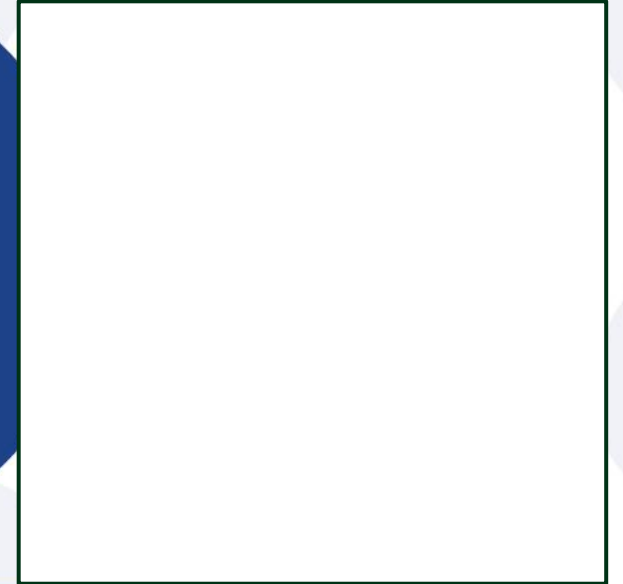**VMUG**
usercon

Welcome to the Minneapolis UserCon!

Scan QR Code for download
Link to the presentation

VMUG
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Infrastructure Cost Containment
...in a subscription-based world

Reach out!

Matt Heldstab
Systems Engineer – Minnesota State Colleges and Universities
Current VMUG Vice President
Contact: mheldstab@vmug.com -- @mattheldstab on TwiX

Broadcom Licensing Information – View From a Customer

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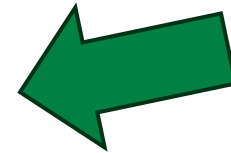# Broadcom Licensing Information – View From a Customer

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

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

- 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

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

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

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

VCF

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Broadcom Licensing Information – View From a Customer

VVF

VMware vSphere Foundation

Broadcom Licensing Information – View From a Customer

VVF

VMware vSphere Foundation

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VVF

VMware vSphere Foundation

VMware vSphere Foundation (VVF)

Aria Suite Standard

Aria Suite Lifecycle

Aria Operations | Aria Operations for Logs

Production Support

vSphere Enterprise Plus

vCenter Standard

vSphere w/Tanzu

ESXi

vSAN Enterprise

vSAN (100 GiB/Core)

Most vSAN customers Will need to purchase the 1TiB add-on to license their cluster.

VVF Add-Ons

VMware VCDR + RWR
VMware Cloud DR — VCDR
VMware Ransomware Recovery — RWR

VMware Site Recovery Manager — SRM

vSAN Enterprise — vSAN

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

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

VVS

VMware vSphere Standard

Broadcom Licensing Information – View From a Customer

VVS

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Broadcom Licensing Information – View From a Customer

Allows for multiple vCenter Instances

VVS

VMware vSphere Standard

VMware vSphere Standard (VVS)

vSphere Standard
- vCenter Standard
- ESXi

Production Support

VVS Add-Ons

VMware VCDR + RWR
- VMware Cloud DR
  - VCDR
- VMware Ransomware Recovery
  - RWR

VMware Site Recovery Manager
- SRM

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Broadcom Licensing Information – View From a Customer

Allows for multiple vCenter Instances

VVS

VMware vSphere Standard

VMware vSphere Standard (VVS)

vSphere Standard

- vCenter Standard
- ESXi

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

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MINNESOTA STATE

Broadcom Licensing Information – View From a Customer

Allows for multiple vCenter Instances

VVS

VMware vSphere Standard

VMware vSphere Standard (VVS)

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- TPM 2.0 and Virtual TPM
- Enhanced vMotion Compatibility (EVC)
- vCenter Native Backup
- vSphere Replication

vSphere Standard

vCenter Standard

ESXi

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
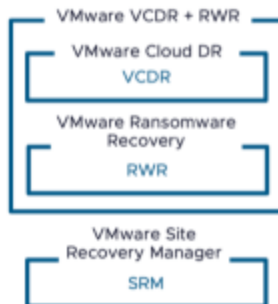
VMware VCDR + RWR

VMware Cloud DR
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MINNESOTA STATE

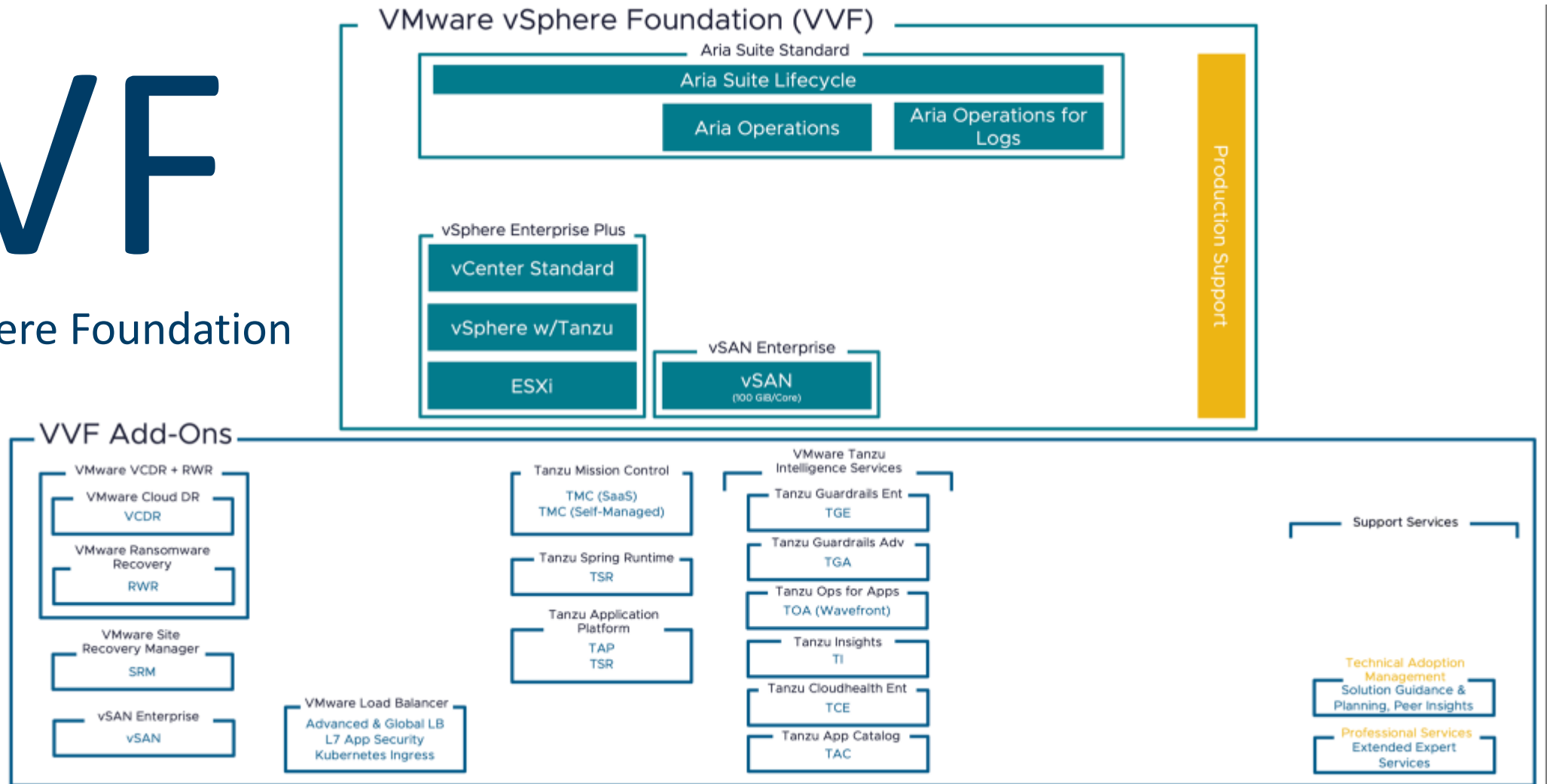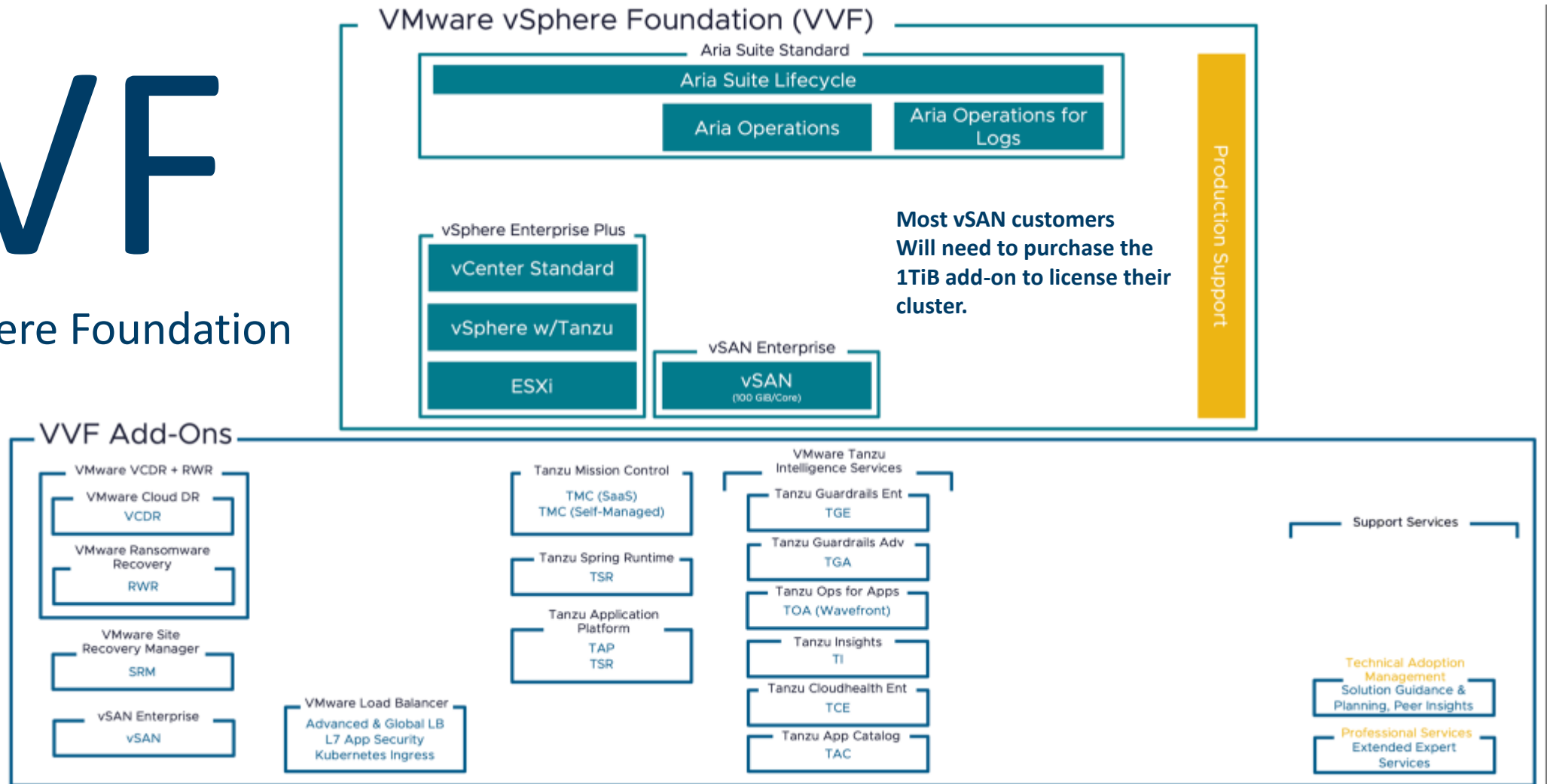# Broadcom Licensing Information – View From a Customer

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
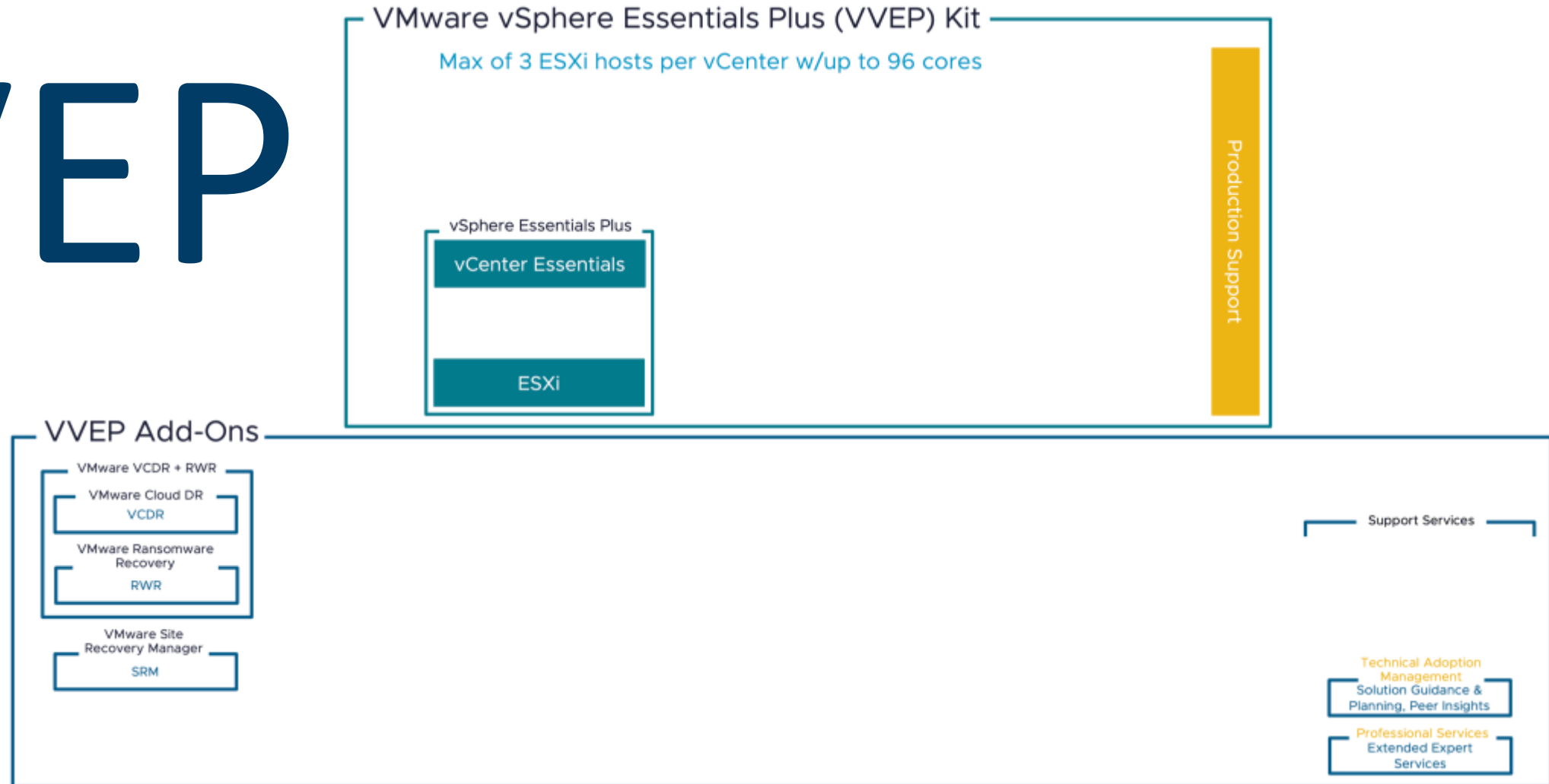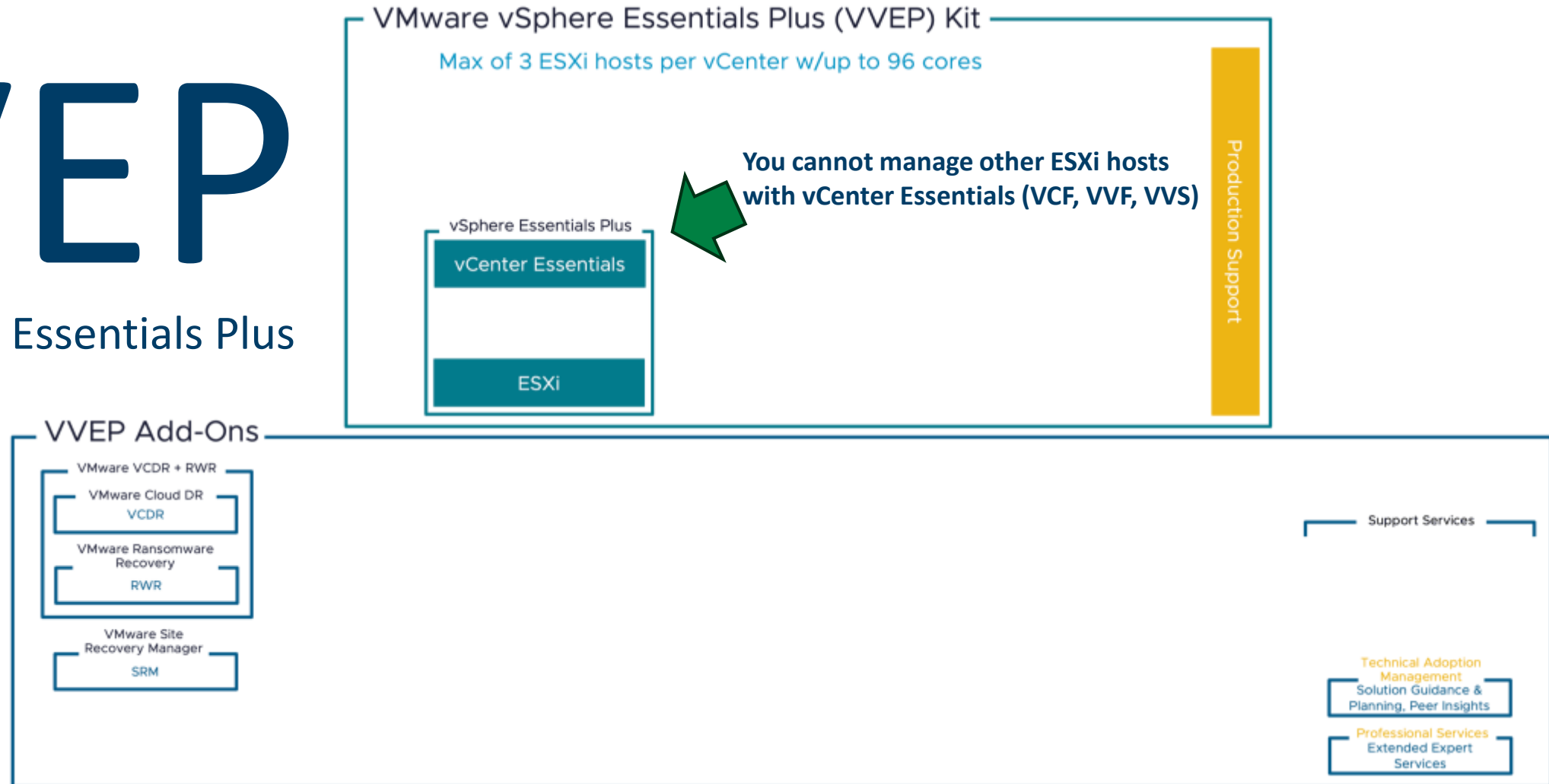
VVEP

VMware vSphere Essentials Plus (VVEP) Kit

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

vSphere Essentials Plus

vCenter Essentials

ESXi

Production Support

VVEP Add-Ons

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VMware Cloud DR
VCDR

VMware Ransomware Recovery
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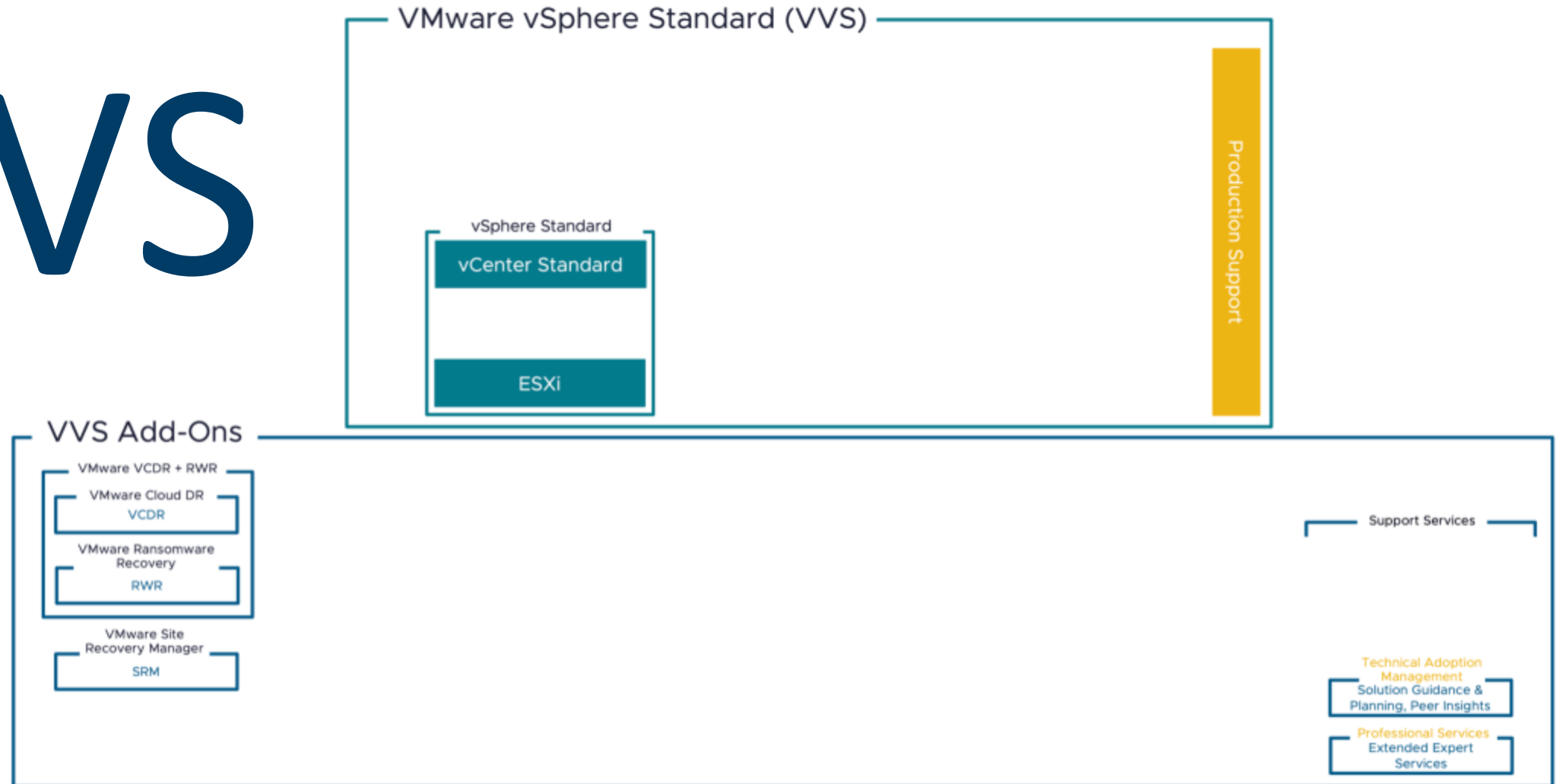
VVEP

VMware vSphere Essentials Plus

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

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

vSphere Essentials Plus
- vCenter Essentials
- ESXi

Production Support

VVEP Add-Ons

VMware VCDR + RWR
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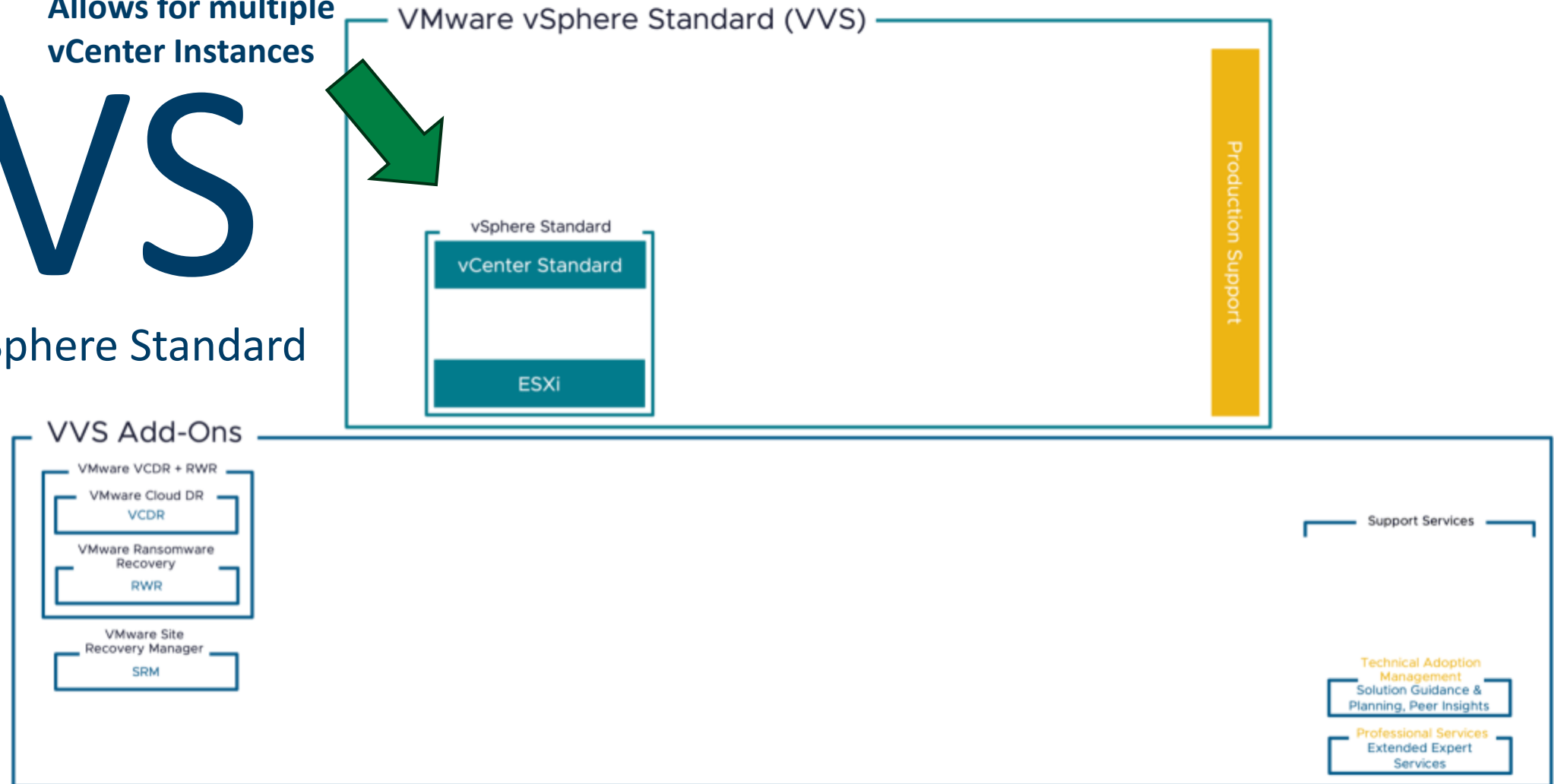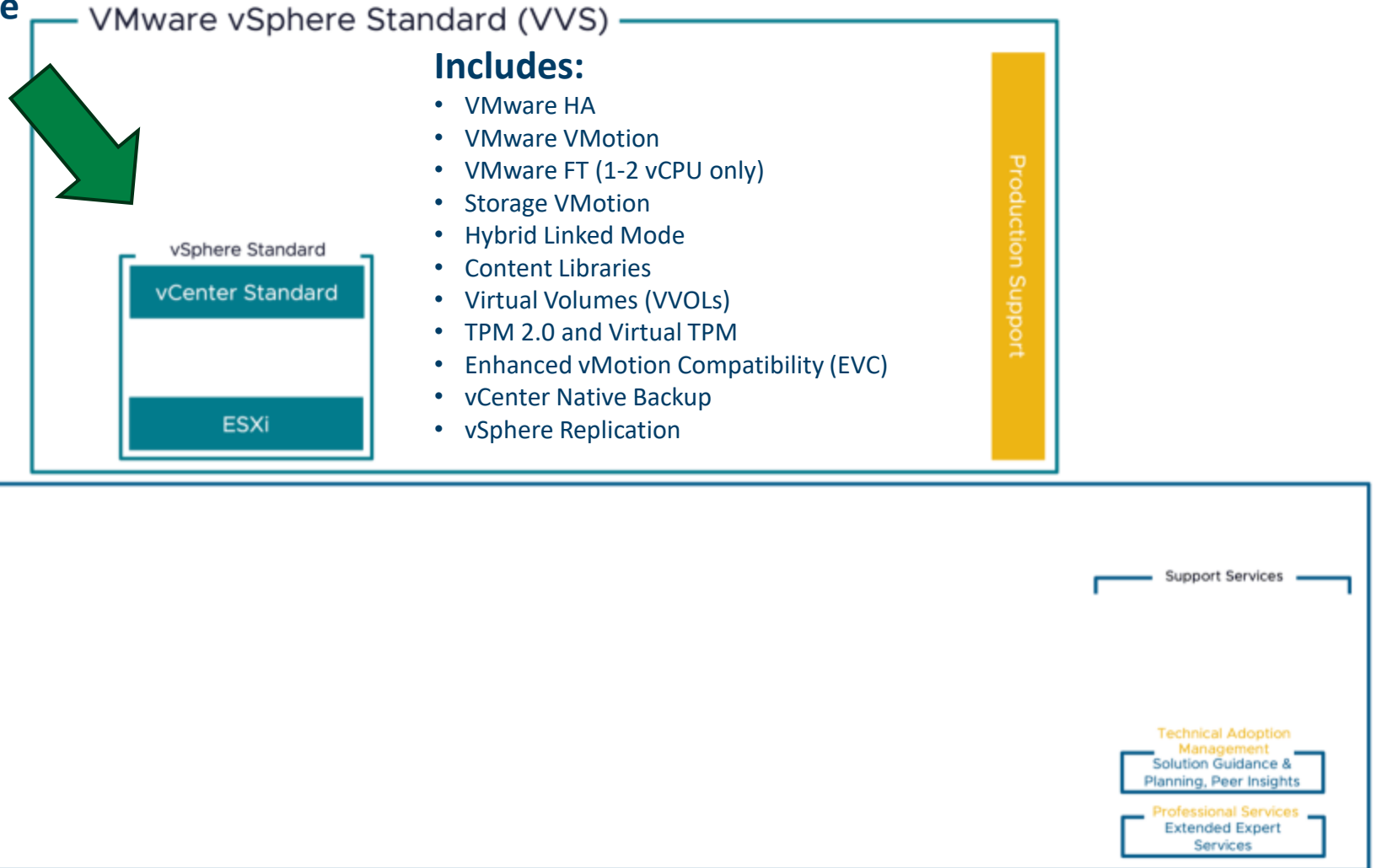
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Broadcom Licensing Information – View From a Customer

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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)

vSphere Essentials Plus

vCenter Essentials

ESXi

Production Support

VVEP Add-Ons

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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

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 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

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300% increase

Broadcom Licensing Information – View From a Customer

Perpetual vs. Subscription

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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
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Broadcom Licensing Information – View From a Customer

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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%

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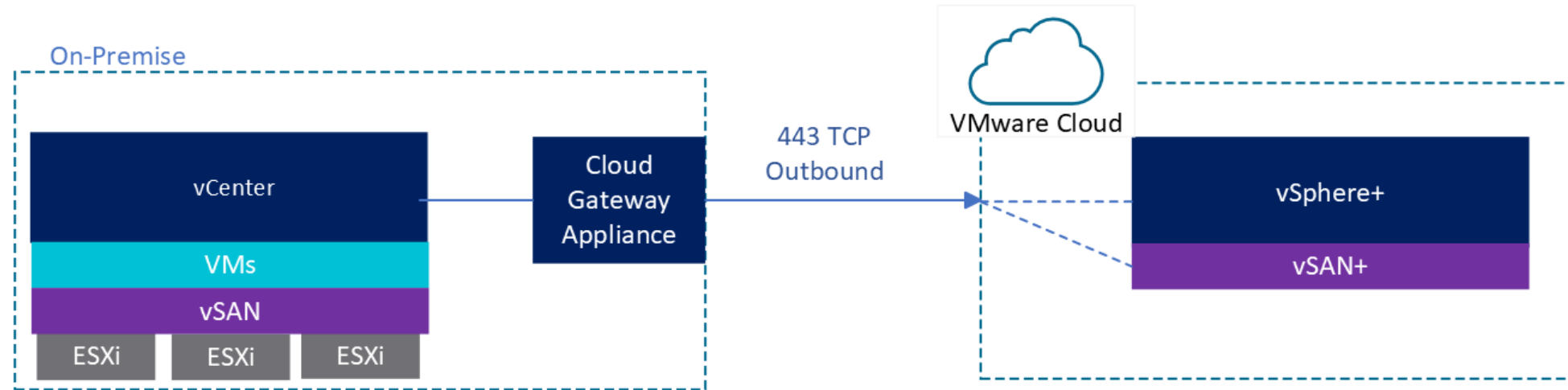$2,000 – Year 3 maintenance
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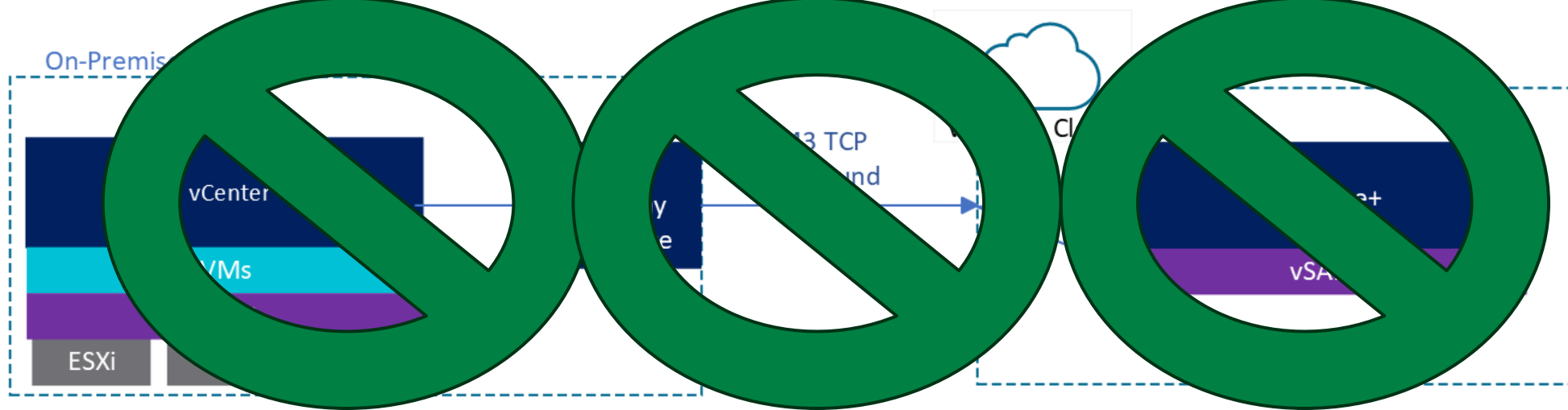
Current Subscription Model vs. vSphere+ Subscription Model

- 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?

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

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

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.

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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

VMUG
usercon

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
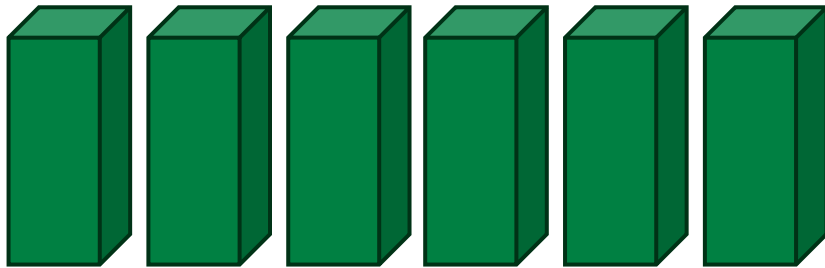
Current Capacity = 100% * 6 hosts – Score of 600
Remove a CPU and Host = 50% * 5 hosts – Score of 250

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

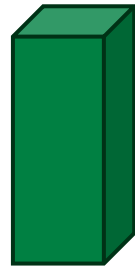# Broadcom Licensing Information – View From a Customer

Use PowerCLI for Maintenance Operations
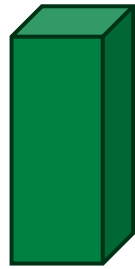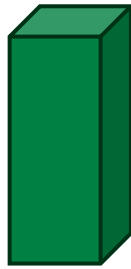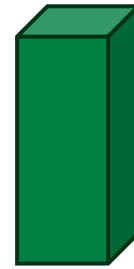
1. Move 1/5th of all VM's on Host 1 to Hosts 2-6 – Patch and reboot
2. Move all VM's from Host 2 to Host 1 – Patch and reboot
3. Move all VM's from Host 3 to Host 2 – Patch and reboot
4. Move all VM's from Host 4 to Host 3 – Patch and reboot
5. Move all VM's from Host 5 to Host 4 – Patch and reboot
6. 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

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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

Link to my presentation
on my GitHub

Questions?   If not, please:

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