

VMware Cloud on AWS

Cloud migration total cost of ownership

AT A GLANCE

VMware Cloud on AWS brings VMware's enterprise-class SDDC software to the AWS Cloud with optimized access to AWS services. Powered by VMware Cloud Foundation™, VMware Cloud on AWS integrates our compute, storage, network and management products, which are optimized to run on dedicated, elastic, baremetal AWS infrastructure.

ADDITIONAL BENEFITS

- Organizations can enjoy the benefit of consistent operation management through vCenter® servers without the need to spend significant resources to retrain IT staff.
- IT teams can respond faster to new business requirements and optimize costs with faster to deploy and more elastic infrastructure.
- Organizations reduce cloud migration risk by moving applications without any changes to a familiar and proven VMware infrastructure running on AWS - the world's most popular public cloud.

There are three areas of cost that organizations should evaluate and compare to understand the total economic impact of moving an application(s) to the public cloud:

1. The total cost of migrating the application(s) to the public cloud
2. The total cost of ownership (TCO) for various public cloud infrastructure options
3. TCO of on-premises infrastructure for the application(s) versus equivalent public cloud footprint

The objective of this note is to demonstrate that VMware Cloud™ on AWS offers a significant cost advantage in each of these areas.

Cost of application migration

There are several different migration patterns of various complexities that organizations can implement to move an application(s) to the public cloud. The more complex the pattern, the more time, resources, and skills are required to migrate the application(s) successfully. From the most to the least complex:

- **Refactor** - Adopt the application(s) to the cloud provider's environment. The software development team re-writes the application(s) code to use native public cloud services and architectural patterns.
- **Replatform** - Change the application(s) operating system or switch to use the cloud provider's middleware. The quality assurance team re-validates the application(s) for performance, scalability, resiliency, security and integration issues.
- **Rehost** - Change the application(s) and operating system to run on the cloud provider's hypervisor. The system engineering team re-sizes the application(s) to fit into pre-defined public cloud provider's resource 'T-shirt' size and re-tests for performance and availability.
- **Relocate** - No change. Virtual infrastructure admin moves the application(s) to VMware Cloud on AWS using various migration options, including live migration with VMware vMotion.

The following chart demonstrates the cost and time benefit of relocating an application(s) to VMware Cloud on AWS versus refactoring the application(s) for native public cloud, based on customer interviews and research performed by IDC and ESG. Typical customers were able to **save 69%** on migration costs and reduce migration time **from years to months** with VMware Cloud on AWS.

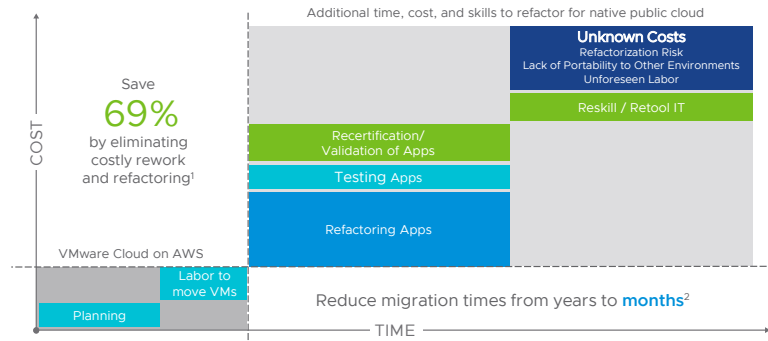


Figure 1. Cost of migrating to public cloud

Cost comparison of public cloud options

Public cloud providers offer a high degree of transparency by publishing list prices of their various service options. However, the wide variety of options and the a-la-carte model to building a complete enterprise-grade solution lead to a complexity that makes like-to-like comparisons difficult. Organizations must consider the following costs when making comparisons for enterprise-grade applications:

1. Compute, network, and storage resources
2. Support
3. Additional enterprise compute, networking and storage features (site-to-site VPN, NAT gateway, and others)

In addition to enumerating the full cost of an enterprise-grade solution, organizations should consider public cloud capabilities that enable compute, network and storage resource optimizations, and therefore generate savings.

Unlike most public cloud offerings, VMware Cloud on AWS bundles all the required enterprise-grade capabilities into its base price. Also, VMware Cloud on AWS offers resource optimization features including memory overcommit, CPU oversubscription, storage deduplication/compression, and WAN optimization that allow organizations to consume fewer resources per application than would otherwise be required. The following chart demonstrates a like-to-like total cost comparison of an average-sized VMware Cloud on AWS i3en Linux virtual machine (VM) to an equivalent native cloud instance without and with typical optimizations of vSphere memory overcommit and CPU oversubscription. Without optimization features enabled, VMware Cloud on AWS VM has a **12% lower cost** than comparable native public cloud instance. With optimization features, and at a typical consolidation ratio of 1.3, VMware Cloud on AWS achieves **38% savings** versus comparable native public cloud instance.

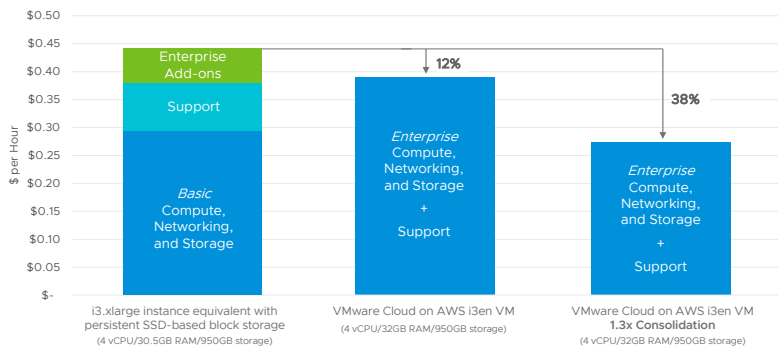


Figure 2. Three year list price comparison example (worst case scenario)

Cost comparison to traditional on-premises infrastructure

Comparing the TCO of existing on-premises infrastructure that supports the application(s) versus the equivalent public cloud infrastructure footprint enables organizations to understand the ongoing, long term cost difference between running the application(s) on-premises or in the public cloud. There are three elements of infrastructure and operations cost that organizations should consider:

1. On-premises or co-location data center facilities costs
2. Cost of perpetual software licenses, hardware infrastructure and support
3. Operating costs

The Total Economic Impact™ of VMware Cloud On AWS, an August 2019 commissioned study of VMware Cloud on AWS customers conducted by Forrester Consulting on behalf of VMware, has found that a typical customer experienced **39% savings** across these three different areas. The following chart shows savings in each of the three different cost categories:

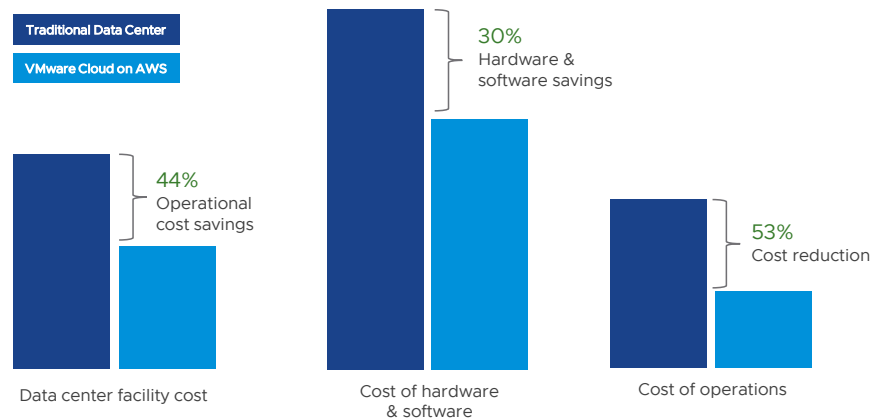


Figure 3. Real customer cost comparison of VMware Cloud on AWS vs. traditional data center

The bottom line

VMware Cloud on AWS provides savings in the three key cost areas that organizations should consider in cloud migration projects. The ability to migrate an application(s) to the cloud without any changes nearly eliminates migration-related costs. Compared to native public cloud options, VMware Cloud on AWS offers a better TCO that can be further increased depending on the degree of infrastructure resource utilization organizations chooses to implement. Compared to traditional on-premises infrastructure, VMware Cloud on AWS offers a high total cost of ownership benefit due to savings on data center facilities, hardware and software, and ongoing operating costs.