

# MARVELL LiquidSecurity and NITROX HSM Adapters

## Product Brief

LiquidSecurity and NITROX HSM Client Features	
<p>Supported Crypto Stacks</p> <ul style="list-style-type: none"> <li>• PKCS11, JCE, and OpenSSL</li> </ul> <p>C-API-based Management Tools</p> <p>Unlimited usage source code license</p> <p>Supported Operating Systems</p> <ul style="list-style-type: none"> <li>• RHEL7.x, CentOS 7.x, Ubuntu</li> <li>• Xen and KVM</li> </ul>	<p>Algorithms</p> <ul style="list-style-type: none"> <li>• RSA Sign/Verify – Support for PKCS1, PSS (2K, 3K, 4K key sizes)</li> <li>• RSA enc/dec – PKCS1, OAEP (2K, 3K, 4K key sizes)</li> <li>• DSA Sign/Verify</li> <li>• ECDH/ECDSA – p-curves, b-curves, k-curves, Bitcoin curve secp256k1, Curve25519</li> <li>• 3DES/AES and SHA (1, 2), HMAC-SHA (1, 2)</li> <li>• Key Derivation: SP800-108 Counter Mode/HMAC-KDF</li> </ul>
LiquidSecurity and NITROX HSM Features	
<p>Industry-Leading Performance</p> <ul style="list-style-type: none"> <li>• 35K 2K RSA Sign Ops/sec</li> <li>• 300K Symmetric Ops/sec</li> </ul> <p>Enhanced On-Card Storage</p> <ul style="list-style-type: none"> <li>• Up to 1 million concurrent SSL contexts</li> <li>• Up to 100,000 concurrent key storage (symmetric and asymmetric)</li> </ul> <p>Dynamic Partition Support</p> <ul style="list-style-type: none"> <li>• FIPS 140-2 Level 3 partitions</li> <li>• Individual adapter can be partitioned into 1 to 32 partitions at run time</li> <li>• Partition defined based on key store, symmetric/asymmetric performance, and maximum concurrent sessions</li> </ul>	<p>Role-Based Access</p> <ul style="list-style-type: none"> <li>• Adapter Administrator – No access to key material on partitions, role limited to creating partitions and health checks</li> <li>• Partition Administrator – Cluster management, user management role</li> <li>• Partition User – Key management operations and crypto operations</li> </ul> <p>User/Clients Per Partition</p> <ul style="list-style-type: none"> <li>• Support for up to 1000 users per partition</li> <li>• Each user can run multiple applications</li> </ul> <p>Support for Single- and Two-factor Authentication</p> <p>Cloning</p> <ul style="list-style-type: none"> <li>• Ephemeral handshake-based cloning to ensure the key rotation for the masking key</li> </ul>
Hardware Specifications	
<ul style="list-style-type: none"> <li>• PCIe Gen2 x8 interface</li> <li>• Dimensions: 2.1" x 6.6"</li> <li>• Operating Temperature: 0 to 50°C</li> <li>• Regulatory Certifications: Safety, cTUVus UL, EMC, FCC/ICES, Class B</li> </ul>	<ul style="list-style-type: none"> <li>• SMBus, FRAM support for additional logging, firmware counters</li> <li>• MTBF 1,511,929 hrs (Telcordia SR-332)</li> </ul>

Feature Comparison	NITROX HSM Adapter	LiquidSecurity HSM Adapter
Backup/Restore	No	2-key, 3-key Smart card based
Audit Logs	No	Yes
Temperature Monitoring and Boot Logs available over SMBus	No	Yes
Park / Unpark Key Management API	No	Yes

## NITROX HSM Adapter Product Comparison Table

Device	System Interface	Isolated Partitions	Performance	
			Max RSA Ops/sec	SSL Record Throughput
CNN3560-NFBE-2.0-G	PCIe Gen 2.0 x8	32	35K (2048b)	10 Gb/s
CNN3530-NFBE-2.0-G	PCIe Gen 2.0 x8	32	18K (2048b)	7 Gb/s
CNN3510-NFBE-2.0-G	PCIe Gen 2.0 x8	24	13K (2048b)	4 Gb/s
CNN3510LP-NFBE-2.0-G	PCIe Gen 2.0 x8	24	10K (2048b)	3 Gb/s
CNN3505LP-NFBE-2.0-G	PCIe Gen 2.0 x8	8	4K (2048b)	1 Gb/s

## LiquidSecurity HSM Adapter Product Comparison Table

Device	System Interface	Isolated Partitions	Performance	
			Max RSA Ops/sec	SSL Record Throughput
CNL3560-NFBE-2.0-G	PCIe Gen 2.0 x8	32	35K (2048b)	10 Gb/s
CNL3530-NFBE-2.0-G	PCIe Gen 2.0 x8	32	18K (2048b)	7 Gb/s



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