Hewlett Packard Enterprise

HPE Solutions for Harvester and Rancher Prime

Unified management of VMs and Kubernetes

In the shifting landscape of IT infrastructure, organizations are constantly looking for novel solutions to meet the needs of modern workloads. Here comes Harvester, an open-source hyperconverged infrastructure (HCI) platform that revolutionizes how organizations approach container orchestration and virtualization.

Today's challenges

Organizations are very much used to conventional virtualization, which is both easy to use and cost-effective. Virtualization platforms can also enhance sustainability and scalability. However, with the rising prevalence of containerization, customers need a hypervisor that can integrate with Kubernetes (K8s). In this scenario, Harvester comes into picture.

Harvester, an open-source project developed by Rancher Labs, which is owned by SUSE®, is an HCI solution based on Linux® kernel-based virtual machines (KVM). Harvester makes the setup and management of virtualized environments easier and more accessible to a wider variety of users, including those without extensive virtualization expertise. Harvester is designed to integrate seamlessly with K8s, embracing its orchestration and management capabilities. As a next-gen open-source HCI project it can reduce licensing costs compared to proprietary hypervisors.

How we can help

HPE ProLiant Gen11 series servers are perfectly suited for setting up a production-grade Harvester cluster to host an entire Rancher setup including multipurpose services and workloads. This high availability (HA) setup can be used to spin up VMs manually or dynamically to meet production requirements, and it will help build container-based solutions to implement DevSecOps, monitoring and logging, edge computing, and more.

Business benefits

- Easily manage and orchestrate workloads across on-premises and cloud environments with support for hybrid infrastructures.

- Increase application deployment flexibility.

- Benefit from community and ecosystem innovation, updates, and support.

- Enhance security measures and resource utilization with a robust and resilient environment for mission-critical workloads.

- Empower IT staff to do more with less effort and switch the focus from manual and repetitive tasks to value-added activities.

Financial benefits

• Consolidate infrastructure management to reduce licensing costs and operational expenses.

• Achieve scalability without overhead.

• Future-proof investments by reducing the risk of premature obsolescence and the need for frequent, costly upgrades.

• Get community-driven cost savings from contributions, updates, and support without additional licensing fees.

• Increase return on investment for IT assets and staff resources.

HPE solution details

In the dynamic realm of container orchestration and virtualization, the seamless integration of Harvester and Rancher Manager is a game-changer, paving the way for a production-ready hosted K8s platform. This powerful synergy allows organizations to effortlessly provision VMs and layer Rancher clusters on top, creating a robust foundation for a K8s environment that is not just agile but truly production ready.

About

Solutions are built using HPE ProLiant DL360 servers, with three bare-metal servers for bringing up the Harvester HCI through PXE boot configuration. The management network and Virtual Extensible LAN (VXLAN) network are kept separate according to best practices. Default VM storage is provisioned through Harvester's default storage class, Longhorn. Rancher Prime is integrated with Harvester, and the required Rancher Kubernetes Engine (RKE) or K3s can be easily custom provisioned through it based on requirements. Rancher Prime is used for four key aspects: cluster management, operating system management, continuous delivery, and virtualization management. Also, the Rancher server will be the centralized management console for hosting and managing all the solutions, including Harvester. Rancher Apps and Marketplace is a key feature and includes applications contributed by the community and partnerships with vendors, ensuring a rich ecosystem of solutions.

Rancher Prime

Rancher Prime enables users to develop and manage workloads and clusters in any environment and support any recognized K8s distribution. Rancher Prime offers the same experience as Rancher community edition, with the addition of enterprise support and access to professional services including go-live and trusted container registry. Customers can accelerate important business outcomes with top-notch technical support above and beyond simple break-fix models with 24/7 coverage for K8s deployments.

Harvester

Harvester is the next generation of HCI designed for modern cloud-native environments. It natively integrates virtualization and containerization capabilities with Rancher to give operators a comprehensive overview for managing virtual and containerized workloads from core to the edge. Users can import and manage Harvester clusters directly through the Rancher Virtualization Management page and extend operational excellence through Rancher including authentication and role-based access control for multi-tenancy support across Harvester clusters. Harvester is created completely out of open-source technologies, including:

• Elemental for SLE Micro 5.3 is an immutable Linux distribution designed to remove as much OS maintenance as possible.

• Kubernetes has become the predominant infrastructure language across all form factors.

- KubeVirt provides virtualization management using KVM on top of Kubernetes.

- Longhorn provides distributed block storage and tiering.

- Grafana and Prometheus provide observability with robust monitoring and logging.

Longhorn

Longhorn is a Cloud-Native Computing Foundation (CNCF) certified project that gives K8s users a robust, portable cloud-native distributed storage platform that lets you orchestrate your storage needs on-demand to eliminate the cross-functional challenges often experienced when provisioning enterprise storage. It comes with features such as:

- Highly available persistent storage for K8s

- Built-in incremental snapshot and backup and cross-cluster disaster recovery

- One-click installation and deployment via the Rancher application catalog, using Helm or with kubectl

- A free, intuitive user interface dashboard for easy understanding and management

- An infrastructure agnostic solution that operates the same across on-premises and cloud environments

Advantages

- Open source collaboration

- Future-ready infrastructure

- Agile scalability

- Centralized view and management interface

- Security and compliance

Offering

HPE solutions for Harvester with Rancher Prime are built on HPE ProLiant DL360 servers with solid-state drive (SSD) storage and high-performance network connectivity.

Starting from
$8,659
Per month*

Configuration sizes	Small	Medium	Large
Rancher Prime with Harvester	2 sockets — 32 cores 128 GB, 3.2 TB SSD USD$8,659/MTH*	2 sockets — 48 cores 256 GB, 6.4 TB SSD USD$15,190/MTH*	2 sockets — 64 cores 384 GB, 6.4 TB SSD USD$17,106/MTH*
Includes	3 x HPE ProLiant DL360 with 2 x Intel Xeon CPUs and local SSD storage, Rancher Prime and operating system subscriptions and HPE Professional Services.		
Options	• HPE Managed Services • HPE Education Services • DevSecOps with onboarding a simple application	• Migrating a simple application to containers • Migrating a VM from VMware vSphere® to Harvester • Migrating an application from other K8s to Rancher • Kasten backup solution	

* Pricing as of January 2024. Subject to change, not inclusive of options.

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