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High-Performance Encryption for Databases in Financial Services

Using Intel®Advanced Encryption Standard New Instructions with InterSystems Caché Substantially Improves Encryption Performance and Reduces Computational Overhead

Executive Summary

Financial services companies have an ever-growing need to encrypt databases containing sensitive customer and trade data. However, using encryption on these databases can require significant computational resources, potentially impacting trading latencies. Intel®Advanced Encryption Standard New Instructions (Intel®AES-NI), included in the Intel®Xeon®processor 5600 and E5 product families (and more recent Intel Xeon processor families), accelerates encryption and greatly reduces computational overhead.

Key Findings

Tests show that even as data and computational time increase, there is negligible degradation in performance for encryption or decryption. Use of Intel AES-NI with Caché's interleaved cipher blocks can s

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