

# EXPLORE

CMTY1916BCN

## Infrastructure Cost-Containment in a Subscription-Based World Plus news on recent licensing changes

Matthew Heldstab  
VMUG Vice President  
Systems Engineer – Minnesota State Colleges and Universities System  
#VMwareExplore #CMTY1916BCN



# Infrastructure Cost-Containment in a Subscription-based World



Matt Heldstab

Systems Engineer – Minnesota State Colleges and Universities

Current VMUG Vice President

VMUG Leader in Minneapolis, MN – 10x VMware vExpert

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

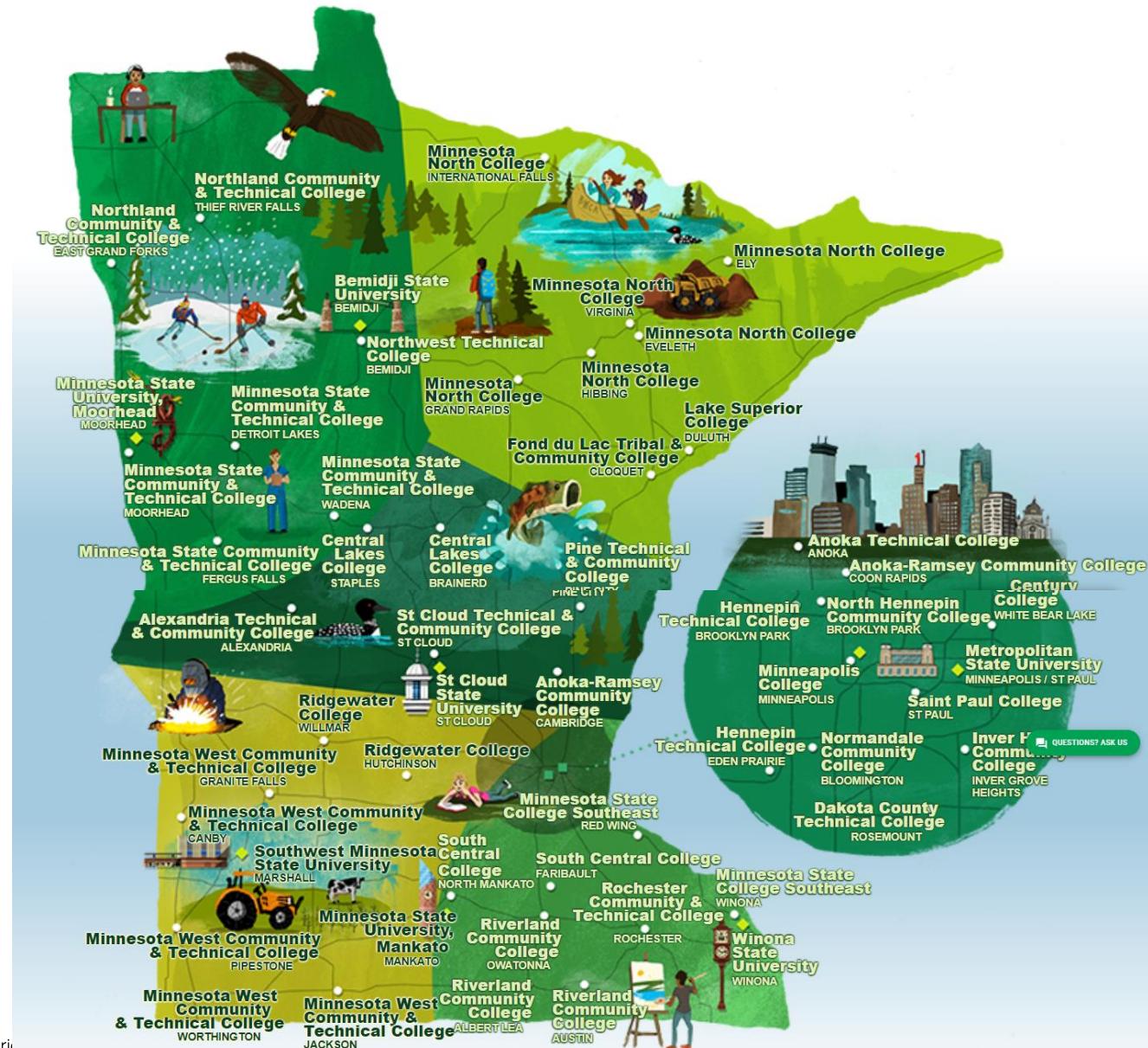
# Infrastructure Cost-Containment in a Subscription-based World

## A bit about me

VMware Practice Lead

Minnesota State Colleges and Universities  
3<sup>rd</sup> largest system of college and  
Universities In the United States

270,000 students on 54 campuses



# Infrastructure Cost-Containment in a Subscription-based World

This information is subject to change

Changes are afoot  
(or erm ...)



What I have heard

Thanks to my team at Broadcom

Additional thanks to my “THREE LETTER” VAR

# Infrastructure Cost-Containment in a Subscription-based World

## Let's Chat About

**VCF**

**VVF**

**VVS**

**VVEP**



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

## Socket vs. Core?

## Perpetual vs. Subscription

## What about VDI?

## vSphere+ vs. New Model

# Infrastructure Cost-Containment in a Subscription-based World

**Let's Chat About**

**Ways to save \$\$\$  
on your next agreement**

**Infra Planning?**

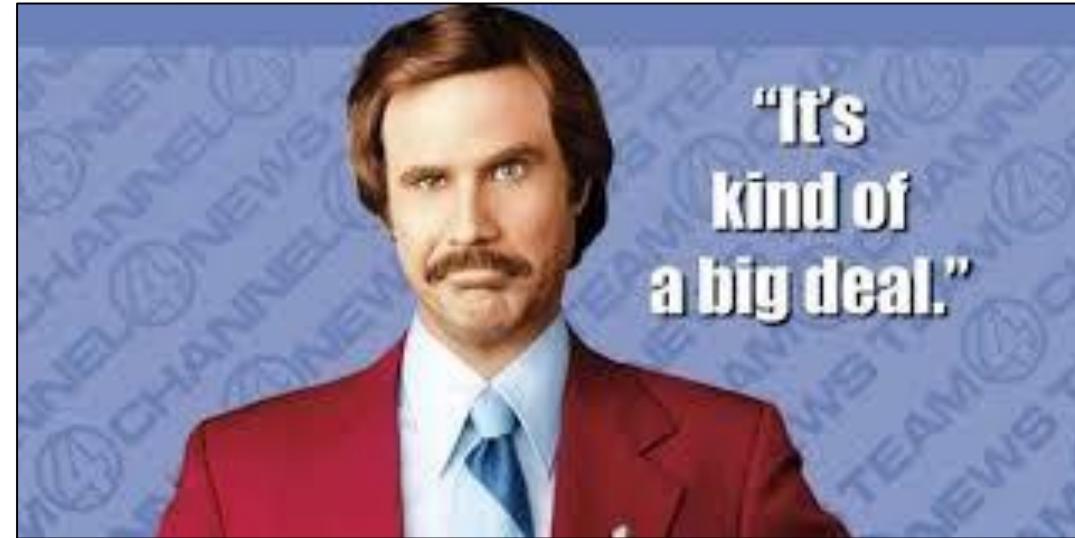
# Infrastructure Cost-Containment in a Subscription-based World

## **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.

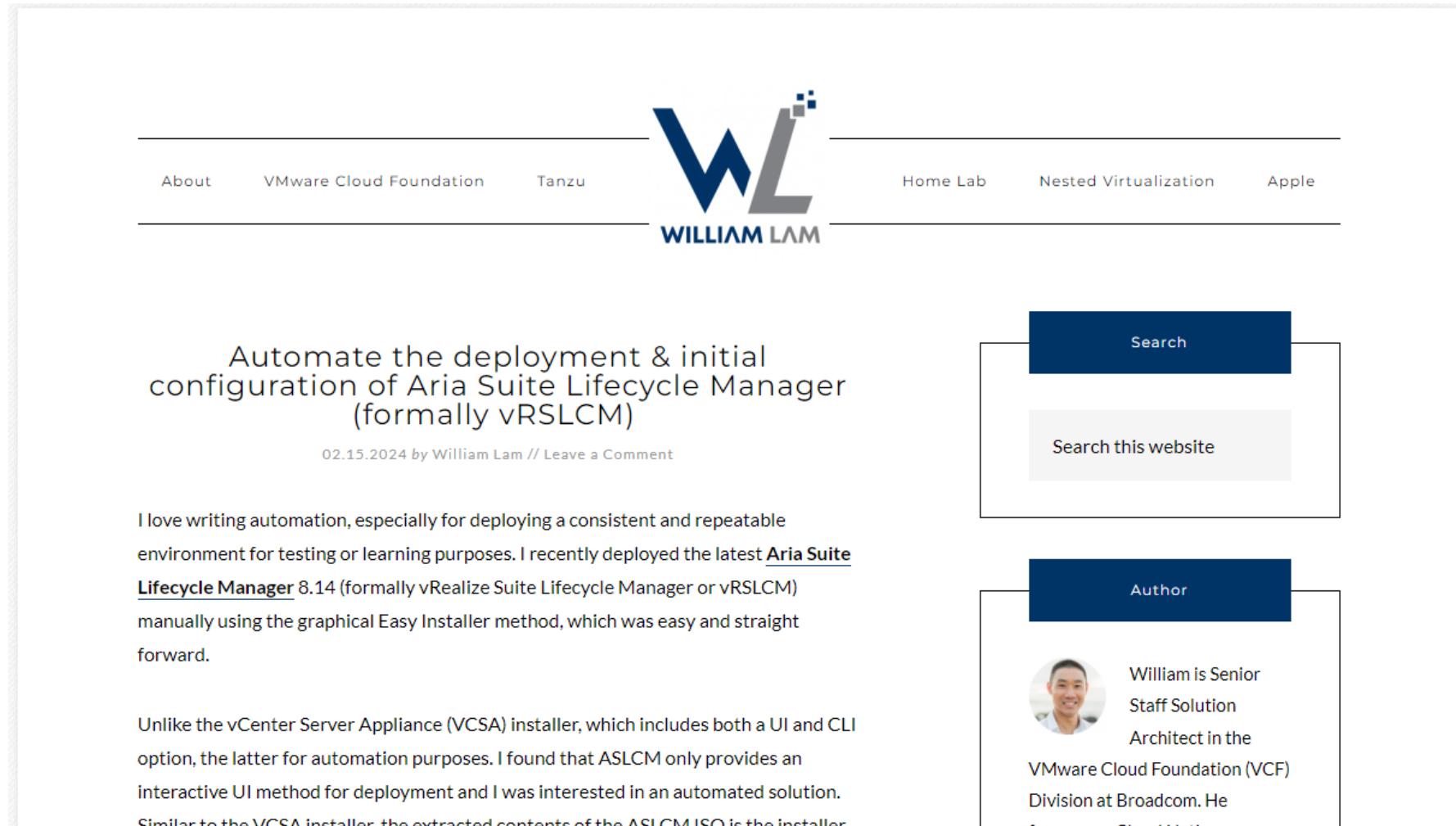
# Infrastructure Cost-Containment in a Subscription-based World

## VCF you say?



# Infrastructure Cost-Containment in a Subscription-based World

William Lam is a fantastic resource – [www.williamlam.com](http://www.williamlam.com)



The screenshot shows a blog post on the William Lam website. The header features a stylized 'WL' logo and navigation links for About, VMware Cloud Foundation, Tanzu, Home Lab, Nested Virtualization, and Apple. The main content area displays a blog post titled "Automate the deployment & initial configuration of Aria Suite Lifecycle Manager (formally vRSLCM)" with a timestamp of 02.15.2024 and a comment link. Below the post is a paragraph about deploying Aria Suite Lifecycle Manager 8.14 using the graphical Easy Installer. Further down, another paragraph discusses the ASLCM installer, mentioning it only provides an interactive UI method. To the right, there is a search bar with a placeholder "Search this website" and a sidebar featuring a "Search" button and an "Author" section with a photo of William Lam and his bio.

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 VCSCA 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

# Infrastructure Cost-Containment in a Subscription-based World

# VCF

VMware Cloud Foundation

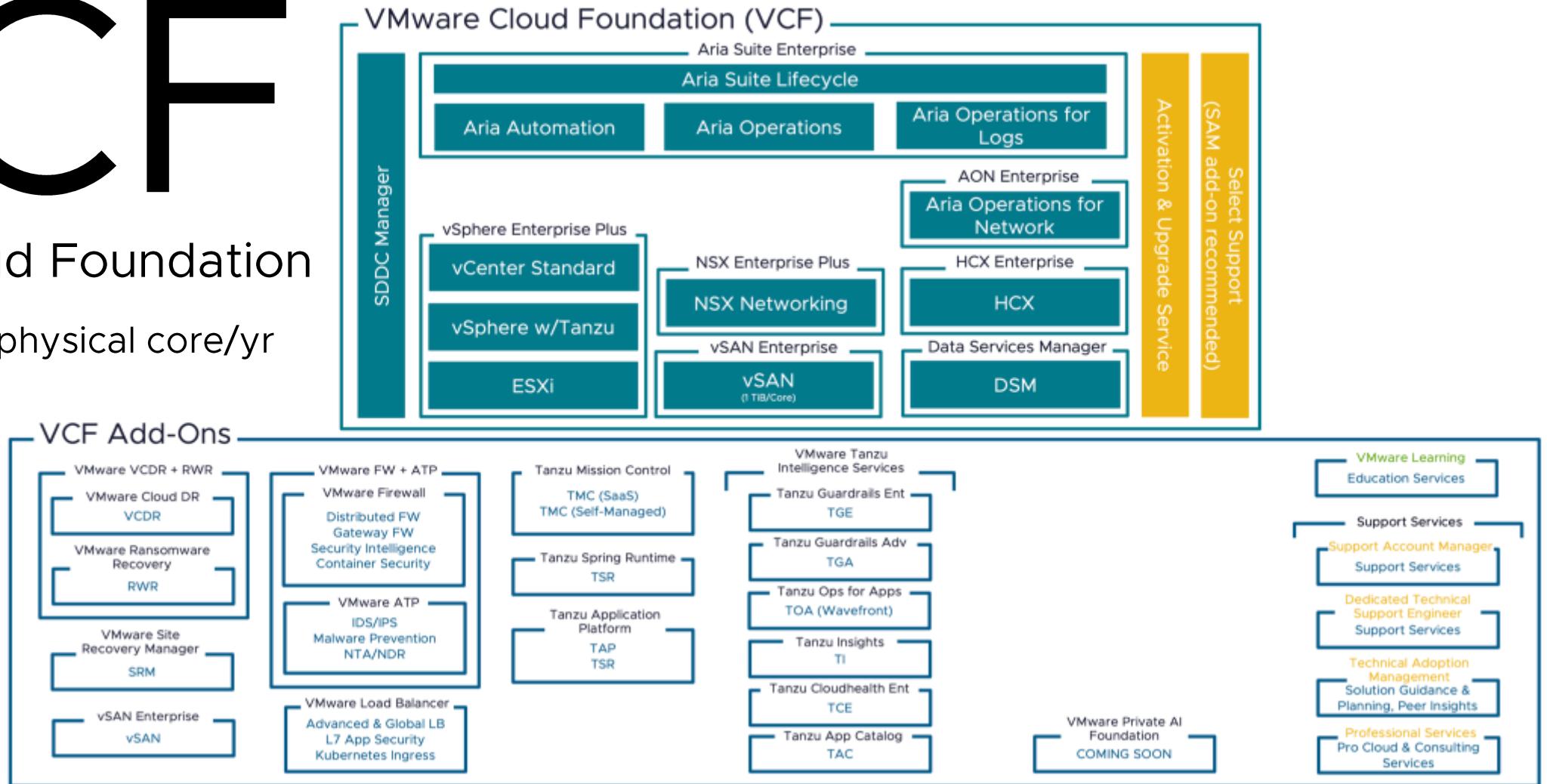
# Infrastructure Cost-Containment in a Subscription-based World

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

# VCF

## VMware Cloud Foundation

Retail - \$350/physical core/yr



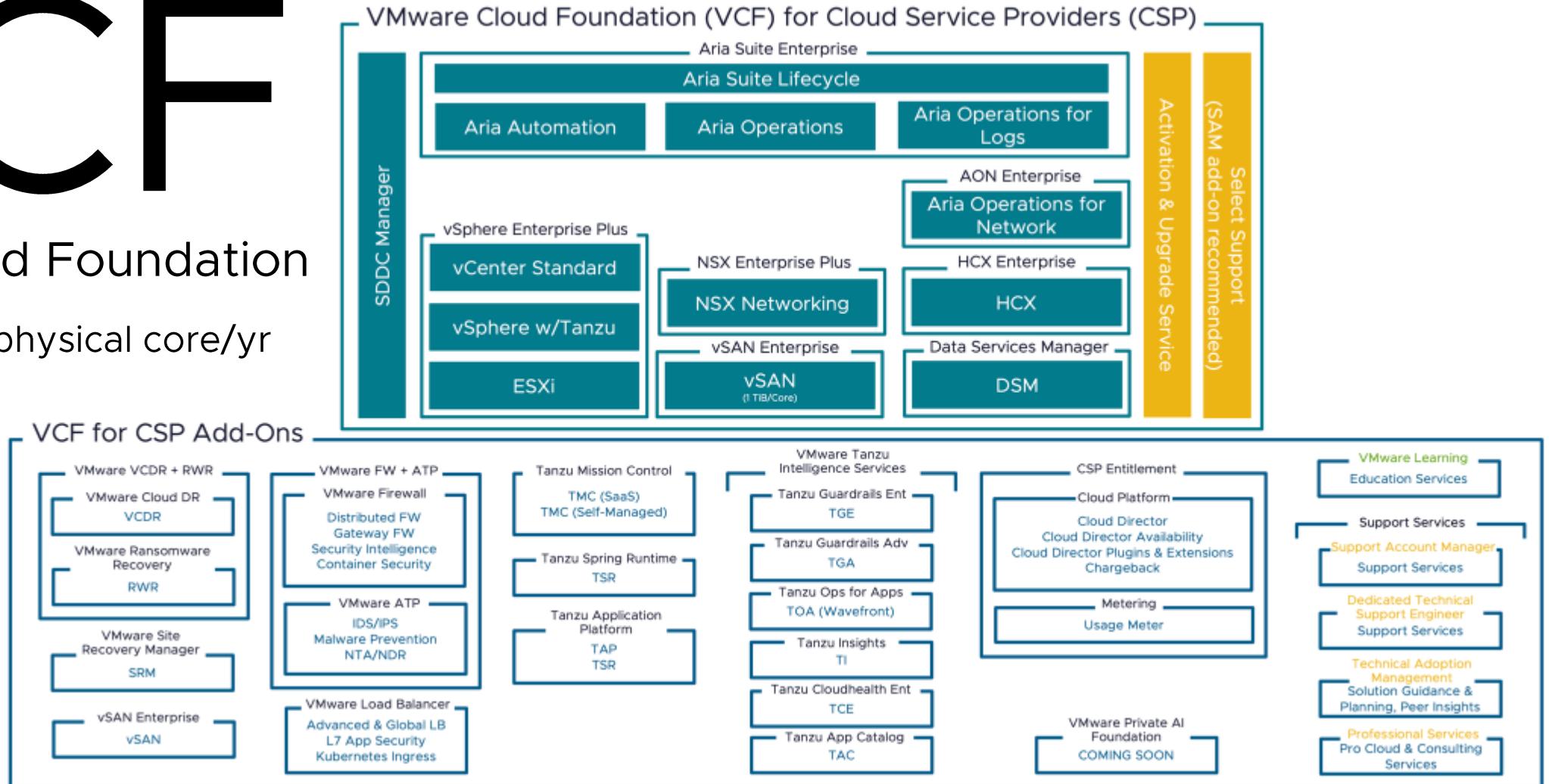
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# VCF

## VMware Cloud Foundation

Retail - \$350/physical core/yr



# Infrastructure Cost-Containment in a Subscription-based World

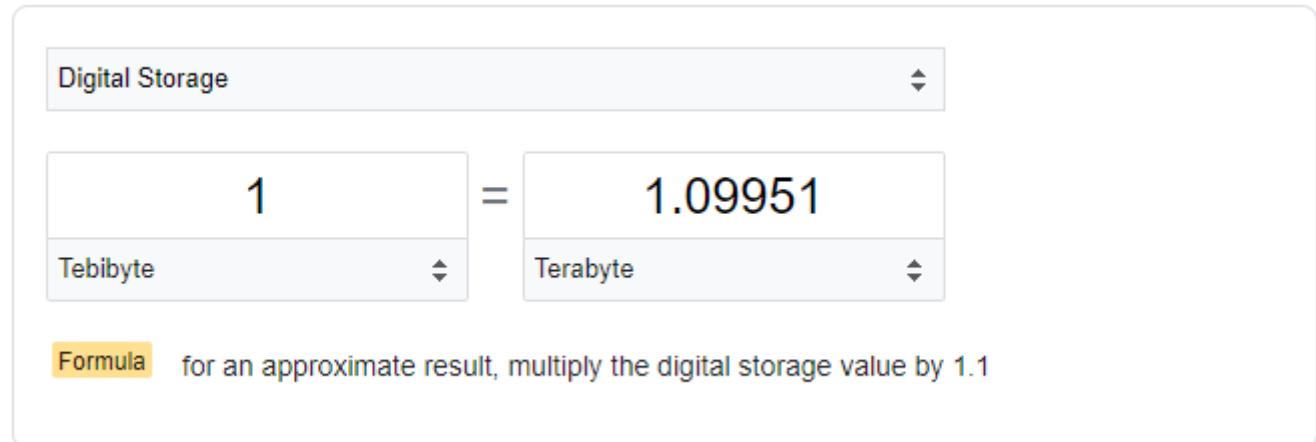
## Measuring VSAN Entitlements

Important stuff to know

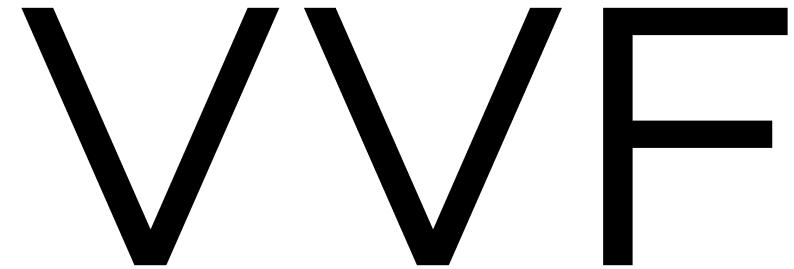
**TiB not TB – Tebibytes not Terabytes**

**RAW not Usable**

1000 cores of VCF = 1099.51 TB



# Infrastructure Cost-Containment in a Subscription-based World



VMware vSphere Foundation

# Infrastructure Cost-Containment in a Subscription-based World

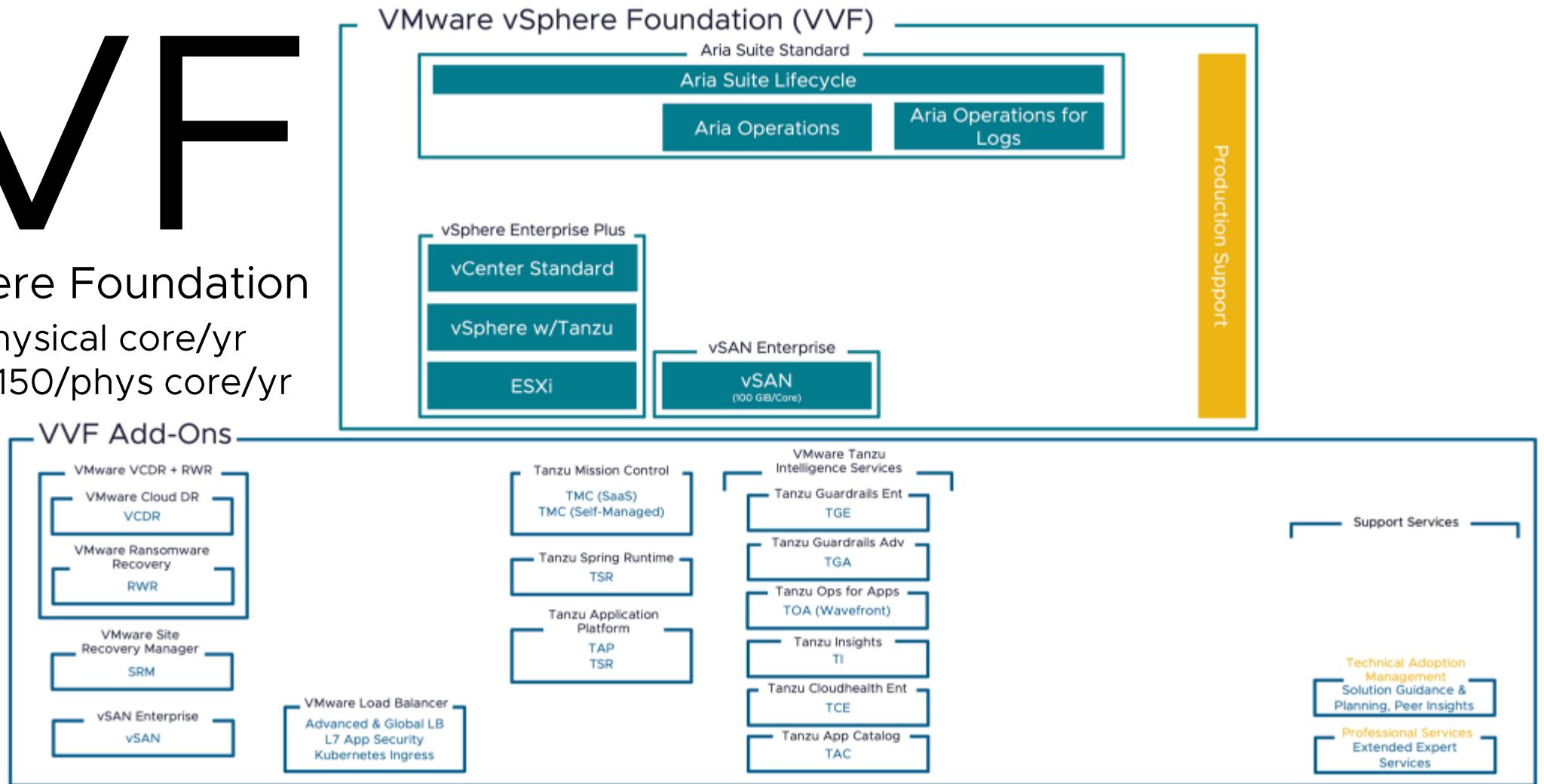
<https://williamlam.com/2024/01/whats-in-the-new-vmware-vsphere-foundation-vvf-and-vmware-cloud-foundation-vcf-offers.html>

# VVF

## VMware vSphere Foundation

Retail - \$190/physical core/yr

Retail (3 yr) - \$150/phys core/yr



# Infrastructure Cost-Containment in a Subscription-based World

## Measuring VSAN Entitlements

Important stuff to know

**GiB not GB – Gibibytes not Gigabytes**

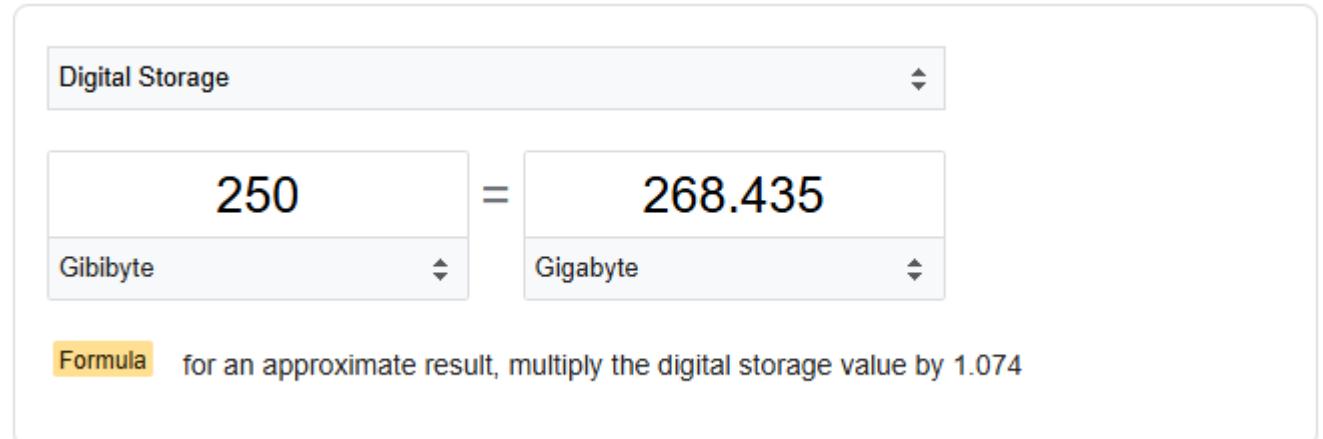
**RAW not Usable**

1000 cores of VVF = 268.435 TB

Digital Storage

250	=	268.435
Gibibyte		Gigabyte

Formula for an approximate result, multiply the digital storage value by 1.074



# Infrastructure Cost-Containment in a Subscription-based World

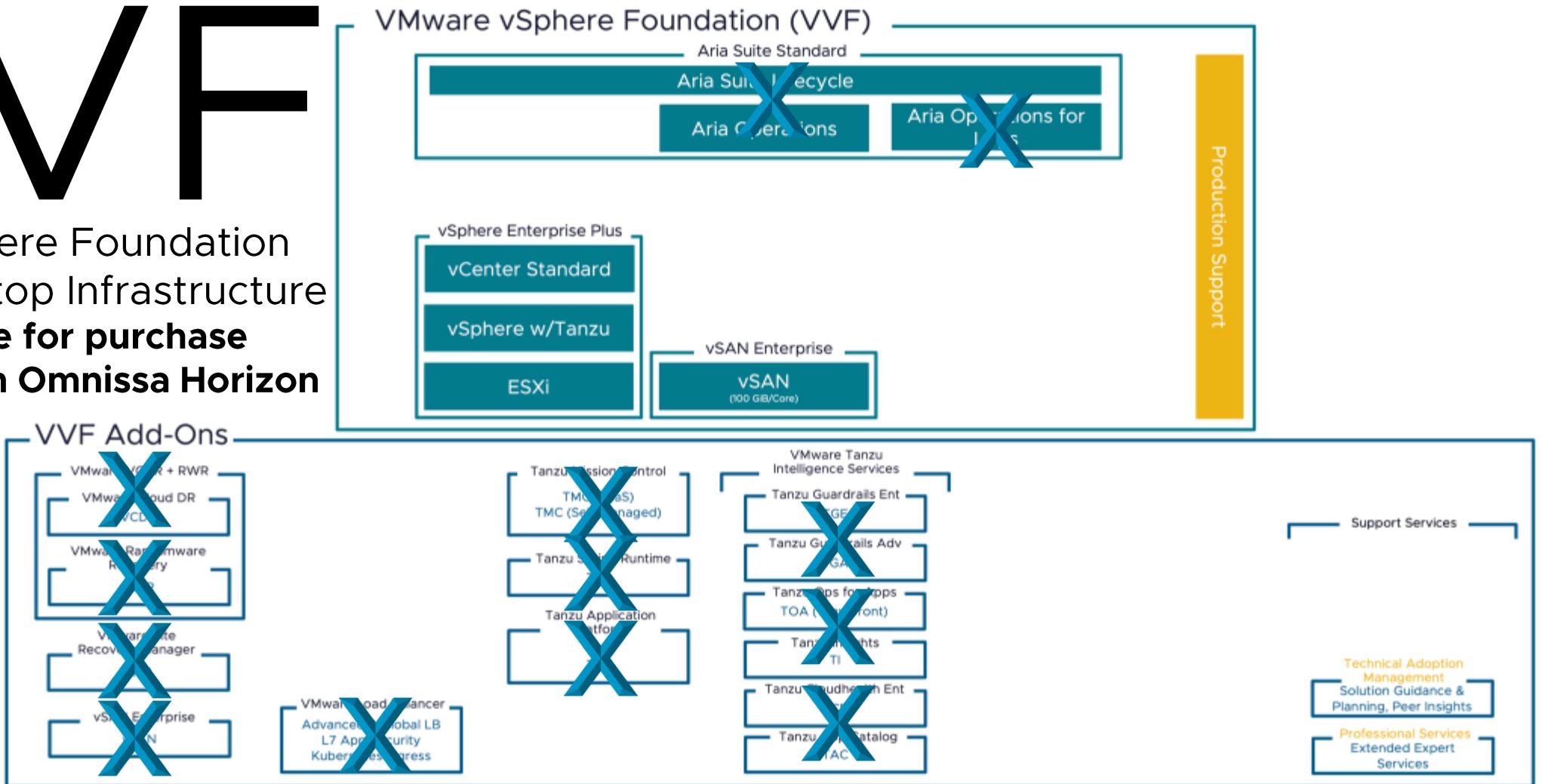
# VVF for VDI

VMware vSphere Foundation  
for Virtual Desktop Infrastructure

# Infrastructure Cost-Containment in a Subscription-based World

# VVF

VMware vSphere Foundation  
for Virtual Desktop Infrastructure  
**\*not available for purchase**  
**\*only for use with Omnissa Horizon**



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

# Infrastructure Cost-Containment in a Subscription-based World

## 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.**

Infrastructure Cost-Containment in a Subscription-based World

# VCF for VDI

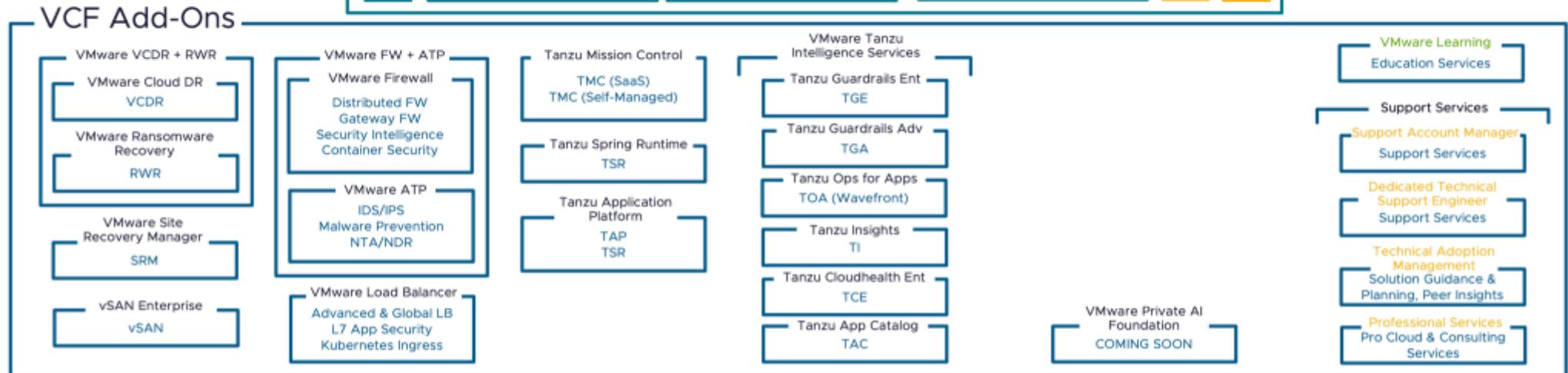
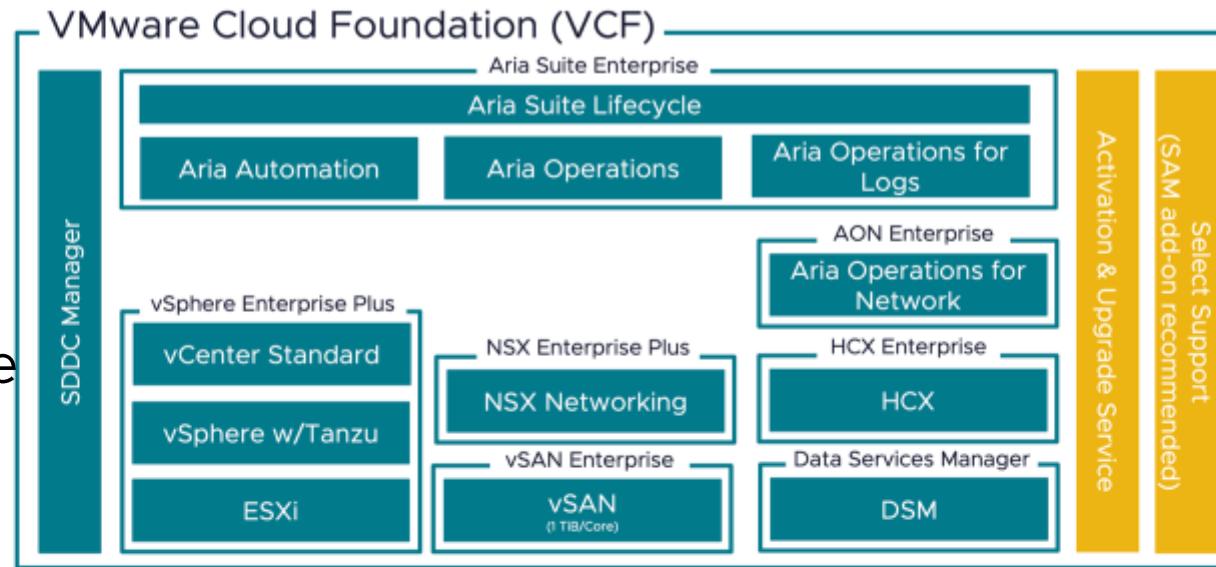
VMware Cloud Foundation  
for Virtual Desktop Infrastructure

# Infrastructure Cost-Containment in a Subscription-based World

# VCF

VMware Cloud Foundation  
for Virtual Desktop Infrastructure

Est. Retail - \$225/physical core/yr  
**\*unofficial/subject to change**



# Infrastructure Cost-Containment in a Subscription-based World

# VCF

VMware Cloud Foundation  
for Virtual Desktop Infrastructure

Est. Retail - \$225/physical core/yr  
**\*unofficial/subject to change**

Available to anyone including  
Citrix Virtual Desktops and Apps on  
(CVAD) customers running  
standalone vSphere.

Entitles Omnissa Horizon and CVAD customers running vSphere,  
VSAN (1 TiB per core RAW entitlement), NSX, and the Aria Suite.

# Infrastructure Cost-Containment in a Subscription-based World

VVS

VMware vSphere Standard

# Infrastructure Cost-Containment in a Subscription-based World

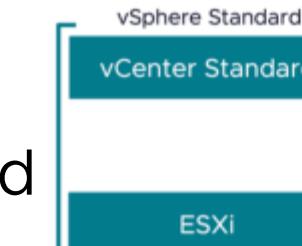
Allows for multiple  
vCenter Instances

# VVS

VMware vSphere Standard  
Retail - \$50/physical core/yr

VVS Add-Ons

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



# Broadcom Licensing Information – View From a Customer

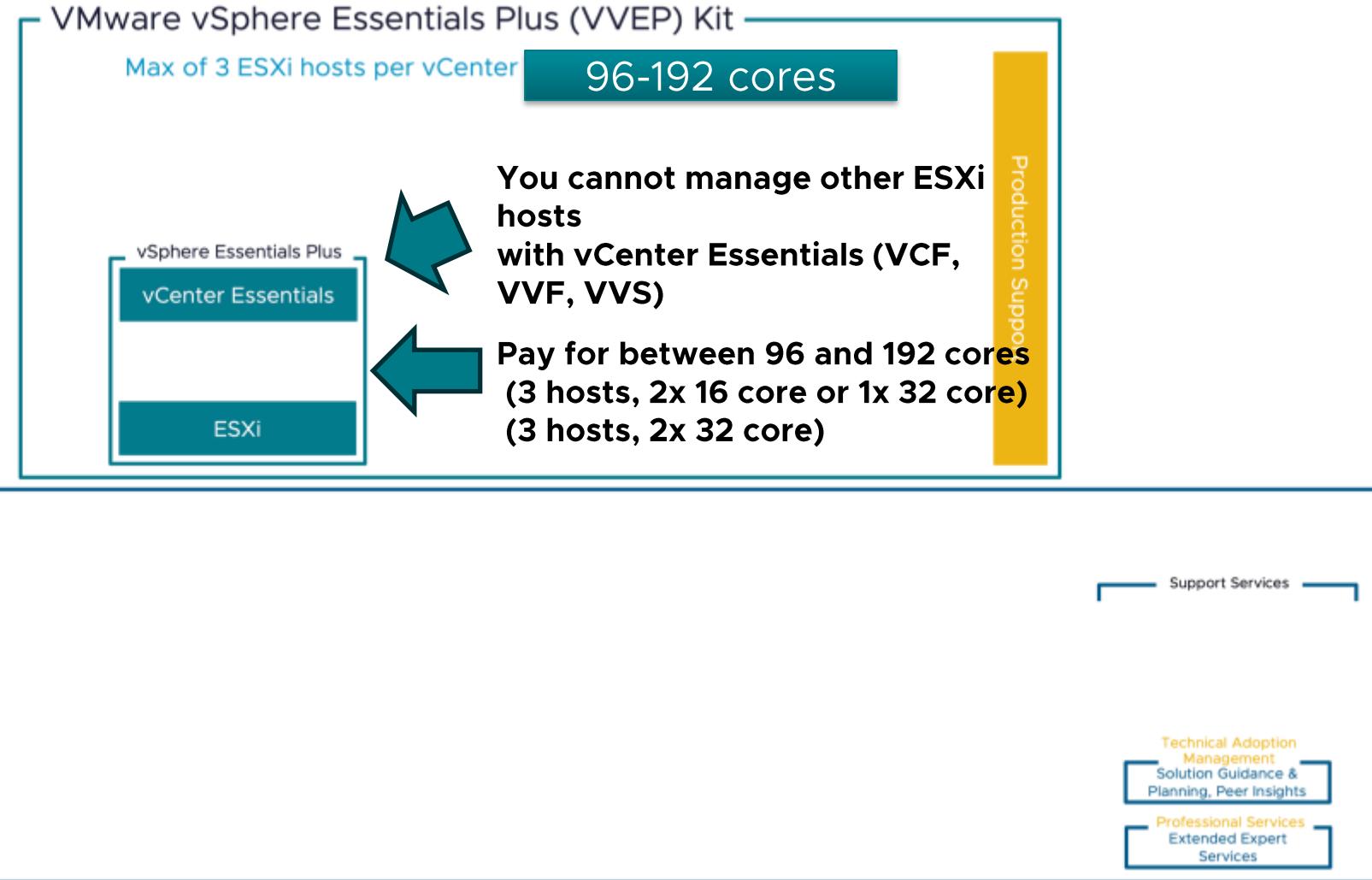
# VVEP

VMware vSphere Essentials Plus

# Infrastructure Cost-Containment in a Subscription-based World

# VVEP

VMware vSphere Essentials Plus  
Retail - \$35/physical core/yr  
**End of Sale 11/11/2024**



# Broadcom Licensing Information – View From a Customer

Starting November 11<sup>th</sup> 2024

# VVEP

VMware vSphere Enterprise Plus

# Infrastructure Cost-Containment in a Subscription-based World

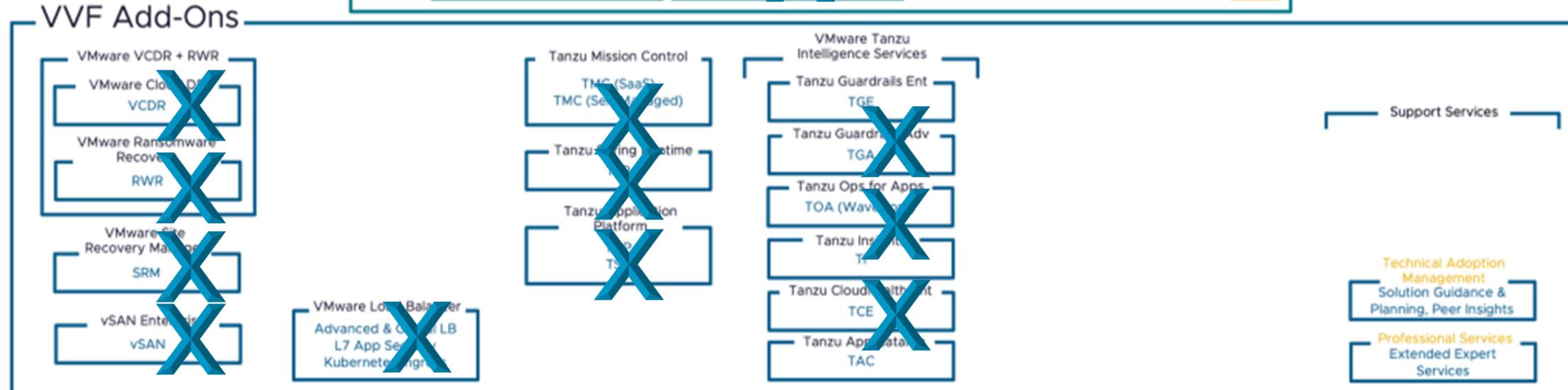
Broadcom's announcement regarding vSphere Enterprise Plus Subscription

<https://news.broadcom.com/cloud/bringing-more-value-and-options-to-the-vmware-cloud-foundation-portfolio>

# Infrastructure Cost-Containment in a Subscription-based World

# VVEP

VMware vSphere  
Enterprise Plus  
Retail - \$150/core/year  
Retail 3yr - \$120/core/year



# Infrastructure Cost-Containment in a Subscription-based World

- **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.
- \*NEW\* VCF Edge allows edge deployments with as few as 2 nodes  
<https://www.vmware.com/docs/vmware-cloud-foundation-edge-datasheet> - min. 8 cores per CPU instead of 16 - \$225/core/year

# Infrastructure Cost-Containment in a Subscription-based World

- 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.

# Infrastructure Cost-Containment in a Subscription-based World

## 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

# Infrastructure Cost-Containment in a Subscription-based World

## 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.

# Infrastructure Cost-Containment in a Subscription-based World

## **Impacts to VMUG Advantage and EvalExperience**

VMUG and Broadcom will continue our partnership. The method subscribers will be entitled to software will be changing.

VMUG Advantage Subscribers will receive 50% off a certification exam.

Subscribers who attain the VMware Certified Professional in VMware Cloud Foundation (VCP-VCF Admin) or VMware Certified Professional in VMware Cloud Foundation (VCAP-VCF) will receive a 3 year subscription to VMware Cloud Foundation for home use. Keys are estimated to be available starting March 1<sup>st</sup> 2025.

As of November 30<sup>th</sup>, EvalExperience keys are no longer available.

# Infrastructure Cost-Containment in a Subscription-based World

## **Impacts to VMUG Advantage and EvalExperience**

Product keys and software will be available as follows:

VCP-VVF certification

32 cores of vSphere Standard

VCP-VCF certification

32 cores of vSphere Standard

VCP-VCF certification +  
VMUG Advantage

64 cores of VMware Cloud Foundation

Certification exam = \$250

**Cert exam after VMUG Advantage Discount = \$125**

VMUG Advantage Cost = \$210 (use keyword COMMUNITY for 10% off)

# Infrastructure Cost-Containment in a Subscription-based World

## VMware VCP Certifications – More Information



VCP-VVF Administrator



VCP-VCF Administrator



VCP-VCF Architect

# Infrastructure Cost-Containment in a Subscription-based World

## **Perpetual vs. Subscription**

**What is the difference?**

**(Comparisons using \$USD)**

# Infrastructure Cost-Containment in a Subscription-based World

## 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

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

12.5% increase

### Subscription Example (static customer)

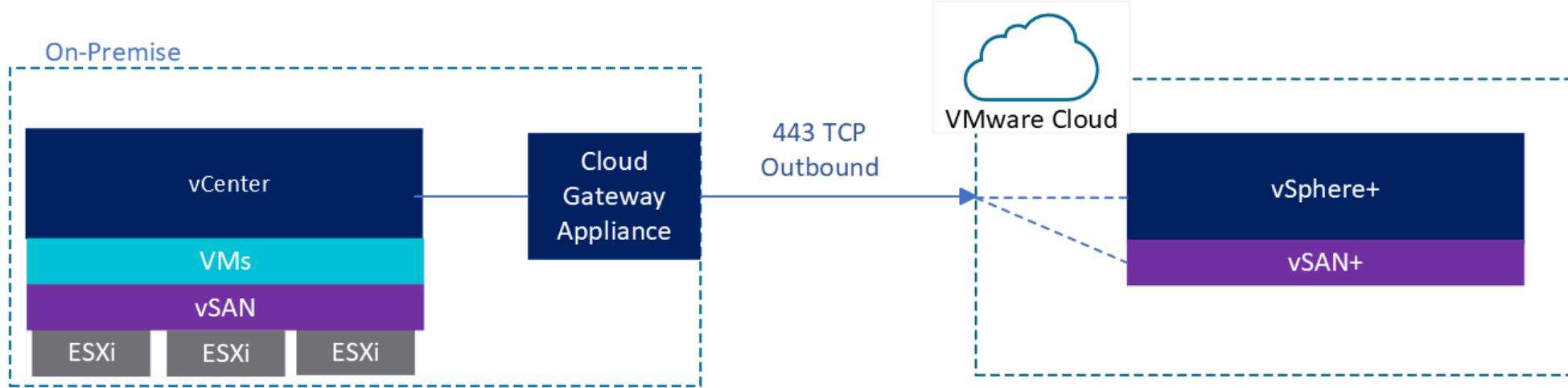
\$6,000 – Year 1 subscription cost  
\$6,000 – Year 2 subscription cost  
\$6,000 – Year 3 subscription cost  
TOTAL for 3 years - \$18,000

### 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

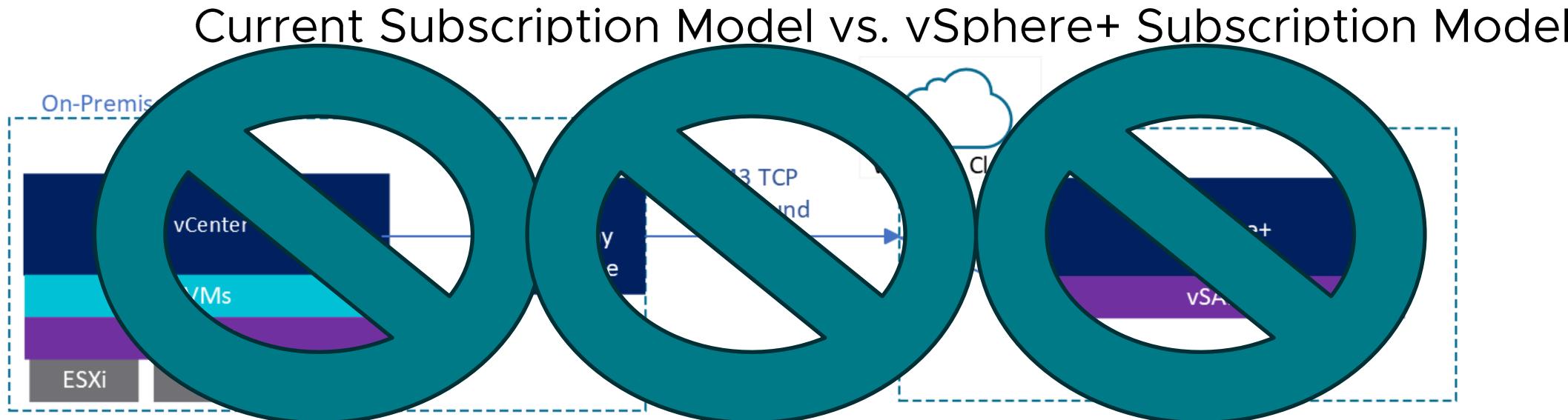
# Infrastructure Cost-Containment in a Subscription-based World

## 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.

# Infrastructure Cost-Containment in a Subscription-based World



- 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

# Infrastructure Cost-Containment in a Subscription-based World

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)

# Infrastructure Cost-Containment in a Subscription-based World

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

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3	<b>Existing Infrastructure Details</b>																								
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# Infrastructure Cost-Containment in a Subscription-based World

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

<https://williamlam.com/2024/02/updated-inventory-calculator-scripts-for-counting-cores-tibs-for-vmware-cloud-foundation-vcf-and-vmware-vsphere-foundation-vvf.html>

```
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
```

# Infrastructure Cost-Containment in a Subscription-based World

## 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.

# Infrastructure Cost-Containment in a Subscription-based World

## **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, VVEP or VVS until the solution licenses expire.**

Once the VSAN solution licenses expire, VSAN entitlement will need to follow VCF or VVF rules.

# Infrastructure Cost-Containment in a Subscription-based World

## 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

# Infrastructure Cost-Containment in a Subscription-based World

# Questions?

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your survey.

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