

VSICM8 Notes & Errata

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Version	Date	Author(s)	Description of Change
01	June 01, 2023	Fabrizio de Luca	Initial Release

Module 2

2-14 - About the Software-Defined Data Center

MORE DETAILS → *VMware Aria* ← VMware Aria is the rebranding and reorganization of the former vRealize Suite, plus the addition of new services.

- To read the announcement blog article, see: <https://blogs.vmware.com/management/2022/08/introducing-vmware-aria.html>
- Get the list of products included at: <https://www.vmware.com/products/aria.html#products-included>
- Compare offerings at: <https://www.vmware.com/products/aria.html#compare-offerings>

2-15 - About vSphere+

MORE DETAILS ← vSphere+ lets you centrally manage your on-premises workloads from a cloud console, with access to cloud services.

- To read the announcement blog article, see: <https://blogs.vmware.com/vsphere/2022/06/announcing-vsphereplus-and-vsphereplus-to-deliver-benefits-of-cloud-to-on-premises-workloads.html>
- Review the list of features at: <https://www.vmware.com/products/vsphere/vsphere-plus.html#features>
- Compare editions at: <https://www.vmware.com/products/vsphere/vsphere-plus.html#compare-editions>

2-17 - vSphere User Interface

BOTCHED → *From the vSphere ESXi Shell, you can run ESXCLI commands. **You can use the ESXCLI command set lets you remotely manage ESXi hosts.** ESXCLI commands can be run against a vCenter system and target any ESXi system.* ← the author likely meant to say that:

You can run the ESXCLI command line in two ways:

- 1. Directly from a vSphere ESXi host shell, to manage that one and only host locally.**
- 2. From a remote system – Windows or Linux, after downloading and installing the utility from <https://code.vmware.com> – against (that is, through) a vCenter Server, targeting any ESXi host in its inventory.**

2-30 - Sharing GPUs with vSphere Bitfusion

MORE DETAILS ← find Bitfusion documentation at <https://docs.vmware.com/en/VMware-vSphere-Bitfusion/index.html>

Module 3

3-16 - Configuring PTP

MORE DETAILS → *For configuring **hardware timestamping**, select PCI passthrough as the network adapter type.* ← according to the VMware documentation portal:

`"For vSphere 7.0 U3, the supported network adapters are Intel X710 and E810".`

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vcenter-esxi-management/GUID-9FD3A5E3-6C2D-4161-9270-4BF57FADCE6D.html>]

Module 4

4-9 - vCenter Architecture

TYPO / MISTAKE OF SYNTAX → *vSphere Client, vCenter database, and managed hosts supports vCenter.* ← more likely a typo.

4-12 - About Enhanced Linked Mode

MORE DETAILS / TOO GENERIC → *For more information on **repointing vCenter instances**, see vCenter Server Installation and Setup at <https://docs.vmware.com/en/VMware-vSphere/index.html>* ← the direct link to the correct documentation pages is <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vcenter-installation/GUID-5809FB05-508B-492A-B9C8-9F292B01519D.html>

4-13 - ESXi and vCenter Communication

WRONG → *If you use VMware Host Client to communicate directly with an ESXi host, communications go directly to the hostd process and **the vCenter database is not updated*** ← **this is not true and can be easily verified, i.e., if you locally create a VM or configure the host settings, vCenter Server immediately sees your changes, hence the DB gets updated. Rather, there might be certain settings not available in the Host Client when ESXi is managed by a vCenter Server, i.e., you cannot set shares, reservations, and limits on VMs.**

[Source: personally tested on <https://labs.hol.vmware.com>]

4-48 - Adding a Data Center and Organizational Objects to vCenter

IMPROVABLE / INCOMPLETE DESCRIPTION → *You can add a data center, a host, a cluster, and folders to vCenter* ← Students shall understand there is a hierarchy in the objects they create: before they can add a Host or a Cluster to the vCenter Server inventory, first they must create at least one Datacenter.

4-56 - About Roles

IMPROVABLE / INCOMPLETE DESCRIPTION → *vCenter provides a few system roles, which you cannot modify* ← the list of unmodifiable system roles provided in the slide notes is just a sample and is incomplete.

4-67 About Global Permissions

BOTCHED → **vCenter permissions, however, Global permissions** are effective only on objects in a particular vCenter instance ← the author likely meant to just say that: **vCenter permissions, however, are effective only on objects in a particular vCenter instance.**

Module 5

5-11 - Viewing Standard Switches

TYPO —> *The slide shows the standard switch, vSwitch0, on the **sa-esxi-01.vclass.local** ESXi host* <— actually, the host selected on the slide graphic is **sa-esxi-02.vclass.local**.

BOTCHED / NON-SENSE —> **For performance and security, you should remove the VM Network virtual machine port group** <— said that way, without any explanation or providing any context, this statement it just doesn't make any sense at all.

The **VM Network** port group shall be removed, in example:

1. Rather than keeping it empty and unused.
2. Rather than, in a production environment, keeping it using the native VLAN 0 together with all the other port groups you may crate.
3. Rather than keeping it with all the default settings.

Otherwise, a student could ask why VMware should create a default port group on each ESXi host deployment and then recommend customers to delete it for "performance and security" reasons!

5-14 - VMkernel Adapter Properties: Enabled Services

BOTCHED / MISLEADING —> *Management: **Activates the management traffic for the host and vCenter*** <— said that way, this sentence may suggest a newbie student that a Management vmkernel adapter is required for the vCenter Server appliance to properly work. Author should have provided a better detailed description, something like the following:

Management: Activates the management traffic for the host and allows it to communicate with the vCenter Server appliance managing it.

5-20 - About Networking Policies

MORE DETAILS —> *The networking security policy provides protection against MAC address impersonation and **unwanted port scanning*** <— according to the VMware documentation portal:

"Promiscuous Mode:

1. Reject. The VM network adapter receives only frames that are addressed to the virtual machine.
2. Accept. The virtual switch forwards all frames to the virtual machine in compliance with the active VLAN policy for the port to which the VM network adapter is connected.

Note: Promiscuous mode is insecure mode of operation. Firewalls, **port scanners**, intrusion detection systems, must run in promiscuous mode".

[Ed. Note] This is the only place where – in the vSphere documentation – VMware mentions "**unwanted port scanning**".

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-networking/GUID-62914CF2-A6A8-4DCC-90A9-8CD4BBF50017.html?hWord=N4IppgHiBcIAoHsBOAXABAZwMYEMB2eAlngOYgC+QA>]

5-21 - Configuring Security Policies

MORE DETAILS ← a good and detailed article can be found in the online documentation at <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-security/GUID-3507432E-AFEA-4B6B-B404-17A020575358.html>

Module 6

6-10 - Storage Overview

WRONG → *Depending on the type of storage that you use, **datastores can be formatted with VMFS or NFS*** ← **you do not "FORMAT" a datastore using NFS!**

In an **NFS Datastore**, the **NFS protocol is used to access data** on a NAS (Network-Attached Storage) device – storage array, computer system, *et cetera* – **over the network**. On that device, a file system – Ext, Ext2, Ext3, Ext4, JFS, ReiserFS, XFS, btrfs, *et al.* – is used to format one or more local disks partitions where data is going to be stored.

As mentioned on one of the many definitions of NFS that can be found on the Internet:

`"Network File System (NFS) is a networking protocol for distributed file sharing. A file system defines the way data in the form of files is stored and retrieved from storage devices, such as hard disk drives, solid-state drives and tape drives. NFS is a network file sharing protocol that defines the way files are stored and retrieved from storage devices across networks".`

[Source: <https://www.techtarget.com/searchenterprisedesktop/definition/Network-File-System>]

6-13 - About vSphere Virtual Machine File System

WRONG → ***A virtual disk stored on a VMFS datastore always appears to the VM as a mounted SCSI device*** ← **virtual disks can be SCSI, SATA or NVMe devices.**

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vm-administration/GUID-5872D173-A076-42FE-8D0B-9DB0EB0E7362.html#GUID-5872D173-A076-42FE-8D0B-9DB0EB0E7362>]

6-18 - Physical Storage Considerations

DUPLICATE LINK ← link to the VMware documentation portal (<https://docs.vmware.com/en/VMware-vSphere/index.html>) is repeated twice in the slide notes.

6-32 - ESXi Network Configuration for Software iSCSI

BOTCHED → *To optimize your vSphere networking setup, you **separate iSCSI networks from NAS and NFS networks*** ← whilst it is very true that separating iSCSI from NFS networks provides security and performance benefits, "*separating iSCSI networks from **NAS and NFS networks***" is a complete non-sense as NAS devices use the NFS protocol to export storage resources to clients; hence, in the above acceptance used in this slide, **a NAS network IS a NFS network.**

Module 7

7-24 - About Virtual Machine Files

WRONG → *In addition to the current log file, `vmware.log`, **up to six archive log files are maintained at one time**. For example, `-1.log` to `-6.log` might exist at first.*

*The next time an archive log file is created, for example, when the VM is powered off and powered back on, the following actions occur: **The -6.log is deleted, the -5.log is recalled to -6.log, and so on**. Finally, the previous `vmware.log` is recalled to the `-1.log` ← according to the VMware documentation portal:*

`"The vmx.log.rotateSize parameter specifies the size at which the switch to a new log file for virtual machines. The default value of vmx.log.rotateSize is 2048000.`

`The vmx.log.keepOld parameter specifies how many older virtual machine log files to retain, ensuring acceptable log file coverage. The default value of vmx.log.keepOld is 10, a suitable number to properly log complex operations such as vMotion". See the documentation for details about how and where configuring the above parameters.`

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-monitoring-performance/GUID-F465D340-6556-49E8-B137-C0B4A060E83B.html>]

Additionally, the correct log file naming convention is: **`vmware-[0-9]+.log`**, meaning that archive log file names are not rotated as suggested in the slide notes, but the index number after "**`vmware-`**" – here represented by the REGEX **`[0-9]+`** that means "one or more digits" – will keep increasing each and every time a new log file is created.

WRONG / MISSING LINK → *For a complete list of all the types of VM files, see vSphere Virtual Machine Administration at **<https://docs.vmware.com/8.0/TBD>** ← the author forgot to update the link with the actual URL (**<https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vm-administration/GUID-CEFF6D89-8C19-4143-8C26-4B6D6734D2CB.html>**) and even there the list of the VM file type is not complete: in example, the **`vm.scoreboard`** file is not described.*

7-69 - Benefits of Content Libraries

MORE DETAILS → *[...] the content library keeps two copies of the VM template, the previous and current versions. You can roll back the template to reverse changes made to the template ← this refers to the **Check Out > Update > Check In, Discard, Revert** and **Delete** functionalities that enable users to manage **VM Templates in Content Library**.*

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vm-administration/GUID-E9EAF7AC-1C08-441A-AB80-0BAA1EAF9F0A.html#GUID-F7BF0E6B-7C4F-4E46-8BBF-76229AEA7220>]

7-70 - Content Library Types

MORE DETAILS → *No option to use previous versions of content is available* ← this statement, when compared to what described in slide 7-69 (see my previous note) may appear as conflicting, yet it refers to **OVF Templates in Content Library**, a different library item type. Hence, despite being poorly detailed and documented, and apparently conflicting, both slides statements are right. "Content libraries support two types of templates, the OVF Template type and the VM Template type".

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vm-administration/GUID-E9EAF7AC-1C08-441A-AB80-0BAA1EAF9F0A.html#GUID-F7BF0E6B-7C4F-4E46-8BBF-76229AEA7220>]

7-73 - Populating the Content Library with Templates

INCOMPLETE → *[VM Templates] Can be stored on any datastore type, **except NFS*** ← actually, as stated in the VMware documentation portal:

"**VM templates cannot be stored in a library that uses NFS or SMB storage**".

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vm-administration/GUID-E9EAF7AC-1C08-441A-AB80-0BAA1EAF9F0A.html#differences-between-vm-templates-and-ovf-templates-in-content-libraries-3>]

Module 8

8-26 - Virtual Machine EVC CPU Mode

WRONG → *In this diagram, **EVC mode is not configured on the cluster*** ← **the actual slide graphic show quite the opposite with a vSphere Cluster configured with an EVC baseline.**

8-27 - Enhanced vMotion Compatibility for vSGA GPU

MORE DETAILS ← vSGA stands for **Virtual Shared Graphics Acceleration**.

[Source: <https://blogs.vmware.com/performance/2020/01/vmware-vsqa-for-content-rich-vdi.html>]

8-47 - Performing a Cross vCenter vMotion in Different SSO Domain (1)

DUPLICATE / MISPLACED SLIDE NOTES → *In the Migrate wizard, you specify the FQDN or IP address of the target vCenter instance and the vCenter credentials. The other wizard options are similar to the option for changing both compute resource and storage: you select the compute resource, datastore, and VM network to use in the target vCenter instance* ← these slide notes refer to – and are a duplicate of – slide 8-48.

8-50 - VMkernel Networking Layer and TCP/IP Stacks

MORE DETAILS → *TCP/IP stacks at the VMkernel level that are configured by default* ← there are also the following additional two TCP/IP Stacks:

- **Mirror TCP/IP stack:** you can create a vmknic on mirror TCP/IP stack when you select mirror stack for ERSPAN. [Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-networking/GUID-D4191320-209E-4CB5-A709-C8741E713348.html>]
- **Ops TCP/IP stack:** to configure IPFIX on a vSphere Distributed Switch backed by **ESXi on DPU**, you must create vmknic on ops TCP/IP stack. Else, the flow information is not exported to collector. [Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-networking/GUID-55FCEC92-74B9-4E5F-ACC0-4EA1C36F397A.html>]

ESXi/vSphere on DPU (formerly Project Monterey): a Data Processing Unit (DPU) is a programable device with hardware acceleration available as a SmartNIC (PCIe Form Factor) that can be plugged in to a server and help with several functions. The SmartNIC has an ARM CPU as well as a Programable Accelerator with a high-speed interconnect between the two. The SmartNIC also has 2 ports (or more) ranging from 10Gb to 100Gb depending on the vendor, and a separate ethernet port for management. The SmartNIC has a local storage which allows for users to install software such as ESXi and/or NSX.

[Source: <https://core.vmware.com/blog/rise-dpus-infrastructure>]

[Source: <https://core.vmware.com/blog/vsphere-dpus-now-available-vsphere-8>]

8-60 - VM Snapshot File

WRONG / MISLEADING → *Disk descriptor file: -00000#.vmdk. This file is a small text file that **contains information about the snapshot** ← **nope, it is just a disk descriptor** and – like any other disk descriptor – provides details about the -delta.vmdk/-sesparse.vmdk disk geometry (heads, cylinders and sectors), its path on the datastore and other general virtual disk properties.*

DUPLICATE → *The snapshot state file has a .vmsn extension and is used to store the state of a VM when a snapshot is taken. A new .vmsn file is created for every snapshot that is created on a VM and is deleted when the snapshot is deleted. The size of this file varies, based on the options selected when the snapshot is created. For example, including the memory state of the VM in the snapshot increases the size of the .vmsn file ← this is just a duplicate of a similar description in a previous bullet list: the two paragraphs should be merged together.*

MULTIPLE DUPLICATES

→ *Memory state file: -.vmem. This file is created if the option to include memory state was selected during the creation of the snapshot. It contains the entire contents of the VMs at the time that the snapshot of the VM was taken.*

→ *Snapshot active memory file: -.vmem. This file contains the contents of the VM memory if the option to include memory is selected during the creation of the snapshot.*

→ *Other files might also exist, depending on the VM hardware version. For example, each snapshot of a VM that is powered on has an associated _.vmem file, which contains the guest operating system main memory, saved as part of the snapshot.*

8-65 - Deleting VM Snapshots (1)

BOTCHED / MISLEADING → *If you delete a snapshot one or more levels above the, You are here level, the snapshot state is deleted. In this example, the snap01 **data is committed** into the parent (base disk), and the foundation for snap02 is retained ← this first issue here is that it is not clear whether the “**Base Disk (5 GB)**” object depicted in the slide is just the virtual disk (-flat.vmdk) or the first snapshot in the hierarchy tree [Ed. Note: and the same will be true for the subsequent slides: 8-66, 8-67 and 8-68]. Based on the two possible interpretations, there will be different behaviors which shall be equally described to better understand the snapshot logic:*

1. **“Base Disk (5 GB)” is the VM virtual disk (-flat.vmdk):** if that’s the case, as it seems to be, then **the slide graphic represents a niche use case** where you are “*deleting a snapshot one or more levels above the **You are here level**”*, yet at the same moment in time the snapshot you are deleting – “**snap01 Delta (1 GB)**” – is also the first snapshot in the tree; that is, it’s the VM virtual disk child.
 - a. **The described behavior is correct, but please bear in mind: this is – once again – a niche use case and it can be applied whenever you delete the VM virtual disk first snapshot in the hierarchy tree:**

- i. The snapshot state (.vmsn/.vmem) is deleted.
 - ii. **The snapshot data (-delta/-sesparse.vmdk) is committed to the VM virtual disk (-flat.vmdk), permanently updating its contents.**
 - iii. The foundation – that is, the supporting state and data – for the subsequent snapshot is retained.
2. **“Base Disk (5 GB)” is actually the first snapshot in the hierarchy tree:** if that’s the case then **the slide graphic represents the most common use case** where you are still “*deleting a snapshot one or more levels above the, **You are here level***”, but that snapshot has yet another (or more) snapshot(s) above itself (i.e.: the “Base Disk” snapshot).
- a. **The described behavior in this case is wrong.** What actually happens is:
 - i. The snapshot state (.vmsn/.vmem) is deleted.
 - ii. **The snapshot data (-delta/-sesparse.vmdk) is “removed” – that is, made no more available – by consolidating it with the content of its child snapshot. Data will flow from the child snapshot disk into the “soon-to-be-removed” (parent) snapshot, therefore the remaining snapshot disk file name will be that of the former parent and its size will be equal to sum of parent + child. NOTE:** in this case, deleting a snapshot will not make you reclaim any storage space!
 - iii. The foundation – that is, the supporting state and data – for the subsequent snapshot is retained.

8-77 - VM Memory Overcommitment

BOTCHED → *VM memory **from this file** is swapped out to disk when host machine memory is overcommitted* ← from which file? No file is being mentioned here, yet. The highlighted text shall be deleted.

Module 9

9-6 - About vSphere Clusters

BOTCHED / OUT-OF-DATE —> *In this screenshot, **five clusters are shown**: SA-Compute-01, SA-Compute-02, SA-Management, **SB-Development, and SB-Management*** <— actually, **only three clusters are depicted in the slide graphic: SA-Compute-01, SA-Compute-02, and SA-Management**. The above-mentioned inventory was shown in the “VMware vSphere: Install, Configure, Manage [V7]” courseware related slide, but then – when upgrading contents to V8 – the screenshot has been updated, whilst the slide notes did not.

9-8 - About Cluster Quickstart

DISPUTABLE TERM —> *The Cluster Quickstart workflow guides you through the **deployment** process for clusters* <— IMHO, the term “deployment” is inaccurate: at this stage of the training, there is nothing – students may/shall be aware of (yet!) – that is getting deployed. Any ESXi host that has to join the vSphere cluster must have been already deployed and powered on. Hence, as Quickstart is more a configuration than a deployment tool, I would tend to prefer the term “**configuration**”.

DISPUTABLE TERM —> ***Deploying** vSphere Distributed Switches* <— same as above, the dvSwitches vmkernel module is already installed in the ESXi hosts (as part of the base image VIBs – the vSphere **I**nstallation **B**undles), dvSwitches get simply configured here.

9-17 - vSphere Cluster Services VMs

MORE DETAILS <— more details about vSphere Cluster Services VMs can be found at:

- <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-resource-management/GUID-96BD6016-4BE7-4B1C-8269-568D1555B08C.html>
- <https://blogs.vmware.com/vsphere/2020/09/vsphere-7-update-1-vsphere-clustering-service-vcls.html>
- <https://kb.vmware.com/s/article/80472>

9-23 - About the VM DRS Score

MORE DETAILS <— for more details on the DRS Score see the following VMware Blog article:

- <https://blogs.vmware.com/vsphere/2020/03/vsphere-7-improved-drs.html>

9-24 - VM DRS Score List

MORE DETAILS <— for more details on the DRS Score algorithm and metrics see the following VMware Blog article:

- <https://blogs.vmware.com/vsphere/2020/05/vsphere-7-a-closer-look-at-the-vm-drs-score.html>

9-33 - vSphere DRS Settings: DRS Group

WRONG —> *For ease of administration, **virtual machines can be placed in VM or host group*** <— **virtual machines can only be added to VM Groups.**

9-36 - VM-Host Affinity Required Rule

DUPLICATE STATEMENT —> *You can enforce this rule when the software running in your VMs has licensing restrictions* <— this is just a duplicate of the previous sentence in the slide notes.

9-50 - vSphere HA Scenario: Datastore Accessibility Failure

DISPUTABLE TERM —> *Power off and restart VMs - Conservative restart policy: vSphere HA does not attempt to **restart** the affected VMs unless vSphere HA determines that another host can restart the VMs* <— for clarity sake, I would replace "restart" with "**power off**".

9-73 - vSphere HA Settings: Failures and Response

DISPUTABLE TERM —> *Power off and restart VMs - Conservative restart policy: vSphere HA does not attempt to **restart** the affected VMs unless vSphere HA determines that another host can restart the VMs* <— for clarity sake, I would replace "restart" with "**power off**".

9-84 - vSphere HA Settings: Performance Degradation VMs Tolerate

WRONG —> ***The Performance degradation VMs tolerate threshold is not available unless vSphere DRS is configured*** <— **this is simply not true.**

9-91 - vSphere Fault Tolerance Checkpointing

TYPO —> *Changes on the primary VM are **note** processed on the secondary VM* <— **not.**

Module 10

10-9 - Updating and Patching vCenter

WRONG → *The Type column tells you if the release item is an update, an **upgrade**, or a patch*
← **upgrades will not be listed here.**

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-vcenter-upgrade/GUID-3E7C2187-42A4-4DD4-9EC8-80D8B0077F82.html>]

10-16 - About Images

WRONG → **ESXi base image: An update that provides software fixes and enhancements** ← as explained in the slide notes: **"The ESXi base image is a complete ESXi installation package and is enough to start an ESXi host"**.

MORE DETAILS → *Requires the Hardware Support Manager plug-in for the desired server family*
← according to the VMware documentation portal: "Each hardware vendor provides and manages a separate hardware support manager that integrates with vSphere".
For more details and a list of Vendors offering a Hardware Support Manager check these links:

- <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-lifecycle-manager/GUID-34AF5B19-FC80-4915-8358-D5FCC8A8E69E.html>
- <https://www.vmware.com/resources/compatibility/search.php?deviceCategory=hsm>

10-19 - Specifying the Download Source

MORE DETAILS → *CIM modules* ← Common Information Model (CIM) is an open standard that defines how managed elements in an IT environment are represented as a common set of objects and relationships between them. The DMTF maintains the CIM to allow consistent management of these managed elements, independent of their manufacturer or provider.

[Source: [https://en.wikipedia.org/wiki/Common_Information_Model_\(computing\)](https://en.wikipedia.org/wiki/Common_Information_Model_(computing))]

10-45 - Keeping VM Hardware Up To Date

MORE DETAILS → *vSGX* ← according to the VMware documentation portal: "vSphere enables you to configure Virtual Intel® Software Guard Extensions (vSGX) for virtual machines. [...] Intel SGX is a processor-specific technology for application developers who seek to protect select code and data from disclosure or modification. Intel SGX allows user-level code to define private regions of memory, called enclaves. The enclave contents are protected such that code running outside the enclave cannot access the enclave contents".

[Source: <https://docs.vmware.com/en/VMware-vSphere/8.0/vsphere-security/GUID-C81950B5-CD0A-40CA-9945-1104A92F4455.html>]