

Wowza Streaming Engine Transcoder benchmarks: Transcode 720p

Input test stream

- **Video Codec:** MPEG-2
- **Video Frame Size:** 1280x720
- **Video Frame Rate:** 23.98 fps
- **Video Bitrate:** 3.0 Mbps
- **Audio Codec:** MPEG-1 Layer 2
- **Audio Sample Rate:** 48 kHz
- **Audio Channels:** Stereo
- **Audio Bitrate:** 128 kbps

Test servers

Server 1

- **Processor:** Single Intel Xeon CPU E3-1285 V3 @ 3.60GHz
- **Cores/Threads:** 4/8
- **Memory:** 32 GB
- **Motherboard:** Supermicro X10SAE
- **OS:** Linux (64-bit)
- **Java:** Java 8 (64-bit)
- **GPU/Acceleration:** Built-in HD4600 with Intel Quick Sync (Haswell)

Server 2

- **Processor:** Single Intel Xeon CPU E3-1285 V3 @ 3.60GHz
- **Cores/Threads:** 4/8
- **Memory:** 32 GB
- **Motherboard:** Supermicro X10SAE
- **OS:** Linux (64-bit)
- **Java:** Java 8 (64-bit)
- **GPU/Acceleration:** NVIDIA Quadro M5000

Server 3

- **Processor:** Single i7 6700k @ 4.0GHz
- **Cores/Threads:** 4/8
- **Memory:** 16 GB
- **Motherboard:** Supermicro X10SAE
- **OS:** Windows 10(64-bit)
- **Java:** Java 8 (64-bit)
- **GPU/Acceleration:** Built-in HD4600 with Intel Quick Sync (Skylake)

Server 4

- **Processor:** Single i7 6700k @ 4.0GHz
- **Cores/Threads:** 4/8
- **Memory:** 16 GB
- **Motherboard:** Supermicro X10SAE
- **OS:** Windows 10 (64-bit)
- **Java:** Java 8 (64-bit)
- **GPU/Acceleration:** NVIDIA Quadro M4000

Server 5

- **EC2 Instance:** AWS G2 2.2xlarge
- **Cores/Threads:** 12/24
- **Memory:** 32 GB
- **8 EC2 Compute Units:** 4 virtual cores with 2 EC2 Compute Units each
- **OS:** Amazon Linux
- **Java:** Java 8 (64-bit)
- **EC2 Instance:** G2 2.2xlarge
- **GPU/Acceleration:** NVENC

Server 6

- **EC2 Instance:** AWS G2 2.8xlarge
- **Cores/Threads:** 12/24
- **Memory:** 32 GB
- **8 EC2 Compute Units:** 4 virtual cores with 2 EC2 Compute Units each
- **OS:** Amazon Linux
- **Java:** Java 8 (64-bit)
- **EC2 Instance:** G2 2.8xlarge
- **GPU/Acceleration:** NVENC

Server 7

- **EC2 Instance:** AWS C4.8xlarge
- **Memory:** 15 GB
- **8 EC2 Compute Units:** 4 virtual cores with 2 EC2 Compute Units each
- **Java:** Java 7 (64-bit)
- **OS:** Amazon Linux
- **EC2 Instance:** C4.8xlarge
- **GPU/Acceleration:** None

Server 8

- **Azure:** Azure-D4-v2
- **Memory:** 60 GB
- **20 EC2 Compute Units:** 32 virtual cores with 3.37 EC2 Compute Units each
- **Java:** Java 7 (64-bit)
- **OS:** Azure Linux
- **Instance Type:** Azure-D4-v2
- **GPU/Acceleration:** None

Server 9

- **Google:** GCP-n1-highcpu-32
- **Memory:** 60 GB
- **20 EC2 Compute Units:** 32 virtual cores with 3.37 EC2 Compute Units each
- **Java:** Java 7 (64-bit)
- **OS:** Google Linux
- **EC2 AMI:** GCP-n1-hoghcpu-32
- **GPU/Acceleration:** None

Note:

The hyphen (-) character indicates that the streams couldn't be transcoded due to excessive CPU utilization.

Input	Output	Server 1		Server 3								
		Server 1 Default	Quick Sync	Server 2 NVENC	Server 3 Default	Quick Sync	Server 4 NVENC	Server 5 NVENC	Server 6 NVENC	Server 7 Default	Server 8 Default	Server 9 Default
1x720p @ 3.0 Mbps	1x720p 1x360p 1x240p 1x160p	19%	10%	8%	15%	7%	8%	10%	2%	6%	14%	12%
2x720p @ 3.0 Mbps	2x720p 2x360p 2x240p 2x160p	53%	20%	19%	27%	11%	13%	18%	5%	14%	27%	24%
3x720p @ 3.0 Mbps	3x720p 3x360p 3x240p 3x160p	70%	27%	25%	40%	30%	19%	33%	8%	22%	42%	37%
4x720p @ 3.0 Mbps	4x720p 4x360p 4x240p 4x160p	-	39%	40%	54%	42%	25%	39%	12%	34%	51%	45%
5x720p @ 3.0 Mbps	5x720p 5x360p 5x240p 5x160p	-	53%	47%	67%	49%	33%	44%	16%	42%	65%	49%
6x720p @ 3.0 Mbps	6x720p 6x360p 6x240p 6x160p	-	62%	60%	-	58%	44%	55%	19%	58%	-	52%
7x720p @ 3.0 Mbps	7x720p 7x360p 7x240p 7x160p	-	66%	69%	-	69%	53%	73%	23%	66%	-	57%
8x720p @ 3.0 Mbps	8x720p 8x360p 8x240p 8x160p	-	-	-	-	-	66%	-	25%	-	-	60%
9x720p @ 3.0 Mbps	9x720p 9x360p 9x240p 9x160p	-	-	-	-	-	-	-	27%	-	-	62%
10x720p @ 3.0 Mbps	10x720p 10x360p 10x240p 10x160p	-	-	-	-	-	-	-	32%	-	-	68%
11x720p @ 3.0 Mbps	10x720p 10x360p 10x240p 10x160p	-	-	-	-	-	-	-	36%	-	-	-