All-In-One Video Encoding, Transcoding, Recording, And Routing For ISR Communications

Kraken is a video transcoder for ISR, and situational awareness applications that require high quality full motion video in environments where network bandwidth is unpredictable or limited.

Optimized for Each Network Segment  Kraken can encode or transcode motion imagery streams to optimize the quality of video transmissions over constrained network segments, including line of sight (LOS) and satellite data networks. Ingesting compressed video data in a broad range of formats, Kraken converts it to efficient standards-based formats (H.264 or HEVC). It addresses the inherent bandwidth limitations of mission critical network links, while maintaining real-time low latency transmission of vital video and metadata.

High Image Quality  Kraken delivers high quality FMV over satellite and other constrained networks. Kraken’s efficient HEVC implementation supports multiple streams and high video quality over limited bandwidth. By leveraging Kraken to optimize the backhaul of ISR video, viewers see an increase in the quality of intelligence derived from improved imagery.

Standards Compliant  Kraken disseminates information including KLV metadata in STANAG/MISB formats required by downstream networks, exploitation systems, and viewers. Latency is kept as low as possible, while preserving metadata with frame-accurate synchronization. Powerful metadata management tools allow Kraken to aggregate multiple sources as required to save valuable bandwidth while preserving geospatial context.

Flexible Deployment  Kraken is a software-based solution designed to take advantage of the latest hardware acceleration technology in order to maximize performance on a variety of platforms. Kraken is available as a rack mount server, small form factor appliance, or as a virtual machine with custom channel configurations and expansions available upon request. When installed on third-party hardware, Kraken can also encode from NDI and SDI sources. Kraken is available in the Microsoft Azure and Amazon AWS cloud marketplaces as a Bring Your Own License (BYOL) instance.

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<th>FEATURES</th>
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<td>Low-Latency Encoding and Transcoding</td>
<td>Ingest video for transcoding at lower bitrates for onward distribution over bandwidth-constrained networks.</td>
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<td>Bandwidth Optimization with HEVC</td>
<td>Get the most from your existing network links with HEVC compression while reducing bandwidth consumption by up to 50%.</td>
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<td>STANAG and MISB Compliant KLV Metadata</td>
<td>KLV metadata is aggregated and preserved in a format that adheres to defense standards.</td>
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<td>KLV Metadata Filtering</td>
<td>Selectively filter and decimate KLV metadata to prioritize video when bandwidth is at a premium.</td>
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<td>Downstream Compatibility</td>
<td>Convert between video codecs and IP video protocols to ensure interoperability with downstream systems.</td>
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<td>Flexible Deployment Options</td>
<td>Available as a compact appliance, rack-mount server, virtual machine (VM) or cloud option BYOL on Microsoft Azure and Amazon Web Services.</td>
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<td>Record Streams</td>
<td>Store streams locally, or on network locations while preserving metadata.</td>
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TRANSCODING INPUTS
Input H.265/HEVC:
SD/HD/UHD
Transport Stream, SRT or RTSP
CBR, VBR
Input H.264/AVC:
SD/HD/UHD
Transport Stream, SRT or RTSP
CBR, VBR
Input MPEG-2:
Transport Stream
CBR, VBR
Input MJPEG:
HTTP MJPEG sources
Validated against L3 Vortex
Input Audio:
MPEG1 layer 2
AAC 2 channel and 5.1

ENCODING INPUTS
NDI
GigE Vision
(Supported by Kraken Edge and Kraken VM software with a compliant SDI-SFP adaptor)
Input Video:
SD-SDI SMPTE 259M
HD-SDI SMPTE 292M, 274M, 296M
3G-SDI SMPTE 424M (Level A Only), 425M
Composite NTSC/PAL/PAL-M is supported by Kraken VM when installed on hardware with Composite capture capabilities.
Input Audio:
SD-SDI SMPTE 272M Embedded
HD/3G-SDI SMPTE 299M Embedded

ENCODING/TRANSCODING OUTPUTS
Output H.265/HEVC:
SD/HD/UHD
Transport Stream
Transport Stream shaping, VBR
Output H.264/AVC:
SD/HD/UHD
Transport Stream
Transport Stream shaping, VBR
Output MPEG-2 Video:
Transport Stream shaping, VBR
Output AAC Audio:
AAC 2 channel
Audio Sync Preserved
Output MPEG-1 Audio:
2 Channel MPEG-1 Layer II
Audio Sync Preserved
Output MPEG-4 Video:
Transport Stream shaping, VBR

TRANSMUXING INPUTS
TS/UDP
TS/SRT
RTSP
RTPM
TRANSMUXING OUTPUTS
TS/UDP
TS/SRT
RTPM
HLS
METADATA HANDLING
KLV with support of both Asynchronous and Synchronous KLV
Insertion and KLV Edits
MISB ST0601.14 - UAS Datalink Set
MISB ST0604.2 - Time Stamping
STANAG 4609
SMpte 336M-2007 Data Encoding Protocol
CoT to KLV Conversion
KLV Filtering (MISB ST0601.10)
RECORDING
Single-file Transport Stream
VIDEO PROCESSING
De-interlacing
Down Scaling
Aspect Ratio Preserved
Configurable Frame Rate
NETWORKING
Single Program Transport Stream (SPTS)
Unicast/Multicast (IGMPv3)
TS over UDP
SRT
Session Announcement (SAP)
MANAGEMENT
Web User Interface
REST API
Console UI
OPERATING SYSTEM
Embedded Linux (CentOS 7)
KRAKEN VIRTUAL MACHINE
(VM-KR-BASE)
VMware ESXi version 6.7 and 7.0
Supports Intel Hardware Acceleration
Supports NVIDIA Hardware Acceleration
KRAKEN SERVER PREMIUM SYSTEM
(S-KR-PREMIUM-KLV)
Weight:
43.87 lbs / 19.9 kg
Dimensions without faceplate (1RU):
H: 1.68" (42.8 mm) W: 17.09" (434 mm)
D: 23.9" (607 mm)
Power:
2 x Redundant 100-240 VAC
550 W Power Supplies
IP Interface:
2 x Gige Base-T NIC
2 x SFP+ (up to 10Gbps) Expansion Slots
KRAKEN SERVER ULTRA SYSTEM
(S-KR-ULTRA-KLV)
Weight:
52.0 lbs / 23.6 kg
Dimensions without faceplate (1RU):
H: 1.68" (42.8 mm) W: 18.98" (482.3 mm)
D: 27.6" (700.5 mm)
Power:
2 x Redundant 100-240 VAC
750 W Power Supplies
IP Interface:
2 x Gige Base-T NIC
2 x SFP+ (up to 10Gbps) Expansion Slots
KRAKEN EDGE
(S-KR-SFF-XC)
Weight:
3.04 lbs (1.38 kg)
Dimensions:
182.00 mm H x 36.00 mm W x 178.56 mm D
(7.16 in. H x 1.42 in. W x 7.03 in. D)
Power:
130 W, 4.5 mm (for 35 W CPU)
Temperature:
Operating: 10°C–35°C (50°F–95°F)
Non-Operating: -40ºC to 65ºC (-40ºF to 149ºF)
IP Interface:
1 x Gige Base T NIC
KRAKEN ON AZURE/AWS
Supports NVIDIA Hardware Acceleration

DoDIN APL Certified
Kraken is on the Department of Defense Information Network Approved Product List (DODIN APL) under tracking number 2118301.