Reflection Questions

Q1. In business terms, how does a snapshot reduce risk and cost during software updates

or testing?

A snapshot acts like an insurance policy for your virtual machine by capturing the exact system state before making changes. If a software update or test causes errors, the system can be rolled back instantly without requiring a full reinstall. This reduces downtime, which saves both time and money for businesses. It also lowers risk because employees can test new features or patches without fear of damaging production environments. Overall, snapshots provide a cost-effective way to experiment safely.

Q2. How do resource limits (RAM/CPU) help balance performance and cost in a shared

computing environment?

Resource limits prevent one virtual machine from consuming excessive hardware power, which could slow down other systems. By capping RAM and CPU usage, businesses ensure fair performance across multiple users or departments sharing the same server. This not only improves efficiency but also avoids the need to over-purchase hardware capacity. In the long run, it balances performance with cost savings, keeping infrastructure lean while meeting operational needs.

Q3. Give one business scenario (e.g., online store during Black Friday) where restoring a

snapshot could save time and money.

Imagine an online retailer preparing for Black Friday by testing a new checkout system. If the update fails during peak traffic, every minute of downtime could mean thousands of dollars lost in sales. Restoring a snapshot would allow the company to revert to a stable version within minutes instead of spending hours troubleshooting. This rapid recovery minimizes revenue loss and protects customer trust. In high-stakes business events, snapshots can be the difference between profit and loss.

Q4. Contrast saving a file vs. taking a snapshot. What does each preserve, and when would

you use one over the other?

Saving a file preserve only the content you’re working on, such as a document or dataset, while a snapshot preserves the entire system state including operating system, settings, and files. You would save a file for regular work tasks where only the document needs protection. In contrast, you would take a snapshot when preparing for system-wide changes, such as installing updates or testing new software. Snapshots are broader in scope and protect against larger risks, whereas file saving is more limited but used frequently.