



F5 SOLUTIONS FOR HPE PROLIANT FOR MICROSOFT AZURE STACK HUB

Augmenting the capabilities of the Microsoft Azure hybrid cloud

Why use F5 with HPE ProLiant for Microsoft Azure Stack Hub?

- Application high availability (HA)
- Multisite/multiregion HA
- Improved security posture
- More productive end users

MICROSOFT AZURE IN THE DATA CENTER

HPE ProLiant for Microsoft Azure Stack Hub offers an on-premises instance of a Microsoft Azure Stack, which is an on-premises extension of Microsoft Azure public cloud. Azure Stack Hub is fully compatible with Azure development and deployment tools.

It is co-engineered by Hewlett Packard Enterprise and Microsoft, and incorporates compute, storage, and networking in an Azure on-premises instance. HPE ProLiant for Microsoft Azure Stack Hub enables a hybrid cloud solution that is fully consistent with Azure public cloud services. This approach delivers the speed, agility, and simplicity of a public cloud with the cost-effectiveness, flexibility, and data sovereignty characteristics of an on-premises cloud.

ENTERPRISE CHALLENGES

HPE ProLiant for Microsoft Azure Stack Hub has proven itself in the enterprise. However, some users wish to take the solution even further by addressing challenges they face, including achieving high availability (HA) for the solution stack and improving security countermeasures. For example, Azure Stack Hub can be vulnerable to volumetric attacks, which can affect performance and reliability. As is, the stack also requires its own dedicated login. This requirement creates potential security risks while reducing end-user productivity.

THE F5 SOLUTION

F5 Networks, whose mission is based on making sure applications are available and secure, has worked with HPE to develop a solution to augment the capabilities of

HPE ProLiant for Microsoft Azure Stack Hub. F5 works with the world's leading technology companies on strengthening manageability and security while ensuring faster and more successful deployments. This Azure Stack Hub solution is the latest in a long, collaborative partnership between F5 and HPE. Its joint customers benefit from the integration and interoperability resulting from such a close collaboration.

SOLUTION OVERVIEW

The F5 solution has been validated for HPE ProLiant for Microsoft Azure Stack Hub for HA. It works primarily by acting as a load balancer between two or more Azure Stack Hub instances. The F5 solution runs on a virtual machine (VM) on a hypervisor, where it can allocate between various tenant workloads on each stack. The VM connects with top-of-rack (ToR) switches and baseboard management controllers (BMCs) on each stack through a border device on each stack.

LOAD BALANCING

With this architecture, the F5 solution can balance loads between each of the HPE ProLiant for Microsoft Azure Stack Hub instances. The load balancing occurs between Layer 4 and Layer 7 of the networks, guided by in-band monitoring. Incoming traffic is balanced between applications and databases to ensure reliability and performance.

F5 also offloads decryption and encryption of traffic workloads. By doing encrypt/decrypt in front of Azure Stack Hub, the F5 solution enables better application performance and a more efficient use of resources. A similar effect results from moving read/write operations to a separate, synchronized Azure Stack Hub in a different location.

Users put the F5 solution's load-balancing capabilities to work setting up failover for critical systems. By keeping two or more Azure Stack Hub instances in sync, F5 can manage instant failover if there is an outage on one of them. For example, a retailer might set up the back end of its point of sale (POS) system on a pair of Azure Stack Hubs synchronized by F5 load balancing. They do this because an outage in the POS system will hurt revenue and customer experience. With the F5 solution in place, a POS outage will have virtually no impact on business operations.

SUPPLEMENTARY WEB APPLICATION FIREWALL

The F5 solution for HPE ProLiant for Microsoft Azure Stack Hub supplements the stack's built-in security countermeasures. The solution's web application firewall offers additional protection against volumetric-type attacks that can overload applications running on the stack. The same functionality can also detect and prevent exfiltration of data from the Azure Stack Hub. As has been observed in many of the worst data breaches, the exfiltration of data over long periods of time, which often goes unnoticed, compounds the impact of the breach. F5 mitigates this risk.

SINGLE SIGN-ON (SSO)

Microsoft Azure Stack Hub requires a separate login for users. This requirement has the potential to affect ease of use and productivity. The F5 solution addresses this issue by enabling federated identity management (FIM). Applied to Microsoft Azure Stack Hub, FIM makes it possible for users to log in once and then be authenticated and authorized to access applications on the stack.

This SSO capability will work between public and on-premises instances of Azure, as well as between Azure Stack Hub and virtually any other application in the enterprise. In the POS example, for instance, an admin could sign on to the network and access the retailer's email server, accounting system, and POS system all with one set of login credentials.

CUSTOMER BENEFITS

Applying the F5 load balancing solution to HPE ProLiant for Microsoft Azure Stack Hub confers a number of benefits to the enterprise. These include:

- Multiple HA scenarios:
 - Application HA—Making applications highly available across the cloud and on-premises, or between multiple Azure Stack Hub instances
 - Localized HA—Allowing two or more Azure Stack Hub instances at the same site to act as failover instances for each other
 - Multisite/multiregion HA—Bridging Azure Stack Hub instances deployed in multiple data centers, including deployments in separate geographic regions
- Improved security posture—Protecting applications and data on Azure Stack Hub against volumetric attacks and exfiltration contributes to an overall improvement in an organization's security posture
- Improved end-user productivity—Leveraging SSO, users of applications on Azure Stack Hub can work more productively

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