



Broadcom Licensing Information View From a Customer

Matthew Heldstab – Senior Windows Administrator

Minnesota State IT Conference
April 22-24, 2024

Session Survey

- » Please complete the session survey in Guidebook
 - Select the session within "Schedule".
 - Listed under "Forms" is the post session feedback session survey

Your feedback will be anonymously shared with the presenter(s) and the planning committee to help future conferences.

Matt Heldstab

- » Systems Engineer – Minnesota State Colleges and Universities
- » VMUG Leader – Minneapolis, MN
- » Current VMUG Vice President
- » Contact: mheldstab@vmug.com -- @mattheldstab on X

Matt Heldstab

- » Double VCP (Desktop and Datacenter)
- » VMware Customer for 18 years (ESX 3.0)
- » Horizon Customer since View 3.0 (2009)
- » VMUG Leader in Minneapolis
- » Current Global Vice President for the VMUG Organization

Broadcom Licensing Information – View From a Customer



Broadcom Licensing Information – View From a Customer



Broadcom Licensing Information – View From a Customer



Broadcom Licensing Information – View From a Customer



Broadcom Licensing Information – View From a Customer



Broadcom Licensing Information – View From a Customer

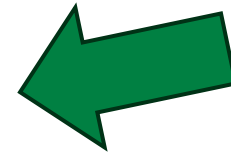
Items to consider:

- I would like this to be interactive
- I am not a Broadcom employee
- Discussions around
 - VCF (VMware Cloud Foundation)
 - VVF (VMware vSphere Foundation)
 - VVS (VMware vSphere Standard)
 - VVEP (VMware vSphere Essentials Plus)
- Perpetual vs. Subscription
- Socket vs. Core focused (**minimum of 16 cores per socket**)
- Current Subscription Model vs. vSphere+ Subscription Model
- Impact to VMware Horizon customers

Broadcom Licensing Information – View From a Customer

Items to consider:

- I would like this to be interactive
- I am not a Broadcom employee
- Discussions around
 - VCF (VMware Cloud Foundation)
 - VVF (VMware vSphere Foundation)
 - VVS (VMware vSphere Standard)
 - VVEP (VMware vSphere Essentials Plus)
- Perpetual vs. Subscription
- Socket vs. Core focused (**minimum of 16 cores per socket**)
- Current Subscription Model vs. vSphere+ Subscription Model
- Impact to VMware Horizon customers



I will be using these abbreviations quite a bit during the presentation

Broadcom Licensing Information – View From a Customer

Other Considerations

- Impact to VMUG Advantage and EvalExperience 365-day Evaluation Keys
- Ways to save money
 - Some of these methods will be geared to SMB / Commercial customers with small-to-medium sized environments
- Preparing for the future (Infrastructure Planning)
- 3rd Party Software Licensing Constraints and how they might impact your vSphere licensing from here on out

Broadcom Licensing Information – View From a Customer

Level-set -- VMware Cloud Foundation

- VCF is a best-in class suite of products that comprise the Software-Defined Datacenter
- VCF will absolutely transform your datacenter, especially if you need to
 - Streamline the deployment of VMware products
 - Eliminate configuration inconsistencies that come with manual deployments
 - Standardize how infrastructure is deployed
 - Bring cloud methods into your on-premises datacenter
 - Integrate with other VMware Cloud products such as VMC on AWS, AVS, OCVS, GCVE
- If your organization can afford VCF, you won't be sorry. Just understand that the technology is more expensive than other editions of vSphere.
- This presentation will discuss what some of the differences are, and compare it to other products that are available.


Broadcom Licensing Information – View From a Customer

William Lam is a fantastic resource – www.williamlam.com

About

VMware Cloud Foundation

Tanzu


WILLIAM LAM

Home Lab

Nested Virtualization

Apple

Automate the deployment & initial configuration of Aria Suite Lifecycle Manager (formally vRSLCM)

02.15.2024 by William Lam // [Leave a Comment](#)


I love writing automation, especially for deploying a consistent and repeatable environment for testing or learning purposes. I recently deployed the latest [Aria Suite Lifecycle Manager 8.14](#) (formally vRealize Suite Lifecycle Manager or vRSLCM) manually using the graphical Easy Installer method, which was easy and straight forward.

Unlike the vCenter Server Appliance (VCSA) installer, which includes both a UI and CLI option, the latter for automation purposes. I found that ASLCM only provides an interactive UI method for deployment and I was interested in an automated solution. Similar to the VCSA installer, the extracted contents of the ASLCM ISO is the installer

Search

Search this website

Author



William is Senior Staff Solution Architect in the VMware Cloud Foundation (VCF) Division at Broadcom. He

Broadcom Licensing Information – View From a Customer

VCF

VMware Cloud Foundation

VCF

The diagram illustrates the VMware Cloud Foundation (VCF) architecture, organized into several layers and components:

- SDDC Manager:** A vertical bar on the left representing the management layer.
- Aria Suite Enterprise:** The top layer, containing:
 - Aria Suite Lifecycle:** A central box encompassing:
 - Aria Automation**
 - Aria Operations**
 - Aria Operations for Logs**
- Infrastructure Components:**
 - vSphere Enterprise Plus:** A box containing:
 - vCenter Standard**
 - vSphere w/Tanzu**
 - ESXi**
 - NSX Enterprise Plus:** A box containing:
 - NSX Networking**
 - vSAN Enterprise:** A box containing:
 - vSAN (1 TIB/Core)**
 - AON Enterprise:** A box containing:
 - Aria Operations for Network**
 - HCX Enterprise:** A box containing:
 - HCX**
 - Data Services Manager:** A box containing:
 - DSM**
- Services:** Two vertical bars on the right:
 - Activation & Upgrade Service** (Yellow bar)
 - Select Support (SAM add-on recommended)** (Orange bar)

VCP Add-Ons

Category	Service
VMware VCDR + RWR	VMware VCDR + RWR
	VMware Cloud DR
	VCDR
	VMware Ransomware Recovery
	RWR
VMware Site Recovery Manager	VMware Site Recovery Manager
	SRM
vSAN Enterprise	vSAN Enterprise
	vSAN
VMware FW + ATP	VMware Firewall
	Distributed FW
	Gateway FW
	Security Intelligence
VMware ATP	VMware ATP
	IDS/IPS
VMware Load Balancer	Advanced & Global LB
	L7 App Security
Kubernetes Ingress	Kubernetes Ingress
Tanzu Mission Control	TMC (SaaS)
	TMC (Self-Managed)
Tanzu Spring Runtime	TSR
Tanzu Application Platform	TAP
	TSR
VMware Tanzu Intelligence Services	Tanzu Guardrails Ent
	TGE
Tanzu Guardrails Adv	TGA
Tanzu Ops for Apps	TOA (Wavefront)
Tanzu Insights	TI
Tanzu Cloudhealth Ent	TCE
Tanzu App Catalog	TAC
VMware Private AI Foundation	COMING SOON
VMware Learning Education Services	Support Services
	Support Account Manager
Dedicated Technical Support Engineer	Technical Adoption Management
	Solution Guidance & Planning, Peer Insights
Professional Services	Pro Cloud & Consulting Services

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

VCF

The diagram illustrates the VMware Cloud Foundation (VCF) architecture for Cloud Service Providers (CSP). It is organized into several layers and components:

- Top Layer (Management & Support):**
 - Aria Suite Enterprise:** The overarching management suite, which includes:
 - Aria Suite Lifecycle:** The central management component.
 - Aria Automation:** For automating infrastructure tasks.
 - Aria Operations:** For monitoring and managing the environment.
 - Aria Operations for Logs:** For log management and analysis.
 - AON Enterprise:**
 - Aria Operations for Network:** For network management and automation.
 - Activation & Upgrade Service:** A service for managing the lifecycle of the VCF environment.
 - Select Support (SAM add-on recommended):** A service for providing technical support and consulting.
- Core Infrastructure Layers:**
 - vSphere Enterprise Plus:** The virtualization layer, which includes:
 - vCenter Standard:** The central management for vSphere.
 - vSphere w/Tanzu:** For running Kubernetes workloads.
 - ESXi:** The hypervisor layer.
 - NSX Enterprise Plus:** The network virtualization layer, which includes:
 - NSX Networking:** For network virtualization and automation.
 - vSAN Enterprise:** The storage virtualization layer, which includes:
 - vSAN (1 TIB/Core):** For distributed storage and data management.
 - HCX Enterprise:** For hybrid cloud extension and migration.
 - Data Services Manager:** For managing data services and backup/recovery.
- Bottom Layer (Infrastructure):** The underlying hardware infrastructure, represented by a blue bar at the bottom.

The diagram illustrates the VMware and Tanzu Add-Ons, categorized into seven groups:

- VMware VCDR + RWR**
 - VMware Cloud DR (VCDR)
 - VMware Ransomware Recovery (RWR)
 - VMware Site Recovery Manager (SRM)
 - vSAN Enterprise (vSAN)
- VMware FW + ATP**
 - VMware Firewall
 - Distributed FW
 - Gateway FW
 - Security Intelligence
 - Container Security
 - VMware ATP
 - IDS/IPS
 - Malware Prevention
 - NTA/NDR
 - VMware Load Balancer
 - Advanced & Global LB
 - L7 App Security
 - Kubernetes Ingress
- Tanzu Mission Control**
 - TMC (SaaS)
 - TMC (Self-Managed)
 - Tanzu Spring Runtime (TSR)
 - Tanzu Application Platform (TAP)
 - TSR
- VMware Tanzu Intelligence Services**
 - Tanzu Guardrails Ent (TGE)
 - Tanzu Guardrails Adv (TGA)
 - Tanzu Ops for Apps TOA (Wavefront)
 - Tanzu Insights (TI)
 - Tanzu Cloudhealth Ent (TCE)
 - Tanzu App Catalog (TAC)
- CSP Entitlement**
 - Cloud Platform
 - Cloud Director
 - Cloud Director Availability
 - Cloud Director Plugins & Extensions
 - Chargeback
 - Metering
 - Usage Meter
- VMware Private AI Foundation**
 - COMING SOON
- VMware Learning Education Services**
 - Support Services
 - Support Account Manager
 - Support Services
 - Dedicated Technical Support Engineer Support Services
 - Technical Adoption Management
 - Solution Guidance & Planning
 - Peer Insights
 - Professional Services
 - Pro Cloud & Consulting Services

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

VVF

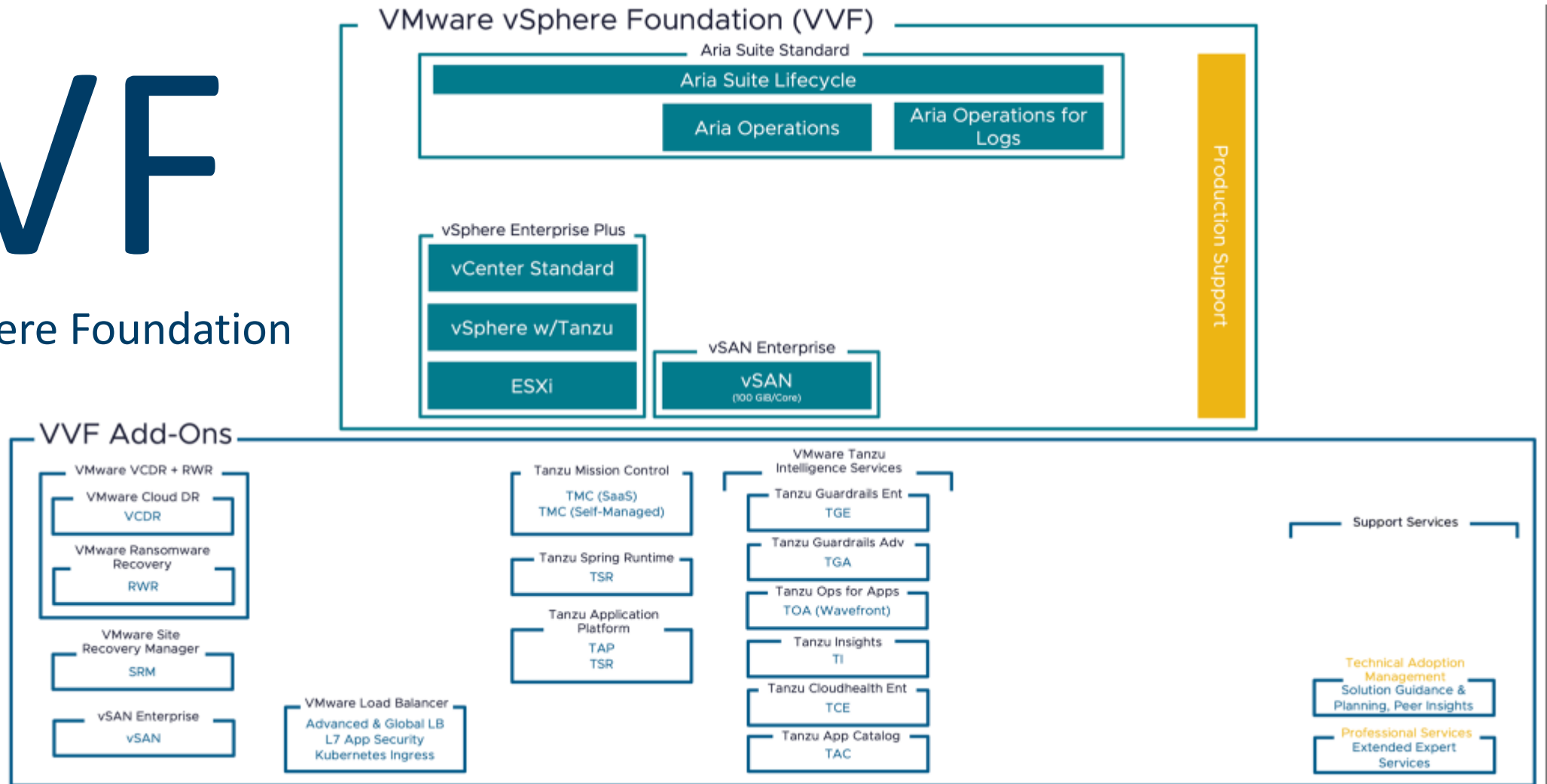
VMware vSphere Foundation

Broadcom Licensing Information – View From a Customer

<https://williamlam.com/2024/01/whats-in-the-new-vmware-vsphere-foundation-vvf-and-vmware-cloud-foundation-vcf-offers.html>

VVF

VMware vSphere Foundation



Entire feature list available at:

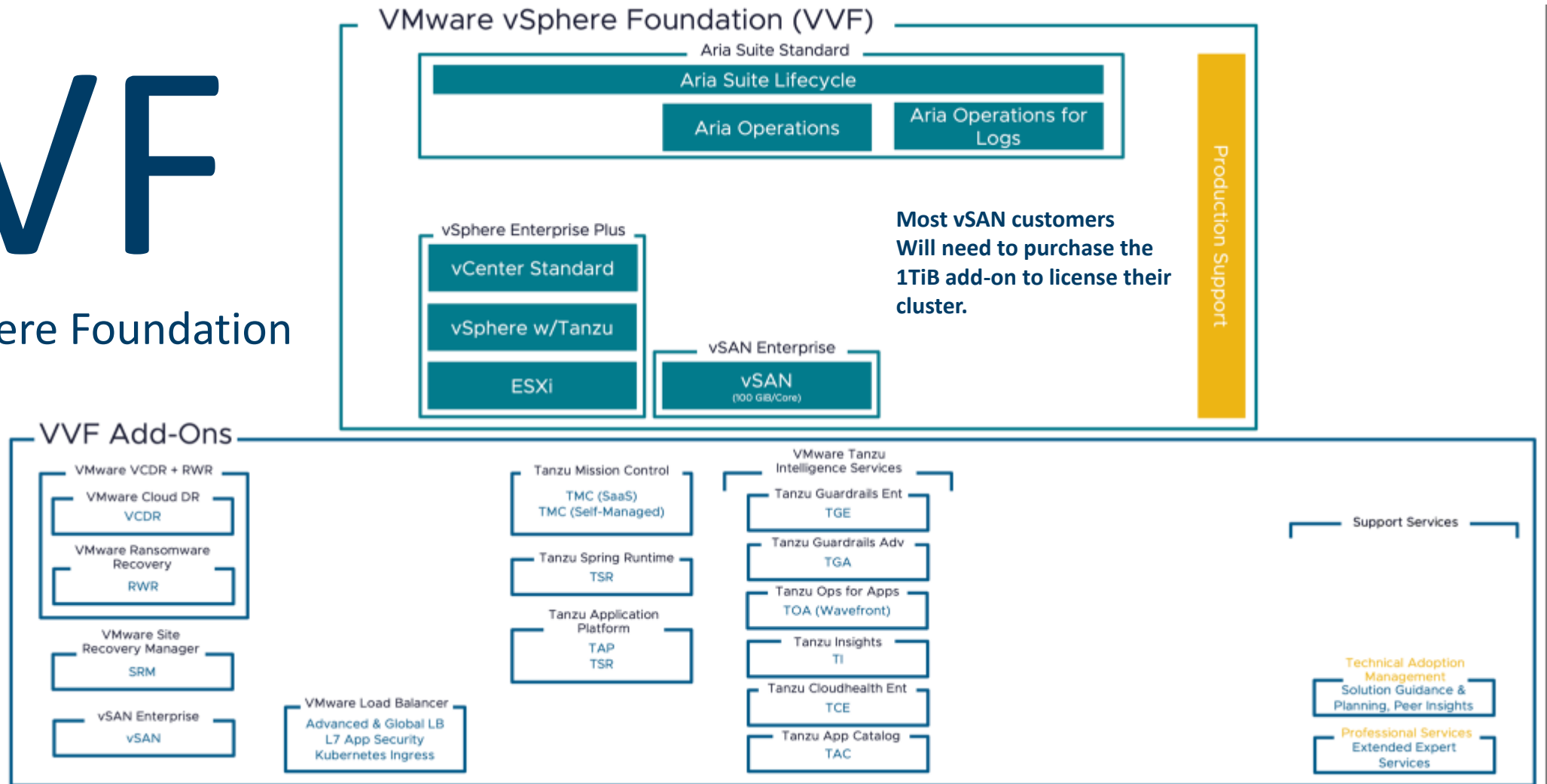
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

<https://williamlam.com/2024/01/whats-in-the-new-vmware-vsphere-foundation-vvf-and-vmware-cloud-foundation-vcf-offers.html>

VVF

VMware vSphere Foundation



Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

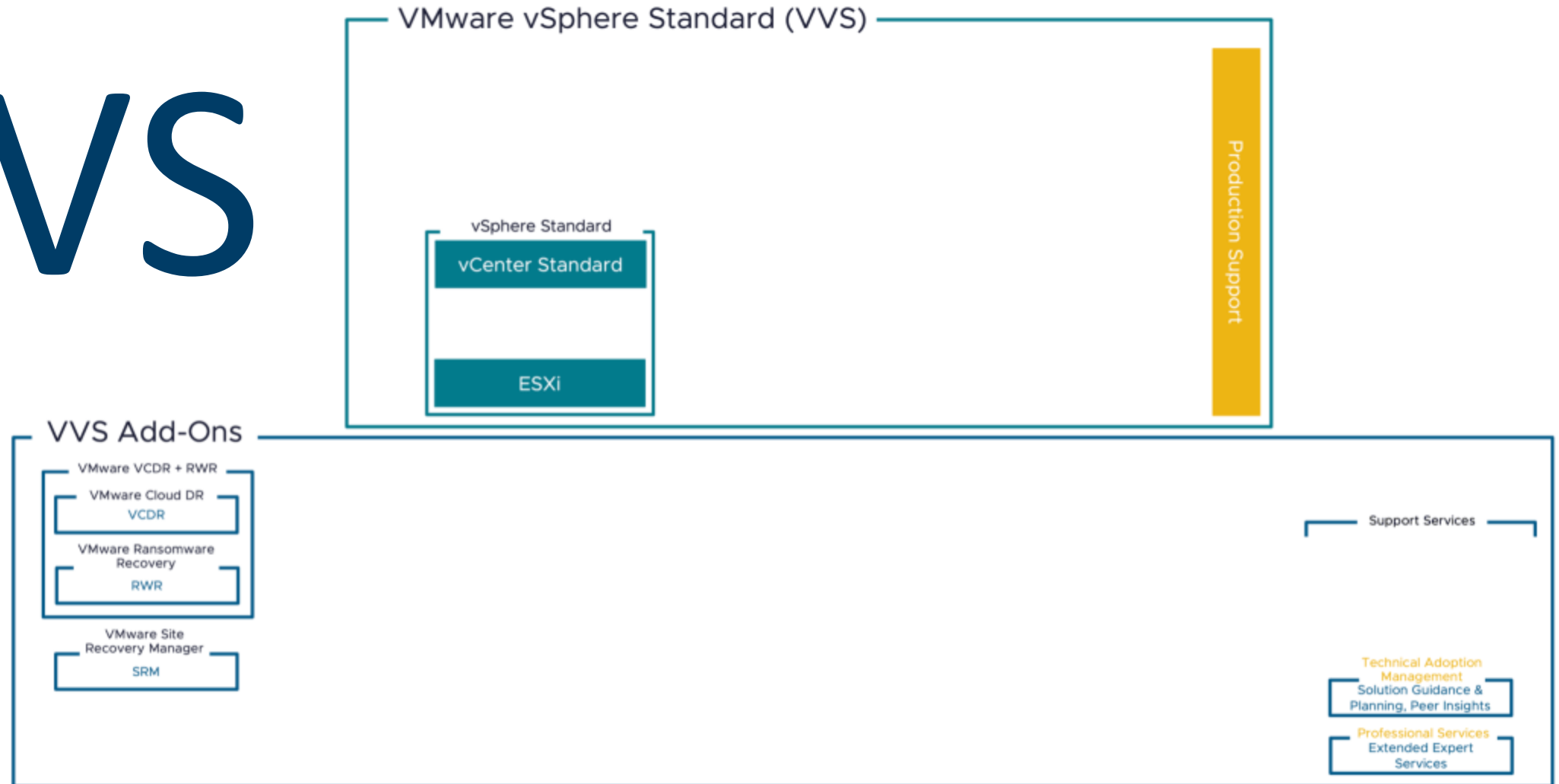
Broadcom Licensing Information – View From a Customer

VVS

VMware vSphere Standard

Broadcom Licensing Information – View From a Customer

VVS



Entire feature list available at:

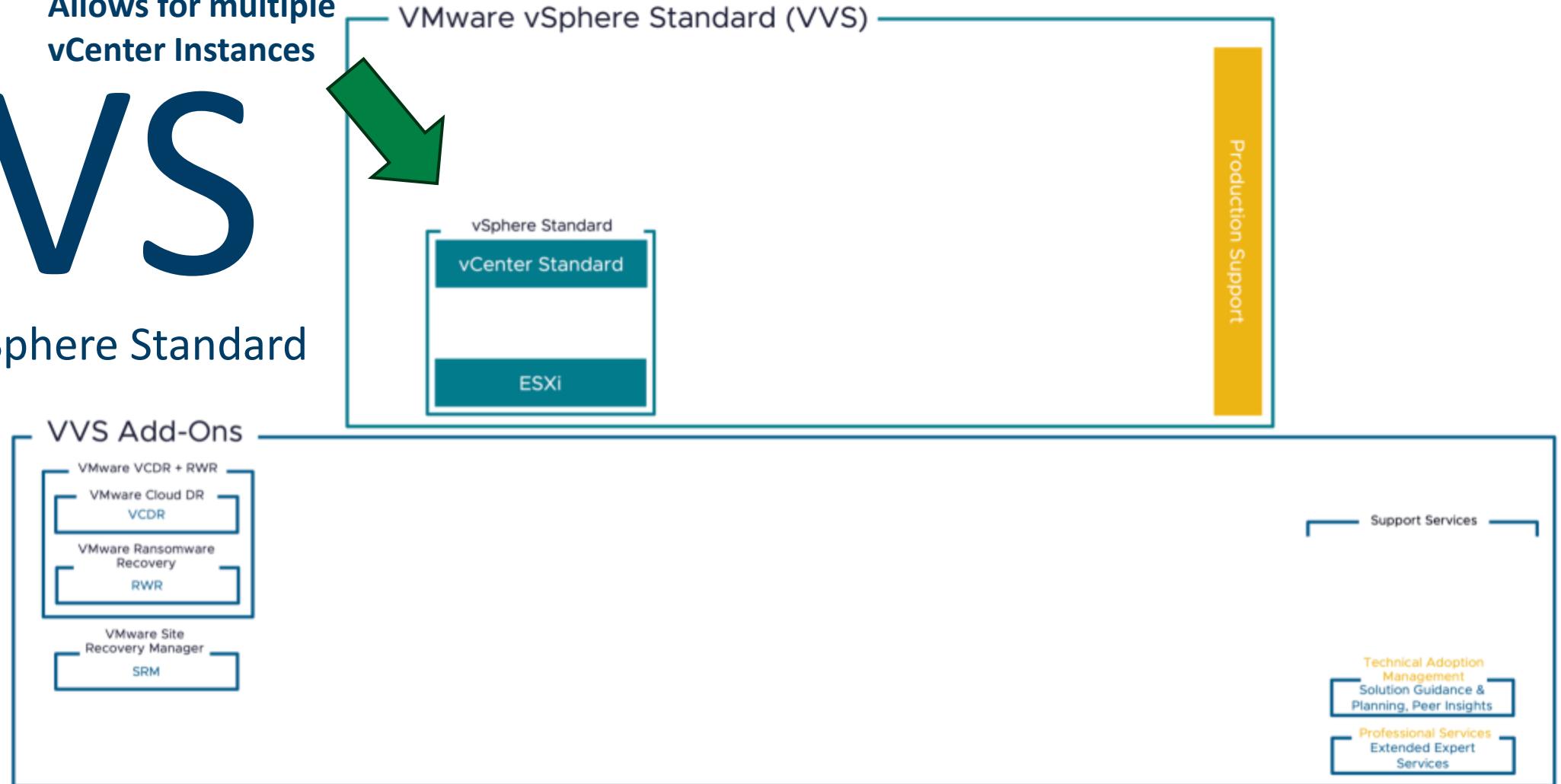
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

Allows for multiple
vCenter Instances

VVS

VMware vSphere Standard



Entire feature list available at:

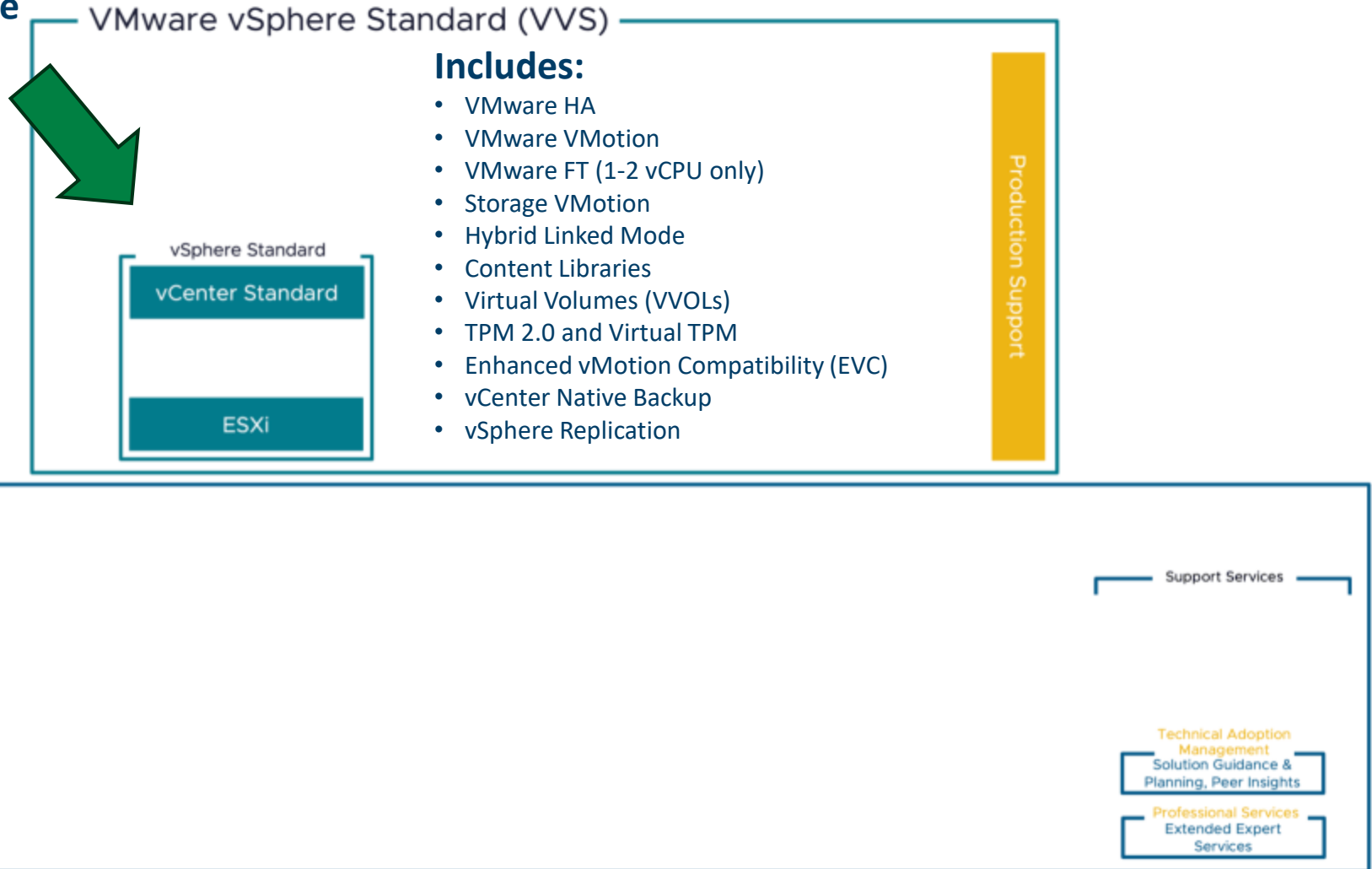
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

Allows for multiple
vCenter Instances

VVS

VMware vSphere Standard



Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

Allows for multiple
vCenter Instances

VVS

VMware vSphere Standard

VMware vSphere Standard (VVS)

Includes:

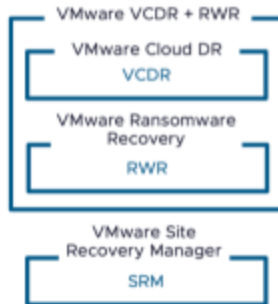
- VMware HA
- VMware VMotion
- VMware FT (1-2 vCPU only)
- Storage VMotion
- Hybrid Linked Mode
- Content Libraries
- Virtual Volumes (VVOLs)
- TPM 2.0 and Virtual TPM
- Enhanced vMotion Compatibility (EVC)
- vCenter Native Backup
- vSphere Replication

Production Support

Does not include:

- Distributed Switches
- Distributed Resource Scheduler (DRS)
- VM Encryption
- Storage DRS
- Storage and Network I/O Controls
- Host Profiles
- Distributed Power Management
- Proactive HA
- vSphere Persistent Memory

VVS Add-Ons



Support Services



Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

VVEP

VMware vSphere Essentials Plus

Broadcom Licensing Information – View From a Customer

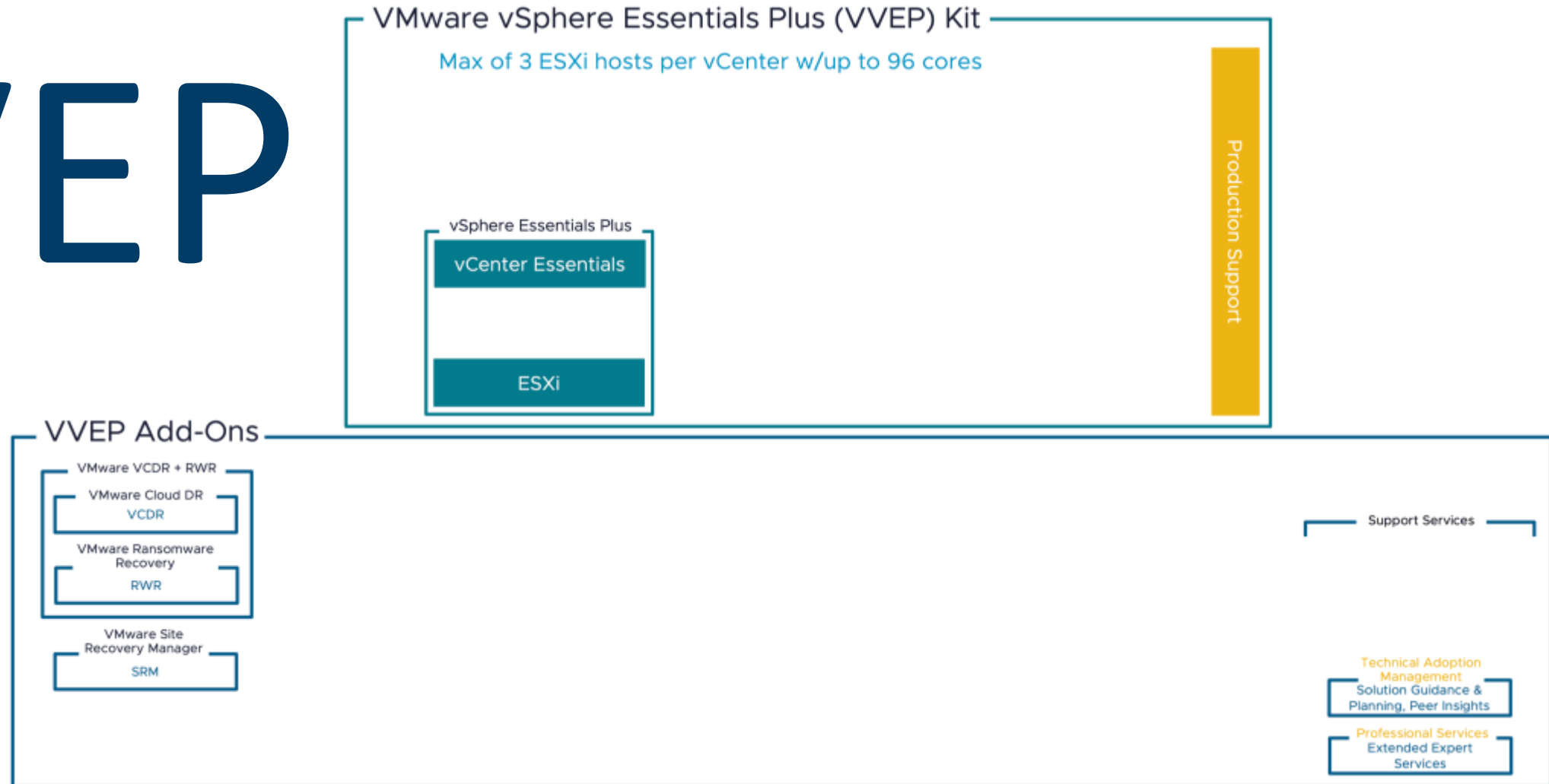
VVEP

VMware vSphere Essentials Plus

NO, that didn't say Enterprise Plus 😊

Broadcom Licensing Information – View From a Customer

VVEP



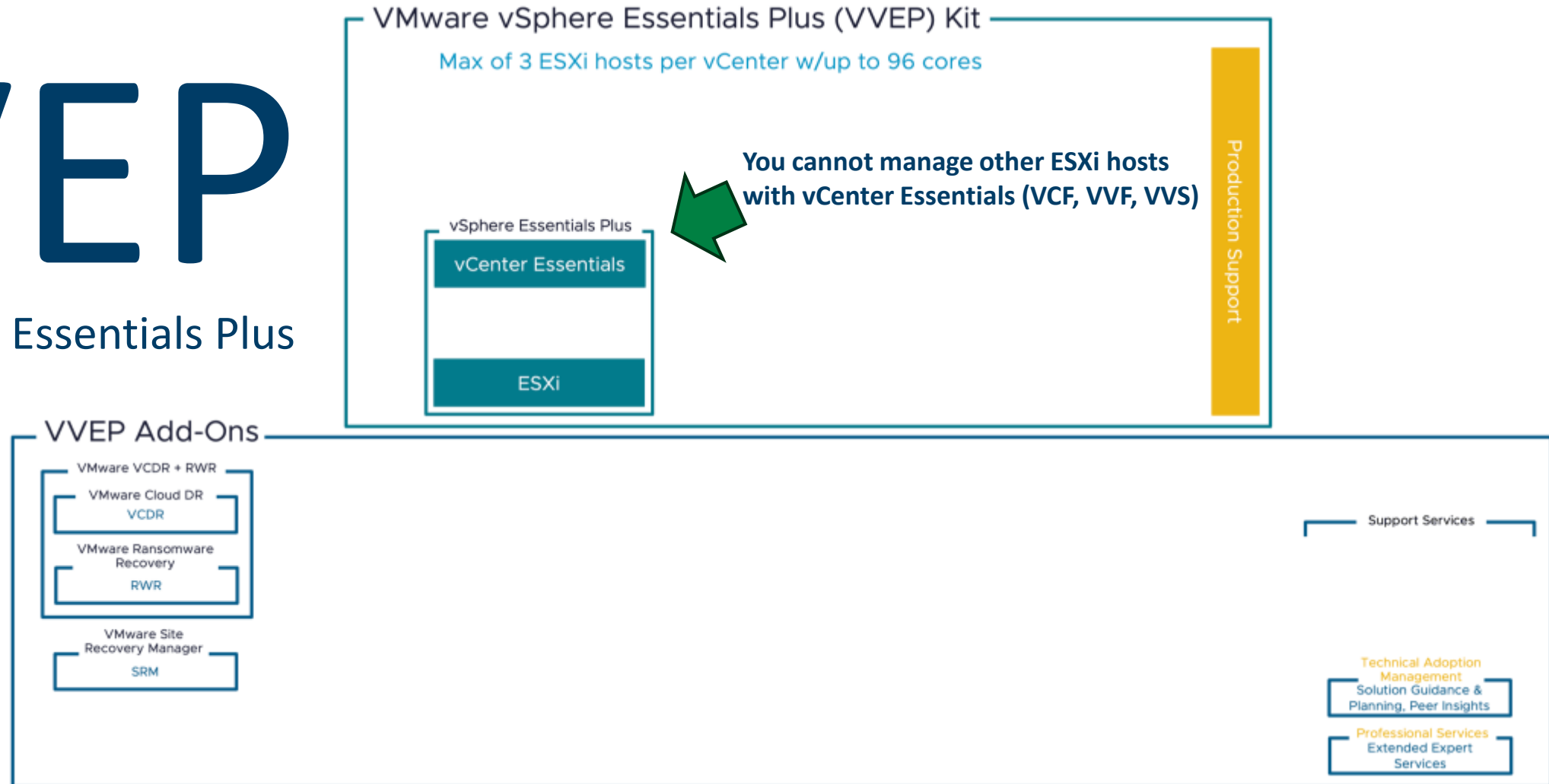
Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

VVEP

VMware vSphere Essentials Plus



Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

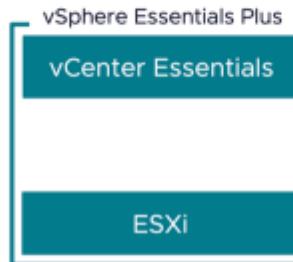
Broadcom Licensing Information – View From a Customer

VVEP

VMware vSphere Essentials Plus

VMware vSphere Essentials Plus (VVEP) Kit

Max of 3 ESXi hosts per vCenter w/up to 96 cores

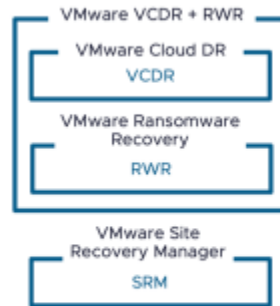


You cannot manage other ESXi hosts with vCenter Essentials (VCF, VVF, VVS)

Pay for all 96 cores
(3 hosts, 2x 16 core
or 1x 32 core)

Production Support

VVEP Add-Ons



Support Services

Technical Adoption
Management
Solution Guidance &
Planning, Peer Insights

Professional Services
Extended Expert
Services

Entire feature list available at:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

Broadcom Licensing Information – View From a Customer

- vSphere ROBO Licensing has not returned
 - Formerly sold in 25 VM or 100 VM packs
 - Allowed unlimited sockets of vSphere that shared the VM packs
 - Used in small-footprint ROBO solutions
 - VSAN and vRealize Operations also had ROBO SKU's that are no longer available
 - Replacing ROBO Standard with vSphere Standard might be a good strategy for many customers.
- OEM's like HP and Dell are allowing purchases of Perpetual ROBO until 4/30 with hardware purchase (3 year)
- There is a new "Edge Compute Stack" available to cover some remove/edge solutions.
 - Managed differently than traditional vSphere

Broadcom Licensing Information – View From a Customer

- VMware's Enterprise License Agreement Changes – View from a customer
- Past ELA negotiations usually centered around purchasing new software and not renewing what you have.
- Subscription plans are all new so the game has changed
- Historically, an ELA has a stated out year which includes a pro-rated year after your ELA has expired.

EXAMPLE:

Customer has a 4-year ELA -- \$4 Million over 4 years (January 2021 thru January 2025)
Normally, a 5th year "Stated out year" of \$1 million from January 2025 thru January 2026 would be available.

Broadcom has canceled all "Stated out years" so customers cannot use their perpetual licensing for an additional year.

Broadcom Licensing Information – View From a Customer

Planning for your next agreement

- Understand what products are available at each level
- Consider ways to leverage savings in other areas
 - IP-based storage vs. Fibre Channel
 - Infrastructure Consolidation (more memory, fewer hosts)
 - CPU strategies (fewer cores/sockets)
- NOTE: Moving from traditional storage to VSAN may increase your memory and CPU requirements.

Broadcom Licensing Information – View From a Customer

- Perpetual vs. Subscription
- Current Subscription Model vs. vSphere+ Subscription Model

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Perpetual Licensing Concept: Purchase the license outright and maintain with a support agreement – typically ~20% of the original license cost, per year

Subscription Licensing Concept: No outright purchase is required, but the annual subscription cost will include the purchase over time

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Customers' complaint: "My renewal is tripling!!"

Perpetual Example (static customer)

\$2,000 – Typical maintenance (year 1)
\$2,000 – Typical maintenance (year 2)
\$2,000 – Typical maintenance (year 3)
TOTAL for 3 years - \$6,000

Subscription Example (static customer)

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Customers' complaint: "My renewal is tripling!!"

Perpetual Example (static customer)

\$2,000 – Typical maintenance (year 1)
\$2,000 – Typical maintenance (year 2)
\$2,000 – Typical maintenance (year 3)
TOTAL for 3 years - \$6,000

Subscription Example (static customer)

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

300% increase

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Customers' complaint: "My renewal is tripling!!"

Perpetual Example (static customer)

\$2,000 – Typical maintenance (year 1)
\$2,000 – Typical maintenance (year 2)
\$2,000 – Typical maintenance (year 3)
TOTAL for 3 years - \$6,000

Subscription Example (static customer)

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

300% increase

Perpetual Example

\$10,000 – one-time purchase of software
\$2,000 – Year 1 maintenance
\$2,000 – Year 2 maintenance
\$2,000 – Year 3 maintenance
TOTAL for 3 years - \$16,000

Subscription Example

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Customers' complaint: "My renewal is tripling!!"

Perpetual Example (static customer)

\$2,000 – Typical maintenance (year 1)
\$2,000 – Typical maintenance (year 2)
\$2,000 – Typical maintenance (year 3)
TOTAL for 3 years - \$6,000

Subscription Example (static customer)

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

300% increase

Perpetual Example

\$10,000 – one-time purchase of software
\$2,000 – Year 1 maintenance
\$2,000 – Year 2 maintenance
\$2,000 – Year 3 maintenance
TOTAL for 3 years - \$16,000

Subscription Example

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

12.5% increase

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

Customers' complaint: "My renewal is tripling!!"

According to the US Inflation Calculator, Inflation from 1/2021-12/2023 was 17.83%

Perpetual Example (static customer)

\$2,000 – Typical maintenance (year 1)
\$2,000 – Typical maintenance (year 2)
\$2,000 – Typical maintenance (year 3)
TOTAL for 3 years - \$6,000

Subscription Example (static customer)

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

300% increase

Perpetual Example

\$10,000 – one-time purchase of software
\$2,000 – Year 1 maintenance
\$2,000 – Year 2 maintenance
\$2,000 – Year 3 maintenance
TOTAL for 3 years - \$16,000

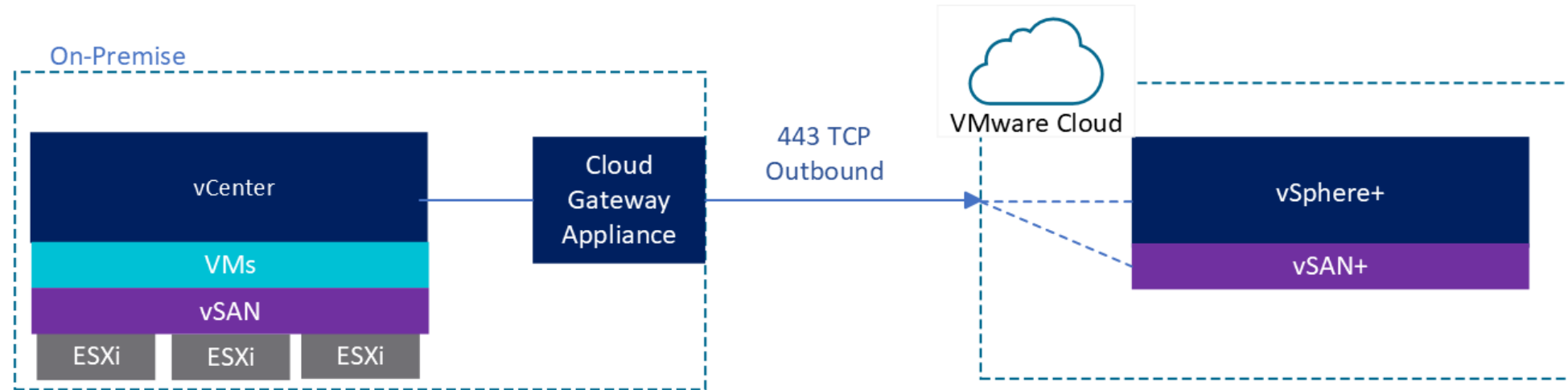
Subscription Example

\$6,000 – Year 1 subscription cost
\$6,000 – Year 2 subscription cost
\$6,000 – Year 3 subscription cost
TOTAL for 3 years - \$18,000

12.5% increase

Broadcom Licensing Information – View From a Customer

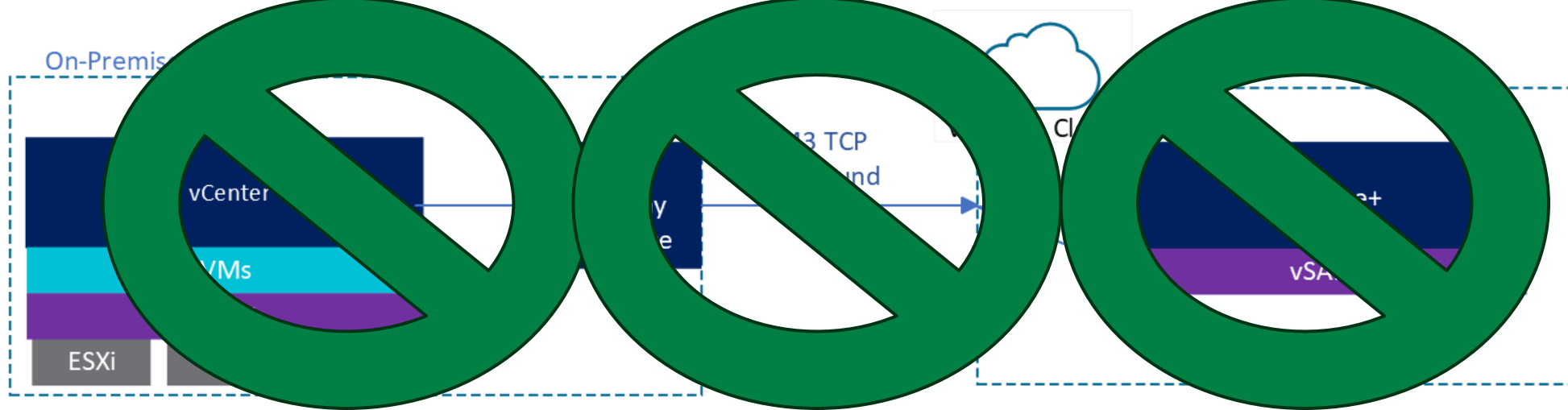
Current Subscription Model vs. vSphere+ Subscription Model



- vSphere+ was VMware's new subscription-model (pre-Broadcom Acquisition)
- Required the use of a "VMware Cloud Gateway" using your VMware Cloud Services account
- Perpetual and vSphere+ licenses must use separate vCenter Servers (not compatible)
- (I was told) that this eliminated your ability to deploy ESXi, join it to your vCenter, and leverage your 60-day Evaluation window.

Broadcom Licensing Information – View From a Customer

Current Subscription Model vs. vSphere+ Subscription Model



- Current Subscription Model eliminates the Cloud Gateway Appliance
- Once you purchase your subscription, you receive keys that function like perpetual
- Subscription and Perpetual keys work with each other on the same vCenter Server
- 60-day Evaluation mode works the same way as it did with perpetual keys

Broadcom Licensing Information – View From a Customer


If I purchase VCF, do I need to run the entire Software-Defined Datacenter?

NO. VCF Cloud Builder doesn't even have a license key in SDDC Mgr. Purchasing VCF gives you the software keys for products such as:

- vSphere
- vCenter
- NSX-T
- VSAN (with up to a 1TiB per physical core entitlement)

Broadcom Licensing Information – View From a Customer

If I purchase VCF, do I need to run the entire Software-Defined Datacenter?

	B	C	D	E	F	G	H	I	J
1									
3	<p>Instructions: Use the <i>Deployment Parameters</i> tab to input configuration details for physical infrastructure and the components used to implement the Management Domain.</p> <ul style="list-style-type: none">- Grey cells are for information purposes and cannot be modified.- Red cells mean the input data is either missing and mandatory or some type of validation of the input data has failed.- Yellow cells indicate input data, default values are included to help illustrate the formatting to be used and align to the VMware documentation. If a value is not required enter 'n/a', if it turns red then its mandatory.								
5	Existing Infrastructure Details			Infrastructure		Value		DNS Zone	
6	<input checked="" type="checkbox"/>	DNS Server and DNS Zone Defined		DNS Server #1	192.168.202.1		DNS Zone Name		vmuglab.local
7	<input checked="" type="checkbox"/>	NTP Servers		DNS Server #2	192.168.202.2				
8				NTP Server #1	192.168.202.1				
9				NTP Server #2	192.168.202.2				
10									
11	License Keys			Use Keyless Licensing		No		Enable Customer Experience Improvement Program ("CEIP")	
12	<input checked="" type="checkbox"/>	ESXi License Key Defined		Licensing		License Key		Enable FIPS Security Mode on SDDC Manager	
13				ESXi	7P		M		
14				vSAN	6M		M		
15				vCenter Server	J		H		
16				NSX	K		M4		
17									
18	vSphere Infrastructure			vCenter Server		Hostname		IP Address	
19	<input checked="" type="checkbox"/>	Default Password for ESXi Hosts Defined		vCenter Server Hostname and IP Address		vcf-vcenter	192.168.201.25		
20	<input checked="" type="checkbox"/>	vCenter Server Passwords Defined		vCenter Server Appliance Size (Default Small)		tiny			
21	<input checked="" type="checkbox"/>	vCenter Server - Hostname and Static IP Defined		vCenter Server Appliance Storage Size		default			
22									
				vSphere Datastore				vSAN Datastore Name	
								nestVSAN	
								Enable vSAN Deduplication and Compression	
								No	
								Enable vSAN-ESA	
								No	

Broadcom Licensing Information – View From a Customer

How do I know how many cores I need to buy in my next agreement?

Updated Inventory & Calculator Scripts for counting Cores/TiBs for VMware Cloud Foundation (VCF) and VMware vSphere Foundation (VVF)

02.12.2024 by William Lam // 2 Comments

Here are two new tools to help our users understand and calculate the required subscription capacity for the new **VMware Cloud Foundation (VCF) and VMware vSphere Foundation (VVF) offerings**, which are licensed based on physical CPU Cores for compute and total raw physical storage (TiBs) for vSAN.

Inventory Script

The PowerCLI script provided in [VMware KB 95927](#) is designed to help users inventory their existing vSphere environment (read-only account is sufficient) to assess the required VCF or VVF subscription capacity for compute and/or vSAN. The script has also been enhanced to incorporate the upcoming 100GiBs of vSAN storage entitlement for each VVF core that is provisioned to a vSAN cluster as well as the latest pricing and packaging for both VCF and VVF. For more details on how to download and use the inventory script, please check out the KB for more information.

Note: Make sure you are using the latest version of the script which had a minor update on 02/14/2024

```
PS /Users/wlam/Desktop> Get-FoundationCoreAndTiBUsage -DeploymentType VCF
Querying all ESXi hosts, this may take several minutes...
Sizing Results for VMware Cloud Foundation (VCF) Instance:
Compute Usage Information
CLUSTER  VMHOST  NUM_CPU_SOCKETS NUM_CPU_CORES_PER_SOCKET FOUNDATION_LICENSE_CORE_COUNT
-----  -
esx-standalone-01  2  4  32
DB Cluster esx-db-01  1  6  16
DB Cluster esx-db-02  1  6  16
DB Cluster esx-db-03  1  6  16
ML Cluster esx-ml-01  2  20  40
ML Cluster esx-ml-02  2  20  40
ML Cluster esx-ml-02  2  20  40
ML Cluster esx-ml-02  2  20  40
vSAN Usage Information
CLUSTER  NUM_HOSTS NUM_CPU_SOCKETS NUM_CPU_CORES FOUNDATION_LICENSE_CORE_COUNT ENTITLED_VSAN_LICENSE_TIB_COUNT REQUIRED_VSAN_TIB_CAPACITY VSAN_LICENSE_TIB_COUNT
-----  -
DB Cluster  3  3  18  48  48  25.178  -22.000
ML Cluster  4  8  160  160  160  17.893  -142.000
Total Required VCF Compute Licenses: 240
Total Required vSAN Add-on Licenses: -164
```

Broadcom Licensing Information – View From a Customer

Impacts to Horizon Environments

- NOTE: Broadcom has announced the divestment to the Private Equity Firm KKR.
- Until the execution of the deal, there are a ton of unknowns

Currently, partners are working with Broadcom's EUC Division to provide renewals for expiring customers. This includes renewed licenses for **vSphere for Desktops, vCenter and VSAN**.

When the divestment occurs, it is unknown whether this will remain the same. Other EUC solutions such as Cloud Software Group's Citrix Virtual Apps and Desktops (CVAD) leverage vSphere for Desktops at a cost.

Currently, VMUG Advantage's "EvalExperience" which provides 365-day evaluation licenses to most VMware products (for non-production use) includes VMware Horizon Advanced.

Broadcom Licensing Information – View From a Customer

Impacts to VMUG Advantage and EvalExperience

VMUG and Broadcom will continue our partnership as it has been in the past. VMUG Advantage subscribers will continue to receive 365-day Evaluation keys within the EvalExperience program.

Since Broadcom's subscription model gives customers a set of installation keys, VMUG Advantage subscribers do not need to worry about keys going away as a part of Broadcom's move to subscription licensing.

VMware's vSphere+ and Cloud Gateway model did not fit VMUG Advantage's key-based model.

A case could be made that Broadcom's subscription model is much more VMUG Advantage-friendly!

Broadcom Licensing Information – View From a Customer

Impacts to Horizon Licenses within VMUG Advantage and EvalExperience

- NOTE: Broadcom has decided to divest the EUC Division
- Until that time, there are a ton of unknowns

VMUG will make every effort to convey to whomever acquires Broadcom's EUC Division the importance of VMUG Advantage to Horizon Customers for testing VDI solutions. Currently, no 3rd party solutions are a part of EvalExperience.

VMUG is discussing the feasibility of adding other 3rd party solutions to EvalExperience in advance of a possible EUC Division Divestment. If you have any requests/recommendations, please reach out to memberservices@vmug.com

Broadcom Licensing Information – View From a Customer

Impacts to Licensing Purchases from a Solution like Dell/EMC VxRail or VSAN Ready Nodes

- Scenario: Customer purchased a solution from an OEM that included VSAN licensing but not vSphere licensing
- Customer uses perpetual keys to license vSphere, but has VSAN licensing paid through 2027

My partner contact told me the following:

Any perpetual keys for a solution such as VSAN will work with either VCF, VVF or VVS until the solution licenses expire.

Once the solution licenses expire, VSAN entitlement will need to follow VCF or VVF rules. Customer will not be able to use VVS when the VSAN licensing expires.

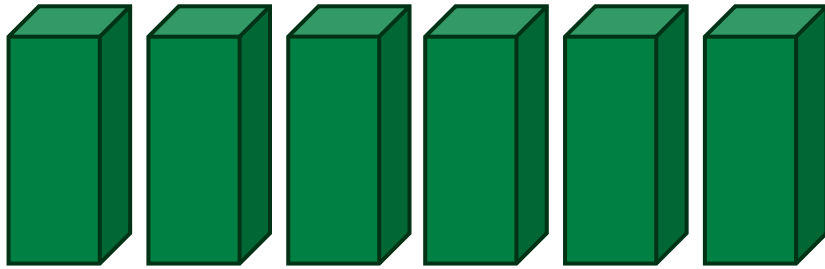
Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern

- **Take a deep look at your CPU utilization – Calculate your true CPU need**
- Take into consideration your availability requirements
 - N+1 – Always have enough resources if you lose a host
 - N+2 – Always have enough resources if you lose two hosts, or are patching, and lose a host
- **Example:**
 - 6 node environment, N+1 requirement
 - 2x Intel Xeon CPU's per host
 - Current cluster CPU Utilization is 20%
 - **Give your CPU utilization a “score” – $20\% * 6 = 120$**
 - Assume you are at “N” (5 hosts in this case)
 - Calculate the impact if you were to remove a CPU on each host. Total CPU capacity would be 50% of what it was, for 5 hosts.

Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern



Current Capacity = $100\% * 6 \text{ hosts}$ – Score of 600

Remove a CPU and Host = $50\% * 5 \text{ hosts}$ – Score of 250

Current CPU Utilization Score is 120. Therefore a workload of 20% would now be at 48%

Why do this? Your VMware contract will be cut in HALF.

Before you do this:

- Contact your vendor to see if it violates your support agreement – possibly order CPU covers
- Verify you have enough memory slot capacity to move all memory sticks to one CPU
- Verify your compute platform doesn't have any dependency on your 2nd CPU
 - Sometimes a 2nd CPU can increase the amount of PCI-e devices you can install

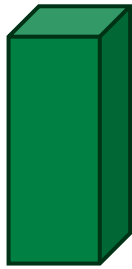
Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern

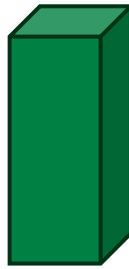
- **Look at your feature set and see if you are actually using those features**
- **Example:**
 - Current vSphere Enterprise Plus Customer
 - Not using Distributed Switches, Network I/O controls, Host Profiles
 - Customer uses the Distributed Resource Scheduler (DRS) but the workloads rarely move
- **Actions:**
 - Reduce licensing to VVS
 - Create PowerCLI scripts for these features made easy by DRS
 - Script host creation of Standard Switches and port groups (for reconfiguring or building hosts)
 - Create scheduled tasks to check whether or not application servers are running on the same ESXi host (replaces DRS Anti-Affinity -- useful after maintenance or HA events)
 - Script the VMotion of VM's for maintenance operations

Broadcom Licensing Information – View From a Customer

Use PowerCLI for Maintenance Operations



Host 1



Host 2



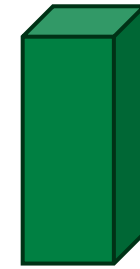
Host 3



Host 4



Host 5



Host 6

1. Move 1/5th of all VM's on Host 1 to Hosts 2-6 – Patch and reboot
2. Move all VM's from Host 2 to Host 1 – Patch and reboot
3. Move all VM's from Host 3 to Host 2 – Patch and reboot
4. Move all VM's from Host 4 to Host 3 – Patch and reboot
5. Move all VM's from Host 5 to Host 4 – Patch and reboot
6. Move all VM's from Host 6 to Host 5 – Patch and reboot
7. Move the same VM's that were moved in step 1 to Host 6

Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern

- **Work with other teams to make sure old licensing rules still apply**
- **Example:**
 - A legacy software licensing rule for an application required a different strategy for physical host core count
 - Vendor required customer to license all physical cores on a host even though it was virtualized
 - Customer purchased four hosts with a single quad-core CPU to reduce physical core count
- **Problem:**
 - Broadcom's new subscription-based licensing approach includes a minimum of 16 cores per socket
 - Customer would be required to pay for 64 cores of vSphere despite having only 16 cores total
- **Actions:**
 - After talking with software vendor, they no longer license physical cores, only virtual cores
 - Vendor approves customer to move software to their normal production cluster
 - Customer was able to move the RAM from the dedicated cluster to their primary cluster

Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern

- **Change compute purchasing strategy to account for CPU footprint**
- **Example:**
 - Customer is memory-bound and not CPU-bound in most environments
 - Customer has a few appliances where the vendor requires 32-cores on the VM
- **Actions:**
 - Create dedicated 2-3 host clusters for non-conforming workloads
 - Hosts in this cluster would have more CPU and less RAM
 - Production clusters would standardize on dual-16 core CPU's
- **Savings:**
 - Customer will save 50% in vSphere licensing over their current dual 32 core CPU hosts

Broadcom Licensing Information – View From a Customer



Questions anyone?