vSAN Features

vSAN version		vSAN 8.0 (OSA)		vSAN 8.0 (ESA)		vSAN 8.0 U1(OSA)		vSAN 8.0 U1(ESA)		vSAN 8.0 U2(OSA)		vSAN 8.0 U2(ESA)		vSAN 8.0 U3(OSA)		vSAN 8.0 U3(ESA)		vSAN 9.0 (OSA)		vSAN 9.0 (ESA)		vSAN 9.1 (OSA)		vSAN 9.1 (ESA)	
Release Date		November-2022		November-2022		March-2023		March-2023		October-2023		October-2023		June-2024		June-2024		June-2025		June-2025		May-2026		May-2026	
	Category	hybrid	all-flash	all-flash	hybrid	all-flash	all-flash	hybrid	all-flash	hybrid	all-flash	all-flash	hybrid	all-flash	all-flash	hybrid	all-flash	hybrid	all-flash	all-flash	hybrid	all-flash	hybrid	all-flash
In-Place Upgrades from OSA to ESA in vSAN 8	Management	N/A		N/A	N/A		N/A	N/A		N/A	N/A		N/A		N/A	N/A		N/A		N/A	N/A		N/A	
Per VM storage policies	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Per VMDK storage policies	Management	x	x	*1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HTML5 vSphere Client	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Health	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Fault Domains	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stretched cluster topology	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2-node toooboy	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2-node direct connect	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cluster-based Deduplication and Compression (OSA)	Space Efficiency		x			x			x			x			x				x					x	
Data resilience using RAID-5/6 erasure coding (OSA)	Space Efficiency		x	x		x		x		x		x			x	x			x	x				x	x
Software checksum	Security & Integrity	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
IOPS limit storage policy	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
iSCSI service	Data Services	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
WSFC with vSAN iSCSI	Data Services	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stretch cluster local data resilience using RAID-1	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stretch cluster local data resilience using RAID-5/6	Resilience		x	x		x		x		x		x			x	x			x	x				x	x
Cluster-based Data-at-Rest encryption (OSA)	Security & Integrity	x	x			x	x		x		x	x			x				x			x	x		
PowerCLI	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Aria Operations Dashboards	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Smart & partial repairs	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Adaptive Resynchronization	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Reactive rebalance	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Proactive rebalance	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Support Insight (Humbug)	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Mixed MTU with Witness Traffic Separation	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TRIM/UNMAP VM Guest Support	Space Efficiency	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Guided HCI cluster creation and extension	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Network Card Firmware/Driver HCL check	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Nested FD for Standard vSAN Cluster (RPQ only)	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
PowerCLI enhancement for vSAN Objects	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Upload/Download vmdk from vSAN	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Enhanced resync & capacity monitorine	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Parallel resynchronization	Performance & Efficiency	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Performance metrics and troubleshooting utility	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN ISCSI online LUN resizing	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CNS - Cloud Native Storage through deployment of First Class Disks	Cloud Native Storage (CNS)	x	x	*1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN File Services - NFS v3/4.1 on vSAN	Data Services	x	x	*1	x	x	*1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vLCM Unified Cluster Lifecycle management	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Improved Capacity view using SRM/VR	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN File Services - SMB on vSAN	Data Services	x	x	*1	x	x	*1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Disaggregation of vSAN HCI clusters to vSAN HCI clusters	Disaggregation	x	x	*1	x	x	*2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CNS - vSAN Data Persistence Platform (DPp)	Cloud Native Storage (CNS)	x	x	*1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CNS - vSAN Direct Configuration	Cloud Native Storage (CNS)	x	x		x	x		x	x				x	x				x	x			x	x		
vSAN Shared Witness for 2-Node	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cluster-based Compression-only (OSA)	Space Efficiency		x	N/A		x	N/A		x	N/A		x	N/A		x	N/A			x	N/A		x	N/A		x	N/A
Cluster-based Data-in-transit encryption	Security & Integrity	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Support of secure wipe for storage devices	Security & Integrity	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN IO insight	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN "Reserved Capacity"	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ability to override default autoswap through the UI	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vLCM support for Lenovo Readynodes	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Durability components for planned maintenance events	Resilience	x	x	*1	x	x	*3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Durability components for unplanned events	Resilience	x	x	*1	x	x	*3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Performance Monitoring vSAN Direct Integration	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN over RDMA	Performance & Efficiency	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Disaggregation of vSAN HCI cluster to compute-only cluster	Disaggregation	x	x	*1	x	x	x	x	x	*4	x	x	*4	x	x	*4	x	x	x	*4	x	x	x	x	*4
vSAN File Service support for 2-Node topologies	Data Services	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Native KMS integration	Security & Integrity	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Proactive-HA integration	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stretch Cluster improvement DRS Awareness	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stretch Cluster 20-20-1 cluster size support	Scalability	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vLCM enhancement. Hitachi Vantara / Lenovo ThinkAgile, Dell 14G	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Improvement network monitoring and supportability	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Performance monitoring improvements	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Improoved alarms integration and usuability	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vLCM Driver & Firmware HCL validation for NVMe devices	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vLCM Update vSAN Witness host appliance	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
I/O Trip Analyzer / Network and Health	Health & Diagnostics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RDT checksum	Resilience	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Proactive insights	Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Secondary levels of resilience in 2-Node topology (using RAID-1 or RAID-5)	Resilience		x			x			x						x				x				x		
Secondary levels of resilience in 2-Node topology (using RAID-1, RAID-5 or RAID-6)	Resilience			x			x			x					x				x				x		
1.6TB Write Buffer Support (OSA only)	Performance & Efficiency		x	N/A		x	N/A		x	N/A				x	N/A				x	N/A			x	N/A	
Data resilience using RAID-5/6 erasure coding at performance level of RAID-1	Performance & Efficiency			x			x			x					x				x						x
Adaptive RAID-5 supportinz as few as three-host clusters	Space Efficiency			x			x			x					x				x						x
Highly CPU and space efficient, storage policy based compression	Performance & Efficiency			x			x			x					x				x						x
Highly CPU efficient cluster based encryption services	Performance & Efficiency			x			x			x					x				x						x
Native scalable snapshots	Performance & Efficiency			x			x			x					x				x						x
Adaptive Network Traffic Shaping	Performance & Efficiency			x			x			x					x				x						x
Device level failure/maintenance domain of data	Resilience			x			x			x					x				x						x
Removal of dedicated cache devices for better TCO and servicability	Performance & Efficiency			x			x			x					x				x						x
Cross-cluster capacity sharing for Stretched Clusters	Disaggregation				x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cross-cluster capacity sharing across vCenter Server Instances	Disaggregation				x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Namespace Object customized sizing	Management				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Skyline Health Scorina and Remediation	Health & Diagnostics				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
High Resolution Performance monitoring	Health & Diagnostics				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
VM I/O Trip Analyzer Task Scheduler	Health & Diagnostics				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Central storage of vSAN trace logs	Health & Diagnostics				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CNS - vSAN Data Persistence Platform (DPp) using common distributed switching	Cloud Native Storage (CNS)				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CNS - Thick provisioning of persistent volumes in vSAN Direct Configuration	Cloud Native Storage (CNS)				x	x		x	x	x	x	x				x	x	x	x			x	x		
ESA Adaptive Write Path	Performance & Efficiency							x				x				x				x					x
ESA Optimized per object processing	Performance & Efficiency							x				x				x				x					x
ESA Auto-Storage Policy Management for Default Storage Policies	Management							x				x				x				x					x
ESA PowerCLI Integration	Management							x				x				x				x					x
ESA Multibank for Adaptive Write path	Performance & Efficiency											x				x				x					x
ESA Adaptive Write path for disaggregated storage	Performance & Efficiency											x				x				x					x
ESA Support for up to 500 VMs per host	Scalability											x				x				x					x
ESA Auto-Policy Management one-click remediation	Management											x				x				x					x
ESA Prescriptive disk claim	Management											x				x				x					x
ESA Deep Rekey operation for clusters usine Encrvption	Security & Integrity											x				x				x					x
ESA Support for VMware Cloud Foundation (VCF)	Management											x				x				x					x
Support for key expiration attribute by key providers	Security & Integrity									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Top Contributors and hotspot detection	Management									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
I/O-Trip Analyzer for Stretched clusters	Health & Diagnostics									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN Witness traffic tagging in User Interface	Manaeement									x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Disaggregation using vSAN storage clusters (previously "vSAN Max")	Disaggregation											x				x				x					x
Support of up to 250 file shares per cluster for ESA	Data Services															x				x					x
vSAN Data Protection for ESA	Resilience															x				x					x
Proactive Hardware Management for ESA	Management															x				x					x
Customizable NVMe endurance alarms for ESA	Management															x				x					x
VM I/O Trip Analyzer Cluster-Level View	Management												x	x	x	x	x	x	x	x	x	x	x	x	x
Enhanced health findings for RDMA networks	Management												x	x	x	x	x	x	x	x	x	x	x	x	x
vSAN ESA Global Deduplication	Space Efficiency																			x *5					x
Support of up to 500 file shares per cluster for ESA	Data Services																			x					x
Network Traffic Separation for vSAN Storage Clusters	Performance & Efficiency																			x					x
Stretched cluster support for vSAN Storage Clusters	Resilience																			x					x
vSAN to vSAN Replication	Resilience																			x *6					x *6
vSAN Site-wide maintenance mode for stretched clusters	Resilience																	x	x			x	x		x
vSAN Manual Site Takeover for stretched clusters	Resilience																	x	x			x	x		x
vSAN Operations Dashboards in VCF	Manaeement																	x	x	x		x	x		x
Multi-tenant volume services for vSAN (through VCF Automation)	Management																	x	x	x		x	x		x
DDH for caching devices in vSAN OSA	Resilience																	x	x			x	x		
DDH enhancements for vSAN ESA	Resilience																			x					x
vLCM Support of heterogeneous cluster	Management																	x	x	x		x	x		x
Enhanced data compression using zSTD	Space Efficiency																								x
Mixed mode support of remote datastores	Management																					x	x		x
Hot-extend of VMDKs used with clustered apps	Management																					x	x		x
Native S3 compatible object storage	Data Services																								x
Data-in-Transit Encryption support for storage clusters	Security & Integrity																								x
Data-at-Rest Encryption for clusters usine vSAN Global Deduplication	Security & Integrity																								x
Multi-source replication for vSAN clusters	Resilience																								x
On-premises vSAN clusters for cyber recovery clean room	Resilience																								x
Enhanced vSAN Protection and Recovery capabilities	Resilience																								x
vSAN Auto-RAID	Resilience																								x
Effective Capacity View	Manaeement																								x
Cross vCenter support for stretched storage clusters	Management																								x

*1 = Not available in initial releases of the vSAN ESA
*2 = Does not support two cross-cluster capacity sharing capabilities in OSA version of vSAN 8 U1
*3 = Durability components supported when using RAID-5/6 erasure coding
*4 = Replaced with vSAN storage clusters (previously named "vSAN Max") which provides centralized shared storage for vSphere clusters
*5 = Requires VMware Advanced Cyber Compliance (ACC) add-on license
*6 = Limited Availability release

General Notes

1. The matrix does not attempt to show the availability of these features as it relates to VMware Cloud Foundation (VCF).
2. The listing of vSAN storage clusters (previously named "vSAN Max") in this matrix is to simply convey that it was introduced in the vSAN 8 U2 code base, as a cluster deployment option.