

Service Name

AWS Elemental MediaConvert

Service Overview

AWS Elemental MediaConvert is a file-based video processing service designed for content owners and distributors with media libraries of any size. It provides scalable video transcoding that converts input video files into output files with various formats and resolutions for delivery to multiple devices. The service offers broadcast-grade features including professional codecs supporting increased bit depth and HDR content, static graphic overlays, advanced audio processing, digital rights management (DRM), and closed captioning support. MediaConvert enables premium content experiences through adaptive bitrate (ABR) packaging output formats for delivering high-quality content from various sources to primary and multiscreen devices.

Key Use Cases

- **Video-on-demand content creation:** Converting media files for broadcast and multiscreen delivery platforms with adaptive streaming capabilities
- **Content format conversion:** Transcoding media files for compatibility, compression, and distribution across different devices and platforms
- **Broadcast-grade processing:** Creating premium content with professional codecs, HDR support, advanced audio, and closed captioning for television and streaming services

Features

- **Professional Broadcast Codecs:** Support for MPEG-2, AVC, AV1, HEVC with 10-bit 4:2:2 color sampling and HDR content creation
- **Adaptive Bitrate Packaging:** CMAF, HLS, DASH, and MSS output formats with automated ABR configuration
- **Advanced Audio Features:** Multi-language audio, audio loudness normalization, Dolby Atmos support
- **Content Protection:** Digital rights management (DRM) integration and encryption capabilities
- **Graphics and Overlays:** Static graphic overlays, image insertion, motion graphics, video overlays
- **Quality Features:** Quality-defined variable bitrate (QVBR), HDR processing including Dolby Vision

Value Proposition

MediaConvert eliminates the complexity of building and operating video processing infrastructure while providing broadcast-grade capabilities that other cloud encoding services often lack. It offers automatic scalability with elastic resource provisioning, pay-as-you-go pricing with tiered volume discounts, and built-in redundancy across multiple Availability Zones:

- The service provides comprehensive broadcast-quality features including static graphic overlays, audio loudness normalization, SCTE-35 ad insertion support, DRM integration, and extensive closed captioning capabilities
- Customers benefit from short turnaround times even with varying workloads, integrated billing and monitoring with other AWS services, and access to the latest codecs and processing technologies without infrastructure management overhead

Service Integration

MediaConvert integrates seamlessly with Amazon S3 for input and output file storage, Amazon CloudFront for global content delivery and CDN services, and AWS Lambda for creating automated watch folders and workflow orchestration. It works with Amazon EventBridge for job status notifications and workflow automation, AWS Step Functions for complex video processing workflows, and Amazon CloudWatch for monitoring and logging encoding metrics:

- The service supports IAM for access control and permissions management, integrates with AWS Systems Manager for resource monitoring, and can be used with Amazon SNS for notifications
- MediaConvert also works with AWS Elemental MediaPackage for content preparation and delivery, and supports integration with third-party DRM providers for content protection

Onboarding and Offboarding

Customers get started by ensuring their input files are accessible in Amazon S3, HTTP, or HTTPS locations and setting up appropriate IAM permissions for MediaConvert to access these resources. They can create their first transcoding job through the MediaConvert console by specifying input files and output settings, or use the API/SDK for programmatic access:

- The console provides system presets for common outputs, while advanced users can create custom presets and job templates
- MediaConvert requires jobs and file storage to be in the same AWS Region
- Customers can track job status through EventBridge notifications and manage resources using queues for parallel processing optimization

Getting Started Guide: <https://docs.aws.amazon.com/mediaconvert/latest/ug/getting-started.html>

Data Removal

MediaConvert processes files stored in customer-controlled Amazon S3 buckets, so data removal involves deleting input and output files from S3 storage locations. Customers retain full control over their media files and can delete them at any time to avoid ongoing storage charges. The service itself does not store customer content permanently - it only processes files during transcoding jobs and outputs results to specified S3 locations.

Backup/Restore and Disaster Recovery

MediaConvert runs on redundant infrastructure distributed across physically separated Availability Zones with automatic health monitoring and component replacement without job disruption. The service provides built-in redundancy and fault tolerance, automatically replacing degraded components. However, backup of source media files and outputs relies on customer-managed Amazon S3 storage with cross-region replication and versioning capabilities.

Backup Capabilities

MediaConvert does not provide native backup capabilities as it is a processing service. Backup depends on underlying Amazon S3 storage where customers store input and output files. Customers can enable S3 versioning, cross-region replication, and use AWS Backup for S3 bucket protection to ensure media file availability.

Disaster Recovery

MediaConvert provides high availability through multi-AZ infrastructure with automatic failover, but does not directly integrate with AWS Elastic Disaster Recovery. Disaster recovery relies on S3's cross-region replication for source files and the ability to recreate transcoding jobs in different regions using job templates and presets.

Recovery Objectives

MediaConvert helps achieve low RTO through its multi-AZ redundant infrastructure that automatically recovers from component failures without job disruption. For RPO objectives, customers rely on S3's versioning and cross-region replication capabilities for source media protection, enabling rapid job recreation in alternate regions when needed.

Service Constraints

Service Quotas: <https://docs.aws.amazon.com/general/latest/gr/mediaconvert.html>

FAQ: <https://aws.amazon.com/mediaconvert/faqs/>

Technical Requirements

Service Documentation: <https://docs.aws.amazon.com/mediaconvert/latest/ug/what-is.html>

User Guide: <https://docs.aws.amazon.com/mediaconvert/latest/ug/>

API Reference: <https://docs.aws.amazon.com/mediaconvert/latest/apireference/>

Pricing Overview

Please see the AWS UK G Cloud 15 Pricing Document accompanying this service in the Digital Marketplace.

Public Pricing: <https://aws.amazon.com/mediaconvert/pricing/>

Cost Optimization

MediaConvert offers tiered volume-based pricing that automatically provides discounts as usage increases monthly, with savings up to 19% for large archives. The service supports Quality-Defined Variable Bitrate (QVBR) encoding to reduce file sizes while maintaining quality, and HEVC encoding for significant file size reduction:

- Reserved pricing is available for predictable workloads with 12-month commitments offering fixed monthly rates
- Accelerated transcoding completes jobs up to 25 times faster for time-sensitive workflows
- Two-tier pricing structure allows choosing Basic tier for simple web distribution or Professional tier only when advanced features are needed

Savings Considerations

Primary cost savings come from eliminating on-premises infrastructure investments and maintenance costs, with pay-as-you-go pricing ensuring customers only pay for actual usage. Automated tiered pricing provides volume discounts without upfront commitments, while file size reduction through QVBR and HEVC encoding can save substantial storage and CDN delivery costs:

- Large content producers can save 18.5% on monthly transcoding through volume discounts
- Organizations with 300 TB archives can save over \$140,000 annually through optimized transcoding and file size reduction
- The elastic scaling eliminates need for capacity planning and reduces turnaround times during peak workloads