VMware Cloud Foundation 3.10

v1.2 – 9/23/21

What's New in Cloud Foundation 3.10

Q1. What's New in VMware Cloud Foundation 3.10?

A. *VMware Cloud Foundation 3.10 provides the following features and enhancements:*

- *ESXi Cluster-Level and 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 Cluster-Level and 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. You can also select specific clusters to upgrade. The ability to select clusters allows for multiple upgrade windows and does not require all clusters to be available at a given time.*

- *Skip Level Upgrades: Enables you to upgrade to VMware Cloud Foundation 3.10 from versions 3.5 and later for VCF and 3.7 and later for VCF on VxRail*

For more information on Cloud Foundation Release 3.10 visit the VMware Cloud Foundation Documentation page

General

Q2. Where can I find more information and resources?

- *VCF Resource Center:* core.vmware.com/vmware-cloud-foundation

- *Product Page:* vmware.com/go/cloudfoundation

- *Documentation:* vmware.com/go/cloudfoundation-docs

- *Community:* vmware.com/go/cloudfoundation-community

- *Talk to your VMware Partner or VMware Sales team.*

Q3. What is VMware Cloud Foundation?

A. VMware Cloud Foundation™ *provides the simplest path to hybrid cloud through an integrated software platform that is the foundation for both private and public cloud environments. Cloud Foundation provides a complete set of software-defined services for compute, storage, network and security, along with cloud management capabilities. The result is simple, secure and agile cloud infrastructure that can be deployed on premises and consumed as a service from public cloud.*

Q4. How can I use Cloud Foundation in the public cloud?

A. *Select service providers from the VMware Cloud Provider program offer cloud services powered by VMware Cloud Foundation, including* CenturyLink*, OVH and* Rackspace. *Reach out to the specific service providers for more information.*

VMware Cloud on AWS *is an on-demand service operated, managed and sold by VMware. VMware Cloud on AWS is powered by VMware Cloud Foundation.*

Additional solutions such as Azure VMware Solution *and* Google Cloud VMware Engine *are also powered by VMware Cloud Foundation.*

Q5. Will existing VMware Cloud Foundation 3.x deployments be able to upgrade to VMware Cloud Foundation 4.3.1?

A. *In addition to existing migration methods, there is limited support for in-place migrations from VMware Cloud Foundation 3.10.1.2+ releases to VMware Cloud Foundation 4.3.1. Customers can now engage the VMware Professional Service Organization (PSO) to perform an assessment for a potential in-place migration from VMware Cloud Foundation 3.10.1.2+ releases to VMware Cloud Foundation 4.3.1. Contact your sales and channel teams for guidance on choosing the best method for migrating your environment.*

NOTE: The following questions and answers focus on Cloud Foundation for on-premises deployment.

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Q6. What types of OEM integrated systems are available with Cloud Foundation from OEMs?

A. Integrated Systems from OEMs can be either:
- Jointly Engineered Solutions (VCF/Dell EMC VxRail)
- Composable (VCF/HPE Synergy or VCF/Dell MX)
- Integrated Systems (Fujitsu PRIMEFLEX, Hitachi Unified Compute Platform UCP-RS and QCT QxStack). All integrated systems are delivered ready to install at the customer site.

Q7. What is the unique integration of a jointly engineered solution?

A. Jointly engineered systems, such as VCF on VxRail, provide unique integration with VCF components. VxRail integration with VCF includes, but is not limited to, lifecycle management of the hardware and software sub-systems using native SDDC Manager orchestrated workflows integrated with VxRail Manager. Note that VxRail does require Dell professional services for installation.

Q8. How does VMware Cloud Foundation integrate with composable systems?

A. Composable systems, such as Dell MX and HPE Synergy integrate with VCF through the Redfish API that enables the ability to compose and decompose hardware resources under control of VMware Cloud Foundation.

Q9. Who supports Cloud Foundation software and hardware?

A. When purchasing an OEM Solution, the OEM partner will be the single point of contact for support of both hardware and software. When Cloud Foundation software is purchased from VMware, the support model will follow the standard practice of VMware products with VMware GSS delivering support for the Cloud Foundation software.

Q10. What are the recommended GSS Support options for Cloud Foundation?

A. The VMware GSS support matrix lists the following support options for VMware Cloud Foundation:

- Basic
- Production
- Business Critical
- Healthcare Critical
- Mission Critical

- U.S. Federal Production

We recommend purchasing at least **Production** support, better **Business Critical** or **Mission Critical** with VMware Cloud Foundation.

Q11. How can I purchase Cloud Foundation software?

A. There are four ways to purchase Cloud Foundation software:

(1) directly from VMware, (2) from VMware channel partners (3) as part of an integrated system from OEM vendors and (4) as a subscription service from a public cloud service provider.

Q12. Can I install the Cloud Foundation software myself?

A. Yes. VMware provides documentation for customers to deploy the Cloud Foundation software on their own. It is highly recommended that you work with VMware Professional Services or your Solution Provider to receive assistance with your deployment. Visit the Documentation page for more information on how to deploy Cloud Foundation.

Q13. Does Cloud Foundation include cloud management capabilities?

A. Cloud Foundation can deploy the full SDDC, including cloud management software based on the capabilities of VMware vRealize Suite components. SDDC Manager can automatically deploy vRealize Automation, vRealize Operations and vRealize Log Insight as part of the Cloud Foundation standardized architecture. Customers must purchase a Cloud Foundation package that includes cloud management, or purchase vRealize Suite separately to license this functionality.

Q14. What is the difference between SDDC Manager and vRealize Automation?

A. *SDDC Manager and vRealize Automation automate different aspects of building and running private and public clouds. SDDC Manager automates the installation and lifecycle management of the vSphere, vSAN, and NSX from bring-up and configuration to patching and upgrading, making it simple for the cloud admin to build and maintain the SDDC. SDDC Manager also automates the installation and configuration of vRealize Log Insight, vRealize Operations, and vRealize Automation.*

On the other hand, vRealize Automation automates the delivery and management of the virtual machines and apps, enabling end users to consume these as services and at scale. vRealize Automation is one of the software components of the Cloud Foundation platform for which SDDC Manager automates the deployment.

Q15. Does SDDC Manager replace other existing management tools, such as vCenter Server?

A. *No. SDDC Manager complements vCenter Server and vRealize Suite products by delivering new functionality that helps cloud admins build and maintain the SDDC. The cloud admin will continue to use vCenter Server as the primary management interface for the virtualized environment.*

Pricing and Packaging

Q16. What happened to the VMware Cloud Foundation Platinum and Basic Editions?

A. *VMware announced the End of Availability (EOA) of vSphere Platinum, Cloud Foundation Platinum, and vCloud Suite Platinum product editions, effective April 2, 2020. The VCF Basic edition was also discontinued. After this date, the Platinum portfolio will no longer be available for purchase. VMware will continue to support the components of the above bundles through their respective* published *support periods. Where do I go for additional information on VCF Pricing and Packaging?*

Q17. Where can I go for additional information on VCF Pricing and Packaging?

A. *Consult with your VMware Sales Representative, channel partner or qualified OEM partner for more PNP information.*

Technical

Q18. What is VMware SDDC Manager?

A. *SDDC Manager is the centralized management software in Cloud Foundation used to automate the lifecycle of components, from bring-up, to configuration, to infrastructure provisioning to upgrades/patches.*

Q19. Can I add SDDC Manager on top of existing deployments?

A. *No. To benefit from SDDC Manager's automation capabilities you do a fresh install of the full SDDC software stack. VMware provides tools, like HCX, to help migrate existing workloads into a new Cloud Foundation deployment.*

Q20. What is the Cloud Builder?

A. *Cloud Builder is a Photon OS VM that is delivered as an OVA file and includes a virtual imaging appliance (VIA). It contains all code and product bits to deploy the full SDDC stack for the management domain for your VMware Cloud Foundation instance. The VM can be deployed on any physical device that has connectivity with the ESXi hosts, including personal laptops and external hosts. Follow the bring-up UI on the VM to deploy the SDDC stack. Input parameters are passed in via a file import.*

Q21. Can VCF Multi-instance Management be used in a deployment based upon a consolidated architecture?

A. *Yes, Multi-instance Management is supported in both a consolidated and standard architecture. The management cluster within a consolidated architecture is managed using resource pools. A standard architecture can be scaled easily by adding more compute and storage.*

Hardware

Q22. What are the physical server requirements?

A. *Cloud Foundation is supported on vSAN ReadyNode server hardware which meets the minimum requirements regarding memory, disk types and capacity, and network interfaces. See the vSAN Compatibility Guide and the Cloud Foundation product documentation for details.*

Q23. What switching hardware is supported?

A. *You can use Enterprise-grade network switches that meet the requirements of vSAN and which are capable of meeting the scale demands of a highly-connected set of vSAN hosts.*

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Q24. How does Cloud Foundation leverage Composable Infrastructure?

A. *Composable Infrastructure allows building physical servers on the fly using an API. Cloud Foundation has a composability plug-in which uses the "RedFish API" to do this integration. This API talks to the composable hardware manager to request physical infrastructure on demand.*

Q25. Which Composable Infrastructure systems are supported?

A. *VMware Cloud Foundation supports Dell MX and HPE Synergy as composable infrastructure systems.*

Workload Domains

Q26. What is a workload domain?

A. *Workload Domains are a logical abstraction of private Cloud capacity that is provisioned automatically by SDDC Manager and administered and patched independently. Workload Domains provide a unit of consumption at the SDDC level by presenting an integrated selection of compute, storage and network resources for business workloads to run in.*

Q27. What is a management domain?

A. *The management domain is a special purpose workload domain that is used to host the infrastructure components needed to instantiate, manage, and monitor the Cloud Foundation infrastructure. The management domain is automatically created using the Cloud Builder appliance when it is initially configured.*

Q28. How many Workload Domains can be created?

A. *Up to 15 workload domains can be created (including the management domain). Each workload domain can contain multiple ESXi host clusters. This limit is imposed by the max number of vCenter Server instances that can be configured in enhanced linked mode.*

Q29. How many nodes are required for the management domain?

A. *The management domain leverages vSAN for storage and requires a minimum of 4 nodes.*

Q30. How many vCenter Server instances can be deployed in a workload domain?

A. *Each workload domain has one dedicated vCenter Server instance. (Pricing and Packaging note: Only one vCenter Server license is needed per Cloud Foundation instance or 15 workload domains))*

Q31. What is the minimum number of vSphere hosts that can be in a Virtual Infrastructure Workload Domain?

A. *Workload require a minimum of three hosts.*

Q32. Can I extend/delete a workload domain after it has been created?

A. *Yes, Cloud Foundation provides a fully automated process for creating, extending, and deleting workload domains using SDDC Manager*

Q33. Can I reduce the size of a workload domain?

A. *Yes, Cloud Foundation allows removing hosts and clusters from workload domains.*

Storage

Q34. Is vSAN required with Cloud Foundation?

A. *vSAN is the required principal storage for any VCF management domain. It is possible however to deploy workload domains with external FC or NFS storage as an option for principal storage.*

Q35. Does VMware Cloud Foundation support external Fibre Channel Storage Arrays as a principal (primary) storage within a VCF Workload Domain?

A. *Yes – while vSAN is always the default preferred storage choice within a workload domain, administrators have the option to provision external FC storage systems as the principal (primary) storage system. For management domains, vSAN is the only storage option that may be assigned.*

Q36. Does Cloud Foundation support all-flash vSAN storage?

A. *Yes, Cloud Foundation supports both the Hybrid and All-Flash vSAN configurations. Note that clusters within a multi-cluster workload domain can have both Hybrid and All-Flash vSAN configurations, mixing Hybrid and All-Flash nodes within a single cluster is not supported.*

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Q37. What is the difference between Principal storage and Supplemental storage within VMware Cloud Foundation?

A. *Principal storage is the primary storage configured during bring up for the management domain and utilizes vSAN Principal storage is configured when creating a new VI workload domain. Supplemental storage can be added to the management domain or any VI workload domain for the purposes of workload migration, backup and archive purposes*

Q38. Which principal storage options are supported with VMware Cloud Foundation?

A. *VMware Cloud Foundation can consume and is validated against vSAN, NFS and VMFS on FC. The management domain uses vSAN for principal storage.*

VMware recommend using vSAN as the principal storage for all VI workload domains to leverage the benefits of managing and maintaining a full software defined stack. vSAN is also updated and patched through SDDC Manager LCM.

Updating and patching non-vSAN storage is a manual task and falls outside of SDDC Manager LCM. To ensure supportability, the storage and HBAs will need to be validated against the vSphere HCL

Q39. How do I stretch vSAN Clusters?

A. *If you would like to use a Stretched Cluster, then the Management Workload Domain needs to be stretched first. Stretched vSAN can be done on a per-cluster basis. The maximum size of a stretched cluster is 15 hosts per availability zone. A vSAN witness must be deployed on a third site for each stretched cluster.*

Q40. Can I use Network Attached Storage (NAS) with Cloud Foundation?

A. *Yes, you can create VI workload domains with external NFS storage. iSCSI storage can be connected manually as supplemental storage to a workload domain.*

Q41. Which NFS version can I use with VMware Cloud Foundation?

A. *VMware Cloud Foundation supports NFS version 3.x.*

Q42. Can I use any server to create a VI Workload Domain utilizing external NFS storage?

A. *Yes, the servers can be any vSphere-compatible rack or blade system. You do not need vSAN ReadyNodes for the VI Workload Domain in this case.*

Q43. Can I change an NFS Workload Domain to use vSAN later?

A. *No, you need to create a new vSAN-based workload domain and vMotion the VMs over.*

Q44. Can I use Fibre Channel (FC) SAN with Cloud Foundation?

A. *Yes. You can add the FC datastores as supplemental storage to the Virtual Infrastructure (VI) workload domains. The FC storage must be managed independently from the workload domain vCenter instance. Check with your storage vendor for a list of support storage arrays. With VCF Release*

Networking

Q45. Can I use NSX-T in a VI workload domain?

A. *Yes. When you create a workload domain you can chose if it has NSX-V or NSX-T. The same NSX instance will be used for all clusters in same workload domain under the same vCenter Server. If you deploy multiple NSX-T Workload Domains, then only one NSX-T Manager will be deployed for all your NSX-T Workload Domains.*

Q46. Can I connect the NSX-T Manager in Cloud Foundation to other non-Cloud Foundation infrastructure?

A. *No. This is not supported. NSX-T is only aware of the corresponding Cloud Foundation Workload Domains*

Q47. Can I use Cisco ACI with Cloud Foundation?

A. *Yes. ACI can come up to the ESXi server, but there is no ACI into the ESXi host, we do not support ACI VDS.*

Cloud Management

Q48. Is it possible to deploy vRealize Automation and vRealize Operations into a VI Workload Domain instead of using the auto-deployed vRealize Automation and vRealize Operations in the Management Workload Domain?

A. *You do not have to use the auto-deployed vRealize Automation and vR Ops in the Management Workload Domain. Instead you can deploy vRealize Automation and vRealize Operations manually in a VI workload domain to consider specific customer SLAs.*

Q49. Can I use vRealize Suite Life Cycle Manager (vRSLCM) which gets deployed by Cloud Foundation for

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vRealize components which were not deployed by Cloud Foundation itself?

A.   *Yes, you can use vRSLCM to manage other components, because there is no dependency on SDDC Manager. Be aware that when you upgrade vRSLCM from SDDC Manager we re-create the vRSLCM from scratch, so all manual configurations will be lost.*

Q50. Does Cloud Foundation provide LifeCycle Management for vRealize components?

A.   *Yes, Cloud Foundation supports the automated upgrade of vRealize products through vRealize Suite Lifecycle Manager (vRSLCM) – this includes vRealize Log Insight, vRealize Operations Manager, and vRealize Automation. SDDC Manager does not patch and upgrade vRealize Suite components. This is handled by using vRealize Suite Lifecycle Manager directly.*

Patching and Upgrades

Q51. What software components can be patched/upgraded using SDDC Manager?

A.   *VMware vSphere, vSAN, NSX, vCenter Server and SDDC Manager components are patched/upgraded. To patch and upgrade the vRealize Suite components use the vRealize Suite Lifecycle Manager which is included in VMware Cloud Foundation.*

Q52. How am I notified when patches/upgrades become available?

A.   *Users are automatically notified from the SDDC Manager user interface when patches and upgrades become available.*

Q53. How often will VMware release software updates?

A.   *Patches are released as they become available and based on criticality (e.g., a security patch). Upgrades are typically released on a quarterly cadence.*

Q54. Can I schedule when patches and upgrades are applied?

A.   *Yes, SDDC Manager allows patches and upgrades to be scheduled as to coincide with regular maintenance windows.*

Q55. Can I patch/upgrade workload domains independent of each other?

A.   *Yes, patches and upgrades are scheduled on a per-workload domain basis allowing updates to be "rolled-in" over time.*

Configuration Minimums and Maximums

Q56. What is the minimum size of a Cloud Foundation environment with a consolidated deployment?

A.   *You need at least 4 servers to run Cloud Foundation. In this scenario, workload VMs are placed in a dedicated Resource Pool in the Management Domain. Additional VI workload domains are not available in this small environment.*

Q57. What is the minimum size of a Cloud Foundation environment with a standard deployment?

A.   *You need at least 7 servers to run Cloud Foundation. In this scenario, workload VMs are placed in the workload domain*

Q58. What is the minimum size of a Cloud Foundation environment to use VI workload domains?

A.   *You need at least 7 servers to run Cloud Foundation with a VI workload domain. 4 servers are used by the management domain, 3 servers is the minimum size of other workload domains.*

Q59. What is the maximum size of a Cloud Foundation environment?

A.   *Cloud Foundation inherits configuration maximums from the component products. For information on sizing VMware Cloud Foundation refer to https://configmax.vmware.com*

Q60. How many workload domains can a Cloud Foundation instance have?

A.   *Cloud Foundation always has 1 management domain and up to 14 VI workload domains. This is because the Cloud Foundation linked vCenter Server environment can have up to 15 vCenter Servers, and each workload domain has its own vCenter Server, see https://configmax.vmware.com*

Q61. What is the maximum size of a workload domain?

A.   *Each workload domain has its own vCenter Server and it can have as many hosts and clusters as a single vCenter Server can handle. The vCenter Server limits apply, see https://configmax.vmware.com*

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Miscellaneous

Q62. Does SDDC Manager automate the deployment of other management components, such as vRealize Business for Cloud or vRealize Network Insight?

  A. *These components can be manually deployed and externally integrated with cloud foundation by leveraging the design and implementation guidance that is available as part of the VMware Validated Designs.*

Q63. What logs are sent to the vRealize Log Insight in the Cloud Foundation management cluster?

  A. *Cloud Foundation sends event logs for vSphere, vSAN, NSX, SDDC Manager, vCenter and Horizon into vRealize Log Insight.*

Q64. Do I need to pay for vRealize Log Insight for the logs sent in the management cluster?

  A. *No. Each instance of Cloud Foundation includes the right to use 50 OSI instances of vRealize Log Insight to capture logs from the management domain components only. The edition used is the full vRealize Log Insight, which includes features such as log forwarding and HA for those management domain components. If a customer wants to use vRealize Log Insight functionality for actual workloads, the customer must acquire the appropriate vRealize Log Insight licenses.*