

VMware Cloud Foundation 4.1 on Dell EMC VxRail Release Notes

VMware Cloud Foundation 4.1

You can find the most up-to-date technical documentation on the VMware website at:

<https://docs.vmware.com/>

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What's New

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The VMware Cloud Foundation (VCF) 4.1 on Dell EMC VxRail release has been determined to be impacted by CVE-2020-4006. Fixes and Workarounds are available to address this vulnerability. For more information, see [VMSA-2020-0027](#).

VMware Response to Apache Log4j Remote Code Execution Vulnerability: VMware Cloud Foundation is impacted by CVE-2021-44228, and CVE-2021-45046 as described in [VMSA-2021-0028](#). To remediate these issues, see [Workaround instructions to address CVE-2021-44228 & CVE-2021-45046 in VMware Cloud Foundation \(KB 87095\)](#).

The VMware Cloud Foundation (VCF) 4.1 on Dell EMC VxRail release includes the following:

- **Remote Clusters:** Extends VMware Cloud Foundation capabilities to the ROBO and Edge sites with VMware Cloud Foundation Remote Clusters. Now customers can enjoy the same consistent cloud operations in their core data center and edge/ ROBO sites.
- **Read-only Access and Local Accounts:** Administrators can create VIEWER users that have read-only access to VMware Cloud Foundation. They can also create a local account for use in break-glass scenarios where a remote identity provider is unreachable.
- **ESXi Parallel Upgrades:** Enables you to update the ESXi software on multiple clusters in the management domain or a workload domain in parallel. Parallel upgrades reduce the overall time required to upgrade your environment.
- **NSX-T Data Center Parallel Upgrades:** Enables you to upgrade all Edge clusters in parallel, and then all host clusters in parallel. Parallel upgrades reduce the overall time required to upgrade your environment.
- **vRealize Suite Lifecycle Manager in VMware Cloud Foundation mode:** VMware Cloud Foundation 4.1 introduces an improved integration with vRealize Suite Lifecycle Manager. When vRealize Suite Lifecycle Manager in VMware Cloud Foundation mode is enabled, the behavior of vRealize Suite Lifecycle Manager is aligned with the VMware Cloud Foundation architecture.
- **vSphere Cluster Services (vCLS) Support:** vCLS is a new capability introduced in the vSphere 7 Update 1 release. vCLS ensures that if vCenter Server becomes unavailable, cluster services remain available to maintain the resources and health of the workloads that run in the clusters.

- **Support for Renaming VMware Cloud Foundation Objects:** You can rename workload domains and compute clusters after you have deployed them. This allows the flexibility of naming these Cloud Foundation objects to align with company policies.
- **VMware Skyline Support for VMware Cloud Foundation:** VMware Skyline brings proactive intelligence to VMware Cloud Foundation by identifying management and workload domains, and proactively surfacing VMware Cloud Foundation solution findings.
- **Remove Host workflow is fully automated from SDDC Manager:** The manual step of removing the host using VxRail Manager Plugin for VMware vCenter is no longer required.
- **Backup Enhancements:** SDDC Manager backup and recovery workflows and APIs have been improved to add new capabilities including, backup management, backup scheduling, retention policy, on-demand backup, and automatic retries on failure. The enhancements also include Public APIs for 3rd party ecosystem and certified backup solutions from Dell PowerProtect and Cohesity.
- **Support for XLarge form factor for Edge nodes:** You can now use SDDC Manager to create an edge cluster with the XLarge form factor for edge nodes in the Management and VI workload domains.
- **Localization:** SDDC Manager includes localization support for the following languages - German, Japanese, Chinese, French and Spanish. Customers can navigate the SDDC Manager UI in those languages.
- **Inclusive terminology:** As part of a [company-wide effort](#) to remove instances of non-inclusive language in our products, the VMware Cloud Foundation team has made changes to some of the terms used in the product UI and documentation.
- **New License for vSphere with Tanzu:** vSphere with Tanzu has its own license key, separate from vSphere 7.0. This is a subscription-based license with a term limit.
- **Start up and shut down order guidance:** [Start up and shut down order guidance](#) for VMware Cloud Foundation is now available, enabling you to gracefully shut down and start up the SDDC components in a prescriptive order.
- **Voluntary Product Accessibility Template (VPAT) report:** The VPAT evaluates compliance with accessibility guidelines as put forward by the US government (under Section 508) and the EU government (under EN 301 549). See <https://www.vmware.com/help/accessibility.html>.
- **BOM Updates:** Updated Bill of Materials with new product versions.

VMware Cloud Foundation over Dell EMC VxRail Bill of Materials (BOM)

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The VMware Cloud Foundation software product is comprised of the following software Bill-of-Materials (BOM). The components in the BOM are interoperable and compatible.

Software Component	Version	Date	Build Number
Cloud Builder VM	4.1	06 OCT 2020	16961769
SDDC Manager	4.1	06 OCT 2020	16961769
VxRail Manager	7.0.100	30 OCT 2020	n/a
VMware vCenter Server Appliance	7.0 Update 1	06 OCT 2020	16860138
VMware NSX-T Data Center	3.0.2	17 SEP 2020	16887200
VMware vRealize Suite Lifecycle Manager	8.1 Patch 1	25 AUG 2020	16776528
Workspace ONE Access	3.3.2	14 APR 2020	15951611
vRealize Automation	8.1 Patch 2	28 JUL 2020	16633378
vRealize Log Insight	8.1.1	28 MAY 2020	16281169
vRealize Log Insight Content Pack for NSX-T	3.9.0	n/a	n/a
vRealize Log Insight Content Pack for Linux	2.1	n/a	n/a
vRealize Log Insight Content Pack for Linux - Systemd	1.0	n/a	n/a
vRealize Log Insight Content Pack for vRealize Suite Lifecycle Manager 8.0.1+	1.0	n/a	n/a
vRealize Log Insight Content Pack for VMware Identity Manager	2.0	n/a	n/a

Software Component	Version	Date	Build Number
vRealize Operations Manager	8.1.1	09 JUL 2020	16522874
vRealize Operations Management Pack for VMware Identity Manager	1.1	n/a	n/a

- VMware ESXi and VMware vSAN are part of the VxRail BOM.
- You can use vRealize Suite Lifecycle Manager to deploy vRealize Automation, vRealize Operations Manager, and vRealize Log Insight using the VMware Validated Design 6.1 documentation.
- vRealize Log Insight content packs are installed when you deploy vRealize Log Insight.
- The vRealize Operations Manager management pack is installed when you deploy vRealize Operations Manager.
- VMware Solution Exchange and the vRealize Log Insight in-product marketplace store only the latest versions of the content packs for vRealize Log Insight. The Bill of Materials table contains the latest versions of the packs that were available at the time VMware Cloud Foundation is released. When you deploy the Cloud Foundation components, it is possible that the version of a content pack within the in-product marketplace for vRealize Log Insight is newer than the one used for this release.

Documentation

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The following documentation is available:

- [VMware Cloud Foundation on Dell EMC VxRail Admin Guide](#)
- [VMware Cloud Foundation 4.1 Release Notes](#)
- [Support Matrix of VMware Cloud Foundation on Dell EMC VxRail](#)

Limitations

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The following limitations apply to this release:

- vSphere Lifecycle Manager (vLCM) is not supported on VMware Cloud Foundation on Dell EMC VxRail.
- Customer-supplied vSphere Distributed Switch (vDS) is a new feature supported by VxRail Manager 7.0.010 that allows customers to create their own vDS and provide it as an input to be utilized by the clusters they build using VxRail Manager. VMware Cloud Foundation on Dell EMC VxRail does not support clusters that utilize a customer-supplied vDS.

Upgrade Information

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The VxRail Manager 7.0.010 release has upgrade and firmware related issues. When upgrading from a previous version of VMware Cloud Foundation and VxRail Manager, it is recommended to skip the 7.0.010 bundle.

If you are upgrading from any of the following environments, use skip-level upgrade to upgrade directly to VMware Cloud Foundation 4.1 and VxRail Manager 7.0.100:

- VMware Cloud Foundation 4.0 and VxRail Manager 7.0.000
- VMware Cloud Foundation 4.0.0.1 and VxRail Manager 7.0.000
- VMware Cloud Foundation 4.0.1 and VxRail Manager 7.0.000

If the VxRail Manager 7.0.010 bundle has already been downloaded to one of those environments, but not applied, perform the following steps:

- 1 In the SDDC Manager UI, disconnect from the MyVMware and Dell EMC depots.
- 2 SSH to the SDDC Manager VM.
- 3 Run the following command to remove the 7.0.010 bundle:

```
python /opt/vmware/vcf/lcm/lcm-app/bin/bundle_cleanup.py DL99643_VxRail-7.0.010-Composite-Upgrade-Package-for-7.0.x.zip
```

- 4 Perform the skip-level upgrade to VMware Cloud Foundation 4.1 and VxRail Manager 7.0.100.
- 5 Reconnect SDDC Manager to the MyVMware and Dell EMC depots.

If you do not want to perform skip-level upgrade, you can upgrade sequentially:

VMware Cloud Foundation 4.0 and VxRail Manager 7.0.000 → VMware Cloud Foundation 4.0.0.1 → VMware Cloud Foundation 4.0.1 → VMware Cloud Foundation 4.0.1.1 and VxRail Manager 7.0.010 → VMware Cloud Foundation 4.1 and VxRail Manager 7.0.100.

If there is a BIOS issue on the nodes after applying the VxRail 7.0.010 bundle, contact Dell EMC Support.

If you are upgrading from any of the following environments, use sequential upgrade to upgrade to VMware Cloud Foundation 4.1 and VxRail Manager 7.0.100:

- VMware Cloud Foundation 4.0.1.1 and VxRail Manager 7.0.010
- VMware Cloud Foundation 4.1 and VxRail Manager 7.0.010

VMware Cloud Foundation 4.1.0.1 on Dell EMC VxRail Release Information

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VMware Cloud Foundation 4.1.0.1 includes bug and security fixes.

You can upgrade to VMware Cloud Foundation 4.1.0.1 on Dell EMC VxRail from a 4.1 deployment. For upgrade information, refer to the *VMware Cloud Foundation on Dell EMC VxRail Administration Guide*.

VMware Cloud Foundation 4.1.0.1 on Dell EMC VxRail contains the following BOM updates:

Software Component	Version	Date	Build Number
SDDC Manager	4.1.0.1	24 NOV 2020	17206953
VxRail Manager	7.0.101	07 DEC 2020	n/a

SDDC Manager 4.1.0.1 addresses the following issue:

SDDC Manager 4.1.0.1 contains security fixes for Photon OS packages [PHSA-2020-3.0-0140](#) to [PHSA-2020-3.0-0162](#) published here: <https://github.com/vmware/photon/wiki/Security-Advisories-3>.

Note: VMware vSphere (ESXi) and VMware vSAN are part of the VxRail BOM. For more information, refer to Dell EMC VxRail documentation.

Resolved Issues

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The following issues have been resolved:

- Credential logging vulnerability as described in [VMSA-2022-0003](#). See [KB 87050](#) for more information.
- Validation fails when using the VMware Cloud Foundation API to commission an ESXi host with VMFS on FC storage.
- Importing a cluster fails with the error `System DVS cannot be null`
- Cloud Builder appliance platform audit issues
- Adding a VxRail cluster to a workload domain fails if the required NSX-T Data Center install bundle is not be available
- Adding a host to a cluster or stretching a cluster fails
- Gateway timeout 504 error displayed during VxRail bundle upload
- The Cloud Builder platform audit does not validate whether or not the vmnics you enter for the secondary vSphere Distributed Switch (vDS) are already in use
- vCenter Server version for the management domain does not match vCenter Server version for workload domains

Known Issues

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For VMware Cloud Foundation 4.1 known issues, see [VMware Cloud Foundation 4.1 Known Issues](#).

VMware Cloud Foundation 4.1 on Dell EMC VxRail known issues and limitations appear below:

- **Upgrading VxRail Manager to 7.0.010 fails with message** `VxRail component upgrade failed with error Auth Fail`

This failure is caused by the fact that the password of the user **mystic** is not migrated to the new VxRail Manager.

Workaround: Update the `mystic` password on VxRail Manager to match SDDC Manager.

- SSH to the SDDC Manager VM using the `vcf` user account.
- Enter the following command to retrieve the `mystic` password:

```
lookup_passwords
```

You will be required to enter the user name and the password for a user with the ADMIN role.

- SSH to the VxRail Manager using the **mystic** account and its default password.
- Enter the following command to reset the default mystic password to match the password retrieved from the SDDC Manager VM: `passwd mystic`
- Retry upgrading VxRail Manager.

- **Upgrading VxRail Manager to 7.0.010 fails with message** `VxRail component upgrade failed with error HostKey has been changed`

This failure is caused by the fact that the VxRail Manager SSH RSA key is not migrated to the new VxRail Manager.

Workaround: Update SDDC Manager's VxRail Manager SSH RSA key to match the SSH RSA key on the new VxRail Manager.

- Take a snapshot of the SDDC Manager VM from the vSphere Web Client.
- SSH to the SDDC Manager VM and run the following command to obtain the current VxRail Manager SSH RSA key:

```
ssh-keyscan -t rsa <vxmip>
```

Replace <vmxip> with the IP address of the new VxRail Manager.

- c Run the following command:

```
curl -X GET -H "Content-Type:application/json" http://127.0.0.1/appliancemanager/ssh/knownHosts -o /tmp/known_hosts.json
```

- d Edit the file /tmp/known_hosts.json to update the SSH RSA key for VxRail Manager to match the SSH RSA key from step 2.

- e Apply the update:

```
curl -X POST -H "Content-Type:application/json" -d @/tmp/known_hosts.json http://127.0.0.1/appliancemanager/ssh/knownHosts
```

- f Delete the SDDC Manager VM snapshot from the vSphere Web Client

- g Retry upgrading VxRail Manager.

■ **Quick Boot of ESXi hosts is not supported**

Although the `enableQuickboot` flag for requesting Quick Boot for ESXi upgrades appears in the API Reference Guide and the API Explorer, Quick Boot is not supported with VMware Cloud Foundation on Dell EMC VxRail.

Workaround: None.

■ **VxRail Manager does not support ESXi lockdown mode**

You cannot enable ESXi lockdown mode for hosts used with VMware Cloud Foundation on Dell EMC VxRail.

Workaround: None.

■ **vVols is not a supported storage option**

Although VMware Cloud Foundation on Dell EMC VxRail does not support vVols, storage settings options related to vVols appear in the SDDC Manager UI. Do not use **Administration > Storage Settings** to add a VASA provider.

Workaround: See [KB 81321](#) for information about how to remove the Storage Settings from the SDDC Manager UI.

■ **The API does not support adding a host to a cluster with dead hosts or removing dead hosts from a cluster**

The following flags appear in the API Reference Guide and API Explorer, but are not supported with VMware Cloud Foundation on Dell EMC VxRail.

- `forceHostAdditionInPresenceofDeadHosts`: Use to add host to a cluster with dead hosts. Bypasses validation of disconnected hosts and vSAN cluster health.
- `forceByPassingSafeMinSize`: Remove dead hosts from cluster, bypassing validations.

Workaround: None.

■ **Validation fails when you add VxRail hosts to a cluster**

This can happen when you are adding multiple hosts, you click the eye icon to show the SSH password of one of the hosts, and then click **Copy To All Hosts**.

Workaround: Manually enter the password for the hosts that failed validation.

■ **Adding a host to a vSphere cluster fails at the `Create NSX-T Data Center Transport Nodes from Discovered Nodes` subtask**

In this situation, check the NSX Manager UI. If it shows the error `Failed to uninstall the software on host. MPA not working. Host is disconnected.` for the host you are trying to add, use the following workaround.

Workaround:

- a SSH to the failed host.
- b Execute the following commands:

```
/etc/init.d/hostd restart
```

```
/etc/init.d/vpxa restart
```

- c In the SDDC Manager UI, retry the add host task.

■ **Adding a host to a cluster may fail with the error `Management NIC does not have subnet mask, UNABLE_TO_RETRIEVE_HOST_ATTRIBUTES`**

VMware Cloud Foundation on Dell EMC VxRail has two port groups for management traffic. In some cases, adding a host to a cluster may select NICs on the VxRail Management port group instead of the Management port group, causing the operation to fail.

Workaround: Deactivate management traffic on the VxRail Management port group for all the hosts in the cluster, add the new hosts to the cluster, and then re-enable management traffic on all hosts.

- a In the vSphere Client, navigate to the first host in the cluster.
- b On the **Configure** tab, expand **Networking** and select **VMkernel adapters**.
- c Select the VMkernel adapter for the VxRail Management port group and click **Edit**.
The Network Label will include "VxRail Management".
- d Deselect **Management** from the list of enabled services and click **OK**.
- e Repeat the above steps for all the hosts in the cluster that you are expanding.
- f From the SDDC Manager UI, retry adding the hosts to the cluster.
- g Once the task completes successfully, go back to the vSphere Client and re-enable the Management service on VMkernel adapter for the VxRail Management port group for each host in the cluster.

■ **Adding a VxRail cluster with hosts spanning multiple racks to a workload domain fails**

If you add hosts that span racks (use different VLANs for management, vSAN, and vMotion) to a VxRail cluster after you perform the VxRail first run, but before you add the VxRail cluster to a workload domain in SDDC Manager, the task fails.

Workaround:

- a Create a VxRail cluster containing hosts from a single rack and perform the VxRail first run.
- b Add the VxRail cluster to a workload domain in SDDC Manager.
- c Add hosts from another rack to the VxRail cluster in the vCenter Server for VxRail.
- d Add the VxRail hosts to the VxRail cluster in SDDC Manager.