

**VCP-VCF ADMINISTRATOR LAB TASKS · EXAM 2V0-17.25**

# **Work task 1 to task 165 and you have built and run a VCF 9.0 private cloud**

Exam 2V0-17.25, VMware Cloud Foundation Administrator, written against VCF 9.0. The testable objectives sit in section 2, the fundamentals, and section 4, deploy, manage, operate and consume. Tasks only, in build order. The code at the right of each task is the objective it covers.

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## A. PRIVATE CLOUD AND THE FLEET, ON PAPER

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*Written tasks, done before anything is built. Objective 2.1 is entirely here.*

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1. | Write the principles of a private cloud in your own words: self-service, pooled capacity, consistent governance, one operating model.                 | 2.1 |
| 2. | List five use cases for a private cloud and, for each, what makes it a better fit than public cloud.                                                  | 2.1 |
| 3. | Write the value proposition of a private cloud for three audiences: the business, the platform team and the developer.                                | 2.1 |
| 4. | Draw a VCF 9.0 fleet on one page: VCF Operations, fleet management, VCF Automation, the Identity Broker, the management domain and a workload domain. | 4.1 |
| 5. | List the components of a VCF deployment and mark which are deployed at bring-up and which are added afterwards.                                       | 4.1 |
| 6. | Write which components run once per fleet and which run in every instance or domain.                                                                  | 4.1 |

## B. VCENTER AND ESX

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*The compute layer every other component sits on.*

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|-----|-------------------------------------------------------------------------------------------------|-----|
| 7.  | Install ESX on a host and set its management network, DNS name and NTP source from the console. | 2.2 |
| 8.  | Deploy a vCenter appliance and record the size you chose and why.                               | 2.2 |
| 9.  | Create a datacenter object and add two hosts to it.                                             | 2.2 |
| 10. | Configure NTP and DNS consistently on every host, then check them from the vSphere Client.      | 2.2 |
| 11. | Configure a VMkernel adapter for vMotion on each host.                                          | 2.2 |
| 12. | Put a host into maintenance mode and back out, recording what happens to its virtual machines.  | 2.2 |
| 13. | Back up the vCenter appliance using file-based backup to an SFTP target.                        | 2.2 |

## C. VSPHERE CLUSTERS

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*Configure a cluster and know what each setting does.*

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|-----|--------------------------------------------------------------------------------------------------|-----|
| 14. | Create a cluster and move hosts into it.                                                         | 2.2 |
| 15. | Turn on vSphere HA and set admission control to tolerate one host failure.                       | 2.2 |
| 16. | Turn on vSphere DRS and compare the automation levels.                                           | 2.2 |
| 17. | Create a VM-to-host affinity rule and a VM-to-VM anti-affinity rule, then test both.             | 2.2 |
| 18. | Configure Enhanced vMotion Compatibility on the cluster and record the baseline chosen.          | 2.2 |
| 19. | Create a resource pool with shares, a reservation and a limit, and place virtual machines in it. | 2.2 |
| 20. | Manage the cluster with a vSphere Lifecycle Manager image and check host compliance against it.  | 2.2 |

## D. VIRTUAL MACHINES

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*Deploy, configure and manage virtual machines through vCenter.*

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|-----|---------------------------------------------------------------------------------------------------------------------------|-----|
| 21. | Create a virtual machine from scratch and install a guest operating system.                                               | 2.2 |
| 22. | Install or update VMware Tools and record what it adds.                                                                   | 2.2 |
| 23. | Convert the virtual machine into a template, then deploy two virtual machines from it with a customisation specification. | 2.2 |
| 24. | Create a content library, add a template to it, and deploy from the library.                                              | 2.2 |
| 25. | Hot add CPU and memory to a running virtual machine, after enabling it.                                                   | 2.2 |
| 26. | Take a snapshot, change the virtual machine, revert, then delete the snapshot. Record why a snapshot is not a backup.     | 2.2 |
| 27. | Clone a running virtual machine.                                                                                          | 2.2 |
| 28. | Migrate a running virtual machine with vMotion, then move its disks with Storage vMotion.                                 | 2.2 |
| 29. | Open a virtual machine console, read its events and change its virtual hardware.                                          | 2.2 |

## E. VSPHERE STORAGE

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*Storage outside vSAN, and the policies that place workloads on it.*

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|-----|-------------------------------------------------------------------------------------------------|-----|
| 30. | Create a VMFS datastore on a block device and record its version.                               | 2.3 |
| 31. | Mount an NFS datastore on every host in the cluster.                                            | 2.3 |
| 32. | Increase the size of a VMFS datastore.                                                          | 2.3 |
| 33. | Tag two datastores and create a tag-based storage policy that only matches one of them.         | 2.3 |
| 34. | Deploy a virtual machine with that policy and confirm where it was placed.                      | 2.3 |
| 35. | Write the difference between thin and thick provisioned disks and change one disk between them. | 2.3 |

## F. VSAN: ESA, OSA AND BUILDING A CLUSTER

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*Know which architecture fits and how a cluster is formed.*

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|-----|------------------------------------------------------------------------------------------------|-----|
| 36. | Write the difference between vSAN ESA and vSAN OSA: how each uses devices and what each needs. | 2.3 |
| 37. | Given a scenario with existing SAS and SATA hardware, decide ESA or OSA and justify it.        | 2.3 |
| 38. | Configure the vSAN VMkernel network on every host.                                             | 2.3 |
| 39. | Turn on vSAN on a cluster and claim the devices.                                               | 2.3 |
| 40. | Read the vSAN datastore capacity and account for raw against usable.                           | 2.3 |
| 41. | Run vSAN Skyline Health and clear the warnings you can.                                        | 2.3 |

## G. VSAN POLICIES, RESILIENCE AND SPACE EFFICIENCY

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*The vSAN sub-objectives with the most questions behind them.*

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|-----|-------------------------------------------------------------------------------------------------------|-----|
| 42. | Create a storage policy with RAID-1 and failures to tolerate of 1, and apply it to a virtual machine. | 2.3 |
|-----|-------------------------------------------------------------------------------------------------------|-----|

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|-----|---------------------------------------------------------------------------------------------------------------------------------------|-----|
| 43. | Create a RAID-5 policy and a RAID-6 policy, and record the minimum host count for each.                                               | 2.3 |
| 44. | Compare the capacity one virtual machine consumes under RAID-1, RAID-5 and RAID-6.                                                    | 2.3 |
| 45. | Change the policy on a running virtual machine and watch the resynchronisation.                                                       | 2.3 |
| 46. | Configure fault domains so a rack failure is survived, and write what it changes.                                                     | 2.3 |
| 47. | Write the resilience and data availability options in vSAN: failures to tolerate, fault domains, stretched clusters, data protection. | 2.3 |
| 48. | Write the purpose of each vSAN space efficiency feature: deduplication, compression, erasure coding, thin provisioning, UNMAP.        | 2.3 |
| 49. | Write which space efficiency features apply to ESA and which to OSA, checked against the 9.0 documentation.                           | 2.3 |

## H. VIRTUAL NETWORKING COMPONENTS AND FABRIC

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*Tell the components apart before you configure them.*

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|-----|------------------------------------------------------------------------------------------------------------------|-----|
| 50. | Write the difference between a standard switch, a distributed switch, an NSX segment, a gateway and an NSX Edge. | 2.4 |
| 51. | Create a distributed switch, add hosts to it and migrate their VMkernel adapters.                                | 2.4 |
| 52. | Create distributed port groups with VLAN IDs and set the teaming policy.                                         | 2.4 |
| 53. | Set the MTU on the distributed switch and confirm it end to end with vmkping.                                    | 2.4 |
| 54. | Prepare hosts for NSX as transport nodes using a transport node profile.                                         | 2.4 |
| 55. | Create an IP pool for host tunnel endpoints and confirm each host got its addresses.                             | 2.4 |
| 56. | Write what a transport zone is and create one overlay and one VLAN transport zone.                               | 2.4 |

## I. CONNECTIVITY AND ROUTING

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*From a segment to the physical network.*

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|-----|--------------------------------------------------------------------------------------------------------------------------------|-----|
| 57. | Create an overlay segment and attach two virtual machines to it.                                                               | 2.4 |
| 58. | Create a Tier-1 gateway, connect the segment, and route between two segments.                                                  | 2.4 |
| 59. | Write what a Tier-0 gateway does that a Tier-1 does not.                                                                       | 2.4 |
| 60. | Configure BGP between a Tier-0 gateway and the physical routers, and confirm the routes.                                       | 2.4 |
| 61. | Configure route advertisement on a Tier-1 and redistribution on the Tier-0, and confirm the segment is reachable from outside. | 2.4 |
| 62. | Create a VPC with a public and a private subnet, and record what each can reach.                                               | 2.4 |
| 63. | Write the difference between centralized and distributed connectivity for a transit gateway.                                   | 2.4 |
| 64. | Trace a packet from a virtual machine to the physical network and name every hop.                                              | 2.4 |

## J. NETWORKING SERVICES

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*What the network does besides moving packets.*

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|-----|----------------------------------------------------------------------------|-----|
| 65. | Configure DHCP on a segment and confirm a virtual machine gets an address. | 2.4 |
| 66. | Configure source NAT on a gateway for a private subnet.                    | 2.4 |
| 67. | Configure destination NAT to publish one virtual machine.                  | 2.4 |

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|-----|-------------------------------------------------------------------------------------------------------------------|-----|
| 68. | Create distributed firewall rules between two groups and test them.                                               | 2.4 |
| 69. | Create a gateway firewall rule on the Tier-0 and write when you would use it instead of the distributed firewall. | 2.4 |
| 70. | Write the load balancing options available in VCF 9.0 and where each fits.                                        | 2.4 |

## K. DEPLOYING VCF

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*Deployment models and the installer. Much of objective 4.1 is described rather than performed, so understand it well enough to explain.*

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|-----|----------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 71. | Deploy the VCF Installer appliance and record what it is used for.                                                                                 | 4.1 |
| 72. | Write the deployment paths the installer offers: a new fleet, a new instance in an existing fleet, and converging an existing vSphere environment. | 4.1 |
| 73. | Write the difference between the simple and the high availability deployment models.                                                               | 4.1 |
| 74. | Complete the planning inputs for a management domain: hosts, networks, DNS, NTP, licences, depot.                                                  | 4.1 |
| 75. | Run the installer validation, fix one failure, and run it again.                                                                                   | 4.1 |
| 76. | Deploy the management domain, or walk through each step in a hands-on lab, and record what each step created.                                      | 4.1 |
| 77. | List the components you still need after bring-up to complete the private cloud.                                                                   | 4.1 |
| 78. | Deploy one of those additional components, such as VCF Operations for logs, and connect it.                                                        | 4.1 |

## L. THE NETWORK GATEWAY AND VCF NETWORKING

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*The blueprint calls it the VCF Network Gateway: the edge cluster, Tier-0 and transit gateway built from vCenter.*

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|-----|--------------------------------------------------------------------------------------------------------------------|-----|
| 79. | Open vCenter Networks, Network Connectivity, and record the connectivity options it offers.                        | 4.1 |
| 80. | Gather the inputs for centralized connectivity: edge size, uplinks, teaming, ASNs, VLANs, BGP peers and IP blocks. | 4.1 |
| 81. | Run the guided workflow to deploy the edge cluster, Tier-0 gateway and transit gateway.                            | 4.1 |
| 82. | Confirm BGP is established and the external IP blocks are advertised.                                              | 4.1 |
| 83. | Write how distributed connectivity differs, and when it is enough.                                                 | 4.1 |
| 84. | Describe how VCF networking is deployed with a workload domain, and what is ready for VPCs afterwards.             | 4.1 |

## M. WORKLOAD DOMAINS, STORAGE AND SUPERVISOR

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*Build the place workloads run.*

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|-----|---------------------------------------------------------------------------------------------|-----|
| 85. | Commission hosts in SDDC Manager and confirm they are unassigned.                           | 4.1 |
| 86. | Create a VI workload domain with a vSAN cluster.                                            | 4.1 |
| 87. | Record what the workload domain creation deployed: vCenter, NSX, the cluster.               | 4.1 |
| 88. | Add a second cluster to the workload domain with a different principal storage type.        | 4.1 |
| 89. | Add supplemental storage to a workload domain cluster.                                      | 4.1 |
| 90. | Enable a Supervisor on a workload domain cluster and record the networking model you chose. | 4.1 |
| 91. | Create a vSphere namespace with resource limits, storage policies and VM classes.           | 4.1 |

92. Deploy a VKS cluster in the namespace and log in to it with kubectl. 4.1

## N. FLEET MANAGEMENT, IDENTITY AND RBAC

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*Objective 4.2 starts here, in VCF Operations.*

93. Open the fleet management area in VCF Operations and list what it manages. 4.2
94. Write which fleet management capabilities apply to fleet-level components and which to each instance. 4.2
95. Configure the VCF Identity Broker with an external identity provider. 4.2
96. Configure single sign-on so one identity reaches vCenter, NSX and VCF Operations. 4.2
97. Map a directory group to a role, and test the access it gives. 4.2
98. Create a custom role in vCenter with only the privileges a VM operator needs, and assign it on one folder. 4.2
99. Record the local break-glass accounts and test one. 4.2

## O. LICENCES, CERTIFICATES AND PASSWORDS

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*Three fleet management tasks people leave until they expire.*

100. Add licences in VCF Operations and assign them to the components that need them. 4.2
101. Read the licence usage view and record what is reported and when. 4.2
102. Configure a certificate authority for the fleet. 4.2
103. Replace the certificate on one component with a CA-signed certificate. 4.2
104. Turn on automatic renewal and record the expiry view. 4.2
105. Rotate the password of a managed service account. 4.2
106. Find an account whose password is out of sync, and remediate it. 4.2

## P. IMPORTING VCENTER AND LIFECYCLE

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*Bring an existing vCenter in, then keep everything current.*

107. List the prerequisites for importing an existing vCenter into VCF as a workload domain. 4.2
108. Run the import precheck against an existing vCenter and fix what it flags. 4.2
109. Import the vCenter and confirm it appears as a workload domain. 4.2
110. Configure the software depot, online or offline, and download a bundle. 4.2
111. Write the upgrade order: fleet components, then the management domain, then workload domains. 4.2
112. Run an upgrade precheck on a workload domain and read the results. 4.2
113. Upgrade one component, or walk through it in a hands-on lab, and record what was disrupted. 4.2

## Q. VCF OPERATIONS: ARCHITECTURE, DATA AND CONTENT

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*The first half of objective 4.3.*

114. Write the use cases for VCF Operations for networks and VCF Operations for logs. 4.3
115. Write the cluster components of VCF Operations, the collectors, and the deployment options. 4.3

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|------|----------------------------------------------------------------------------------------------------|-----|
| 116. | Pick one virtual machine and list three metrics and three properties for it. Write the difference. | 4.3 |
| 117. | Create a custom list view of virtual machines with chosen metrics and properties.                  | 4.3 |
| 118. | Create a report from that view and schedule it.                                                    | 4.3 |
| 119. | Create a dashboard with three widgets that interact.                                               | 4.3 |
| 120. | Share the dashboard with a group of users.                                                         | 4.3 |
| 121. | Create a custom group with dynamic membership rules.                                               | 4.3 |

## R. ALERTS, POLICIES, LOGS AND HEALTH

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*What tells you something is wrong.*

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|------|---------------------------------------------------------------------------------------|-----|
| 122. | Create a symptom definition and an alert definition built on it.                      | 4.3 |
| 123. | Configure an email notification for that alert, then trigger it.                      | 4.3 |
| 124. | Create a VCF Operations policy, change one threshold, and apply it to a custom group. | 4.3 |
| 125. | Write how policy inheritance works, and test which policy an object gets.             | 4.3 |
| 126. | Search log events in VCF Operations for one host and filter them by time and text.    | 4.3 |
| 127. | Create a log query alert for a specific event.                                        | 4.3 |
| 128. | Open VCF Health and Diagnostics and read the health of each fleet component.          | 4.3 |
| 129. | Collect a support bundle for one component.                                           | 4.3 |

## S. NETWORK, STORAGE, APPLICATION, COMPLIANCE AND DRIFT

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*The second half of objective 4.3.*

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|------|-----------------------------------------------------------------------------------------------|-----|
| 130. | Monitor network flows for one application with VCF Operations for networks.                   | 4.3 |
| 131. | Trace the path between two virtual machines with VCF Operations for networks.                 | 4.3 |
| 132. | Monitor a vSAN cluster in VCF Operations: capacity, performance and health.                   | 4.3 |
| 133. | Set up application monitoring on one virtual machine and confirm its services are discovered. | 4.3 |
| 134. | Group the virtual machines of one application and monitor them together.                      | 4.3 |
| 135. | Turn on a security hardening compliance benchmark and read the result.                        | 4.3 |
| 136. | Fix one non-compliant setting and confirm the score changes.                                  | 4.3 |
| 137. | Configure configuration drift detection for vCenter against a baseline.                       | 4.3 |
| 138. | Create drift deliberately, detect it, and remediate it.                                       | 4.3 |

## T. VCF AUTOMATION FROM THE PROVIDER SIDE

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*Objective 4.4 begins with the provider: everything a tenant later uses.*

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|------|------------------------------------------------------------------------------------------------|-----|
| 139. | Write the use cases for VCF Automation in one paragraph.                                       | 4.4 |
| 140. | Write the components and deployment options of VCF Automation.                                 | 4.4 |
| 141. | Configure a region from a vCenter with a Supervisor and its NSX Manager.                       | 4.4 |
| 142. | Create two organizations, one VM Apps and one All Apps, and write the difference.              | 4.4 |
| 143. | Assign a region and quota to each organization.                                                | 4.4 |
| 144. | Configure provider networking: connect the gateway and define the IP ranges tenants draw from. | 4.4 |
| 145. | Create a provider content library and publish a virtual machine image to it.                   | 4.4 |

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|------|-----------------------------------------------------------------------------------|-----|
| 146. | Configure the identity provider for an organization.                              | 4.4 |
| 147. | Sign in as an organization administrator and record what they can and cannot see. | 4.4 |

## U. VCF AUTOMATION FROM THE ORGANIZATION SIDE

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*Tasks an organization administrator performs.*

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|------|--------------------------------------------------------------------------------------------|-----|
| 148. | Create a project, add members, and assign a role.                                          | 4.4 |
| 149. | Configure an organization network, such as a VPC, and connect a workload to it.            | 4.4 |
| 150. | Create a virtual machine template or blueprint, and publish it to the catalog.             | 4.4 |
| 151. | Request the catalog item as a project member and confirm it deploys.                       | 4.4 |
| 152. | Run a day 2 action on the deployed workload.                                               | 4.4 |
| 153. | Create a governance policy, such as a quota or an approval, and test it.                   | 4.4 |
| 154. | Create an Orchestrator workflow and run it from a catalog item or an event.                | 4.4 |
| 155. | Write how extensibility automates a business process, with one example from your own work. | 4.4 |
| 156. | Write the Supervisor-based services available, and deploy one to a Supervisor.             | 4.4 |
| 157. | Write what changes for a consumer when a Supervisor service is in place.                   | 4.4 |

## V. AGAINST THE CLOCK

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*Do this section twice in the last week, timing yourself.*

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|------|----------------------------------------------------------------------------------------------------------|-----|
| 158. | Configure a cluster with HA, DRS and one affinity rule. 15 minutes.                                      | 2.2 |
| 159. | Create three vSAN policies and apply them to three virtual machines. 15 minutes.                         | 2.3 |
| 160. | Build a segment, a Tier-1 and DHCP, and route to it from outside. 20 minutes.                            | 2.4 |
| 161. | Create a workload domain cluster and enable a Supervisor on it. 30 minutes, or walk through it in a lab. | 4.1 |
| 162. | Replace a certificate and rotate a password. 15 minutes.                                                 | 4.2 |
| 163. | Build a view, a report, a dashboard and an alert in VCF Operations. 25 minutes.                          | 4.3 |
| 164. | Create an organization, a project and a catalog item, and request it. 25 minutes.                        | 4.4 |
| 165. | Without notes, write the upgrade order and the components of a VCF fleet. 5 minutes.                     | 4.2 |