

**ULTRA SAFE****KEYPER™ LOAD BALANCER****DATASHEET**

KEYPER LOAD BALANCER SUPPORTS A WIDE VARIETY OF ARCHITECTURES, INCLUDING:

- LOAD BALANCER ON APPLICATION SERVER(S)
- LOAD BALANCER PER APPLICATION SERVER(S)
- DEDICATED LOAD BALANCER SERVER(S)
- APPLICATION SERVERS CLUSTERED WITH LOAD BALANCER SERVER(S)
- GEOGRAPHICALLY DISTRIBUTED DISASTER RECOVERY LOAD BALANCER SERVER(S)

The Keyper Load Balancer is a highly flexible piece of software that sits between the Keyper Hardware Security Module (HSM) and its Providers (PKCS#11, Microsoft CAPI/CNG Providers). It allows:

Scalability - Aggregated performance of multiple HSMs acting in parallel  
 Resilience - Active-active high availability HSM configurations  
 Automatic Key Backup - key replication over a secured channel  
 Geographic DR - Architectures supporting service continuity

All of these services are transparent to the Application and the Provider, without either being 'aware' that any of these services are being performed. Up to 16 Keyper HSMs can be handled, appearing as one logical HSM to the application accessing those HSMs via an AEP Provider.

The Keyper Load Balancer itself can be installed on the same host as the application and Provider or can be installed on dedicated hosts.

**KEY BUSINESS BENEFITS**

- Assurance against loss of cryptographic keys
- Future proofed scalability without initial over specification. HSMs deployed as required will scale to the demand of the highest-performance applications
- Automated fault tolerant service continuity
- Allows for flexibility of Load Balancer placement within the system architecture
- Graceful handling of loads that could otherwise exceed an HSM's capacity
- Enables project to select OS to suit application
- Centralised source for audit across HSM estate, configurable to four levels of detail and three categorisations of events
- Session open, request timeouts and retry timers can be configured to match application requirements for optimal performance across widest range of architectures
- Service continuity in case of unexpected Load Balancer process termination

**SECIFICATION**

- All calls are distributed to the Keyper HSM under least load
- Keys generated or imported are distributed amongst all Keyper HSMs being balanced/distributed
- If a Keyper HSM is added after a key has been distributed, the Load Balancer will import that key into that HSM when that Keyper HSM first receives a call that requires it – where PKCS#11 'no export' attribute is not set
- If a call to a Keyper HSM fails for whatever reason Load Balancer redirects it to another Keyper HSM
- Load Balancer maintains a queue of calls awaiting a free Keyper HSM to become free to process the call. This queue varies in size and response time depending upon a time-out parameter.
- Load Balancer can be allocated a maximum number of calls (tasks) per Keyper HSM Load Balancer can reside on a machine other than the Provider
- MS CAPI/CNG Providers and PKCS#11 Providers can share Keyper HSM and their Load Balancer seamlessly but not their keys.

Customer Type	Applications	Realised Benefits
Commercial enterprises, NGOs and critical national infrastructure	<ul style="list-style-type: none"> <li>• Virtual private networks</li> <li>• Secure conferencing</li> <li>• Asset protection</li> </ul>	<ul style="list-style-type: none"> <li>• Remote access</li> </ul>
Government departments	<ul style="list-style-type: none"> <li>• Inter-office communications</li> <li>• Remote working</li> </ul>	<ul style="list-style-type: none"> <li>• Government-grade security</li> <li>• Legislative</li> <li>• Flexibility</li> <li>• Ease of use</li> </ul>
Pan-government intranets	<ul style="list-style-type: none"> <li>• Inter-departmental comms</li> <li>• Application and data sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Confidentiality</li> <li>• Cost savings</li> <li>• Business continuity</li> </ul>
Military and defence	<ul style="list-style-type: none"> <li>• Fixed infrastructure</li> <li>• In-theatre communications</li> <li>• Reverse tunnelling</li> <li>• Remote working</li> </ul>	<ul style="list-style-type: none"> <li>• Confidentiality</li> <li>• Increased efficiency</li> <li>• Cost saving</li> </ul>
Diplomatic and intelligence	<ul style="list-style-type: none"> <li>• Embassy communications</li> <li>• Field operative comms</li> </ul>	<ul style="list-style-type: none"> <li>• Confidentiality</li> <li>• Centralised key management</li> <li>• Portability</li> </ul>
Managed service providers	<ul style="list-style-type: none"> <li>• Secure managed network</li> </ul>	<ul style="list-style-type: none"> <li>• Manageability</li> <li>• High availability</li> <li>• Scalability</li> <li>• Low cost of ownership</li> </ul>

**TYPICAL APPLICATIONS**

- PKI Certificate Authority
- DNSSEC
- Code, Application and Download Signing
- User- and card-based authentication systems

**PRODUCT COMPATIBILITY**

- Keyper 9720 (Enterprise / Professional)
- KeyperPlus (all models)

**SUPPORTED OPERATING SYSTEMS**

Supported Operating Systems	Architecture
<b>Microsoft Windows</b>	
2008 Server R2	x86_64
2012 Server / R2	x86_64
<b>Linux</b>	
CentOS 6 (RHEL 6)	x86, x86_64
<b>FreeBSD</b>	
FreeBSD 8.1	x86_64
<b>Sun/Oracle</b>	
Sun Solaris 10	SPARC (64-bit)

**ORDERING INFORMATION**

Product	Ordering Part Number
Keyper Load Balancer software (licensed for single server, single Keyper HSM)	KEY-LB
Keyper Load Balancer software (licensed for single server, unlimited Keyper HSMs)	KEY-LB1



**making a difference**

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