II IP/IP: TELCO

Telco Quality, Highly Reliable, 1 RU, 19 Inch Wide, 14 Core Intel® Xeon® Based Real Time, Multi Definition, Multichannel IP Transcoder and or Streamer (up to 1080p/i), with Ability to Transcode 40 SD Streams from MPEG-2 to H.264 or Optional H.265, or H.264 to MPEG-2. It Boots Quickly from Flash Drive and Remembers all Settings. Easy to Use GUI Allows Full Config of Each Stream and via SNMP. Can Report its Status to Remote Network Operations. Typical Real Time Transcodes Benchmarks Include 40 SD Streams, or 15 Each 720p60 Streams, or 10 Each 1080p/i Streams. Supports Flash, HLS, RTMP, HTTP, and Live Streaming and Works Well with Atlas™, Wowza®, and Adobe® Flash® Servers. Ideal Device for Creating Low, Medium, and High Bit Rate Streams Inside ISP's and CDN's. SDK Available for CDN's Who Wish to Offer Transcode Management via "Their" Application. Supports 50 Simultaneous HLS Users. With Optional Atlas™ Add-on, Supports 500 RTMP, DASH, and/or HLS Users Natively.

Features

- Input or output format can be MPEG-2, H.264, optional H.265, or a mixture, with most popular Wrappers and Containers
- Can sit in the cloud as a Cloud Encoder
- Supports HLS (adaptive) for output to mobile devices
- Input: IP (H.264, MPEG-2, VC-1, or optional H.265)
- Supports NewTek™ NDI® input
- Supports IP content protection with rotating Key Servers like Verimatrix® VCAS™, Widevine, etc. via OPT
- IP output protocols: UDP, RTP, RTMP (Open Flash), HTTP, with DLNA support
- Supports logo insertion, text overlay, and SCTE 35 compliant cue tone insertion ("ad markers") on outputs
- Supports 50 simultaneous HLS users. Optional built-in server supports 1,000+ simultaneous HLS, DASH, and/or RTMP users natively (without Media Servers).
- Transcoding bit rates: .1 to 15 Mbps with 4:2:0 or optional 4:2:2
- Resolutions: qHD, H.264up, SQVGA, QCIF, QVGA, CIF, or any custom size up to 1080p/i. Also supports all computer resolutions.
- Transcodes up to 15 720p60 HD streams, or 10 1080i/p HD streams, or 40 SD streams from MPEG-2 to H.264, or vice-versa
- Optional H.265 transcodes are up to 4 720p HD streams, or 2 1080i/p HD streams, or 16 SD streams from MPEG-2 or H.264 to H.265, or vice-versa
- Creates simultaneous High, Medium, and Low bitrate streams
- Able to upconvert incoming SD streams to HD, and scale down
- SNMP, REST, SOAP support for remote management and monitoring
- Support for Variable Bit Rate (VBR) encoding maximizes adaptive streaming video quality and bandwidth efficiency
- Tested to work with Atlas™, Wowza®, and Adobe® Flash® media servers
- Tested compatible with major brands of IP devices including Amino™, Roku®, Telergy, Android™, and Apple iPad® and iPhone®
- Audio support: AAC, Embedded pass-through, MPEG-1 Layer II, optional MP3, and/or optional “SurCode for Dolby Digital” AC-3
- Settings are remembered when power cycled
- Based on embedded Linux® (via flashdisk)
- Remote GUI includes some scheduling
- Supports Reliable Scrambling via Rotating Key Encryption or classical AES and DES standards
- Supports 3G mobile network and Internet network, including 3GPP v4, 5, 6 and 3GPP2
- Now! QUALYS certified to Level 2 for Critical Vulnerabilities like Open Ports, Tracking applications with COBIT, FISMA, HIPAA, NERC, PCI DSS, SANS, SCAP compliance
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Sample of GUIs

Applications

- IPTV Unicasting, Multicasting, Streaming
- OTT and Mobile
- Replicating single streams into Low, Medium, and High bit rates
- Telco TV
- Hotels, Cruise Lines, Universities, Resorts
- Rendering and Encoding Farms
- Digital Media Distribution

Inputs/Outputs

- PS 1
- PS 2
- IP
- WAN 2
- LAN 2
- Management (Either can be used for IP Input or Output)

Reliability Points

- No hard drives
- Lots of spare fans
- Remote MIBS
- Server Class MB
- Quick swap redundant power supply
- Boots up in 40 seconds
- Supermicro IPMI management

CDNs Tested With:

1. Akamai*
2. Limelight
3. Tata
4. Octoshape
5. CDNetworks
6. Internap
7. Highwinds
8. Verizon*
9. Ustream*
10. Mirror Image
11. Tulix*
12. More to come!

*Certified
**IP Input and Output**

**IP Input**

**IP Output**
- Ethernet: Up to 2 x 1 GigE
- Output protocols: UDP, RTP, RTMP (Open Flash), HTTP, with DLNA support
- Type: IP-multicast, IP-unicast
- Video: NTSC or PAL
- Latency: 1.2 seconds (fixed)

**Specifications**

- **Some Supported Resolutions – Input and Output**
  - 1920 x 1080
  - 1280 x 720
  - 720 x 576
  - 720 x 480
  - 704 x 480
  - 640 x 480
  - 480 x 480
  - 480 x 320
  - 320 x 240
  - qHD
  - H.265 up

- Also supports any custom resolution not listed here, including computer formats like 1280 x 1024, etc. Note: Lower resolution results in higher transcodes.
- Supports PAL TO NTSC conversion but not NTSC to PAL. Supports closed captioning.
- H.265 output resolutions supported are 1080, 720, 576, 480.
- H.265 576/480 resolutions only have 4:3 aspect ratio.

- **Output Bit Rates**
- Bit Rates: Multiple H.264, MPEG-2, and/or optional H.265 video streams at different bit rates (.1 to 15 mbps)
- Quality: 8 bit encoding with 4:2:0 color sampling; optional 4:2:2

**Administration**
- Access: Web interface, ssh interface
- SNMP: Monitoring and alerts, MIBS available
- Scheduling: On, Off support for timelots

**CPU and Operating System**
- CPU: Single 14 Core Xeon®
- OS: DVEO embedded Linux® in SSD

**Physical & Power**
- Size: 1.77" h x 17.2" w x 19.85 d" (43 x 437 x 504 mm)
- Power: 400W (1+1) Redundant Super Compact Short-depth AC-DC
- Supply: Gold-level power supply with PMBus and I2C
- Voltage: 100-240V, 4-2A, 60-50 Hz, 400 watts
- Operating Temperature: 10° to 35° C (50° to 95°F)
- Non-Operating Temperature: -40° to 70° C (-40° to 158° F)
- Operating Humidity: 8% to 90% (non-condensing)
- Non-Operating Humidity: 5% to 95% (non-condensing)
- Fans: 4 x 40 x 28 mm 4-pin PWM cooling fans
- Weight: 18.6 lbs (8.5 kg)
- Conformities: UL, CSA, CE, RoHS

**Security**
- Ports security scanned to MIL requirements prior to shipment

**Ad Insertion**
- SCTE Ad Marker insertion via RS232, USB, IP, Contact closures

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**Options**

- Optional transcoding to H.265
- DVEO SILVER or GOLD CARE™ – Extended Warranty with Priority Tech Support
- Optional DOZER™ Automated UDP Packet Recovery protocol, enabling error-free video delivery over UDP.
- 4:2:2 10 bit encoding
- Fiber Optic Interface with SFP interfaces
- Optional built-in “Mini Atlas” server supports 1,000+ simultaneous HLS, DASH, and/or RTMP users
- "Cloud" version available

**Ordering Information**

Brutus II IP/IP: TELCO
- Tech Support – One year support and updates, included
- Option 1: H.265 Transcoding
- Option 2: DVEO GOLD CARE™
- Option 3: DOZER™ Automated UDP Packet Recovery
- Option 4: 4:2:2 10 bit encoding
- Option 5: SPF Fiber Interfaces
- Option 6: Built-in “Mini Atlas” server

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