# Blazar

Advanced Transcoding Platform

## Just-in-time transcoding reduces overhead, increases speed, saves storage.


*Depending on configuration a 2 RU chassis may be provided.*

The igolgi Blazar is an exceptional product designed to streamline workflows for any facility that requires traditional bulk transcoding at very high speeds, just-in-time transcoding for generation of a single or multiple profile(s), and/or live dynamic ad insertion.  Blazar can be configured to support generating any ABR profile on-the-fly and Blazar scales from low volume to high volume easily. Blazar saves on storage and bandwidth especially for SVOD and cloud DVR applications.

Blazar is fast!  Optionally configurable from 10 to 100x real-time transcode speeds means a two-hour movie or program can be transcoded in 1 minute and generate multiple profiles and pre-segmented transcoder outputs ready for packaging or delivery. Only the highest profile in the ABR ladder needs to be stored, then any lower profile can be regenerated on-demand using Blazar.  JIT transcoding can be coupled with JIT packaging and digital rights management (DRM) for additional flexibility.

Scalable architecture enables flexible file workflows for very fast transcodes. 1RU CPU/GPU engine is capable of up to 20x real time speeds. Proprietary software architecture allows multiple 1RU engines to increase linear scaleup of processing speeds of up to 100x and beyond.

The Blazar platform is part of the of igolgi family of products offering exceptional video processing and advanced software algorithms for the highest quality and fastest throughput. Igolgi products are all simple to set up, monitor, and use, and offer a variety of hardware and software configurations appropriate for any application.

Our products are designed, manufactured, and tested in the United States with USA-based support.

Our value proposition is simple: the highest quality, most flexible products at the best price point.

# Blazar

## Key Features

### Smart packaging

Each 1 RU chassis enables 20x real-time transcoding. Unique software enables 5 chassis (only 5 RU) to transcode material 100x faster than real-time.

### Advanced software and processing

Blazar uses igolgi's patent pending software layer combined with a unique CPU/GPU processing engine for exceptional speed and accuracy.

### Easy integration

RESTful API's assure integration with many products and platforms.

### Just-in-time (JIT) transcoding

No need to transcode multiple profiles in advance.  Create only the highest bandwidth profile and let Blazar create all lower bandwidth profiles as requested, on-the-fly.

### Saves bandwidth

By storing only the highest bandwidth profile, Blazar reduces storage required by 50-65%

### Amazingly fast bulk transcoding

Transcode a 2-hour HD movie in 1 minute (with optional engines) and generate multiple profiles and pre-segmented transcoder outputs ready for packaging or delivery. For television syndicated programs, all segments, breaks, and time code remain intact.

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## Q: Why Blazar?

### What is the advantage of the Blazar platform?

The Blazar platform enables much faster than real-time transcoding. A vast majority of profile requests in OTT systems are for the highest profile outputs. However, in most systems, four to eight lower profiles are created and carried around for distribution. With Blazar those lower profiles are created only when needed, saving valuable bandwidth and storage.

### How does Blazar accomplish such high performance?

Blazar uses the power of the latest GPU technology and an efficient and proprietary software layer that manages the GPU resources very efficiently.

### What is the "secret sauce" in Blazar?

The secret sauce is the software layer that is contained in the Orchestrator. This component manages the workflows through the GPUs and very efficiently manages the additional GPU hardware resources (Workers) to accomplish on-the-fly transcode performance at blazing speeds.

### How does Blazar scale?

Blazar scales without limit by just adding more GPU resources. The limit of performance is the number of Worker resources controlled by the Orchestrator until the limit of input stream capacity is reached.

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# Blazar Use Cases Descrip-

## Dense Live and File Transcoding

- The dense multi-GPU based Blazar platform is very efficient for live and file transcoding applications. Compared to a traditional CPU based architecture, Blazar is up to four times as dense for the same performance metrics.
- Blazar supports H.264 and HEVC outputs in the transcoder (this can be set up on a program by program basis) much like the traditional CPU based systems
- Blazar provides all the I/O flexibility of the CPU based systems and the same convenient Web based user interface for setup and operations

## On the Fly Lower ABR Profile Generation

- In most IP based Adaptive Bit Rate (ABR) delivery systems, multiple profiles of the content are created (either for live, DVR or VOD applications)
- In practice, most clients request the highest profile most of the time. Creating/storing all the profiles for very infrequent use is a waste of compute and storage resources
- Blazar offers a solution to recreate all the lower profile streams on-the-fly and on-demand with the highest profile as the starting point. The system is architected to keep up with the real-time delivery schedule. This saves on storage and initial processing to create and store all lower level profiles for all content.

## Live-Ad Insertion

- lLive dynamic Ad-insertion is a challenging problem to accomplish in real-time situations. Typically, an ad needs to be downloaded, transcoded into ABR profiles and inserted into the outbound ABR workflow in a matter of a few seconds.
- Blazar can accomplish dynamic ad insertion in real-time for both H.264 and HEVC ads
- The Blazar Live Ad-Insertion application can be invoked by external applications through a convenient API call or can be integrated into third party applications

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# Specifications

## Video

| | |
|---|---|
| Video Compression Input | MPEG-2 simple, main, and main profile @ high level<br>H.264 Baseline, Main, High , High 10 , High 422<br>HEVC/H.265 Main, Main 10 , Main 422 10 |
| Video Compression Output | MPEG-2 simple, main, and main profile @ high level (HD only)<br>H.264 Baseline, Main, High , High 10 , High 422<br>HEVC/H.265 Main, Main 10 , Main 422 10 |
| Video Processing | Slate Insertion<br>Progressive, interlace<br>Resolution Cropping, scaling and upconversion or downconversion<br>De-interlacing<br>MCTF Noise Filtering with strength options<br>Ultra Low Latency Mode<br>4K HDR HLG BT-2020<br>50 to 60 Hz, 60 to 50 HZ format conversion |

## Resolutions and Frame Rates

| | |
|---|---|
| IP Input Formats<br><br>Flexible - QCIF to 4Kp60<br><br>Common Resolutions: | 240p, 288p,480p,576p @ 10,12.5,15,20,23.976,29.97,30,50 and 59.94 and 60 Hz<br>576i and 480i x 720, 544 and 352 pixels @ 23.976, 24, 25, 29.97 and 30 Hz<br>1080i x 1920, 1440, 1280 and 960 pixels @ 23.976, 24, 25, 29.97 and 30 Hz<br>720p x 1280, 960 and 640 pixels @ 23.976, 24,29.97,30, 50, 59.94, and 60 Hz<br>1080p x 1920,1440,1280, and 960 pixels @ 23.976, 24,29.97,30, 50, 59.94, 60 Hz<br>2160p x 3840, 4096 pixels @ 23.976, 24,29.97,30, 50, 59.94, and 60 Hz |

## Resolutions and Frame Rates Cont.

| | |
|---|---|
| SDI Input Formats | SD : 625i50 (PAL), 525i59.94 (NTSC)<br>HD 1280x720 : 720p60, 720p59.94, 720p50, 720p30, 720p29.97, 720p25, 720p24 ,720p23.98<br>HD 1920x1080 : 1080i60, 1080i59.94, 1080i50, 1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080psf30, 1080psf29.97, 1080psf25, 1080psf24, 1080psf23.98, 1080p60 A/B, 1080p59.94 A/B, 1080p50 A/B, 1080p60, 1080p59.94, 1080p50.<br>1080psf29.97, 1080psf25, 1080psf24, 1080psf23.98, 1080p60, 1080p59.94,1080p50, 1080p48, 1080p47.952<br>4K 3840x2160, in 8 or 10-bit, 2 Sample Interleave or Square Division : 2160p60,<br>2160p59.94, 2160p50, 2160p30, 2160p29.97, 2160p25, 2160p24, 2160p23.98 |

## Audio

| | |
|---|---|
| Audio Compression | Multiple programs per channel, configurable SDI audio slots<br>MPEG-1 layer 2<br>MPEG-2 layer 3 (mp3)<br>AAC-LC, AAC-HEv1, AAC-HEv2<br>Stereo and 5.1<br>PCM<br>Up to 8 stereo pairs, or mix of stereo and 5.1 programmable SDI slots |

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# Specifications Continued

## Transport Processing Inputs

| | |
|---|---|
| MPEG2-TS over UDP | Unicast or multicast, SPTS or MPTS<br>IP or ASI input, VSB, satellite, or QAM<br>Redundant IP input |
| HLS | Single Profile HLS input |
| Transport Protocal | RTP/RTSP |
| Scrambling | BISS 0/1/E decryption per PID, BISS -CA |
| FEC | SRT input decode<br>CoPv3 FEC<br>ZIXI |

## Transport Processing Outputs

| | |
|---|---|
| MPEG2-TS over UDP | Unicast or multicast, SPTS or MPTS<br>IP and simultaneous ASI output<br>Redundant IP output |
| SDI | 3G-SDI, 12G-SDI inputs for SD, HD, and 4K content types |
| MPEG DASH | DASH Packaged Output |
| STLTP- ATSC 3.0 Broadcast Gateway | A.324 Compliant Output to Feed Single or SFN Transmitters |

## Ancillary Data

EIA608 & EIA708 closed captioning

SCTE35 passthrough (with IP input)

Embedded on SDI

Embedded timecode on SDI

Digital Ad Insertion

DRM integration

CDN integration and redundant publishing points

## Configuration and Management

Web Based User Interface

IPMI hardware management

SNMP Mibs, downloadable from GUI

Channel configuration backup and restore

## Physical

| | |
|---|---|
| Dimensions | 1U standard chassis : 1.7 x 17.2 x 28.5 28 pounds<br>1U short depth chassis : 1.7 x 17.2 x 16.9 15 pounds<br>1U Dense GPU Chassis : 1.7 x 17.2 x 36 30 pounds<br>2U Dense IO Chassis : 3.4 x 17.2 x 26 30 pounds |
| Power | 400 to 700 Watt power supply depending on chassis |
| Environmental Spec. | Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F)<br>Non-operating Temperature: -40°C to 60°C (-40°F to 140°F)<br>Operating Relative Humidity: 8% to 90% (non-condensing)<br>Non-operating Relative Humidity: 5% to 95% (non-condensing)<br>Cooling front to back |

# Our Mission

First and foremost, igolgi is an engineering and development company. Our engineering staff has years of experience in every type of compression and encoding technology, and we are experts in software control and interface. Our principal engineers hold over 200 patents in compression related projects. For over a decade we have provided innovative, flexible, and high-quality solutions for the broadcast, cable, LPTV and government markets.

igolgi is an American company - all development, engineering, production, and support is based in the USA.

As ATSC 3.0, IP, and compression technologies evolve, igolgi is a partner you can count on to ensure every aspect of your design and implementation meets today's needs and is ready for future growth and expansion.

This is our "sweet spot". Let us help you.

Call or email us for a no-obligation discussion of your current and future needs.

## Our Promise

**Highest Quality**.
Our advanced Codecs and optimized software algorithms assure the best quality in any resolution.

**Simplest to Use.**
Our enhanced user interface makes set up, monitoring, and changes fast and simple.

**Most Configurable.**
SD. HD-SDI, ASI, IP are all configurable for maximum flexibility.

**Easiest Upgrade.**
Update the software and change out hardware (if required) to keep you future proofed.

**Superior Support.**
Our support is USA-based, and our PremierPlus ® gives you 24x7x365 expanded support and service.

**Best Value.**
igolgi has it all: technology, flexibility, expandability, and support... at a price that will surprise and please you.

## Stay Connected


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