

A customer has contacted you about building two new desktops. The first desktop will be a gaming workstation. The customer requirements include:

- Playing the newest games at a high frame rate
- Fast game load times
- Enough storage to have several games installed at once
- High-end audio
- No concern about cost
- Running the current Windows OS

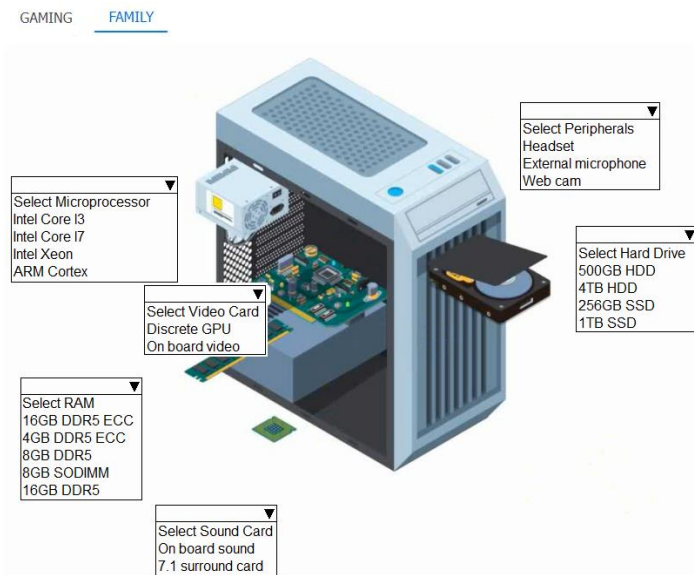
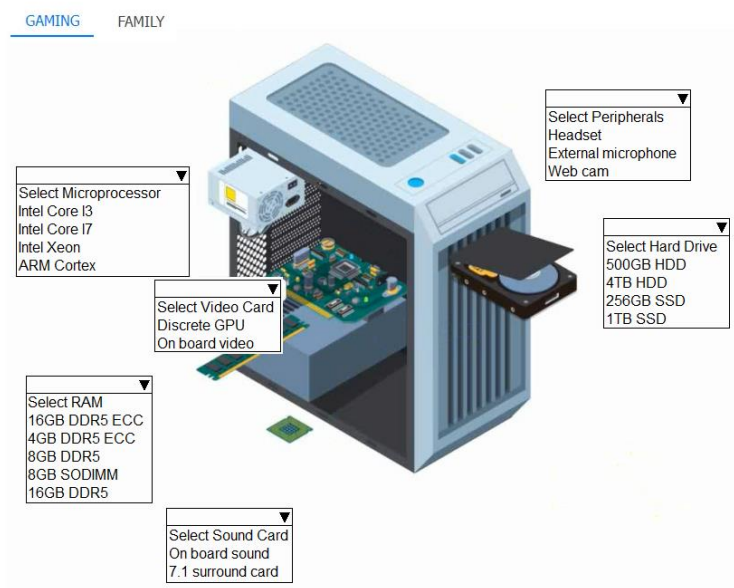
The second workstation will be a family workstation. The requirements include:

- Capability for word processing, videoconferencing, and basic web surfing
- Minimal cost, as long as it meets the requirements
- Running the current Windows OS

INSTRUCTIONS

Use the drop-down menus to select the appropriate component for each category, based on the above requirements.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.



Answer:

GAMING FAMILY

Select Microprocessor
Intel Core I3
Intel Core I7
Intel Xeon
ARM Cortex

Select Video Card
Discrete GPU
On board video

Select RAM
16GB DDR5 ECC
4GB DDR5 ECC
8GB DDR5
8GB SODIMM
16GB DDR5

Select Sound Card
On board sound
7.1 surround card

Select Peripherals
Headset
External microphone
Web cam

Select Hard Drive
500GB HDD
4TB HDD
256GB SSD
1TB SSD

GAMING FAMILY

Select Microprocessor
Intel Core I3
Intel Core I7
Intel Xeon
ARM Cortex

Select Video Card
Discrete GPU
On board video

Select RAM
16GB DDR5 ECC
4GB DDR5 ECC
8GB DDR5
8GB SODIMM
16GB DDR5

Select Sound Card
On board sound
7.1 surround card

Select Peripherals
Headset
External microphone
Web cam

Select Hard Drive
500GB HDD
4TB HDD
256GB SSD
1TB SSD

A technician is setting up a video-editing workstation and the operating system is already installed on an internal M.2 drive. The new workstation must meet the following requirements:

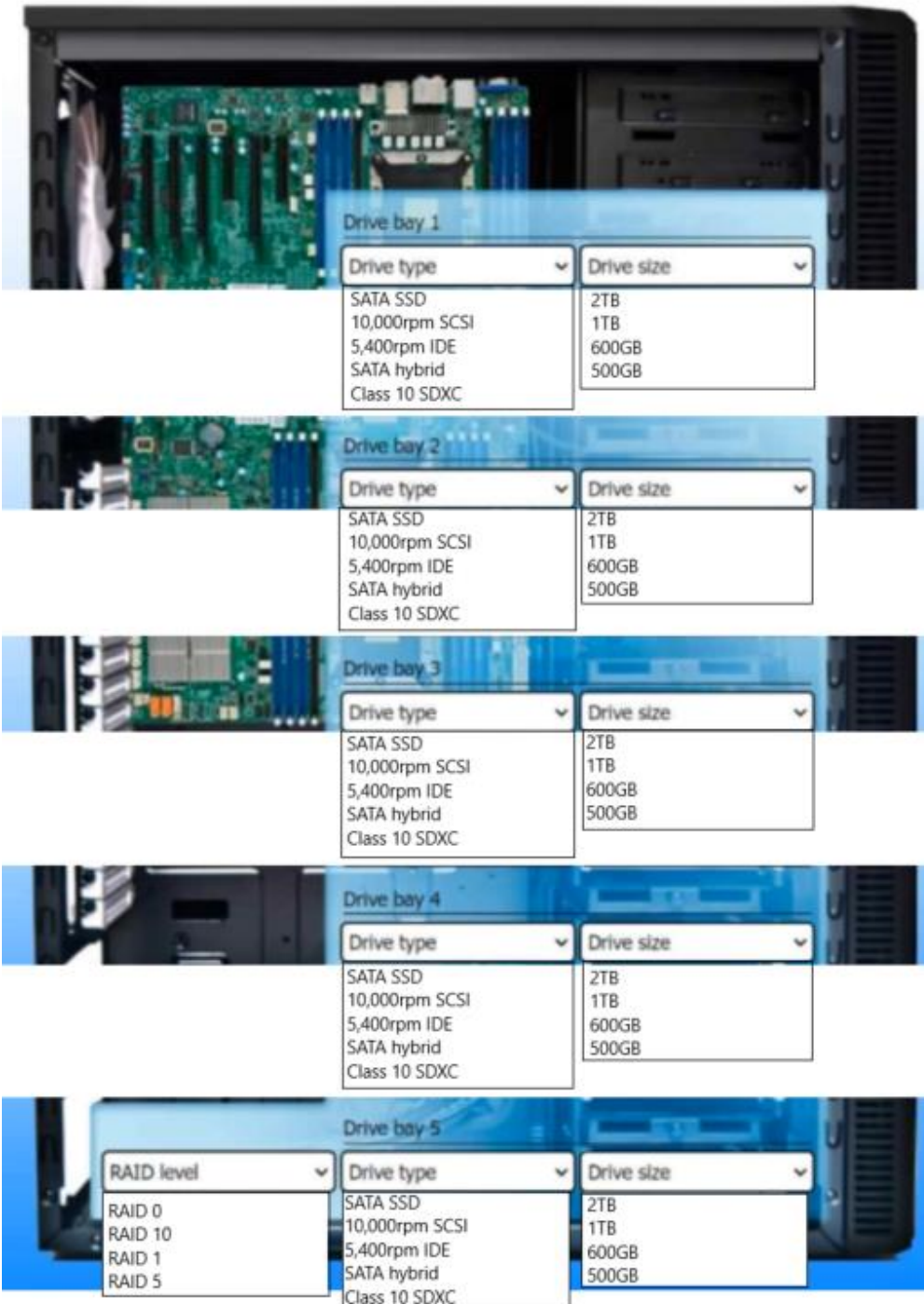
- Be able to edit files at the fastest speed
- Allow for disk failure without any downtime
- Have 2TB of usable space
- Ensure the most robust fault tolerance

INSTRUCTIONS

Use the drop-down menus to select the appropriate RAID level, drive types, and drive sizes based on the requirements above. For each drive type that is selected, a corresponding drive size must also be selected.

Selections may be used more than once. Not all selections will be used, and all drive bays may not be filled in.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.



Explanation:

Requirements Breakdown:

Fastest speed: SATA SSDs will provide the best performance for video editing.

Disk failure protection without downtime: RAID 10 provides both redundancy and high read/write performance, meeting this requirement.

2TB of usable space: RAID 10 with 4 drives of 1TB each would provide 2TB of usable space (since RAID 10 mirrors data).

Most robust fault tolerance: RAID 10 also offers superior fault tolerance compared to RAID 5 or RAID 0.

Recommended Configuration:

RAID level: RAID 10 (best combination of speed and fault tolerance).

Drive type: SATA SSD (for optimal speed).

Drive sizes: 1TB per drive.

Setup Based on the Image:

Drive bay 1: SATA SSD, 1TB

Drive bay 2: SATA SSD, 1TB

Drive bay 3: SATA SSD, 1TB

Drive bay 4: SATA SSD, 1TB

RAID Level: RAID 10

An administrator is replacing 15,000rpm hard drives in a server. Which of the following is the interface type the drives most likely use?

- A. IDE
- B. SAS
- C. eSATA
- D. SATA

An administrator is replacing 15,000rpm hard drives in a server. Which of the following is the interface type the drives most likely use?

- A. IDE
- B. SAS
- C. eSATA
- D. SATA

Correct Answer:
B

A support technician for a small office is asked to improve the signal quality of the wireless network. An employee located in Office 1 reports poor Wi-Fi performance, particularly during certain times of the day.

The office has two access points, and each access point has a coverage of 2,000 sq ft (186 sq m), while the total office space is approximately 3,000 sq ft (279 sq m).

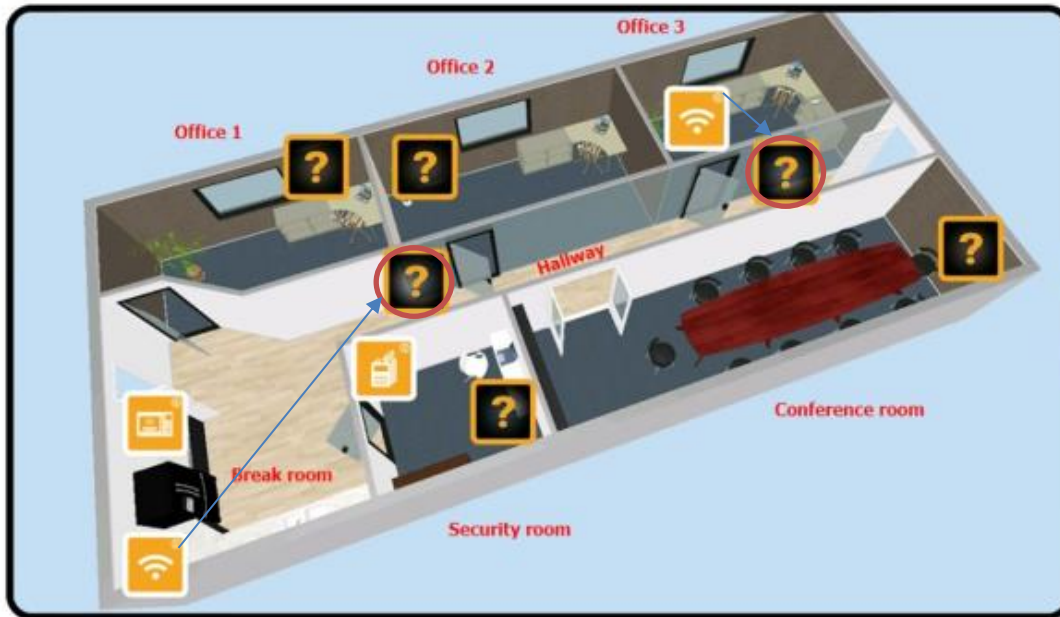
Additionally, the management team requests that any electronics should be located strategically to minimize signal interference.

INSTRUCTIONS

Click the X in the upper right corner of each device to remove it from its current location. Click on a ? around the office to add a device to that location.

Devices should be moved to the appropriate locations in order to satisfy the above requirements, and all devices will be placed around the office.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.



Explanation:

Wi-Fi Access Points

Access Point 1: Move it to **the hallway or the center of the office**, ensuring it covers **Office 1** effectively.

Access Point 2: Move it to **Office 3 or between Office 2 and the conference room**. This will help cover the remaining areas and improve signal strength throughout the space.

The Wi-Fi access points need to be strategically placed in the office to maximize coverage. Avoid putting them near interfering devices like microwaves or walkie talkies.

Microwave

Move the microwave away from any access points or locations where Wi-Fi signals are strong. Microwaves can cause interference on the 2.4 GHz Wi-Fi band, which is commonly used by wireless access points. For example, you can move the microwave to the lower left corner.

Walkie Talkies

Place walkie talkies away from the access points or any area where the Wi-Fi signal might be weak. For example, into the conference room. Walkie talkies often operate on frequencies that can interfere with the wireless signal, particularly on the 2.4 GHz band.

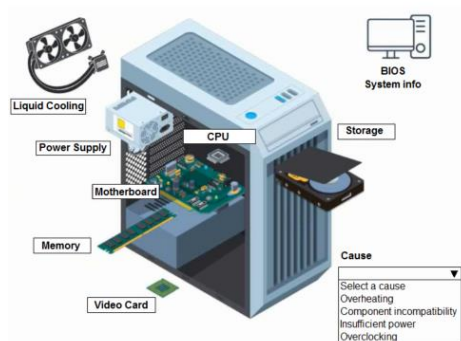
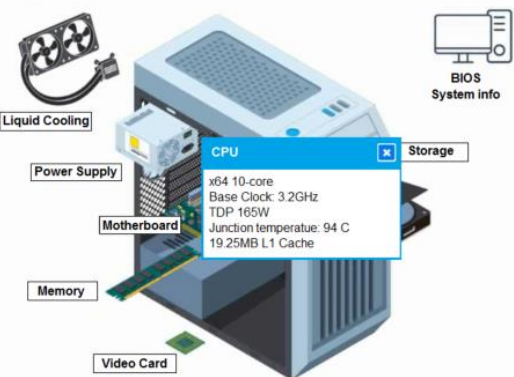
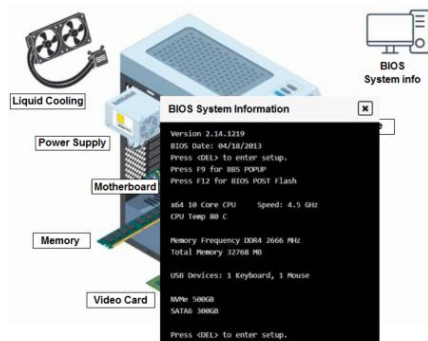
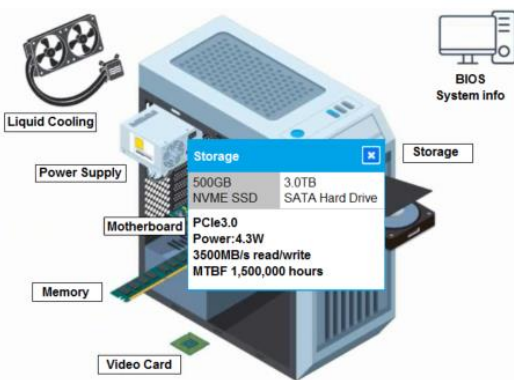
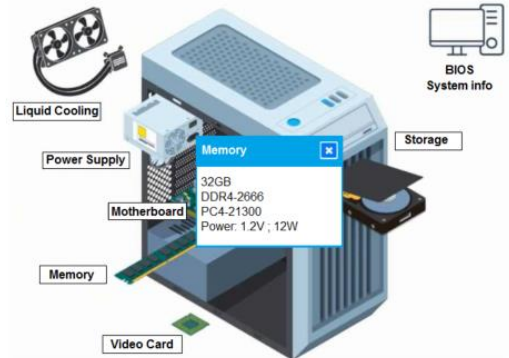
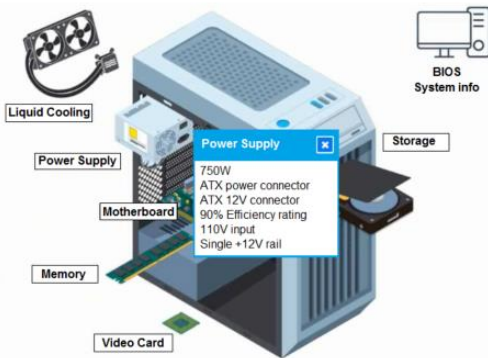
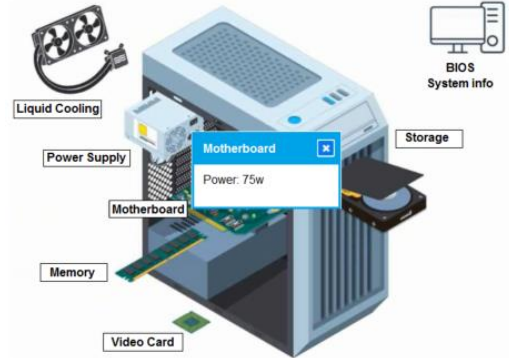
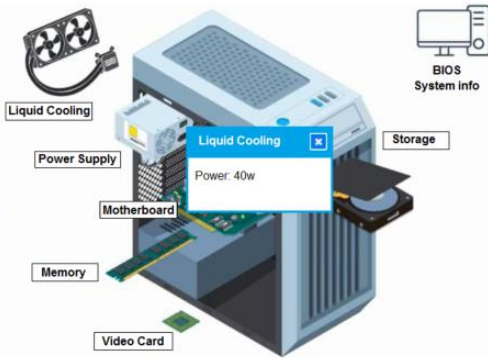
A customer built a computer for gaming, sourcing individual components and then assembling the system. The OS starts up, but within a few minutes the machine locks up. The customer brought the computer to a technician to diagnose the issue.

INSTRUCTIONS

Click on each component to view the specification.

Select the appropriate cause and resolution for the issue.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.



Explanation:

Explanation

The diagram shows a PC case with various components labeled. On the left, there is a 'Liquid Cooling' unit, a 'Power Supply', a 'Motherboard', 'Memory' modules, and a 'Video Card'. In the center, the 'CPU' is visible. On the right, there is a 'Storage' drive. Above the case, there is a 'BIOS System info' icon. Below the case, there are two dropdown menus: 'Cause' and 'Resolution'. The 'Cause' menu has options: 'Select a cause', 'Overheating', 'Component incompatibility', 'Insufficient power', and 'Overclocking'. The 'Resolution' menu has options: 'Select a resolution', 'Replace PSU with higher wattage model', 'Update motherboard firmware', 'Install larger radiator', 'Lower CPU clock speed', 'Increase CPU multiplier', 'Run CHKDSK on NVMe drive', 'Replace thermal paste', 'Decrease CPU voltage', 'Raise memory frequency', 'Switch motherboard for micro-ATX form factor', 'Decrease memory module frequency', and 'Replace GPU with lower performance model'. The 'Component incompatibility' option in the 'Cause' menu and the 'Lower CPU clock speed' option in the 'Resolution' menu are highlighted with red boxes.

Cause

- Select a cause
- Overheating
- Component incompatibility
- Insufficient power
- Overclocking

Resolution

- Select a resolution
- Replace PSU with higher wattage model
- Update motherboard firmware
- Install larger radiator
- Lower CPU clock speed
- Increase CPU multiplier
- Run CHKDSK on NVMe drive
- Replace thermal paste
- Decrease CPU voltage
- Raise memory frequency
- Switch motherboard for micro-ATX form factor
- Decrease memory module frequency
- Replace GPU with lower performance model

A user reports poor performance on the application server.

INSTRUCTIONS

Click on Server 1 and Server 2 and review the information presented in each chart to determine which drives need to be replaced.

Select the appropriate replacement drive that should be used, for the least performance degradation to the server.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.

Status	Name	State	Layout	Bus protocol	Media	Read policy	Write policy	Stripe element size	Disk cache policy
✓	Server 1	Ready	RAID-5	SAS	HDD	No read ahead	Write back	64KB	Disabled
⚠	Server 2	Degraded	RAID-5	SAS	HDD	No read ahead	Write back	64KB	Disabled

Server 1

Status	Name	State	Size	Media	Speed	Failure predicted
✓	Physical disk 1:2	Online	4TB	HDD	15k rpm	Yes
✓	Physical disk 1:3	Online	4TB	HDD	15k rpm	No
✓	Physical disk 1:4	Online	4TB	HDD	15k rpm	No
✓	Physical disk 1:5	Online	4TB	HDD	15k rpm	No

Server 2

Status	Name	State	Size	Media	Speed	Failure predicted
✓	Physical disk 1:2	Online	2TB	HDD	7200rpm	No
✓	Physical disk 1:3	Online	2TB	HDD	7200rpm	No
✓	Physical disk 1:4	Online	2TB	HDD	7200rpm	No
✗	Physical disk 1:5	Offline	2TB	HDD	7200rpm	Failed

Server 1, Drive bay 2

Size	Interface	Rotational speed
4TB v	HDD	15k rpm

Server 2, Drive bay 3

Size	Interface	Rotational speed
2TB v	HDD	7200rpm

Server 1, Drive bay 3

Size	Interface	Rotational speed
4TB v	HDD	15k rpm

Server 2, Drive bay 5

Size	Interface	Rotational speed
2TB v	HDD	7200rpm

Server 1, Drive bay 4

Size	Interface	Rotational speed
4TB v	HDD	15k rpm

Server 2, Drive bay 2

Size	Interface	Rotational speed
2TB v	HDD	7200rpm

Server 1, Drive bay 5

Size	Interface	Rotational speed
4TB v	HDD	15k rpm

Server 2, Drive bay 4

Size	Interface	Rotational speed
2TB v	HDD	7200rpm

Explanation:

From the information provided for both Server 1 and Server 2, here is the analysis of the drives:

Server 1:

- **Physical Disk 1:1** has no issues, but **Physical Disk 1:2** is predicted to fail.
- Server 1 is operating under RAID 5 with five disks, all of which are 4TB HDDs at 15k RPM.

Server 2:

- **Physical Disk 1:5** is marked as "Failed."
- Server 2 is also running RAID 5, but the disks are 2TB HDDs at 7200 RPM, and this disk is offline.

Recommended Action:

- For **Server 1**, replace **Physical Disk 1:2**. To minimize performance degradation, choose a replacement 4TB HDD with 15k RPM, matching the existing disks for RAID compatibility.
- For **Server 2**, replace **Physical Disk 1:5**. As the other disks in this server are 2TB HDDs at 7200 RPM, choose a similar 2TB HDD at 7200 RPM to maintain RAID integrity and performance.

A natural disaster occurred, and the storage system for the development team is unrecoverable. The technician is preparing replacement storage arrays that include a hypervisor with the capacity to support several virtual machines. Two separate bays are available, and both should be utilized.

Requirements for the primary array include the following:

- No need to be scalable
- Very fast on reads
- Fault tolerance of one drive
- Ability to function with only one drive
- Easily recoverable data
- High redundancy
- Minimum cost and number of drives
- At least 80GB of usable space

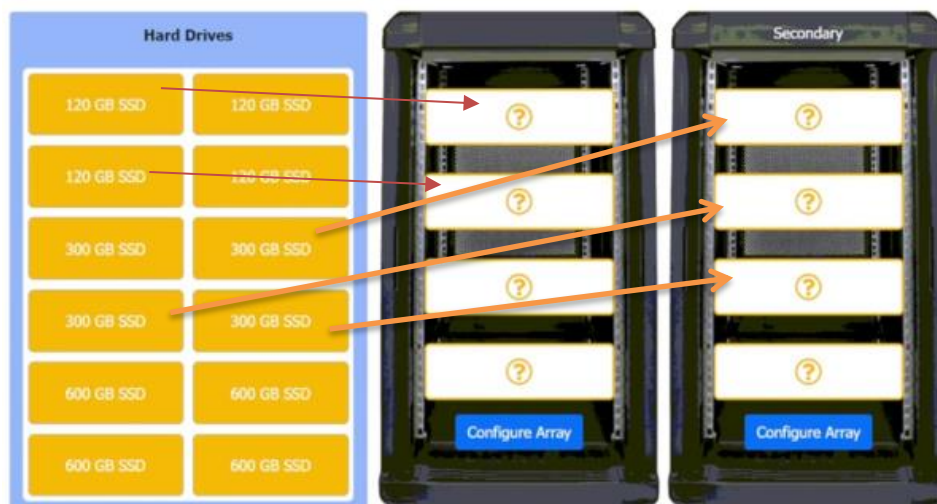
Requirements for the secondary array include the following:

- Fault tolerance of one drive
- Total usable space of 600GB
- Best write performance
- Minimum number of drives

INSTRUCTIONS

Drag and drop the appropriate hard drives. Then open each array to complete the configuration.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.



Explanation:

Primary Array (Focused on Redundancy & Speed for Reads)

- .RAID Type: RAID 1 (Mirroring) is the best option. It provides high read speeds and redundancy, ensuring data remains available even if one drive fails.
- .Minimum Drives Needed: 2
- .Drive Selection: Since the requirement is at least 80GB of usable space, and RAID 1 mirrors data, the smallest drive that meets this condition is **120GB SSD**.
- .Final Selection: Use **two 120GB SSDs**.

Secondary Array (Focused on Best Write Performance & 600GB Usable Space)

- .RAID Type: RAID 5 (Stripe with Parity) is the best option. It provides fault tolerance and better write performance than RAID 1.
- .Minimum Drives Needed: 3 (RAID 5 requires at least three drives)
- .Drive Selection: Since RAID 5 uses one drive's worth of space for parity, to get **600GB usable**, we need **three 300GB SSDs**.
- .Final Selection: Use **three 300GB SSDs**.

Steps to Configure the Arrays

.Primary Array Setup:

- Drag **two 120GB SSDs** into the available slots.
- Configure as **RAID 1**.

.Secondary Array Setup:

- Drag **three 300GB SSDs** into the available slots.
- Configure as **RAID 5**.

Part 1

For each cable type, click the (+) to select the appropriate connector and tool.

Part 2

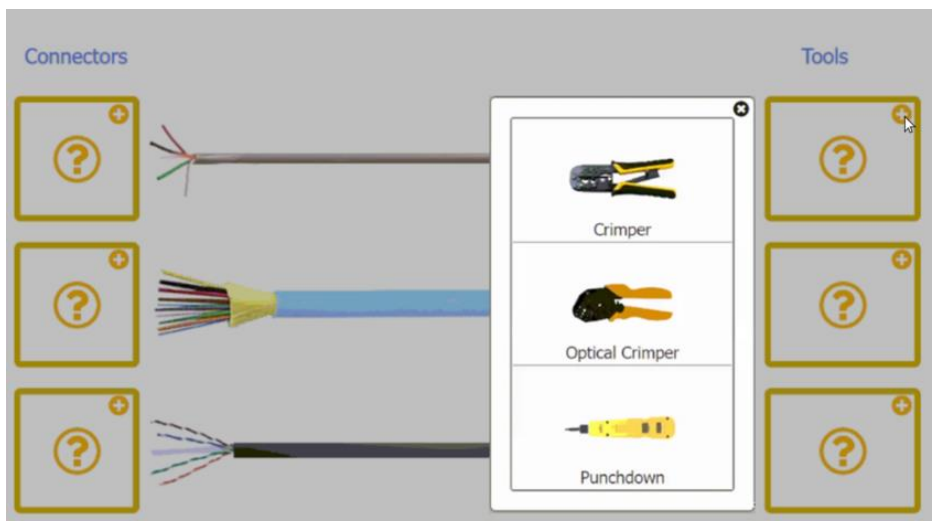
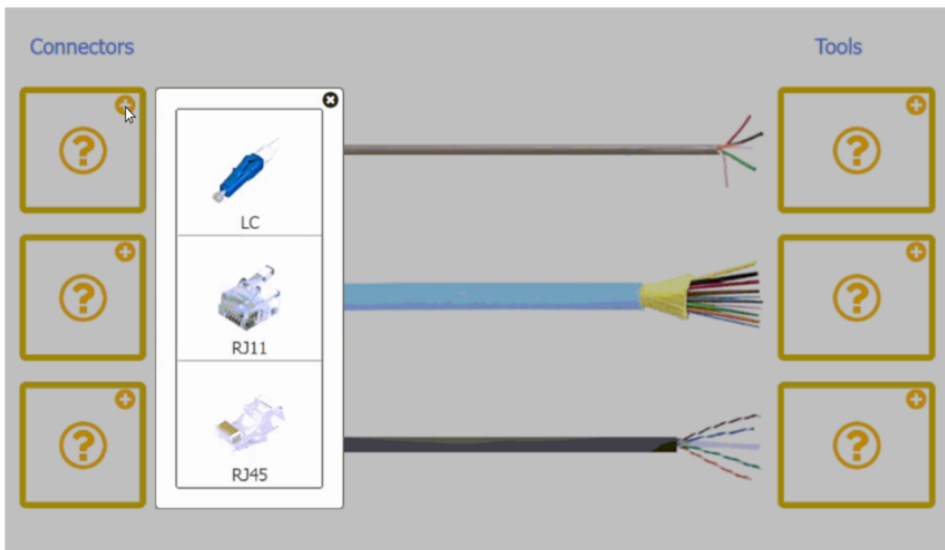
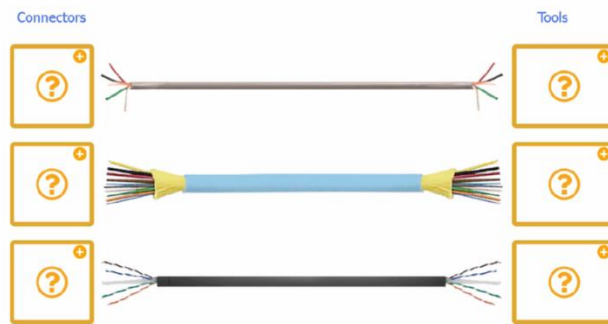
An access point was moved and no longer has connectivity. Connect the access point, patch panel, and switch by clicking the (+)

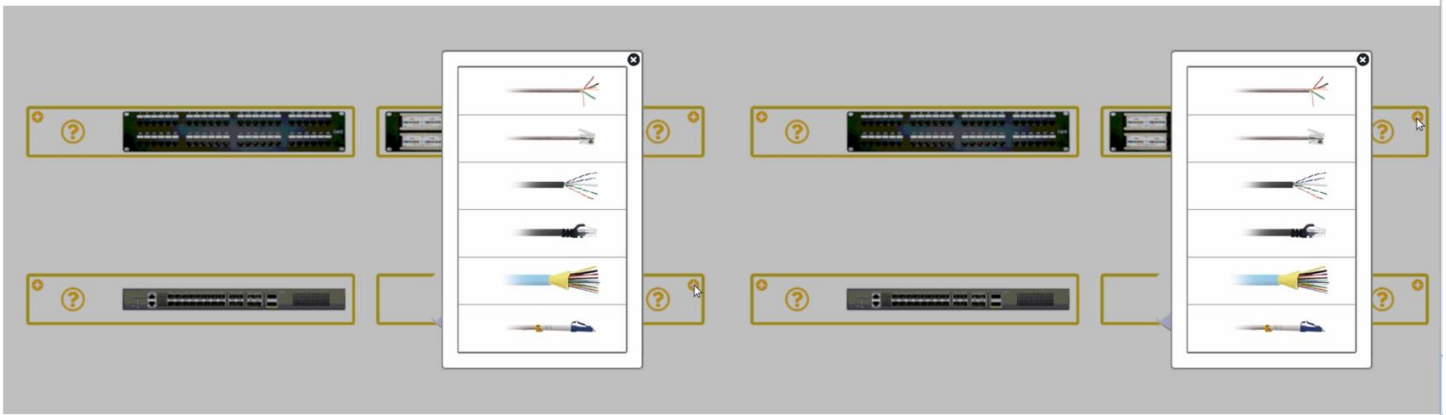
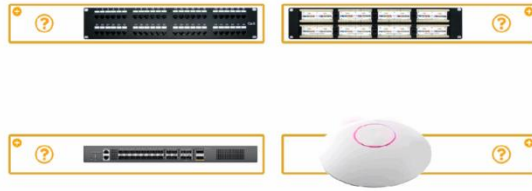
The link will be visible after making the second selection of each pair.

Cable ends may be used multiple times, and all placeholders will be filled.

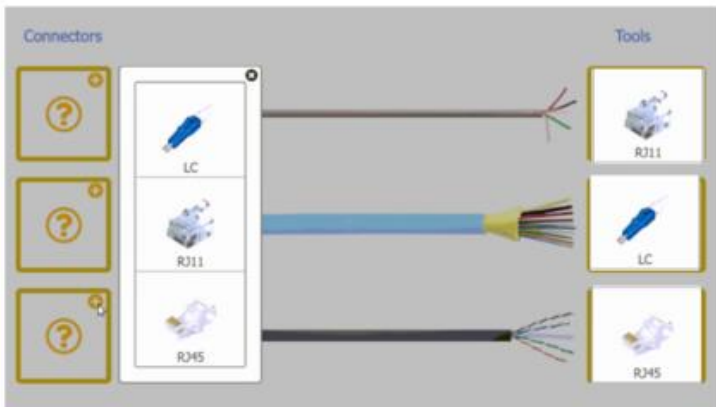
If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.

Part 1

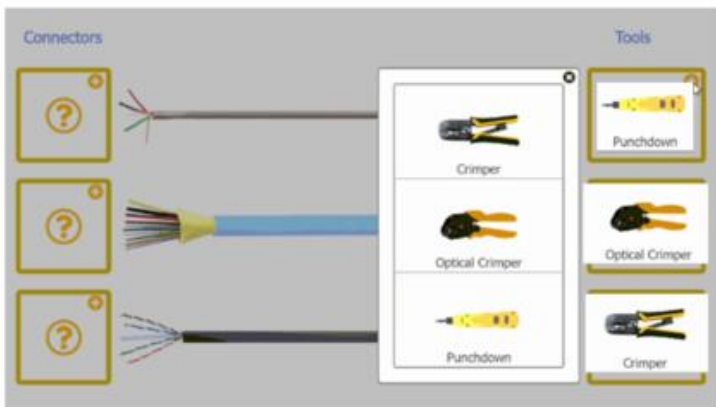




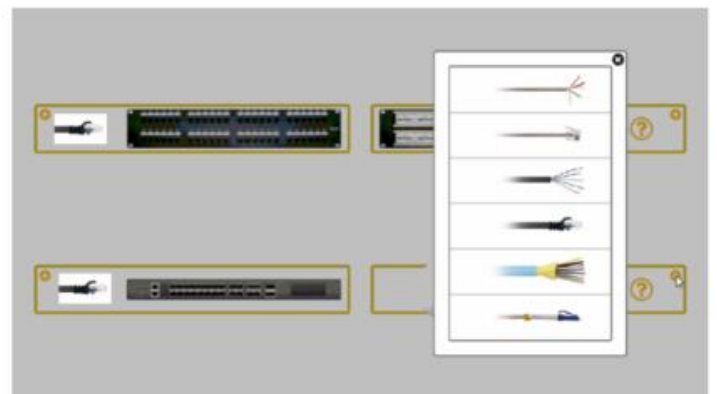
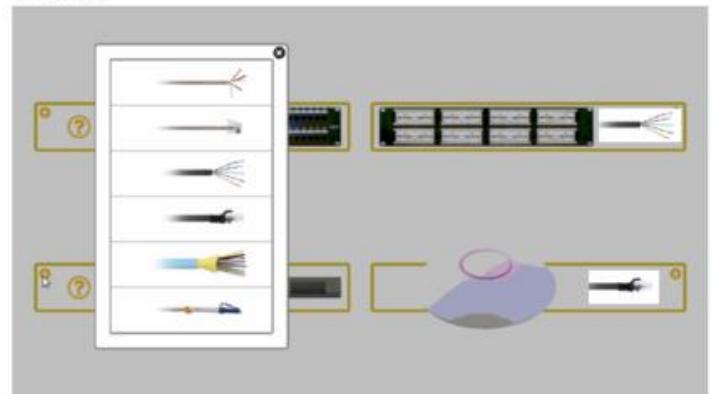
Explanation:



RJ11, LC, RJ45



Part2-



An office manager reports that a printer is experiencing performance issues. Printouts are smudging when they are handled and recently whenever they need to print legal sized documents, the paper jams before anything is printed on it.

The following paper sizes are used:
Letter (8.5x11in/21.59x27.94cm)
Legal (8.5x14in/21.59x35.56cm)
Oversized(11x17in/27.94x43.18cm)

INSTRUCTIONS

Using the dropdown menus, select from the available printer parts to replace only the faulty components on the office printer to resolve the stated issues.

If at any time you would like to bring back me initial state or me simulation, please click me Reset All button.



Explanation:

Smudging on printouts: This is commonly caused by a faulty **fuser**. The fuser is responsible for bonding the toner to the paper by applying heat. If it is malfunctioning, the toner may not properly bond, resulting in smudging.

Paper jamming when printing legal-sized documents: This is often related to issues with the **rollers**. The rollers are responsible for feeding the paper into the printer, and if they are worn out or misaligned, it can cause paper jams, especially with specific paper sizes like legal paper.

Tray 2 (Letter size): Leave unchanged.

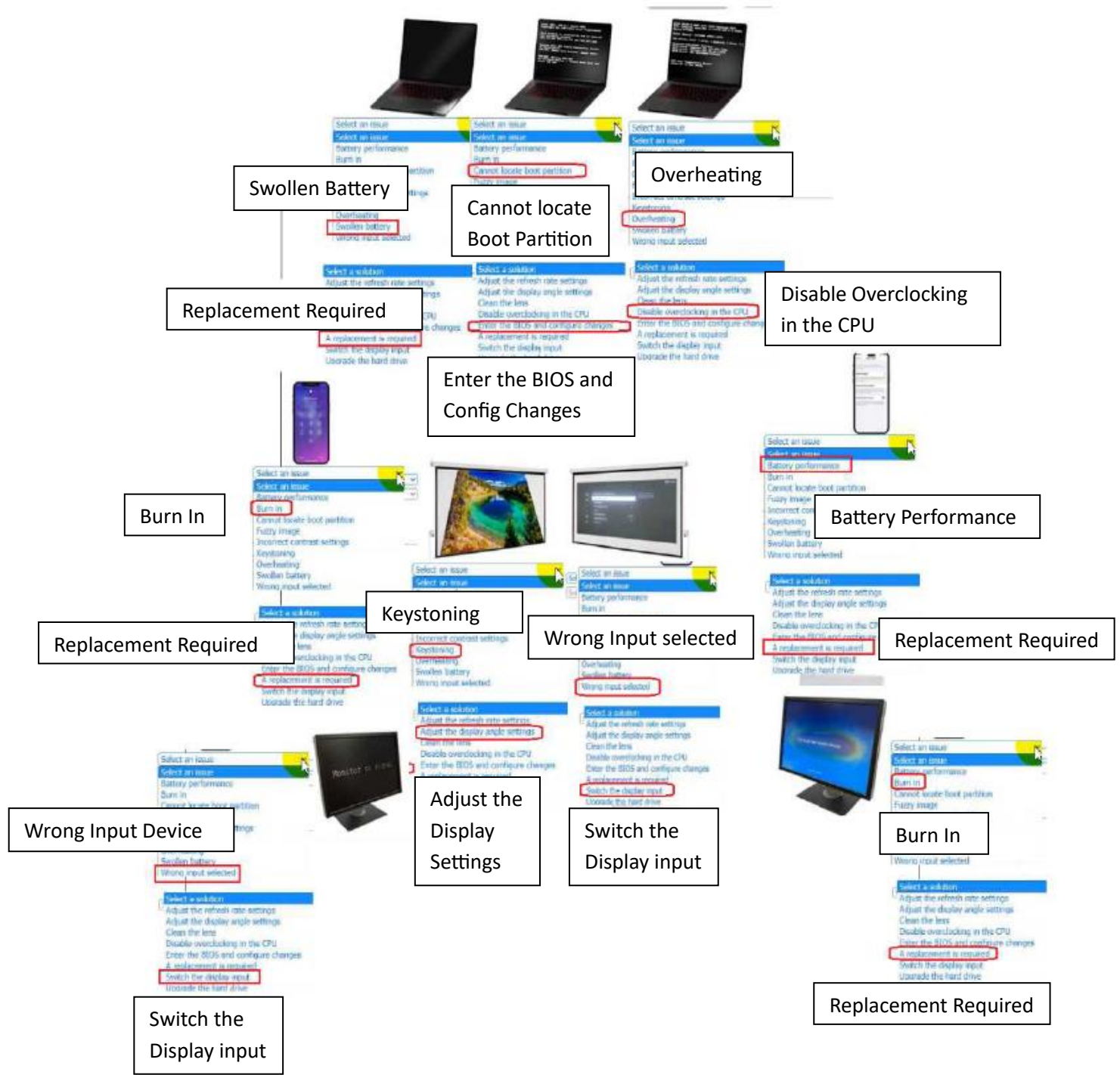
Tray 3 (Legal size): Select **Rollers**.

Topmost drop-down menu: Select **Fuser**.

A technician is diagnosing several device issues reported by employees.

INSTRUCTIONS

Click on each device to review the issue. Then select the appropriate issue and solution from the drop-down menu. Each option may be used more than once.



Note: Keystoning is a feature that corrects distortion in an image when a projector is not perpendicular to a screen. It's also known as keystone correction.