

A Cloud Encoding Pricing Comparison

AWS Elemental MediaConvert

Microsoft Azure

Bitmovin

Dolby Hybrik

encoding.com

Telestream Cloud (Flip)

Zencoder

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Overview

Selecting a cloud encoding partner is challenging, with well over a dozen vendors providing a variety of services. Directly comparing these services can be surprisingly complex, since they each offer a different take on features, performance, quality, and price. Even comparing services on price is harder than it first looks, since they all use different pricing schemas. For example, one vendor might charge by-the-output-minute while another charges by-total-gigabytes.

To assist companies considering moving to the cloud or changing vendors, Dolby commissioned me to write this white paper comparing the H.264 and H.265 pricing of seven leading vendors, including Dolby's own Hybrik encoding service. By way of background, Dolby's service is optimized for large-scale media processing, and is used by companies like Sony Pictures, Paramount, Google and WarnerMedia.

To compare pricing between the services, I needed to establish a standardized output configuration. Since many media companies serve their viewers with multi-bitrate HTTP Live Streaming (HLS), I decided to use Apple's recommended encoding ladders from the [HLS Authoring Specification](#). This meant one test for the H.264 encoding (going up to 1080p resolution) and one test for H.265 (going up to 4K resolution). I used the publicly available pricing for all services.

Cost Comparison Summary

Table 1 shows the summary cost comparison for H.264 encoding, with cost computed as a monthly expense based on the total number of hours of source material processed with pricing details provided later in this document. As you can see, pricing for the per-minute or per-GB services ranges between \$8 and \$40 to encode a H.264 ladder from a single source hour.

The Hybrik service is an outlier at both ends of the hourly range. At very low volumes, the service is comparatively expensive since the minimum service level is \$1,500 per month. So, encoding a single hour of source took \$1 of machine time, plus the \$1,500 base service cost. As the number of source hours encoded per month increases however, the Dolby Hybrik service becomes the overwhelmingly less-expensive option, dropping to a fraction of the other services after 200 hours or so.

Service Cost	Monthly Source Hours							
	1	10	50	100	200	300	400	1000
AWS MediaConvert	\$17	\$170	\$849	\$1,698	\$3,395	\$5,094	\$6,792	\$16,980
Azure Media Services	\$12	\$122	\$608	\$1,215	\$2,430	\$3,645	\$4,860	\$12,150
Bitmovin	\$25	\$246	\$1,228	\$2,456	\$4,912	\$7,369	\$9,825	\$24,562
Dolby Hybrik	\$1,501	\$1,507	\$1,537	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240
Encoding.com	\$17	\$167	\$833	\$1,666	\$3,332	\$4,999	\$6,665	\$16,662
Telestream Cloud	\$8	\$84	\$420	\$840	\$1,680	\$2,520	\$3,360	\$8,400
Zencoder	\$40	\$300	\$1,215	\$2,000	\$3,240	\$4,860	\$6,480	\$16,200

Table 1. Monthly cost summary per hour of source for H.264 encoding.

Figure 1 shows the cost as a chart. The horizontal axis shows the number of monthly source hours ranging from 1 to 1000, and the vertical axis shows the monthly encoding cost for those hours for each encoding platform.

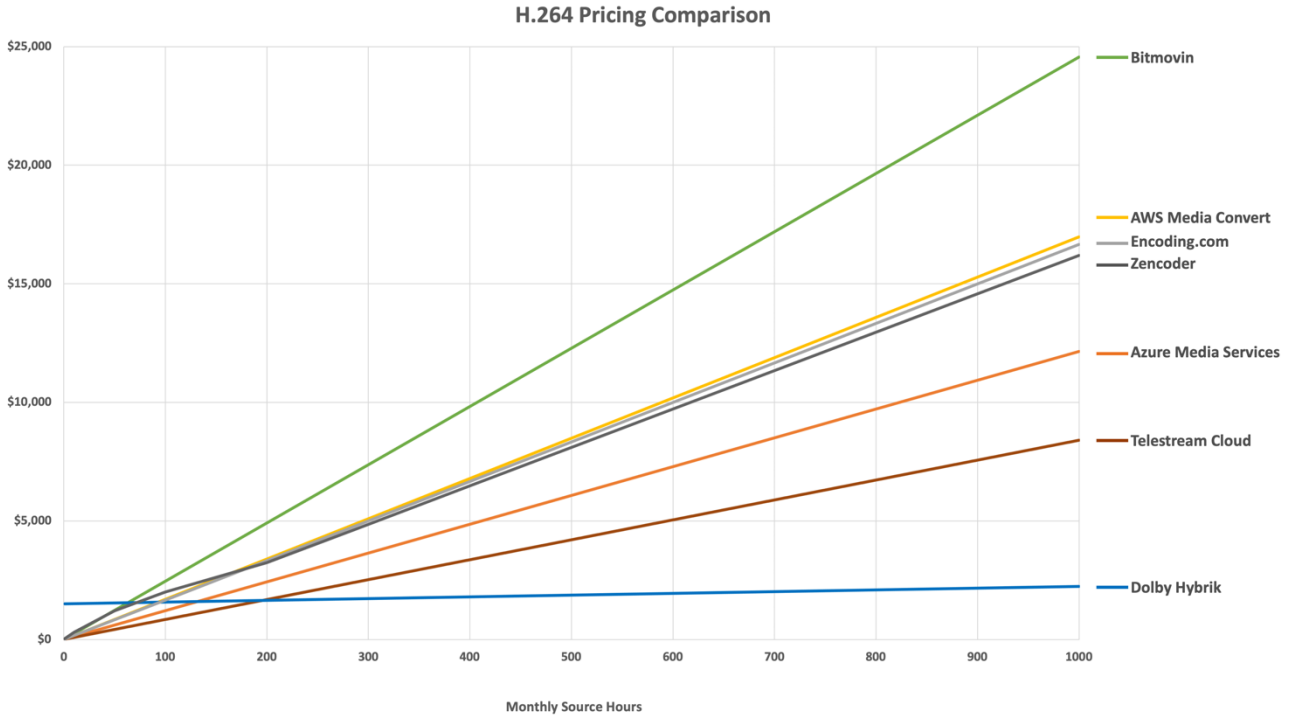


Figure 1. Monthly encoding costs by service and volume – H.264

Table 2 shows the summary cost comparison for H.265 encoding of the Apple-recommended 4K ladder. The costs here are substantially higher than for the H.264 ladder.

Service Cost	Monthly Source Hours						
	1	10	100	200	300	400	1000
AWS MediaConvert	\$208	\$2,073	\$20,730	\$41,460	\$62,190	\$82,920	\$207,300
Azure Media Services	\$121	\$1,212	\$12,117	\$24,234	\$36,351	\$48,468	\$121,170
Bitmovin	\$92	\$924	\$9,238	\$18,477	\$27,715	\$36,953	\$92,383
Dolby Hybrik	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$12,260
Encoding.com	\$56	\$553	\$5,530	\$11,059	\$16,589	\$22,119	\$55,297
Telestream Cloud	\$61	\$606	\$6,060	\$12,120	\$18,180	\$24,240	\$60,600
Zencoder	\$61	\$459	\$3,060	\$6,120	\$9,180	\$12,240	\$30,600

Table 2. Monthly cost summary per hour of source for H.265 encoding.

Two factors drive this cost increase. First, is that the ladder has three additional rungs (1 at 1440p and 2 at 4K). These larger resolutions require substantially more encoding processing – remember that if you double the resolution, you have four times the number of pixels.

The second factor is that H.265 (HEVC) is a more complex codec than H.264. H.265 can achieve reductions of up to 50% in bandwidth for the same output quality as H.264, but these reductions come at the cost of increased processing requirements. H.265 can take anywhere between 2x and 10x the processing time of an equivalent H.264 encode. Figure 2 shows a graph of the pricing data shown in Table 2.

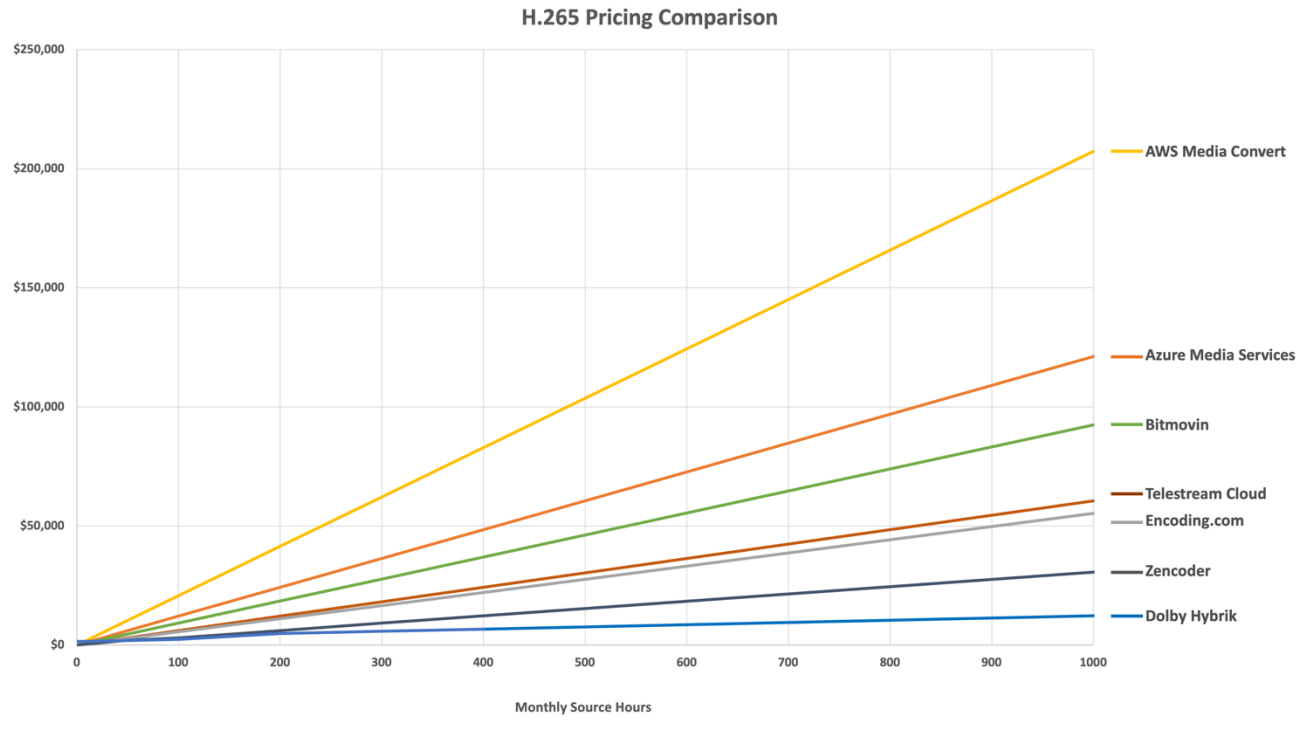


Figure 2. Monthly encoding costs by service and volume – H.265

As I close this summary section, I will point out that achieving a precise apples-to-apples comparison between the services is difficult. For example, the goal was to compare the cost of 2-pass high-quality encoding from each service. However, Telestream's Cloud Flip service only offers one-pass encoding. How does Telestream's single-pass output compare to the two-pass output from other services? That's beyond the scope of this analysis, but it's a comparison you should perform before choosing a cloud vendor.

In addition, note that few services expose all configuration options that impact quality, like the codec preset, which trades off quality for encoding time. So, even if the service uses a high-quality codec, like x264, you may not have control over the most relevant quality-related configuration option. In contrast, Hybrik provides complete control over all options available in x264 and x265, providing you with complete control over the cost/quality equation. Ultimately, price can't be your only decision point. You will need to assess the quality of your prospective services to see if they meet your overall requirements.

Project Assumptions

I ran two different projects with two different assumptions. The H.264 project assumed a one-hour 1080p source video at 30fps supplied in MXF format at 50 Mbps encoded to the recommended H.264 encoding ladder in the Apple HLS Authoring Specification. I also encoded two audio streams, one at 128 kbps for the 540p resolution rungs and higher, and one at 64 kbps for the lowest ladder rungs. I packaged the video in a single ABR format using two-pass encoding (if available). For consistency, I priced all services assuming operation in the Amazon AWS US East region.

Table 3 shows the H.264 encoding ladder, with nine video layers plus two audio layers. When you're paying by the minute, each rung is a separate minute, so each source hour generates

540 minutes of output video (60 minutes times nine rungs) plus 120 audio output minutes (60 minutes times 2 rungs). Most vendors charge different prices for UHD, Full HD, SD, and audio minutes, so you'll need to know the minutes of each type to accurately calculate the price.

Layer #	Layer Size	Video (Mb/s)	Audio (Mb/s)	Total (Mb/s)	Total (GB/hr)
1	1920x1080	7.800	0	7.800	3.43
2	1920x1080	6.000	0	6.000	2.64
3	1280x720	4.500	0	4.500	1.98
4	1280x720	3.000	0	3.000	1.32
5	960x540	2.000	0	2.000	0.88
6	640x360	1.100	0	1.100	0.48
7	480x270	0.730	0	0.730	0.32
8	416x234	0.365	0	0.365	0.16
9	416x234	0.145	0	0.145	0.06
Audio 1	64 kbps	0.000	0.064	0.064	0.03
Audio 2	128 kbps	0.000	0.128	0.128	0.06
	Total	25.64	0.19	25.83	11.35

Table 3. H.264 encoding ladder

As shown in Table 3, each source video hour generates a total of 11.35 GB of output, which I computed because encoding.com charges by the GB of combined input and output. At 50 Mbps, our one-hour source video equals 21.97 GB of input, which totals 33.32 GB (source plus output) for each hour of video processed.

The HEVC test project assumed a one-hour 30 fps 4K video in MXF format at 200 Mbps encoded to the recommended standard dynamic range HEVC Apple-recommended encoding ladder as shown in Table 4. The ladder includes 12 video layers, plus 2 audio layers. As before, each output is a separate minute, so each hour of source video generates 720 minutes of output video (60 minutes times 12 rungs) and 120 output audio minutes (60 minutes times 2 rungs).

Layer #	Layer Size	Video (Mb/s)	Audio (Mb/s)	Total (Mb/s)	Total (GB/hr)
1	3840 x 2160	16.800	0	16.800	7.38
2	3840 x 2160	11.600	0	11.600	5.10
3	2560 x 1440	8.100	0	8.100	3.56
4	1920 x 1080	5.800	0	5.800	2.55
5	1920 x 1080	4.500	0	4.500	1.98
6	1280 x 720	3.400	0	3.400	1.49
7	1280 x 720	2.400	0	2.400	1.05
8	960 x 540	1.600	0	1.600	0.70
9	960 x 540	0.900	0	0.900	0.40
10	960 x 540	0.600	0	0.600	0.26
11	768 x 432	0.300	0	0.300	0.13
12	640 x 360	0.145	0	0.145	0.06
Audio 1	64 kbps	0.000	0.064	0.064	0.03
Audio 2	128 kbps	0.000	0.128	0.128	0.06
	Total Bandwidth	56.15	0.19	56.34	24.76

Table 4. H.265 encoding ladder

For a 200 Mbps source video, the input equals 87.89 GB/hour for a total of 112.65 GB per hour of processed video.

Pricing Models

There are four basic pricing models in the cloud encoding market. These are:

Per-minute pricing – Here the service charges by the minute of output. Most companies in our comparison use this pricing model, which works one of two ways (which I'll explain further for each service). Some services have a fixed price for each form of output: e.g., SD is \$0.02/min; HD is \$0.04/min, audio is \$0.005/min.

Alternately, other services have one standard per-minute price (e.g., \$0.02/minute) with modifiers for the resolution or output codec. For example, an HD minute might have a 2x multiplier, a UHD minute might have a 4x multiplier, and HEVC output might have a 2x multiplier. These multipliers combine, so 4K HEVC output would cost 8x SD H.264 output.

Per-GB pricing – Here, the service charges by the total GB of input/output minutes. Because the source format can have a big impact on the overall cost, it is important to know what your expected sources will be. The only service in our comparison using this pricing is encoding.com.

Dedicated machine pricing - Some companies allow you to rent a computer in the cloud and process as much content as possible during the rental period. This is generally less expensive than per-GB or per-minute pricing but is very service provider and project specific. Since the companies in our comparison don't publish pricing for this option, I didn't attempt to compute pricing under this model.

Dolby Hybrik pricing – Dolby Hybrik uses a Platform-as-a-Service (PaaS) pricing model. The Hybrik service manages the media processing, but the machines processing the video are actually running in your own cloud account on either Amazon AWS, Microsoft Azure or Google GCP. In addition to processing cost, this has the advantage of safeguarding your data in your own Virtual Private Cloud (VPC) environment.

With Hybrik, you don't actually pay Dolby for the machine time that you use – you pay either AWS, Azure or GCP directly for that. You pay a flat monthly fee to Dolby based on the total number of cloud machines that you want to be able to simultaneously run. Hybrik is designed to spin-up machines on the "spot" market, which is substantially less expensive than using on-demand machines. The fees to Dolby are:

- 10 cloud machines - \$1,500/month
- 100 cloud machines - \$7,500/month
- 1000 cloud machines - \$15,000/month

As you'll see, the Hybrik costs in our comparison includes both the Dolby Hybrik fee and the cost of the machine time paid to the cloud vendor, which was AWS in this case.

Note that cloud platforms like AWS, GCP and Azure charge for data to be moved outside of the region where it is stored. So, for example, if you were to take data stored in us-east-1 on AWS and process it on a service running in eu-west-1, you would incur a data transfer charge. If your data was stored on one platform, and you wanted to transcode on a service on a different platform, your data transfer charge would be even higher. Our assumption in the pricing comparisons is that all storage and services are running on the same platform in the same region.

The next section gives a summary of the pricing comparisons between the services. To ensure accuracy, I checked my computations with each service, so overall cost should be very close to actual. However, prices and pricing schemas change, and cost analysis can be surprisingly complex, so I encourage you to do your own research using this whitepaper as a guide to help you understand the options available in the market.

As you would expect, at large volumes you may be able to negotiate lower pricing with a specific vendor. Since I was not in a position to negotiate pricing, I used published pricing for all services. When vendors offered different pricing schemas, I used the schema most comparable to the other services.

Detailed Cost Analysis

Dolby Hybrik Costs

To calculate Dolby Hybrik costs, I created encoding ladders as specified above and rendered the audio and video in the Hybrik system using spot pricing. Other than two-pass encoding, I left all performance-related options like profile and preset at their default configurations (which was the medium preset for both H.264 and H.265).

As shown in Table 5, the 1080p H264 project took 2.83 hours to compute on c5.4xlarge instances that cost \$0.26/hour on the spot market for a total processing cost of \$0.74. The 4K HEVC project took 35.62 hours of machine time on the same instances for a processing cost of \$9.26/hour. Remember that machine time is different from elapsed time – if 10 machines are working on the same file, then 35 hours of machine time would be 3.5 hours of elapsed time.

Job Type	# Machines	Machine Time (hrs.)	Machine Type	Machine Cost (\$/hr)	Total Cost
H264 HLS (9 video layers)	10	2.83	c5.4xlarge	\$0.26	\$0.74
H265 HLS (12 video layers)	10	35.62	c5.4xlarge	\$0.26	\$9.26

Table 5. Machine time to encode the test project on Hybrik.

In terms of service level, Hybrik could produce over 1,000 hours of H264 output with only 10 cloud instances, which costs \$1,500/month. With HEVC I had to jump to the next service level (20 instances for \$3,000/month) to complete 200 hours of HEVC, which was sufficient for all other encoding levels. To keep things simple, I computed and presented the H.264 and HEVC comparisons separately.

Now let's look at charges for the other services.

AWS Elemental MediaConvert Costs

AVS Elemental MediaConvert is the pay-as-you-go option for accessing the AWS Elemental Technologies encoding stack. There are [two pricing tiers](#), Basic and Professional, with the latter necessary to access two-pass encoding. H.264 pricing for 30fps 2-pass encoding is \$0.021/minute for SD, \$0.042/minute for HD, and \$0.005/minute for audio, producing a cost per hour for H.264 output of \$16.98, compared to Hybrik's processing-only cost of \$0.74 (Table 6).

	Monthly Source Hours						
AWS H.264 Cost	1	10	100	200	300	400	1000
SD cost (5 rungs)	\$6.30	\$63	\$630	\$1,260	\$1,890	\$2,520	\$6,300
HD cost (4 rungs)	\$10.08	\$101	\$1,008	\$2,016	\$3,024	\$4,032	\$10,080
Audio cost (2 rungs)	\$0.36	\$3.6	\$36	\$72	\$108	\$144	\$360
MediaConvert Total	\$17	\$170	\$1,698	\$3,396	\$5,094	\$6,792	\$16,980
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 6. AWS Elemental MediaConvert costs for monthly source hours – H.264.

For 30 fps 2-pass HEVC encoding, AWS Elemental MediaConvert [charges](#) \$0.017/minute for SD, or 8x the cost of H.264, \$0.336/minute for HD, and \$0.672 for 4K, with audio at \$0.005/minute. Table 7 presents the results, showing an HEVC ladder cost of \$207.30/hour compared to Hybrik's processing-only cost of \$9.26.

	Monthly Source Hours						
AWS H.265 Cost	1	10	100	200	300	400	1000
SD cost (5 rungs)	\$50.40	\$504	\$5,040	\$10,080	\$15,120	\$20,160	\$50,400
HD cost (4 rungs)	\$80.64	\$806	\$8,064	\$16,128	\$24,192	\$32,256	\$80,640
4K cost (3 rungs)	\$120.96	\$1,210	\$12,096	\$24,192	\$36,288	\$48,384	\$120,960
Audio cost (2 rungs)	\$0.60	\$6.00	\$60	\$120	\$180	\$240	\$600
MediaConvert Total	\$208	\$2,073	\$20,730	\$41,460	\$62,190	\$82,920	\$207,300
Hybrik Total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 7. AWS Elemental MediaConvert costs for monthly source hours – HEVC.

Microsoft Azure Costs

Microsoft Azure is an integrated cloud encoding/cloud platform with [a standard and premium encoder](#), with the former sufficient for our needs. For H.264 encoding, Azure charges a base price of \$0.015/minute for the standard encoder, with HD priced at 2x and audio at .25x, or \$0.00375/minute. This produces a cost per hour for H.264 output of \$12.15/hour, compared to Hybrik's processing-only cost of \$0.74 (Table 8).

	Monthly Source Hours						
Cost Rollup	1	10	100	200	300	400	1000
SD mins. (5 rungs @ 1x)	\$4.50	\$45	\$450	\$900	\$1,350	\$1,800	\$4,500
HD mins (4 rungs @ 2x)	\$7.20	\$72	\$720	\$1,440	\$2,160	\$2,880	\$7,200
Audio mins. (2 rungs @ .25x)	\$0.45	\$5	\$45	\$90	\$135	\$180	\$450
Azure Total	\$12.15	\$122	\$1,215	\$2,430	\$3,645	\$4,860	\$12,150
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 8. Microsoft Azure costs for monthly source hours – H.264.

For HEVC, Azure offers [three tiers](#), Speed, Balanced, and Quality. I used Quality, which for 30fps video, starts at \$0.081/minute for SD (5.4x the cost of H.264), \$0.161/minute for HD, and \$0.321 for 4K with audio at \$0.00375/minute or .25x. For the HEVC ladder, Azure costs \$121.17/hour compared to Hybrik's processing-only cost of \$9.26 (Table 9).

	Monthly Source Hours						
Azure H.265 Cost	1	10	100	200	300	400	1000
SD mins. (5 rungs @ 1x)	\$24.30	\$243	\$2,430	\$4,860	\$7,290	\$9,720	\$24,300
HD mins. (4 rungs @ 2x)	\$38.64	\$386	\$3,864	\$7,728	\$11,592	\$15,456	\$38,640
4K mins. (3 rungs @ 4x)	\$57.78	\$578	\$5,778	\$11,556	\$17,334	\$23,112	\$57,780
Audio mins. (2 rungs @ .25x)	\$0.45	\$5	\$45	\$90	\$135	\$180	\$450
Azure Total	\$121.17	\$1,212	\$12,117	\$24,234	\$36,351	\$48,468	\$121,170
Hybrik Total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 9. Microsoft Azure costs for monthly source hours – HEVC.

Note that Azure used to charge for Media Reserved Units (MRUs) that were “recommended if your workload requires one or more concurrent tasks to be running.” However, during our price checking Microsoft advised that MRUs were discontinued and now the “encoding system automatically scales up and down based on load.”

Bitmovin

Bitmovin offers two modes of pricing: Software-as-a-Service and deployment within a managed or private cloud. I show SaaS costs here, as Bitmovin does not publish their pricing for a private deployment. Note that with the private deployment model, you pay your own hardware costs, plus a per-minute fee that depends upon volume and encoding type. Still, if you opt for a private deployment, your overall costs should be lower than those shown below.

To compute SaaS costs, I divided Bitmovin’s baseline encoding charge (\$5,499 per year) by the number of included minutes (225,000), which equals about \$0.024/minute, though most larger customers will likely qualify for lower pricing. Like other services, there are multipliers for HD (2X minutes) and UHD (4x minutes). There is also a multiplier depending on the codec used and for two-pass encoding. The Bitmovin comparison H.264 to Dolby Hybrik is shown in Table 10.

	Monthly Source Hours						
Bitmovin H.264 Cost	1	10	100	200	300	400	1000
SD mins.(5 rungs @ 1x)	300	3,000	30,000	60,000	90,000	120,000	300,000
HD mins. (4 rungs @ 2x)	480	4,800	48,000	96,000	144,000	192,000	480,000
Total video minutes	780	7,800	78,000	156,000	234,000	312,000	780,000
2-pass encoding (.25x)	195	1,950	19,500	39,000	58,500	78,000	195,000
Total video minutes	975	9,750	97,500	195,000	292,500	390,000	975,000
Audio mins. (2 @ .25x)	30	300	3,000	6,000	9,000	12,000	30,000
Total minutes	1,005	10,050	100,500	201,000	301,500	402,000	1,005,000
Per-minute charge	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024
Bitmovin Total	\$25	\$246	\$2,456	\$4,912	\$7,369	\$9,825	\$24,562
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 10. Bitmovin costs for monthly source hours – H.264

Regarding our 4K HEVC scenario, Bitmovin charges a 2x premium for HEVC. This means that a 4K HEVC video layer (defined as between 1080 and 2160 vertical resolution) would have a 8X multiplier on total minutes charged. Table 11 shows the results for H.265 encoding.

Cost Rollup	1	10	100	200	300	400	1000
SD mins.(5 rungs @ 1x)	300	3,000	30,000	60,000	90,000	120,000	300,000
HD mins. (4 rungs @ 2x)	480	4,800	48,000	96,000	144,000	192,000	480,000
4K minutes (3 rungs @ 4x)	720	7,200	72,000	144,000	216,000	288,000	720,000
Total video minutes	1,500	15,000	150,000	300,000	450,000	600,000	1,500,000
HEVC Premium (@ 2x)	3,000	30,000	300,000	600,000	900,000	1,200,000	3,000,000
2-pass encoding (.25x)	750	7,500	75,000	150,000	225,000	300,000	750,000
Total video minutes	3,750	37,500	375,000	750,000	1,125,000	1,500,000	3,750,000
Audio mins. (2 @ .25x)	30	300	3,000	6,000	9,000	12,000	30,000
Total minutes	3,780	37,800	378,000	756,000	1,134,000	1,512,000	3,780,000
Per-minute charge	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024	\$0.024
Bitmovin Total	\$92.38	\$924	\$9,238	\$18,477	\$27,715	\$36,953	\$92,383
Hybrik Total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 11. Bitmovin costs for monthly source hours – HEVC

encoding.com

encoding.com has three [pricing](#) models, Public Cloud (On-Demand), Hybrid Cloud, and Reserved Cloud. Public Cloud is the traditional cloud SaaS model where you upload your files to the cloud and process in an encoding.com service center, with charges based upon GB of input/output. With Hybrid Cloud, you run encoding.com's software on your own private cloud, much like Bitmovin's service discussed above. With Reserved Cloud, you pay by the month for a reserved cloud instance that you can run 24/7. Encoding.

The company doesn't publish Reserved Cloud or Hybrid Cloud pricing, and the lowest published price for Public Cloud pricing is \$0.50/GB. I asked about this and heard "the annual commitment will determine the per GB rate. The \$.50 / GB pricing would be if a customer committed to ~250 TBs. On average, our large customers commit to plans that are between 1 Petabyte / year - 20 Petabytes / year so pricing is significantly lower." In our HEVC scenario, throughput reached about 1.3 Petabytes so certainly pricing at that level would be lower.

Table 13 shows encoding.com's Public Cloud pricing for H.264, including a cost per hour for the H.264 output of \$16.66, compared to Hybrik's processing-only cost of \$0.74 (Table 12).

encoding.com H.264 Cost	Monthly Source Hours						
	1	10	100	200	300	400	1000
Input GB	21.97	220	2,197	4,395	6,592	8,789	21,973
Output GB	11.35	114	1,135	2,270	3,406	4,541	11,352
Total bandwidth	33.32	333	3,332	6,665	9,997	13,330	33,325
Encoding.com Total	\$16.66	\$167	\$1,666	\$3,332	\$4,999	\$6,665	\$16,662
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 12. encoding.com costs for monthly source hours – H.264

With the 4K HEVC file, input GB quadruples to 87.89 GB, which boosts overall pricing considerably (Table 15) though it is still less expensive than several other services that charge multiples for 4K and HEVC encoding. For our HEVC ladder, encoding.com costs \$56.32/hour compared to Hybrik's processing-only cost of \$9.26/hour (Table 13).

	Monthly Source Hours						
encoding.com H.265 Cost	1	10	100	200	300	400	1000
Input GB	87.89	879	8,789	17,578	26,367	35,156	87,891
Output GB	24.76	227.04	2,270	4,541	6,811	9,082	22,704
Total bandwidth	112.65	1,106	11,059	22,119	33,178	44,238	110,595
Encoding.com Total	\$56.32	\$553	\$5,530	\$11,059	\$16,589	\$22,119	\$55,297
Hybrik Total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 13. encoding.com costs for monthly source hours – HEVC

Telestream Cloud

Telestream Cloud [charges](#) \$0.01/per-minute, with adjustments for resolution, frame rate, and codec. Additionally, audio is charged at .5x minutes, or \$0.005/minute. For H.264, there's a 2x adjustment for HD video. This produces a cost per hour for the H.264 output of \$8.40, compared to Hybrik's processing-only cost of \$0.74 (Table 14).

	Monthly Source Hours						
Telestream H.264 Cost	1	10	100	200	300	400	1000
SD mins. (5 rungs)	300	3,000	30,000	60,000	90,000	120,000	300,000
HD mins. (4 rungs @ 2x)	480	4,800	48,000	96,000	144,000	192,000	480,000
Total video minutes	780	7,800	78,000	156,000	234,000	312,000	780,000
Audio mins. (2 rungs @ .5x)	60	600	6,000	12,000	18,000	24,000	60,000
Total minutes	840	8,400	84,000	168,000	252,000	336,000	840,000
Per-minute charge	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
Telestream Cloud Total	\$8.40	\$84	\$840	\$1,680	\$2,520	\$3,360	\$8,400
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 14. Telestream costs for monthly source hours – H.264

Telestream charges 4x minutes for HEVC and another 4x minutes for 4K video, producing an HEVC cost of \$60.60/hour compared to Hybrik's processing-only cost of \$9.26 (Table 15).

	Monthly Source Hours						
Cost Rollup	1	10	100	200	300	400	1000
SD mins. (5 rungs @ 4x)	1,200	12,000	120,000	240,000	360,000	480,000	1,200,000
HD mins. (4 rungs @ 8x)	1,920	19,200	192,000	384,000	576,000	768,000	1,920,000
4K mins (3 rungs @ 16x)	2,880	28,800	288,000	576,000	864,000	1,152,000	2,880,000
Total video minutes	6,000	60,000	600,000	1,200,000	1,800,000	2,400,000	6,000,000
Audio mins. (2 rungs @ .5x)	60	600	6,000	12,000	18,000	24,000	60,000
Total minutes	6,060	60,600	606,000	1,212,000	1,818,000	2,424,000	6,060,000
Per-minute charge	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
Telestream Cloud Total	\$60.60	\$606	\$6,060	\$12,120	\$18,180	\$24,240	\$60,600
Hybrik Total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 15. Telestream costs for monthly source hours – HEVC.

Zencoder

Zencoder [prices](#) on a per-minute basis with the tiered pricing based on the number of minutes per month. With no commitment, the cost is \$0.05 per minute. With a \$2000/month commitment, the cost can be as low as \$0.02 per minute.

Each minute of SD H.264 output counts as 1 regular minute, with HD video at 2x minutes, UHD at 4x minutes, and audio at .25x minutes. For the H.264 project, this yields the results shown in Table 16.

	Monthly Source Hours						
Zencoder H.264 Costs	1	10	100	200	300	400	1000
SD mins. (5 runs)	300	3,000	30,000	60,000	90,000	120,000	300,000
HD mins. (4 runs @ 2x)	480	4,800	48,000	96,000	144,000	192,000	480,000
Total video minutes	780	7,800	78,000	156,000	234,000	312,000	780,000
Audio mins. (2 runs @ .25x)	30	300	3,000	6,000	9,000	12,000	30,000
Total minutes	810	8,100	81,000	162,000	243,000	324,000	810,000
Monthly commitment	\$40	\$300	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
Included minutes	1,000	10,000	100,000	100,000	100,000	100,000	100,000
Overage	-190	-1,900	-19,000	62,000	143,000	224,000	710,000
Per-minute Charge	\$0.040	\$0.030	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020
Overage charge	\$0	\$0	\$0	\$1,240	\$2,860	\$4,480	\$14,200
Zencoder Total	\$40	\$300	\$2,000	\$3,240	\$4,860	\$6,480	\$16,200
Hybrik Total	\$1,501	\$1,507	\$1,574	\$1,648	\$1,722	\$1,796	\$2,240

Table 16. Zencoder costs for monthly source hours – H.264

Zencoder doesn't charge extra for HEVC; according to my contact at Brightcove, "This is one way we hope we can motivate our customers to migrate to use more modern codec technologies. This also enables us to generate optimal multi-codec profiles without transcoding cost being a factor that influences it." You see the HEVC cost rollup for Zencoder in Table 17.

	Monthly Source Hours						
Zencoder H265 Costs	1	10	100	200	300	400	1000
SD mins. (5 rungs)	300	3,000	30,000	60,000	90,000	120,000	300,000
HD mins. (4 rungs @ 2x)	480	4,800	48,000	96,000	144,000	192,000	480,000
4K (3 rungs at 4x minutes)	720	7,200	72,000	144,000	216,000	288,000	720,000
Total video minutes	1,500	15,000	150,000	300,000	450,000	600,000	1,500,000
Audio mins. (2 rungs @ .25x)	30	300	3,000	6,000	9,000	12,000	30,000
Total minutes	1,530	15,300	153,000	306,000	459,000	612,000	1,530,000
Monthly	\$40	\$300	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
Included minutes	1,000	10,000	100,000	100,000	100,000	100,000	100,000
Overage	530	5,300	53,000	206,000	359,000	512,000	1,430,000
Charge	\$0.040	\$0.030	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020
Overage charge	\$21.20	\$159	\$1,060	\$4,120	\$7,180	\$10,240	\$28,600
Zencoder total	\$61.20	\$459	\$3,060	\$6,120	\$9,180	\$12,240	\$30,600
Hybrik total	\$1,509	\$1,593	\$2,426	\$4,852	\$5,778	\$6,704	\$16,760

Table 17. Zencoder costs for monthly source hours – HEVC

Analysis

At the very least, the foregoing should inform you that there's great variability in pricing for cloud encoding. That stated, for most high-volume streaming producers, encoding is not yet a commodity, as most companies require features, workflows, and outputs that not all vendors support.

Still, when multiple vendors check all the required boxes, price and quality become critical differentiators. Remember that you really can't assess price without considering output quality, so to get to an apples-to-apples pricing comparison, you'll have to roll up your sleeves and perform test encodes on all services that make your short list.