



# A S e r i e s F a i l u r e s

[HOME](#) [ABOUT](#) [VCAP-DCA INDEX](#) [THINAPP](#) [VCDX STUFF](#) [OTHER PAGES](#) [VCAP-DCD INDEX](#)

« VCAP-DCA Objective 3.2 – Optimize Virtual Machine Resources

VCAP-DCA Objective 3.4 – Perform Capacity Planning in a vSphere Environment »

GO

## VCAP-DCA Objective 3.2 – Optimize Virtual Machine Resources

### Knowledge

- Explain DRS affinity and anti-affinity rules
- Identify required hardware components to support DPM
- Identify EVC requirements, baselines and components
- Understand the DRS slot-size algorithm and its impact on migration recommendations

### Skills and Abilities

- Properly configure BIOS and management settings to support DPM
- Test DPM to verify proper configuration
- Configure appropriate DPM Threshold to meet business requirements
- Configure EVC using appropriate baseline
- Change the EVC mode on an existing DRS cluster
- Create DRS and DPM alarms
- Configure applicable power management settings for ESX Hosts
- Properly size virtual machines and clusters for optimal DRS efficiency
- Properly apply virtual machine automation levels based upon application requirements

### Tools

- vSphere Resource Management Guide
- Product Documentation
- vSphere Client
- DRS Resource Distribution Chart

### Notes

#### Explain DRS affinity and anti-affinity rules

- Specifies that two or more virtual machines are placed on the same host or on different hosts.
- When a conflict in rules occurs, the older rule takes precedence and the new rule is disabled.
- Disabled rules are then ignored.
- Higher precedence is given to preventing violations of anti-affinity rules then violations of affinity rules.

To check on affinity rule violations

1. Select the cluster in the inventory panel of the vSphere Client
2. Select the DRS tab, and click Faults
3. Any rule currently being violated has a corresponding fault on this page. Read the fault to determine why DRS is not able to satisfy the particular rule.

#### Identify required hardware components to support DPM



- > SRM (3)
- > ThinApp (16)
- > VCAP-DCA (38)
- > VMware (57)



#### MY LATEST TWEETS



#### followers



about 0 seconds ago



about 0 seconds ago

#### 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.

- Uses IPMI, iLO or WOL
- If one of those three is not supported, DPM can put the host in standby mode.
- If a host supports multiple protocols, the order of precedence is IPMI, iLO, WOL.
- For WOL make sure WOL is supported for physical NICs

#### Identify EVC requirements, baselines and components

- Configured at Cluster Level
- Helps to ensure VMotion compatibility for the hosts in a cluster by presenting the same CPU feature set to virtual machines.
- Must use same CPU vendors in cluster
- Verify CPU compatibility here [http://kb.vmware.com/selfservice/microsites/search.do?language=en\\_US&cmd=displayKC&externalId=1003212](http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1003212)
- Intel VT or AMD-V
- XD (Execute Disable) or NX (No Execute)

#### Properly configure BIOS and management settings to support DPM

- See some of the information above. You will want to make sure you properly configure IPMI/iLO as well as WOL if used. WOL will need to be configured and supported for the NIC.

#### Test DPM to verify proper configuration

- Manually put a host into standby
- Power off VM resources to let DPM take action based on the configured DPM Threshold

#### Configure appropriate DPM Threshold to meet business requirements

pg 63

- Similar to DRS, the DPM power on/off recommendations are assigned priorities ranging from 1 to 5 stars.
- Priority 1 is mandatory while priority five will bring just a slight improvement.
- Configured per cluster under Power Management.
- You can override DPM on a host level, specifying particular hosts you would like to only manually involve or disable involvement entirely.

#### Configure EVC using appropriate baseline

This [VMware KB](#) covers this topic in depth. In it you can find what version of vSphere/ESX support what baselines and what CPUs support what baselines.

#### Change the EVC mode on an existing DRS cluster

- Cluster Settings—>VMware EVC

#### Create DRS and DPM alarms

Check out this spreadsheet for a complete list of DRS alarms.

<http://communities.vmware.com/servlet/JiveServlet/download/12145-1-35516/vSphere%20Alarms%20v2.xlsx;jsessionId=B696F778AA032D9AE6E36FBA38F1D98D>

Specifically related to DPM

Your most common event to monitor for will be a failure to bring a server back online when it is needed again.

Exist Standby Error alarm DrsExitStandbyModeFailedEvent

Additionally these other events exist

Entering Standby mode (about to power off host)	DrsEnteringStandbyModeEvent
Successfully entered Standby mode (host power off succeeded)	DrsEnteredStandbyModeEvent
Exiting Standby mode (about to power on the host)	DrsExitingStandbyModeEvent
Successfully exited Standby mode (power on succeeded)	DrsExitedStandbyModeEvent

#### Configure applicable power management settings for ESX Hosts

You can set advanced host attributes to manage power settings.

**Power.CpuPolicy** When you set this attribute to the default value of static, VMkernel does not directly set CPU power management states and only responds to requests from the BIOS. When you enable this policy (set to dynamic), VMkernel dynamically selects appropriate power management states based on current usage. This can save power without degrading performance. Enabling this option on systems that do not support power management results in an error message.

#### Properly size virtual machines and clusters for optimal DRS efficiency

### CATEGORIES

- » [SRM](#) (3)
- » [ThinApp](#) (16)
- » [VCAP-DCA](#) (38)
- » [VMware](#) (57)

Realize how not properly sizing your virtual machines will affect the efficiency of DRS. If you give a system too much memory that is less memory available to other systems. Additionally remember the overhead for the system will be higher with a higher amount of configured memory. Ultimately this can result in a increased slot size.

One big mistake you can make is simply porting systems over with the same specs they had virtually, when they don't need it. If you bring enough 4 core systems over you will see performance issues quickly.

### Properly apply virtual machine automation levels based upon application requirements

- This will override the cluster settings for that virtual machine.
- Under Cluster Settings—> VMware DRS—>Virtual machine Options
- Fully Automated(default)
- Partially Automated
- Manual
- Disabled

### Other Links

<http://frankdenneman.nl/2010/03/drs-resource-distribution-chart/>

<http://www.virtualizationteam.com/uncategorized/vmware-evc-enhanced-vmotion-compatibility-enable-vmware-vmotion-across-cpu-generations.html>

<http://www.yellow-bricks.com/2010/03/09/vm-powered-on-alarm/>

- [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](#)
- [VCAP-DCA Objective 3.2 – Optimize Virtual Machine Resources](#)
- [VCAP-DCA Objective 3.1 – Tune and Optimize vSphere Performance](#)

 [VCAP-DCA](#), [VMware](#), [vsphere](#)

Share  
this  
post!

Print  
article

This entry was posted by [Sean Crookston](#) on September 12, 2010 at 7:02 pm, and is filed under [VCAP-DCA](#), [VMware](#). Follow any responses to this post through [RSS 2.0](#). You can [leave a response](#) or [trackback](#) from your own site.

COMMENTS (0)

RELATED POSTS

NO COMMENTS YET.

Name (required)

E-mail (required, will not be published)

Website

Submit Comment

Mystique theme by [digitalnature](#) | Powered by [WordPress](#)



RSS FEEDS

XHTML 1.1

TOP

PR 0

