Hewlett Packard Enterprise

Reference Architecture

HPE Reference Architecture for HPE VM Essentials Software 8.0.1 on HPE ProLiant DL325 Gen11 and DL380/DL360 Gen10 Plus

CONTENTS

EXECUTIVE SUMMARY

HPE VM Essentials (VME) software is a unique software offering which provides highly-available HPE VME hypervisor clusters based on KVM while also providing the ability to connect to existing VMware vCenter clusters for unified management of VM workloads. The solution provides per-socket pricing, brownfield VM discovery, and a simple VM-as-a-service provisioning interface into both HPE VME and VMware hosts. Available as standalone software or as an embedded option within HPE Private Cloud offerings, this enterprise-grade solution is supported by HPE's global support organization.

Built on the same KVM foundation behind the world's hyperscale clouds, the HPE VME hypervisor has added advanced cluster management including resource-based placement, VME host-to-host live migration, hot resize and reconfigure, secure hardening, and integrated data protection.

To enable flexibility for those continuing to serve VMware-based applications, HPE VME manager software will also connect to existing VMware vSphere clusters for customers who want to simplify management and provisioning of instances into both VMware ESXi and HPE VME hosts from one unified solution. In addition to a simple VM provisioning catalog, HPE VME manager also includes integration into external IPAM and DNS solutions, secure key management, automation execution, built-in data protection, and basic VMware ESXi-to-HPE VME image format conversion.

Lastly, HPE VM Essentials software offers an upgrade path to the full Morpheus Data software platform for expanded hybrid cloud management including connectivity into dozens of on-prem and public clouds, Kubernetes cluster management, governance policy enforcement, and FinOps capabilities for optimization, metering, and reporting.

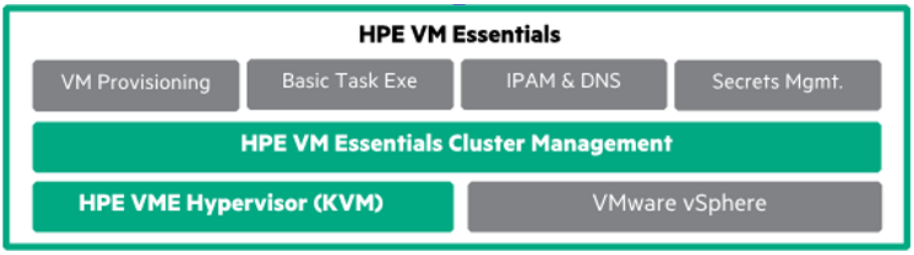

FIGURE 1. HPE VM Essentials capability diagram

HPE VM Essentials hypervisor features comprise of:

- **HPE Validated Hardware:** The HPE VM Essentials hypervisor has been validated on HPE Gen 11 servers 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 disk(s) 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.
- **Native Data Protection**: Backup and restore HPE VM Essentials virtual machines using the solution's native data protection feature.
- **Virtual Machine Snapshots**: Create and revert snapshots for HPE VM Essentials virtual machines.
- **External Storage Support**: The HPE VM Essentials hypervisor supports running virtual machines on external storage via iSCSI, NFS, and Fibre Channel. **For this release of the Reference Architecture, only external storage with iSCSI has been validated.**

HPE VM Essentials Solution features for VMware and VME include:

- **Multi-Hypervisor Support**: HPE VM Essentials enables simple provisioning and management of HPE VM Essentials virtual machines as well as VMware virtual machines.
- **Centralized Identity & Single Sign-On (SSO)**: Enable external user authentication using Active Directory (AD) or LDAP. Enable single sign-on with Okta, OneLogin, Azure AD, or SAML.
- **IPAM Integration**: Integrate with external IPAM providers (Infoblox, phpIPAM, BlueCat, SolarWinds) to automate the reservation of an IP address for the virtual machine during the provisioning process.
- **DNS Integration**: Integrate with external DNS providers (Infoblox, Microsoft DNS, BlueCat, SolarWinds) to automate the creation of DNS records for a virtual machine during the provisioning process.
- **Provisioning Automation**: Execute Bash or PowerShell scripts during virtual machine provisioning to automate system bootstrapping operations.
- **Day 2 Automation**: HPE VM Essentials supports the execution of Bash and PowerShell scripts on provisioned and discovered virtual machines.
- **Secrets Management**: Securely store and retrieve secrets from Cypher, the native secrets manager for use with the embedded Bash and Powershell task automation feature.
- **HTML 5 Virtual Machine Console**: Access the console of HPE VM Essentials virtual machines and VMware virtual machines via the HTML5 VM console.

This Reference Architecture provides architecture overview and guidance for deploying and managing HPE VM Essentials on HPE ProLiant DL 325 Gen11, DL380 and DL360 Gen10 Plus Servers attached to external HPE Alletra MP iSCSI storage via Aruba 8325 and 6300 switches.

Target audience: This document is intended for IT decision makers as well as architects, system engineers, partners, and system administrators who want to understand the capabilities of enterprise-ready VMaaS solutions using the HPE ProLiant DL Servers and HPE VM Essentials software. The reader should have a solid understanding and familiarity with virtualization, enterprise networking, storage, and HPE ProLiant DL Servers. For assistance with deployment of HPE ProLiant DL Servers with HPE VM Essentials, contact your Hewlett Packard Enterprise Representative or channel partner.

This Reference Architecture describes solution testing performed in November 2024.

REFERENCE ARCHITECTURE OVERVIEW

This Reference Architecture demonstrates best practices for supportability for customers building a cloud solution in an enterprise data center and deploying applications in an automated manner. The solution design is based on HPE VM Essentials on HPE ProLiant DL Servers connected to Alletra MP iSCSI storage via Aruba switches. HPE VM Essentials provides a unified platform for managing

both HPE VME Clusters and VMware-based environments comprising HPE VM Essentials Hypervisor, and HPE VM Essentials Manager.

This Reference Architecture demonstrates the following supported components for HPE VM Essentials Software:

- HPE Servers - HPE ProLiant DL325 Gen11 and HPE ProLiant DL380/DL360 Gen10 Plus server with 10/25Gb Network adapters as HPE VM Essentials Hypervisor hosts.
- HPE Storage – HPE Alletra MP as principal storage connected to the HPE ProLiant DL Server. This storage should be configured as Global File System 2 (GFSv2) via iSCSI.
- HPE Networking – HPE Aruba 8325 and Aruba 6300 switches connecting the HPE ProLiant DL servers and HPE Alletra MP storage.
- HPE VM Essentials manager - Enables the HPE VM Essentials administrator to easily manage array storage, datastores, and virtual machines.

Figure 2 shows the reference architecture component layout showcasing the solution components validated in this Reference Architecture.

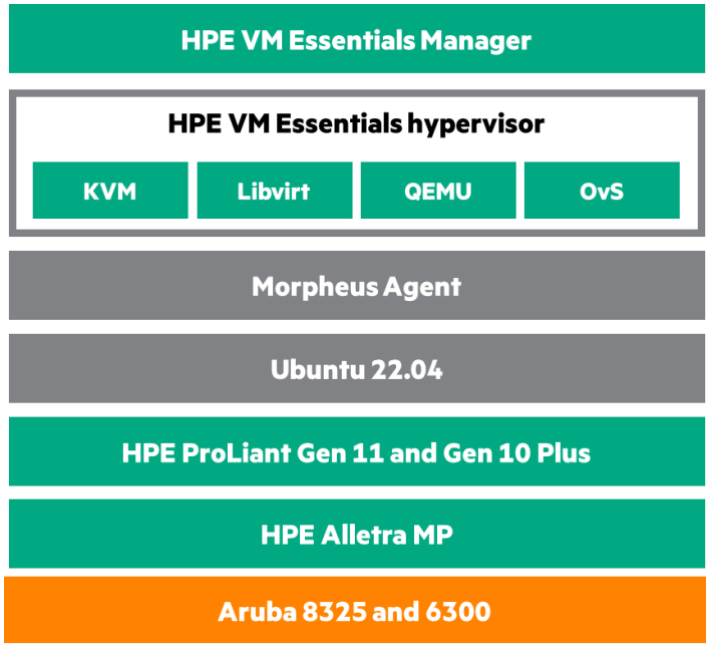

FIGURE 2. Diagram layout showcasing the solution components

HPE VM ESSENTIALS SOFTWARE COMPONENTS

HPE VM Essentials Solution and HPE Virtualization hypervisor is validated on the HPE ProLiant DL Servers solution is tested with the following hardware and software components.

Release notes at https://www.hpe.com/us/en/hpe-vm-essentials.html.

Software

The logical architecture of the validated HPE VM Essentials (VME) stack compromises the following components.

HPE VM Essentials Manager
The management server that provides KVM clustering, identity management, virtual machine provisioning, monitoring, and logging. The HPE VM Essentials Manager will be downloaded from the HPE Software center and installed as a pre-packaged virtual appliance.

It is installed as a KVM-based virtual machine on any single host which will be part of the cluster. The manager itself is running on an Ubuntu 22.04 VM and can be installed in one of three pre-defined sizes which are described below.

- Runs Ubuntu 22.04 as the base operating system
- Available in multiple hardware configuration sizes
    - Small: 2 vCPUs and 12 GB RAM (Manages a maximum of 1 HPE VME cluster)
    - Medium: 4 vCPUs and 16 GB RAM (Manages a maximum of 3 HPE VME clusters)
    - Large: 4 vCPUs and 32 GB RAM (Manages a maximum of 10 HPE VME clusters)

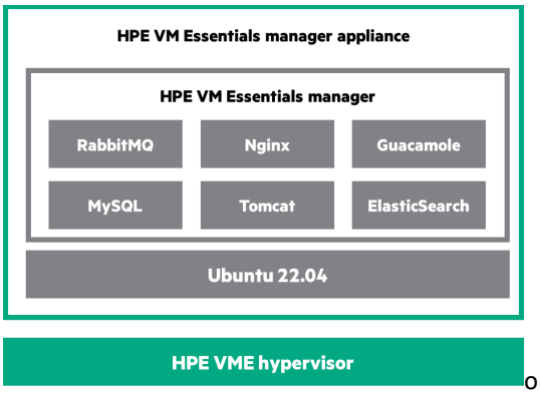

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FIGURE 3. HPE VM Essentials Manager layout diagram.

HPE VM Essentials Hypervisor

KVM-based hypervisor hosing virtual machines being managed by the HPE VM Essentials Manager.

- CPU: One or more 64-bit x86 CPUs, 1.5 GHz minimum with Intel VT or AMD-V enabled
- Memory: 8 GB minimum.
- Disk Space: 50 GB minimum for the Ubuntu 22.04 operating system. An operating system disk of 15 GB is also required. Clusters utilizing non-converged Layouts can configure external storage (iSCSI). Virtual Image datastores need to have 20% usable capacity, or the oldest images may be deleted to create capacity. It's recommended to select a minimum of 2 shared disks for HA failover quorum per cluster (this is manual selection).
- Network Connectivity: HPE VME Hypervisor hosts must be assigned static IP addresses. They also need DNS resolution for HPE VME Manager and Internet access to download and install system packages for HPE VME dependencies, such as KVM, Open vSwitch (OVS), and more.
- HPE VM Essentials clusters require a minimum of 3 hypervisor hosts.
- The following network ports are being used for communication in the HPE VM Essentials solution between components.

Description	Source	Destination	Port	Protocol
Morpheus Agent communication with the Morpheus appliance	HPE VME Hypervisor Host	HPE VME Manager	443	TCP

Description	Source	Destination	Port	Protocol
HPE VME Hypervisor host configuration and management	HPE VME Manager	HPE VME Hypervisor Host	22, 5900	TCP
HPE VME Hypervisor interhost communication for clustered deployment	HPE VME Hypervisor Host	HPE VME Hypervisor Host	22, 2224,3121, 5403, 5404, 9929, 21064	TCP
			5405, 9929	UDP
Morpheus server SSH access for deployed virtual machines	HPE VME Manager	HPE VME Hypervisor-hosted virtual machines	22	TCP
Morpheus server WinRM (HTTP) access for deployed virtual machines	HPE VME Manager	HPE VME Hypervisor-hosted virtual machines	5985	TCP
Morpheus server WinRM (HTTPS) access for deployed virtual machines	HPE VME Manager	HPE VME Hypervisor-hosted virtual machines	5986	TCP

TABLE 1. HPE VM Essentials Software Network Communication Ports

Morpheus Agent
The software that runs on each Hypervisor host that collects system stats, logs, and executes operations received from the HPE VM Essentials Manager server.

Ubuntu 22.04
The installation of the base Ubuntu operating system is a requirement for deployment of the hypervisor host. Ubuntu 22.04 installation can be done on local disk on the HPE ProLiant servers or boot from SAN from the HPE Alletra MP storage. The minimum disk size for the Ubuntu 22.04 install should be 250 GB. During the installation of Ubuntu 22.04, if you are using LVM, you will not use all available disk space by default. Manual steps must be taken to claim all available space on the disk.

Following installation, it is required to install the hardware enablement (HWE) package as well. HWE is a set of newer kernels that provide support for newer hardware on Ubuntu LTS releases. Also, all Ubuntu 22.04 should be configured in the same way before the hypervisor installation and clustering is completed by the HPE VME Manager.

Deploying HPE VM Essentials Software on Reference Architecture
Below is the order of operations for deploying HPE VM Essentials Software in your environment. While the Reference Architecture will outline the deployment process, please refer to the HPE VM Essentials deployment guide – https://hpevm-docs.morpheusdata.com/en/latest/vme_getting_started/vme_getting_started.html# – for detailed steps and instructions.

1. Order hardware and/or validate hardware components match the Reference Architecture.
2. Connect validated HPE ProLiant servers (listed in a prior section) and HPE Alletra MP storage to Aruba switches.
3. Install Ubuntu 22.04 on validated ProLiant servers for HPE VME Hypervisor host deployment.
4. Configure connectivity on HPE VME Hypervisor hosts and HPE Alletra MP storage.
5. Download and install HPE VME console on each HPE VME Hypervisor host.
6. Deploy and configure HPE VME Manager on any HPE VME Hypervisor host.
7. Create and configure HPE VME Clusters and datastores via HPE VME Manager.

NETWORKING DESIGN CONSIDERATIONS

The Reference Architecture was built for a redundant physical network to support HPE VME Hypervisor hosts connected to Aruba 8325 and 6300 switches using shared storage from a HPE Alletra MP array over iSCSI. To ensure performance with redundancy, minimal 10/25 Gb connectivity should be used to connect the HPE VME Hypervisor hosts and HPE Alletra MP array to the Aruba 8325 for storage, Hypervisor host management, and VM compute traffic. The Aruba 6300 switches are used for hardware management and are dedicated management switches. HPE VME Hypervisor hosts should have a minimum of 4 x 10/25 Gb ports per host (recommended to have 2 network adapters to support redundancy), but recommended to have 6 x 10/25 Gb ports per host for redundancy and throughput.

There are multiple networking design layouts included here for consideration. The minimum host port configuration will allow for a converged hypervisor host management and VM compute network.. The recommended host port configuration will allow for a diverged hypervisor host and VM compute networking layout.

The Reference Architecture follows the recommended logical network layout to map with the physical design. A minimum of 4 VLANs is needed, and each Hypervisor host will be connected to those VLANs as shown below.

- VM Compute VLAN(s)
- Hypervisor Host Management VLAN
- Storage VLANs (2 separate storage VLANs for multi-pathing to each controller on the Alletra MP array)

In the minimum converged network configuration, the Hypervisor Host Management VLAN, and VM Compute VLANs should be on the same trunk from the Aruba 8325. The server network ports that the Hypervisor Host Management VLAN, and VM Compute VLANs should be bonded with LACP 802.3ad at the OS level on the HPE VM Essentials host. Since the Reference Architecture is connected on Aruba 8325 switches, the ports that the bond is connected to should be configured with LACP, or Link Aggregation Control Protocol, with automatic negotiation to provide redundancy and throughput. Also, it is recommended that Aruba 8325 switches be put in a LAG, Link Aggregation Group, configuration for redundancy and throughput. The Storage network will be separated into 2 separate logical networks for redundancy via MPIO, or Multi-Path Input/Output, that is configured at the OS level on the HPE VM Essentials host. Storage VLANs should not be trunked on the Aruba 8325 switch ports. See diagram below for minimum converged network configuration.

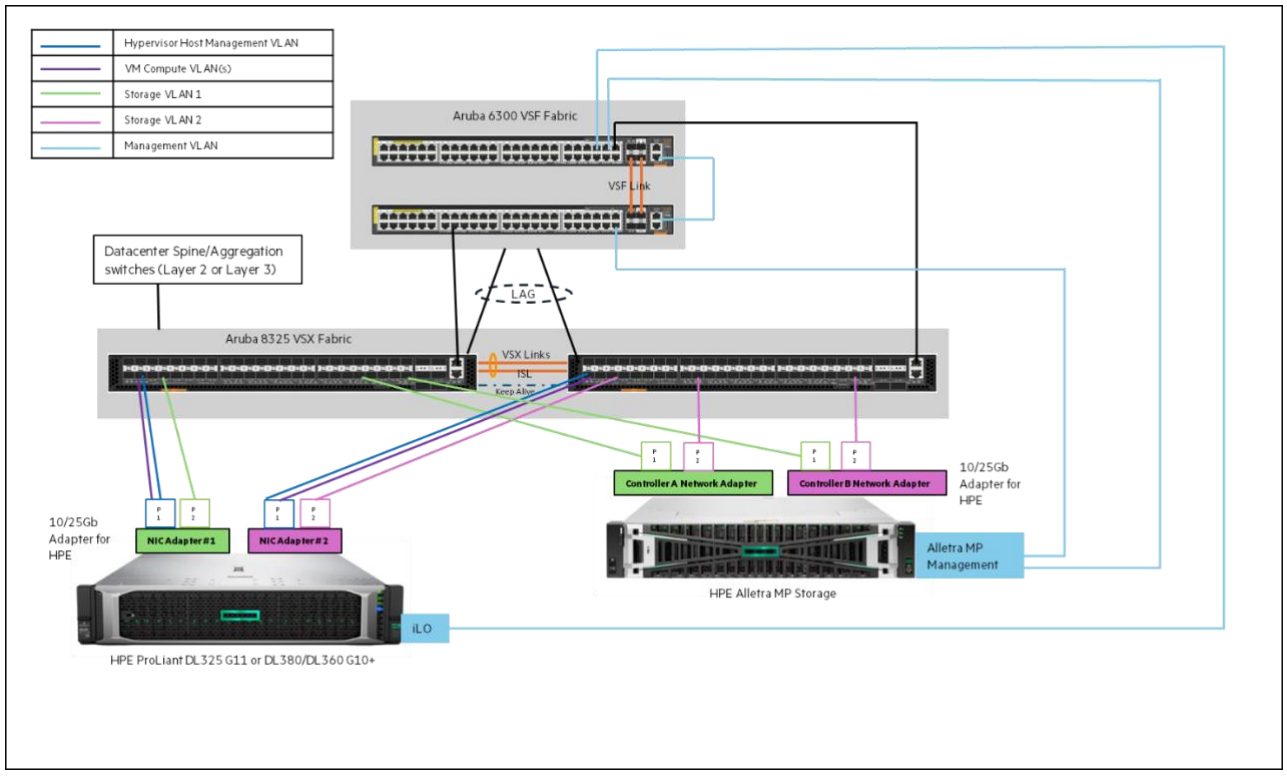

FIGURE 4. Converged Network connectivity diagram.

In the recommended diverged network configuration, the Hypervisor Host Management VLAN, and VM Compute VLANs should be on the same trunk from the Aruba 8325. The server network ports that the Hypervisor Host Management VLAN, and VM Compute VLANs should have their network ports on the HPE VM Essentials host. Also, it is recommended that Aruba 8325 switches be put in a LAG, Link Aggregation Group, configuration for redundancy and throughput. The Storage network will be separated into 2 separate logical networks for redundancy via MPIO, or Multi-Path Input/Output, that is configured at the OS level on the HPE VM Essentials host. Storage VLANs should not be trunked on the Aruba 8325 switch ports. If your HPE VM Essentials host has more than 6 total high throughput network ports (10/25Gb ports or higher), you may bond the additional ports for your VM compute or Storage VLANs for additional throughput. See diagram below recommended diverged network configuration.

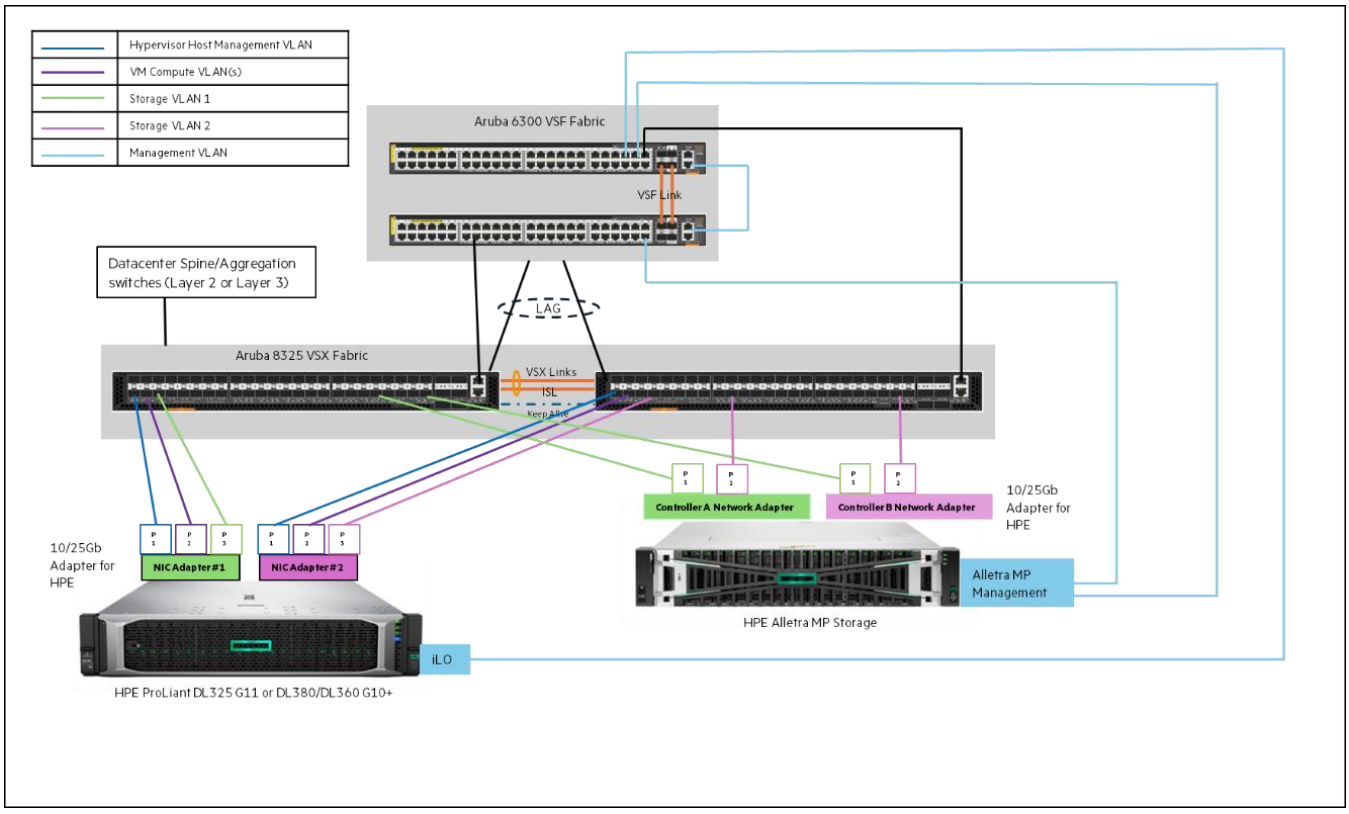

FIGURE 5. Diverged Network connectivity diagram

HARDWARE

This section will delve into the hardware components used in the Reference Architecture.

- HPE Servers - HPE ProLiant DL325 Gen11 and HPE ProLiant DL380/DL360 Gen10 Plus server with 10/25Gb Network adapters as HPE VM Essentials Hypervisor hosts.
- HPE Storage – HPE Alletra MP as principal storage connected to the HPE ProLiant DL Server. This storage should be configured as Global File System 2 (GFSv2) via iSCSI.
- HPE Networking – HPE Aruba 8325 and Aruba 6300 switches connecting the HPE ProLiant DL servers and HPE Alletra MP storage.

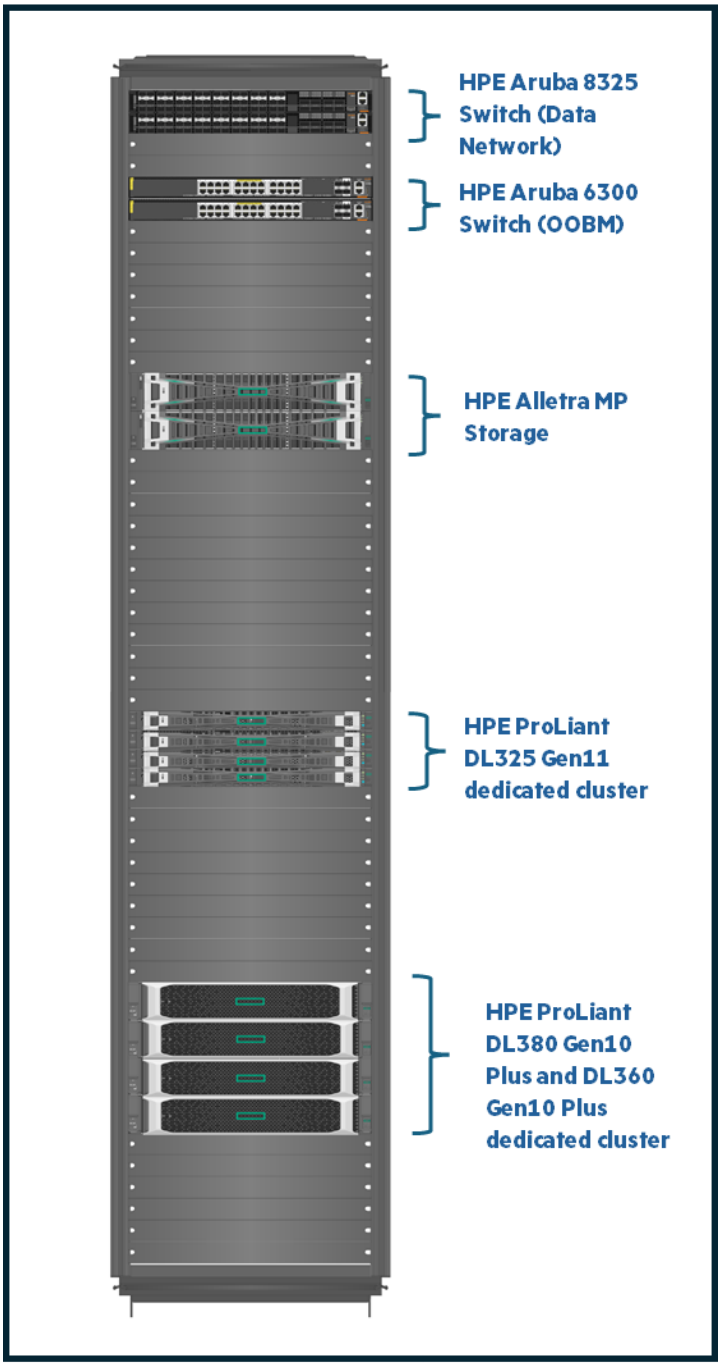

FIGURE 6. Physical rack layout showcasing the solution components. This example rack contains a homogeneous cluster of HPE ProLiant DL325 Gen11 servers. AMD and Intel-based servers are not mixed in the same cluster.

Table 2 shows the hardware components used in this solution.

Components	Quantity	Description
HPE ProLiant DL325 Gen11 server	4	• Minimum 1x AMD® EPYC® 9354P (3.25GHz/32-core/280W) • 512 GB RAM • Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HP • HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller • 2x 480GB SATA SSD
HPE ProLiant DL380 Gen10 Plus server	4	• 2x Intel Xeon-Gold 6338 2.0GHz 32-core 205W Processor for HPE • 512 GB RAM • Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE • HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device • HPE Smart Array P816i-a SR Storage Controller • 2x 480GB SATA SSD
Aruba 8325 Switch	2	Top of Rack– 48Y 48-port 10/25 GbE
Aruba 6300M Switch	2	Out of Band Management - 48-port 1GbE and 4-port SFP56
HPE Alletra MP Storage	1	B10130 2-node Controller

TABLE 2. HPE hardware components

HPE ProLiant DL325 Gen11

The HPE ProLiant DL325 Gen11 server is a low-cost 1U 1P solution that delivers exceptional value balancing compute, memory and network bandwidth at 1P economics. Powered by 4th and 5th Generation AMD EPYC™ Processors with up to 160 cores, increased memory bandwidth (up to 3 TB, 6000 MT/s), high-speed PCIe Gen5 I/O and EDSFF storage, and supporting up to two DW GPUs at the front, this server is a superb low-cost, 1U 1P, performance solution for your virtualized workloads. The HPE ProLiant DL325 Gen11 server is an excellent choice for virtualized workloads such as software-defined compute, CDN, VDI, and secure edge apps that require balancing processor, memory, and network bandwidth.

Figure 7 shows the HPE ProLiant DL325 Gen10 Plus server.

FIGURE 7. HPE ProLiant DL325 Gen11 server

HPE ProLiant DL380 and DL360 Gen10 Plus server

HPE ProLiant DL380 and DL360 Gen10 Plus server delivers world-class performance with the right balance of expandability and scalability. Designed for supreme versatility and resiliency while being backed by a comprehensive warranty make it is ideal for a virtualized environment. With a choice of CPUs offering a balance between core counts and core frequencies, very large memory footprints, and disk options. The HPE ProLiant DL380 Gen10 Plus server is an ideal choice for supporting demanding workloads. For this use case, each server used in this solution was equipped with 512 GB RAM and dual Intel® Xeon® Gold 2GHz 32 Core CPUs.

Figure 8 shows the front view of the HPE ProLiant DL380 Gen10 Plus server.

FIGURE 8. HPE ProLiant DL380 Gen10 Plus server

Aruba 6300M Switch

The Aruba CX 6300 Switch Series is a modern, flexible and intelligent family of stackable switches ideal for enterprise network access, aggregation, core, and data center top of rack (ToR) deployments. Created for game-changing operational efficiency with built-in security and resiliency. The Aruba 6300M 48-port 1GbE and 4-port SFP56 (R9F63A) switch provide the foundation for high-performance networks supporting IoT, mobile, and cloud applications.

Figure 9 shows the front view of the Aruba 6300M Switch.

FIGURE 9. Aruba 6300M Switch

Aruba 6300M Switches configuration

Aruba 6300M switches are the out-of-band management switches in this solution. Both Aruba 6300M switches are configured for Virtual Switching Framework that virtualizes two physical devices into one Virtual Fabric to provide high availability and scalability. All the HPE ProLiant DL Server's iLO connects to the solution management network configured on Aruba 6300M switches. HPE Integrated Lights-Out enables the remote management of HPE ProLiant DL Servers securely from anywhere on this solution management network.

Aruba 8325 Switch Series

The Aruba 8325 Switch Series offers a flexible and innovative approach to addressing the application, security, and scalability demands of the mobile, cloud, and IoT era. These switches serve the needs of the next-generation core and aggregation layer, as well as emerging data center requirements at the Top of Rack (ToR) and End of Row (EoR). They provide over 6.4Tbps of capacity, with line-rate Gigabit Ethernet interfaces including 1Gbps, 10Gbps, 25Gbps, 40Gbps, and 100Gbps. The Aruba 8325 Switch series includes industry-leading line rate ports 1/10/25GbE (SFP/SFP+/SFP28) and 40/100GbE (QSFP+/QSFP28) with connectivity in a compact 1U form factor. These switches offer a fantastic investment for customers wanting to migrate from older 1GbE/10GbE to faster 25GbE, or 10GbE/40GbE to 100GbE ports.

Figure 10 shows the front view of the Aruba 8325 32Y8C Switch.

FIGURE 10. Aruba 8325 Switch

Aruba CX 8325 Switches configuration

Aruba 8325 Switches should be connected and configured for Virtual Switching Extension (VSX) that virtualizes the control plane of two aggregation switches to function as one device at layer 2 and as independent devices, at layer 3 Aruba's VSX has been designed from the ground up to provide industry-leading performance and high availability (HA) with much-needed simplicity. This is accomplished through the resiliency of AOS-CX, a modern network operating system that performs continuous state synchronization. All the VLANs required for HPE VM Essentials deployment should be created on the top-of-rack (ToR) switches or allowed from customer network data center uplinks. The Ethernet downlink ports on the Aruba 8325 Switches should be trunk enabled allowing all VLANs required for the HPE VM Essentials stack.

HPE Alletra MP Storage

HPE Alletra Storage MP is a unique, software defined, scale-out data system that consolidates a high-performance all-flash object storage service, exabyte-scale capacity, and easy management. for data intensive initiatives, like data lakes, digital repositories, and backup with flash-accelerated recovery. The Alletra MP takes advantage of the industry's first disaggregated multiprotocol architecture, which makes it possible for you to scale from terabytes to exabytes on the same hardware. Cost savings are provided through the ability to efficiently scale capacity and performance independently.

It is a software-defined, multi-protocol storage platform that provides flexibility and high performance for both structured and unstructured data storage needs. It consists of standardized, composable building blocks — compute (node), capacity (JBOF), and switches — that can be configured for different software-defined storage personas and use cases. This enables you to uniquely deploy block, file or object workloads on common hardware and manage everything with a unified cloud experience through the HPE GreenLake cloud.

Figure 11 shows the HPE Alletra MP storage.

FIGURE 11. HPE Alletra MP Storage

HPE Alletra MP iSCSI Storage using two Aruba Switches

Figure 12 shows the cabling diagram of HPE Alletra MP Storage (iSCSI) with the HPE ProLiant DL325 Gen11 servers (could be use DL380/360 Gen10 Plus as well). The cabling shows that the HPE Alletra MP Storage is connected to the HPE ProLiant DL325 Gen11 server through Controller A and Controller B 10/25Gb network adapter ports on each HPE Alletra MP controller. HPE Alletra MP Storage is configured to use 3 different networks, a management network of speed 1Gbps and 2 data networks of speed 10Gbps.

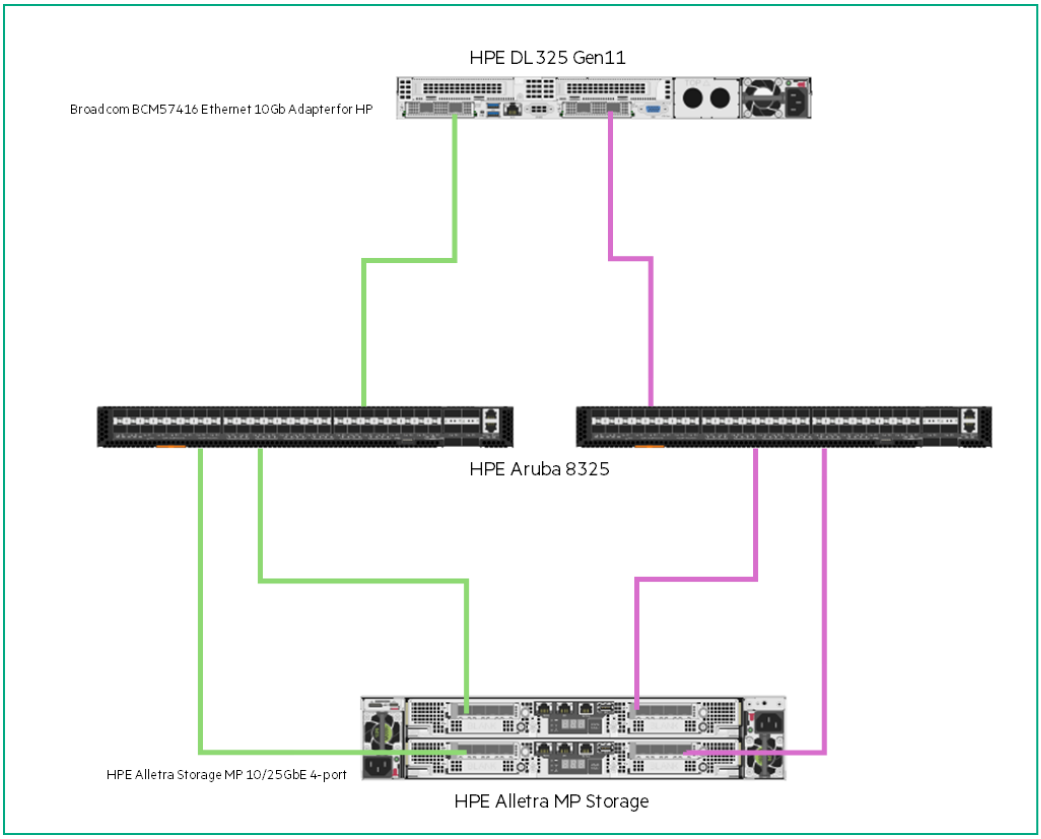

FIGURE 12. Example of HPE Alletra MP storage (iSCSI) with HPE ProLiant DL Servers

See the HPE Alletra MP Storage documentation to understand the best practices of configuring HPE Alletra MP Storage at https://www.hpe.com/us/en/alletra-storage-mp-b10000.html.

SUMMARY

HPE VM Essentials includes the HPE VME KVM-based hypervisor but also supports your existing VMware licenses, providing ease of use, agility, and a unified VM-vending experience for HPE VME and VMware clusters. The KVM stack is ideal for those exploring alternatives to VMware, starting with non-mission-critical workloads such as test and development.

Over the course of 2025, HPE plans to ramp performance testing and solution engineering to provide specific recommendations and other reference architectures for common workloads and an expanded set of target use cases.

Morpheus is well known for its integration into dozens of third-party technologies. HPE VM Essentials leverages that same pluggable abstraction framework to enable partner ecosystem integration, such as with backup providers Cohesity, Commvault, and Veeam.

At launch, HPE VM Essentials is offered under a term-based subscription license and shall be priced competitively on a per-CPU socket basis, with no extra charge for connecting existing VMware clusters.

This Reference Architecture showcases the ability to:

- Overview of deployment of HPE VM Essentials Hypervisor with HPE VM Essentials Manager.
- Build a validated HPE VM Essentials environment with a choice of either HPE ProLiant DL325 Gen11 or DL380 Gen10 Plus or DL360 Gen10 Plus servers, HPE Alletra MP Storage as principal storage for iSCSI connectivity.

URLS FOR FIRMWARE, SOFTWARE, AND DOCUMENTATION

Rack and power links

- HPE Rack and Power Infrastructure, https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html

Network links

- Networking documentation page, https://asp.arubanetworks.com
- Aruba 6300 Switch documentation page, https://www.hpe.com/psnow/product-documentation?jumpid=in_lit-psnow-red&cc=ie&lc=en&oid=1012138130
- Aruba 8325 Switch documentation page, https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00065472en_us

Storage links

- HPE Alletra MP Storage, https://www.hpe.com/us/en/alletra-storage-mp-b10000.html
- Single Point of Connectivity Knowledge (SPOCK), http://www.hpe.com/storage/spock)

Server links

- HPE ProLiant DL servers, https://www.hpe.com/us/en/servers/proliant-dl-servers.html
- SPP Documentation, http://www.hpe.com/info/spp/documentation

Software links

- HPE VM Essentials
  - Software - https://hpevm-docs.morpheusdata.com/
  - Documentation – https://www.hpe.com/support/VME-Docs

RESOURCES AND ADDITIONAL LINKS

HPE Reference Architectures, https://www.hpe.com/support/VME-RA

HPE Servers, hpe.com/servers

HPE Storage, hpe.com/storage

HPE Networking, hpe.com/networking

HPE GreenLake Advisory and Professional Services, hpe.com/us/en/services/consulting.html

HPE Enterprise Support Center, https://support.hpe.com/hpesc/public/home

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