



Minimize SWaP-C in DoD, internet and telecom networks **(Size, Weight, Power and Cost savings)**

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Securely move data and actionable intelligence in operational time for communications, data transfer and data storage (*including Intelligence, Surveillance and Reconnaissance (ISR) audio, video, and imagery over narrow-bandwidths.*)

- Greatest cost savings
- Strongest fully-compliant security
- Fastest transmission speeds
- Smallest footprints and storage requirements
- Least overhead and energy consumption
- Third party services or self-contained systems

Secure cloud accelerator



Whitenoise Labs is the leader in cyber security technologies. Dynamic Identity Verification and Authentication (DIVA) provide:

- One-time-pad (OTP) authenticated secure network access (two channel, multi-factor authenticated login)
- OTP dynamic, continuous authentication throughout a session
- OTP authenticated encryption

Whitenoise imposes identity and data provenance. Whitenoise technologies are patented globally.

[http://www.wnlabs.com/pdf/Cyber Belt Presentation.pdf](http://www.wnlabs.com/pdf/Cyber_Belt_Presentation.pdf)

<http://www.wnlabs.com/pdf/WNL-DIVA-TLS-Extension.pdf>

Sequor Speed™ Server

SEQUOR SYSTEMS

Sequor Systems are the fastest web and pki servers in the world with patented lockless programming that optimizes and simplifies multi-threading for dramatic speed increases. Sequor servers are fully compliant.

Sequor **Speed™** servers provide performance improvements of up to 700% by processing 7.6 times more requests per second.

The multi-core efficiency of the Sequor web and pki server reduces energy consumption by 648% compared to market leading Apache and NGINX servers.

Get a turbo boost of up to 600% for your web server infrastructure and reduce the number of servers you will need in the future.

<http://www.sequorsystems.com>

Study the performance facts measured by ESG Labs in Boston.

<http://www.wnlabs.com/pdf/ESG-Lab-Review-Sequor-Systems-May-2016.pdf>

KT-Tech compression



KT-Tech has the most advanced compression technologies in the world.

KT-Tech software was successfully demonstrated at SOCOM TNT 12-1 Camp Roberts, CA.

KT-Tech's video compression/feature extraction software successfully provided the world's first, unmatched, actionable quality video at 1 kbps bandwidth (less than 1/50th the bandwidth of 56 kbps dial-up connections).

When compared to other image compression algorithms, KT-Tech's Compression/Feature Extraction software provides savings of 50%- 99% [2:1 - 100:1] in bandwidth use to and from the cloud, for communications and with data storage costs.

The high-speed transmission times eliminate perceptible latency and have a time savings of at least 90% in encoding, retrieval and display.

<http://www.kttech.com/>

http://www.wnlabs.com/pdf/KT-Tech_Creating_Virtual_Bandwidth.pdf

Secure accelerator benefits

- ❑ A dollar's worth of data storage will now cost one penny with 100:1 compression.
- ❑ A dollar's worth of data transmission will now cost one penny with 100:1 compression
- ❑ If it takes you 100 seconds to transmit data now it will take you one second
- ❑ If you server farmer has 100 servers it now needs only 13 servers to do the same work.
- ❑ If you spent a thousand dollars for power before it will cost you less than ten dollars (100:1 compression and > 600% energy use reduction because of the **Speed™** platform.)

Two implementations provide the foundation for all additional products, services and benefits:

❑ **Transport Security Layer extension**

After the one-time, on-line software upgrade of the TLS extension the client now has secured their systems and have the only key they will ever need to easily order and activate additional secure offerings in Platform-as-a-Service or Security-as-a-Service configurations and models i.e. virtual desktops, mobile payments, secure video services etc.

❑ **Speed™ platform**

Combining lockless programming, compression and security creates a secure cloud accelerator. Speed is scalable moving forward in the following fashion. Data is compressed. The data is then encrypted using WN that makes this compressed data bit independent. The signal is then parsed and transmitted in parallel channels (reducing transmission time) and reassembled at the receiver.

KT compression clarity for video

Look at the crispness of a video feed compressed to .15 % of the original feed

RAVEN UAV Video
Original Uncompressed
File Size = 1.56 GB



RAVEN UAV Video
KT-Tech Compressed
File Size = 2.5 MB
less than 0.15 % of original size



Crows Camera compression

Clarity at .13% of the original feed

CROWS Daylight Camera

Distinguish: Man Carrying Weapon versus Farm Equipment

**CROWS Video
Original Uncompressed
File size = 398 MB**



**CROWS Video
KT-Tech Compressed
File Size = 536 KB
less than 0.13% of original size**



Infrared compression

Clarity on infrared at .01% of the original feed size

DOD “Multi-Spectral Infrared Skin Detection”: Detect Concealed Sniper

DOD“IR Skin Detection” Video

Original Uncompressed
File Size= 1.46 GB

DOD“IR Skin Detection” Video

KT-Tech Compressed
File Size =177 KB

less than 0.01 % of original size



Video and compressed file sizes

Original video feed and size; compressed video size

Name	Date modified	Type	Size
 Hoe_64Kbps_WN_encrypted	6/2/2016 2:09 PM	File	536 KB
 Hoe_64Kbps-1FPS.ktm	6/2/2016 1:14 PM	KTM File	536 KB
 Hoe-Uncompressed	6/3/2016 12:47 PM	Video Clip	407,780 KB
 KTMovie	6/2/2016 1:14 PM	Application	384 KB
 KT-Tech Video Compression-Feature Extraction Examples 2016	6/2/2016 1:14 PM	Adobe Acrobat D...	329 KB



Degree of compression can be set.

Non-video data and audio can be compressed as well i.e. text

File size reduction with KT

KT compresses that down to 536 KB (see the red arrows)

The screenshot shows a Windows File Explorer window with a table of files. A Properties dialog box is open for the file 'Hoe_64Kbps-1FPS.ktm'. Two red arrows point to the file size '536 KB' in the table and the 'Size' field in the Properties dialog.

Name	Date modified	Type	Size
Hoe_64Kbps-1FPS.ktm	6/2/2016 1:14 PM	KTM File	536 KB
KTMovie	6/2/2016 1:14 PM	Application	384 KB
KT-Tech Video Compression-Feature Extraction Examples 2016	6/2/2016 1:14 PM	Adobe Acrobat D...	329 KB

Hoe_64Kbps-1FPS.ktm Properties

General Security Details Previous Versions

Hoe_64Kbps-1FPS.ktm

Type of file: KTM File (.ktm)

Opens with: Windows Shell Commor Change...

Location: C:\Users\Grappo\Desktop\KT Tech video and vide

Size: 535 KB (548,565 bytes)

Size on disk: 536 KB (548,864 bytes)

Created: Today, June 02, 2016, 47 minutes ago

Modified: Today, June 02, 2016, 47 minutes ago

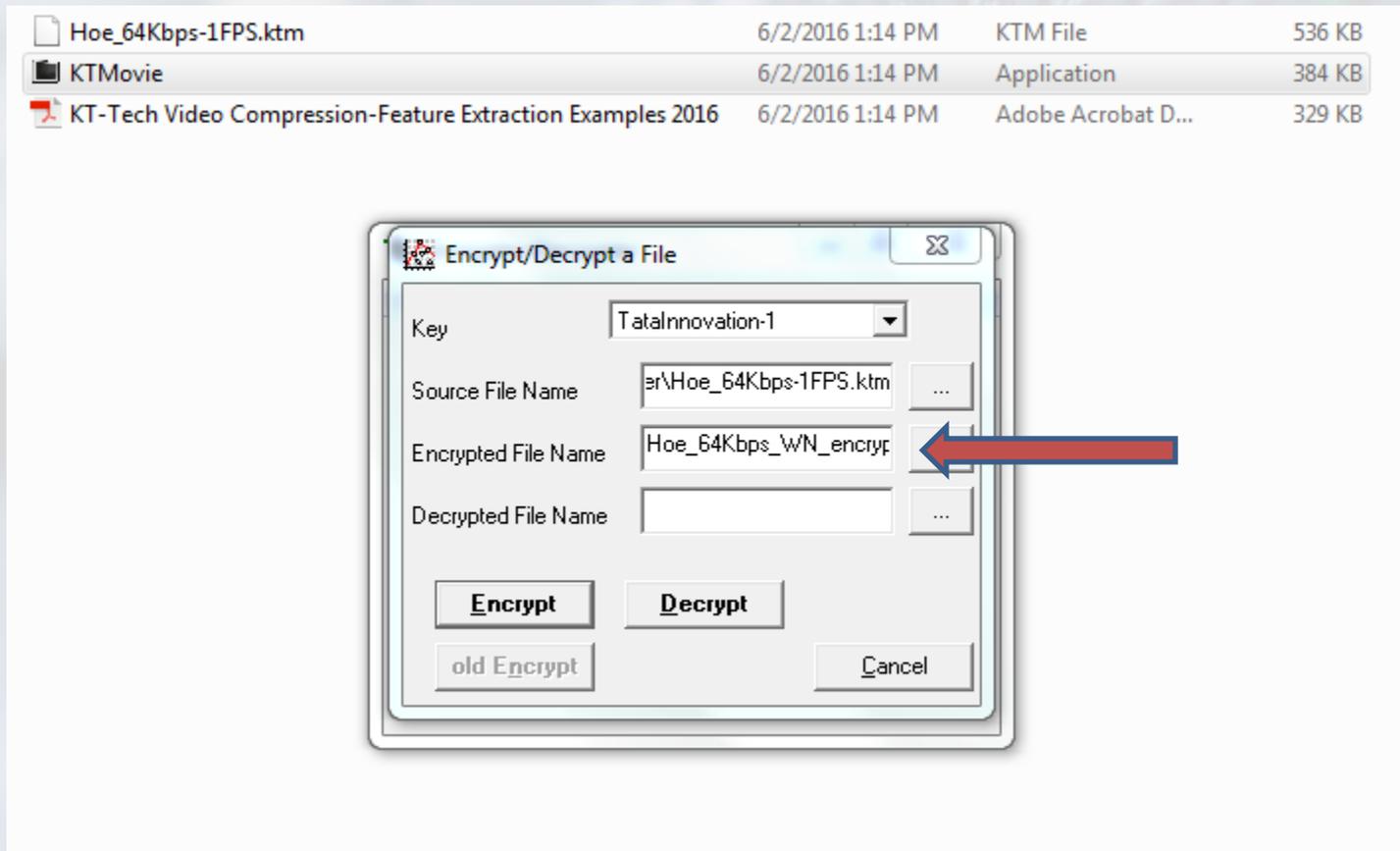
Accessed: Today, June 02, 2016, 26 minutes ago

Attributes: Read-only Hidden Advanced...

OK Cancel Apply

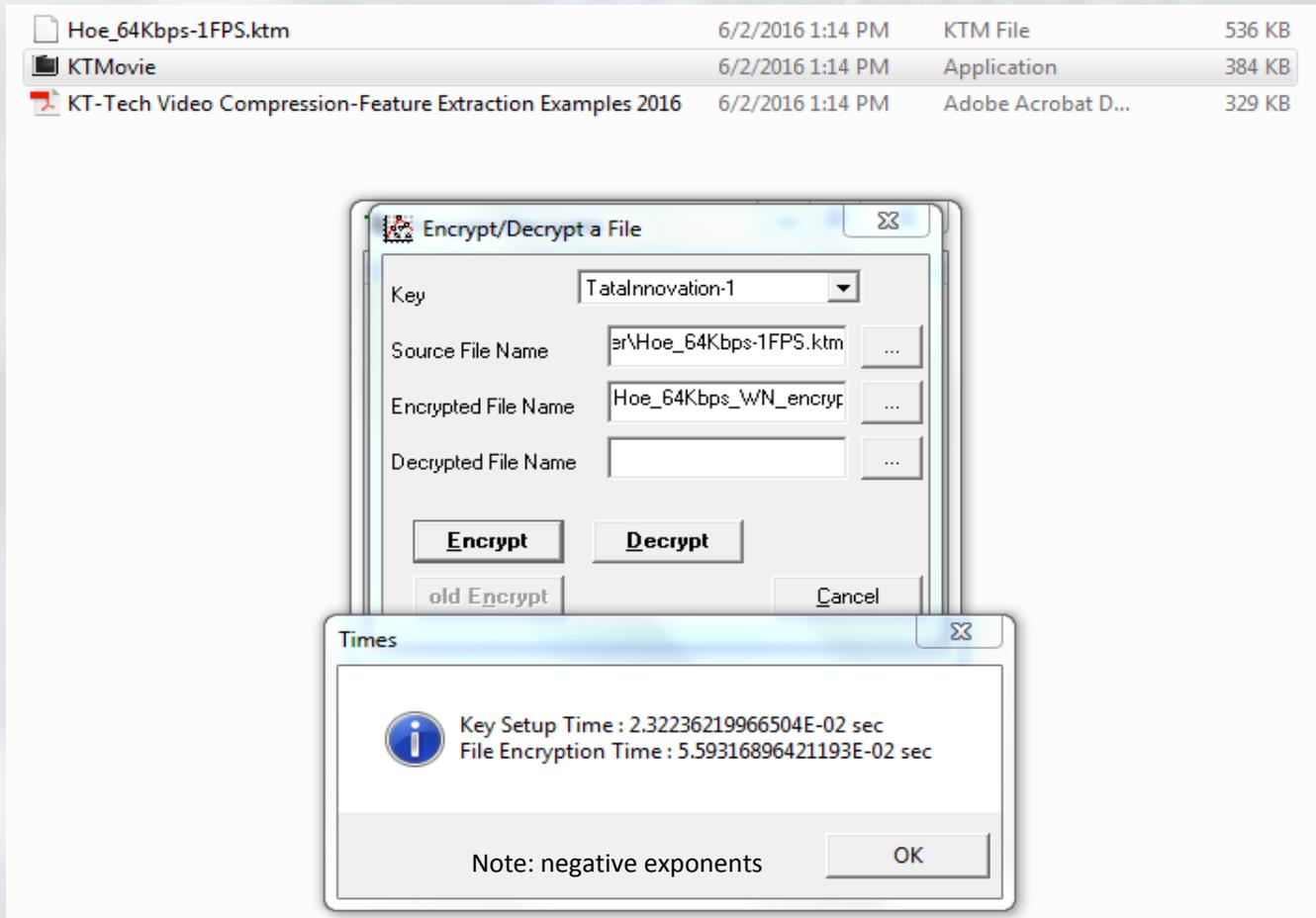
Encrypt compressed file with WN

The compressed file is now secure for transmission or storage



Encryption speed

Encryption time does not bog down the process



The image shows a Windows file explorer window with three files listed:

File Name	Date/Time	File Type	Size
Hoe_64Kbps-1FPS.ktm	6/2/2016 1:14 PM	KTM File	536 KB
KTMovie	6/2/2016 1:14 PM	Application	384 KB
KT-Tech Video Compression-Feature Extraction Examples 2016	6/2/2016 1:14 PM	Adobe Acrobat D...	329 KB

Overlaid on the file explorer are two dialog boxes:

- Encrypt/Decrypt a File**: A dialog box with a key dropdown set to "TatalInnovation-1". It has input fields for "Source File Name" (r\Hoe_64Kbps-1FPS.ktm), "Encrypted File Name" (Hoe_64Kbps_wN_encryp), and "Decrypted File Name". Buttons for "Encrypt", "Decrypt", "old Encrypt", and "Cancel" are visible.
- Times**: A smaller dialog box showing performance metrics:
 - Key Setup Time : 2.32236219966504E-02 sec
 - File Encryption Time : 5.59316896421193E-02 secA note at the bottom reads "Note: negative exponents" and an "OK" button is present.

Whitenoise does not bloat data

The compressed and encrypted files are the same size

The screenshot shows a Windows file explorer window with a table of files. The table has columns for Name, Date modified, Type, and Size. The files listed are:

Name	Date modified	Type	Size
Hoe_64Kbps-1FPS.ktm	6/2/2016 1:14 PM	KTM File	536 KB
KTMovie	6/2/2016 1:14 PM	Application	384 KB
KT-Tech Video Compression-Feature Extraction Examples 2016	6/2/2016 1:14 PM	Adobe Acrobat D...	329 KB
Hoe_64Kbps_WN_encrypted			536 KB

Overlaid on the file explorer is a 'Properties' dialog box for the file 'Hoe_64Kbps_WN_encrypted'. The dialog box has tabs for 'General', 'Security', 'Details', and 'Previous Versions'. The 'General' tab is selected, showing the following information:

- Type of file: File
- Description: Hoe_64Kbps_WN_encrypted
- Location: C:\Users\Grappo\Desktop\KT Tech video and vide
- Size: 535 KB (548,565 bytes)
- Size on disk: 536 KB (548,864 bytes)
- Created: Today, June 02, 2016, 4 minutes ago
- Modified: Today, June 02, 2016, 4 minutes ago
- Accessed: Today, June 02, 2016, 4 minutes ago
- Attributes: Read-only Hidden

Red arrows point to the 'Size' column in the file explorer table and the 'Size on disk' field in the properties dialog box, highlighting that both values are 536 KB.

Demonstration

Video demonstration with manual steps so that you can see the process

Dramatically reduced file sizes with lossless compression along with the hyper fast transmission rates of Sequor Secure Speed Servers reduces the time to securely transmit data effectively reducing latency to .0025 seconds. It simplifies uploads and downloads. It minimizes transmission and storage costs.

Further speed increases are possible moving forward. Encryption with Whitenoise makes the resultant data bit independent which means no bit is related to any other.

This stream can be parsed with the segments sent in parallel or routed through different servers and reassembled at the receiving end.

Demo

Use case examples

The cloud accelerator has big benefits anywhere data is transmitted or stored

Examples:

- The City of Baltimore Police Department collects a terra-byte of data from police video vests each day. Think of the problem nationwide.
- Unique media on demand with authenticated encryption i.e. movie-on-demand
- Real time ISR
- All telecom services i.e. music services, teleconferencing etc.

Contact Details

How to Contact Us

Thank you!

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