Preview: IT4510 : Network Infrastructures Administration

Syllabus

Course Overview

In this course, you will explore fundamental network administration concepts using the latest network operating system (NOS) tools for planning, installing, configuring, optimizing, securing, printing, and troubleshooting an enterprise network. Topics include IPv6, DHCP, DNS, group policy, SNMP, and print services. This course aligns with some learning outcomes necessary to prepare for various Microsoft certification examinations.

Technology Resources

This Capella course offers real-world, hands-on labs provided by Practice-Labs.com. These labs offer guided practice in performing tasks related to achieving course competencies and completing assessments. If you require the use of assistive technology or alternative communication methods to participate in these activities, please contact DisabilityServices@Capella.edu to request accommodations.

Course Competencies

(Read Only)

To successfully complete this course, you will be expected to:

1. Plan a strategy for designing and employing a Microsoft Windows network administration model that solves an organizational problem.
2. Manage performance in a Windows-based environment.
3. Configure Windows-based network services and protocols.
4. Design a network infrastructure to solve a business problem in a Windows-based environment.
5. Evaluate the effectiveness of a variety of Windows-based network configurations.
6. Implement network security, policies, and standards in a Windows-based network environment.
7. Troubleshoot a Windows-based network administration.

8 Communicate effectively.

Course Prerequisites

Prerequisite(s): Completion of or concurrent registration in IT3355 and IT3358.

Syllabus >> Course Materials

Required

The materials listed below are required to complete the learning activities in this course.

Library

- Minasi, M., Booth, C., Butler, R., Greene, K., McCabe, J., Panek, R., Rice, M., & Roth, S. (2014). *Mastering Windows Server 2012 R2.* Sybex.

Suggested

Optional

The following optional materials are offered to provide you with a better understanding of the topics in this course. These materials are not required to complete the course.

Library

- Skillsoft. (n.d.). Server 2012 R2: Administration: Group policy processing [Tutorial].
- Skillsoft. (n.d.). Server 2012 R2: Administration: Managing GPOs and preferences [Tutorial].
- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Active directory [Tutorial].

- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Hyper-V [Tutorial].
- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Servers [Tutorial].
- Skillsoft. (n.d.). TestPrep 70-140 installing and configuring Windows Server 2012 [Tutorial].

Projects

Project >> Windows Network Infrastructure Proposal

Project Overview

The course project takes a problem-based, case-based approach to learning the course material by putting you into the role of a consultant who will provide solutions to a fictitious customer.

The project is broken down into component assignments in each unit. You will receive feedback on each component and use that feedback to update your designs for the final project submission. This feedback will include evaluation of how well you have articulated a design that is clearly and directly tied to business needs and user requirements.

You will design a Windows-based network infrastructure for Happy Health Systems (HHS), described in the scenario below. As you work on the project, focus on the main concepts that have been presented each week. Using this information, choose from similar technologies and services to create a design that best fits the needs of the scenario, business needs, and user requirements. In your project components, discuss alternatives for your particular design choices, make design decisions about network components, and then implement your selected alternatives in your final design.

Scenario

Your consulting company has been hired by the CIO of HHS to design a Windows-based network infrastructure for the organization. You will create a virtual infrastructure proposal for HHS that will include strategies for ensuring high availability, scalability, security, and a plan for virtual migration.

About Happy Health Systems

HHS is a health care organization consisting of four hospitals, 10 clinics, a physicians' practice, and a research facility. The facilities cover a three-state area for which a central administration infrastructure is in place. The main administration hub for HHS is located at one of its hospitals, and each location has its own tiered support team. The main hub is administered by a single set of senior managers who all report to the same board of directors.

HHS currently connects a few remote locations, but it is not satisfied with the limited capability and lack of security of these locations.

Senior management is hoping for you to be able to build a new virtualization infrastructure within the current network infrastructure. You have also been asked to make virtual their main clinical electronic medical record

(EMR) application system as part of this project.

A summary of usage follows:

- The number of users at each of the hospitals averages 2,000.
- The number of users at each of the clinics averages 100.
- The physicians' practice includes 45 physicians, 300 residents, and 200 medical students at any given time.
- The research facility includes 35 users.

HHS has chosen to implement a common EMR system that will be used throughout their organization by all of the facilities under its umbrella. This EMR system is the main clinical system in use throughout the organization with the exception of the radiology and lab systems. The applications are used for the maintenance of electronic medical records as follows:

- EPIC Electronic Health Record: The main clinical system used all facilities except radiology and lab.
- Phillips I-Site Radiology System: The main EMR system used at radiology facilities.
- Cerner Pathnet Laboratory Solution: The main EMR system used at the lab facilities.

The following applications are issued to all users throughout HHS in addition to the EMR system:

- MS Exchange e-mail.
- Microsoft Office Suite.
- PeopleSoft ERP (finance, supply chain, and HR and payroll modules).
- Symantec Security Suite.
- Spybot Search and Destroy.

Each site separately has a 1GB ethernet fiber backbone and the network segments from the core switches to desktop use fiber as well.

You have been asked to propose a virtualization infrastructure that will support the implementation of this system. You are also asked to virtualized the main clinical EMR application.

Your solution must address these specific needs, in addition to the business needs and user requirements:

- Security.
- Availability.
- Reliability.
- Manageability.
- Scalability.
- Supportability.

- **Written communication:** Written communication should be free of errors that detract from the overall message.
- **Length of paper:** No page length requirements. The software system you design will dictate the number of pages required.
- **References:** Include a list of references, including books, Web sites, articles, and other resources.

- **Diagrams:** All diagrams must be done in an application such as Visio (Windows) or Omnigraffle (Mac). Capella provides a free copy of Visio for your use. See the study in Unit 1.
- **APA formatting:** Resources and citations should be formatted according to current APA style and formatting guidelines.
- **Font:** Arial, 10-point.

Unit 1 >> Introduction to a Windows infrastructure

Introduction

In this unit, you will be introduced to the fundamental concepts and theories related to Windows-based network infrastructures and basic Windows-based networks. From the physical network to the Windows Server administration tasks, you will explore a broad range of Windows Server networking concepts, including the services, software, and components that are typically found in Microsoft-based network infrastructures.

For the course project this week, you will take your initial steps toward developing a network infrastructure proposal by creating the scope document in which you will define organizations, identify a scope, and explore the fundamental physical design considerations as you begin developing your strategies for Windows-based network deployment.

Learning Activities

u01s1 - Studies

Readings

In *Mastering Windows Server 2012 R2*, read:

- Chapter 1, "What's New in Windows Server 2012 R2," pages 1–17.
- Chapter 2, "Installing and Upgrading to Windows Server 2012 R2," pages 19–103.

Optional Skillsoft Resources

- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Servers [Tutorial].
- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Active directory [Tutorial].

u01s2 - Software Preparation and Technology Access

In this course, you will be using software and technology that is needed to complete designated activities and assignments. There is no additional cost for this software and technology. Some software packages will be made available to you at no additional cost through Capella's subscription with Microsoft, while other software packages are available for free download through open-source licensing.

Capella University requires learners to meet certain minimum computer requirements. Please note that some software required for a course may exceed these minimum requirements. Check the requirements for the software you may need to download and install to make sure it will work on your device. Most software will require a Windows PC. If you use a Mac, refer to Installing a Virtual Windows Environment.

The software and technologies below are strongly recommended to support you in completing the course objectives. If you have access to other tools that you believe may still meet course requirements or if you have any difficulties accessing this resource or completing the related assignments, please contact your course faculty member to discuss potential alternatives.

If you use assistive technology or any alternative communication methods to access course content, please contact DisabilityServices@Capella.edu with any access-related questions or to request accommodations.

For this course, follow the instructions provided through the links below to download and install software or register for an account, as required.

Microsoft Software

1. Visit Capella's Microsoft Software page for instructions on obtaining free Microsoft software.
2. Identify the version of MS Visio that is compatible with your operating system.
3. Download and install.

Practice Labs

This Capella course offers real-world, hands-on labs provided by Practice Labs in many of the units of this course. Click the Practice Labs Orientation link in this unit to access an introductory lab.

Note: As a Capella learner, you have access to IT online resources through Capella's Skillsoft subscription, where you can find helpful materials.

u01s3 - Course Preparation

Bloom's Taxonomy – Enhance Your Critical Thinking Skills

Critical thinking is an important skill to cultivate for both your coursework and professional development. Many learners do not initially realize that there are different ways of thinking and levels of depth in understanding. Bloom's taxonomy provides a structure to help conceptualize these different levels. Awareness of different ways to approach information helps you move beyond basic understanding to more effectively analyze, evaluate, and synthesize important concepts. It also helps you to clarify expectations and provide an appropriate level of response for your coursework.

Capella University Library

Being able to identify, analyze, and synthesize information is a critical skill. Many resources are readily available online, but it is important to use appropriate and high quality information to support academic and professional activities. This process includes not only locating information but also ensuring that the information is sound, appropriate, and worthy of academic use. Welcome to Library Guides provides guidance for accessing and using the rich resources available in the Capella University Library and beyond.

Here are a few Capella University Library resources:

- Tour the Library.
- Getting Critical Search Skills.
- How Do I Find Peer-Reviewed Articles?

Capella Online Writing Center

Visit the Capella Online Writing Center for a variety of tools to help you improve your written communication and presentation skills. You may also send papers to the Smarthinking Tutoring service, to receive feedback and revision suggestions prior to submitting assignments.

Here are a few Writing Center resources:

- APA Style and Format.
- Annotated Bibliography.

- Academic Honesty.

Campus Resources

The following Campus resources for learners are commonly used in Capella courses:

- Time Management.
- Capella Career Center.
- Research and Scholarship.

Self-Paced Tutorials

- This course requires you to complete assignments using Microsoft products, including MS Visio. Capella University supplies optional tutorials for these software products. Go to the Microsoft Office Software page to access these resources.
- Capella also has an extensive library of self-paced tutorials available to learners. To browse the available tutorials, go to the Capella Tutorials page.

u01s4 - Project Preparation

At the end of this course, you will submit a paper as the final component of your course project. There are five components:

- Unit 1, Assignment 1: Windows Network Infrastructure Scope Document.
- Unit 2, Assignment 2: Physical Design and Addressing Strategy.
- Unit 3, Assignment 3: DHCP and DNS Strategy.
- Unit 4, Assignment 4: Windows Server Administration and Security Plan.
- Unit 5, Assignment 5: Windows Network Infrastructure Proposal.

To achieve a successful project experience and outcome, you are expected to meet the following requirements:

- Read the course project description to learn the requirements for your course project, which is due in Unit 5. Examine the project's objectives and requirements and view the grading criteria in the scoring rubric. Note that one of the criteria on which your project will be evaluated is the effectiveness of your written communication.
- Begin preparing for your course project by observing how upcoming unit assignments and discussions will be incorporated into your project assignment. Refer to supplemental resources, optional readings, Web sites, articles, and additional suggested materials to begin your research. Contact your instructor if you have any questions about the course project or the associated project components.

- You are strongly encouraged to begin working on the course project now and to continue to work on it throughout the course.

u01v1 - Practice Labs Orientation: Module Zero – Basics

This lab is designed to familiarize you with the Practice Labs platform. This is a great time to ensure that you can access the labs without any technical difficulty.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

If you have technical issues pertaining to accessing the hands-on labs, contact Practice Labs Technical Support:

- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u01v2 - Hands-On Lab: Install and Configure Servers

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

u01v3 - Hands-On Lab: Configure Disk Pools

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

Course Resources
Configure Disk Pools

u01v4 - Hands-On Lab: Install Domain Controllers

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

u01v5 - Hands-On Lab: Install AD DS on Server Core

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

u01a1 - Windows Network Infrastructure Scope Document

In the course project description, you have been provided an organization to use for your course project.

Using any additional resources you find helpful, create a draft document of your project scope based on the business goals and constraints of the organization. Your goal is to develop an initial scope document and proposal for transitioning from a traditional computing environment to one based on strategic use of a Windows-based server infrastructure. You are to describe the organization's current state and environment and to identify the process, benefits, and risks for deploying Windows Server within that environment.

As part of this redesign, you are asked to evaluate the existing infrastructure and make any and all improvements you believe are appropriate to improve the cost and efficiency of managing the network.

To prepare for this assignment, do the following:

- Complete the required virtual labs for this week.
- Research this topic and include at least three references from articles, books, or Web sites to support your paper.

Your completed scope should include the following:

- Describe the organization in detail, including information about its size, location, organizational user, and network.
- Identify the main business problems and requirements, including information about organizational user, organizational systems, and network requirements.

- Describe the initial physical design considerations appropriate for the early stages of a Windows-based infrastructure project, including basic design decisions related to topology, device selection, and placement choices.
- Identify and describe decision makers, stakeholders, and those individuals included in the requirements analysis and information gathering phases of a project related to the deployment of a Windows network infrastructure.
- Discuss the business and IT benefits of this transition.
- Describe the business and IT risks involved in this transition.
- Describe how the concepts and activities presented in the labs this week supported your scope document.

Make sure that your paper is professionally written and free of errors and that APA formatting is applied throughout. When it is complete, submit your assignment.

u01d1 - Planning for a Unified Environment

You are a consultant for Students of Capella (SOC), a global consulting firm based in Minneapolis, Minnesota. You have recently been hired by HHS to help with the redesign of their wide area network (WAN). Both organizations are considering implementing a Windows Server infrastructure.

Choose one organization to represent, and answer the following:

- What are the primary concerns that you must address while planning for this transition for your organization?
- Describe at least two issues that must be addressed before and during the installation of Windows Server.

Response Guidelines

Respond to at least two other peers' posts. Do you agree with their points or have anything to add?

Course Resources
Undergraduate Discussion Participation Scoring Guide

Unit 2 >> Window's Physical Design and Addressing Strategy

Introduction

This unit will provide the skills and knowledge needed to design a virtual infrastructure. In this unit, you will learn to design your topology while obtaining a hands-on working knowledge of the Windows Server operating system. IPv4 and IPv6 addressing schemes and strategies will also be explored and compared. As you progress throughout the week, the labs will expand your knowledge by teaching you how to configure advanced addressing schemes within Windows Server.

For the project this week, you will be required to create your physical infrastructure proposal by designing the physical network topology and creating an IPv6 addressing strategy for the HHS network infrastructure.

Learning Activities

u02s1 - Studies

Readings

In *Mastering Windows Server 2012 R2*, read:

- Chapter 4, "Windows Server 2012 R2 Networking Enhancements," pages 147–172.
- Chapter 6, " DNS and Name Resolution in Windows Server 2012 R2," pages 211–255.

Optional Skillsoft Resource

- Skillsoft. (n.d.). Server 2012 R2: Administration: Managing GPOs and preferences [Tutorial].
- Skillsoft. (n.d.). Server 2012 R2: Administration: Group policy processing [Tutorial].

u02v1 - Hands-On Lab: Configure Local Storage

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u02v2 - Hands-On Lab: Configure File and Share Access

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

Course Resources
Configure File and Share Access

u02v3 - Hands-On Lab: Create and Configure Virtual Networks

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u02v4 - Hands-On Lab: Configure Network Interface Card Teaming in VMs

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

If you have technical issues pertaining to accessing the hands-on labs, contact Practice Labs Technical Support:

- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u02v5 - Hands-On Lab: Managing IPv4 and IPv6 Addressing

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u02a1 - Physical Design and Addressing Strategy

Provide a physical design for HHS. Using any additional resources you find helpful, create a physical design and IP addressing strategy for your new network infrastructure. Analyze and design a network topology that displays basic server placement and segmentation to support a reliable network.

As part of this redesign, you are asked to evaluate the existing infrastructure and make any and all improvements you believe are appropriate to improve the cost and efficiency of managing the network.

To prepare for this assignment, do the following:

- Complete the required virtual labs for this week.
- Research this topic and include at least three references from articles, books, or Web sites to support your paper.

Your completed design should include the following:

- Design a physical topology that is appropriate for the organization. Your discussion and design should correlate with the organization description that you provided last week.
- Create a diagram that displays a site plan from a physical design perspective, including design components related to topology, device selection, and placement choices.
- Write an analysis of your physical design, providing appropriate rationale for the chosen topology and device placement.
- Design an IPv4 strategy that represents the new architecture; include decisions relative to subnetting, class, and type of addresses used.
- Analyze a strategy for IP addressing and subnetting that is appropriate for HHS.
- Design an IPv6 scheme using your IPv4 strategy and apply it to your network.
- Compare and contrast IPv4 and IPv6 addressing and subnetting.
- Describe IP configuration steps for Windows Server 2012 and HHS, including any special considerations or circumstances that must be addressed.
- Describe how the concepts and activities presented in the labs for this week supported your addressing strategy.

Make sure that your paper is professionally written and free of errors and that APA formatting is applied throughout. When it is complete, submit your assignment.

Course Resources

APA Style and Format

u02d1 - Subnetting

You are a consultant for Students of Capella (SOC), a global consulting firm based in Minneapolis, Minnesota. You have recently been hired by HHS to help with the redesign of its network infrastructure. You are meeting with the network engineers to plan the new addressing scheme, and, as a team, you all are discussing the possible implementation of subnets.

Answer the following:

- What are the benefits of using subnets?
- What are the risks associated with using subnets?
- What requirements must be calculated in order to apply subnets to HHS?

Response Guidelines

Respond to at least two other peers' posts. Do you agree with their points or have anything to add?

Course Resources
Undergraduate Discussion Participation Scoring Guide

Unit 3 >> Windows DHCP and DNS

Introduction

This unit introduces advanced addressing and naming strategies. You will explore Dynamic Host Configuration Protocol (DHCP) and the Domain Name Service (DNS). This week's material will describe how to install, configure, and maintain these services within Windows Server, and best practices for designing and incorporating these network services into a Windows-based infrastructure will also be explored.

For the project this week, you will be required to create your logical design proposal, by designing a DHCP and DNS strategy and naming scheme for the redesign of HHS.

Learning Activities

u03s1 - Studies

Readings

In *Mastering Windows Server 2012 R2*, read:

- Chapter 5, "IP Address Management and DHCP Failover," pages 175–209.

Optional Skillsoft Resource

- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Servers [Tutorial].

u03v1 - Hands-On Lab: Create and Configure Virtual Machine Settings

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

If you have technical issues pertaining to accessing the hands-on labs, contact Practice Labs Technical Support:

- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u03v2 - Hands-On Lab: Create and Configure Virtual Machine Storage

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u03v3 - Hands-On Lab: Deploy and Configure DHCP Service

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u03v4 - Hands-On Lab: Deploy and Configure DNS Service

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

If you have technical issues pertaining to accessing the hands-on labs, contact Practice Labs Technical Support:

- Help and Support: https://practice-labs.com/Help-support.aspx

- E-mail: contactus@practice-labs.com

u03v5 - Hands-On Lab: Configuring Work Folders

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

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- E-mail: contactus@practice-labs.com

u03a1 - DHCP and DNS Strategy

For this assignment, use any additional resources you find helpful to provide a DHCP and DNS strategy for the HHS network infrastructure.

The main goal for this assignment is to define your logical strategy for expanding upon your existing WAN design. You are creating a workable WAN network for HHS that includes DHCP and DNS servers.

Your logical plan should involve at least two separate locations. A discussion of the strategies and techniques that you would apply in adding upon your existing WAN should be included along with a network diagram of your newly proposed WAN network.

To prepare for this assignment, do the following:

- Complete the required virtual labs for this week.
- Research this topic and include at least three references from articles, books, or Web sites to support your paper.

Your completed plan should include the following:

- Create a DHCP and DNS plan that is appropriate for the organization. Your discussion and design should correlate with the organization description that you provided last week.
- Design a DHCP server topology that is appropriate for the organization. Your discussion and design should correlate with the organization description that you provided last week.
- Write an analysis of your DHCP server topology design, providing appropriate rationale for the chosen topology and device placement.
- Design a DNS server topology that is appropriate for the organization. Your discussion and design should correlate with the organization description that you provided last week.
- Write an analysis of your DNS server topology design, providing appropriate rationale for the chosen topology and device placement.
- Describe an appropriate DHCP strategy to support HHS's WAN network infrastructure that includes scope, exclusions, and lease.
- Design an appropriate DNS naming strategy to support HHS's WAN network infrastructure that includes relative DNS naming schemes.
- Describe DHCP configuration steps for Windows Server 2012 and HHS, including any special considerations or circumstances that must be addressed.
- Describe DNS configuration steps for Windows Server 2012 and HHS, including any special considerations or circumstances that must be addressed.
- Describe how the concepts and activities presented in the labs for this week supported your plan for high availability.

Make sure that your paper is professionally written and free of errors and that APA formatting is applied throughout. When it is complete, submit your assignment.

Course Resources

APA Style and Format

u03d1 - Troubleshooting the DNS

Imagine that the project planning phase for HHS is complete and that you have begun the implementation phase. You have configured your DNS server and are ready to begin adding PCs to the domain. With your first PC, you receive this error: "The domain HappyHealthSys.local course could not be contacted." What steps would you take to troubleshoot this issue?

Response Guidelines

Read your peers' posts and provide quality comments for at least two of your peers.

- Did you take the same steps to troubleshoot as your peers?
- What was different?
- As it relates to the project, what additional information or insight were your peers able to offer?

Course Resources

Undergraduate Discussion Participation Scoring Guide

Unit 4 >> Windows Server Administration and Security

Introduction

This unit offers tips and information on creating effective server management and security practices and strategies. The material will introduce several tools that reside within Windows Server to help administrators monitor performance, maintain server compliance, and build a secure infrastructure.

For this week's project component, you will create a maintenance, monitoring, and security strategy for HHS that integrates many of the Windows Server embedded administration tools and services.

Learning Activities

u04s1 - Studies

Readings

In *Mastering Windows Server 2012 R2*, read:

- Chapter 8, "Creating and Managing User Accounts," pages 378–464.
- Chapter 9, "Group Policy: AD's Gauntlet and Active Directory Delegation," pages 467–531.

Optional Skillsoft Resource

- Skillsoft. (n.d.). Server 2012 R2: Installing and configuring: Hyper-V [Tutorial].

u04v1 - Hands-On Lab: Managing Failover Clustering

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

Practice Labs Technical Support

If you have technical issues pertaining to accessing the hands-on labs, contact Practice Labs Technical Support:

- Help and Support: https://practice-labs.com/Help-support.aspx
- E-mail: contactus@practice-labs.com

u04v2 - Hands-On Lab: Create and Manage AD Groups and OUs

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

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u04v3 - Hands-On Lab: Create and Manage Active Directory Users and Computers

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part

of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

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u04v4 - Hands-On Lab: Create Group Policy Objects

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

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u04a1 - Windows Server Administration and Security Plan

For this assignment, use any additional resources you find helpful to provide a maintenance, monitoring, and security plan for a Windows-based network infrastructure. Provide a written description of your plan that includes a discussion of the tools available in Windows Server for network monitoring, maintenance, and administration.

To prepare for this for this assignment, do the following:

- Complete the required virtual labs for this week.

- Research this topic and include at least three references from articles, books, or Web sites to support your paper.

Your completed plan should include the following:

- Design a maintenance, monitoring, and security strategy that is appropriate for the organization. Your discussion and design should correlate with the organization description that you provided last week.
- Include in your strategy at least three network performance monitoring tools that are available within Windows Server.
- Include in your strategy at least three server monitoring tools that are available within Windows Server.
- Include in your strategy at least three security tools that are available within Windows Server.
- Include a strategy for finding, preventing, and fixing network server issues and trouble areas.
- Include a strategy that discusses how you plan to manage, monitor, and control application and server upgrades, patches, and compliancy on the network.
- Describe security configuration steps for Windows Server 2012 and HHS, including any special considerations or circumstances that must be addressed.
- Describe performance management configuration steps for Windows Server 2012 and HHS, including any special considerations or circumstances that must be addressed.

Make sure that your paper is professionally written and free of errors and that APA formatting is applied throughout. Once it is complete, submit your assignment.

Course Resources

APA Style and Format

u04d1 - Server Security

You are a consultant for Students of Capella (SOC), a global consulting firm based in Minneapolis, Minnesota. You have recently been hired by HHS to help redesign the network. You are meeting with the team of network engineers to discuss measures that can be taken to secure the Windows server infrastructure.

Choose one organization to represent and answer the following:

- What tools are available as part of Windows Server to help maintain the privacy of the servers?
- What external tools or measures do you plan to apply to ensure the security of servers within the infrastructure?

Response Guidelines

Respond to at least two other peers' posts. Do you agree with their points or have anything to add?

Course Resources
Undergraduate Discussion Participation Scoring Guide

Unit 5 >> Routing and Remote Access

Introduction

This unit covers a very important topic for Windows-based network infrastructures: routing and remote access. The unit explores Windows routing and remote access services and provides instructions for installing, configuring, and maintaining its services.

This week, you will complete your Windows Network Infrastructure Proposal project. All of the previous project components will be compiled and refined, and a discussion of routing and remote access will be added.

Learning Activities

u05s1 - Studies

Readings

In *Mastering Windows Server 2012 R2*, read:

- Chapter 17, "Remote Server Administration," pages 883–926.

Optional Skillsoft Resources

- Skillsoft. (n.d.). TestPrep 70-140 installing and configuring Windows Server 2012 [Tutorial].

u05v1 - Hands-On Lab: Configure Print and Document Services

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

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u05v2 - Hands-On Lab: Configure Security Policies

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

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u05v3 - Hands-On Lab: Configure Application Restriction Policies

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

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u05v4 - Hands-On Lab: Configure Windows Firewall

Read the requirements for all related course activities in this unit before completing this lab. Follow the lab instructions carefully, as you may be required to take screen captures or produce lab related documents as part of graded activities. Take notes as needed as you complete the lab to help you meet all requirements.

Click the linked title heading above to access the hands-on lab.

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u05a1 - Windows Network Infrastructure Proposal

For this assignment, your goal is to compile all of your previous assignments into one final Windows Network Infrastructure Proposal.

Using any additional resources you find helpful, update your assignments based on your instructor feedback and then finalize your proposal.

As part of this redesign, you are asked to evaluate the existing infrastructure and make any and all improvements you believe are appropriate to improve the cost and efficiency of managing the network

To prepare for this assignment, do the following:

- Complete the required virtual labs for this week.
- Research this topic and include at least three references from articles, books, or Web sites to support your paper.

Your completed Windows Network Infrastructure Proposal should include the following:

- Create a project scope document that details appropriate business requirements, IT goals, and project parameters for the given scenario.
- Create a physical design that is accurately represented using design diagrams and a written analysis that is comprehensive and appropriately meets the organization's needs.
- Design a logical plan that is accurately represented using effective IP, DHCP, and DNS strategies and a written analysis that is comprehensive and appropriately meets the organization's needs.
- Design a maintenance, monitoring, and security strategy that accurately represents business needs, using a detailed written analysis.
- Integrate routing and remote services into the new Windows network design.
- Make sure that your paper is professionally written, structured, and free of errors, and that APA formatting is applied throughout.

When it is complete, submit your document.

Course Resources

APA Style and Format

u05d1 - Reflection

Discuss your experience in this course.

- What you have learned in this course?
- How might the information benefit you in the future?
- How would you rate your experience using the virtual practice labs and exam activities offered in this course?

Course Resources

Undergraduate Discussion Participation Scoring Guide