Exam Report: 5.4.7 Practice Questions

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Overall Performance

Your Score: 43%

Passing Score: 80%

View results by: Objective Analysis Individual Responses

Individual Responses

Question 1: Correct

You work for a small company as the human resources specialist. Since the company is fairly small, you are maintaining all of the employee information on your desktop computer, which is running Windows 10. This computer has two high-capacity hard disks. You want to ensure that this information is protected from a hard disk failure, so you want to set up a Windows software RAID system.

Which of the following would be your BEST solution?

- Use mirrored volumes.
- Use striped volumes.
- Use spanned volumes.
- Use RAID 5 volumes.

Explanation

A Windows software RAID system can be configured in Windows 10 using the Windows Disk Management tool. Of the available options from within Disk Management, you would need to configure a mirrored volume to protect your data from a disk failure. Disk mirroring requires two available drives with sufficient storage. Once configured, the data written to a mirrored volume is duplicated to both drives. This duplication, or mirroring, means that if one of the mirrored drives fails, all of the data can still be retrieved from the remaining good drive.

A spanned volume is a dynamic volume consisting of disk space on more than one physical disk. This method does not duplicate the data. If a spanned volume drive fails, the data is lost.

A striped volume uses the free space on more than one physical hard disk to create a bigger volume similar to a spanned volume. However, a striped volume writes across all volumes in the stripe in small blocks, distributing the load across the disks in the volume. In other words, when a single file is written, some of the file will be on one disk, and the rest of the file will be on another disk. This makes writing files faster as the data to all of the disks in the strip at the same time. It does not, however, protect the data in the event of a disk failure.

RAID 5 requires more than two disks.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_ADDING_ARRAYS]

Question 2: Correct

You are running Windows 10 on your computer. You want to decrease the time it takes to write data to your drives. To do this, you have decided to create a Windows software RAID system using a striped volume.

Before you create the striped volume, which action MUST you take?

- Format your disks to use GPT partitions.
- Format your disks to use MBR partitions.

- Use a multi-partition volume on a basic disk.
- Convert basic disks to dynamic disks.

Explanation

When creating a Windows software RAID on Windows 10, all of the drive used for the RAID system must be configured as dynamic disks.

The step of formatting your disks comes after the step of configuring your drives as either basic or dynamic. Like basic disks, dynamic disks can use the MBR or GPT partition styles on systems that support both.

With older versions of Windows, a basic disk included a multi-partition volume. To encourage the use of dynamic disks, multi-partition volume support was removed from basic disks and is now exclusively supported on dynamic disks.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_ADDING_ARRAYS_2]

Question 3: Correct

One of your customers wants you to build a personal server that he can use in his home. One of his concerns is making sure he has at least one backup of their data stored on the server in the event that a disk fails. You have decided to back up his data using RAID. Since this server is for personal use only, the customer wants to keep costs down. Therefore, he would like to keep the number of drives to a minimum.

Which of the following RAID systems would BEST meet the customer's specifications?

- RAID 0
- RAID 1
- RAID 5
- RAID 10

Explanation

RAID 1 will protect memory from a single disk failure and provides high-read performance. It also only requires a minimum of two disks. RAID 5 would also protect data from a single disk failure, but requires a minimum of three disks, and RAID 10 requires a minimum of four disks.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_CUSTOM_RAID]

Question 4: Incorrect

Ben is concerned about losing data due to a hard disk failure. His computer will only support a maximum of three disks. To protect his data, you have decided to use RAID (redundant array of independent disks).

Which of the following RAID types would give Ben the BEST mirrored data protection?

- RAID 0
- RAID 1
- ~~RAID 5~~
- RAID 10

Explanation

RAID 1 is the only mirrored solution that can work on three or less drives. RAID 0 and RAID 5 protects data using stripping. RAID 10 uses mirroring, but requires a minimum of four disks.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID1]

Question 5: Correct

You have been asked to configure the drives in a computer. The end user wants to use striping without incorporating any fault tolerance.

Which of the following will BEST meet these requirements?

- RAID 1
- RAID 0
- Expanded volume set
- RAID 5

Explanation

RAID 0 uses disk striping and offers no fault tolerance. Disk striping breaks data into units and stores the units across a series of disks by reading and writing to all disks simultaneously. A failure of one disk in the set means all data is lost. This is the fastest of all RAID types. RAID 5 also uses disk striping, but provides fault tolerance for a single disk failure. RAID 1 provides fault tolerance, but does not use striping. An expanded volume set is a volume that spans more than one hard drive. An expanded volume set also offers no fault tolerance, yet does not use striping.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_0_01]

Question 6: Incorrect

You are building a new computer that will contain two hard disks. To provide increased performance, you have decided to configure the drives using RAID technology.

Which of the following will BEST meet your needs?

- ~~RAID 1~~
- RAID 0
- RAID 2
- RAID 5

Explanation

RAID 0 (striping) uses two or more disks and provides an increase in performance, but not fault tolerance. RAID 1 (mirroring) uses two disks to provide fault tolerance, but not an increase in performance. RAID 5 uses a minimum of three disks and provides both fault tolerance and an increase in read performance.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_0_02]

Question 7: Incorrect

You have a computer with three hard disks. A RAID 0 volume uses space on Disk 1 and Disk 2. A RAID 1 volume uses space on Disk 2 and Disk 3. Disk 2 fails. Which of the following is true?

- Data on the RAID 1 volume is accessible; data on the RAID 0 volume is not.
- ~~Data on both volumes is still accessible.~~
- Data on both volumes is not accessible.

Data on the RAID 0 volume is accessible; data on the RAID 1 volume is not.

Explanation

In this scenario, Disk 2 is shared between both volumes. If Disk 2 fails, the RAID 1 volume is still accessible because RAID 1 (mirrored) volumes can sustain a loss of a single disk. The data on the RAID 0 volume is not accessible. RAID 0 uses striping, which distributes the data evenly between multiple disks. If a single disk fails, the entire volume is lost.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_0_VS_RAID_1]

Question 8: Correct

A computer being used by the HR department needs to ensure that all of the data on that computer is protected from a single hard disk failure. The data needs to be read as quickly as possible, and the HR department would like to maximize drive use as much as possible. This computer can use up to three hard drives.

Which of the following RAID types would meet these requirements and provide the BEST data protection?

- RAID 0
- RAID 1
- RAID 5
- RAID 10

Explanation

A RAID 5 volume combines disk striping across multiple disks with parity for data redundancy. Parity information is stored on each disk. If a single disk fails, its data can be recovered using the parity information stored on the remaining disks. RAID 5 also provides an increase in performance for read operations. With three drives, RAID 5 uses approximately 33% overhead, whereas RAID 1 and 10 use 50%.

RAID 0 does not provide fault tolerance. If one disk in the set fails, all data is lost. RAID 10 requires a minimum of four disks; this computer only has three.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_5]

Question 9: Incorrect

What is an advantage of RAID 5 over RAID 1?

- RAID 5 continues to operate with a failure in two disks; RAID 1 can only operate with a failure of one disk.
- ~~RAID 5 provides redundancy; RAID 1 does not.~~
- RAID 5 improves performance over RAID 1.
- RAID 5 provides redundancy for the disk controller.

Explanation

RAID 5 provides both fault tolerance and improved performance. RAID 1 (mirroring) provides only fault tolerance with no performance benefit. Both RAID 5 and RAID 1 can only sustain a loss of one disk in the set. Use multiple disk controllers to provide redundancy for the disk controller.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_5_01]

Question 10: Incorrect

You have been asked to implement a RAID 5 solution for an engineer's desktop workstation. What is the minimum number of hard disks that can be used to configure RAID 5?

- 2
- 3
- 4
- 5
- 6

Explanation

A RAID 5 array stripes data and parity information across multiple hard disks. To complete a RAID 5 array, a minimum of three hard disks is required. RAID 0 and RAID 1 can both be implemented with a minimum of two hard disks.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_RAID_5_02]

Question 11: Correct

One of the video editors in your company is worried that he may lose a lot of data if his hard drive fails. He has asked you to come up with a solution. To do this, you have decided to implement a RAID 10 solution on his desktop workstation.

Which of the following is the MINIMUM number of hard disks that can be used?

- 2
- 3
- 4
- 5
- 6

Explanation

A RAID 10 array nests a mirrored array within a striped array. To create a RAID 10 array, a minimum of four hard disks is required (two for the mirrored array and two more to stripe the mirror).

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_TRB_RAID_10_01]

Question 12: Incorrect

Which of the following drive configurations uses striping with parity for fault tolerance?

- ~~RAID 10~~
- RAID 1
- RAID 5
- RAID 0

Explanation

RAID 5 also uses disk striping, but provides fault tolerance for a single disk failure. Disk striping breaks data into units and stores the units across a series of disks by reading and writing to all disks simultaneously. RAID 0 uses disk striping and offers no fault tolerance. A failure of one disk in the set

means all data is lost. RAID 1 provides fault tolerance, but does not use striping. A RAID 10 array nests a mirrored array within a striped array.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_FCT_TRB_RAID_5_01]

Question 13: Incorrect

You are configuring a new system, and you want to use a RAID 0 array for the operating system using SATA disks and the RAID functionality built into the motherboard.

Which of the following BEST describes the action you will take as part of the configuration?

- Set master/slave jumpers on the hard drives.
- ~~In the BIOS, set the disk mode to IDE.~~
- Set the disk mode to AHCI in the BIOS.
- Load the RAID drivers during operating system installation.

Explanation

If you are using an onboard RAID controller with SATA drives, edit the CMOS settings and identify the drive type as RAID. This tells the system to load the onboard BIOS for accessing the connected drives. If you want to install the operating system on a RAID array, you need to manually load the controller driver so that Windows can see the RAID array.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_CFG_RAID_0_03]

Question 14: Incorrect

You have an existing computer running Windows 10. You want to configure a RAID 1 array in the computer. You install two new SATA drives, then use the RAID controller integrated in the motherboard to define a RAID 1 array using them. When you boot the computer, Windows does not show the logical RAID drive. What should you do?

- In the BIOS, change the SATA disk mode to RAID.
- Set the jumpers on the drives to use SATA I mode.
- ~~In the BIOS, change the SATA disk mode to AHCI.~~
- Install the drivers for the RAID controller.

Explanation

You must install the RAID driver so that Windows recognizes arrays created by the motherboard RAID utility. Without the driver, Windows will not be able to see the logical drive defined by the array. When you define the array, you configure the BIOS to use RAID as the SATA type. If you had not completed this step, you would not be able to run the RAID configuration utility. Use AHCI to configure SATA drives to support hot swapping.

References

TestOut PC Pro - 5.4 RAID
[e_raid_pp6.exam.xml Q_RAID_CFG_RAID_1_01]