

# Infrastructure Cost Containment

...in a subscription-based world

Reach out!

Matt Heldstab

Systems Engineer – Minnesota State Colleges and Universities

Current VMUG Vice President

Contact: [matt@tcwd.net](mailto:matt@tcwd.net) -- @mattheldstab on TwiX

## 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:

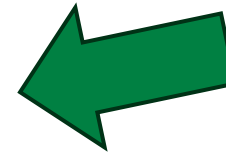
- I would like this to be interactive
- I am not a Broadcom employee
- Discussions around
  - VCF (VMware Cloud Foundation)
  - VVF (VMware vSphere Foundation)
  - VVS (VMware vSphere Standard)
  - VVEP (VMware vSphere Essentials Plus)
- Perpetual vs. Subscription
- Socket vs. Core focused (**minimum 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)
  - VVF for VDI
  - 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 (VVF for VDI / vSAN)



**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)
- 3<sup>rd</sup> 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 – YOU GUYS KNOW THE STORY

- 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](http://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

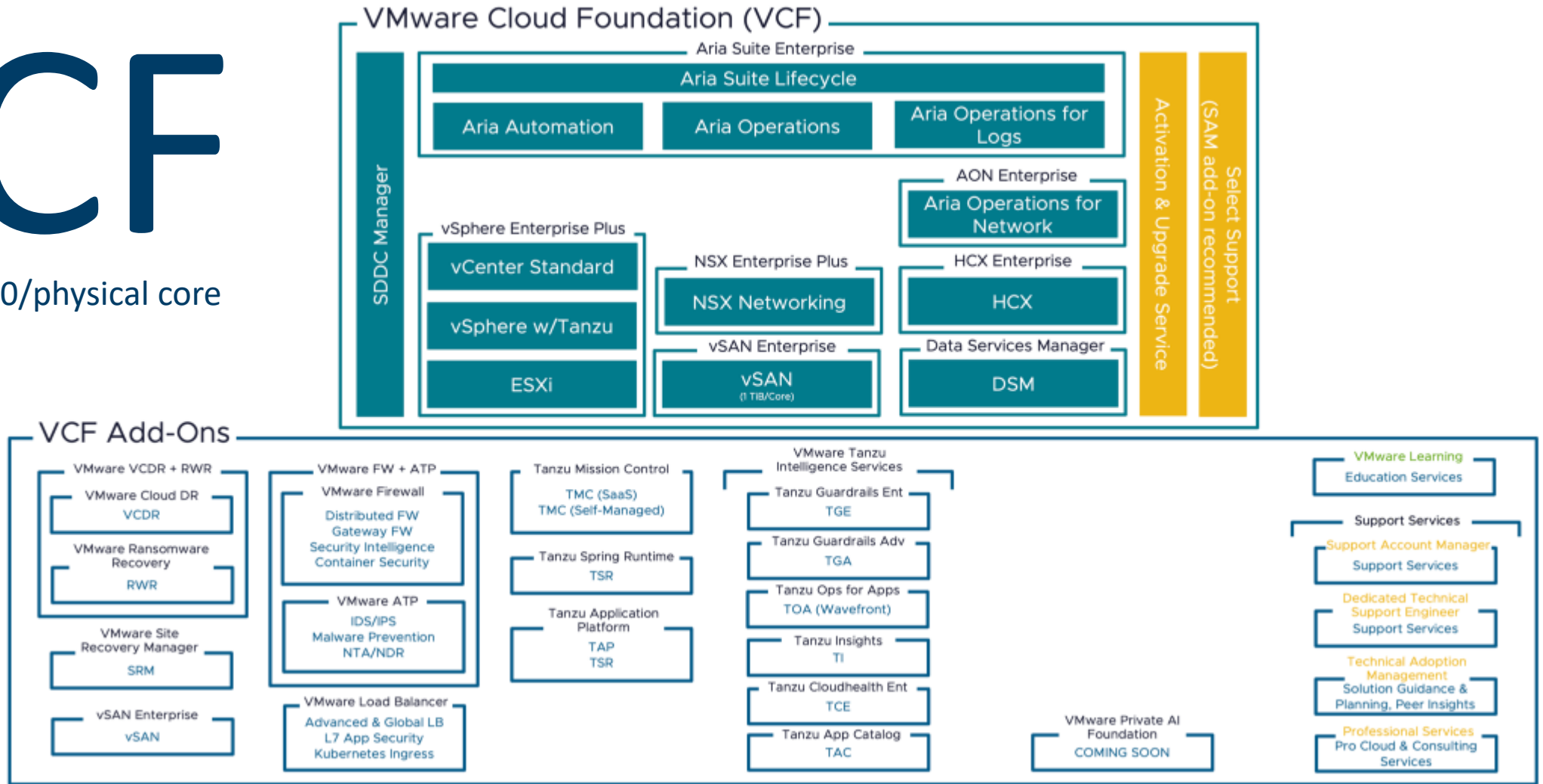
VMware Cloud Foundation

# 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>

# VCF

Retail - \$350/physical core



Entire feature list available at:

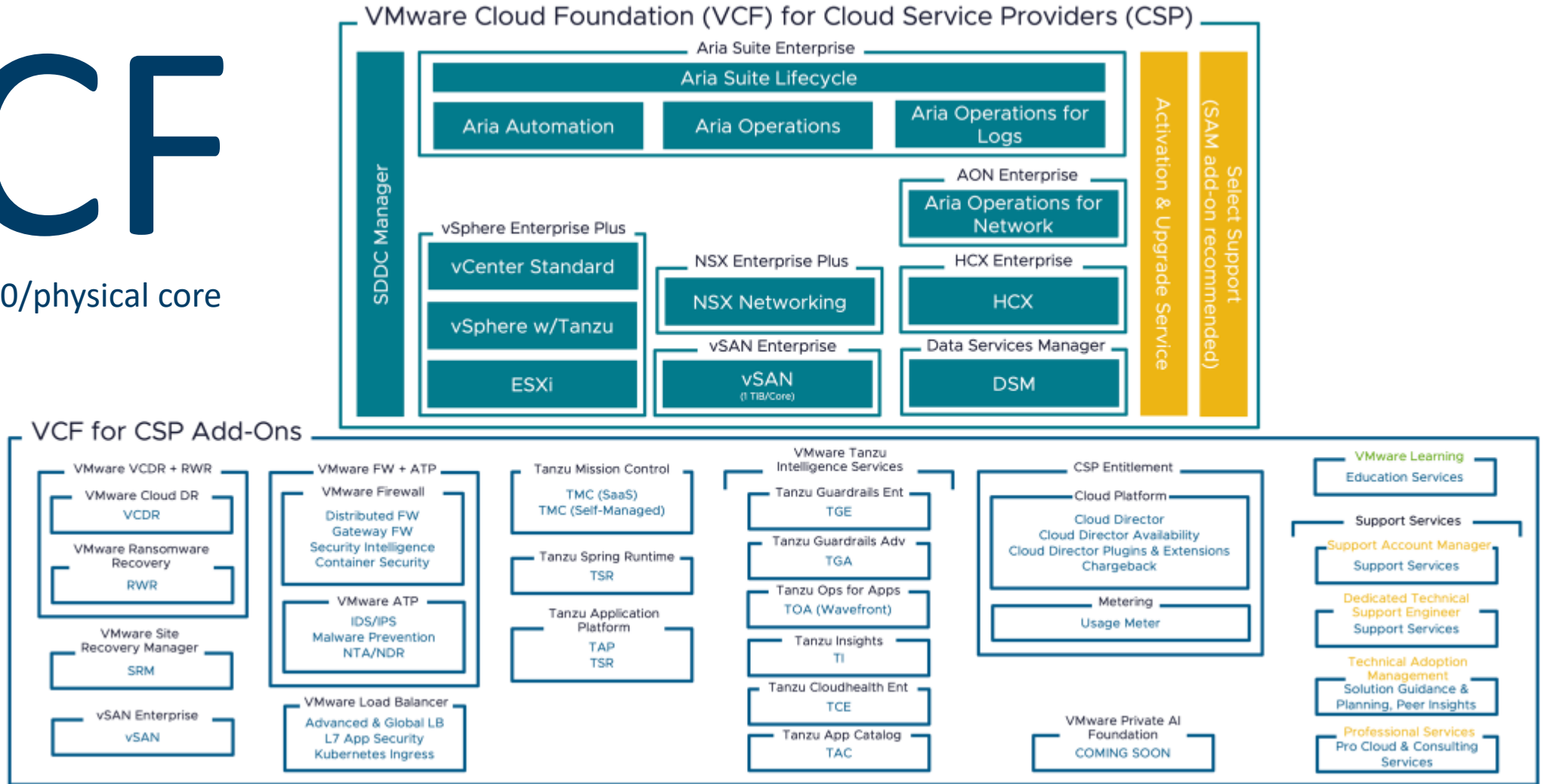
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

# 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>

# VCF

Retail - \$350/physical core



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



VMware vSphere Foundation



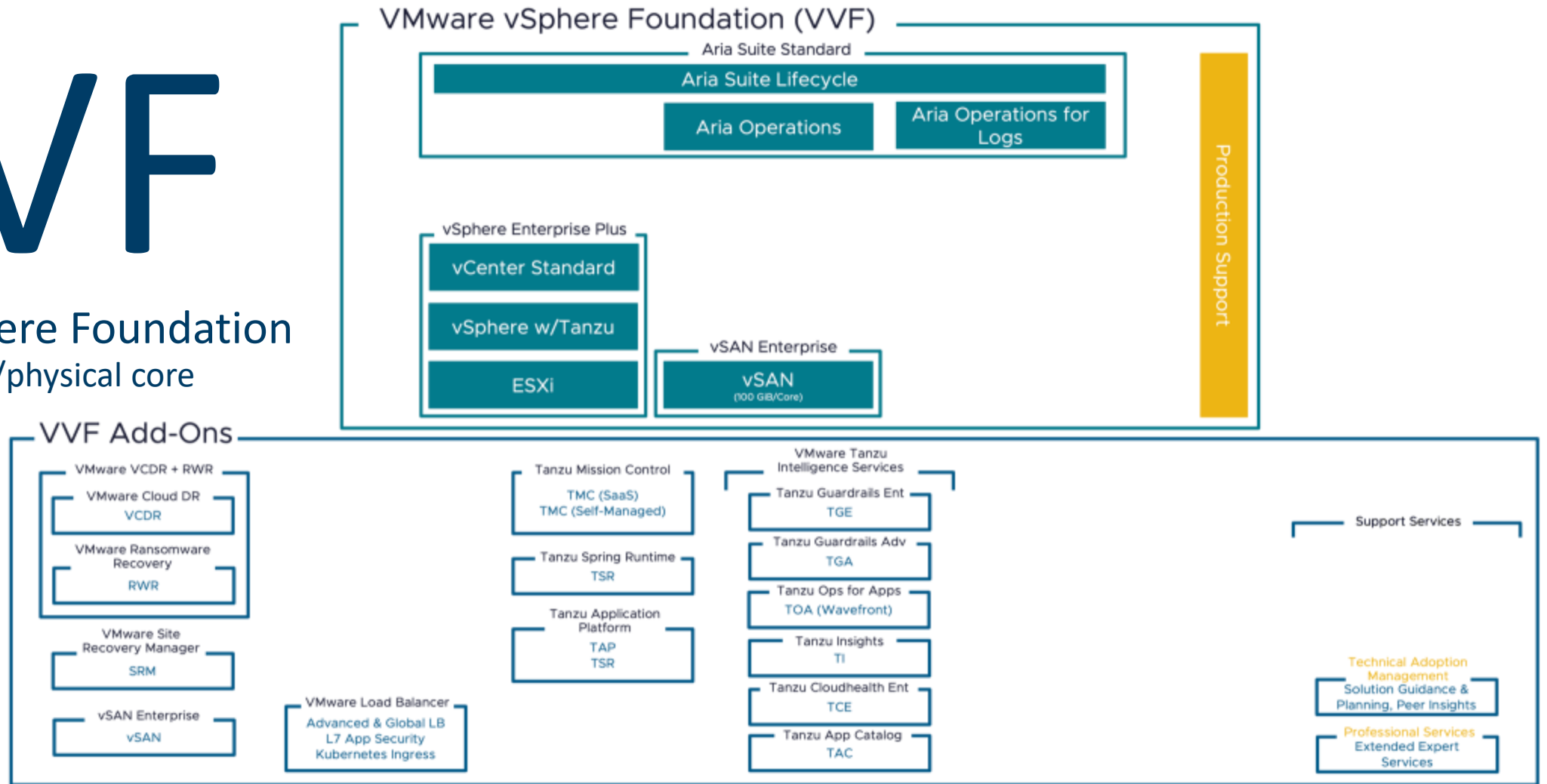
# Broadcom Licensing Information – View From a Customer

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

# VVF

## VMware vSphere Foundation

Retail - \$135/physical core



Entire feature list available at:

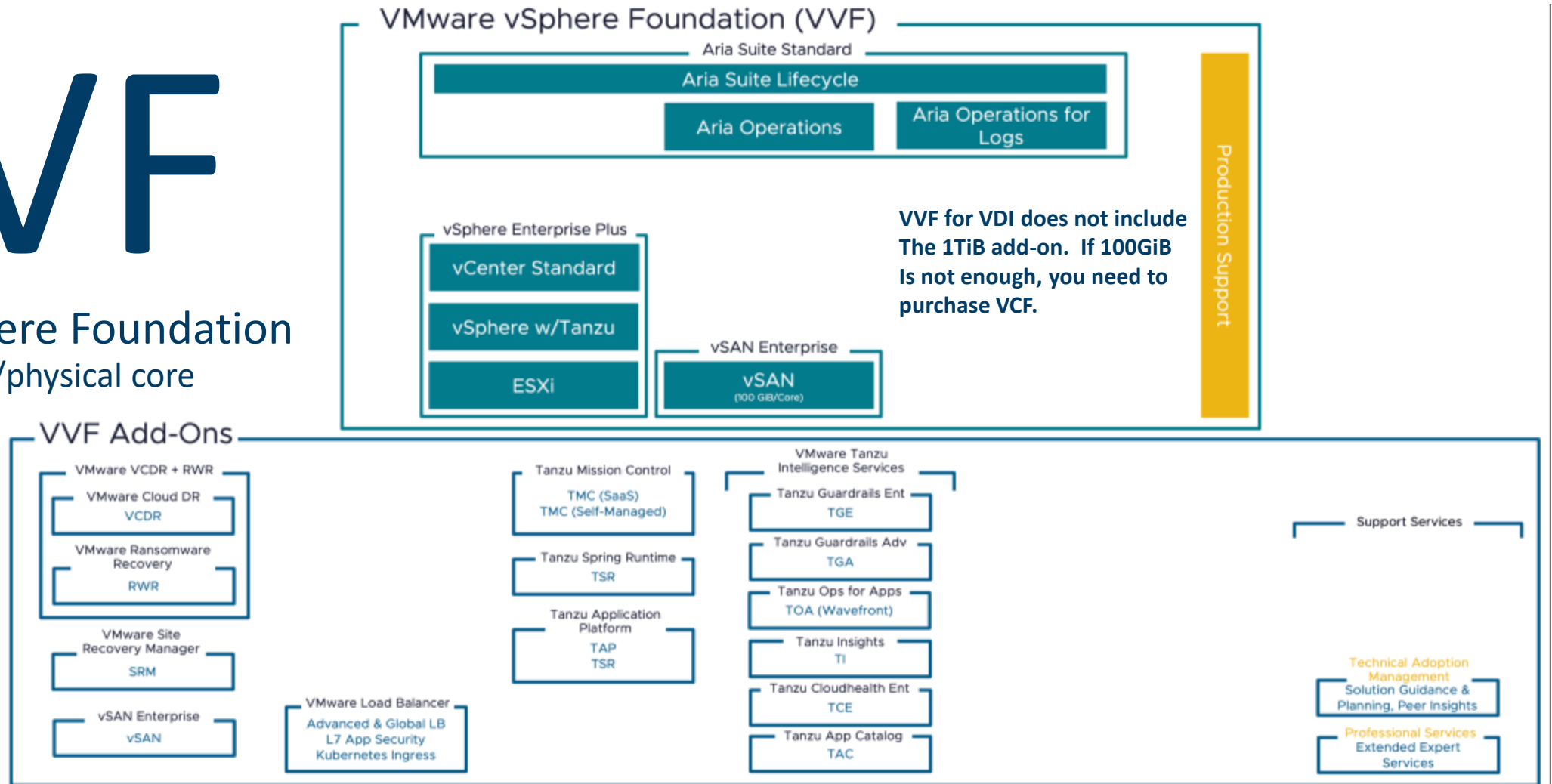
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

# 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  
Retail - \$135/physical core



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

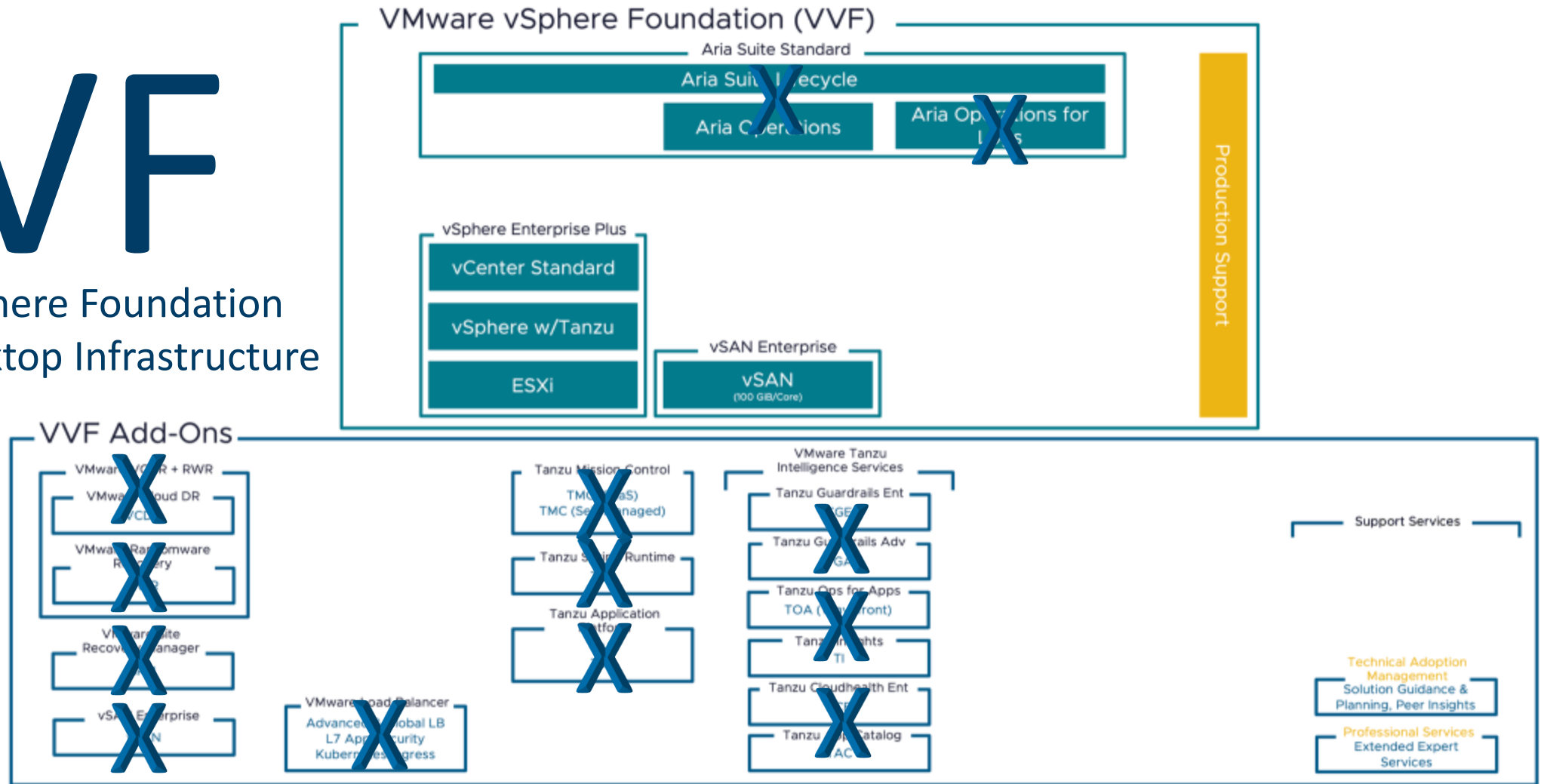
# VVF for VDI

VMware vSphere Foundation  
for Virtual Desktop Infrastructure

# Broadcom Licensing Information – View From a Customer

# VVF

VMware vSphere Foundation  
for Virtual Desktop Infrastructure



<https://www.omnissa.com/setting-the-record-straight-euc-to-continue-to-offer-horizon-with-vsphere-and-vsan/>  
[https://ftpdocs.broadcom.com/cadocs/0/contentimages/VVF\\_VDI\\_SPD\\_July2024.pdf](https://ftpdocs.broadcom.com/cadocs/0/contentimages/VVF_VDI_SPD_July2024.pdf)

# Broadcom Licensing Information – View From a Customer

## 2. USE RIGHTS AND LIMITATIONS.

### License Metrics

- VMware vSphere Foundation for VDI ("VVF for VDI") is subscription software licensed on a per User license metric.
- **Component Specific License Notes.** The following table describes additional component specific license entitlement rights and limitations of VVF for VDI:

#	VVF for VDI Component	Metric Entitlement	Entitlement Details
1	vSphere Foundation License Manager for VDI	User	The vSphere Foundation License Manager for VDI component is included in VVF for VDI with the sole purpose of facilitating license management for the VVF for VDI bundle. It is not meant to provide any intrinsic management features to end customers.
2	vSAN	100 GiB	The 100 GiB vSAN trial capacity included in VVF for VDI is tied to the VVF for VDI cores that are configured for vSAN and cannot be aggregated. Once customers exceed the trial capacity, they must license the entire raw storage claimed in the vSAN cluster starting from 0.

Once customers exceed the trial capacity, they must license the entire raw storage claimed in the vSAN cluster starting from 0. 1 TiB add-ons Are not available, I was told you need to purchase VCF.

# Broadcom Licensing Information – View From a Customer

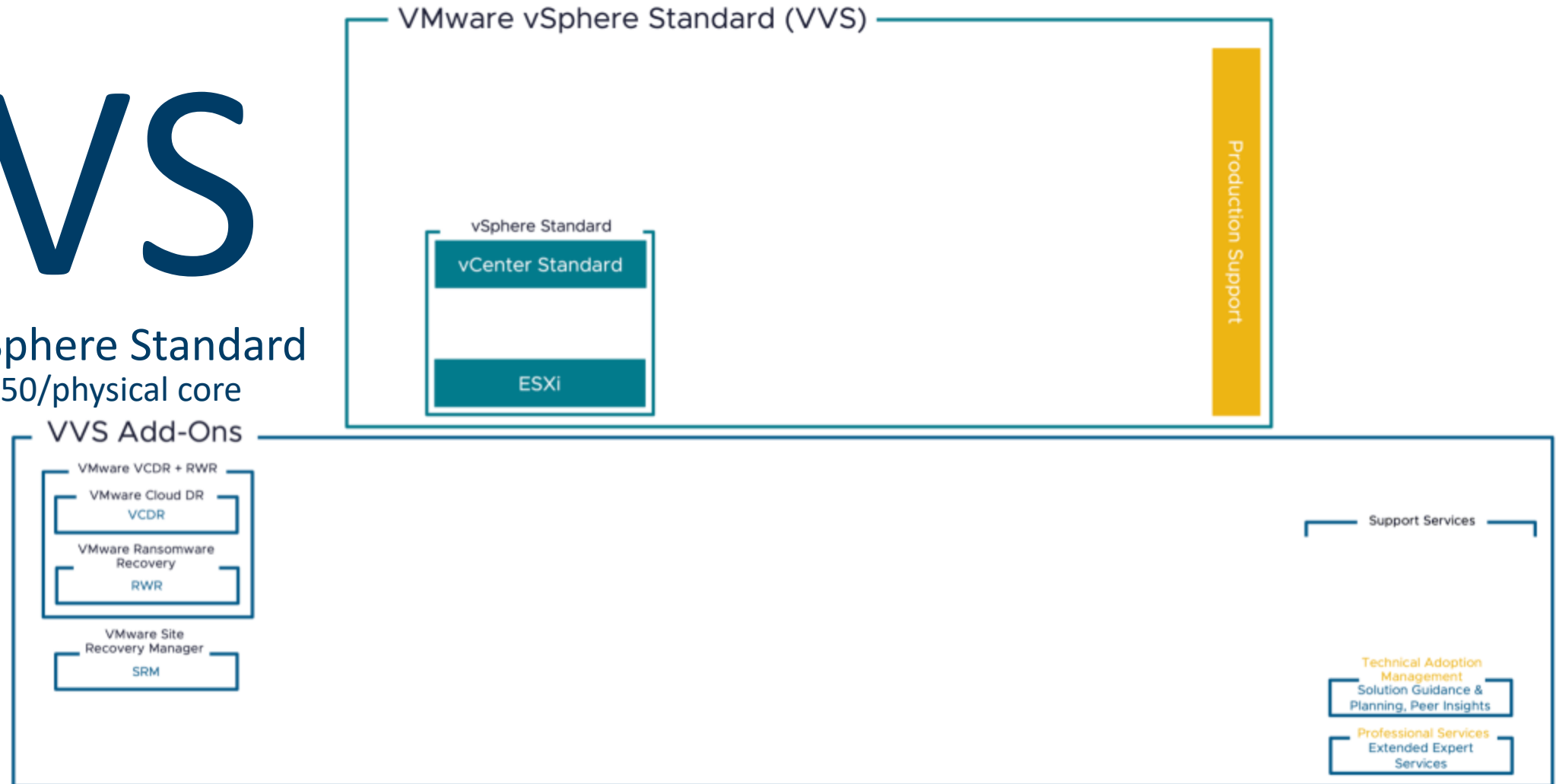
VVS

VMware vSphere Standard

# Broadcom Licensing Information – View From a Customer

# VVS

VMware vSphere Standard  
Retail - \$50/physical core



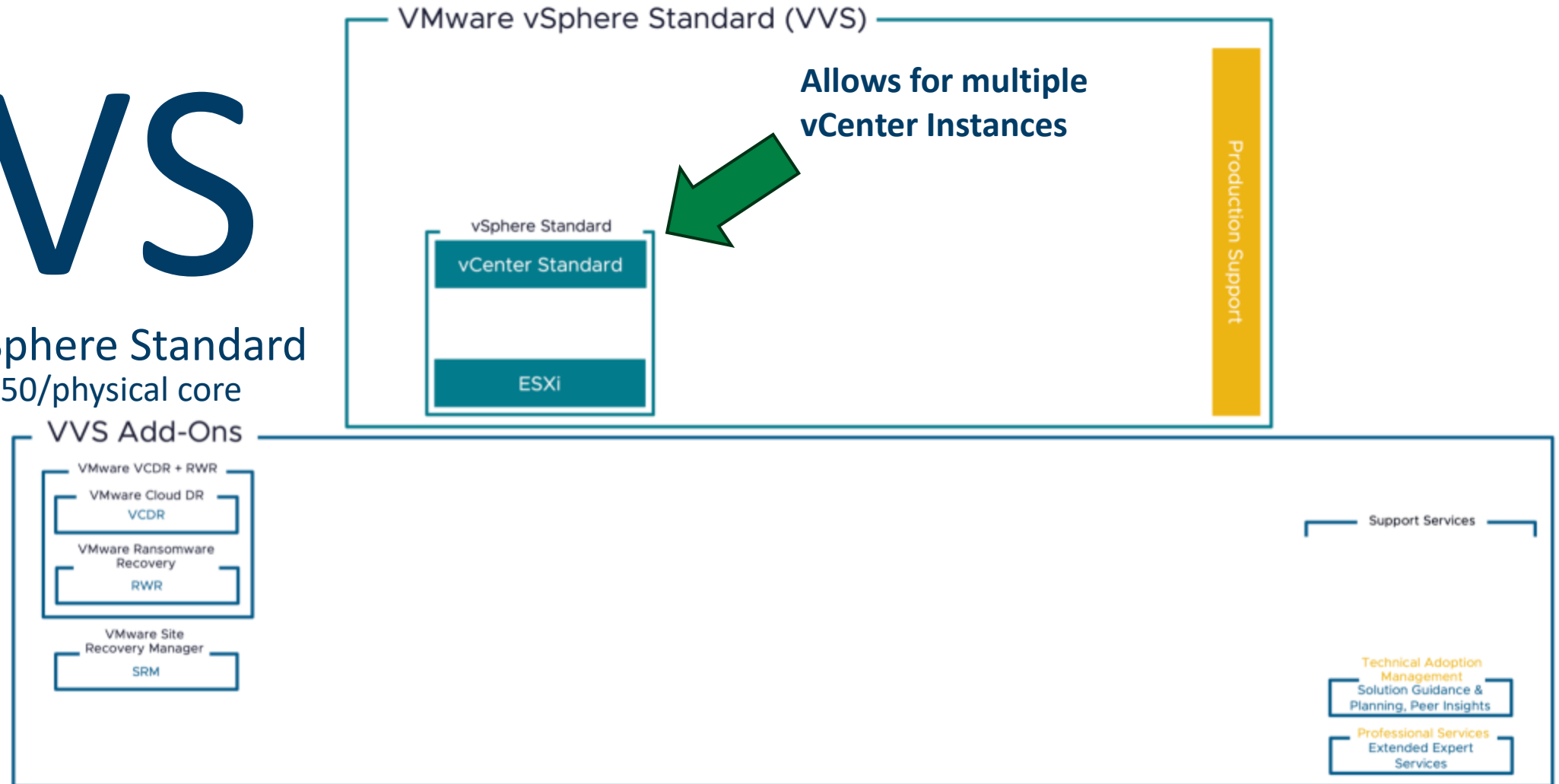
Entire feature list available at:

<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  
Retail - \$50/physical core



Entire feature list available at:

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

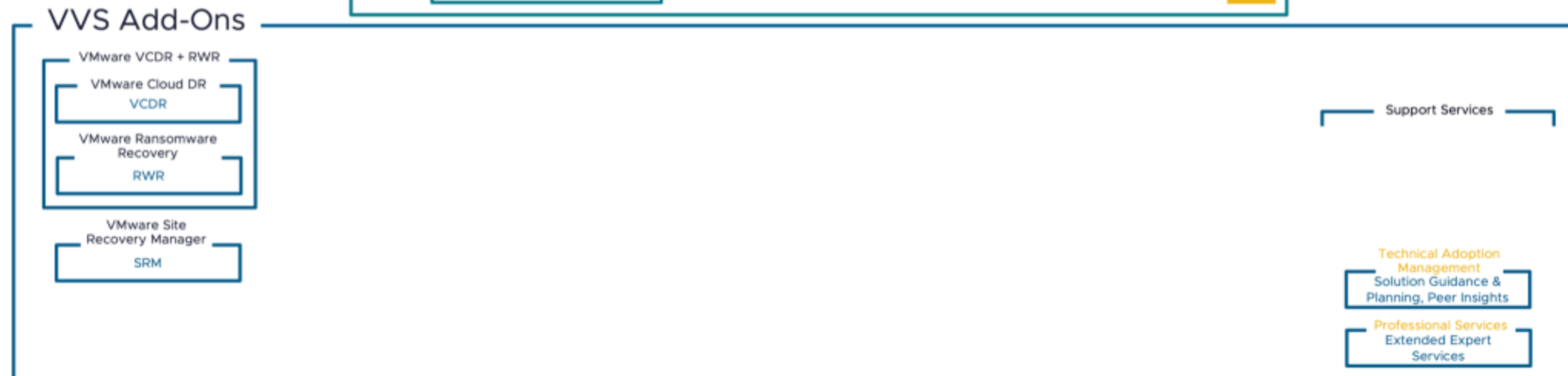
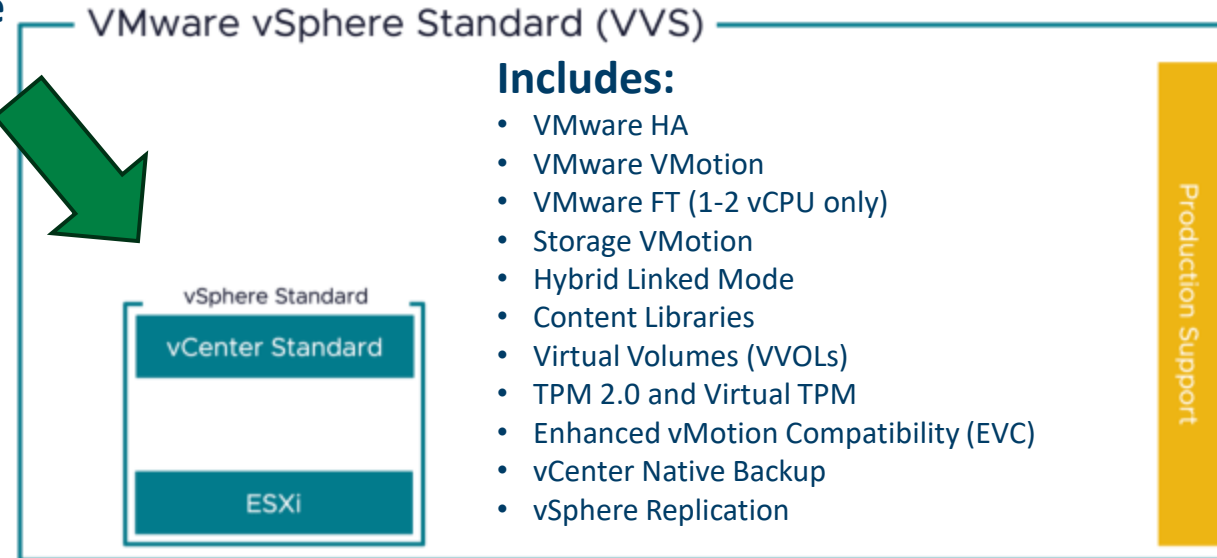


# Broadcom Licensing Information – View From a Customer

Allows for multiple  
vCenter Instances

# VVS

VMware vSphere Standard  
Retail - \$50/physical core



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  
Retail - \$50/physical core

VMware vSphere Standard (VVS)

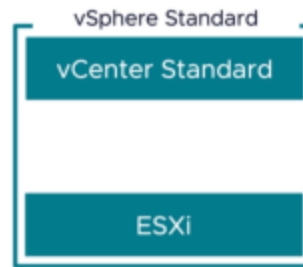
## Includes:

- 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

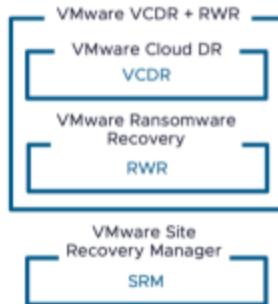
Production Support

## 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

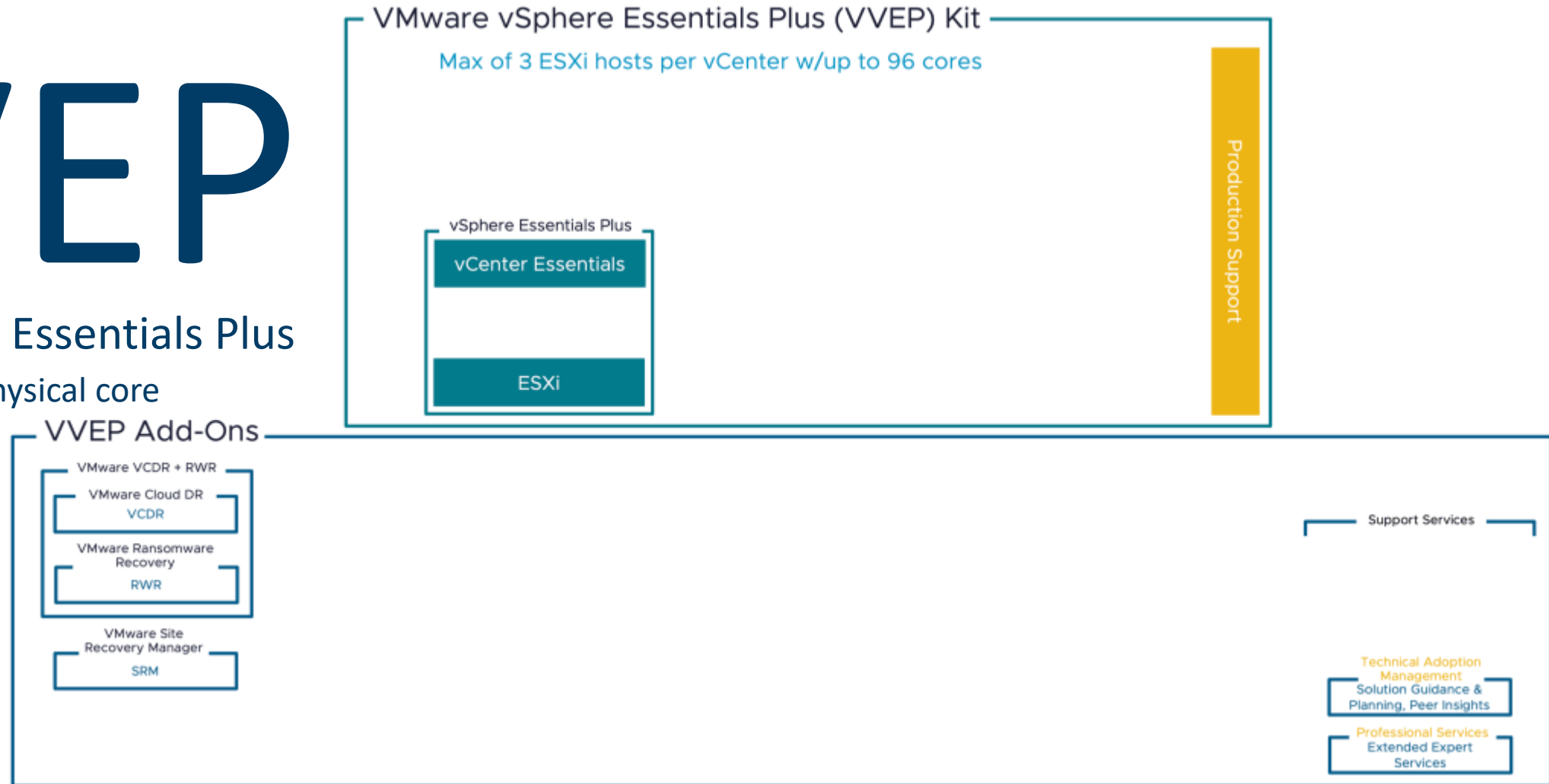
NO, that didn't say Enterprise Plus 😊

# Broadcom Licensing Information – View From a Customer

# VVEP

VMware vSphere Essentials Plus

Retail - \$35/physical core



Entire feature list available at:

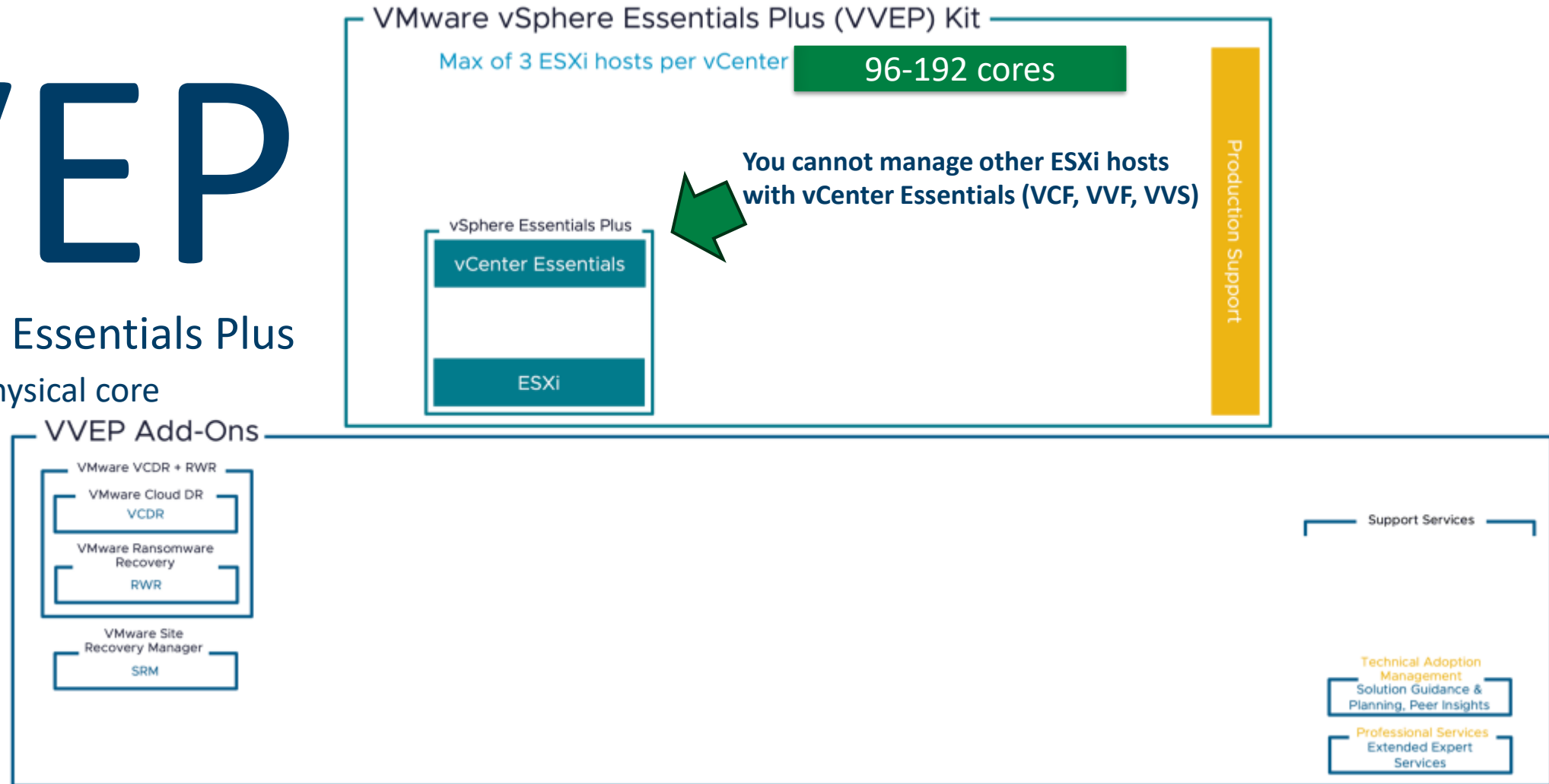
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

# Broadcom Licensing Information – View From a Customer

# VVEP

VMware vSphere Essentials Plus

Retail - \$35/physical core



Entire feature list available at:

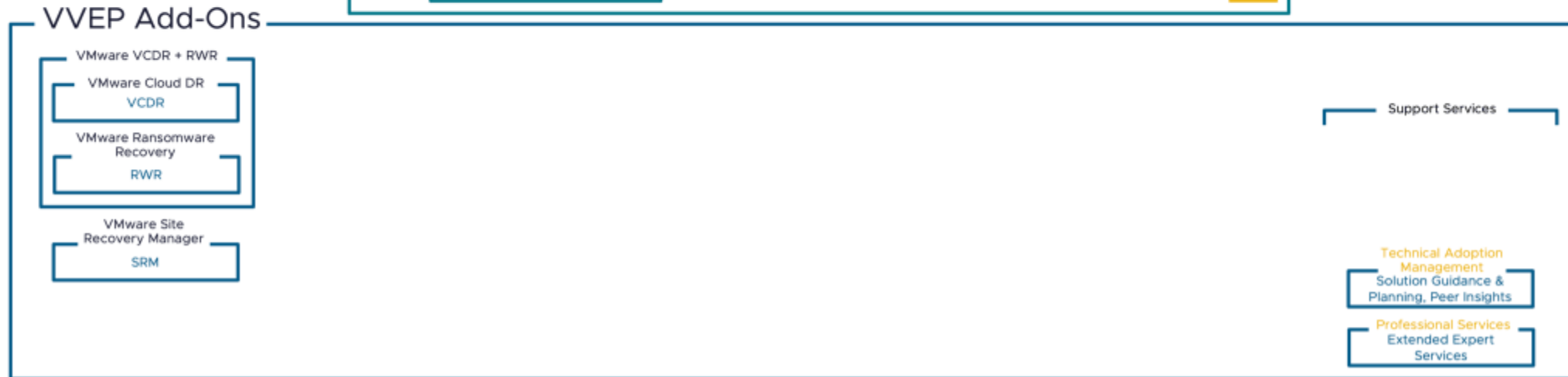
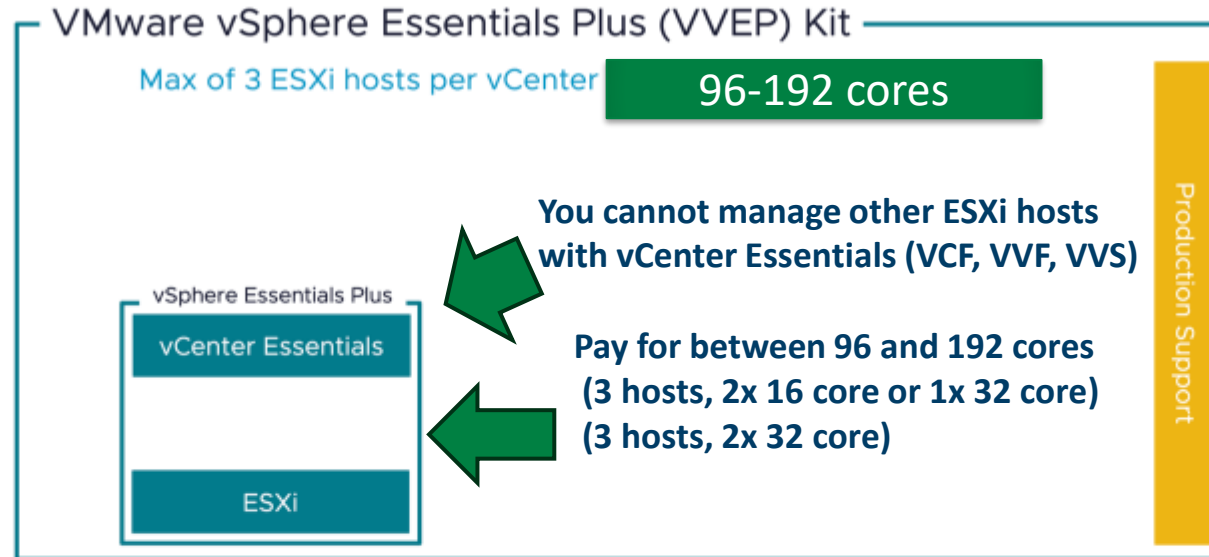
<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/docs/vmw-datasheet-vsphere-product-line-comparison.pdf>

# Broadcom Licensing Information – View From a Customer

# VVEP

VMware vSphere Essentials Plus

Retail - \$35/physical core



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.
- There is a new “Edge Compute Stack” available to cover some remove/edge solutions.
  - Managed differently than traditional vSphere
- **\*NEW\*** VCF Edge allows edge deployments with as few as 2 nodes  
<https://www.vmware.com/docs/vmware-cloud-foundation-edge-datasheet> - 25 sites minimum, min. 8 cores per CPU instead of 16



# Broadcom Licensing Information – View From a Customer

- **VMware IT Academy by Broadcom Update**

- Colleges and Universities that were a VMware IT Academy had until August 15<sup>th</sup> to renew for one final year.
- After that, they will need to choose a different technology to act as a teaching platform, or pay retail for the hosts they are using.

[VMware IT Academy & Software Licensing End of Life FAQ \(brightspace.com\)](#)

[Termination of VMware IT Academy by Broadcom – Network Development Group, Inc \(netdevgroup.com\)](#)

# Broadcom Licensing Information – View From a Customer

- VMware's Enterprise License Agreement Changes
  - 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 5<sup>th</sup> 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

- Get a right-sized quote first. Don't wait for the quote and then reduce your core-count ask
  - Rumor has it the next quote could be the same
- If you don't need VCF, consider asking for a quote for it anyway to give them hope "if the price is right"
- Play that sad trombone. Give hard evidence of hardship.  
NOTE: Some account teams and verticals have different requirements / flexibility
- Understand what products are available at each level

# Broadcom Licensing Information – View From a Customer

## Planning for your next agreement

- Seriously consider your attitude when you start negotiating
- Broadcom rewards those who view them as a strategic partner
- Broadcom tends to look down on folks who threaten them
  - Should be a no-brainer that a civil conversation can only help the situation?
- If you have presented or volunteered at a VMUG, let them know! Many directors view that level of engagement as a sign that you are a valuable customer.

# 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

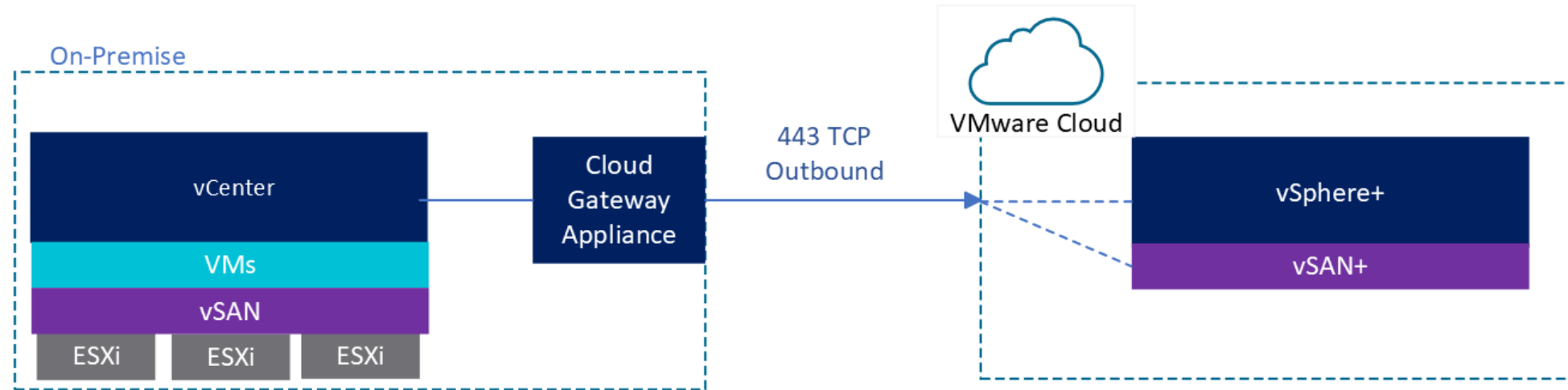
### Subscription Example

\$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

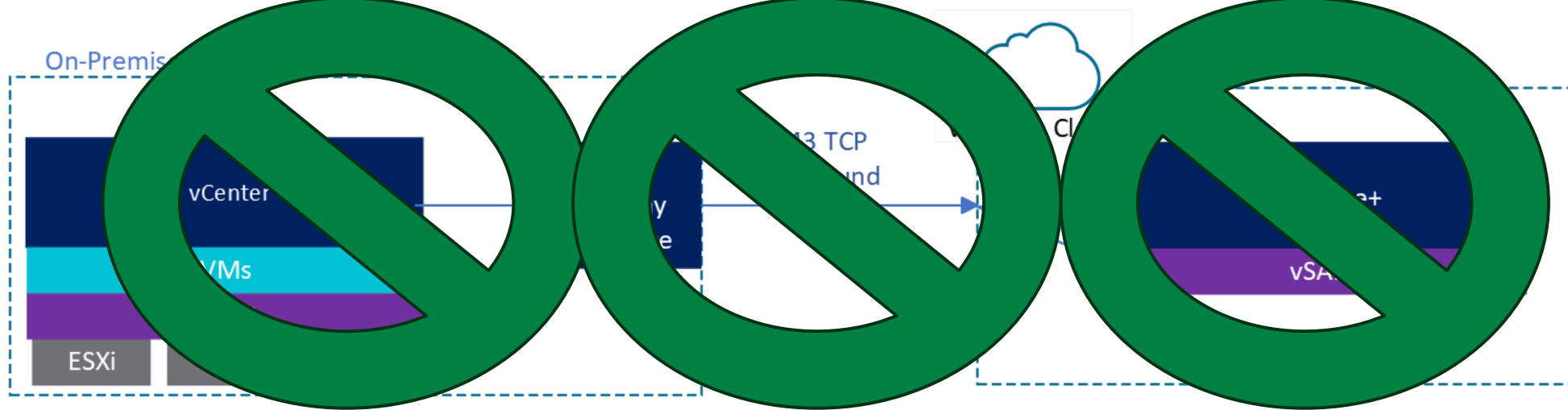
## Current Subscription Model vs. vSphere+ Subscription Model



- 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><b>Instructions:</b> 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"><li>- Grey cells are for information purposes and cannot be modified.</li><li>- <b>Red cells mean the input data is either missing and mandatory or some type of validation of the input data has failed.</b></li><li>- <b>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.</b></li></ul>								
5	<b>Existing Infrastructure Details</b>			<b>Infrastructure</b>		<b>Value</b>		<b>DNS Zone</b>	
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	<b>License Keys</b>			<b>Use Keyless Licensing</b>		No		<b>Enable Customer Experience Improvement Program ("CEIP")</b>	
12	<input checked="" type="checkbox"/>	ESXi License Key Defined		<b>Licensing</b>		<b>License Key</b>		<b>Enable FIPS Security Mode on SDDC Manager</b>	
13				ESXi	7P		M		
14				vSAN	6M		M		
15				vCenter Server	J		H		
16				NSX	K		M4		
17									
18	<b>vSphere Infrastructure</b>			<b>vCenter Server</b>		<b>Hostname</b>		<b>IP Address</b>	
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		<b>vCenter Server Appliance Size (Default Small)</b>		tiny			
21	<input checked="" type="checkbox"/>	vCenter Server - Hostname and Static IP Defined		<b>vCenter Server Appliance Storage Size</b>		default			
22									
				<b>vSphere Datastore</b>					
				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 creating the company OMNISSA.

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

**Customers requiring > 100GiB per core of VSAN or NSX in their VDI cluster will need to purchase VCF.**

Other EUC solutions such as Cloud Software Group's Citrix Virtual Apps and Desktops (CVAD) leverage vSphere for Desktops at a cost.

# 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 divested the EUC Division

VMUG is in discussions with Omnissa regarding the inclusion of Horizon within VMUG Advantage to assist Horizon Customers in testing VDI solutions. Currently, no 3<sup>rd</sup> party solutions are a part of EvalExperience.

VMUG is discussing the feasibility of adding other 3<sup>rd</sup> party solutions to EvalExperience. If you have any requests/recommendations, please reach out to [memberservices@vmug.com](mailto: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 VSAN solution licenses expire, VSAN entitlement will need to follow VCF or VVF rules.

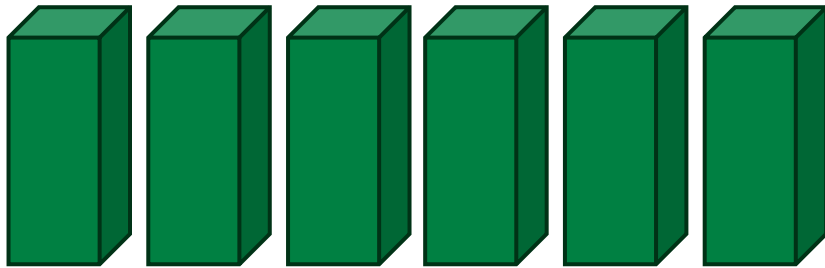
# Broadcom Licensing Information – View From a Customer

## 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 2<sup>nd</sup> CPU
  - Sometimes a 2<sup>nd</sup> CPU can increase the amount of PCI-e devices you can install

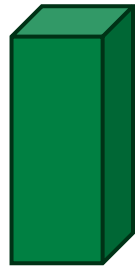
# Broadcom Licensing Information – View From a Customer

Ways to save money if cost is a concern

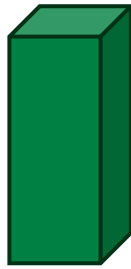
- **Look at your feature set and see if you are actually using those features**
- **Example:**
  - Current vSphere Enterprise Plus Customer
  - Not using Distributed Switches, Network I/O controls, Host Profiles
  - Customer uses the Distributed Resource Scheduler (DRS) but the workloads rarely move
- **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

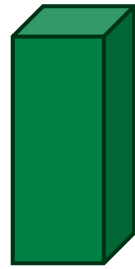
Use PowerCLI for Maintenance Operations



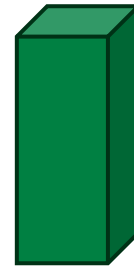
Host 1



Host 2



Host 3



Host 4



Host 5



Host 6

1. Move 1/5<sup>th</sup> 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

- **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

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

Link to my presentation