



**Hewlett Packard**  
Enterprise

# Efektyvinkite savo virtualią aplinką su HPE VM Essentials: Atviro pasirinkimo galia

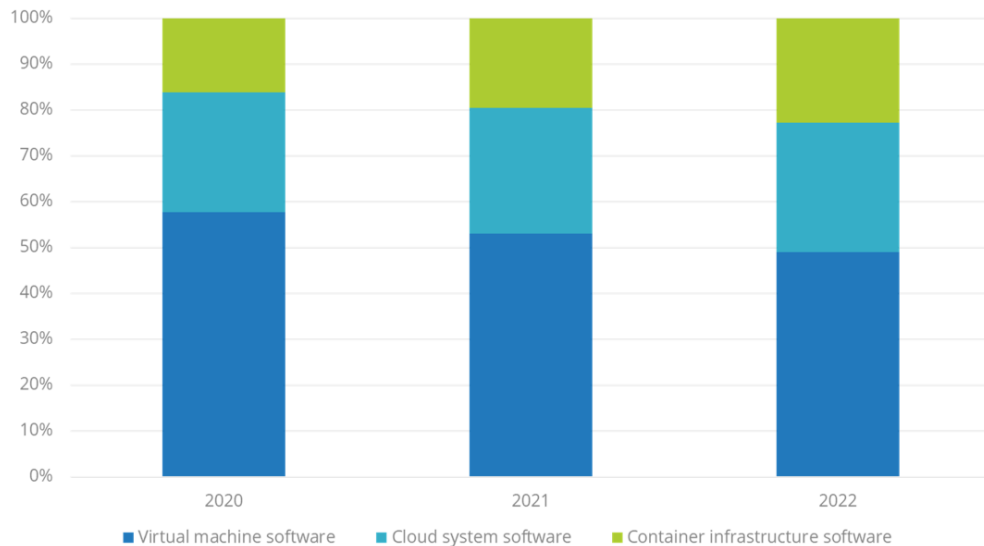
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HPE Hybrid IT  
06 2025

# Virtualization is the architecture of choice

## Software Defined Compute share by technology

Worldwide Software Defined Compute Software share by technology segment



- Total 2022 market size of \$8.6 billion, a 12.8% growth from 2021
- VM technology based revenue continues to shift away from VMS and into CSS as customers embrace cloud operating models
- Container growth is not currently coming at the expense of VMS or CSS, but is a net add to the SDC market and the fastest growing segment.



Source: IDC Software Tracker, May 2023

© IDC | 7

Virtual machine software and cloud system software dominate the software defined compute market

Most cloud system software deployments use virtualization technologies inside

Use of containers is growing fast, but it remains primarily platform-centric (e.g. DevOps).

## Licensing changes have caused significant disruption

- Bundles only: VCF, VVF, vSphere Standard
- No more perpetual licenses
- No more ELAs
- Lower discounting
- Extra charges (e.g., vSAN)



Effective price increase of

**2-4x**

for most customers\*

Note: \*Some customers experience effective price increases of 15x or more

# Most popular choices

|   | Hypervisor         | K8s                       | Storage               | Data LCM & Cyber Resiliency | Network                       | Infra. Mgmt       | IT Ops Mgmt.          | Cloud Mgmt        | Hardware infra   | Open Hybrid Cloud Platform | E2E Enterprise services            |
|---|--------------------|---------------------------|-----------------------|-----------------------------|-------------------------------|-------------------|-----------------------|-------------------|--|----------------------------|------------------------------------|
| NUTANIX   | AHV                | Nutanix Kubernetes Engine | AOS                   | DP & DR                     | Flow                          | Prism             | Epoch, Prism Pro, NCM | NCM Self-Service  | <div>  <b>Hewlett Packard Enterprise</b> </div> |                            |                                    |
| Microsoft   | Hyper-V            | Azure Kubernetes Service  | Storage Spaces Direct | Azure Site Recovery         | Windows Server SDN            | Azure Portal      | Azure Monitor         | Azure Arc         |  |                            |                                    |
| vmware  | ESXi               | Tanzu Kubernetes Grid     | vSAN                  | Live Recovery               | NSX Networking                | SDDC Manager      | Aria Operations       | Aria Automation   |  |                            |                                    |
| <div>  <b>Hewlett Packard Enterprise</b> </div> | HPE virtualization | HPE Kubernetes Service    | HPE Alletra and more  | Zerto and more              | HPE Aruba Micro seg-mentation | HPE Private Cloud | OpsRamp               | HPE Private Cloud | Compute Storage Networking   | HPE GreenLake Cloud        | A&PS Managed Operational Financial |

# HPE VM Essentials Software introduction

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# Announcing **HPE VM Essentials Software**

- Reduce costs with HPE VM Essentials integrated hypervisor
- Simplify management across VMware and HPE clusters
- Future-proof IT with flexible consumption & upgrade paths
- Lower risk with enterprise-grade support & ecosystem

# NEW: HPE VM Essentials Software to unify VMware & HPE VME hypervisor

- **Reduce costs with HPE VM Essentials integrated hypervisor**

Featuring core capabilities to diversity VM estates including storage optionality (local, NFS, iSCSI, Fibre Channel), distributed workload placement, VM HA and live migration, data protection via snapshots and native backup, and DR with Zerto\*

- **Simplify management across VMware and HPE**

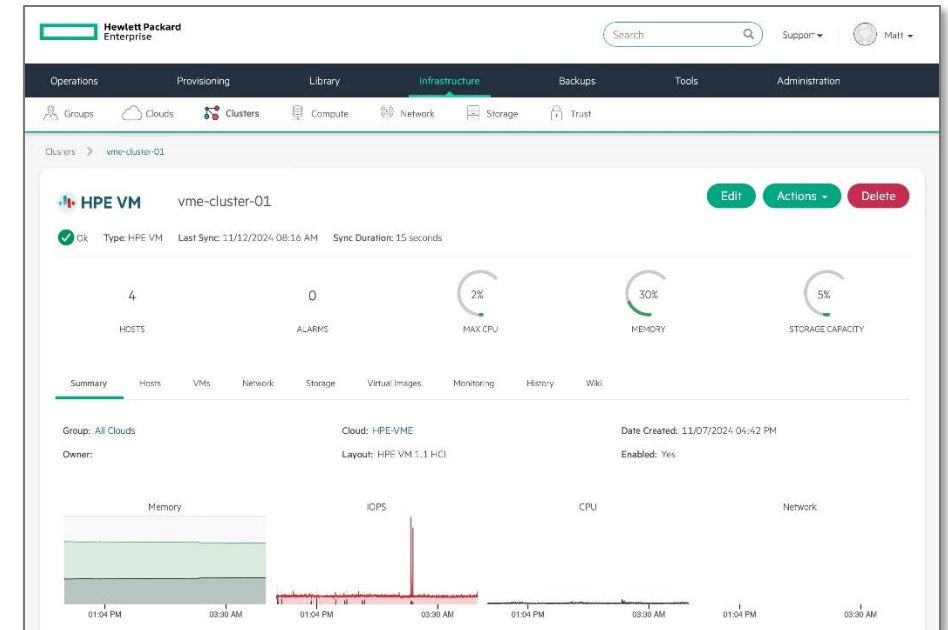
Connect existing VMWare® clusters for management and VM-vending into ESXi and HPE VME hypervisor from one interface. Also includes IPAM and DNS integration, automation execution, secrets management, and VMWare to KVM image conversion

- **Future-proof IT with flexible consumption & upgrade paths**

Available as standalone software and integrated into HPE Private Cloud. Customers can upgrade to full Morpheus PlatformOps for hybrid cloud management, K8s support, governance, and FinOps capabilities

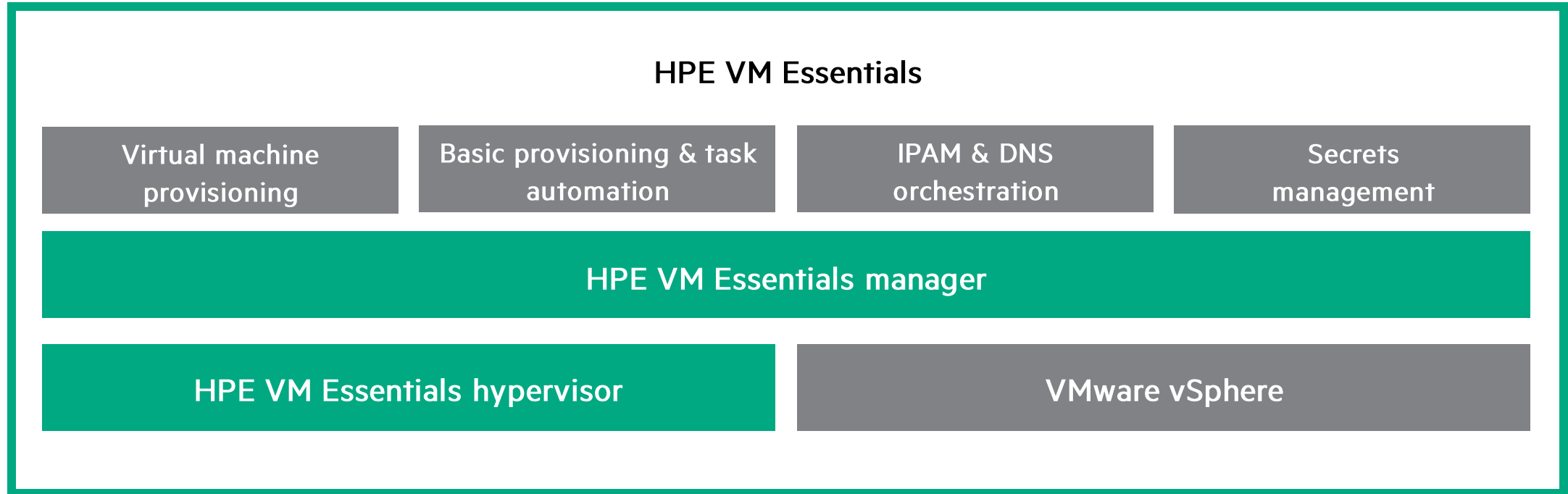
- **Lower risk with enterprise-grade support & ecosystem**

Building on a proven KVM core, HPE VM Essentials includes HPE's enterprise-class global support. HPE is working with its ecosystem of ISVs to expand HPE VME hypervisor certification and support for Data Protection, VDI, ERP, etc.



\* Zerto integration with HPE VM Essentials on roadmap for 1H 2025

# Solution overview



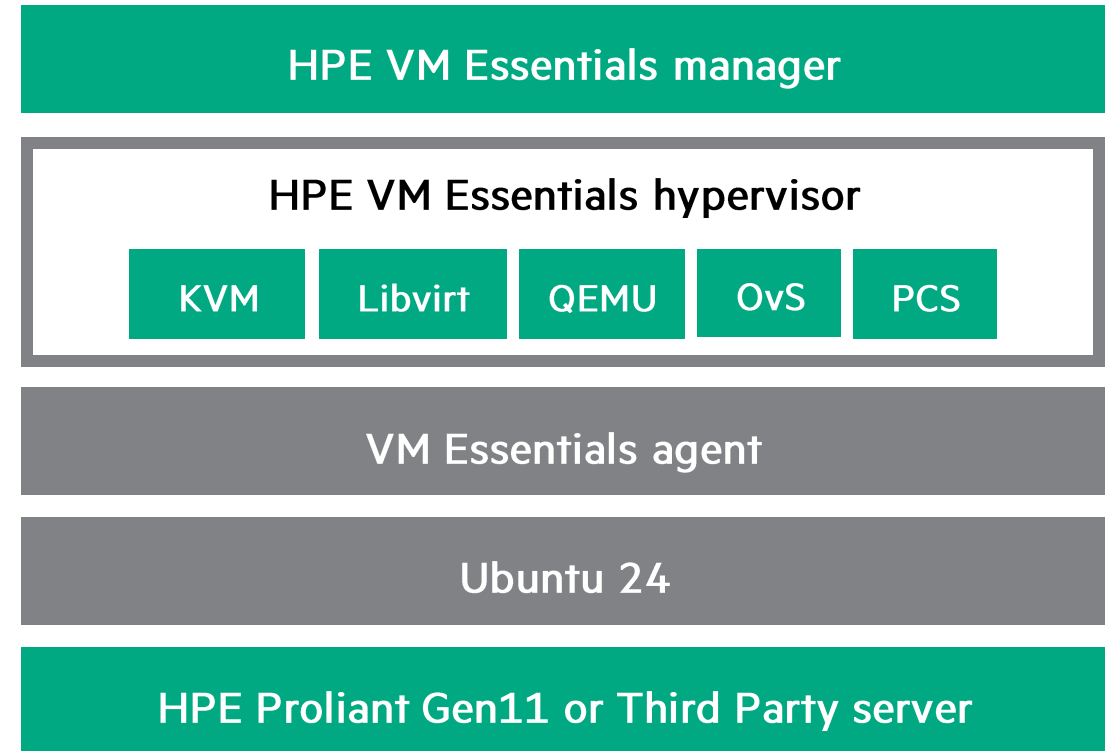
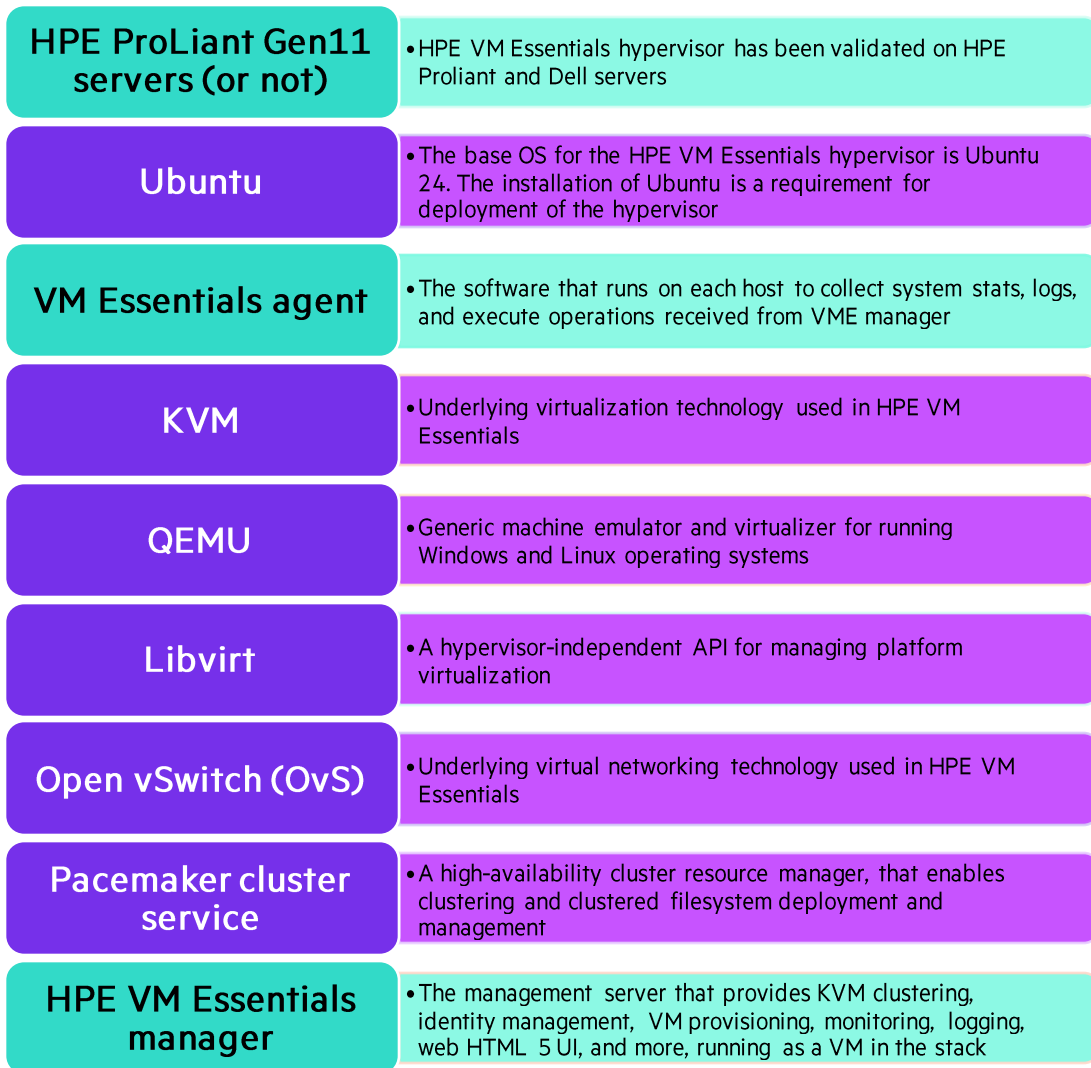


# Architecture

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# Theory of operation - logical architecture



# Features comparison

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# HPE VM Essentials solution features

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## **Multi-hypervisor support**

HPE VM Essentials enables simple provisioning and management of HPE VM Essentials and VMware virtual machines

## **Centralized identity & single sign-on (SSO)**

Enables external user authentication using Active Directory (AD) or LDAP. Optional SSO with Okta, OneLogin, Azure AD, or other SAML-enabled providers

## **IPAM integration**

Integrate with external IP address management providers (Infoblox, phpIPAM, BlueCat) to automate the reservation of an IP address for the VM during the provisioning process

## **DNS integration**

Integrate with external DNS providers (Infoblox, Microsoft DNS, BlueCat) to automate the creation of DNS records for a VM during the provisioning process

## **Provisioning automation**

Execute Bash or PowerShell scripts during VM provisioning, to automate system bootstrapping operations

## **Day 2 automation**

HPE VM Essentials supports the execution of Bash and PowerShell scripts on provisioned and discovered VMs

## **Secrets management**

Securely store and retrieve secrets from the native secrets manager for use with the solution's task automation feature

## **HTML 5 virtual machine console**

Access the dashboard of HPE VM Essentials and VMware virtual machines via the HTML 5 console



# HPE VM Essentials hypervisor features

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## **HPE-validated hardware**

The HPE VM Essentials hypervisor will be validated on HPE servers and others to deliver an optimal experience and provide hardware compatibility assurance

## **VM live migration**

Migrate a running HPE VM Essentials virtual machine from one host to another within the same cluster with zero downtime

## **VM high availability**

Automatically restart HPE VM Essentials virtual machines on another host in the same cluster in the event of an unexpected host failure within the cluster

## **Dynamic workload scheduler**

Dynamically schedule the placement of HPE VM Essentials virtual machines within a cluster, based upon optimal workload distribution across the cluster

## **Storage migration**

Migrate the virtual disks of a running HPE VM Essentials virtual machine from one storage datastore to another with zero downtime

## **VMware VM conversion**

Convert existing VMware virtual machines to the HPE VM Essentials hypervisor using the native conversion feature within the HPE VM Essentials solution



# HPE VM Essentials hypervisor features

## Virtual machine snapshots

Create and revert snapshots for HPE VM Essentials virtual machines

## Native data protection

Backup and restore HPE VM Essentials virtual machines using the solution's native data protection feature

## External storage support

The HPE VM Essentials hypervisor supports running virtual machines on external storage via iSCSI, NFS, and Fibre Channel

## HPE Alletra Storage MP integration

HPE VM Essentials includes an integration with the HPE Alletra Storage MP B10000 storage array, that enables HPE VM Essentials virtual machines to natively reference the Alletra MP storage for their storage (1:1 VM-to-disk mapping)

## HPE Alletra Storage MP array-based snapshots

The Alletra MP storage integration provides the ability to create and revert array-based snapshots for HPE VM Essentials virtual machines through the HPE VM Essentials UI





# Value proposition

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- **Competitively priced VMware alternative**

- Priced per socket on VME hosts for significant savings in most configurations, compared to per-core licensing found in VMware, eliminating un-needed software which is forced into VMware suites like VVF and VCF

- **Unified management experience**

- Connect existing brownfield VMware vCenter clusters for management and VM-vending into ESXi and HPE VME from one simple interface

- **Vertically integrated hardware and software solution**

- Integrated into the HPE hardware portfolio to leverage software and hardware synergy to deliver differentiating technical capabilities

- **Scalable path to Morpheus PlatformOps**

- Upgradable to full Morpheus PlatformOps suite, to add support for other hypervisors, public clouds, and Kubernetes; governance policy enforcement, and cloud cost management and optimization capabilities (FinOps)



# Hypervisor feature comparison

| Category                                   | Feature   | HPE Morpheus VM Essentials | VMware vSphere feature         | VMware vSphere Standard | VMware vSphere Enterprise Plus | Nutanix | Proxmox    |
|--|---|----------------------------|--------------------------------|-------------------------|--------------------------------|---------|------------|
| Pricing structure                          | Pricing   | Per socket                 |                                | Per core                | Per core                       | n/a     | Per Socket |
| Infrastructure Management                  | Centralized repository for virtual machine templates and files                      | Yes                        | Content Library                | Yes                     | Yes                            | Yes     | Yes        |
| Infrastructure Management                  | Identity and Access Management Federation   | Yes                        | Identity Federation            | Yes                     | Yes                            | Yes     | Yes        |
| Security                                   | Secure Communication Protocols (TLS 1.2/1.3)  | Yes                        | TLS 1.2 and 1.3                | Yes                     | Yes                            | Yes     | Yes        |
| Security                                   | Virtual Machine Encryption  | No                         | VM Encryption                  | No                      | Yes                            | Yes     | No         |
| Security                                   | Virtual Trusted Platform Module (vTPM) 2.0  | Yes                        | vTPM                           | Yes                     | Yes                            | Yes     | Yes        |
| Virtualization and Resource Management     | Virtual Symmetric Multiprocessing for resource allocation                           | Yes                        | vSMP                           | Yes                     | Yes                            | Yes     | Yes        |
| Virtualization and Resource Management     | High Availability for automatic failover  | Yes                        | HA                             | Yes                     | Yes                            | Yes     | Yes        |
| Virtualization and Resource Management     | Distributed Resource Scheduler: Automated workload balancing                        | Yes                        | Distributed Resource Scheduler | No                      | Yes                            | Yes     | Yes        |
| Virtualization and Resource Management     | Single Root I/O Virtualization for improved network performance                     | No                         | SR-IOV                         | No                      | Yes                            | No      | Yes        |
| Migration and Replication                  | Live migration of virtual machines (like to like, within a cluster)                 | Yes                        | vMotion                        | Yes                     | Yes                            | Yes     | Yes        |
| Migration and Replication                  | Live migration of virtual machine storage   | Yes                        | Storage vMotion                | Yes                     | Yes                            | Yes     | Yes        |
| Storage and Data Management                | High availability for management server   | Yes                        | vCenter HA (auto-restart)      | Yes                     | Yes                            | Yes     | Yes        |
| Storage and Data Management                | Data protection for management server   | Yes                        | vCenter Backup and Restore     | Yes                     | Yes                            | Yes     | Yes        |
| Network Management                         | IPAM integration to automatically reserve IP Addresses from external IPAM solutions | Yes                        | N/A                            | No                      | No                             | No      | No         |
| Network Management                         | DNS integration to automatically create DNS records in external DNS solutions       | Yes                        | N/A                            | No                      | No                             | No      | No         |
| Data Protection and Disaster Recovery (DR) | Synchronous replication for disaster recovery                                       | No                         | MetroCluster                   | No                      | Yes                            | Yes     | No         |
| Data Protection and DR                     | Native VM snapshots   | Yes                        | VM Snapshot                    | Yes                     | Yes                            | Yes     | Yes        |
| Data Protection and DR                     | Native VM backup and recovery   | Yes                        | N/A                            | No                      | No                             | Yes     | Yes        |



# Features comparison

| Feature                 | VMware vSphere Standard | vSphere Enterprise Plus | vSphere Foundation | HPE VM Essentials                        |
|-------------------------|-------------------------|-------------------------|--------------------|--|
| Life Cycle Management   | Yes                     | Yes                     | Yes                | Yes - HPE Private Cloud Business Edition |
| Content Library         | Yes                     | Yes                     | Yes                | Yes                                      |
| Distributed Switch      | No                      | Yes                     | Yes                | Yes                                      |
| Virtual Volume          | Yes                     | Yes                     | Yes                | Yes, w/ HPE Alletra Storage MP B10000    |
| Identity Federation     | Yes                     | Yes                     | Yes                | Yes                                      |
| TLS 1.2 and 1.3         | Yes                     | Yes                     | Yes                | Yes                                      |
| TPM 2.0                 | Yes                     | Yes                     | Yes                | Yes                                      |
| Virtual TPM             | Yes                     | Yes                     | Yes                | No                                       |
| VM encryption           | Yes                     | Yes                     | Yes                | Yes, w/ HPE Alletra Storage MP B10000    |
| SSO and Identity Broker | No                      | No                      | Yes                | Yes                                      |
| Key Provider            | Yes                     | Yes                     | Yes                | No                                       |
| vSMP                    | Yes                     | Yes                     | Yes                | Yes                                      |
| HA                      | Yes                     | Yes                     | Yes                | Yes                                      |
| FT                      | Yes                     | Yes                     | Yes                | No                                       |



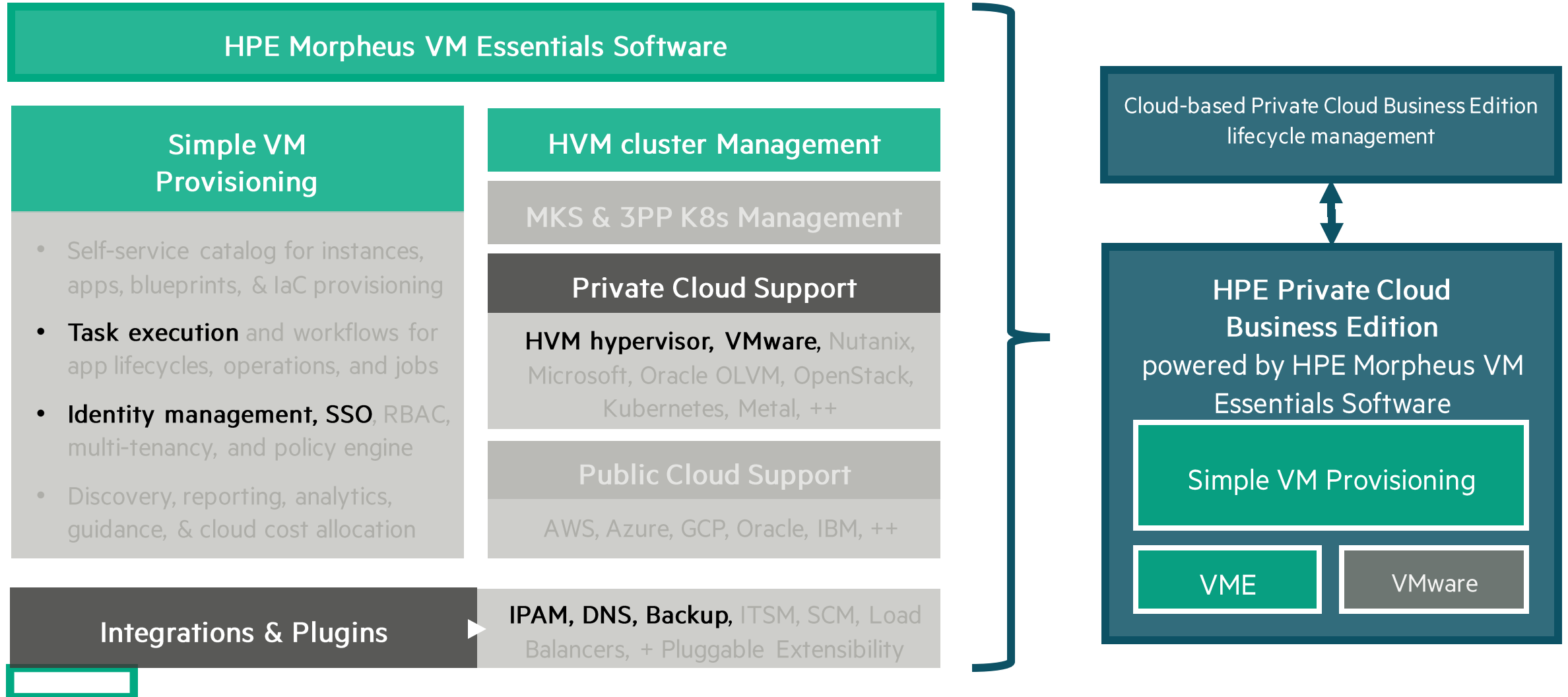
# Features comparison

| Feature                         | vSphere Standard | vSphere Enterprise Plus | vSphere Foundation | HPE VM Essentials                     |
|---------------------------------|------------------|-------------------------|--------------------|---------------------------------------|
| Distributed Resource Scheduler  | No               | Yes                     | Yes                | Yes                                   |
| Storage DRS                     | No               | Yes                     | Yes                | No                                    |
| Distributed Power Management    | No               | Yes                     | Yes                | No                                    |
| Storage Policy-based Management | Yes              | Yes                     | Yes                | No                                    |
| SR-IOV                          | No               | Yes                     | Yes                | No                                    |
| vMotion                         | Yes              | Yes                     | Yes                | Yes                                   |
| Storage vMotion                 | Yes              | Yes                     | Yes                | Yes                                   |
| vSphere Replication             | Yes              | Yes                     | Yes                | Yes, w/ HPE Alletra Storage MP B10000 |
| Support for 4K Native Storage   | Yes              | Yes                     | Yes                | Yes                                   |
| vCenter HA (auto-restart)       | Yes              | Yes                     | Yes                | Yes                                   |
| vCenter Backup and Restore      | Yes              | Yes                     | Yes                | Yes                                   |
| IPAM integration                | Yes              | Yes                     | Yes                | Yes                                   |
| DNS integration                 | Yes              | Yes                     | Yes                | Yes                                   |
| MetroCluster                    | No               | Yes                     | Yes                | No                                    |



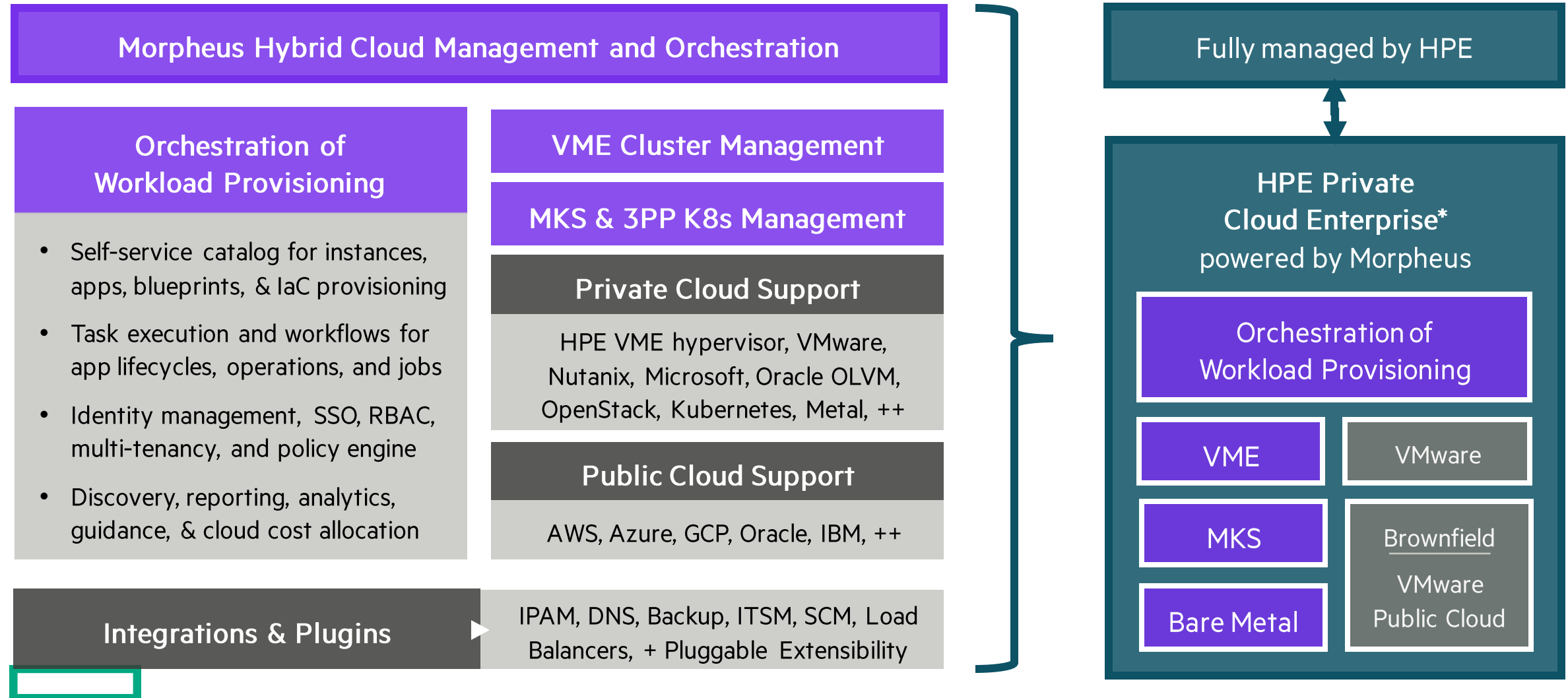
# VM Essentials addresses cost and hypervisor lock-in

A starting point with an upgrade path to the rest of the features.



# HPE Morpheus Enterprise orchestrates HPE's Private Cloud strategy

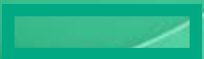
The future is a composable set of hybrid cloud capabilities.





# Several deployment scenarios

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# Storage overview

- Datastores are storage for virtual machines and optionally also virtual images (ISOs, QCOW2, VMDK, etc.)
- There are 3 type of datastores supported for hosting VMs and images:
  - Directory Pool:
    - Comprised of local storage on each server
    - The same directory path must exist on each node
  - NFS:
  - GFS2:
    - iSCSI and FC supported
    - Clustered file system orchestrated by the *pacemaker* cluster service
    - Presented volumes must show with the same name on each host

ADD DATA STORE

NAME

New Data Store

TYPE

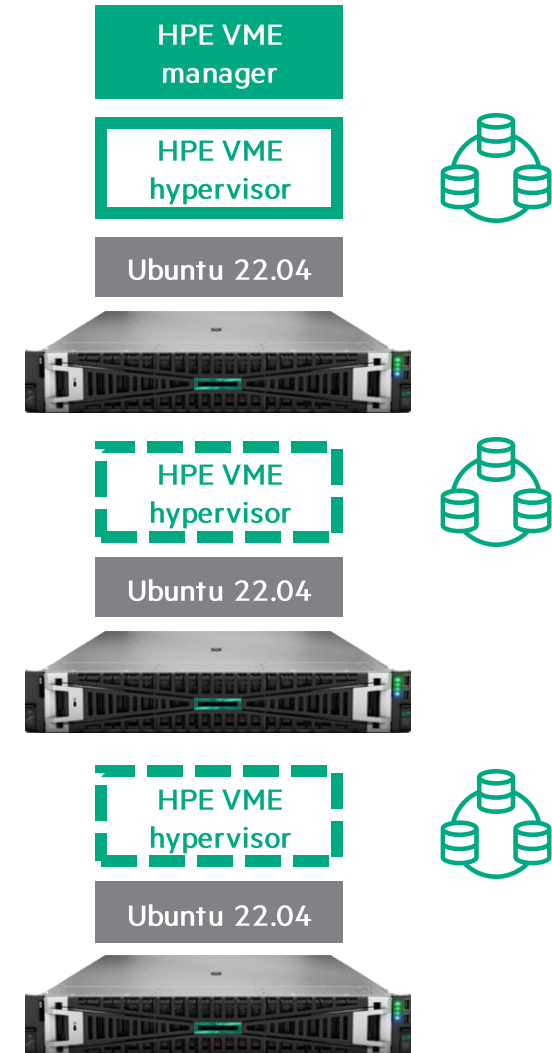
Select

Select

Directory Pool

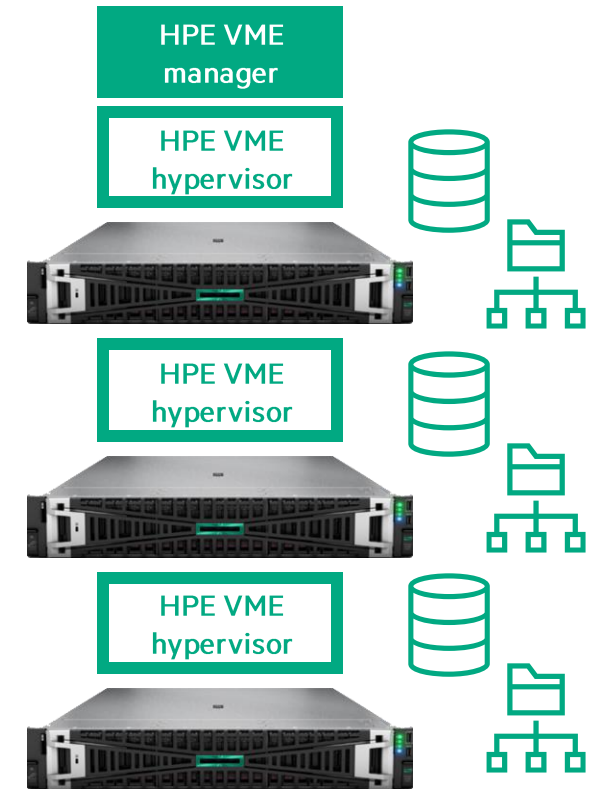
NFS Pool

GFS2 Pool (Global File System 2)



# Storage – local

- Local storage on the servers
- If not leveraging CEPH:
  - VMs can be migrated between hosts, which will result in copying of the VM from one host's local storage to the destination host's local storage
  - Note that this is not shared nor HCI-type storage - if a host experiences a disruption, the VMs on that local storage will no longer be accessible
- By default, there are local directory pools created upon deployment:
  - local
  - morpheus-cloud-init
  - morpheus-images
- Additional directories can be specified:
  - The directory path must match on each host and the amount of available storage should be consistent across those hosts
- If CEPH was configured on initial cluster deployment, the local device being used for that purpose on each host will act as a single large volume across all hosts:
  - Acts as converged storage



The screenshot shows the HPE VME web interface with the 'Storage' tab selected. The 'Data Stores' sub-tab is active, displaying a table of directory pools. The table has columns for NAME, TYPE, CAPACITY, and ONLINE. There are three rows of data, each with an 'ACTIONS' dropdown menu.

| NAME                | TYPE           | CAPACITY          | ONLINE | ACTIONS   |
|---------------------|----------------|-------------------|--------|-----------|
| local               | Directory Pool | 14.3GiB / 97.9GiB | Yes    | ACTIONS ▼ |
| morpheus-cloud-init | Directory Pool | 14.3GiB / 97.9GiB | Yes    | ACTIONS ▼ |
| morpheus-images     | Directory Pool | 14.3GiB / 97.9GiB | Yes    | ACTIONS ▼ |

# Storage – NFS

- File shares presenting from NAS servers can also be mounted as datastores
- Present a share from the server, providing access to all hosts in the cluster
- Within the VME cluster, add a datastore, specifying the NFS host presenting the share and the share path
- This will mount the file share on all hosts within the cluster

ADD DATA STORE

NAME

NFS-Datastore

TYPE

NFS Pool

SOURCE HOST

nasserver.rtplab.hpecorp.net

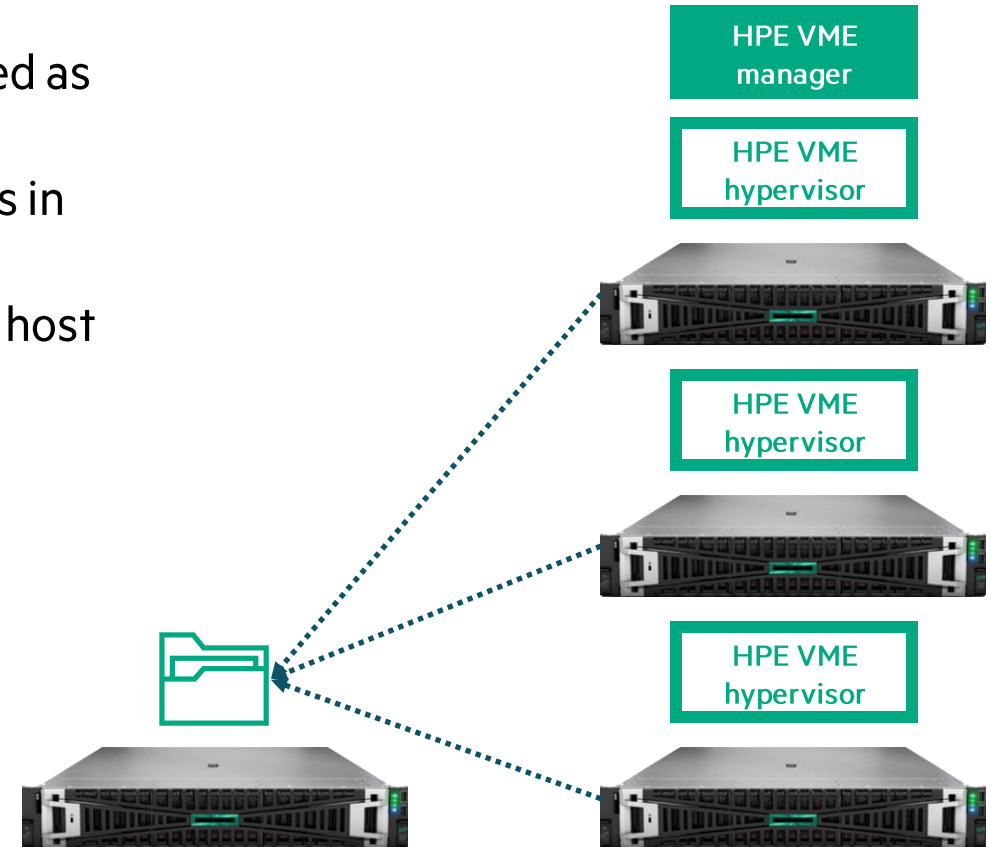
SOURCE DIRECTORY

/datashares/clusterds

☐ IMAGE TARGET

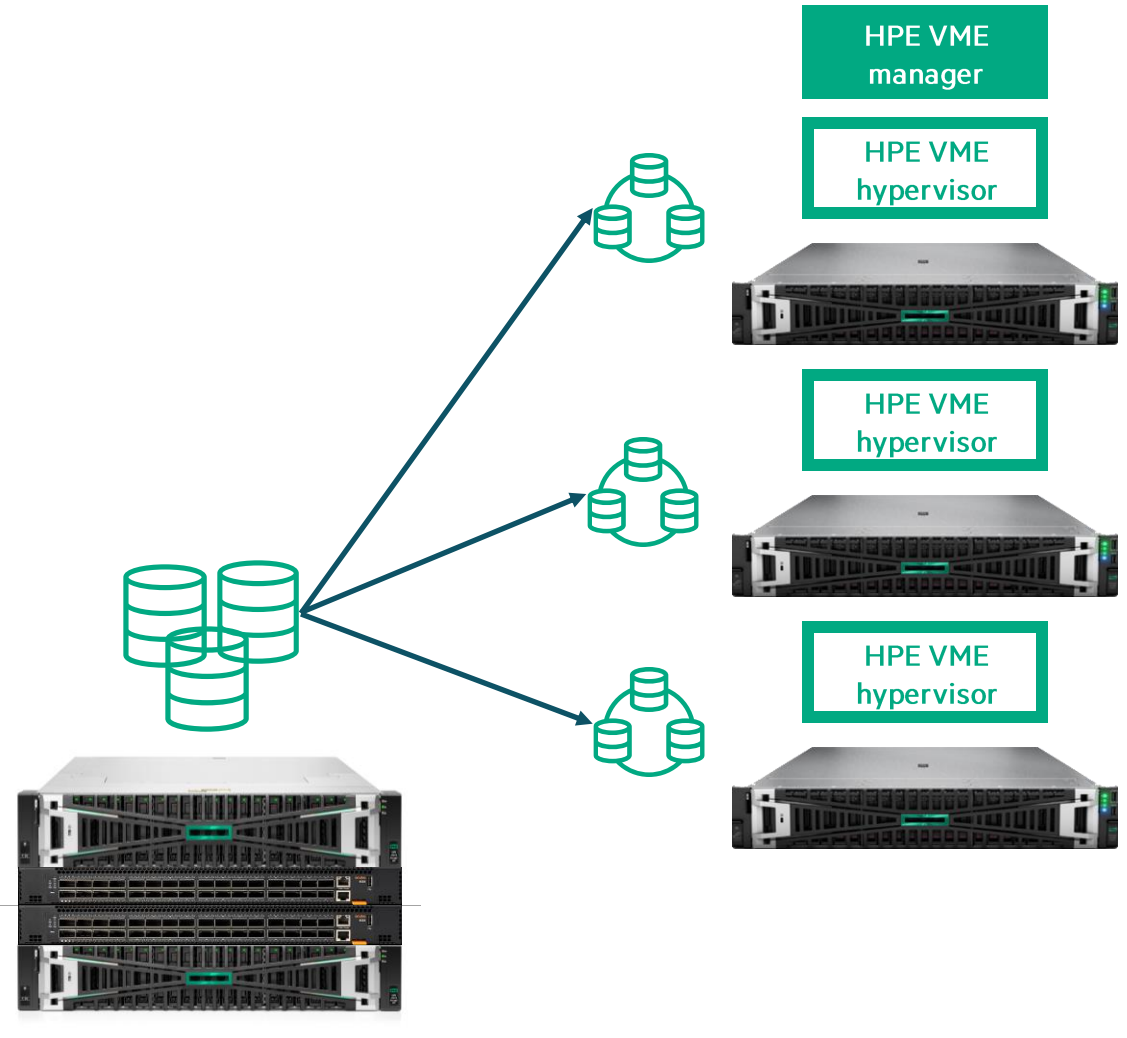
Cancel

Save



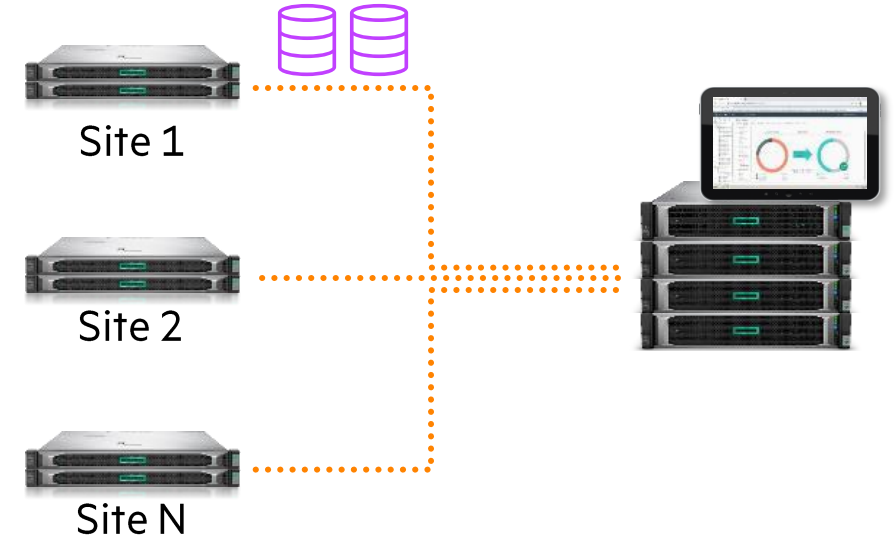
# Storage – GFS2

- Global Filesystem 2 (GFS2) is a clustered filesystem that is used on shared SAN storage
- iSCSI and Fibre Channel supported at launch
- Volumes are presented from a storage array to all hosts in a cluster
- Note: a volume must appear with the same device name on all hosts in the cluster
- VME manager orchestrates mounting the device and creation of the filesystem during datastore creation



# HPE SimpliVity

HCI without compromise  
All-in-one solution for edge to core workloads



2-node  
**High Availability**

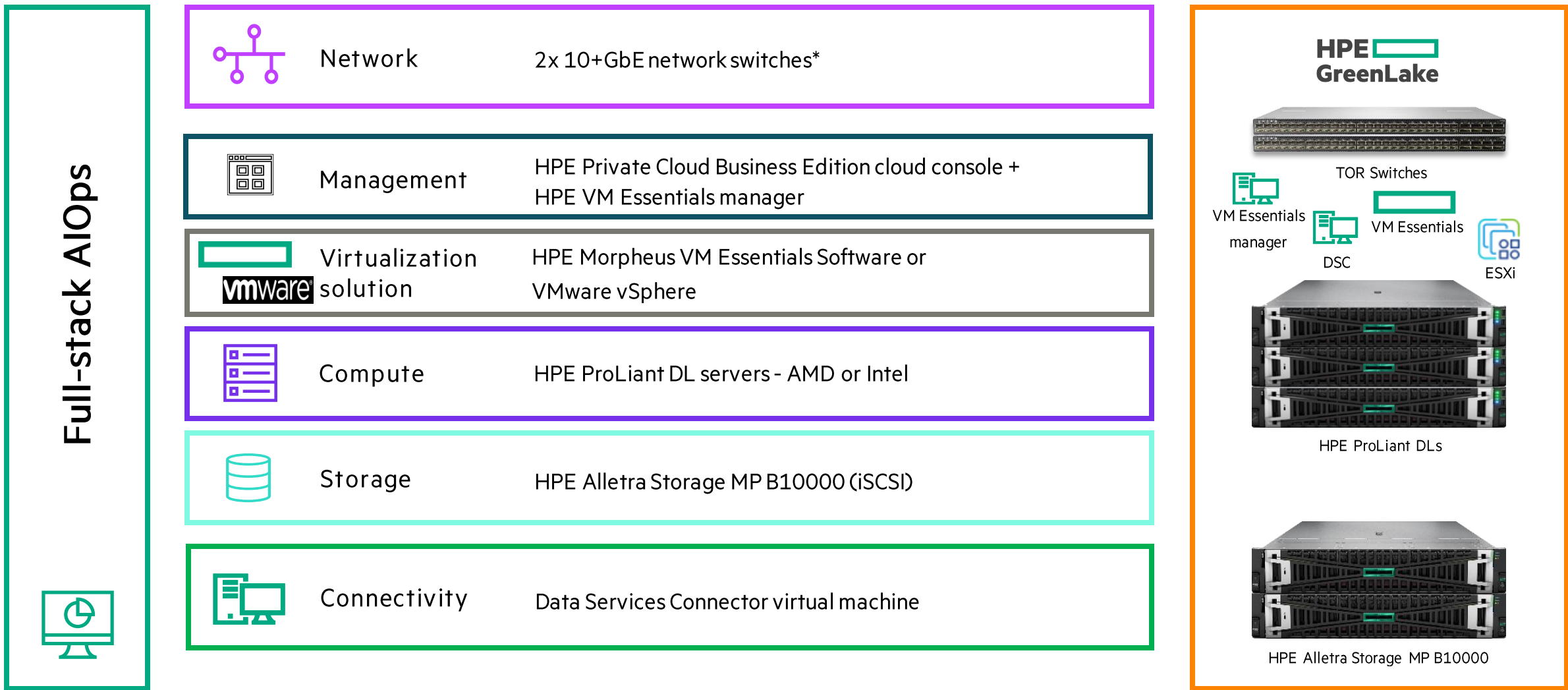
Built-in  
**Data Protection**

Hyper  
**Efficiency**





# Private Cloud Business Edition with HPE Alletra Storage MP B10000



\*Default topology, refer to the Private Cloud Business Edition Network Considerations Guide for networking best practices, requirement, and supported topologies

# Thank you!

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