

COURSE SYLLABUS

NET415 – VMWARE INFRASTRUCTURE: INSTALL AND CONFIGURE

COURSE DESCRIPTION

This course covers the installation and configuration of VMware Infrastructure. Through lecture and hands-on lab assignments, the student will examine how server virtualization can transform a single, physical computer host into a vehicle that supports the execution of multiple virtual systems. The student will explore the installation, configuration, and management of VMware's current Infrastructure software, which consists of VMware ESXi Server, VMware vCenter Server and VMware vCenter Server Appliance.

GENERAL COURSE INFORMATION

Number of Credits/Units	4
Course Length in Weeks	10
# Hours Lecture	30
# Hours Laboratory	20
Prerequisites	None
Course Developer(s)	S. Green
Date Approved / Last Reviewed	Jun 2012 / New
Test Data	N/A

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- ☒ Discuss the functionality of VMware vSphere 4 Infrastructure
- ☒ Install and configure ESX server
- ☒ Install and configure vCenter Server
- ☒ Configure ESX Server networking and storage
- ☒ Control user access to the VMware Infrastructure
- ☒ Monitor resource usage using vCenter Server

LEARNING OBJECTIVES

To achieve the learning outcomes specified for this course, students will, upon successful completion of the course:

- In a written and oral activity, the student will be able to describe the functionality of VMware vSphere 5.
- In an ongoing hands-on laboratory exercise, the student will install an ESXi server and configure the networking and storage.
- In an ongoing hands-on laboratory exercise, the student will install and configure Appliance vCenter Server.
- In an ongoing hands-on laboratory exercise, the student will install and configure vCenter Server.
- In an ongoing hands-on laboratory exercise, the student will deploy and manage virtual machines using Appliance vCenter Server.
- In an ongoing hands-on laboratory exercise, the student will allocate and monitor virtual machines resources to ensure high availability of applications.
- In an ongoing hands-on laboratory exercise, the student will control user access to the VMware Infrastructure.
- In a written examination, the student will demonstrate the understanding and configuration of VMware vSphere 5 with greater than 75% accuracy.

INSTRUCTIONAL METHODS EMPLOYED IN THIS COURSE

A number of instructional/learning methods are employed in this course, including the following:

- Discussion
- Exams
- Labs
- Lecture
- Reading

INFORMATION RESOURCES FOR THIS COURSE



Textbook

VMware Educational Services. (2011) VMware vSphere 5.0: Install, Configure, Manage. Palo Alto CA: VMware Inc. VAP-ENG-A-VS5ICM-SG.

VMware Educational Services. (2011) VMware vSphere 5.0: Install, Configure, Manage Laboratory Exercises. Palo Alto CA: VMware Inc. VAP-ENG-A-VS5ICM-LAB.



Other Materials

None



Web Site Readings

VMware. VMware Infrastructure
<http://www.vmware.com/products/vi/>
 (Retrieved 5 Feb 2009)

VMware. VMware vSphere Communities
<http://communities.vmware.com/community/vmtn/vsphere>
 (Retrieved 8 April 2010)

Wikipedia. VMware vSphere
http://en.wikipedia.org/wiki/VMware_vSphere
 (Retrieved 8 April 2010)

What's New in VMware vSphere 5?
<http://www.vmware.com/files/pdf/products/vsphere/vmware-what-is-new-vsphere5.pdf>
 (Retrieved 11 June 2012)

VMware vSphere Documentation
<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html?rct=j&q=vsphere%205.0&source=web&cd=4&ved=0CHYQFjAD&url=http://www.vmware.com/go/support-pubs-vsphere&ei=iJzWT7ivHuSg2AXdkel-&usq=AFQjCNGXtliO0Z1fajLgAxEYdJ3VXGQBcA>
 (Retrieved 11 June 2012)

Configuring Maximums for VMware vSphere 5.0
<http://www.vmware.com/pdf/vsphere5/r50/vsphere-50-configuration-maximums.pdf>
 (Retrieved 11 June 2012)

What's New in vSphere 5.0 - Storage
<http://www.vmware.com/files/pdf/techpaper/Whats-New-VMware-vSphere-50-Storage-Technical-Whitepaper.pdf>
 (Retrieved 11 June 2012)

VMware vSphere 5.0 Upgrade Best Practices
<http://www.vmware.com/files/pdf/techpaper/vSphere-5-Upgrade-Best-Practices-Guide.pdf>
 (Retrieved 11 June 2012)

Understanding Memory Resource Management in VMware vSphere 5.0
http://www.vmware.com/files/pdf/mem_mgmt_perf_vsphere5.pdf
 (Retrieved 11 June 2012)

vSphere 5 FAQ: VMFS-5
http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2003813
 (Retrieved 11 June 2012)

VMware vSphere for Enterprise
<http://www.vmware.com/products/vsphere/mid-size-and-enterprise-business/overview.html>
 (Retrieved 11 June 2012)

COURSE OUTLINE

WEEK	TOPIC	READING	PROJECT ASSIGNED	PROJECT DUE
1	Course Introduction Introduction to Virtualization Create Virtual Machines	Module 1 Module 2 Module 3	Install VMware vSphere Graphical user Interface Configuring VMware ESXi Working with Virtual Machines	
2	VMware vCenter Server Configure and Manage Virtual Network	Module 4 Module 5	Configure VMware vCenter Server Appliance Using VMware vCenter Server Standard Virtual Switch	
3	Configure and Manage Virtual Storage	Module 6	Accessing IP Storage (Optional) Design a Network Configuration Managing VMware vSphere VMFS	
4	Virtual Machine Management	Module 7	Using Templates and Clones Modifying a Virtual Machine Migrating Virtual Machines Managing Virtual Machines	
5	Discussion Data Protection	 Module 8	Mid-term Exam	
6	Access and Authentication Control Resource Management and Monitoring	Module 9 Module 10	Access Control Resource Pools Monitoring Virtual Machine Performance Using Alarms	
7	High Availability and Fault Tolerance Scalability	Module 11 Module 12	Using vSphere High Availability vSphere Distributed Resource Scheduler (DRS)	
8	Patch Management	Module 13	VMware vCenter Update manager	
9	Installing VMware Components	Module 14	Installing VMware vCenter Server	
10	Discussion		Final Exam	

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal

AU = Audit	TR = Transfer Credit
WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.