

Network and data security solution with F5 BIG-IP LTM

HPE Atalla Hardware Security Module (HSM)

This document describes the advantages of the joint solution of HPE Atalla HSM and F5-BIG IP Local Traffic Manager (LTM) to provide data security, scalable, and high availability deployment.

Target audience

Any organization that desires to leverage the HPE Atalla HSM along with F5's BIG-IP LTM to create a combined solution with best-of-breed protection.

HPE Atalla HSM highlights

HPE Atalla HSM offers superior remote management, unmatched customizations with off-the-shelf support for all major payments applications.

F5 BIG-IP LTM highlights

BIG-IP LTM gives you the control to add servers easily, eliminate downtime, improve application performance, and meet your security requirements.

HPE Atalla HSM with F5 BIG-IP LTM

Your network's job is to deliver applications, services, and data security, but as your business needs change and grow, it becomes more complex and more expensive for your infrastructure to keep up with these demands.

F5's BIG-IP LTM turns your network into an agile infrastructure for application delivery. It's a full proxy between users and application servers, creating a layer of abstraction to secure, optimize, and load balance application traffic. This gives you the control to add servers easily, eliminate downtime, improve application performance, and meet your data security requirements.

BIG-IP LTM provides sophisticated monitors to check device, application, and content availability, including specialized monitors for many applications, as well as customized monitors to check content and simulate application calls. Deploying the HPE Atalla HSM with the F5 BIG-IP LTM provides a secure, scalable, and highly available deployment that ensures the best combined data protection and traffic monitoring solution available for customers. Following are a few benefits of a combined HPE Atalla HSM and F5 BIG-IP LTM solution:

- Greater reliability for HPE Atalla HSM solutions
HPE Atalla HSM appliances depend on application software to provide high-traffic load balancing. However, whenever there is a data center outage, network administrators need to be able to take actions to redirect the workloads. Also, a hardware-based load balancer is well designed to handle local and global failovers.
- Greater manageability
Nonresponsive HPE Atalla HSM appliances need to be rapidly detected and diagnosed correctly by network administrators. While most HPE Atalla HSM client applications are designed to detect failures, resulting issues will typically be escalated to HPE Atalla HSM application developers or application teams. Monitoring tools leveraging the SNMP protocol and F5 BIG-IP can directly provide network administrators with the visibility they need to manage HPE Atalla HSM appliances as an integral part of the IT infrastructure.
- Greater performance
F5 BIG-IP Secure Socket Layer (SSL) offloading helps improve overall HPE Atalla HSM performance by up to 30 percent.¹ Secondly, distributed denial of service (DDOS) attacks can be mitigated or detected by BIG-IP, thereby improving the HPE Atalla HSM service's availability.

¹ Based on HPE Data Security Engineering validation testing July/Aug 2014

Solution brief

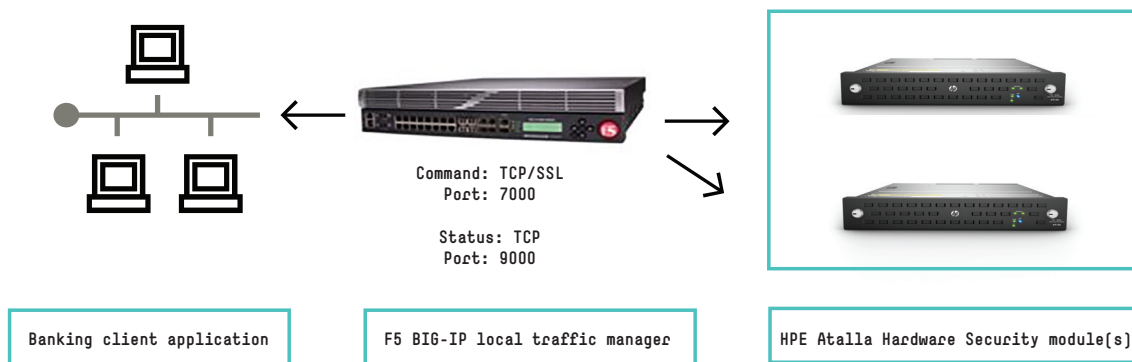


Figure 1: Logical deployment architecture HPE Atalla HSM and the BIG-IP LTM system

Why HPE Atalla HSM?

Meets the highest government and financial industry standards

The HPE Atalla HSM is a PCI certified, Federal Information Processing Standard (FIPS) 140-2 Level 3 validated, secure, tamper-resistant hardware security module (HSM) for cryptographic processing solutions for securing payment transactions.

Mitigates risk, enforces controls

The HPE Atalla HSM mitigates risk and enforces controls by implementing the Atalla Key Block (AKB), which prevents keys from being used for other than their intended purpose or misused. In addition, the Secure Configuration Assistant-3 (SCA-3) allows for simple and intuitive dual control of Atalla HSM's security policy.

Scales easily as your security needs grow

The HPE Atalla HSM allows for variable growth by offering a range of high-performance models, so customers pay only for the capacity they require. Multiple HPE Atalla HSMs can be added to a network to increase capacity. The HPE Atalla HSM software is upgradable and new features can be added at the customer site via license.

Provides secure, high-performance financial transaction processing

The HPE Atalla HSM has long been an integral part of cryptographic operations within the payments infrastructure providing unrivaled protection of customer Personal Identification Numbers (PINs), sensitive customer data, and associated cryptographic keys for safeguarding value-based transactions. Whether the application needs PIN issuance, translation, or verification, EMV (Europay®, MasterCard® and Visa®) or credit card processing, the HPE Atalla HSM is a vital part of that cryptographic solution. The HPE Atalla HSM employs an advanced security architecture that prevents retrieval of PINs, keys, and other sensitive data in clear text form.

Superior remote management

Initial key management can be done remotely. Competing HSMs require an installation process involving initial key loading or management by direct connection. This is very cumbersome and HPE Atalla HSM avoids this process.

Continuously protects cryptographic keys

The HPE Atalla HSM protects cryptographic keys by forcing the separation of duties for key component entry, storing the master file key in a secure FIPS boundary and securely generating, importing, and exporting working and transport keys. All keys are encrypted and decrypted inside of the secure boundary of the HPE Atalla HSM.

Why F5 BIG-IP LTM?

F5 offers a complete suite of application delivery technologies designed to provide high availability (HA), scalability, and security to HPE Atalla HSM deployment. In addition, the F5 solution for HPE Atalla HSM includes management and monitoring features to support a multi-node infrastructure.

- F5 can reduce the burden on servers by monitoring HPE Atalla HSM responsiveness across multiple ports and protocols, providing intelligent load balancing decisions.
- CPU-intensive operations such as SSL processing can be offloaded onto the BIG-IP system, which can extend HPE Atalla HSM capacity by up to 30 percent.¹
- F5 protects HPE Atalla HSM deployments that help run your business with powerful application-level protection, as well as network-and protocol-level security.

Deployment architecture

The F5 BIG-IP LTM system provides intelligent traffic management and failover for HPE Atalla HSM servers. Through advanced health checking capabilities, the BIG-IP LTM recognizes when resources are unavailable or underperforming and directs traffic to other resources. The above diagram shows an example deployment for HPE Atalla HSM and the F5 BIG-IP LTM system.

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