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VCAP-DCA Objective 2.3 : Deploy and Maintain Scalable Virtual Networking

Knowledge

- Explain relationship between vDS and logical vSSes

Skills and Abilities

- Understand the use of command line tools to configure appropriate vDS settings on an ESX/ESXi host
- Determine use cases for and apply Port Binding settings
- Configure Live Port Moving
- Given a set of network requirements, identify the appropriate distributed switch technology to use
- Use command line tools to troubleshoot and identify configuration items from an existing vDS

Tools

- ESX Configuration Guide
- ESXi Configuration Guide
- vSphere Command-Line Interface Installation and Scripting Guide
- Product Documentation
- vSphere Client
- vSphere CLI
- vicfg-*

Notes

Understand the use of command line tools to configure appropriate vDS settings on an ESX/ESXi host

Explore and be familiar with the usage of the vicfg-vswitch command.

From the [vSphere Command Line Reference](#), the three options below are specific to the distributed virtual switch.

Add an uplink adapter to a distributed virtual port

`-add-dvp-uplink / -P`

Deletes an uplink adapter from a port on the distributed virtual switch.

`-del-dvp-uplink / -Q <adapter_name> -dvp <DVPort_id><dvswitchname>`

Name of a distributed virtual port

`-dvp / -V`

Determine use cases for and apply Port Binding settings

Three different types of port binding exist. A good read on the topic is a [VMware KB here](#)

Static Binding

- When you connect a VM to a dvPort group a port is reserved and is immediately assigned.
- This port is freed up only when the VM is removed from the dvPort group.



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Virtualization

Quote of the Day



Configuration
Maximums for
VMware

vSphere is my favorite VMware document. It answers many of the "How many", "How much" type questions about VI capabilities. This is one of the documents that will most often be updated as new releases of VMware VI are released so it's a good one to keep tabs on.

- No command line option and can only be done through vCenter.
- This is the default setting and is recommended for general use.

Dynamic Binding

- dvPort is assigned to a VM only when the VM is powered on and the NIC is connected.
- The dvPort is freed up when the VM is powered off or the NIC is disconnected.
- VMs connected to a dvPort group configured with dynamic binding MUST be powered on and off through vCenter.
- A use case for this would be an environment where you have more VMs than available ports.

Ephemeral binding

- dvPort is created and assigned to the VM when the VM is powered on and NIC is connected.
- dvPort is deleted when the VM is powered off or VM NIC is disconnected.
- Ephemeral dvPort assignments can be made through ESX(i) or vCenter.
- This is the only method that will allow you to manage ports when vCenter is down, although network traffic will be unaffected using the other binding methods when vCenter is down.
- Best use case is for emergency and recovery situations

Configure Live Port Moving

Live port migration means a standalone dvPort can be moved to a dvPortGroup and thus acquiring the all the configuration of the dvPortGroup and a dvPort which is a part of a dvPortGroup can be moved out from a dvPortGroup, the subsequent config changes to the dvPortGroup does not apply to this dvPort.

Given a set of network requirements, identify the appropriate distributed switch technology to use

Learn the differences between using the Nexus 1KV vs. VMware's distributed virtual switch.

There is certainly a price difference and then there is also a management difference. The 1KV is administered like a standard switch, so the Cisco guys in the organization can manage the virtual switching environment consistently with the physical switching environment.

This [article here](#) is a good read on the discussion of what option to approach and why.

Use command line tools to troubleshoot and identify configuration items from an existing vDS

I've covered this topic I believe in other sections of Objective 2 and the network troubleshooting section in Objective 6.

- [VCAP-DCA Objective 2.3 : Deploy and Maintain Scalable Virtual Networking](#)
- [VCAP-DCA Objective 2.2 : Configure and Maintain VLANs, PVLANS and VLAN Settings](#)
- [Objective 9.3 – Configure vCenter Server Linked Mode](#)
- [Objective 9.2 – Plan and Execute Scripted Installations](#)
- [Objective 8.2 – Administer vCenter Orchestrator](#)
- [VCAP-DCA Brownbag Session #1](#)
- [VCAP-DCA Objective 7.1 : Secure ESX\(i\) Hosts](#)
- [VCAP-DCA Objective 9.1 : Install ESX Server with Custom Settings](#)
- [VCAP-DCA Objective 3.5 – Utilize Advanced vSphere Performance Monitoring Tools](#)
- [VCAP-DCA Objective 3.4 – Perform Capacity Planning in a vSphere Environment](#)

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