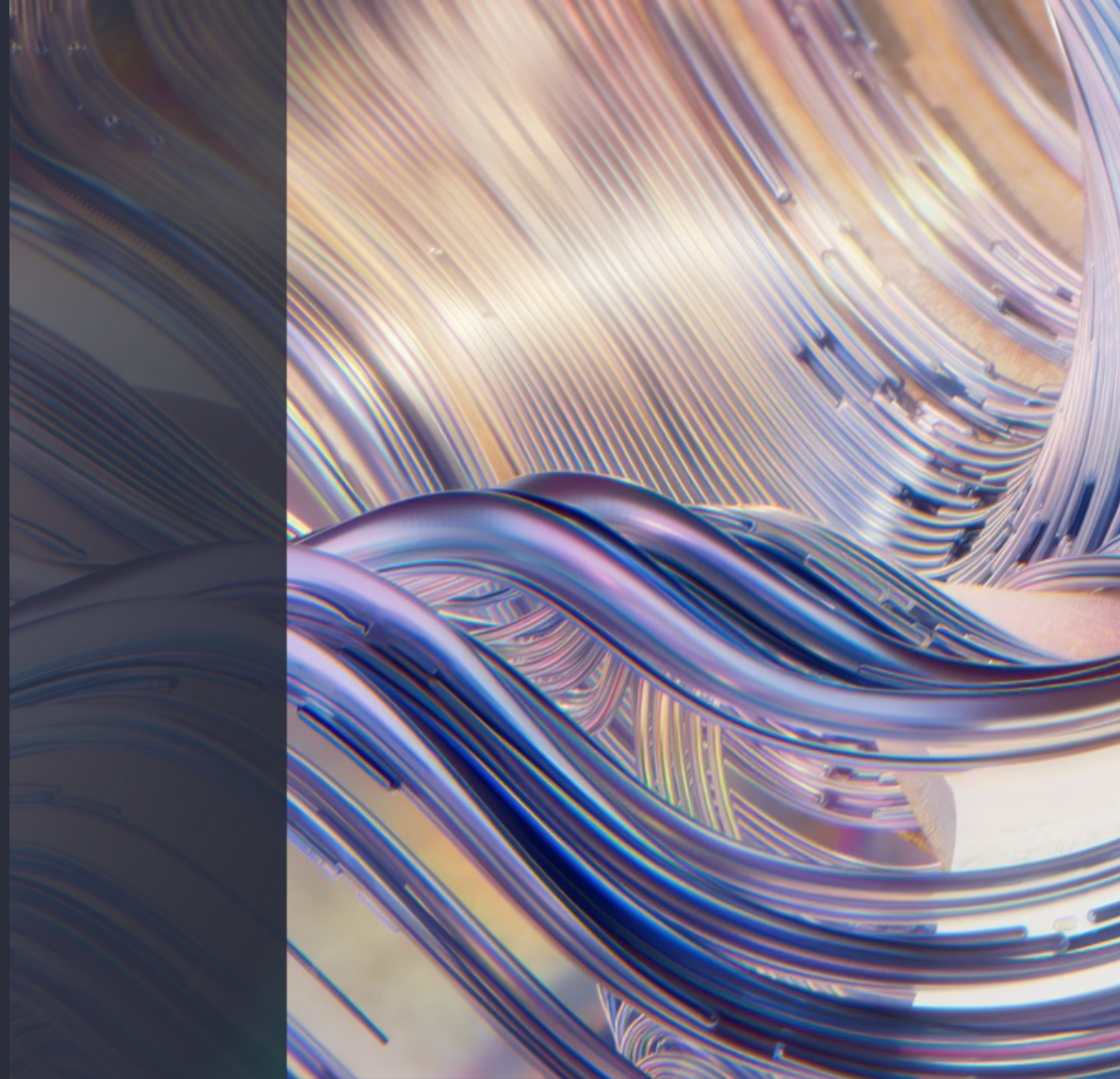




Go Beyond Virtualization

with HPE Morpheus VM
Essentials

Chairutthan Lowsophonkul (Ruck)
Storage Product Manager and Sales Specialist



Licensing changes have caused significant disruption for customers

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

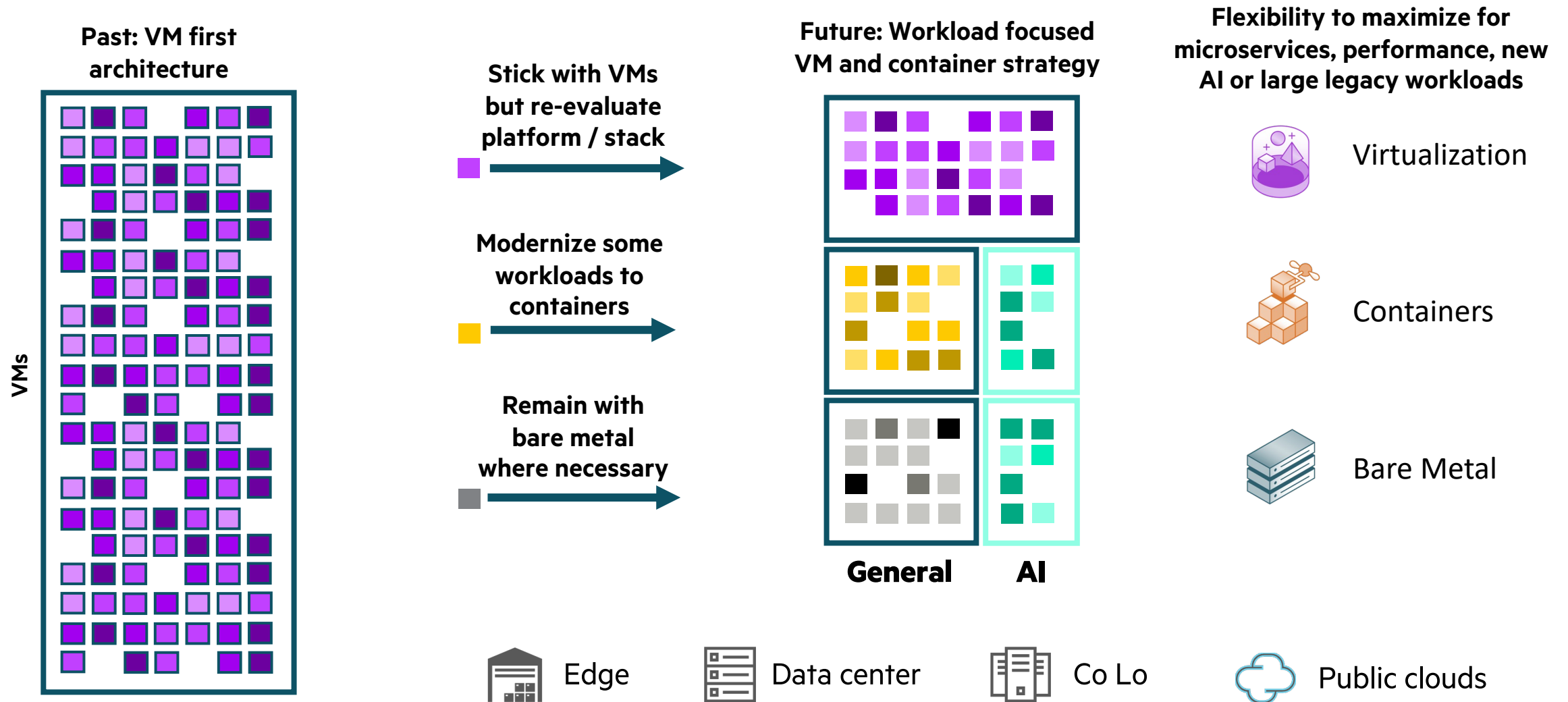
Effective price increase of

2-4x

for most customers*

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

Pushing acceleration of re-platforming and modernization efforts



HPE MORPHEUS SOFTWARE

90%
Reduction in VM Costs



HPE offers a future-proof strategy and platform to go beyond virtualization

HPE Morpheus VM Essentials

Free up **resources**, focus on your **workloads**, and unify the **operating model**

OPTIMIZE

investments with the right analytics, infrastructure, and financial controls

Up to 5x Lower TCO¹

MODERNIZE

with open alternatives, an ecosystem of engineered solutions, and migration help

Extensible to Hybrid-Multi-Cloud Management

SIMPLIFY

hybrid cloud operations with unified orchestration and end-to-end manageability

One Console for manage VM
integrated VMware VM

¹ Combined with our assessment tools, private cloud portfolio and enterprise services

Will be available standalone and within HPE Private Cloud solutions

HPE GreenLake Cloud Platform

HPE Morpheus Enterprise

**HPE Private Cloud
solutions**

**HPE Morpheus
VM Essentials**
Embedded

HPE Morpheus VM Essentials
Standalone Software

**ProLiant &
Alletra**

3rd party HW

Bare Metal

Container

Virtualization

Public Cloud

**HPE PCE &
HPE ProLiant**

**HPE
K8s**



**aws
EKS**

**HPE
VM Essentials** **vm**

A
AS-HCI



aws

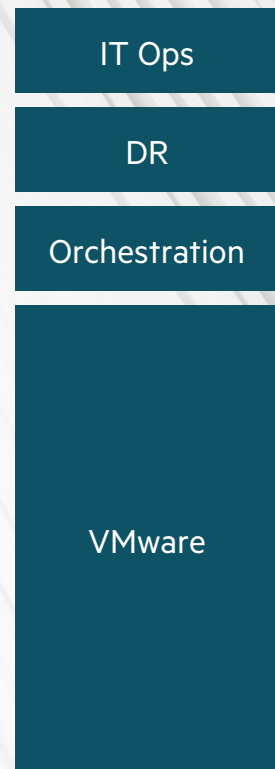


HPE Services

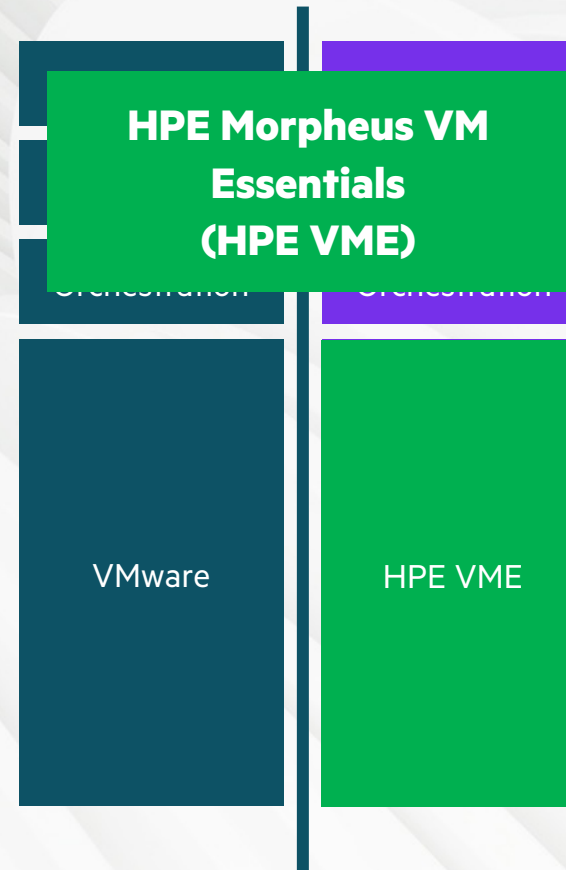
Advisory
Deploy
Integrate
Migrate
Manage
Operate

As adopt VMware alternatives, IT operations become challenges

Past: Unified through VMware



Future: ~~fragmented and siloed~~ Unified Management



HPE Morpheus VM Essentials Software

unifies VMware and HPE hypervisors

Reduce costs with HPE's HVM hypervisor (KVM-based)

External storage support, distributed workload placement, high availability and live migration, integrated data protection, GPU passthrough, and more.

Simplify management across VMware and HPE

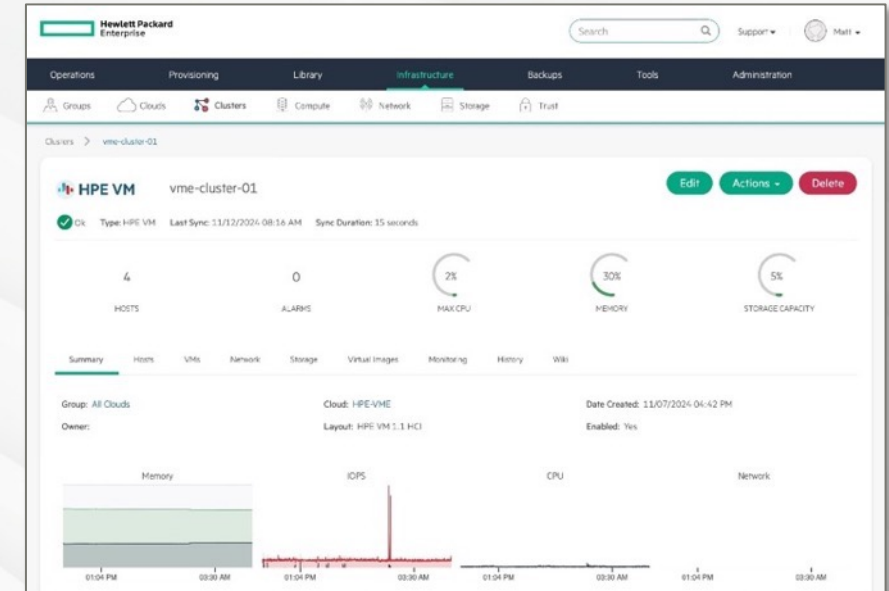
Connect VMware clusters for simple VM-vending into ESXi and HVM from one place. Includes IPAM & DNS integration, task execution, secrets management, and migration

Future-proof with flexible consumption paths

Available as standalone software or integrated into HPE Private Cloud, with a path to HPE Morpheus Enterprise for private and public clouds support, K8s support, workflows, governance, and FinOps.

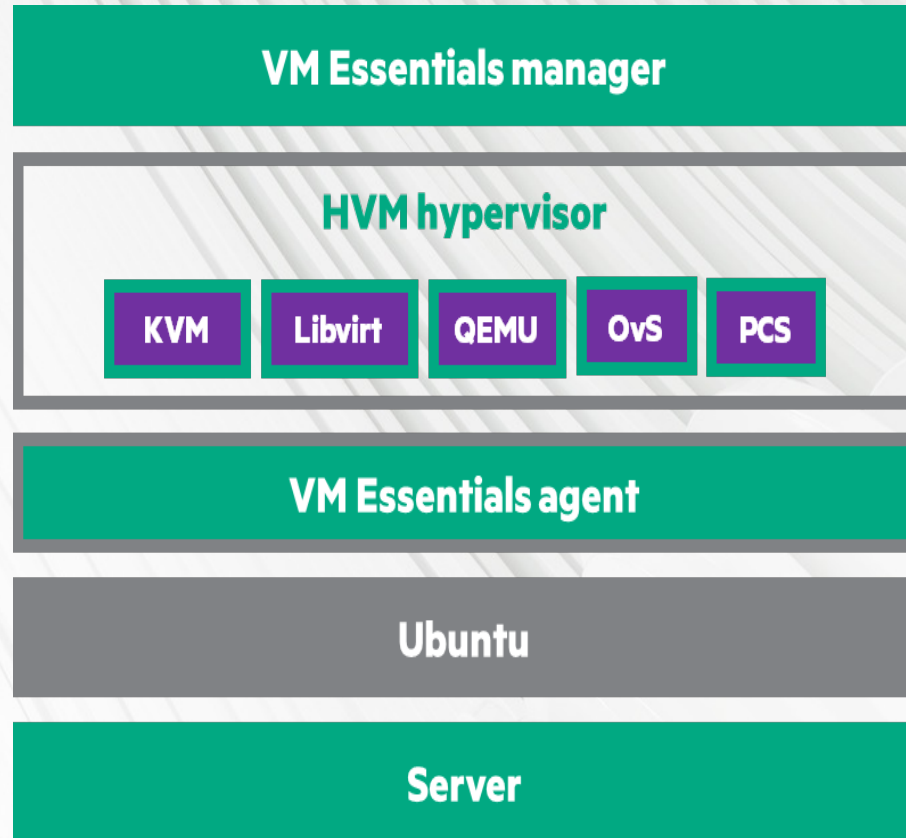
Lower risk with an enterprise-grade support & ecosystem

Building on a proven KVM core, including 24x7 enterprise-class global support. HPE is working with its ecosystem of ISVs to expand HVM hypervisor certification and support for data protection, VDI, database, etc.



- Licensed **per socket**, not per core
- Standalone for HPE and 3rd-party HW
- Integrated in HPE Private Cloud offerings
- New: **Integrated installer and OS**

HPE Morpheus VM Essentials



	Year of Introduction
Ubuntu <ul style="list-style-type: none">• The base OS for the HPE VM Essentials hypervisor is Ubuntu 22.04. The installation of Ubuntu is a requirement for deployment of the hypervisor	2004
KVM <ul style="list-style-type: none">• Underlying virtualization technology used in HPE VM Essentials	2006
QEMU <ul style="list-style-type: none">• Generic machine emulator and virtualize for running Windows and Linux operating systems	2003
Libvirt <ul style="list-style-type: none">• A hypervisor-independent API for managing platform virtualization	2005
Open vSwitch (OvS) <ul style="list-style-type: none">• Underlying virtual networking technology used in HPE VM Essentials	2009
Pacemaker Cluster Service <ul style="list-style-type: none">• A high-availability cluster resource manager, that enables clustering and clustered filesystem deployment and management	2004
Morpheus <ul style="list-style-type: none">• Management and orchestration services providing integration for all services, identity management, monitoring, logging, web UI, etc.	2010

Enterprise-grade capabilities - HPE Morpheus VM Essentials

Today

- ✓ Automation
- ✓ High availability
- ✓ Workload balancing
- ✓ Live host & storage migration
- ✓ Flexible storage options
- ✓ Embedded in HPE Private Cloud
- ✓ Upgrade to Morpheus Enterprise
- ✓ Micro-segmentation with CX10K
- ✓ Simplified install with embedded OS
- ✓ Affinity / Anti-affinity

What's coming next*

Stretched Storage Cluster

Expanding ISV certification

Advanced migration

Disaster recovery

HPE Morpheus Enterprise

HPE Morpheus VM Essentials

Available deployment to meet your requirement

HPE VME Standalone SW

or

HPE GreenLake for Private Cloud Business Edition

HPE ProLiant & Alletra Storage

HPE PCBE with Alletra MP B10000

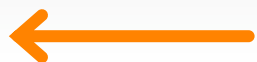
HPE SimpliVity



New or Existing HPE Infrastructure
& 3rd Party HW²

Disaggregated HCI
for mixed workloads at scale

All-in-one HCI for general purpose
edge to core workloads



Colocation



Datacenter



Edge



HPE Private Cloud Business Edition

Product Evolution and Timeline

Gen 1.0



2019

- Introduction with Nimble G5 arrays
- vCenter Plugin

Gen 2.0



2022

- Expand with HPE Alletra 5000/6000
- PCBE: Cloud Console
- Broadcom VMware

Gen 3.0



2025

- **HPE Alletra MP B10000**
- PCBE: Life-cycle Management
- **HPE Morpheus VM Essentials**
- **Broadcom VMware**
- 3-16 nodes/VME cluster

More performance and efficiency

The most compelling case for server refresh yet, even if you're locked in for another few years

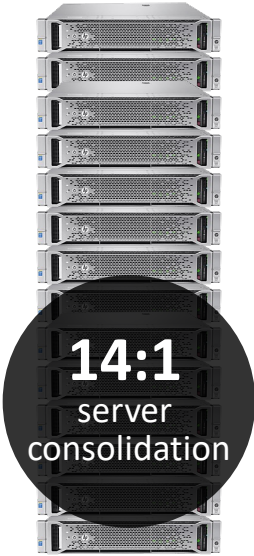
Free up data center capacity with up to 26:1 consolidation

Lower VM software costs up to 74%

Reduce energy consumption and achieve up to 84% power savings



Gen8¹



Gen9²

Up to **41%** higher performance per watt advantage⁸



7:1 server consolidation

Gen10³



Gen10 Plus⁴



Latest processors

plus up to **90%** license savings with HPE Morpheus VM Essentials⁷

VM software savings(up to) ⁶	74%	53%	27%	40%
Power savings per year (up to) ⁵	84%	61%	65%	50%

SPEC and the names SPECrate are registered trademarks of the Standard Performance Evaluation Corporation (SPEC). The stated results [SPECrate2017_int_base: #36693 (1), #36691 (2), #20893 (3), #37007 (4)] are published as of 01-01-2025, see spec.org, and compared against a 48-core estimated Gen12 system. All rights reserved. (5) Power savings based on the Thermal Design Power of the systems. (6) VM software savings per term of the license. Virtualization savings analysis based on core-based licenses as at April 9th 2025. The calculations were made by comparing to a Gen12 with 48 cores per socket.(7) 90% costs savings is a comparison of HPE Morpheus VM Essentials Software versus VMware vSphere Foundation. Savings do not include discounts and subject to change without notice. (8) The performance per watt advantages are based on internal power and performance measurements6 on similar configured high energy efficient servers and compared against an estimated 86-core Gen12 system.

Need to scale storage on existing deployments?

HPE GreenLake cloud

Brownfield + Greenfield,
Multi-vendor, Multi-Cloud

Morpheus

OpsRamp

Brownfield

On-Prem VMs & K8s



3rd-Party Servers

HPE Alletra MP

HPE Alletra Storage MP B10000



Industry's first disaggregated,
scale-out block storage with
100% data availability guaranteed¹

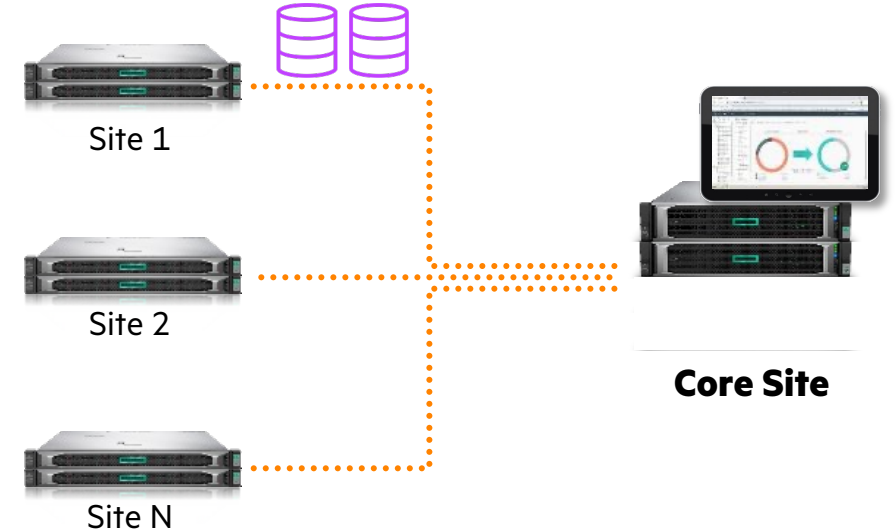
**Add shared storage to
existing deployments**
to scale-out storage without
increasing VMware license
counts

**Run existing workloads
without compromise**
with a 100% data
availability guarantee

Simplify management
with an intuitive cloud
experience on prem

HPE SimpliVity

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



**2-node
High Availability**

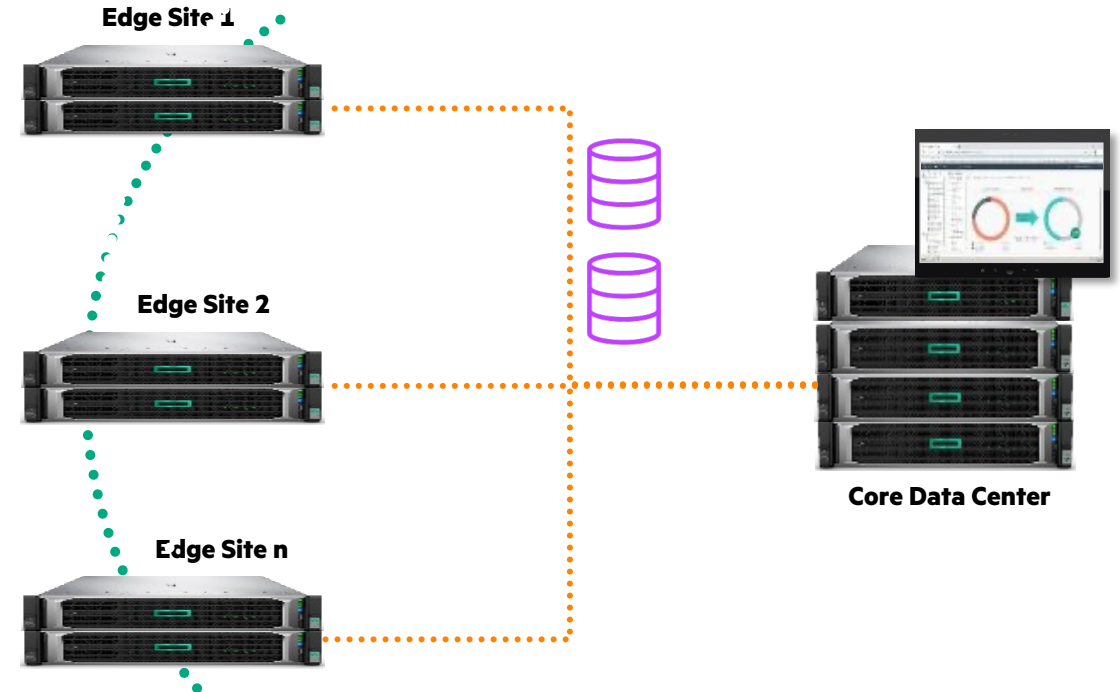
**Built-in
Data Protection**

**Hyper
Efficiency**

Six reasons to choose HPE SimpliVity for distributed edge

- 1 Most efficient, all-in-one solution**
2-node HA, security and data services
- 2 Always online and recoverable**
Built-in backup and DR
- 3 Efficiency at the edge**
Optimized for 10:1 data reduction*
- 4 No edge site admin required**
Centrally manage all distributed clouds
- 5 Intelligent AI operations**
Predictive analytics, support automation
- 6 Delivered optionally as a service**
Pay per use and financial flexibility

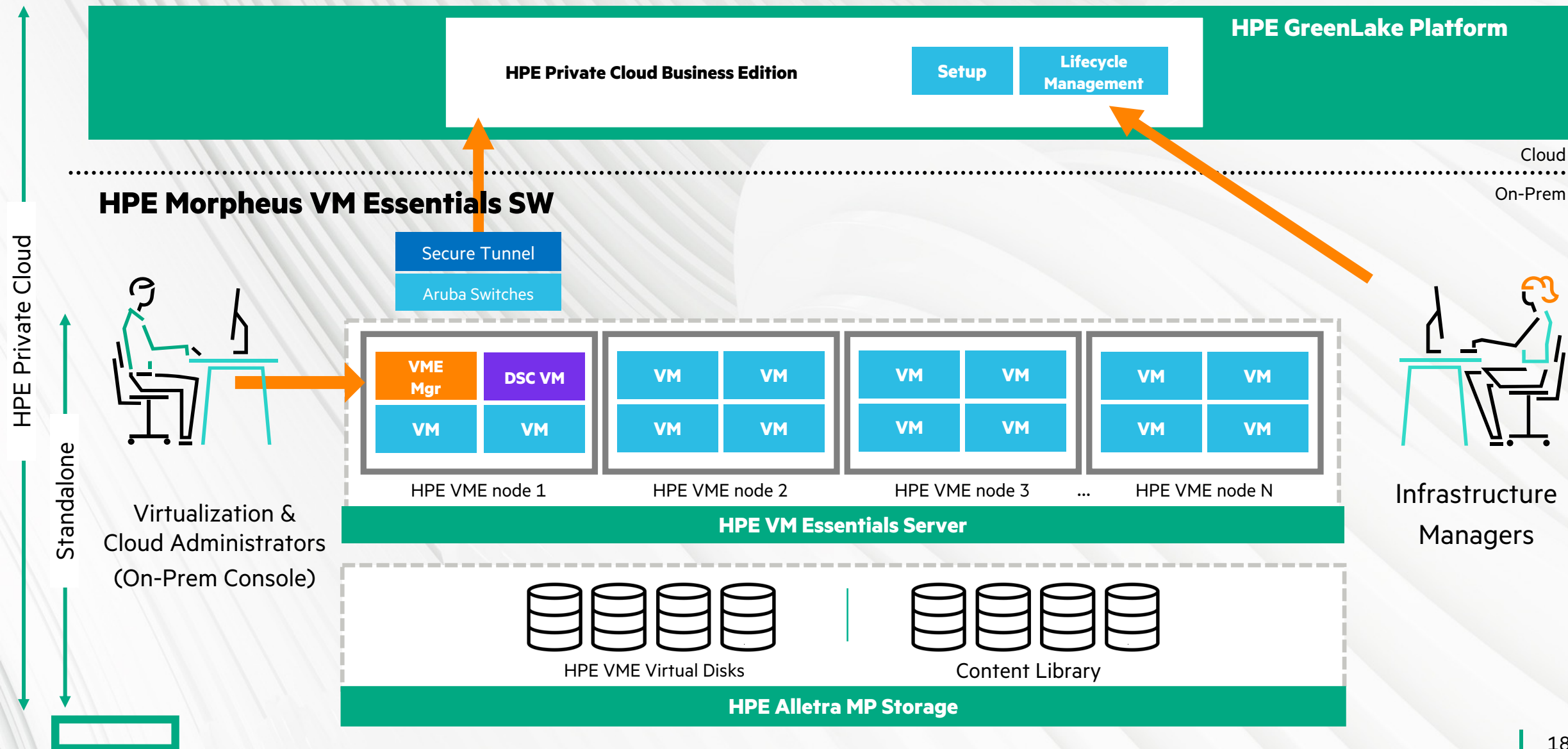
* HPE SimpliVity Hyperguarantee



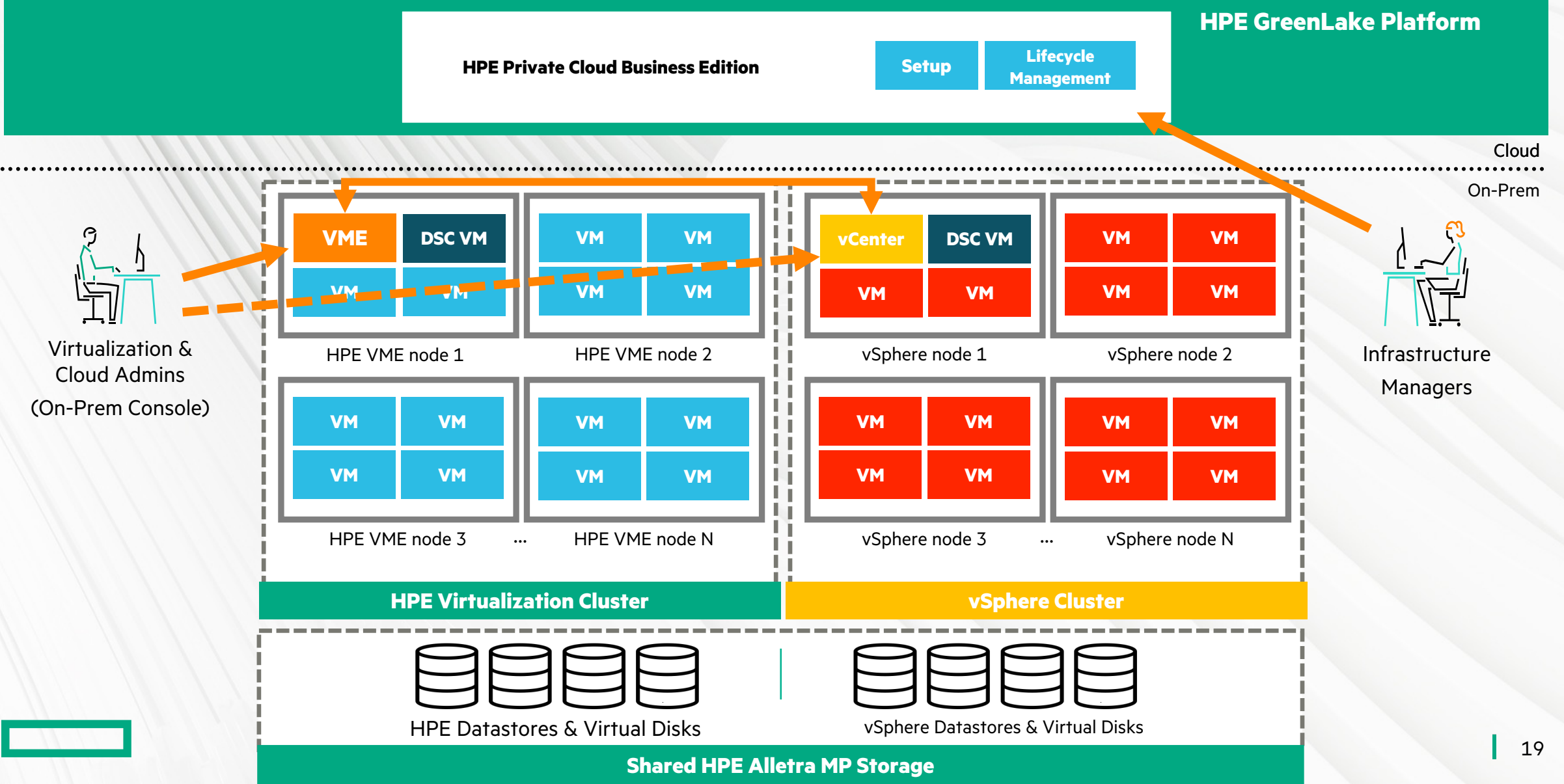
HPE SimpliVity
Private Cloud for the edge

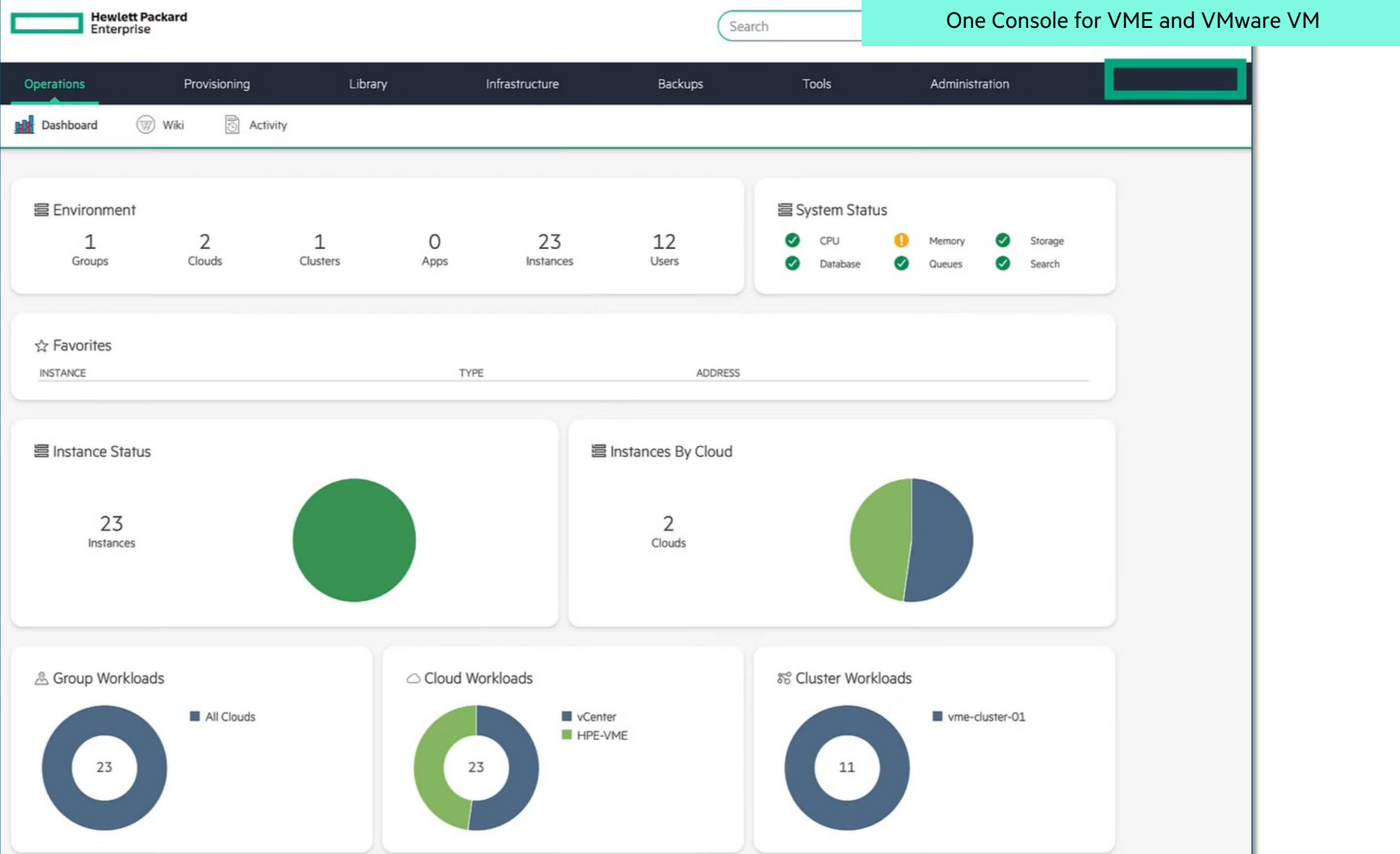


HPE Morpheus VM Essentials for HPE Private Cloud Business Edition



HPE Morpheus VM Essentials for HPE Private Cloud Business Edition






CREATE CLOUD

Cloud


Configure

Group

Review

 MORPHEUS

PRIVATE CLOUD
 The "Private Cloud" provides a dedicated, isolated environment where users have full control over server management and resource allocation. It offers flexibility and security, with the ability to configure and manage infrastructure according to specific organizational needs.



VMWARE VCENTER
 VMWare VCenter cloud

Previous

Next

CREATE CLOUD

Cloud

Configure

Group

Review

A comma separated list of labels that can be used to group/organize items.

☒ ENABLE

☒ AUTOMATICALLY POWER ON VMS

Details

Easy Integration: by Add vCenter Credentials

Hewlett Packard Enterprise

Operations **Provisioning**

Instances

CREATE INSTANCE

Type

Instance Summary

CREATE INSTANCE

Type

Search

HPE VME

vmware

vc-deb-2

deb

CREATE INSTANCE

Configure

Automation

Back

CREATE INSTANCE

Type

Group

Configure

Automation

Review

HPE VM

DEMO VME

HPE-VME Group (HPE-VME Cloud)

Summary

Instance Options

NAME: DEMO VME
GROUP: HPE-VME Group
CLOUD: HPE-VME Cloud
TYPE: HPE VM
PLAN: 2 CPU, 8GB Memory
Version 2 Memory: 8GB
VERSION: 1.0
LAYOUT: Single HPE VM

Volumes

ROOT: 80 GB (Standard)

Networks

PRODUCTION: DHCP

Options

User Config

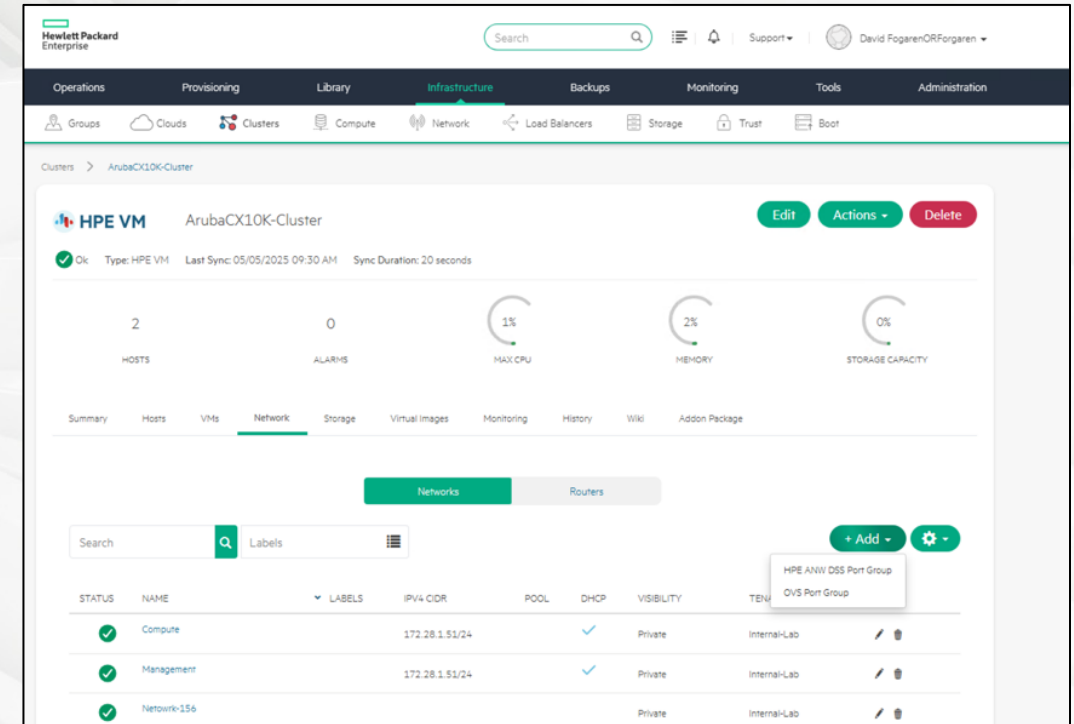
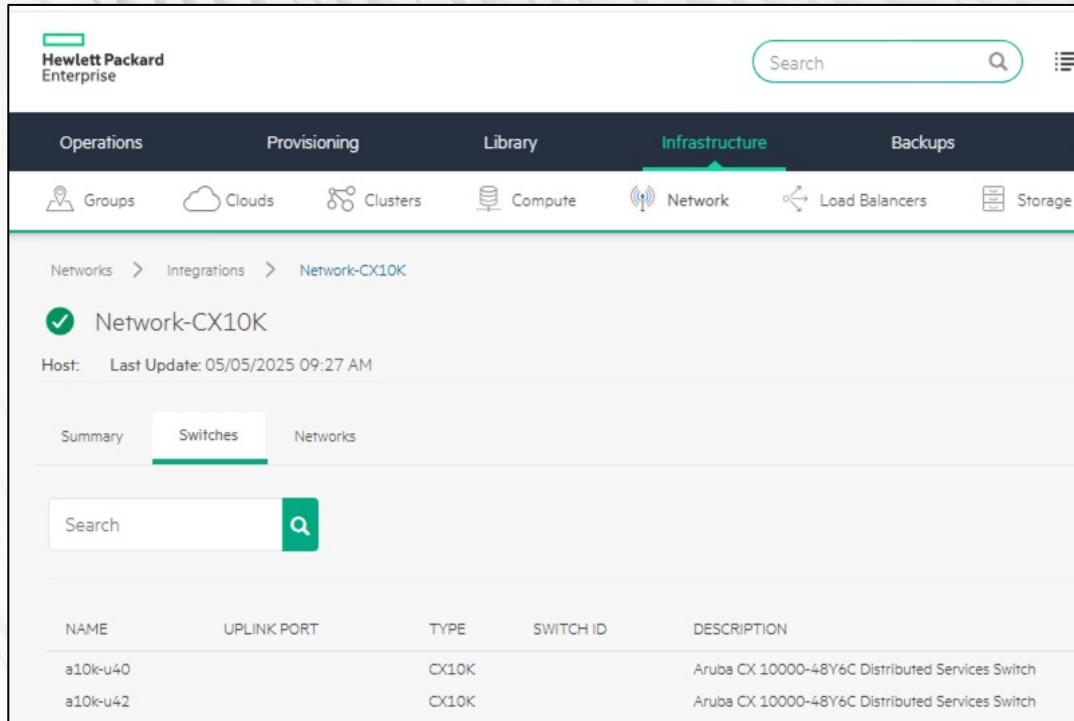
Advanced Options

Previous Complete

Previous Next

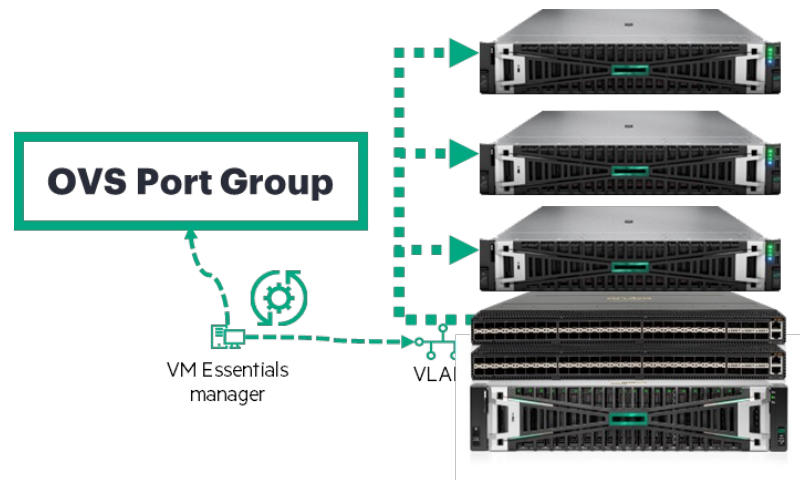
HPE Aruba Networking CX 10000 Series

VM Essentials plug-in enables accelerated networking and security services



Enabling **firewall and micro-segmentation** across ESXi and HVM hypervisors,
at 10X the scale/performance at a fraction of the licensing cost

HPE Aruba CX network plugin



Tasks managed as part of deployment

Integrate VM Essentials with the Aruba switch pair

Edit the cluster

Tasks managed post deployment

Create/delete OVS port group

Creates/deletes associated VLANs on the switches

Assigns/unassigns VLANs to switch ports

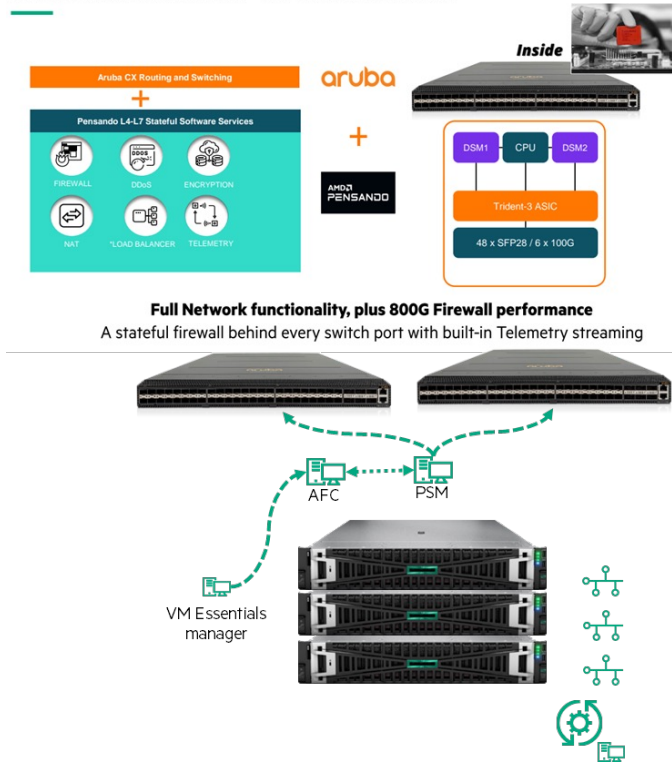
Adds/removes VLAN to lag1 (uplink to the upstream network)

The HPE Aruba CX network plugin is installed and leveraged by

HPE Private Cloud Business Edition if the Network Automation feature is leveraged.

HPE Aruba DSS network plugin

Distributed services switch – CX10000 Architecture



- Basic **micro- and macro-segmentation**
- Automates interface creation, security groups, network and switch configuration
- Plugin interfaces with Aruba Fabric Composer (AFC)
- Automates network creation/deletion/modification and associated network actions for VM creation/deletion/modification

Expanded strategic partnership for cyber resilience and data protection



Global leader in hybrid data solutions



Commvault®

Global leader in data protection

- Comprehensive protection from edge-to-cloud and source-to-target
- Commvault will integrate and offer HPE Zerto Software to customers
- Enhanced HPE Alletra Storage MP and Commvault Cloud solutions

Veeam Data Platform

Deep integration with HPE Morpheus VM Essentials



Global leader in
private cloud solutions



Global leader in
data resilience

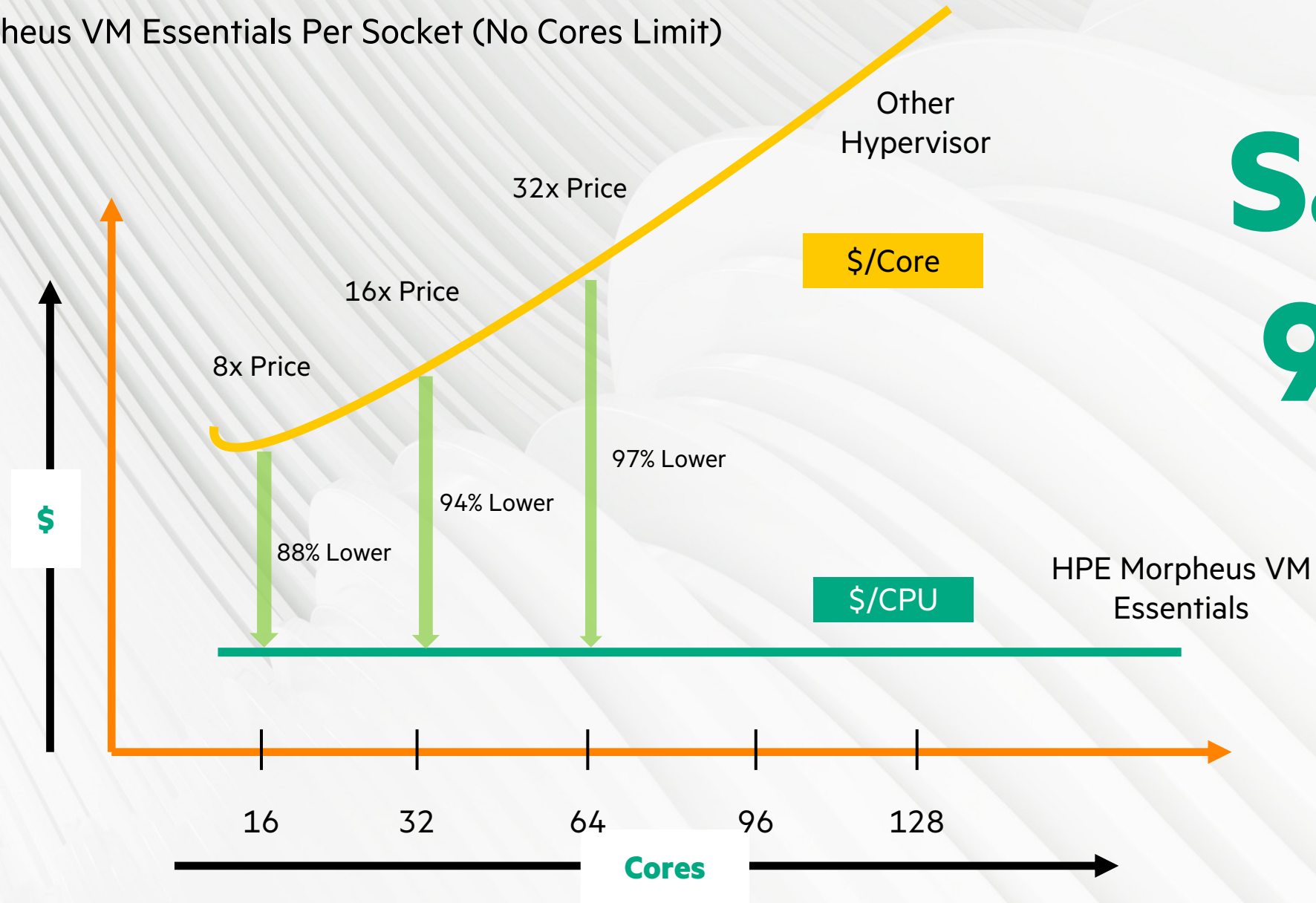
- Comprehensive protection for virtualized workloads
- HPE and Veeam “Data Resilience by Design” services framework



* Integration announced, under development & subject to change without notice

Licensing

- HPE Morpheus VM Essentials Per Socket (No Cores Limit)



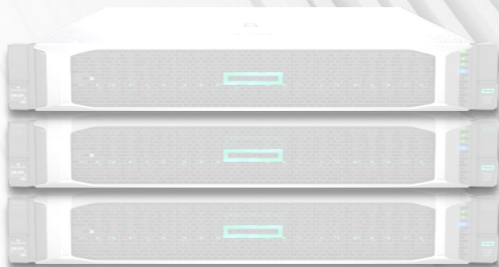
**Save
90%**

Reduce Virtualization Cost

HPE Private Cloud Business Edition with HPE Morpheus VM Essentials

For example 3x Node (24 core, 256GB Mem/server, effective storage capacity 20TiB)

**vSphere Foundation
+ vSAN**



VS

HPE Morpheus VM Essentials



HPE Alletra Storage MP B10000

3x HP ProLiant Server (24core), 256GB Memory
HPE Alletra Storage MP B10000 (NVMe) Effective Capacity 20TiB
HPE Morpheus VM Essentials 3Y

3Y SW Subscription Only

~2,600,000 Baht*

2,690,000 Baht*

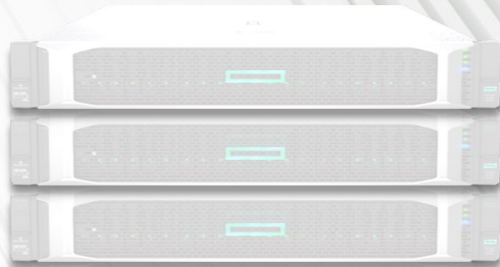
**Estimated from street price, not included installation services. Price may subject to change.*

Reduce Virtualization Cost

HPE SimpliVity with HPE Morpheus VM Essentials

For Example 3x Node (24 core, 256GB Mem/server, effective storage capacity 15TiB)

**vSphere Foundation
+ vSAN SW**



5Y SW Subscription Only

~4,400,000 Baht*

VS

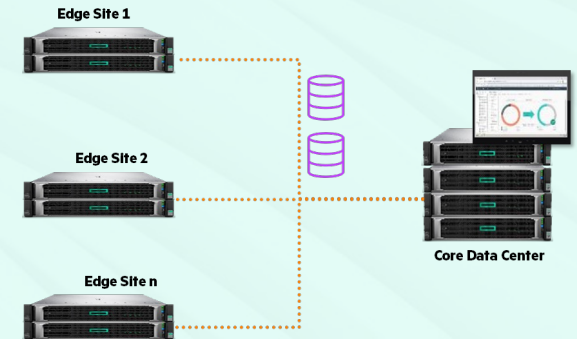
**HPE Morpheus VM Essentials
HPE SimpliVity 325 Gen11**



3x Node (24 core, 256GB Mem/server)
Effective all-flash storage capacity 15TiB
+ HPE Morpheus VM Essentials 5Y (embedded)
+ Built-in high efficiency backup

2,590,000 Baht*

**2-node
High Availability**



**Built-in
Data Protection**

**Hyper
Efficiency**

Optimized for 10:1 data reduction⁺

* Estimated from street price, not included installation services. Price may subject to change., excluded network switch

+ HPE SimpliVity Hyperguarantee

HPE SimpliVity

with HPE Morpheus VM Essentials

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



HPE SimpliVity 325 Gen11

with HPE Morpheus VM Essentials

Promotion Set Included:

- **2x HPE SimpliVity 325 Gen11 each with**
 - 24 core Processor
 - 256GB Memory
 - 2x 25GbE NIC with DAC Cable (direct connect)
 - 2x 10Gbase-T for VM access
- **All-Flash share storage effective capacity 6.7 TiB***
- HPE Morpheus VM Essentials (embedded) 5Y
- 5 Year TechCare Essential Services (24x7)
- Installation and Startup Services

Special Offer: 1,290,000 Baht*

2-node
High Availability

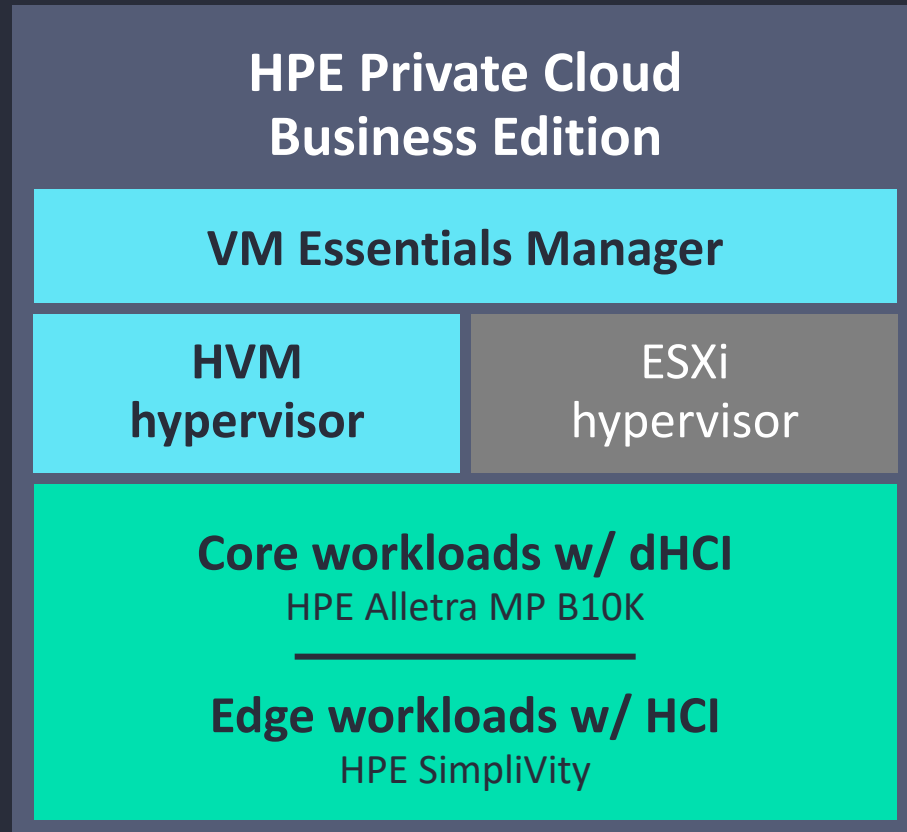
Built-in
Data Protection

Hyper
Efficiency

• * Price not included VAT, Price Valid Until 31 Oct 2025

• ** Estimated Data Reduction at 2:1, customer provide one VM or Linux host for run VME Manager and Arbiter SW (Arbiter for 2 nodes. deployment) contact HPE or Partner for detail.

HPE Morpheus VM Essentials now fully integrated for a unified private cloud experience



90%

lower license cost with KVM-based hypervisor

2.5X

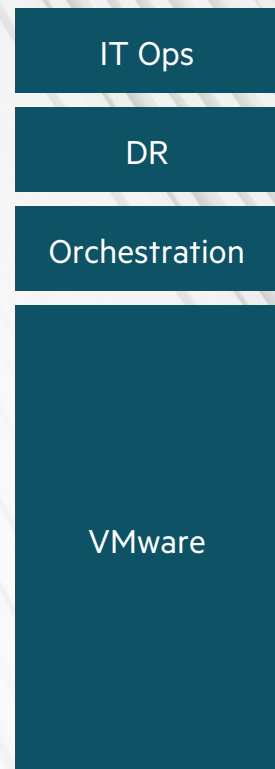
lower TCO with dHCI for core workloads

45%

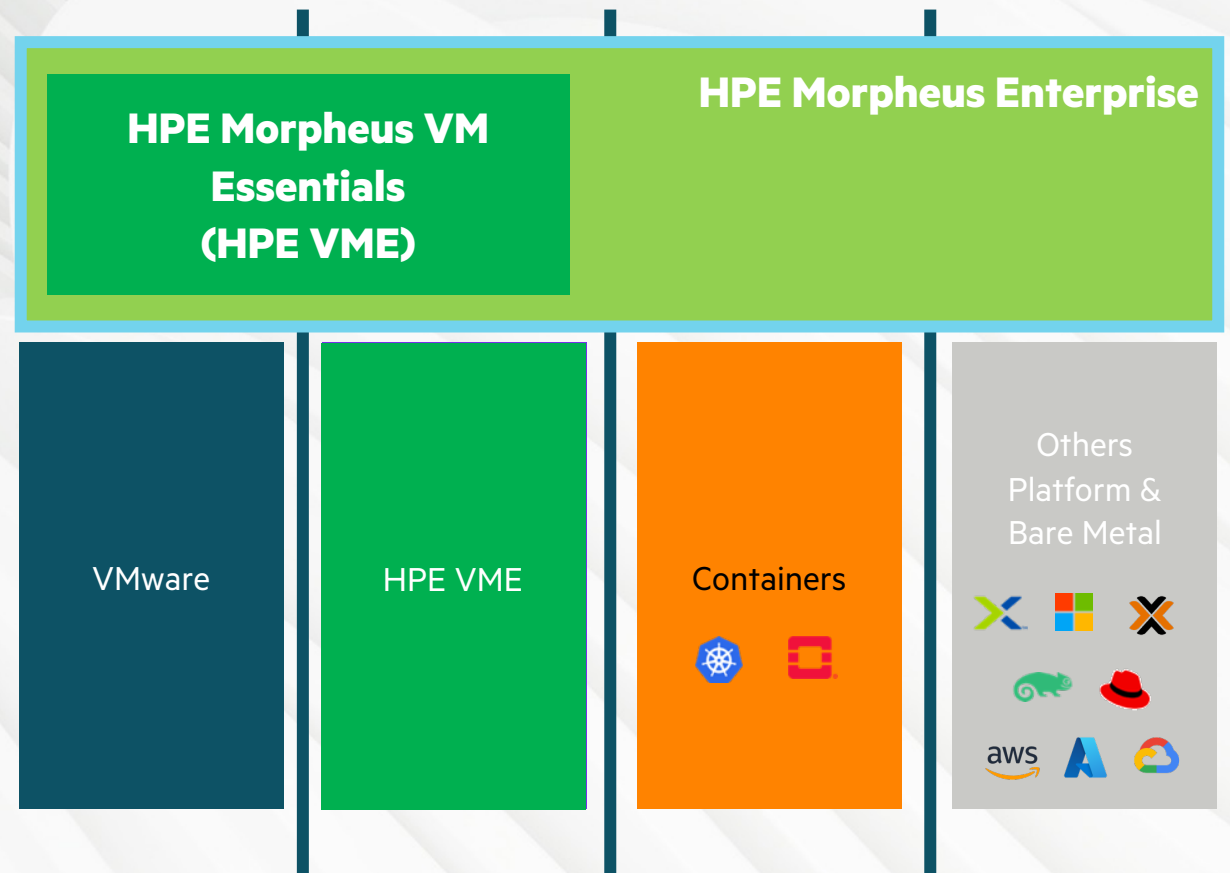
lower TCO at the edge vs. other HCI

Address Hybrid IT operations challenges

Past: Unified through VMware



Future: ~~fragmented and siloed~~ Unified Management



HPE Morpheus Enterprise enables IT to become an internal service provider

Hybrid Cloud, DevOps, Internal Development Platforms are about self-service... so Is Morpheus

Provision Any Workload Into Any Cloud On-Demand

Orchestrate all the tools and dependencies for catalog deployment and lifecycle management of VMs (IaaS / VMaaS), containers (CaaS), app services (PaaS), multi-tier app stacks, and cloud services.

Simplify Runtime Deployment for Flexibility and Choice

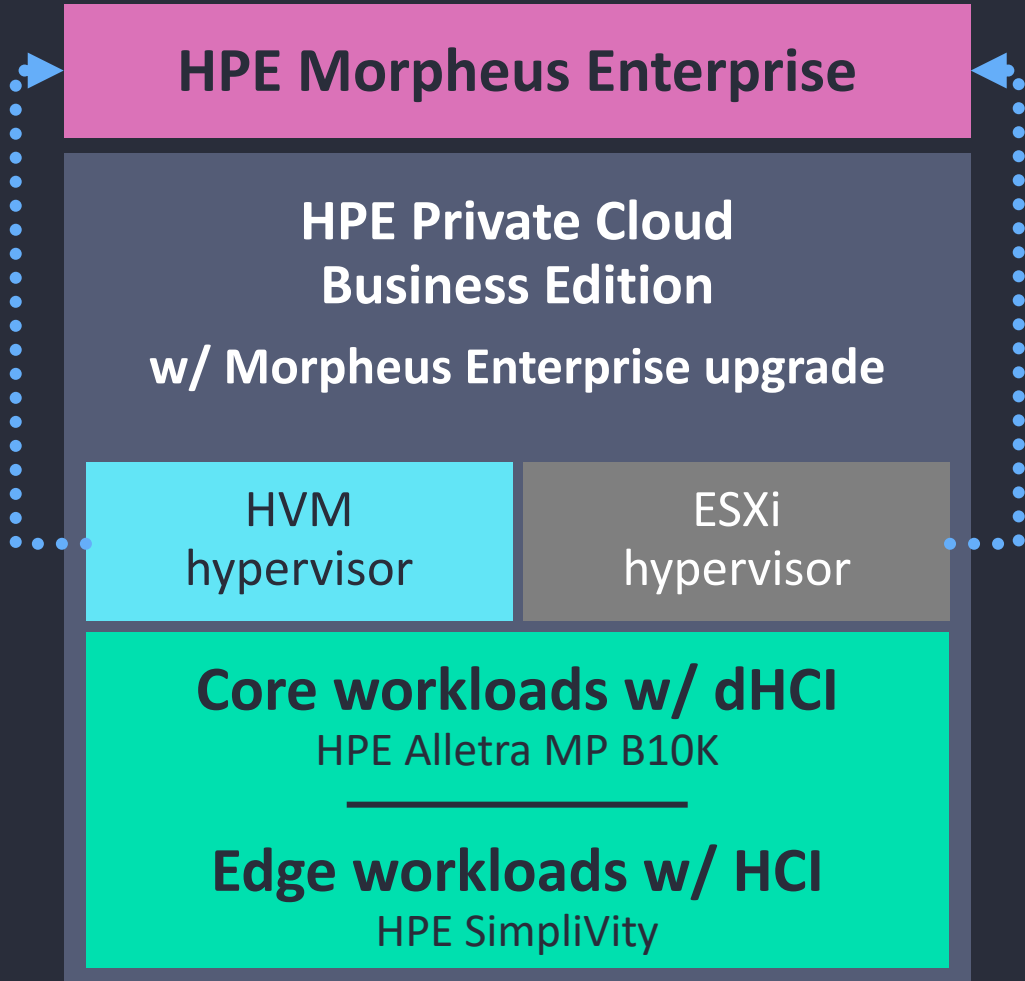
Push button deployment and management of **Virtualization (VME)** and **Kubernetes (MKS) Clusters** plus cloud-managed EKS, AKS, GKE. Extend with brownfield of 3rd Party K8s like SUSE, OpenShift, etc.

Lower Cloud Cost with Visibility and Optimization

Discover on-prem and public cloud instances, optimize resource use with analytics and rightsizing, sync cloud invoices, enforce budget policy, enable show back, and centralize reporting.



Extending the lead with an easy path to best-in-class hybrid cloud management

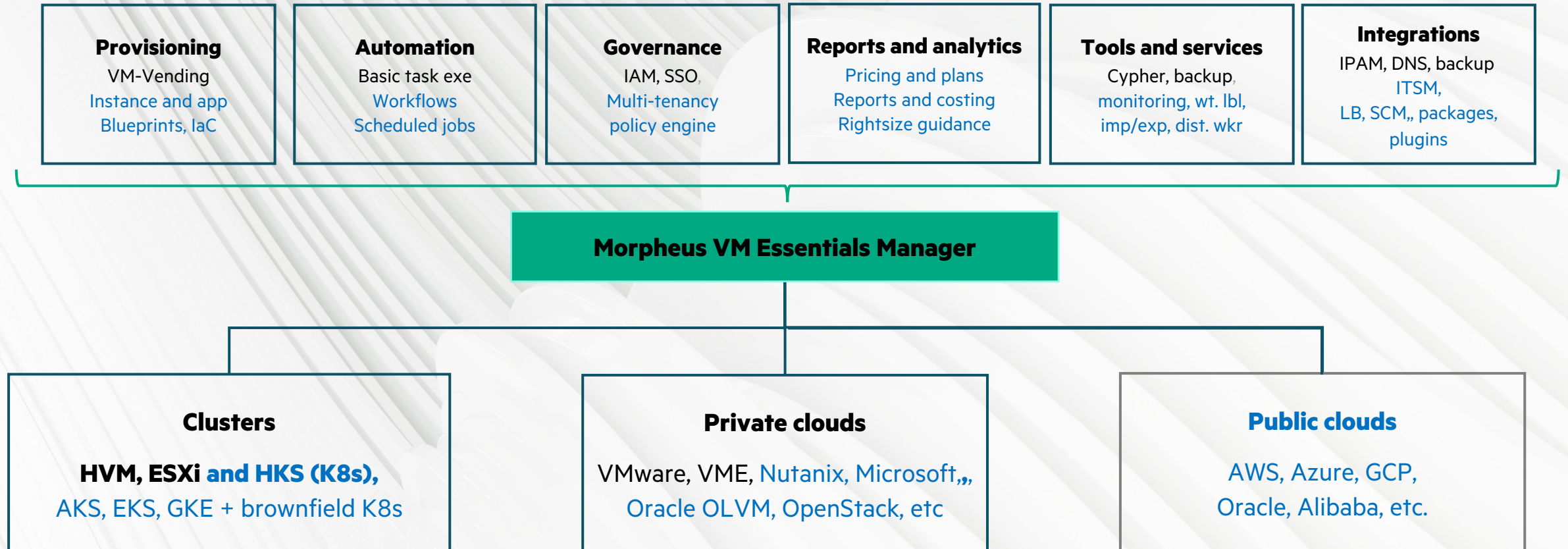


Unlock your full potential with an in-place upgrade from Morpheus VM Essentials to Morpheus Enterprise

- Add brownfield hypervisors as private clouds to streamline heterogeneous management
- Includes support for VMware, Nutanix, Microsoft, Oracle OLVM, OpenStack, etc.
- Govern public cloud access with policy for AWS, Azure, GCP, OCI, and others
- Get complete visibility and financial control with chargeback, analytics, and rightsizing

HPE Morpheus VM Essentials Software

Software or embedded for HPE Private Cloud Enterprise—Licensed per CPU socket



Unify Hybrid Cloud Operations for all your Apps & Ops from Day-0 to N

ITOps, SecOps, DevOps, FinOps



Governance

Orchestration

Operations

Discover

Discovery
Inventory
Integration
Audit

Enforce

Guardrails
Policies
Budget
RBAC

Provision

IaaS
PaaS
XaaS
IaC
Blueprints

Protect

Backup
Recovery
Replication
Secrets

Manage

Scaling,
access, &
lifecycle
management

Observe

App-to-infra
Traditional &
cloud native

Analyze

Capacity
analytics
Perf mgmt.
Root cause

Act

Remediation
Incident mgmt.
Runbook
Config mgmt.



Optimize

Workloads
Capacity
Performance
Costs
Placement

Inform

Monitor,
Forecast,
Report
Chargeback
Showback

Secure

SecOps
integrations



Containers

HPE
K8s



aws
EKS

Virtualization

HPE VM
Essentials

vm

A
AS-HCI



Bare Metal

HPE GL
Servers

Public Cloud

aws





Thank You!