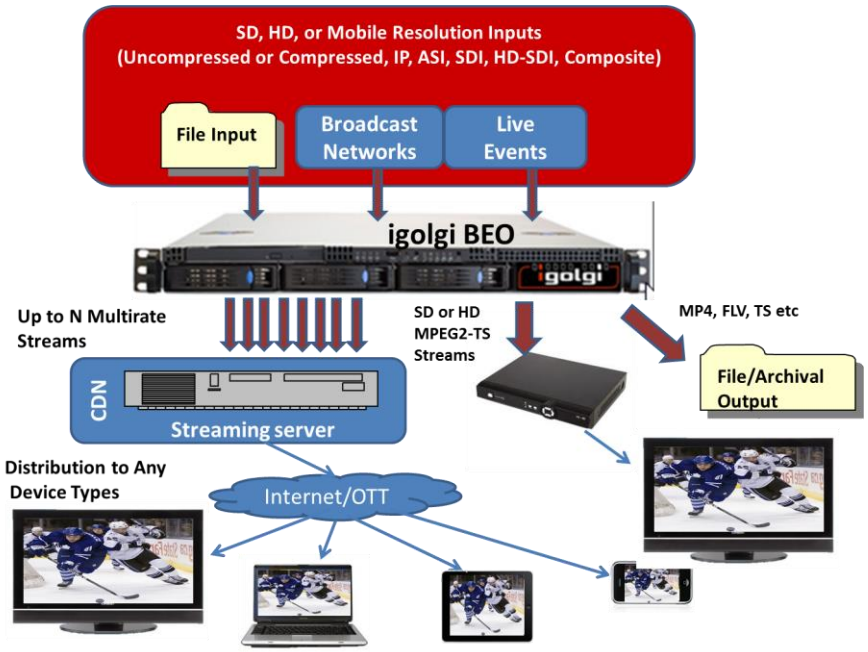
BEO – Live & File SD/HD Encoder/Transcoder
Adaptive Streaming, Internet Distribution, Archival/VOD



To transfer video content from any source and onto the Internet or for over the top(OTT) delivery, there is no simpler, higher video quality solution than the igolgi BEO product family.

BEO provides a compact solution that sets up in minutes for any *live* or *file* inputs and *live adaptive streaming* or *file* outputs.

igolgi's advanced H.264/HEVC encoding technology provides professional quality video with 2-pass encoding algorithms creating outstanding video at the lowest possible bit rates, saving bandwidth and cost for CDN hosting and distribution.

A convenient Web interface with a very rich and easy to navigate graphical user interface together with diagnostic and maintenance tools makes the BEO platform easy to set up and manage

KEY Features

- Uncompressed or compressed *file* or *live streaming* inputs
- Inputs: 8-VSB, ASI, IP, HD-SDI, HDMI, HLS, RTMP
- SD and HD Formats on inputs and adaptive multi-stream outputs
- H.264/HEVC full two-pass encoding
- Super Low Delay mode supported
- DASH Streaming
- Apple HTTP Dynamic Streaming
- Microsoft Smooth Streaming
- Native synchronized MPEG2-TS outputs
- Compatible with Wowza Media Server, MSFT IIS, and Akamai Compliant
- *Simultaneous* Streaming and file archival in all modes
- Multi-Resolution, multi-frame rate support
- Multi-channel Audio support
- MCTF de-interlacing for highest video quality with interlaced inputs

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BEO SPECIFICATIONS:

Compression Standards

Video

MPEG-2
Simple, Main, and 422P Profile
up to High Level

MPEG-4 AVC/H.264
Baseline, Main, and High Profile
Up to Level 4.2 HD

HEVC/H.265 Main, upto Level4

Audio

Multiple programs per channel
MPEG-1 layer 2
MPEG-2 layer 3 (mp3)
MPEG2/MPEG-4, AAC-LC, AAC-HE
Dolby Digital E, AC-3 and pass through
Sampling Frequency: 32, 44.1, 48 KHz

Resolutions and Frame rates

Flexible – QCIF to HD 1080p60
Mix and match resolutions, frame rates and bit rates – very flexible output configurations
Common Resolutions :

576i and 480i x 720, 544 and 352 pixels @ 23.976, 25, 29.97 and 30 Hz
1080i x 1920, 1440, 1280 and 960 pixels @ 23.976, 25, 29.97 and 30 Hz
240p, 288p,480p,576p @ 10,12.5,15,20,23.976,30,50 and 59.94 and 60 Hz
720p x 1280, 960 and 640 pixels @ 10, 12.5,15, 24, 30, 50 and 60 Hz
1080p x 1920,1440,1280, and 960 pixels @ 10,12.5,15, 23.976, 50, 59.94, and 60 Hz (1080p60 is upgrade option)

Programmable to arbitrary output resolutions and frame rates

Optional Processing

Format Conversion
PAL/NTSC to NTSC/PAL
50i/25p to/from 60i/30p
50p to/from 60p
Cropping/Scaling (manual or AFD)
Single in – multi-out(e.g. PIP)
Noise Filtering
0 to 24 hour delay inserter(option)
COPv3 FEC Decode/Encode
Audio Level Control

Transcoding

Full decode/full re-encode mode
Scene Change Detection and I frame insertion
Fixed and Dynamic GOP Structures

Rate Control

CBR, VBR, Capped VBR
Single and Multi-pass modes

Adaptive Multi-Stream Transport

DASH Support
Apple - HTTP Multi-rate streaming with TS segmenting
Microsoft Silverlight Multi-rate Streaming
Synchronized native MPEG2-TS multi-rate streaming

File I/O (option)

Inputs: MPEG2-TS, MP4, FLV
Outputs: MPEG2-TS, MP4
Simultaneous streaming and file creating for archival modes

Input/Output Bitstream Formats

MPEG2-TS/HLS/RTMP over UDP/IP
RTP/UDP/IP
MPEG2-TS/RTP/UDP/IP
MPEG-TS over ASI

Input-Output Interfaces

IP – Quad Gigabit Ethernet ports per node
SDI, HDMI and ASI inputs (option)
VSB/ClearQAM inputs(option)
Analog input (option)
ASI outputs (option)

Configuration and Management

Embedded web-server interface
SNMP Monitoring and Control

Xeon Platforms

Xeon 55XX, Xeon 56XX, E3-26xx, E3-12xx Blades, 1RU, 2RU, 3RU, 6RU with redundant power. Up to 600 SD Transcodes OR 196 HD transcodes or 10 Gpixels/sec processing on 6RU platform

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BEO PLATFORM: AVAILABLE CONFIGURATIONS

BEO configurations are characterized in terms of CPUs utilized in the server platforms. Given the vast number of possible configurations, performance is characterized in terms of a common figure of merit on each platform. This is based on the output Mpixels/sec delivered. The Mpixel calculation for each video is based on the resolution of the video times the frame rate for all the adaptive streams created.

Example :
Input Video HD MPEG2. Output H.264 Main Profile: 4 profiles: 1280x720@30fps, 960x540@30fps, , 640x480@30 fps and 320x240@30fps. Total Pixel count = 54.72 Mpixels/sec.

The table below characterizes some popular platforms deployed with the the BEO Application

CPU for Server Configuration	Single Node Mpixel Capacity	Configurations	Total Platform Capacity***
Dual Xeon 5645	140 Mpixels/sec	1U, 1 node	125 Mpixels/sec
Dual Xeon 5645	140 Mpixels/sec	2U, 2 node	280 Mpixels/sec
Dual Xeon 5645	140 Mpixels/sec	2U, 4 node	560 Mpixels/sec
Dual Xeon E3-2630v2	155 Mpixels/sec	1U, 1 node	155 Mpixels/sec
Dual Xeon E3-2630v2	155 Mpixels/sec	2U, 2 node	310 Mpixels/sec
Dual Xeon E3-2630v2	155 Mpixels/sec	2U, 4 node	620 Mpixels/sec
Single Xeon E3-1270	150 Mpixels/sec	1U, 1 node	125 Mpixels/sec
MicroCloud Xeon E3-1270	150 Mpixels/sec	3U, 12 node	2000 Mpixels/sec
MicroCloud Xeon E3-1270	150 Mpixels/sec	3U, 24 node	4000 Mpixels/sec
Dual Xeon E5-2630v3	320Mpixels/sec	1U, 1 node	320 Mpixels/sec
Dual Xeon E5-2630v3	320 Mpixels/sec	2U, 2 node	640 Mpixels/sec
Dual Xeon E5-2630v3	320 Mpixels/sec	2U, 4 node	1280 Mpixels/sec
Dual Xeon E5-2680v3	600 Mpixels/sec	1U, 1 Node	600 Mpixels/sec
Dual Xeon E5-2680v3	600 Mpixels/sec	2U, 4 Node	2400 Mpixels/sec
Dual Xeon E5-2630v4*	375 Mpixels/sec	1U, 1 Node	375 Mpixels/sec
Dual Xeon E5-2630v4*	375 Mpixels/sec	2U, 2 Node	750 Mpixels/sec
Dual Xeon E5-2630v4*	375 Mpixels/sec	2U, 4 Node	1500 Mpixels/sec
Dual Xeon E5-2680v4*	490 Mpixels/sec	2U, 4 Node	1960 Mpixels/sec
Dual Xeon E5-2690v4*	530 Mpixels/sec	2U, 4 Node	2120 Mpixels/sec

*June 2016 Releases
Please note that all 56xx, 26xx and 12xx, 16xx and Intel Xeon Scalable Platform series can be deployed. Please contact us for specific CPU performance in that entire offering.

For HEVC benchmarks, please contact us.

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