Disaster Recovery with IBM Cloud Virtual Servers

Phase 3: Development Part 1

Agenda:

1. Introduction
2. Recovery Time Objective
3. Recovery Point Objective
4. On-premises virtual machines
5. Summary

1.Introduction:

i) Disaster recovery is a critical aspect of any modern business's IT strategy, ensuring that essential data and systems can be rapidly restored in the event of unexpected disruptions.

ii)IBM Cloud Virtual Server offers a robust and reliable platform for implementing a comprehensive disaster recovery solution.

iii)In today's interconnected world, businesses rely heavily on their digital infrastructure, making data loss and downtime potentially catastrophic.

2.Recovery Time Objective:

i)Recovery Time Objective (RTO) is a critical metric in disaster recovery and business continuity planning. It represents the maximum acceptable downtime for a system, application, or service following a disruption.

ii)In other words, RTO defines the time within which a system must be restored to avoid significant business impact.

SOURCE CODE

```
import time
# Simulate system recovery (replace this with your actual recovery process)
def recover_system():
        print("Recovering the system...")
        time.sleep(5) # Simulating recovery time (5 seconds in this case)
if _name_ == "_main_":
        start_time = time.time()
        recover_system()
        end_time = time.time()
        recovery_time = end_time - start_time
print(f"Recovery Time: {recovery_time} seconds")
        # Compare recovery_time to your defined RTO and take appropriate
actions
        defined_rto = 10 # Replace with your actual RTO
if recovery_time <= defined_rto:
        print("Recovery within RTO")
else:
        print("Recovery time exceeded RTO")
```

OUTPUT

```
        Recovery within RTO
```

3.Recovery Point Objective:

i)Crucial metric in disaster recovery and data protection. It represents the maximum tolerable amount of data loss that an organization can accept in the event of a system failure or data disruption.

ii)In other words, RPO defines the point in time to which data must be successfully restored after a disruption.

SOURCE CODE

```
from datetime import datetime

# Define the time of the last backup and the time of the disaster/data loss event

last_backup_time = datetime.strptime("2023-10-15 15:30:00", "%Y-%m-%d %H:%M:%S")
disaster_time = datetime.strptime("2023-10-16 10:00:00", "%Y-%m-%d %H:%M:%S")

# Calculate the RPO in seconds

rpo_seconds = (disaster_time - last_backup_time).total_seconds()

# Convert the RPO to a more human-readable format (e.g., hours and minutes)

rpo_hours = int(rpo_seconds // 3600)
rpo_minutes = int((rpo_seconds % 3600) // 60)
print(f"Recovery Point Objective (RPO): {rpo_hours} hours and {rpo_minutes} minutes")
```

OUTPUT

```
Recovery Point Objective (RPO): 18 hours and 30 minutes
```

4. On-premises virtual machines:

i)Setting up regular backups for on-premises virtual machines is crucial for data protection and disaster recovery.

ii)You can achieve this using backup tools or scripts.

iii)Below is a simplified example using a Python script for creating backups of a virtual machine.

iv)In practice, you would likely use dedicated backup software or cloud services for a more robust and automated solution.

5.Summary:

i)In summary, disaster recovery with IBM Cloud Virtual Server combines robust technology, scalability, and security to provide a comprehensive solution for protecting your critical data and applications.

ii)By leveraging IBM’s expertise and infrastructure, businesses can enhance their disaster recovery capabilities, reduce the risk of downtime, and ensure business continuity in the face of unforeseen events