

VMWARE PHOTON PLATFORM

A container-optimized cloud platform for modern applications

AT A GLANCE

VMware Photon™ Platform is a container-optimized cloud platform which delivers on-demand tools and services for developers to build, test, and run modern applications while enabling IT to retain security, control, and performance of the datacenters. Purpose-built for cloud-native applications, Photon Platform brings scale, performance and features previously accessible only to hyper-scale web companies into enterprise data centers.

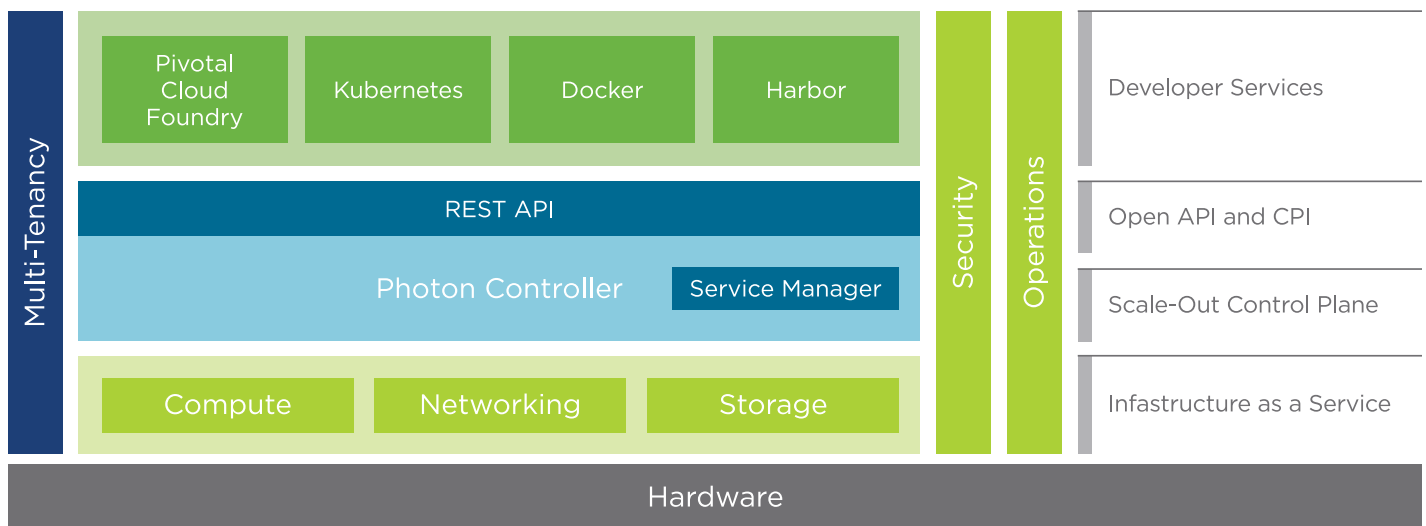
More and more businesses are moving towards cloud-native applications to enhance business speed and agility. VMware Photon Platform is designed to support this cloud-native movement, providing a complete, end-to-end solution that accelerates, simplifies, and secures your organization’s cloud-native deployment.

What is Photon Platform?

Photon Platform is a container-optimized cloud platform which delivers on-demand tools and services for developers to build, test, and run modern applications while enabling IT to retain security, control and performance of data center infrastructure.

Purpose-built for cloud-native applications with integrated container infrastructure support, Photon Platform is a fully API-driven, multi-tenant platform which brings the scale, performance and features previously accessible only to hyper-scale web companies into enterprise data centers. It leverages industry-leading compute, networking, and storage technologies to bring best-in-class performance, reliability and ease-of-use for cloud-native workloads.

VMware Photon Platform



KEY FEATURES

- Production-grade, fully supported Kubernetes distribution with full life-cycle management and pod-based network virtualization
- Comprehensive compute, storage, networking, security, and operations
- Granular multi-tenancy and access management for resource isolation and security throughout the stack
- Highly-available control plane for web scale deployments
- Robust Docker registry via Harbor, an open-source container registry server designed for enterprise
- Support for Docker containers, including enterprise service registry and authentication
- Integration with Pivotal Cloud Foundry
- Simple-to-use API and CLI tools
- Rich HTML5 web interface for management and consumption
- Optimized for high churn container environments and large number of concurrent API requests

Key Components of Photon Platform

- **Photon Controller**
 - A scale-out control plane that turns compute hosts into an easy-to-manage single system
 - Aggregates and exposes IaaS services for secure container and modern app runtimes via IaaS APIs
 - Simplifies deployment and life cycle management of compute, networking, security, storage and operations functions
 - Complete life-cycle management of advanced developer services (Kubernetes and Harbor)
- **Photon OS**
 - A lightweight operating system optimized for containers
- **ESXi™**
 - Industry-leading hypervisor running on bare metal for virtualization
- **Networking**
 - Networking virtualization based on NSX technology
- **Storage**
 - Hyper-converged storage based on vSAN technology

Technical Specifications

Technical specifications for developers and application team

- **Modern developer services**
 - Docker and Kubernetes support
 - Versioned REST API-based access to platform features
 - CLI and web interface enable easy access to features
 - Photon Platform works seamlessly with leading PaaS framework Pivotal Cloud Foundry
- **Kubernetes as a Service**
 - Developers get access to on-demand Kubernetes clusters. These clusters are provisioned in seconds to minutes
 - Developers can scale up their Kubernetes clusters on demand, with no down time
 - Easy lifecycle management of cluster, including upgrading master, etcd and worker nodes
 - New versioning of Kubernetes allowing for easy upgrade of all Kubernetes infrastructure components
 - Support for Persistent Volumes
 - Load balanced and redundant Kubernetes multi-master deployment
 - Authentication of Kubernetes API requests via integration with Lightwave (utilizing standards-based OIDC)
 - Highly available Kubernetes deployments, automatically recovering from failures without any user intervention
 - Low maintenance. Enables developers to focus on applications rather than spending time on automating or maintaining their clusters.

- **Infrastructure as a Service**

- Developers are offered a library of IaaS resources they can self-service including VMs, networks, storage
- Support for robust virtual networking via custom subnets
- Robust resource management via quotas
- Advanced image sharing functionality via IAM features
- VMs are provisioned quickly, chosen from IT defined catalog of VM sizes and operating system base images
- Scale-out control plane allows simultaneous provisioning of large numbers of workloads, supporting the needs of high churn container environments
- Integration with Active Directory via Photon's authentication subsystem

Technical specifications for infrastructure operations teams

- **Simple to setup and operate infrastructure platform**

- REST API, CLI and web interfaces are intuitive and easy to use
- Pre-integrated stack requires little or no customization to work in your environment

- **Production-grade Security**

- Isolated workloads via ESXi virtualization
- Multi-tenancy across the stack
- Identity and access management integrates with your corporate directory
- Create tenants and projects to isolate groups of users and their workloads from each other
- Certificate management and rotation across all hosts in cluster

- **Storage management**

- Aggregate disks in Photon Platform compute hosts into hyper-converged datastores
- Connect to traditional SAN, NFS and FC storage
- Define catalog of disk options using any ESXi supported datastore, including hyper-converged storage

- **Network Virtualization for Containers**

- Pod-level virtual networking for Kubernetes via NSX
- Operational advantages of running NSX applied to Kubernetes virtual networking

- **Hardware flexibility**

- Same hardware compatibility as ESXi 6.5

HOW IS PHOTON PLATFORM USED?

Developers can interact with Photon Platform via API calls, utilizing our various SDKs, or by consuming higher level frameworks like Kubernetes. The high churn capabilities in Photon Platform make it easy to deploy CI/CD pipelines onto the platform without worrying if the underlying hardware infrastructure can handle the load. A modern HTML5 web interface and a simple CLI tool can be used for common operational tasks and provides a high-level view of the platform's overall utilization and health.

LEARN MORE

Visit <https://www.vmware.com/products/photon-platform.html>

Key Benefits

- **Gain unprecedented business speed and agility**
With Photon Platform, developers can enjoy one-click access to the tools and services they need to build and run cloud-native applications. Container frameworks such as Kubernetes are being offered as an on-demand service to developers. Businesses can now try to experiment faster and accelerate product roadmaps, thus moving more rapidly to deliver innovative software solutions to market.
- **Enable the highest degree of security and tight control of business data**
With Photon Platform, businesses retain tight control over their data: how it's protected, and where it's stored. Photon Platform provides a trusted computing stack that integrates unified identity and access management across all layers of compute, network, storage. Photon Platform is able to federate with your existing identity and access management solution, including Active Directory.
- **Enjoy enterprise-grade networking, security and storage for running cloud-native applications**
Photon Platform leverages leading VMware technologies to deliver Photon networking, storage and security features optimized for running cloud-native applications. It leverages VMware NSX® technology to deliver virtual networking on demand and VMware vSAN™ technology to deliver hyper-converged storage (in addition to local and traditional storage options).
- **Optimize cost of workloads with greater infrastructure flexibility**
Photon Platform runs in enterprises' own data centers, which enables businesses to realize large cost-savings by purchasing their own hardware for large-scale, more predictable workloads. In addition, the ability to customize hardware configurations to meet the workload demands can also help achieve significant price/performance gains.

