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ARE YOU READY FOR THE MTA?

Exploring BYOD: Mobile Identity and Device Management

STUDY GUIDE for EXAM 98-368:
Mobility and Devices Fundamentals

PREPARING FOR MTA CERTIFICATION

98-368 Mobility and Devices Fundamentals

AUTHORS

Michael Teske Michael is a network specialist instructor at Northeast Wisconsin Technical College, focusing on Windows Server and desktop operating systems. He has developed a variety of courses for the college during more than 14 years of employment. Michael remains active as a business technology consultant, where he has practiced for over 20 years. His area of expertise includes Microsoft on-premises and cloud-based solutions. He recently earned his MBA in Computer Information Security. Michael is the author of the 98-349 Windows Operating System Fundamentals and 98-365 Windows Server Administration Fundamentals Exam Review Kits in the MTA Certification Exam Review Kit series.

Andrew Warren Andrew has more than 25 years of experience in the information technology (IT) industry, many of which he spent teaching and writing. Andrew has been involved as a subject matter expert for many Microsoft Official Curriculum courses, and he has been the technical lead on a number of other courses. Andrew also has been involved in developing TechNet sessions on Microsoft Exchange Server. Based in the United Kingdom, Andrew runs his owcn IT training and education consultancy.

Patricia Philips Patricia taught computer science for 20 years in Janesville, Wisconsin. She served on the Microsoft National K–12 Faculty Advisory Board. She has worked in a variety of roles related to K–12 curriculum development and pilot programs, including Microsoft Expression Studio web design, Microsoft XNA, and TouchDevelop curriculum development, in addition to MTA Certification Exam Review Kits. She is currently the editor of the Computer Science Teachers Association newsletter, the Voice, and she consults on a variety of computer science curriculum projects.

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INTRODUCTION

MTA validates building-block technology concepts and helps students explore, discover, and pursue successful careers in information technology (IT) or computer science (CS) in an exciting and rewarding way. This entry-level certification provides students with confidence, credibility, and differentiation.

Explore career options without committing a lot of time and resources   MTA exams validate the core technology knowledge that is in demand today by businesses around the world. Whether you want to explore becoming a network administrator, software engineer, web developer, or database analyst, MTA gets you started on the right path.

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Empower yourself   As the first step toward becoming a MCSA, MTA shows your commitment to technology. This Student Study Guide serves as a study tool to help students prepare for their MTA certification exam. Students are challenged with real-life situations for each of the major topics covered in the exam. Although successful completion of the study guide exercises does not guarantee that you will pass your MTA exam, it is an excellent way to gauge your readiness to take the exam and build confidence that you know your stuff on exam day.

START

MTA 98-368
MOBILITY AND DEVICES FUNDAMENTALS
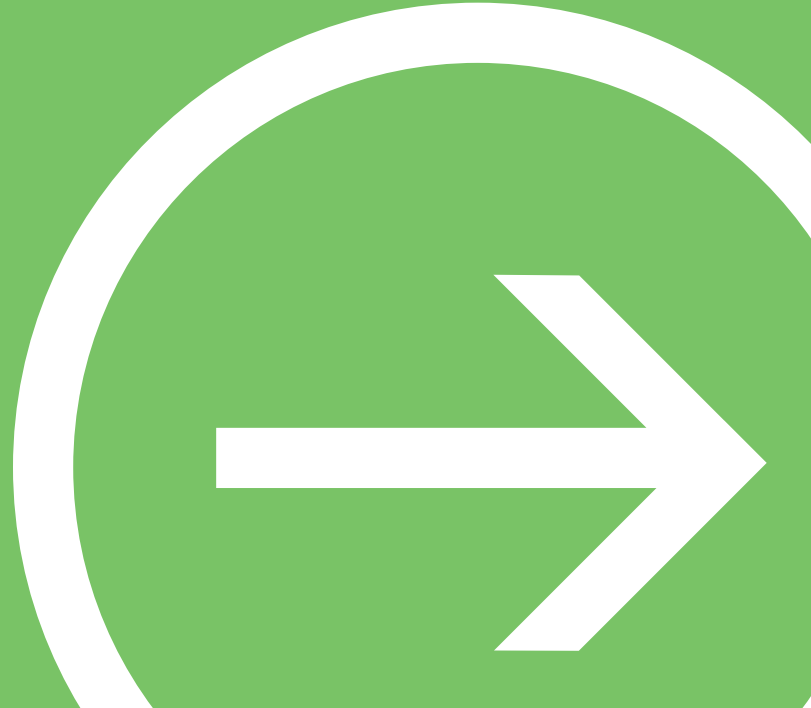
OBJECTIVE 1

Understand device configurations

CONFIGURE DEVICE OPTIONS

SCENARIO: Josh Horning works on several computers in the Coho Vineyard & Winery facilities. Along with his responsibilities as the host for wine tasting, he is responsible for maintaining the workgroup computers that run the company's operations. He signs in to computers with local accounts and finds himself wasting time configuring the systems to meet his needs. He would like to have his settings and apps available on each system he accesses. Along with his apps, he would like to have access to his files, and he thinks that it would be beneficial for other employees to have similar access to their files. He also has a computer that is named for a former employee. He would like to rename this computer based on its role to avoid further naming issues. Coho Vineyard & Winery only has four computers and does not have the capital to invest in a server-based solution. Answer the following questions.

1. **How can Josh create a computing environment where he and his coworkers can sign in with their personalized Coho accounts on every machine and still maintain their settings easily and efficiently?**

  a. Josh can create an Active Directory domain by installing a server that has centralized management.

  b. Josh can create Microsoft accounts and add those accounts to all of the systems he manages.

  c. Josh should carry his files on a USB flash drive so he has his data wherever he goes.

2. **Where can Josh change the name of the personalized computer?**

  a. He can change the name within System properties, which are located in Control Panel.

  b. He cannot change the name; once it is set, it is permanent.

  c. He can change the name under Personalization in Control Panel.

3. **Aside from the ability to sign in to multiple systems with one account, what other benefits are associated with a Microsoft account?**

  a. All devices will synchronize personal settings such as Favorites, Microsoft OneDrive content, and installed apps.

  b. You can use it only on computers that are running the Windows 8.1 operating system.

  c. There are no other benefits.

HINT ⬇

Most system configurations can be changed in Control Panel and in PC settings.

Answers

1. How can Josh create a computing environment where he and his coworkers can sign in with their personalized Coho accounts on every machine and still maintain their settings easily and efficiently?

    b. Josh can create Microsoft accounts and add those accounts to all of the systems he manages. Adding an Active Directory Domain Services domain controller would simplify his authentication issues. However, it would not be cost-effective in a small workgroup environment.

2. Where can Josh change the name of the personalized computer?

    a. He can change the name within System properties, which are located in Control Panel. You can change most system settings in Control Panel. Josh must have appropriate permissions to perform this task.

3. Aside from the ability to sign in to multiple systems with one account, what other benefits are associated with a Microsoft account?

    a. All devices will synchronize personal settings such as Favorites, OneDrive content, and installed apps. Josh's Microsoft account will synchronize most personal settings, including desktop backgrounds and color schemes, and you can use it on all Microsoft devices and services, such as OneDrive, Xbox Live, and Music.

Essential details

- On a secure or multiuser computer system, a user account is an established means for an individual to gain access to the system and its resources. Usually created by the system's administrator, a user account consists of information about the user, such as password, rights, and permissions.

- A Microsoft account can be created with an existing email address, including non-Microsoft addresses.

- A workgroup is a group of PCs that are connected to a home or small office network. A workgroup shares resources such as printers and files. When you set up a network, the Windows operating system automatically creates a workgroup and gives it a name.

- The Control Panel is one of the primary locations for changing device settings. Device settings can be changed in PC Settings or by clicking the Settings charm. A variety of options can be modified in Control Panel, including the computer name, remote settings, performance settings, hardware settings, and system restore settings.

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TRAINING

CONFIGURE DESKTOP SETTINGS

SCENARIO: Della Monroe is the owner of Fourth Coffee, which is based in Seattle, Washington. Fourth Coffee is a popular coffee shop with a loyal customer base. Della has added new staff to support increased customer traffic. However, her new employees are not very proficient with the Windows 8.1 operating system and the Start screen. Della has asked you if you can help make her employees more proficient with her point-of-sale terminals and tablets. She would like to have only the apps, frequent contacts, and access to the documents folder display on the Start screen. She would also like to add her company logo to the background of both the Start screen and the desktop interface. As a side note, Della has an employee who is visually impaired, and she wants to know if there is anything you can do to help the employee read the screen more easily. Answer the following questions.

1. **What can you do to consolidate Della's business apps and other items on the Start screen?**

   a. You can create a group with only the necessary business apps, contacts, and documents folder by pinning the necessary items and then creating a group for the related items. All other items can be unpinned from the desktop to eliminate confusion.

   b. You cannot do anything, because the Start screen is not customizable.

   c. Della should send her employees to computer training so she does not have to have a consultant configure her systems.

2. **Is it possible to meet Della's request for consistent desktop and Start screen backgrounds?**

   a. No, Windows 8.1 does not have the capability to change the Start screen background.

   b. No, it would require expensive non-Microsoft software to accommodate this.

   c. Yes, Windows 8.1 can display the desktop background on the Start screen by adjusting the Start screen options within the Taskbar and Navigation properties.

3. **What can you do to accommodate the employee who has visual impairments?**

   a. Della can purchase a magnifying screen from the home medical store and rotate it to the computers her employee is working at.

   b. Windows 8.1 has a Magnifier feature in the Ease of Access Center that can be used like a magnifying lens.

   c. You cannot do anything. Della will have to terminate the employee.

HINT

Groups can be created to organize Start screen tiles.

Answers

1. What can you do to consolidate Della's business apps and other items on the Start screen?

    a. You can create a group with only the necessary business apps, contacts, and documents folder by pinning the necessary items and then creating a group for the related items. All other items can be unpinned from the desktop to eliminate confusion. Windows 8.1 provides many Start screen customization options, including pinning folder locations, contacts, and websites to the Start screen.

2. Is it possible to meet Della's request for consistent desktop and Start screen backgrounds?

    c. Yes, Windows 8.1 can display the desktop background on the Start screen by adjusting the Start screen options within the Taskbar and Navigation properties. Windows 8 had limited ability to change the look of the Start screen. The release of Windows 8.1 provided greater customization options, including color profiles and custom backgrounds.

3. What can you do to accommodate the employee who has visual impairments?

    b. Windows 8.1 has a Magnifier feature in the Ease of Access Center that can be used like a magnifying lens. Windows 8.1 has a variety of accessibility options to accommodate visual, auditory, and physical impairments, including the Magnifier, Narrator, and text or visual alternatives for sound within the Ease of Access Center.

Essential details

- **Start screen:** The Start screen replaces the Start menu in Windows 8.1 and Windows RT 8.1.

- **Desktop:** On the desktop, you can use a variety of apps and programs—from specialized software to any of the Windows Store apps. You also can create shortcuts on the desktop that link to files, applications, websites, folders, and other items.

- **Taskbar:** The taskbar is the long horizontal bar at the bottom of the screen in desktop mode.

- When using Windows 8.1, you can customize a computer to accommodate a user with hearing or visual impairments through the Ease of Access settings within Control Panel.

- Microsoft: Start screen
  http://aka.ms/xy8juf
- Microsoft: Touch: Swipe, tap, and beyond
  http://aka.ms/mx0y83
- Microsoft: Accessibility in Windows 8
  http://aka.ms/bivia7
- Microsoft: Desktop
  http://aka.ms/bfwe1v
- Microsoft: How to use the taskbar
  http://aka.ms/um34ul

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TRAINING

CONFIGURE DRIVE ENCRYPTION

SCENARIO: Josh Horning is the information technology (IT) manager at Woodgrove Bank. In recent months, the banking industry, along with other businesses, has come under scrutiny regarding security and the safekeeping of confidential information. Most of the bank officials, including the loan officers, use laptops and tablets that are running Windows 8.1 Pro, and they often work on business tasks at the Fourth Coffee shop. Recently, several bank officials have forgotten their devices, in addition to storage media, at the coffee shop. There is a real possibility that sensitive information is stored on these devices and media. Fortunately, Fourth Coffee employees have called the bank when they have found these devices. Thankfully, each device has an asset tag with the bank's name and number inscribed on it. So far, the bank has been lucky. However, Josh needs to ensure that these devices are secured properly. Answer the following questions.

1. **What can be done to ensure that data on the laptops and tablets is safe if the devices fall into the wrong hands?**

   a. Josh can configure a self-destruct mechanism that wipes the device if the wrong password is entered more than three times.

   b. Josh can secure each device by turning on BitLocker.

   c. Bank officials should not be allowed to use laptops or tablets.

2. **Is there anything Josh can do to protect the external devices from being compromised when lost?**

   a. Yes, Josh can encrypt the external devices by using BitLocker To Go.

   b. No, Josh needs to implement a company policy that restricts employees from using portable storage media.

   c. Yes, Josh can attach storage media to lanyards that company employees can wear around their wrists.

3. **What happens if someone steals the hard drive from one of the laptops?**

   a. Malicious users will not be able to obtain any information from a BitLocker-enabled drive unless they have the password or recovery key.

   b. The bad guys win. All they need to do is start the drive in a different system, and they will have access to all of the data.

   c. Malicious users can remove the hard drive platters and place them in a new hard drive case.

HINT ⊕

You can encrypt portable media by using BitLocker To Go.

Answers

1. What can be done to ensure that data on the laptops and tablets is safe if the devices fall into the wrong hands?

    b. Josh can secure each device by turning on BitLocker. BitLocker secures the data on the drives. BitLocker can use Trusted Platform Module (TPM) 1.2 to increase security.

2. Is there anything Josh can do to protect the external devices from being compromised when lost?

    a. Yes, Josh can encrypt the external devices by using BitLocker To Go. BitLocker To Go is used for external storage, including USB flash drives, secure digital (SD) cards, and external portable hard drives. The encryption process is similar to the BitLocker drive encryption process.

3. What happens if someone steals the hard drive from one of the laptops?

    a. Malicious users will not be able to obtain any information from a BitLocker-enabled drive unless they have the password or recovery key. The hard drive becomes useless if it is removed. The encryption is tied to both the TPM and the user's account credentials. Any attempt to recover data from the hard drive will be impossible for most malicious users.

Essential details

- **BitLocker:** BitLocker is a data protection feature that is available in Windows 8.1 Pro and Windows 8.1 Enterprise, and in all editions of Windows Server 2012 R2. BitLocker encrypts the hard drives on your computer to provide enhanced protection against data theft or exposure on computers and removable drives that are lost or stolen. Additionally, when BitLocker-protected computers are decommissioned, it is much more difficult to recover deleted data from an encrypted drive than from an unencrypted drive.

- **Encryption**: Encryption is the process of encoding data to prevent unauthorized access, especially during transmission. Encryption typically is based on one or more keys, or codes, that are essential for decoding, or returning the data to readable form.

- **Trusted Platform Module (TPM):** A TPM is a microchip that is provides basic security-related functions, primarily involving encryption keys. A TPM typically is installed on the motherboard of a computer or laptop, and it communicates with the rest of the system by using a hardware bus.

- BitLocker Overview
  http://aka.ms/lqt6ys
- BitLocker Frequently Asked Questions (FAQ)
  http://aka.ms/pevtuz
- BitLocker in Windows 8
  http://aka.ms/uqibyl
- Trusted Platform Module Management Step-by-Step Guide
  http://aka.ms/jluzu0
- What's New in BitLocker in Windows and Windows Server
  http://aka.ms/svkxe2

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TRAINING

CONFIGURE UPDATES

SCENARIO: Della Monroe is the technology coordinator at the local high school. She manages three open labs, and the computers all run the Windows 8.1 operating system. The labs also offer check-out tablets that run Windows 8.1. The lab PCs boot directly to the desktop interface, and the tablets use the Start screen. Della has noticed that the systems sometimes display update notifications or even reboot while students are using them. She would like to have the updates download, but she would like to manage the install.

Della also would like to have updates automatically download for Microsoft Office, which is installed on all systems. Some Office installations are updating and some are not. She has also noticed that the most recent update conflicts with the school's Learning Management System (LMS) and the LMS documentation states that she has to remove the last update applied. Della wants to find a better way to manage these update issues. Answer the following questions.

1. **What can Della do to avoid the problems she is experiencing in the school's computer labs?**
   a. Disconnect all systems from the Internet.
   b. Manage preferences on how updates are downloaded and installed. Set the updates to Download, but let her choose when she wants to install.
   c. Nothing, updates cannot be configured.

2. **Can Della remove a single update?**
   a. No, her only recourse is to perform a system restore.
   b. Yes, however, she will have to remove each file individually and clear the registry settings.
   c. Yes, within Windows Updates, she can view Installed Updates and select updates to be uninstalled.

3. **Is it possible for Windows Update to download updates for other products?**
   a. Yes, within Windows Updates, she can choose to have updates for other Microsoft products installed.
   b. No, each product must go through its own update routine.
   c. No, Della has to wait for the updates to come through her monthly TechNet subscription.

HINT

Microsoft offers three options for handling updates.

Answers

1. What can Della do to avoid the problems she is experiencing in the school's computer labs?

    b. **Manage how updates are downloaded and installed.** Set the updates to Download, but let her choose when she wants to install. There are four options: download and automatically install, download and allow me to install, check for updates and let me choose whether to download and install, and never do updates.

2. Can Della remove a single update?

    c. **Yes, within Windows Updates, she can view Installed Updates and select updates to be uninstalled.** Any update can be removed. A restart may be required, and the system will attempt the update again if it is set for automatic updates.

3. Is it possible for Windows Update to download updates for other products?

    a. **Yes, within Windows Updates, you can choose to have updates for other Microsoft products installed.** You can use the Microsoft Update to choose to install updates for other Microsoft products.

Essential details

- Windows Update scans your system to determine the updates and fixes your system's needs.
- The second Tuesday of each month is the day that Microsoft releases security updates. It is called Patch Tuesday.
- An Out-of-band patch is an update that is critical or time-sensitive.
- An Out-of-band update is an update that is released when needed.

FAST TRACK HELP

- Automated updating for Windows Store apps
  http://aka.ms/vf80tl
- Troubleshoot problems with installing updates
  http://aka.ms/ydalxp
- Office downloads & updates
  http://aka.ms/swi0we
- Windows Update: Frequently Asked Questions
  http://aka.ms/n9db8m
- Install Surface and Windows updates
  http://aka.ms/ni6f2y

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TRAINING

OBJECTIVE 2

Understand data access and management

DESCRIBE CLOUD STORAGE SERVICES

SCENARIO: Josh Horning is sole proprietor of Coho Winery. Josh has six computers that are all running the Windows 8.1 operating system. For some time, he has wanted to find a better way to manage the many aspects of his business. His wish list includes having all of his data available on every computer that he signs in to and being able to access that data from home. His current methods of organization equate to sticky notes left everywhere. His messiness has caused him to lose track of important things such as posting wine events on his social media accounts and even ordering wine for his wine tasting events. Josh likes to post on Facebook and Twitter, and he would like to be able have a public calendar with his monthly schedule. He thinks he can tie these all together, and what would be even better is if he had access to some of these things from his Windows Phone. Answer the following questions.

1. **What type of apps can Josh use to organize his mess?**
   a. There is no app that can help this poor soul.
   b. Office 365 can help Josh's situation with Outlook and OneNote integration.
   c. It is not possible to link his computer to a phone.

2. **What can Josh use to publish his events?**
   a. Josh can share his calendar, create a link, and post on social media.
   b. Josh can take a screen shot of his calendar and repost it every time an event changes.
   c. Josh can print his calendar and tape it to his front door.

3. **Can any of Josh's needs be addressed on his phone?**
   a. Absolutely. OneNote is standard on Windows Phone and in Microsoft Office apps, which will allow him to update and post to social media on the fly!
   b. No, this functionality is not present on any smartphone.
   c. Yes; however, each need would involve separate purchases.

HINT

Calendars, OneNote, and other Microsoft Office items can be shared publicly or with individual people.

Answers

1. What type of apps can Josh use to organize his mess?

    b. Office 365 can help Josh's situation with Outlook and OneNote integration. Josh can use Office 365 on his computers, which will give him access to all of his documents, notebooks, and emails on his computer, in the cloud, and from his Windows Phone. Alternatively, he can use Microsoft Office Online.

2. What can Josh use to publish his events?

    a. Josh can share his calendar, create a link, and post on social media. Josh can create a link for his calendar of events. He will have to find a service to shorten the link if he chooses to post it on Twitter with a 140-character limit. People will only be able to view the calendar, and not to change or post to it.

3. Can any of Josh's needs be addressed on his phone?

    a. Absolutely. OneNote is standard on Windows Phone and in Microsoft Office apps, which will allow him to update and post to social media on the fly! Windows Phone comes standard with OneNote, OneDrive, and Microsoft Office integration. It also integrates with most social media services. OneNote, OneDrive, and Microsoft Office are also available on iOS and Android platforms.

Essential details

- Azure Storage is highly available, high-performance, and multipurpose storage. Azure Storage can accommodate high-workload applications, virtual machines, and access from a variety of platforms.

- People can share and access OneNote notebooks that are stored in OneDrive from various platforms, including desktops, Windows Phones, and non-Microsoft operating systems and devices.

- Outlook.com comes with access to Office Online and 15 GB of free OneDrive storage.

- How is OneDrive for Business different from OneDrive?
  http://aka.ms/yijiy0

- Office 365: compare products
  http://aka.ms/dw9fd5

- Office 365
  http://aka.ms/whyuqd

- Microsoft OneNote Online
  http://aka.ms/mpe3m4

- Outlook
  http://aka.ms/Apw586

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TRAINING

DESCRIBE LOCAL STORAGE

SCENARIO: Luann Rollins is a graphic design artist at Nod Publishers. She maintains all the publishing materials files, and creates the book-cover mock-ups from her home studio. She works primarily from home so that she can take care of her two children. Unfortunately, between her work and school projects, Luann's computer storage space has become limited. She cannot delete her children's projects, and she also has to maintain her professional portfolio of work. The graphic design files and software occupy a large volume of space. She needs to expand her storage capacity. Answer the following questions.

1. **What are Luann's options at this point?**
   a. She could archive her children's projects.
   b. She could purchase another computer, as her current one is full.
   c. She could add an external drive, and create a storage space.

2. **How can Luann ensure that the new configuration protects her data from drive failure?**
   a. She can purchase the extended warranty. That will protect the data.
   b. She can create a two-way mirror that will provide a reasonable level of fault tolerance.
   c. As long as she does not play video games on it, the hard drive should be fine.

3. **Does it matter what type of drives she adds to the storage space?**
   a. Yes, the drives must solid state drives only.
   b. No, internal and external drives can be used in a storage space.
   c. Yes, all drives must have identical size, interface, and speed for it to work.

HINT ⊍

Storage spaces support both two-way and three-way mirroring.

Answers

1. What are Luann's options at this point?

   c. She could add an external drive, and create a storage space. Luann does not have to purchase a new computer; it is easier to simply add one or two drives, and create a storage space.

2. How can Luann ensure that the new configuration protects her data from drive failure?

   b. She can create a two-way mirror that will provide a reasonable level of fault tolerance. Storage spaces support both two-way and three-way mirroring, which duplicates the data across drives in a mirrored fashion.

3. Does it matter what type of drives she adds to the storage space?

   b. No, internal and external drives can be used in a storage space. USB3 external drives offer better performance. Storage spaces can be configured with a variety of drive types.

Essential details

- Simple spaces are designed for increased performance, but they do not protect your files from drive failure by keeping multiple copies. They are best suited for temporary data, image editor scratch files, and intermediary compiler object files.

- Mirror spaces are designed for increased performance and protect your files from drive failure by keeping more than one copy. Two-way mirror spaces make two copies of your files and can tolerate one drive failure, while three-way mirror spaces can tolerate two drive failures.

- Parity spaces are designed for storage efficiency, and they protect your files from drive failure by keeping more than one copy. Parity spaces are best suited for archival data and streaming media, such as music and videos.

FAST TRACK HELP

- Storage Spaces: FAQ
  http://aka.ms/aadbrv
- Storage Spaces Overview
  http://aka.ms/izi551
- TechNet Storage Spaces Overview
  http://aka.ms/tkd303

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TRAINING

DESCRIBE FILE SYSTEMS

Scenario: Josh Horning works at Southridge Video. Southridge's specialty is making promotional videos for local semiprofessional sports teams. The company's computers are all running the Windows 8.1 operating system. They also have secondary drives with FAT32 file systems so that graphic designers can save the files that they generate on non-Microsoft systems. Southridge recently replaced the graphic designers' systems with Windows 8.1 systems, and the company wants to have better security on its shared resources. Josh wants to do this without having to move files back and forth. Answer the following questions.

1. What file system will support Josh's needs?
   - **a.** FAT
   - **b.** Network file system (NFS)
   - **c.** NTFS

2. Will Josh have to save his files somewhere else to change to a new file system?
   - **a.** Yes, he will have to format the drive, which erases all data that is stored on the drive.
   - **b.** Yes, when he runs the convert command, all data on the drive is lost.
   - **c.** No, converting the file system maintains the integrity of the data.

3. Will Josh have to be concerned with larger files with his conversion?
   - **a.** Yes, he will have to reduce the video files in size because the file system will not support them.
   - **b.** No, NTFS will support anything that is stored on a FAT32 file system.
   - **c.** Yes, Josh might have to consider a different file system or at least keep files on a FAT32 file system for now.

HINT ⬇

The convert command can convert FAT32 to NTFS, keeping files intact.

Answers

1. What file system will support Josh's needs?

    c. NTFS. NTFS has both security and compression features.

2. Will Josh have to save his files somewhere else to change to a new file system?

    c. No, converting the file system maintains the integrity of the data. The convert command converts the file system without data loss.

3. Will Josh have to be concerned with larger files with his conversion?

    b. No, NTFS will support anything that is stored on a FAT32 file system. NTFS supports larger file sizes then FAT32.

Essential details

- One of the primary differences between FAT32 and NTFS is the ability to apply security to a volume in both permissions and encryption when using NTFS volumes.
- NTFS is a widely used format for security purposes.
- The convert command can convert FAT32 to NTFS, keeping files intact. However, you cannot convert back.
- External storage such as portable hard drives, secure digital (SD) cards, and USB flash drives come standard with FAT32 file systems for compatibility.
- ReFS stores data in a way that protects it from many of the common errors that can normally cause data loss
- ReFS features include maintaining data integrity, availability of data, scalability, compatibility, and proactive error detection.

FAST TRACK HELP

- Building Windows 8
  http://aka.ms/ydacii
- ReFS
  http://aka.ms/dkyd2n
- ReFS overview
  http://aka.ms/s5d6ep

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TRAINING

DESCRIBE FILE AND PRINT SHARING

Scenario: Della Monroe and Josh Horning both work at Alpine Ski House. They are responsible for event planning and marketing for the Alpine Ski House. They both use computers with Windows 8.1 operating systems, and they have separate offices. Josh's computer is a desktop system, and Della uses a Microsoft Surface Pro 3. Both computers are connected to a wireless network.

Della and Josh collaborate on everything they design, from flyers and event calendars, to special menus. Often they find themselves sharing files or documents back and forth either by emailing them to each other, or by copying them to a USB flash drive and walking them to the other's office.

This has caused several problems, including lost versions, full email folders, and inefficiencies. Della and Josh agree that they should keep all of the documents on one computer and enable both to access the files. Josh's computer was chosen to maintain all data. Answer the following questions.

1. **Josh shared a folder with Della and noticed Everyone has Full Control. He's sure he only gave her Read access. He did not modify the NTFS permissions. Did something go wrong?**
   a. Yes, clearly Josh's system is compromised and it is Della's fault.
   b. No, that's just how sharing works.
   c. No, the default NTFS permissions (Read/Read & Execute, List Folder Contents), are more restrictive than the Everyone Full Control access.

2. **Would Josh and Della have to enter a password every time they access a resource in a home-group setting?**
   a. No, you are assigned a homegroup password, and you enter it only once.
   b. Yes, that's part of having a secure home network.
   c. No, a password isn't required in a homegroup.

3. **What other resources can Josh and Della share?**
   a. Nothing; they can only share their folders.
   b. They can share anything in their libraries and public folders, and they can share printers.
   c. They can share their monitors.

HINT ⬇

The most restrictive permission wins between NTFS and Share permissions.

Answers

1. Josh shared a folder with Della and noticed Everyone has Full Control. He's sure he only gave her Read access. He did not modify the NTFS permissions. Did something go wrong?

    c. No, the default NTFS permissions (Read/Read & Execute, List Folder Contents), which are more restrictive than the Everyone Full Control access. Della's effective permissions would be Read because it is the most restrictive.

2. Would Josh and Della have to enter a password every time they access a resource in a homegroup setting?

    a. No, you are assigned a homegroup password, and you enter it only once. An advantage of using homegroups is that the password for the group only has to be entered during setup or when the homegroup password changes.

3. What other resources can Josh and Della share?

    b. They can share anything in their libraries and public folders, and they can share printers.

Essential details

- A homegroup makes it easy to share pictures, music, videos, documents, and printers with other people on a home network. A homegroup is protected with a password, but you only need to enter the password once, when adding your computer to the homegroup.

- NTFS permissions are always applied regardless of how the resource is accessed, locally or across the network.

- NTFS Full Control permission allows a user to take ownership of the resource as well as modify the access control list.

- Printer Sharing allows other users to connect to a printer across the network. It can be manually shared or automatically available within a homegroup configuration.

- How IT Works: NTFS Permissions
  http://aka.ms/c88bec
- NTFS Permissions
  http://aka.ms/tpv262
- Sharing files and printers
  http://aka.ms/Szc4yq
- HomeGroup from start to finish
  http://aka.ms/D7i0ot
- Share files and folders
  http://aka.ms/uftklk
- Share a printer
  http://aka.ms/spi28j
- Joining a domain, workgroup, or homegroup?
  http://aka.ms/hdfvln

Track
Your Score

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TRAINING

DESCRIBE DATA ENCRYPTION

Scenario: Josh Horning is an employee of Fourth Coffee shop. His boss is Della Monroe. Della is a very trusting person, and her employees appreciate her confidence in them. Josh, however, is concerned about the privacy of some of the files on her computer. Della maintains most of her business records, including employee information, on a computer to which everyone has access. Della is not a tech-savvy person, and adding additional steps in her day would only make things worse. Josh has asked Della if he can help secure those files, and she has agreed. Answer the following questions.

1. **Josh decides to create and encrypt a folder named Private Documents while he is signed in as Della, with her permission, of course. He moves the sensitive files to the encrypted folder. What else does he need to do?**
   a. Josh needs to purchase a biometric retina reader to complete the encryption process, and use Della's retina scan as the basis.
   b. Nothing, the files will inherit the encryption attribute when they are copied to an encrypted folder.
   c. Josh needs to install third-party encryption software.

2. **What will happen if Della walks away from her computer without signing out and other employees attempt to access the encrypted files?**
   a. They will be able to access the files without problems.
   b. They will receive an access-denied message.
   c. The hard drive will self-destruct within 10 seconds.

3. **What will happen if Della copies the encrypted files to a Public folder that is accessible by the other employees?**
   a. The employees will be able to access the files as intended.
   b. They will receive an access denied message.
   c. The employees will receive a message that they have to run the CIPHER.exe in the command prompt to decrypt the files.

HINT

Files copied from an encrypted folder to another folder on the same volume will remain encrypted.

Answers

1. Josh decides to create and encrypt a folder named Private Documents while he is signed in as Della, with her permission, of course. He moves the sensitive files to the encrypted folder. What else does he need to do?

    b. Nothing, the files will inherit the encryption attribute when they are copied to an encrypted folder. Files copied to an encrypted folder will be encrypted. No further action is required.

2. What will happen if Della walks away from her computer without signing out and other employees attempt to access the encrypted files?

    a. They will be able to access the files without problems. File encryption is tied to the user who is signed in to the system. Therefore, if someone accesses files directly, or remotely, using a third party tool while the user is signed in, that person will be able to view the files. It is important to secure user credentials and sign out of workstations.

3. What will happen if Della copies the encrypted files to a Public folder that is accessible by the other employees?

    b. They will receive an access-denied message. Files copied from an encrypted folder will remain encrypted. The person who encrypted the files will have to decrypt the files to allow access.

Essential details

- **Encrypting File System (EFS).** EFS is a powerful tool for encrypting files and folders on client computers and remote file servers. It enables users to protect their data from unauthorized access by other users or external attackers.

- **Encryption.** Encryption is the process of encoding data to prevent unauthorized access, especially during transmission. Encryption is usually based on one or more keys, or codes, that are essential for decoding, or returning the data to readable form. The U.S. National Bureau of Standards created a complex encryption standard, Data Encryption Standard (DES), which is based on a 56-bit variable that provides for more than 70 quadrillion unique keys to encrypt documents.

TRACK
Your Score

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TRAINING

DESCRIBE DATA SECURITY

Scenario: The Fourth Coffee shop is a subsidiary of A. Datum Corporation, and Della Monroe is the shop's manager. She typically emails the shop's daily revenue statistics to the corporate offices. A. Datum has noticed that a few new coffee shops have opened in the immediate area. A. Datum is concerned that Della might be doing business on an unsecured network. The corporate offices are installing some new applications that the corporate office network will host. It will take time to get the infrastructure in place in order to make it easy for Della to perform her daily financial routines without being a security expert. In the meantime, A. Datum wants to set up a VPN connection to the corporate offices. It has deployed Josh Horning from IT to set it up for Della and to show her how to connect. He will also set up her workstation to renew the security certificates for secure corporate sites. Answer the following questions.

1. What will Della need to do to connect to the corporate network by using the VPN?
   a. Nothing. Josh was able to create a persistent connection with a traditional VPN.
   b. Della will have to click Connect to a network and then enter her credentials.
   c. Della's modem will have to dial the VPN, and then the VPN will dial her back.

2. What could simplify the process for Della and make the data transfer more secure?
   a. She could just send her financials to corporate by using the post office.
   b. She could ask Josh to pick up her spreadsheets on his way through town.
   c. A. Datum could implement DirectAccess.

3. After Della connects to the VPN, what can she do?
   a. She will be able to interact with the corporate network as if she were connected directly.
   b. Not much, but it is extremely secure.
   c. She will be limited to secure emails.

HINT ⬇

DirectAccess is an always-connected, secure connection to a remote network.

Answers

1. What will Della need to do to connect to the corporate network by using the VPN?

    b. Della will have to click Connect to a network and then enter her credentials. A traditional VPN requires more user intervention to establish a connection, sign in, and connect to resources.

2. What could simplify the process for Della and make the data transfer more secure?

    c. A. Datum could implement DirectAccess. DirectAccess is a seamless and secure connection that will connect Della to the corporate network automatically when it senses an Internet connection.

3. After Della connects to the VPN, what can she do?

    a. She will be able to interact with the corporate network as if she were connected directly. Additional configuration might be required, but with valid credentials, she will be able to connect to and access any resources she is permitted to access.

Essential details

- **DirectAccess.** DirectAccess is a feature that allows connectivity to organizational network resources without the need for traditional VPN connections. With DirectAccess, client computers are always connected to the organization—remote users do not need to start and stop connections, as is required with VPN connections. In addition, IT administrators can manage DirectAccess client computers whenever those computers are running and connected to the Internet.

- **VPN.** VPN involves point-to-point connections across private or public networks such as the Internet. A VPN client uses special TCP/IP-based protocols, called *tunneling protocols*, to make a virtual call to a virtual port on a VPN server.

- **Encapsulation.** Encapsulation occurs when private data is placed in a packet with a header that contains routing information, which allows the data to traverse a network such as the Internet.

- **Authentication.** Authentication proves the identity of the user who is trying to connect to a network.

- **Data encryption.** Encryption ensures data confidentiality. The sending party encodes the data and the receiving party decodes the message using a key. Several encryption schemes are available for encoding and decoding data.

- **Data integrity.** Integrity means that data is safe and has not been modified in transit.

- Certificates overview
  http://aka.ms/ynuoh9
- Using DirectAccess
  http://aka.ms/nsekcr
- What is a VPN?
  http://aka.ms/n802tu
- What's new in Windows 8.1
  http://aka.ms/hsw57u

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TRAINING

OBJECTIVE 3

Understand device security

DESCRIBE THE DIFFERENCES BETWEEN THE INTERNET, AN INTRANET, AND AN EXTRANET

Scenario: You have been asked to manage several computers that are used at the local sports club. There are a few laptops running the Windows 8.1 operating system, and two desktop computers that are also running Windows 8.1. Users also have their own tablets and Windows Phone devices. A single connection to the Internet through a wireless hub enables Internet access. All computers and devices have wireless network cards and are connected to the wireless hub. Answer the following questions.

1. **The sports club has been acquired recently by a larger company that has a number of locations around the city. It is important that these various new locations be part of a single network to enable access by employees. How would you describe this network?**

   a. It is the Internet.

   b. It is an extranet.

   c. It is an intranet.

2. **The newly acquired sports club's management wants to enable sports club members to be able to manage their own accounts online. This means being able to make reservations for things like tennis courts, or to reserve rooms for social events. How would you describe a network that enabled external users to connect to internal resources?**

   a. It is the Internet.

   b. It is an extranet.

   c. It is an intranet.

3. **The app that is required for sports club members to make and manage reservations uses several specific TCP/IP ports to communicate. To ensure that only the designated app can access server resources on the internal network, what must you do?**

   a. Configure Windows Firewall on the members' home computers.

   b. Configure firewall settings at the boundary with the Internet to ensure that only the appropriate network traffic can enter the internal network.

   c. Configure firewall settings at the boundary with the Internet to ensure that only the appropriate network traffic can leave sports club members' home networks.

HINT ⬇

The Internet, an intranet, and an extranet have distinct features for communication.

Answers

1. The sports club has been acquired recently by a larger company that has a number of locations around the city. It is important that these various new locations be part of a single network for access by employees. How would you describe this network?

   c. It is an intranet. An intranet is a collection of private computer networks connected by network infrastructure such as routers.

2. The newly acquired sports club management want to enable sports club members to be able to manage their own accounts online. This means being able to make reservations for things like tennis courts, or to reserve rooms for social events. How would you describe a network that enabled external users to connect to internal resources?

   b. It is an extranet. When an organization makes its network available to vendors and/or suppliers, usually to support a specific application, this is known as an extranet.

3. The app that is required for sports club members to make and manage bookings uses a number of specific TCP/IP ports to communicate. To ensure that only the designated app can access server resources on the internal network, what must you do?

   b. Configure firewall settings at the boundary with the Internet to ensure only the appropriate network traffic can enter the internal network. It is not necessary to secure the network traffic at the sports club members' networks; outbound traffic is generally permitted.

Essential details

- A public network supports information management systems that are available to many individuals and organizations. The Internet is a widely used example of a public network.

- A private network, sometimes referred to as an intranet, is a network based on the TCP/IP protocol and designed to support information management services within a company or organization.

- Firewalls are barriers that incorporate technology designed to prevent unwanted or unauthorized communications between computer networks or hosts.

- Many services are available "in the cloud," including: email, directory services that provide authentication to a subscriber's network services, storage such as OneDrive, backup and disaster recovery, website hosting, and messenger services.

- Windows Firewall from start to finish
  http://aka.ms/fr2up5

- What is cloud computing?
  http://aka.ms/c2ra9o

- Reimagining with Cloud
  http://aka.ms/w8hu85

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TRAINING

DESCRIBE USER AUTHENTICATION

Scenario: You have been hired to help improve security at the various health clubs, spas, and other sports facilities that the Lamna Healthcare Company recently acquired. Before the acquisition, security was not high on the list of priorities for many of these small organizations. Typically, the extent of their IT infrastructure is a small number of computers that are connected by a wireless hub to the Internet.

Lamna management wants things to improve. It has asked you to consider how to manage authentication for the company's growing network. Answer the following questions.

1. **Many of the executives and managers want to use their own devices, typically smart phones, to access Lamna's corporate resources. How might you implement a rigorous authentication method to support the use of mobile phones on the corporate network?**

   a. Implement user names and passwords throughout the organization.

   b. Implement smart card authentication for managers and executives.

   c. Implement a multi-factor authentication mechanism for users who want to use their own devices.

2. **You do not want sports club members to have to sign in with user names and passwords when they access club facilities, but you want to know who is on-premises. What authentication method could you use?**

   a. An authentication method based on smart cards.

   b. A multi-factor authentication method based on biometrics, user names, and passwords.

   c. A multi-factor authentication method based on smart cards, user names, and passwords.

3. **Lamna shares documents among staff and club members. The company wants to protect and control who can view, edit, print, and copy the documents. How might you address this requirement?**

   a. Implement a multi-factor authentication mechanism that requires users to identify their devices when they access secured content.

   b. Deploy AD RMS to protect Lamna documents.

   c. Implement smart card authentication for managers and executives.

HINT ⬇

Try to determine when simple or more rigorous authentication is needed.
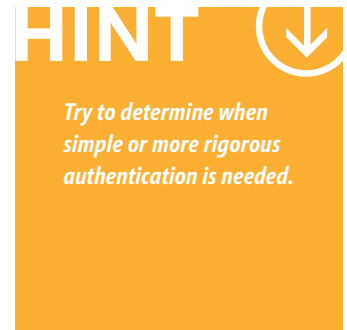
Answers

1. Many of the executives and managers want to use their own devices, typically smart phones, to access Lamna's corporate resources. How might you implement a rigorous authentication method to support the use of mobile phones on the corporate network?

    c. Implement a multi-factor authentication mechanism for users who want to use their own devices. This could involve sending a text message that contains a PIN to the phones.

2. You do not want sports club members to have to sign in with user names and passwords when they access club facilities, but you want to know who is on-premises. What authentication method could you use?

    a. An authentication method based on smart cards. This method addresses the requirement and enables future expansion. Because many smart cards can work contactless, this means no card readers are necessary, which should help avoid bottlenecks around the clubs.

3. Lamna shares documents among staff and club members. The company wants to protect and control who can view, edit, print, and copy the documents. How might you address this requirement?

    b. Deploy AD RMS to protect Lamna documents. Using AD RMS enables Lamna to control who can access its documents and what level of access they have to those documents.

Essential details

- User authentication enables you to identify users when they attempt to access resources.
- Different methods exist to enable authentication, including simple user names and passwords, biometrics, and smart cards.
- Multi-factor authentication combines two or more authentication methods to make authentication more rigorous.

- Smart Card Authentication
  http://aka.ms/hepa6n
- Smart Cards
  http://aka.ms/req3wq
- How AD RMS Works
  http://aka.ms/t7opat
- Active Directory Rights Management Services
  http://aka.ms/itseby
- Windows Biometric Framework Overview
  http://aka.ms/ey8trq
- Azure Multi-Factor Authentication
  http://aka.ms/rw9ufu
- Multi-Factor Authentication for Office 365
  http://aka.ms/lhfeex

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TRAINING

OBJECTIVE
understand device security 3.3

DESCRIBE PERMISSIONS

Scenario: The Lamna Healthcare Company has purchased a collection of file servers, which are being delivered to its sports clubs and spas around the city. You have been asked to come up with a shared folder strategy for all of the servers that meets the following objectives:

- Each staff member must have his or her own private data area in a common folder called Staff.
- Each sports club requires a shared data folder that all staff members can access. They will need to be able to create, edit, and delete documents and other files within this data area.

Answer the following questions to proceed with the folder sharing project.

1. What File Permissions (formerly called NTFS permissions) will you assign to the Staff folder?
   a. Full Control permissions to Everyone
   b. Read and Execute permissions to Everyone, and Full Control permissions to the Administrator
   c. Read and Execute permissions to the Administrator, and Full Control permissions to Everyone

2. What File Permissions will you assign to the Staff\Steve folder?
   a. Modify permissions to Steve
   b. Read and Execute permissions to Steve
   c. Full Control to Steve

3. The Data folder has been created and shared. A group called Staff has been created, to which all staff user accounts have been added. Share permissions have been assigned as Full Control for Everyone. What File Permissions must you now apply on this folder to ensure that users can only create, edit, and delete files?
   a. Full Control permissions granted to Everyone
   b. Full Control permissions granted to the Staff group
   c. Modify permissions granted to the Staff group

HINT ⬇

Always try to assign the minimum necessary permissions.

Answers

1. What File Permissions will you assign to the Staff folder?

    b. Read and Execute permissions to Everyone, and Full Control permissions to the Administrator. This enables the administrator to have sufficient permissions to manage the Staff folder, including the permissions that are required to create individual subfolders for each user.
Users require at least Read and Execute permissions on the parent folder of their own subfolder to be able to navigate to their subfolder through the shared folder.

2. What File Permissions will you assign to the Staff\Steve folder?

    c. Full Control to Steve. Generally, you should grant users Full Control permissions to their personal folders.

3. The Data folder has been created and shared. A group called Staff has been created, to which all staff user accounts have been added. Share permissions have been assigned as Full Control for Everyone. What File Permissions must you now apply on this folder to ensure that users can only create, edit, and delete files?

    c. Modify permissions granted to the Staff group. Modify permissions are sufficient to allow staff members to perform all typical file activities. Always assign the minimum necessary permissions.

Essential details

- It is important to secure file resources, especially when they are shared, to ensure that only authorized users can access those resources.
- When you copy or move files and folders to a different partition, they inherit the permissions of the destination folder.
- Always assign the minimum required permissions.
- Effective permissions are determined by combining the permissions of your user account and the groups of which your account is a member.

- File and Folder Permissions
  http://aka.ms/krs9i9

- 12 Steps to NTFS Shared Folders in Windows Server 2012
  http://aka.ms/xjwphv

- How Owners Are Assigned and Changed
  http://aka.ms/blfr8p

- Sharing files and folders
  http://aka.ms/uylhdi

- Share files using the Public folders
  http://aka.ms/r14t64

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TRAINING

DESCRIBE MALWARE

Scenario: Your antimalware project is going well at Lamna Healthcare Company. You are justifiably pleased. Over dinner, you tell your parents about the meeting with senior management. Your father asks you to look at his computer before you go back to your apartment. He is suspicious of the way it has been behaving recently, and your talk about viruses got him thinking. You agree, and when dinner is finished, the two of you sit down at his computer. Answer the following questions.

1. **What would you do first to determine if the computer has been infected with malware?**

    a. Run a scan with any installed antivirus software.

    b. Ask your father more questions about why he is suspicious.

    c. Download the Microsoft Malicious Software Removal Tool and then run it on your father's computer.

2. **You notice that although your father's computer is running Windows 8.1 and has Windows Defender installed, it appears not to be up-to-date. You immediately update the virus and malware definitions, but how can you ensure that they stay current?**

    a. In Windows Defender, on the Update tab, select the Update automatically check box.

    b. In Windows Update, click the Change settings link in the menu on the left side of the window. Ensure that the Install updates automatically option is selected.

    c. There is no way to keep Windows Defender up-to-date automatically.

3. **After performing a scan and removing malware, you decide to perform one final check. What other Windows 8.1 component can help mitigate the risks posed by malware?**

    a. Enabling and configuring Windows Firewall.

    b. Selecting the most rigorous Windows SmartScreen settings.

    c. Both.

HINT

Keep antimalware software current and run antimalware scans regularly.

Answers

1. What would you do first to determine if the computer has been infected with malware?

    b. Ask your father more questions about why he is suspicious. Although running scans and using the Malicious Software Removal Tool might make sense, it would be better to get an idea of the computer's symptoms and the sequence of events that led to a possible infection.

2. You notice that although your father's computer is running Windows 8.1 and has Windows Defender installed, it appears not to be up-to-date. You immediately update the virus and malware definitions, but how can you ensure that they stay current?

    b. In Windows Update, click the Change settings link in the menu on the left side of the window. Ensure that the Install updates automatically option is selected. Virus and malware definitions update as part of Windows Update. You can manually update Windows Defender from within the Windows Defender app, however.

3. After performing a scan and removing malware, you decide to perform one final check. What other Windows 8.1 component can help mitigate the risks posed by malware?

    c. Both. You should certainly make sure that Windows SmartScreen is enabled and configured to Get administrator approval before running an unrecognized application from the Internet. You should also ensure that Windows Firewall is properly configured.

Essential details

- Malware is any unwanted software that is present on a user's computer.
- Malware might be fairly innocuous, merely displaying advertisements that are of little interest (adware).
- Malware might be very damaging, consuming bandwidth, disrupting services, and possibly damaging data files, harvesting secure information, and self-replicating.
- Educating users on how malware spreads is very important and can reduce malware occurrences significantly.
- Implementing antivirus and antimalware software on client computers and server computers, such as email servers, can help mitigate the risks.
- Using firewalls can help prevent some types of malware from spreading within an organization.

- Windows Defender
  http://aka.ms/rfwa98

- Malicious Software Removal Tool
  http://aka.ms/dt3gzj

- How can I help protect my PC from viruses?
  http://aka.ms/ehq9ui

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TRAINING

OBJECTIVE 4

Understand cloud services

DESCRIBE THE TYPES OF CLOUD SERVICES

Scenario: Nod Publishers was founded one year ago by Edna, a friend from college. You have just joined your friend at her startup company. The ethos of the company is to find new writing talent and help bring their writing to the market. With all the changes in the publishing industry, Nod brings a fresh approach. The company uses technology to produce books, some-times with a niche appeal, but the company still aims to be profitable.

Based on your advice, Edna, the business proprietor and your friend, has shifted her IT infrastructure from an on-premises model to a hosted one. Answer the following questions.

1. **In which of the three levels of cloud service does the vendor provide the most complete hosted solution?**
   a. IaaS
   b. PaaS
   c. SaaS

2. **What type of cloud service is provided by Microsoft Office 365?**
   a. SaaS
   b. Storage
   c. Productivity

3. **Is it possible to operate a cloud hosting model in which some resources remain on-premises and are managed by your local IT support staff while much of the IT infrastructure is hosted by a cloud services vendor?**
   a. Yes
   b. No

HINT

Levels of cloud service are: Saas, Paas, and IaaS. Types of cloud service include storage and productivity.

Answers

1. In which of the three levels of cloud service does the vendor provide the most complete hosted solution?

    c. **SaaS.** SaaS offerings consist of complete software applications that are delivered as a cloud-based service. Users can subscribe to the service and use the application, normally through a web browser or by installing a client-side app.

2. What type of cloud service is provided by Microsoft Office 365?

    c. **Productivity.** Although some elements of Office 365 are SaaS, that is the level of service, not the type of service offered.

3. Is it possible to operate a cloud hosting model in which some resources remain on-premises and are managed by your local IT support staff while much of the IT infrastructure is hosted by a cloud services vendor?

    a. **Yes.** In a hybrid cloud, a technology binds two separate clouds (public and private) together for the specific purpose of obtaining resources from both. You decide which elements of your services and infrastructure to host privately, and which to host in the public cloud.

Essential details

- Examples of Microsoft SaaS services include Microsoft Office 365, Skype, and Microsoft Dynamics CRM Online.

- The primary advantage of SaaS services is that they enable users to easily access applications without the need to install and maintain them. Typically, users do not have to worry about issues such as updating applications and maintaining compliance, because the service provider handles these tasks.

- Many organizations use a hybrid model when extending to the cloud; that is, they begin to shift some elements of their applications and infrastructure to the cloud.

- Sometimes, an application and its supporting infrastructure are shifted to the cloud, while the underlying database is maintained within the organization's own infrastructure. This approach might be used to address security concerns with that particular database.

- Azure Storage
  http://aka.ms/unqzf2
- Advantages of Cloud computing
  http://aka.ms/bi2p40
- Microsoft Cloud Productivity
  http://aka.ms/fpru4y
- Choose your Office
  http://aka.ms/d2tn0o

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TRAINING

DESCRIBE MICROSOFT INTUNE

Scenario: A friend of yours from college founded Nod Publishers one year ago. The mission of the company is to find new writing talent and help bring it to market. With all the changes in the publishing industry, Nod brings a fresh approach. Using technology to produce books, sometimes with niche appeal, the company still aims to be profitable.

A lot of the company's new writing talent uses a variety of devices to produce their work. This is also true of the on-premises staff and many of the freelance editors. Edna, the CEO, is your friend. She calls you in for a chat about technology, which is "your thing."

"Thing is," she says, "I want to let them write on what they want. If the writing is good, they can bring it on a tablecloth, as far as I care. Can we cope with folks using any kind of device?"

"Apart from the tablecloth, I think we can cope," you say. "Although, I'm working on that, too."

Edna smiles and hands you a slip of paper. "Work through these questions for me," she requests.

The meeting ends and you head over to your beanbag chair in the "idea area" to begin pondering Edna's questions.

The following is what Edna wants to know about how to manage different device types in a network. Answer the questions as best as you can.

1. **What cloud service does Microsoft offer to enable the management of both iOS and Android devices?**
   a. Microsoft Azure.
   b. Microsoft Office 365.
   c. Microsoft Intune.

2. **How can we make sure that all the devices have appropriate apps on them? My editors want to use a specific app for their scheduling.**
   a. Microsoft Intune enables administrators to deploy apps to managed devices.
   b. Azure supports a whole range of different apps, so no worries there.
   c. Office 365 provides all the scheduling that editors need. They just need to reskill.

3. **Edna went home on the bus yesterday because her car was in the garage. She was reading a submission from a promising author. When she got home, she realized that she left her phone on the bus. What would you do?**
   a. Ask Edna to be more careful in future.
   b. Use the remote wipe feature to wipe the device's corporate data, including the author submission.
   c. Call the bus company.

HINT ⬇

Learn more at the following website:
http://aka.ms/dau1jj

Answers

1. What cloud service does Microsoft offer to enable the management of both iOS and Android devices?

    c. Microsoft Intune. Microsoft Intune enables you to manage disparate device types.

2. How can we make sure that all the devices have appropriate apps on them? My editors want to use a specific app for their scheduling.

    a. Microsoft Intune enables administrators to deploy apps to managed devices.

3. Edna went home on the bus yesterday because her car was in the garage. She was reading a submission from a promising author. When she got home, she realized that she left her phone on the bus. What would you do?

    b. Use the remote wipe feature to wipe the device's corporate data, including the author submission. Although, it would not hurt to ask Edna to be careful in future; nor would it hurt to call the bus company to see if her phone was turned in to the lost and found.

Essential details

- Microsoft Intune enables you to manage your users' mobile devices so that users can seamlessly and securely access organizational resources, data, and apps.

- Microsoft Intune policies are groups of settings that control features on computers and mobile devices, such as software updates, Endpoint Protection, and security settings.

- Microsoft Intune remote wipe enables an administrator to erase sensitive data when a managed device is lost or stolen.

FAST TRACK HELP

- Microsoft Intune
  http://aka.ms/dau1jj

- Mobile device management capabilities in Microsoft Intune
  http://aka.ms/lj86qj

- Documentation Library for Microsoft Intune
  http://aka.ms/xowuk0

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TRAINING

DESCRIBE MICROSOFT AZURE

Scenario: A friend from college founded Nod Publishers one year ago. The mission of the company is to find new writing talent and help bring it to market. With all the changes in the publishing industry, Nod brings a fresh approach. Using technology to produce books, sometimes with niche appeal, the company still aims to be profitable.

You have just presented the case for shifting the entire Nod Publishers IT infrastructure to the cloud at a board of directors meeting. Afterward, you and the CEO, your friend Edna, are chatting about the meeting and about how things are going to move forward.

She has a number of fundamental questions that revolve around the concept of cloud computing services provided by Microsoft, who you have selected as a suitable vendor. Try to answer her questions.

1. **"What cloud service does Microsoft offer that provides services—I think you called them Virtual Machines and Websites—that enable you to shift some or all of our IT infrastructure to the cloud?"**

   a. Microsoft Azure.

   b. Microsoft Office 365.

   c. Microsoft Intune.

2. **"I'm worried that one day, we'll be running our publishing system in-house on our own servers, and the next day, we'll be in the Microsoft cloud. I'm just concerned that maybe that is too fast. Maybe we should move some parts over first, and continue to operate some other elements locally. What do you think?"**

   a. Sadly, it is an all or nothing switch. Nod either hosts it all, or hosts none of it.

   b. Nod can host what it wants. Azure services enable us to use a hybrid approach with some elements managed in our datacenter, and the rest in the cloud, managed by Microsoft.

   c. Microsoft does not offer a hosted solution that works for us.

3. **"So, how do users authenticate in the hosted system? Currently, users enter a user name and password in a dialog box, and our local domain controller checks that and lets users into the system. How does it work in the Microsoft cloud?"**

   a. It works the same way. Users sign in, and our local authentication server checks them before letting them onto the cloud.

   b. There is no need for authentication in the cloud.

   c. Microsoft provides Azure Active Directory. This provides the same functionality as a local domain controller.

> ## HINT ⊻
> *Hybrid clouds allow you to combine on-premises and off-premises services.*

Answers

1. "What cloud service does Microsoft offer that provides services—I think you called them Virtual Machines and Websites—that enable you to shift some or all of our IT infrastructure to the cloud?"

    a. Microsoft Azure.

2. "I'm worried that one day, we'll be running our publishing system in-house on our own servers, and the next day, we'll be in the cloud. I'm just concerned that maybe that is too fast. Maybe we should move some parts over first, and continue to operate some other elements locally. What do you think?"

    b. Nod can host what it wants. Azure services enable us to use a hybrid approach with some elements managed in our datacenter, and the rest in the cloud, managed by Microsoft.

3. "So, how do users authenticate in the hosted system? Currently, users enter a user name and password in a dialog box, and our local domain controller checks that and lets them into the system? How does it work in the Microsoft cloud?"

    c. Microsoft provides Azure Active Directory. You can use Azure Active Directory or your own domain controller to provide authentication to cloud services.

Essential details

- Azure virtual machines run on a Hyper-V server in a Microsoft datacenter, while management interfaces are provided to the user.

- Azure provides a range of hosted services, including virtual machines, websites, search, databases, and much more.

- The Azure infrastructure is highly available and robust, and it supports a number of data recovery technologies.

- What is Microsoft Azure?
  http://aka.ms/es7cqf
- The cloud for modern business
  http://aka.ms/hyno2u
- Azure portal
  http://aka.ms/e3i5cp
- Service Level Agreements
  http://aka.ms/gdyb7r
- Free one-month trial
  http://aka.ms/un95il
- Get started with Azure
  http://aka.ms/lb8mry

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TRAINING

OBJECTIVE 5

Understand enterprise mobility

IN THIS CHAPTER

- 5.1 Describe identity services
- 5.2 Describe business data access
- 5.3 Describe Bring Your Own Device (BYOD)

DESCRIBE IDENTITY SERVICES

Scenario: You have just finished your freshman year at Bellows College. Samantha Duffy, the IT manager at Bellows, has asked you to help her out over the summer recess. She has a project to implement a new identity and authentication system within the college. The system must be able to integrate the college into the wider academic community so that students can use apps to access other colleges' content.

The college has made a significant investment in IT infrastructure, mostly in servers running various Linux distributions. Authentication is provided by a directory service running on a server installed with an older version of Windows Server.

The college principal, Barry Rayford, has asked you to come to his office to answer a few questions about the project. Do your best to answer his questions.

1. **"I see from the project proposal that Ms. Duffy has suggested using something called Active Directory Federation Services. What does it do?" (Choose the best answer)**
   a. Authenticates users in a single organization.
   b. Authenticates users across multiple organizations.
   c. Enables claim-based authentication between organizations.

2. **"Why would we benefit from deploying the directory service to the Microsoft cloud?"**
   a. We would not. There is no benefit from using the cloud.
   b. Because it would enable us to get the same benefits of using Active Directory without the hassle of maintaining physical infrastructure to support it.
   c. Microsoft does not have a directory service for its cloud services.

3. **"If we use Active Directory Domain Services on our local servers, I worry that we will lose the possibility to use multi-factor authentication. Should I worry?"**
   a. No. AD DS in Windows Server 2012 R2 supports multi-factor authentication.
   b. Yes. Only Azure AD supports multi-factor authentication, so we would need to deploy our directory to the Microsoft cloud.
   c. That is where Active Directory Federation Services (AD FS) comes in. With AD FS, we can add multi-factor authentication to the mix.

HINT ⬇

AD DS is a Windows Server 2012 server role that provides authentication services within an organization.

Answers

1. "I see from the project proposal that Ms. Duffy has suggested using something called Active Directory Federation Services. What does it do?" (Choose the best answer)

    c. **Enables claim-based authentication between organizations.** C is the best answer, although b is partially correct.

2. "Why would we benefit from deploying the directory service to the Microsoft cloud?"

    b. **Because it would enable us to get the same benefits of using Active Directory without the hassle of maintaining physical infrastructure to support it.** Cloud services enable you to maintain the same functionality as with on-premise deployments, but without the physical infrastructure in your offices.

3. "If we use Active Directory Domain Services on our local servers, I worry that we will lose the possibility of using multi-factor authentication. Should I worry?"

    a. **No. AD DS in Windows Server 2012 R2 supports multi-factor authentication.**

Essential details

- AD DS is a Windows Server 2012 server role that provides authentication services within an organization.
- Microsoft Azure Active Directory provides identity and authentication services without the need for an organization to build a supporting physical IT infrastructure.
- AD FS enables you to provide identification, authentication, and authorization across organizational and platform boundaries.

- Active Directory Domain Services
  http://aka.ms/ait7r1
- Active Directory Domain Services
  http://aka.ms/ypxy5v
- Active Directory Federation Services Overview
  http://aka.ms/no320w
- Active Directory Federation Services
  http://aka.ms/cxtfu0
- Azure Active Directory
  http://aka.ms/mn3bu7
- What is Azure Active Directory?
  http://aka.ms/t2av5l

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DESCRIBE BUSINESS DATA ACCESS

Scenario: Last summer, Samantha Duffy, the Information Technology (IT) manager at Bellows College, asked you to help her out with the data access part of an IT project. She explained that students must be able to access their college work files from any device. She mentioned it is also important that some of the college's apps that handle things like class scheduling are available across a wide range of user devices. Students use the following device types:

- Windows-based laptops and tablets
- iOS-based tablets and phones
- Android-based tablets and phones
- Mac OS–based laptops

The college's IT infrastructure is now entirely hosted on the Microsoft cloud platform by using Azure and Intune. It is now time to implement your part of the project. To help draw up an implementation project plan, answer the following questions about devices and data access at the college.

1. **When college students arrive for their first day of the fall semester, their computing devices will connect to the college network. Which of the following components will allow them to synchronize college work data between their various devices?**

   a. Work Folders.

   b. Intune.

   c. Azure RemoteApp.

2. **Elsa Konig pops in to see Samantha at the beginning of the fall semester. Elsa cannot locate the scheduling app, which was built to run on Windows Vista, which she needs to find all her classes. What does Samantha do?**

   a. She opens the Work Folders share on the user's iOS device to locate the scheduling app.

   b. She uses the Intune Company Portal to locate and download the iOS version of the scheduling app.

   c. She uses Azure RemoteApp to access the app from the user's iOS device.

3. **Samantha wants a variety of apps to be available for students to select from their devices. How can you easily facilitate this request?**

   a. Install all apps on all devices during student registration.

   b. Use the Intune Company Portal to make the apps available.

   c. Use Work Folders to synchronize the apps between all users' devices.

HINT ⬇

Focus on the client device types. Not all solutions support all client types.

Answers

1. When college students arrive for their first day of the fall semester, their computing devices will connect to the college network. Which of the following components will allow them to synchronize college work data between their various devices?

    a. **Work Folders.** Work Folders allows users to access work-related files with their personal devices and to synchronize that data between their devices.

2. Elsa Konig pops in to see Samantha at the beginning of the fall semester. Elsa cannot locate the scheduling app, which was built to run on Windows Vista, which she needs to find all her classes. What does Samantha do?

    c. **She uses Azure RemoteApp to access the app from the user's iOS device.** RemoteApp supports a wide range of client types, including iOS. Because the app actually runs on Windows Vista, it is necessary to use RemoteApp to run the app.

3. Samantha wants a variety of apps to be available for students to select from their devices. How can you easily facilitate this request?

    b. **Use the Intune Company Portal to make the apps available.** You can populate the Intune **Company** Portal with the desired apps.

Essential details

- Users can utilize the Intune Company Portal to enroll their devices, view the status of their devices, download apps deployed by the college, or contact the college's IT department for support.

- Users can store their work content in Work Folders and access that content from multiple devices. These devices do not need to be domain members.

- Users can utilize any of the college's apps from virtually any device by using Azure RemoteApp.

- Enable mobile device enrollment with the Microsoft Intune Company Portal

  http://aka.ms/xc82in

- Documentation Library for Microsoft Intune

  http://aka.ms/n61ea2

- Work Folders Overview

  http://aka.ms/hnes5w

- Work Folders: FAQ

  http://aka.ms/tvidss

- RemoteApp

  http://aka.ms/qyklli

- Azure RemoteApp

  http://aka.ms/dqzdyb

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DESCRIBE BRING YOUR OWN DEVICE (BYOD)

Scenario: You are about to begin your second year at Bellows College. You have been working with Samantha Duffy, the IT manager at Bellows, on a project to help implement students' own devices into the campus network. This project has been going well. Over the summer recess, the college's IT infrastructure was mostly shifted to the Microsoft cloud by using Microsoft Azure and Microsoft Intune.

Because you are majoring in Information Technology, Samantha has asked you to take over a part of the project that relates to implementing users' own devices. Before the summer recess, Samantha took a poll of the students at the college to determine which devices they use. Students use the following device types:

- Windows-based laptops
- Windows tablets
- iOS tablets and phones
- Android tablets and phones
- Mac OS laptops

It is important that students be able to access their college work files from their own devices. It is also important that the college retain control of what is being connected to its infrastructure. You have been looking at the concept of Bring Your Own Device (BYOD). Answer the following questions.

1. **You must provide a standard desktop to students within each department. For instance, students who sign in to the college network with a user account that is a member of the Arts department should receive a specific desktop and set of apps that relate to the Arts. How could you do this?**

 a. Implement desktop virtualization so that users receive the correct desktop and apps.

 b. Implement Active Directory Rights Management Services (AD RMS) so that mobile devices receive the correct apps.

 c. Implement Dynamic Access Control (DAC) so that only users who are part of the Arts department receive the Arts apps.

HINT

DAC and AD RMS control access to resources; desktop virtualization controls the user experience.

2. Which of the following statements about students being able to use their own devices to access college resources is true?

   a. It results in more productive students.

   b. It shifts some of the management cost to the students.

   c. Both of the above.

3. The college has one particular app that was originally designed to run on a laptop installed with Windows Vista. Although the app can be made available across all platforms by using Microsoft technologies, should the app be consistent across all devices? That is, do users need the same functionality in a scheduling app that they access from their phone as they do in their desktop PC?

   a. Yes, the app should remain the same regardless of which platform is used.

   b. No, the app should be adjusted for form factor.

Answers

1. You must provide a standard desktop to students within each department. For instance, students who sign in to the college network with a user account that is a member of the Arts department should receive a specific desktop and set of apps that relate to the Arts. How could you do this?

   a. **Implement desktop virtualization so that users receive the correct desktop and apps**. Neither DAC nor AD RMS enable virtual desktops.

2. Which of the following statements about students being able to use their own devices to access college resources is true?

   c. **Both of the above**. BYOD results in more productive users, and it does shift some of the management cost to the users.

3. The college has one particular app that was originally designed to run on a laptop installed with Windows Vista. Although the app can be made available across all platforms by using Microsoft technologies, should the app be consistent across all devices? That is, do users need the same functionality in a scheduling app that they access from their phone as they do in their desktop PC?

   b. **No, the app should be adjusted for form factor.** It is unlikely that you need to do the same things with an app when you are using your phone as you do when you are using your PC. You likely will only need to view your appointments or find a lecture room. It probably is easier to edit appointments and create new ones from a desktop device.

Essential details

- Allowing students to bring their own devices to access college resources can help students be more productive.

- Desktop virtualization provides students with standardized desktops and apps across a variety of mobile devices.

- DAC uses claims about students, such as whether they are in a particular department, to determine the level of access those students have to resources.

- AD RMS uses claims about students to determine the level of access those students have to resources.

- Embrace Bring Your Own Device scenarios
  http://aka.ms/krs1fh

- Bring Your Own Device (BYOD) Survival Guide for Microsoft Technologies
  http://aka.ms/e4575b

- Virtual Desktop Infrastructure
  http://aka.ms/joqruw

- Dynamic Access Control: Scenario Overview
  http://aka.ms/ok0trn

- Dynamic Access Control Overview
  http://aka.ms/nsn7e5

- Active Directory Rights Management Services Mobile Device Extension
  http://aka.ms/nafar6

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