VMware Cloud Foundation* Helps Empower Hybrid Cloud Agility

Through deep collaboration and a shared vision, Intel and VMware* help businesses achieve scalability and productivity at a lower cost with hybrid cloud

This solution brief describes how to solve business challenges through investment in innovative technologies.

If you are responsible for...

- **Business strategy:**
  You will better understand how a VMware Cloud Foundation* hybrid cloud solution will help enable you to successfully meet your business outcomes.
- **Technology decisions:**
  You will learn how a VMware Cloud Foundation hybrid cloud solution works to deliver IT and business value.

Executive Summary

Scalability is the key to delivering solutions quickly and cost-efficiently. But achieving true scalability in a rapidly changing world can be daunting to even the most technologically savvy person. Optimizing software—limited by the hardware infrastructure on which it runs—can only go so far. Virtualization can help, but managing the environment, including hands-on dependencies, can slow production. The challenge to achieving scalability is integrally tied to IT automation, network provisioning, IT cycle times, and complex operations. With those critical pieces in place, a business can achieve nearly seamless performance.

Intel and VMware* have collaborated for more than a decade to help organizations accelerate provisioning, improve operational efficiency, and decrease time-to-market (TTM). VMware Cloud Foundation*, built on Intel® technology, eliminates hardware silos and delivers compute, storage, and networking through a single software layer on industry-standard x86 servers. True scalability helps achieve agility and productivity at a low cost, demonstrating how IT can increase profitability (Figure 1).
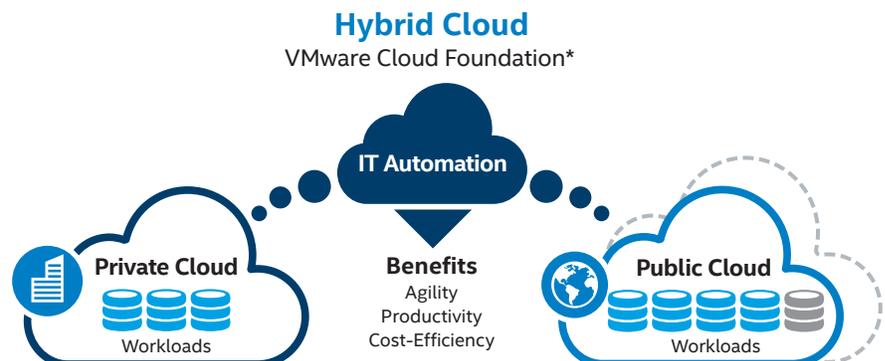

Figure 1. With over a decade of collaboration, Intel and VMware* help organizations improve operational efficiency and decrease time-to-market (TTM).

Solution Benefits

VMware Cloud Foundation* offers the following features:

- IT automation improves agility and time-to-market (TTM).
- Rapid provisioning simplifies operations.
- Software-defined infrastructure helps improve forecasting and meet changing needs.
- A common set of tools allows administrators to aggregate and correlate across environments.

Business Challenge: Hardware-Dependent Infrastructure Limits Optimization

Digital transformation is creating rapid and fundamental changes in business. Across industries, businesses face pressure to deliver solutions quickly, with low production costs. IT organizations understand that to meet the needs of the business, which in turn requires also meeting the changing needs of the customer, they must transform their data centers to be more agile. Supporting the next generation of applications means overcoming the following challenges:

- **Speed time-to-market (TTM).** Reducing physical server provisioning and landing times is not enough. Environment management and application team efficiency, due to infrastructure location and hands-on dependencies, slow production.
- **Reduce costs.** Traditional infrastructure can cost less when virtualized, but it falls short of fully improving hardware efficiency, automating orchestration, and pooling resource use.
- **Improve scalability.** Without changes to the underlying infrastructure, traditional applications may neither scale effectively nor perform failover properly, especially when meeting irregular load demand.

VMware Cloud Foundation* helps organizations overcome these challenges and shift to a more agile, service-oriented IT model by providing integration of private environments and public clouds using VMware Cloud on Amazon Web Services* (AWS*).

Gain Virtual Infrastructure and IT Automation

VMware Cloud Foundation provides a straightforward solution that helps cloud administrators gain the ability to expand and contract an underlying infrastructure to meet changing needs. Now, businesses have the flexibility to deploy a wide variety of operating systems and application stacks within the tenant virtual machines. Administrators can integrate and monitor the underlying infrastructure with a common set of tools that aggregate and correlate across physical and virtual environments.

VMware vRealize Operations* and vRealize Log Insight* provide IT operators with performance management, capacity optimization, and real-time log analytics using predictive analytics for both structured and unstructured data. Overall IT efficiency can be improved through the ability to accelerate the delivery and ongoing management of personalized, business-relevant infrastructure, providing services at the right size and service level for the task.

Solution Value: Efficient Use of IT Resources Optimizes TCO

VMware Cloud Foundation, built on Intel® technology, helps IT organizations modernize the data center and deliver IT infrastructure and application service with speed and agility. VMware Cloud Foundation architecture makes hybrid cloud possible by defining a platform common to both public and private clouds. The security-focused, enterprise-ready infrastructure delivers elastic scalability and network efficiency, as well as high-performance space efficiency, which help reduce the total cost of ownership (TCO) (Figure 2).

The benefits include:

- **Agility.** The innovative, software-defined approach to infrastructure automates IT, runs more applications, and helps improve agility in the data center and TTM.
- **Productivity.** Administrators can rapidly provision networking and security services, simplify operations, and increase operational efficiency and scalability, while reducing IT cycle times and manual tasks.
- **Cost-efficiency.** Greater operational efficiency saves time, optimizing the use of IT resources. VMware Cloud Foundation helps reduce hardware costs through an Infrastructure-as-a-Service (IaaS) model. Without the need for specialized hardware, organizations gain efficiency and speed.

VMware Cloud Foundation*
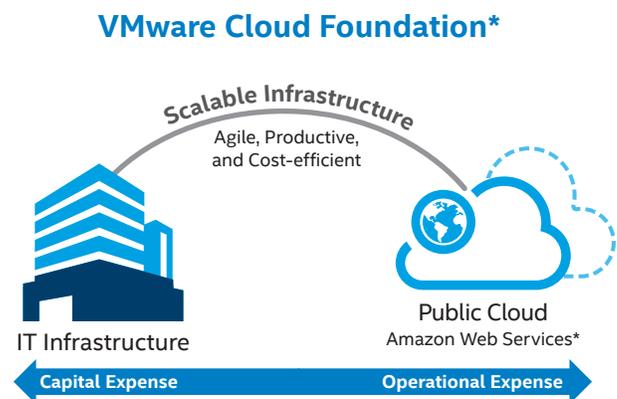
Figure 2. VMware Cloud Foundation* is a security-focused, enterprise-ready infrastructure that delivers elastic scalability and helps businesses move from high capital investment to more predictable operational expenses.

VMware Cloud Foundation helps eliminate hardware silos and deliver compute, storage, and networking through a single software layer on industry-standard x86 servers. It helps simplify private infrastructure and improve performance by utilizing faster CPUs and new flash technologies such as Intel® Optane™ Solid State Drives (SSDs). The vRealize Suite* provides enterprise-ready cloud management to proactively address system health, automate IT, and help development teams deliver complete application stack solutions.

Intel and VMware have collaborated for over 10 years, with the goal to accelerate provisioning, improve operational efficiency, and decrease TCO. VMware Cloud Foundation for hybrid cloud includes VMware SDDC Manager*, which automates configuration, provisioning, and updates. It also includes VMware vRealize Log Insight for cloud automation. Additional components include VMware vSphere*, Virtual SAN*, and NSX*, which converge compute, storage, and networking into a single, integrated software layer.

VMware's collaboration with AWS helps businesses run any application, using common software and tools in a consistent hybrid cloud environment. AWS is a leader in public cloud infrastructure, and is the primary provider for VMware-supported public cloud solutions and services. Businesses can rely on VMware's virtualization and management software for seamless workload deployment across their on-premises and AWS environments.

Solution Architecture: High Performance, Strong Security

VMware Cloud Foundation uses Intel's security-focused technology to shorten the path to hybrid cloud implementation and increase administrative productivity. Also, organizations can manage and automate a heterogeneous,

A Shared Vision

Intel and VMware* have collaborated for over 10 years, sharing roadmaps and technology to advance the needs of businesses. The two companies share a vision to help IT organizations modernize data centers with software-defined infrastructure; accelerate performance; and provide flexibility, agility, and a focus on security with on-premises and hybrid clouds.

Joint engineering has focused on deep solution optimization, pre-validated solution frameworks, software-defined enterprise, and VMware Cloud Foundation* to simplify the path to the hybrid cloud. Together, Intel and VMware offer a natural extension between virtualized technologies with complementary hardware- and software-based security.

multi-cloud environment with an enterprise-ready cloud management platform optimized for Intel® server platforms. Intel technology provides the following benefits (Figure 3):

- **Performance.** Intel® Xeon® Scalable processors and Intel® Ethernet Gigabit Server Adapters provide state-of-the-art performance and reliability for compute-intensive workloads. Intel® Solid State Drives (Intel® SSDs) deliver stable, reliable scalability for data storage.

- **Security.** Intel® Trusted Execution Technology (Intel® TXT) provides cloud operators with automated security and compliance monitoring while Intel® Advanced Encryption Standard–New Instructions (Intel® AES–NI) data encryption and security tools help protect data during transition and storage.
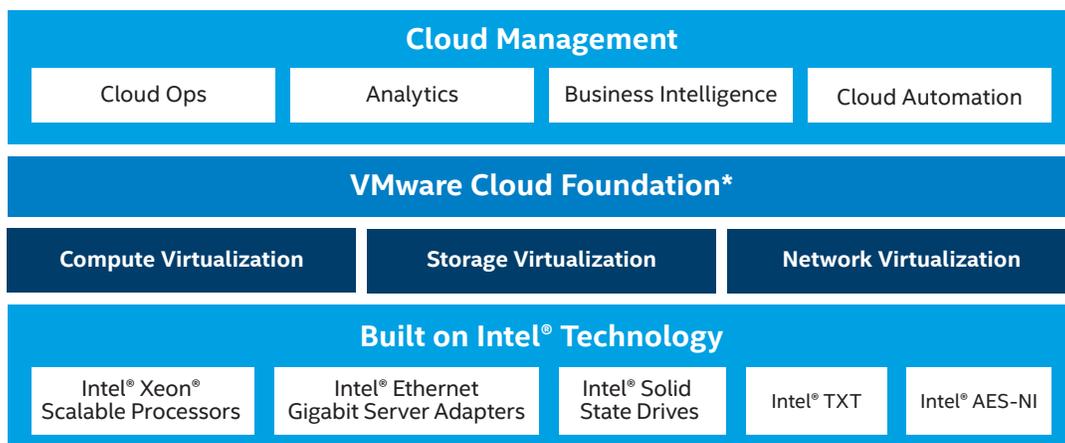
Figure 3. Intel's security-focused technology helps shorten the path to hybrid cloud implementation and increased productivity.

Conclusion

Businesses seeking to keep operational costs low and improve TTM, as well as benefit from digital transformation, can accomplish these objectives by implementing a hybrid cloud solution available from VMware, using Intel technology. By doing so, IT organizations can modernize their data centers, migrate from hardware-centric infrastructure, and improve operational efficiency, while increasing scalability, productivity, and agility.

Intel and VMware's collaboration has resulted in a shared vision to help organizations move to a software-defined infrastructure to accelerate performance and improve flexibility, agility, and a focus on security. VMware Cloud Foundation for hybrid cloud uses Intel technology to help businesses achieve these goals. VMware SDDC architecture makes hybrid cloud possible and delivers elastic scalability and network efficiency, which optimize TCO.

Find the solution that is right for your organization. Contact your Intel representative or **visit intel.com/cloud**.

Focus on VMware*

VMware*, based in Palo Alto, California, is a global leader in cloud infrastructure and digital workspace technology that focuses on providing unprecedented freedom and flexibility in IT environments. VMware solutions help organizations improve business agility by modernizing data centers and integrating public clouds, increase innovation with modernized apps, and create exceptional experiences by empowering the digital workspace.

Learn More

You may also find the following resources useful:
- Optimal Workload Placement for Public, Private, and Hybrid Clouds
- Cloud Solutions Meet Changing Needs with a Competitive Advantage brief (ask your Intel Representative)

Solution Provided By: