KNWE 0646 Advanced Server Services 1 Course

In this course, students will learn advanced tasks necessary to deploy, manage, and maintain a Windows Server infrastructure.

Course Description

In this course, students will learn advanced tasks necessary to deploy, manage, and maintain a Windows Server infrastructure. Topics in this course include site-level fault tolerance, advanced file services, backup and disaster recovery, DNS security, IP Address Management (IPAM), multi-domain and multi-forest management and support, and site configuration, replication. MCP and MCSA titles (Course 1 of 2 for exam 70-412).These skills are used in business environments to manage day-to-day network and systems operations. This course followed by with KNWE 0746 can be used as preparation to take the Microsoft 70-412 industry exam which validates the advanced configuration tasks necessary to deploy, manage, and maintain a Windows Server 2012 infrastructure and can lead to valuable resume-building titles such as Microsoft Certified Professional (MCP) and Microsoft Certified Solutions Associate (MCSA). The MCP title requires candidates to pass any single Microsoft exam and the MCSA title requires candidates to pass the following three exams: 70-410, 70-411, 70-412. Pursuing the MCSA title will validate the skills and knowledge necessary for implementing, managing, maintaining, and provisioning services and infrastructure in a Windows Server 2012 environment.

Skills developed in this course are used by Server Administrators, Systems Administrators, Network Administrators, Information Technology Specialists (IT Specialists), Local Area Network Administrators (LAN Administrators), IT Managers, Network Specialists, Network Engineers, Network Specialists, Help Desk Techs, and others.

Course Competencies

Students who successfully complete this course will be competent to perform the following functions:

1. Configure Active Directory Domains and Trusts

2. Configure Active Directory Sites and Replication

3. Configure Advanced File Services and Storage Solutions

4. Configure and Perform System and Data Backup and Recovery

5. Implement Advanced DHCP Solutions

6. Implement Advanced DNS Solutions

Module 1 Learning Objectives

Students who complete this module will be able to perform the following tasks:

- Implement multi-domain and multi-forest Active Directory environments, including interoperability with previous versions of Active Directory

- Upgrade existing domains and forests, including environment preparation and functional levels

- Configure multiple user principal name (UPN) suffixes

- Configure external, forest, shortcut, and/or realm trusts

- Configure trust authentication

- Configure name suffix routing

- Implement thin provisioning and trim

- Demonstrate knowledge of advanced file services, Dynamic Access Control, and storage optimization concepts

Learning Activity: TestOut - Complete sections 1.1, 1.2, and 1.3 including quizzes under lesson 1 Active Directory Infrastructure

Learning Activity: Review Textbook Chapter 1 Advanced Active Directory Infrastructure

Link to Chapter 1

0646 Module 1 Practice Exercises

Using live equipment, complete the practice exercises from chapter 1 of the textbook. Following the format used in the Example Lab Demonstration.pdf document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise, briefly describe what the screenshots show. Upload here and submit the assignment for your instructor's review.

Link to Chapter 1 Exercises

Chapter 1 Exercises

1. Create a forest trust
2. Configure name suffix routing
3. Configure selective authentication
4. Configure UPN suffixes
5. Configure a shortcut trust

KNWE 0646 Module 1 AD Infrastructure Exam

Module 2 Learning Objectives

Students who complete this module will be able to perform the following tasks:

- Configure sites and subnets

- Create and configure site links

- Move domain controllers between sites

- Manage AD and SYSVOL Replication

- Configure replication to Read-Only Domain Controllers (RODCs)

- Configure Password Replication Policy (PRP) for RODCs

- Demonstrate knowledge of Active Directory sites and replication concepts

Learning Activity: TestOut - Complete sections 1.4 through 1.8 including quizzes and labs

0646 TestOut 1.0 Evidence of Completion

Students are required to complete each of the TestOut labs and Lesson Review Exams with a passing grade through section 1.8. In TestOut, select the Score Sheet under Personal Reports as shown in the image below. Also, ensure that Exams and Labs are selected under Resource Types. Next, use the Build Report button in the bottom right corner of the screen to build your report. Use the Windows Snipping Tool to capture an image of your report that represents you have completed all labs and quizzes with a passing score then save the image as a jpg and **submit the assignment here in Canvas**.

Learning Activity: Review Textbook Chapter 2 Active Directory Sites and Replication

Link to Chapter 2

0646 Module 2 Practice Exercises

Using live equipment, complete the practice exercises from chapter 2 of the textbook (starting on page 88). Following the format used in the Example Lab Demonstration.pdf document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise, briefly describe what the screenshots show. Upload here and submit the assignment for your instructor's review.

Link to Chapter 2 Exercises

 (scroll to about 2/5th of the page to find the practice exercises).

Chapter 2 Exercises

1. Create AD Sites

2. Create AD Subnets **(*Note: Instead of using the 10.10.10.x/28 addresses as suggested in the book, use the 144.35.120.x addresses you have been assigned and use the /32 subnet mask. Please see your instructor if you have any questions or need assistance.)**

3. Create site links

4. Modify Site link cost and replication schedule

5. Configure MEL-DC as an additional Domain Controller

6. Verify site placement and trigger replication

7. Configure ADL-DC as an RODC

8. Configure RODC replication

9. View account passwords replicated to ADL-DC

10. Monitor replication with repadmin

11. Remove the RODC and reset accounts

KNWE 0646 Module 2 Sites & Replication Exam

Module 3 Learning Objectives

Students who complete this module will be able to perform the following tasks:

- Configure Network File System (NFS) data store
- Configure BranchCache
- Install the File Server Resource Manager Role
- Configure File Classification Infrastructure (FCI)
- Configure file access auditing
- Implement Dynamic Access Control (DAC)
- Configure file classification
- Configure iSCSI target and initiator
- Configure Internet Storage Name server (iSNS)
- Implement thin provisioning and trim
- Demonstrate knowledge of advanced file services, Dynamic Access Control, and storage optimization concepts.

Learning Activity: TestOut - Complete the 6 sections including quizzes under lesson 2 File and Storage Solutions

0646 TestOut 2.0 Evidence of Completion

Students are required to complete each of the TestOut labs and Lesson Review Exams with a passing grade through section 2.6. In TestOut, select the Score Sheet under Personal Reports as shown in the image below. Also, ensure that Exams and Labs are selected under Resource Types. Next, use the Build Report button in the bottom right corner of the screen to build your report. Use the Windows Snipping Tool to capture an image of your report that represents you have completed all labs and quizzes with a passing score then save the image as a jpg and **submit the assignment here in Canvas**.

Learning Activity: Review Textbook Chapter 6 Advanced File Services and Storage

Link to Chapter 6

0646 Module 3 Practice Exercises

Using live equipment, complete the practice exercises from chapter 6 of the textbook. Following the format used in the Example Lab Demonstration.pdf document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise, briefly describe what the screenshots show and briefly describe the steps you took to successfully completed the exercises. Upload here and submit the assignment for your instructor's review.

One item to note, in step 21 of exercise 8 you might see an error which informs you that the file name should use a .vhdx extension rather than a .vhd extension. You should move forward using the .vhdx extension rather than .vhd as mentioned in the book.

Link to Chapter 6 Exercises

Exercise Goals

1. Creating set of properties and rules that automatically assigns a Ready To Archive: Yes value to any file that has not been accessed in more than 365 days.

2. Creating an additional iSCSI virtual disk on SYD-DC. Configuring the iSCSI virtual disk so that it can only be accessed by ADL-DC. Connecting, mounting, and formatting the disk.

KNWE 0646 Module 3 Exam File & Storage Solutions

Module 4 Learning Objectives

Students who complete this module will be able to perform the following tasks:

- Configure and Manage Local and Network Backups
- Configure Windows Server Backups
- Manage VSS settings using VSSAdmin
- Restore from backups
- Recover servers using Windows Recovery Environment (Win RE) and safe mode
- Configure the Boot Configuration Data (BCD) store
- Demonstrate knowledge of system and data backup and recovery concepts

Learning Activity: TestOut - Complete the 4 sections including quizzes under lesson 3 Disaster Recovery

0646 TestOut 3.0 Evidence of Completion

Students are required to complete each of the TestOut labs and Lesson Review Exams with a passing grade through section 3.4. In TestOut, select the Score Sheet under Personal Reports as shown in the image below. Also, ensure that Exams and Labs are selected under Resource Types. Next, use the Build Report button in the bottom right corner of the screen to build your report. Use the Windows Snipping Tool to capture an image of your report that represents you have completed all labs and quizzes with a passing score then save the image as a jpg and **submit the assignment here in Canvas**.

Learning Activity: Review Textbook Chapter 5 Backup and Recovery

Link to Chapter 5

0646 Module 4 Practice Exercises

Using live equipment, complete the practice exercises from chapter 5 of the textbook. Following the format used in the Example Lab Demonstration document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise and briefly describe what the screenshots show. Upload here and submit the assignment for your instructor's review.

Please let your instructor know if you need assistance setting up an environment to perform the tasks from this chapter.

Link to Chapter 5 Exercises

Exercises:

Notes* Please do not complete Exercise 8 as there is already a DHCP server running in the classroom that will provide the required addressing for Exercise 9.

For Exercises 9-11, you may need direct access to the Hyper-V server that is hosting your virtual machines. Please work with your instructor for this level of access which will need to be done on campus.

Exercises 12 and 13 are optional if you would prefer to not set up a Windows Azure Backup.

The following are goals of the exercises in chapter 5:

1. Performing a local backup using Windows Server Backup
2. Performing a backup over the network using Windows Server Backup
3. Using Vssadmin.exe to manage volume shadow copies
4. Performing a full server recovery over the network using Windows RE
5. Booting into Safe Mode
6. Modifying the Boot Configuration Data Store
7. Configuring a computer to use Windows Azure Backup (**Exercise 12 Is Optional**)
8. Backing up data to and restoring data from Windows Azure Backup (**Exercise 13 is Optional**)

KNWE 0646 Module 4 Exam Backup & Restore

Module 5 Learning Objectives

Students who complete this module will be able to perform the following tasks:

- Create and configure superscopes and multicast scopes
- Implement DHCPv6
- Configure high availability for DHCP, including DHCP failover and split scopes
- Configure DHCP Name Protection
- Configure DNS registration
- Provision IPAM manually or by using Group Policy
- Configure server discovery
- Create and manage IP blocks and ranges

- Monitor utilization of IP address space

- Demonstrate knowledge of advanced DHCP and IPAM concepts

Learning Activity: TestOut - Complete the 7 sections including quizzes under lesson 4 Advanced DHCP

0646 TestOut 4.0 Evidence of Completion

Students are required to complete each of the TestOut labs and Lesson Review Exams with a passing grade through section 4.7. In TestOut, select the Score Sheet under Personal Reports as shown in the image below. Also, ensure that Exams and Labs are selected under Resource Types. Next, use the Build Report button in the bottom right corner of the screen to build your report. Use the Windows Snipping Tool to capture an image of your report that represents you have completed all labs and quizzes with a passing score then save the image as a jpg and **submit the assignment here in Canvas**.

Learning Activity: Review Advanced DHCP Lessons 2 and 3 from Chapter 3

Link to Chapter 3

0646 Module 5 Practice Exercises

Please see your instructor before beginning these lab exercises.

Using live equipment, complete the practice exercises 1 and 9 through 20 from chapter 3 of the textbook (skipping the DNS-related exercises 2-8 which you will complete in the next module). Following the format used in the Example Lab Demonstration document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise. Upload here and submit the assignment for your instructor's review.

Link to Chapter 3 Exercises

Exercises

You should complete Exercises 1 and 9-20 from the textbook .

Goals From These Exercises:

1. Deploying a split scope
2. Configuring DHCP Name Protection
3. Setting up a multicast scope
4. Enabling DHCP failover
5. Configuring and deploying IPAM

KNWE 0646 Module 5 Exam Advanced DHCP

Module 6 Learning Objectives-3

Students who complete this module will be able to perform the following tasks:

- Configure security for DNS, including Domain Name System Security Extensions (DNSSEC), DNS Socket Pool, and cache locking

- Configure DNS logging

- Configure delegated administration

- Configure recursion, netmask ordering, and GlobalNames zone

- Demonstrate knowledge of advanced DNS concepts

Learning Activity: TestOut - Complete the 3 sections including quizzes under lesson 5 Advanced DNS

0646 TestOut 5.0 Evidence of Completion

Students are required to complete each of the TestOut labs and Lesson Review Exams with a passing grade through section 5.3. In TestOut, select the Score Sheet under Personal Reports as shown in the image below. Also, ensure that Exams and Labs are selected under Resource Types. Next, use the Build Report button in the bottom right corner of the screen to build your report. Use the Windows Snipping Tool to capture an image of your report that represents you have completed all labs and quizzes with a passing score then save the image as a jpg and **submit the assignment here in Canvas**.

Learning Activity: Review Advanced DNS from Lesson 1 of Chapter 3

Link to Chapter 3

0646 Module 6 Practice Exercises

Using live equipment, complete the practice exercises from chapter 3 of the textbook. Following the format used in the Example Lab Demonstration document, use MS Word and the MS Snipping Tool or equivalent tools to create screenshots of the key moments of each exercise. Upload here and submit the assignment for your instructor's review.

Link to Chapter 3 Exercises

Exercises

1. Configuring DNSSEC
2. Configuring NRPT
3. Creating GlobalNames zone
4. Configuring advanced DNS server options

KNWE 0646 Module 6 Exam Advanced DNS

Practice Final (Not Required)

The Practice Final is administered through TestOut and will allow you additional preparation if needed before taking the final exam. The Practice Final is not required. Students may request access to the Practice Final exam at any time.

KNWE 0646 Final Skills Assessment (Required)

The Final Skills Assessment will allow students to demonstrate their ability to configure services and settings presented throughout this course. The exam will be administered through TestOut as your other exams have been and will include 15 performance-based assessment items and will require a score of 75% or higher to pass. Students are allowed 150 minutes to complete this closed-book exam which must be taken in the TB 517 classroom or other room as directed by your instructor.

Please notify your instructor when you are ready to take this exam. Once you have passed the exam, upload a screen capture of your score here in Canvas and click on the Submit button.