Module 11: Exercise on Local Replication

Scenario:

A manufacturing organization stores data of their mission critical applications on a high end storage array with RAID 1 configuration. The database application has 1 TB of storage and needs 24x7availability. Average data that changes in 24 hours is 60 GB.

Requirements:

1. Need solution to address logical corruption of database
2. Maximum RPO of 1 hour
3. Solution should support restore request for up to 8 hours old data
4. Minimize the amount of storage used for data protection

Task:

Suggest an appropriate local replication solution to meet RPO requirement with minimum amount of storage. Estimate the physical storage required by this solution.

Solution:

Pointer based virtual replication technology is the most obvious choice here. A rolling pointer-based virtual replication solution can meet the requirements. Creating pointer based virtual replica every hour – Total of 8 such replicas will meet requirement.

- At Hour 01:00 Create Replica 1
- At Hour 02:00 Create Replica 2
- At Hour 03:00 Create Replica 3
- At Hour 04:00 Create Replica 4
- At Hour 05:00 Create Replica 5
- At Hour 06:00 Create Replica 6
- At Hour 07:00 Create Replica 7
- At Hour 08:00 Create Replica 8
- At Hour 09:00 Recreate Replica with Replica 1

If logical corruption occurs, data can be restored from the latest Replica. Each Replica is kept for 8 hours. If 60 GB data changes in 24 hours this implies that on average 20 GB of data changes every 8 hours. Thus each replica would require 20GB. Thus 8 replicas need approximately 160 GB of physical storage.