Outputs were randomly checked for lip sync and video/audio quality.

> *Notes: Performed on one Lightspeed K20 Server with SQL Standard as the primary database. Each job included converting a 3-hour MOV ProRes source, creating 10 independent output streams (1080p24 3Mb, 2Mb, 1Mb; 720p24 2Mb, 1Mb, 480p 2Mb, 1Mb, 240p 1Mb, 700Kb, 400Kb) and packaging into the following containers (one MP4 for each stream, HLS, HSS, Dash, HDS including all above streams)*