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VMware Cloud Foundation and VMware vSphere Foundation:

Feature Comparison & Upgrade Paths

vmware by Broadcom

As part of the VMware integration into Broadcom, we have taken several core steps to drive more value for the VMware portfolio.

- First, the VMware portfolio has been dramatically simplified to 2 core offerings: VMware Cloud Foundation and VMware vSphere Foundation, plus a set of Advanced, Add-on Services as detailed in this blog.
- Second, the portfolio has shifted completely from perpetual to a subscription model, using compute cores as the fundamental metric for scaling VMware environments.
- Finally, the overall pricing has been reduced up to 50% compared to previous subscription offers, reducing customers' overall TCO when deploying this infrastructure.

Portfolio Simplification

VMware by Broadcom has two primary offerings:

1. **VMware Cloud Foundation** – the flagship enterprise-class private cloud platform for customers to run their business-critical and modern applications – in a secure, resilient, and cost-efficient manner.
   - VMware Cloud Foundation is a full-stack Infrastructure as a Service (IaaS) platform that delivers software-defined compute, storage, networking, security, and management.
   - Integrated self-service infrastructure platform to deploy VMs/containers for developer agility.
   - Hardened platform offering built-in resilience, scaling, and clustering for non-stop operations.
   - Provides cloud agility to scale infrastructure without scaling staff, delivering cloud consumption on-premises.
   - Provides automation and orchestration to simplify Day 0, Day 1, and Day 2 tasks.
   - Available as a single SKU to simplify full stack deployment.

2. **VMware vSphere Foundation** – a simplified, enterprise-grade workload platform for our mid-sized to smaller customers.
   - VMware vSphere Foundation solution integrates vSphere with our intelligent operations management to provide the best performance, availability, and efficiency with greater visibility and insights.
   - vSphere Foundation can be upgraded to a Hyperconverged Infrastructure (HCI) solution with an optional software-defined storage (vSAN) add-on.

Figure 1: shows VMware by Broadcom simplified portfolio

Note: Customers can purchase additional storage capacity with VMware Cloud Foundation or vSphere Foundation as a vSAN add-on.

Feature Comparison: VMware vSphere Foundation vs. VMware Cloud Foundation

Features	Previous Products	vSphere Foundation	VMware Cloud Foundation
Compute			
Distributed Resource Scheduler, Distributed Switch	vSphere Enterprise Plus	•	•
Cross-VC vMotion, Long Distance vMotion, Direct Path vMotion, Storage vMotion	vSphere Enterprise Plus	•	•
High Availability, Fault Tolerance, Data Protection, Trust Authority	vSphere Enterprise Plus	•	•
Kubernetes Runtime, Automated Multicluster Operations	Tanzu Kubernetes Grid	•	•
vCenter: Backup and Restore, Linked Mode, HA	vCenter Server Standard	•	•
Storage			
Data-at-rest and Data-In-Transit Encryption	vSAN Enterprise	0.25 TiB / Core*	1TiB / Core
Stretched Cluster with Local Failure Protection	vSAN Enterprise	0.25 TiB / Core	1TiB / Core
Petabyte Scale, Disaggregated Storage for vSphere	vSAN Enterprise	0.25 TiB / Core	1TiB / Core
Dedup & Compression	vSAN Enterprise	0.25 TiB / Core	1TiB / Core
Networking			
Networking: Distributed Switching and Routing	NSX Enterprise Plus		•
Large Scale Workload Migration	HCX Enterprise		•
Network Ops: Flow Analysis, App Discovery, M-Seg Planning, Network Assurance and Verification	Aria Operations for Networks		•
Management			
Operations: Performance Optimization, Capacity Management, Compliance, Monitoring and Troubleshooting, Log Analytics	Aria Operations	•	•
Automation: Automated Lifecycle Management, App/Infra Provisioning, Governance	Aria Automation		•
VMware and Third-Party Database, Middleware and Application management packs	Aria Operations Enterprise		•
Monitoring and Troubleshooting for Applications with Open-Source Telegraf	Aria Operations Enterprise		•
Out-of-the-box Monitoring and Troubleshooting for Curated Applications with Telegraf agent	Aria Operations Enterprise		•
Native Public Cloud Monitoring	Aria Operations Enterprise		•
TVS management packs	Aria Ops for Integrations	•Excludes DB & apps	•
VCF Operations fleet management: Workload Domain Management, Lifecycle Management, Certificate Management	SDDC Manager		•
Support			
Broadcom Essential Support – Regional Coverage, 24x7 Support		•	•
Activation/ Upgrade Support for VCF			Purchased Separately
Jumpstart Workshops for VCF (new purchases of VCF ACV > $500k except for US Pub Sector)			•

(*)- vSAN capacity increase to 0.25 TiB is available in vSphere Foundation purchases starting 11/22/24.

Detailed Feature Comparison: vSphere Standard vs. VMware vSphere Foundation vs. VMware Cloud Foundation

- VMware vSphere Foundation - includes VMware vSphere, vCenter Standard, vSphere Kubernetes Service, vSAN, VCF Operations, and VCF Operations for logs.
- VMware Cloud Foundation – includes VMware vSphere, vCenter Standard, vSphere Kubernetes Service, vSAN, NSX, VCF Operations, VCF Operations for networks, VCF Operations for logs, VCF Automation, VCF Operations fleet management (earlier known as SDDC Manager), HCX, and access to Tanzu Mission Control-SM.
- VMware Cloud Foundation Edge - VMware Cloud Foundation Edge is an optimized configuration of VMware Cloud Foundation with the addition of vSphere for vSAN witness, tailored for edge use cases.

Solution License - VMware Cloud Foundation and VMware vSphere Foundation now include a solution license key that enables access to the different components from a single key.

Note – The below comparison applies to vSphere 8.0 U3 P04 and VCF 5.2.1

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Compute					
vCenter Edition	vCenter Standard	vCenter Standard	vCenter Standard	vCenter Standard	vCenter Standard
vCenter Lifecycle Management Service	•	•	•	•	•
vSphere Kubernetes Service (VKS)			•	•	•
VM Service			•	•	•
Storage Service			• [1]	•	•
Network Service			• [1]	•	•
Container Registry Service			•	•	•
VM Registry Service			•	•	•
Network Load Balancing			• [1]	•	•
Workload Availability Zones			•	•	•
Simplified VKS cluster lifecycle Management			•	•	•
VKS cluster package management			•	•	•
Customizable base OS Images			•	•	•
vSphere Lifecycle Manager	•	•	•	•	•
vCenter Server Profiles	•	•	•	•	•
vCenter Update Planner	•	•	•	•	•
Content Library	•	•	•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Compute					
vSphere Configuration Profiles		•	•	•	•
Host Profiles		•	•	[2]	[2]
Auto Deploy		•	•	[2]	[2]
Virtual Volumes (vVols)	•	•	•	•	•
Green Metrics	•	•	•	•	•
Identity Federation	•	•	•	•	•
Hardware TPM 2.0 Support	•	•	•	•	•
Virtual TPM 2.0	•	•	•	•	•
FIPS 140-2, 140-3, and Common Criteria Certification	•	•	•	•	•
TLS 1.2	•	•	•	•	•
TLS 1.3	• [3]	• [3]	• [3]	• [3]	• [3]
Virtual Machine Encryption		•	•	•	•
Standard Key Provider (External KMS)	•	•	•	•	•
Native Key Provider	•	•	•	•	•
Per-VM Enhanced vMotion Compatibility (EVC)		•	•	•	•
Instant Clone		•	•	•	•
VMware vShield Endpoint	•	•	•	•	•
Distributed Resource Scheduler (DRS)		•	•	•	•
Storage DRS		•	•	•	•
Distributed Power Management (DPM)		•	•	•	•
Storage Policy-Based Management	•	•	•	•	•
I/O Controls (storage)		•	•	•	•
Single Root I/O Virtualization (SR-IOV)		•	•	•	•
vSphere persistent memory/memory tiering		•	•	•	•
NVIDIA GRID vGPU		•	•	•	•
Accelerated Graphics for VMs		•	•	•	•
Dynamic DirectPath IO	•	•	•	•	•
Vendor Device Group		•	•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Compute					
vMotion	•	•	•	•	•
Cross-vCenter vMotion	•	•	•	•	•
vCenter Hybrid Linked Mode	•	•	•	•	•
vSMP	•	•	•	•	•
High Availability (HA)	•	•	•	•	•
Proactive HA			•	•	•
Storage vMotion	•	•	•	•	•
Fault Tolerance	• (only 2 vCPU)	•	•	•	•
vSphere Replication	•	•	•	•	•
Support for 4k Native Storage	•	•	•	•	•
vSphere Quick Boot	•	•	•	•	•
vCenter File-Based Backup and Restore	•	•	•	•	•
vCenter Server Appliance Migration	•	•	•	•	•
Cross vCenter Mixed Version Provisioning	•	•	•	•	•
Hot and Cold Migration to the Cloud	•	•	•	•	•
Policy-based Governance		•	•	•	•
Kubernetes Automation			•	•	•
Workload Lifecycle Management		•	•	•	•
vSphere Orchestration & Extensibility	•	•	•	•	•
Storage					
vSAN Express Storage Architecture (ESA)			•	•	•
vSAN Original Storage Architecture (OSA)			•	•	•
All-Flash Hardware			•	•	•
Data Compression			•	•	•
Basic Compression and Deduplication			• (OSA Only)	• (OSA Only)	• (OSA Only)
Advanced Storage and Network Layer Compression			• (ESA Only)	• (ESA Only)	• (ESA Only)
Data at-Rest Encryption			•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Storage					
Data in-Transit Encryption			•	• [2]	• [2]
Storage Policy-Based Management			•	•	•
Software Checksum			•	•	•
vSAN over RDMA			•		
Erasure Coding (RAID-5/6)			•	•	•
vSAN storage clusters			•	•	•
Remote Datastores			•	•	•
Stretched Cluster			•	• (OSA Only)	• (OSA Only)
2-Node Cluster			•	No	No
File Services			•	• (OSA Only)	• (OSA Only)
iSCSI Target Service			•	• [2]	• [2]
Cloud Native Storage (CNS) Control Plane			•	•	•
vSphere Container Storage Interface (CSI) Driver			•	•	•
Rack Awareness (Fault Domains)			•	• [2]	• [2]
vSAN Data Persistence Platform			•	•	•
External Storage					
VMFS - Fibre Channel	•	•	•	• (Principal, Supplemental)	• (Principal, Supplemental)
VMFS – iSCSI	•	•	•	• (Supplemental)	• (Supplemental)
VMFS – FcoE	•	•	•	• (Supplemental)	• (Supplemental)
VMFS - NVMe/FC	•	•	•	• (Supplemental)	• (Supplemental)
VMFS - NVMe/TCP	•	•	•	• (Supplemental)	• (Supplemental)
VMFS - NVMe/RDMA	•	•	•	• (Supplemental)	• (Supplemental)
NFS - v3	•	•	•	• (Principal, Supplemental)	• (Principal, Supplemental)
NFS - v4.1	•	•	•	• (Supplemental)	• (Supplemental)

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
External Storage					
vVols - Fibre Channel	●	●	●	● (Principal, Supplemental)	● (Principal, Supplemental)
vVols – iSCSI	●	●	●	● (Principal, Supplemental)	● (Principal, Supplemental)
vVols - NVMe/FC	●	●	●	● (Supplemental)	● (Supplemental)
vVols - NVMe/TCP	●	●	●	● (Supplemental)	● (Supplemental)
vVols - NFS v3	●	●	●	● (Supplemental)	● (Supplemental)
Storage I/O QoS Controls (SIOC)		●	●	●	●
Storage Array Integration (VAAI) for Block Storage	●	●	●	●	●
Storage Array Integration (VAAI) for NFS Storage	●	●	●	●	●
Workload (VMDK) Clustering	●	●	●	●	●
Auto config with NFS	●	●	●	●	●
Auto config with VMFS					
3rd party storage plugins	●	●	●	●	●
Host commissioning and cluster management	●	●	●	●	●
Networking					
vSphere Distributed Switch		●	●	●	●
Link Aggregation Control Protocol (LACP)		●	●	● [2]	● [2]
Load-Based Teaming		●	●	●	●
Network I/O QoS Control (NIOC)		●	●	●	●
Private VLAN		●	●	●	●
MAC Learning		●	●	●	●
BPDU Guard		●	●	●	●
Guest VLAN Tagging		●	●	●	●
VLAN Backed Networking	●	●	●	●	●
Virtual Networking				●	●
Spoofguard				●	●
L2 Multicast		●	●	●	●

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Networking					
L3 Multicast				•	•
Enhanced Datapath				•	•
Enhanced Datapath for DPUs				•	•
IPv4 and IPv6 Routing				•	•
Dynamic Routing (OSPFv2 / BGP / BFD)				•	•
VRF				•	•
EVPN				•	•
NAT				•	•
L2 and L3 VPN				•	•
Quality of Service (QoS)		• (NIOC)	• (NIOC)	• (NIOC, NSX)	• (NIOC, NSX)
Edge Bridge for Networking				•	•
DNS, DHCP and IPAM				•	•
Container Networking with Antrea			•	•	•
Policy, Tagging, and Grouping				•	•
Multi-Tenancy with Projects				•	•
Virtual Private Cloud (VPCs)				•	•
Manager / Controller Clustering				•	•
Federation				•	•
Edge in VM and Bare-Metal Form Factor for Networking				•	•
Automated and Manual Manager and Edge Deployment				•	•
Automated Host Prep				•	•
Port Mirroring		•	•	•	•
Netflow/IPFIX		•	•	•	•
Traceflow				•	•
Live Traffic Analysis				•	•
Packet Capture		•	•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Automation					
IaaS Consumption Surface				•	•
Policy-based Governance				•	•
Infrastructure as Code				•	•
Kubernetes Automation				•	•
Network Automation				•	•
Private AI Automation				•	•
SDDC Infrastructure Consumption				•	•
Workload Lifecycle Management				•	•
VCF Automation Orchestration & Extensibility				•	•
VCF Operations					
Global inventory for VMware Cloud Foundation			•	•	•
Single sign-on (vCenter, VCF Operations, VCF Operations for Logs, VCF Operations Orchestrator)			•	•	•
GPU summary with OOTB alerts and dashboards for Private AI Operations			•	•	•
Centralized certificate and license visibility across the VCF stack			•	•	•
Audit events across vCenter, vSphere, vSAN, and NSX			•	•	•
Configuration drift detection for vCenter			•	•	•
Diagnostics for VMware Cloud Foundation to show component health status			•	•	•
vSAN overview dashboards with support for vSAN Max			•	•	•
Visualization (OOTB; Custom): Dashboards, Views, Reports, Heat Map, Performance Charts, Super Metrics, Metric Correlation, Relationship Mapping			•	•	•
Performance Monitoring and Analytics			•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Operations					
Compliance Management, including regulatory compliance (CSA, DISA, FISMA, ISO, CIS, PCI, HIPAA), custom compliance templates, vSphere hardening			•	•	•
Real-Time predictive capacity management, including trending (Workload What-If analysis), right-sizing, workload optimization (manual and automated)			•	•	•
Troubleshooting with guided remediation			•	•	•
VCF Automation Integration				•	•
Cost Management and Optimization with Fine-Grained Cost Analytics (Service and Data Center costs, Reclamation, Planning)			•	•	•
Configuration Management for custom VM profiles			•	•	•
VMware Site Recovery Manager™ and vSphere Replication™ Management Packs			•	•	•
Service Discovery and Application Dependency Mapping			•	•	•
Out-of-the-Box Discovery, Monitoring and Troubleshooting for Packaged Applications				•	•
Extensibility via VMW & 3rd-Party App & Management Packs (e.g., DBs, middleware, app management)			•	•	•
Extensibility via VMW & 3rd-Party App & Public Cloud Management Packs (e.g., DBs, middleware, app management, public cloud)				•	•
Logs Dashboards (OOTB, custom)			•	•	•
Logs Interactive analytics			•	•	•
Logs vSphere integration (Collect from VMware vCenter®, ESX)			•	•	•
Logs for Kubernetes collection querying and analytics			•	•	•
Logs Alerting			•	•	•
Logs Machine learning/ analytics			•	•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Operations					
Logs Active Directory integration			•	•	•
Logs Role-based access control			•	•	•
Logs Query API			•	•	•
Logs Scheduled dashboard reports			•	•	•
Logs Partitioning			•	•	•
Logs Content Pack support vSphere, VKS, HCX, SDDC Manager			•	•	•
VCF Network Operations					
VMware Cloud Foundation Network Visibility and Troubleshooting for vSphere, vCenter, NSX, HCX				•	•
Data Center Assessment Dashboard				•	•
Network Assessment and Optimization Report				•	•
vCenter plug-in with views of networking metrics and analytics (on the vCenter dashboard)				•	•
Deployment backup and restore for replicating the setup configuration				•	•
Custom dashboards				•	•
Flow IPv6 traffic from VMware vCenter and NSX				•	•
NSX Load Balancer integration				•	•
NSX Advanced Load Balancer integration (AVI Separate purchase required)				•	•
NSX federation visibility				•	•
VMware HCX troubleshooting and monitoring, including the VM-to-VM path				•	•
VMware HCX network monitoring, visibility, L2 extension in VMware Cloud, and VM-to-VM overlay path				•	•
Network Visibility for vSphere Kubernetes Service Integrated Edition Kubernetes, and Red Hat OpenShift				•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Network Operations					
Visibility of NSX Container Plug-in for OpenShift 4.x (Kubernetes cluster)				•	•
Network Assessment planning for VMware Cloud Foundation and NSX				•	•
Pre-Deployment Assessment Dashboards for network traffic				•	•
Trial Evaluation Mode with VMware Cloud Foundation				•	•
Security & Network Capacity Planning				•	•
Highlight critical VMs via the Crown Jewels reachability and visibility analysis for security posture				•	•
VMware Cloud Foundation Network Operations platform is compliant and uses Federal Information Processing Standards (FIPS 140-2) validated cryptographic modules				•	•
NSX PCI compliance dashboard				•	•
NSX Firewall network segmentation planning and operations (NSX IPFIX)				•	•
App-centric Flow-Based Network Troubleshooting and Analytics				•	•
Application discovery (names, tags, RegEx)				•	•
Flow-Based Application Discovery				•	•
DNS mapping (import bind file)				•	•
Application dashboard (alerts, intent failures, security issues, and guided network troubleshooting incidents)				•	•
Visibility of Incomplete TCP sessions				•	•
Flow/threshold analytics and reporting				•	•
Path Visibility for Overlay Fabric and Underlay				•	•
NSX visibility over network fabric				•	•
Virtual flows (VDS IPFIX, VM to VM, VM to Physical)				•	•
Physical flows (NetFlow v7 and v9, and sFlow)				•	•
Network visibility of logical routing and switching				•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Network Operations					
Day 2 Network Operations with Assurance and Verification				•	•
Guided network troubleshooting				•	•
Streaming databus to export information learned from the platform				•	•
Network Map topology visualization				•	•
Traffic path and redundant path analysis				•	•
NSX Day 2 ops (topology view, health checklist, edge load balance dashboard)				•	•
Public APIs to view and access network metrics				•	•
Usability large-screen support				•	•
VM and IP address network analysis				•	•
VMware Cloud on AWS network visibility connected to VMware Cloud Foundation				•	•
VMware Cloud on AWS Direct Connect network visibility connected to VMware Cloud Foundation				•	•
VMware Cloud on AWS Outposts network visibility connected to VMware Cloud Foundation				•	•
Azure VMware Solution network visibility connected to VMware Cloud Foundation				•	•
Azure flow collection for security groups for network visibility connected to VMware Cloud Foundation				•	•
Google Cloud VMware Engine network visibility connected to VMware Cloud Foundation				•	•
Oracle Cloud VMware Solution network visibility connected to VMware Cloud Foundation				•	•
End-to-End Network Visibility Adjacent to VMware Cloud Foundation				•	•
Visibility across third-party switches, routers, firewalls and load balancers				•	•
Network device auto discovery				•	•

Features	vSphere Standard	vSphere Enterprise Plus	vSphere Foundation	VMware Cloud Foundation Edge	VMware Cloud Foundation
Cloud Management					
VCF Network Operations					
ServiceNow integration for app discovery, issue resolution email				•	•
Network visibility of Cisco Catalyst 9000 network map, VM-to-VM path, intent				•	•
Cisco Application Centric Infrastructure (ACI) with network assurance and verification support				•	•
Cisco BGP-EVPN underlay/overlay visibility				•	•
Arista BGP-EVPN underlay/overlay visibility				•	•
Juniper Ethernet VPN VM-to-VM path				•	•
DNS resolution with Infoblox				•	•
Advanced Services (Add-ons)					
Additional Storage Capacity - vSAN			•	•	•
VMware Live Recovery			•	•	•
VMware Avi Load Balancer			•	•	•
VMware vDefend Firewall with Advanced Threat Prevention (ATP)				•	•
VMware Tanzu Platform				•	•
VMware Tanzu Data Services				•	•
VMware Private AI				•	•

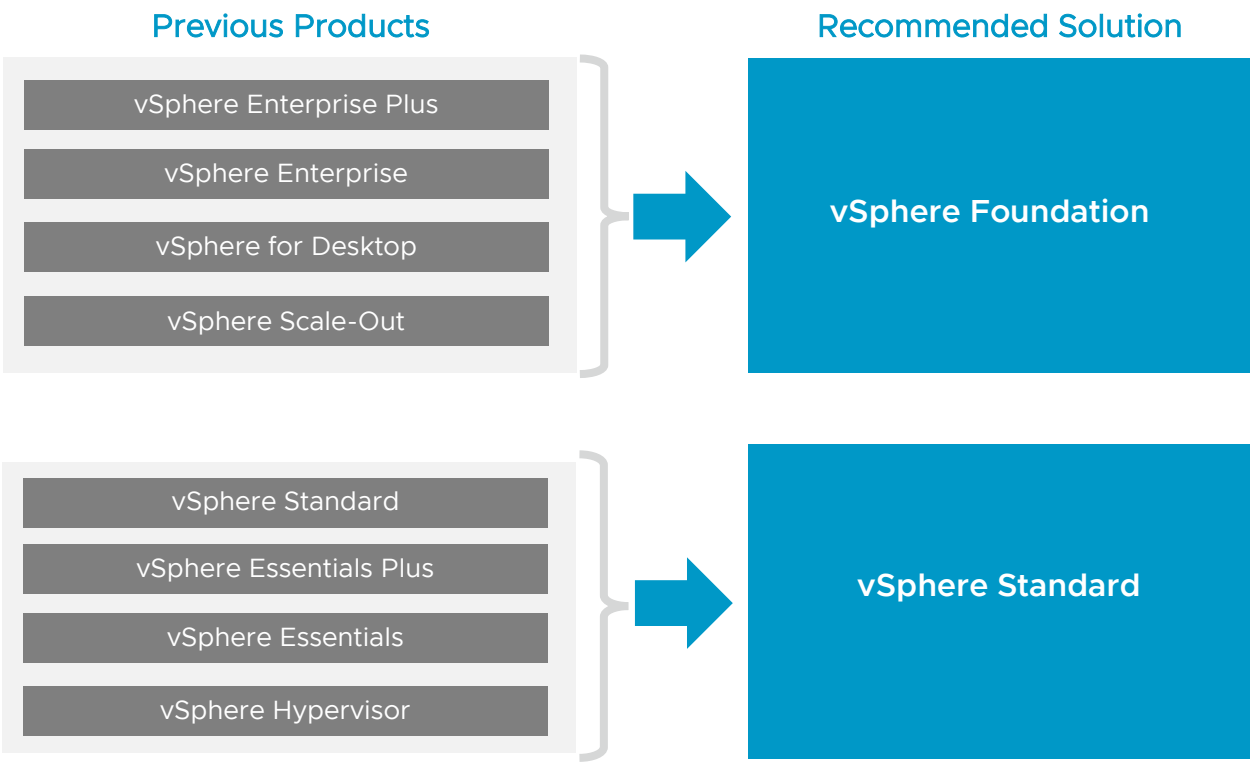
[1] - Denotes features that are limited to the support of VM Service and VKS.

[2] - Denotes features that are compatible with VCF, but not integrated with VCF Operations fleet management.

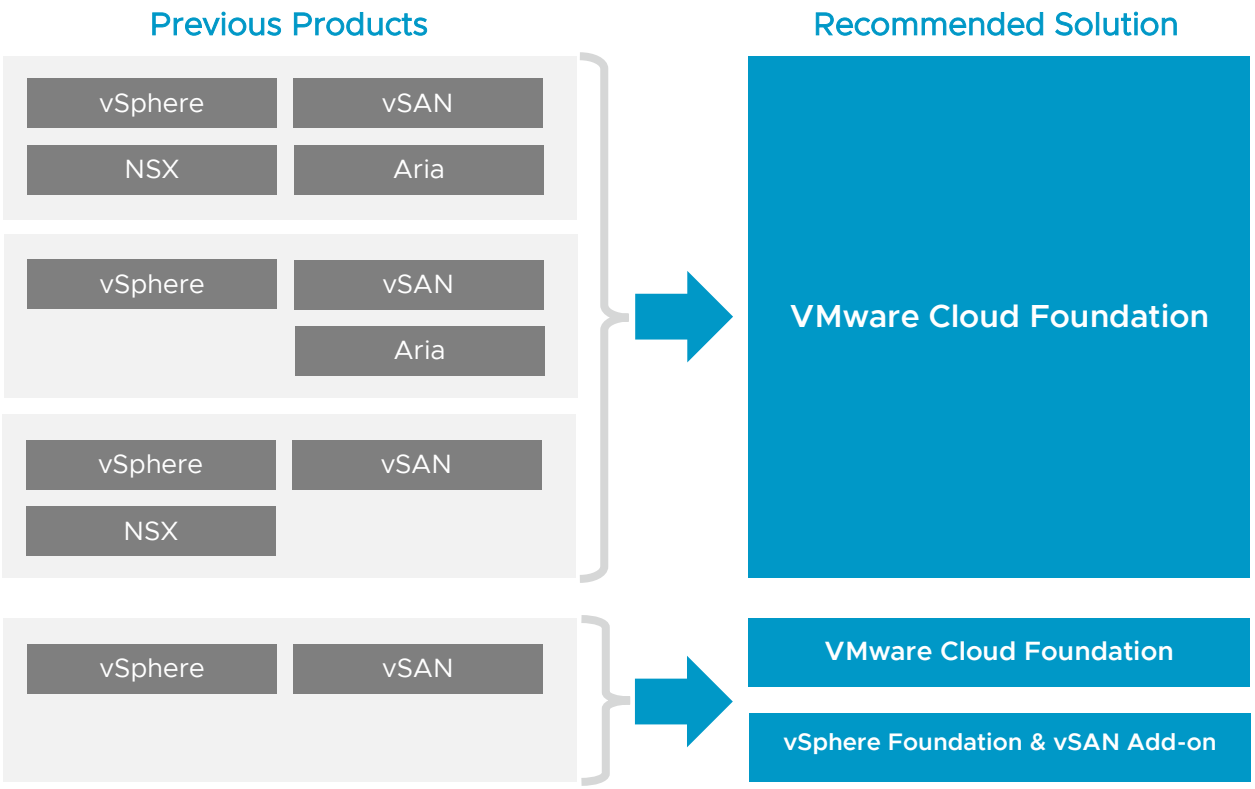
[3] - For more information about the use of TLS 1.3 with FIPS 140-3 requirements consult the product documentation.

The below graphics show upgrade paths from previous products to new offerings.

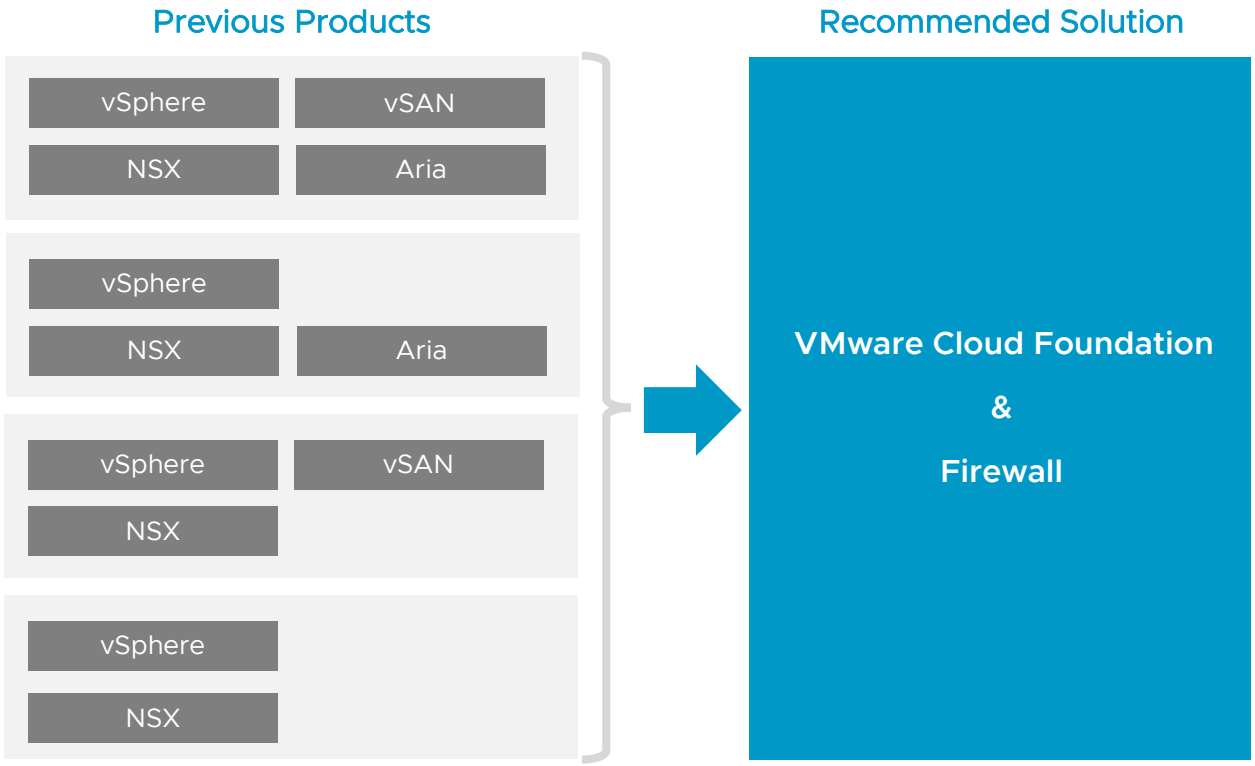
Compute Paths



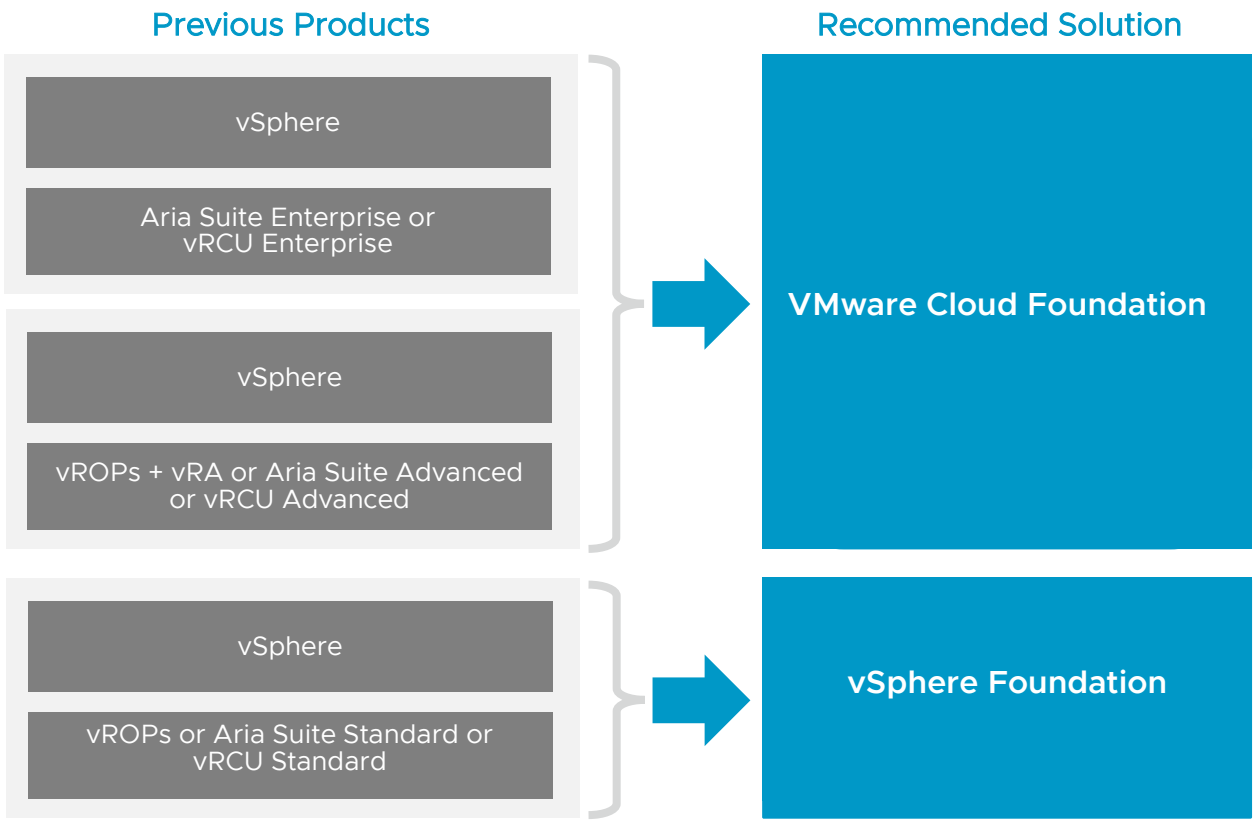
Storage Paths



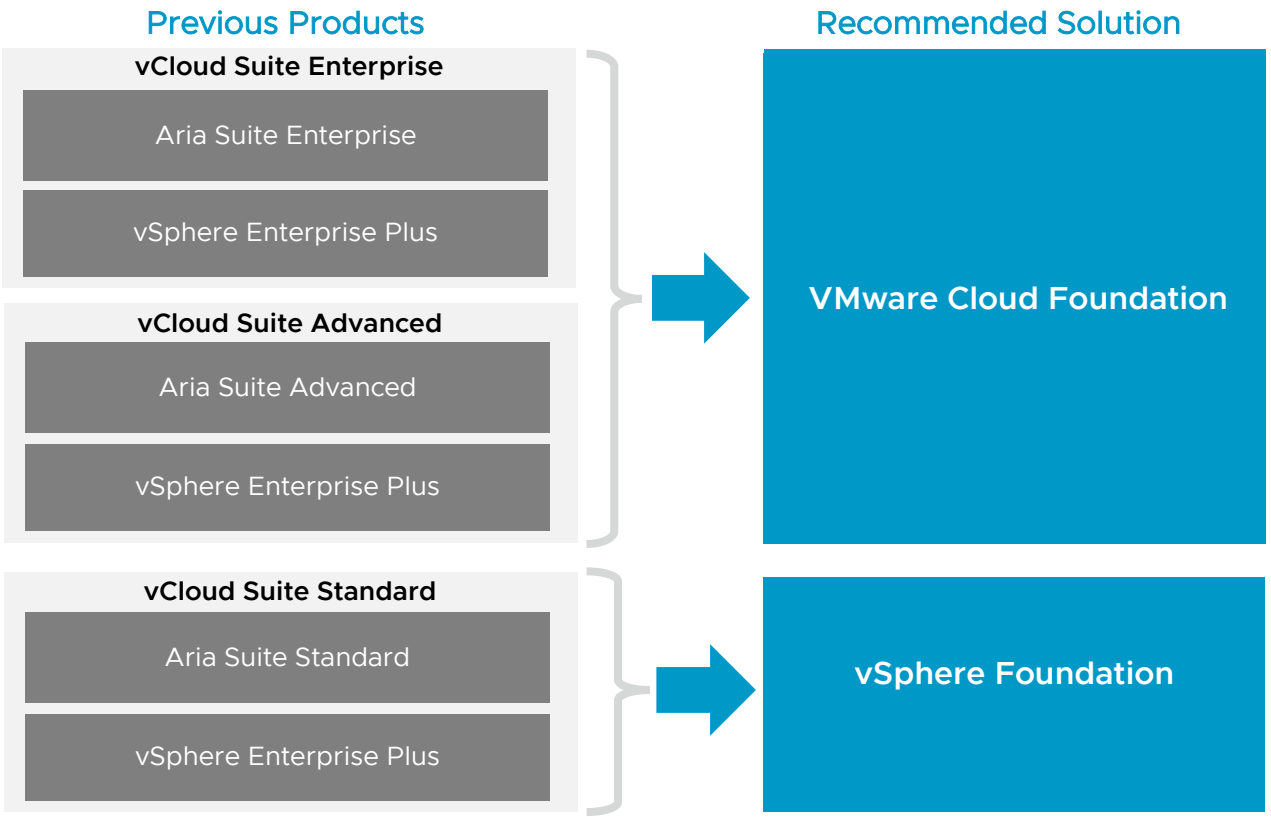
Networking/ Security Paths



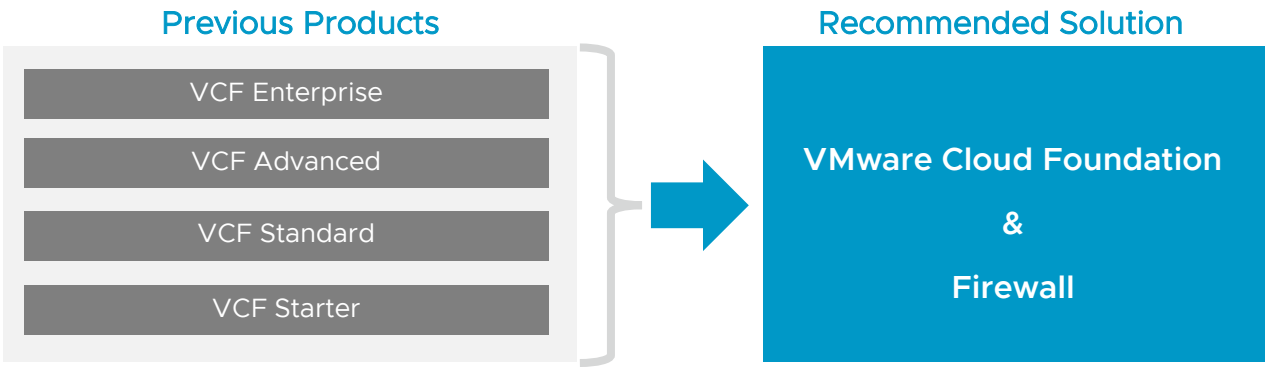
Management Path



vCloud Suite Paths



VCF Paths



For additional details, contact your VMware account team and sales representative.

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