

EE4217 2013 (solution) (25 marks)

1 a)

Ans:

- Recovery Point Objective (RPO) is the point in time to which systems and data must be recovered after an outage. This defines the amount of data loss a business can endure. Different business units within an organization may have varying RPOs.
- Recovery Time Objective (RTO) is the period of time within which systems, applications, or functions must be recovered after an outage. This defines the amount of downtime that a business can endure, and survive.
- Disaster recovery
 - Restoring previous copy of data and applying logs to that copy to bring it to a known point of consistency
 - Generally implies the use of backup technology
 - Data copied to tape and then shipped off-site
 - Requires manual intervention during the restore and recovery processes
- Disaster restart
 - Process of restarting mirrored consistent copies of data and applications
 - Allows restart to a common point of consistency for all participating DBMS utilizing automated application of recovery logs during DBMS initialization
 - The restart time is a comparable length of time required for the application to restart after a power failure

[2 each total 8 marks]

1 b)

Several choices are available to get the data written to the backup media:

- Copy the data : simply copy the data from the primary storage to the secondary storage (disk or tape) onsite. This is a simple strategy, easily implemented but it has impact to production server.
- Mirror then copy: Can avoid impact on the production application, but will add infrastructure cost associated with additional resources.
- Remote Backup: can be used to comply with offsite requirements. A copy from the primary storage is done directly to the backup media that is sitting on another site.
- Copy then duplicate or remote copy:
You can do a copy to a first set of backup media, then replicate it to an offsite location to remove any manual procedures associated with moving the backup media to another site.

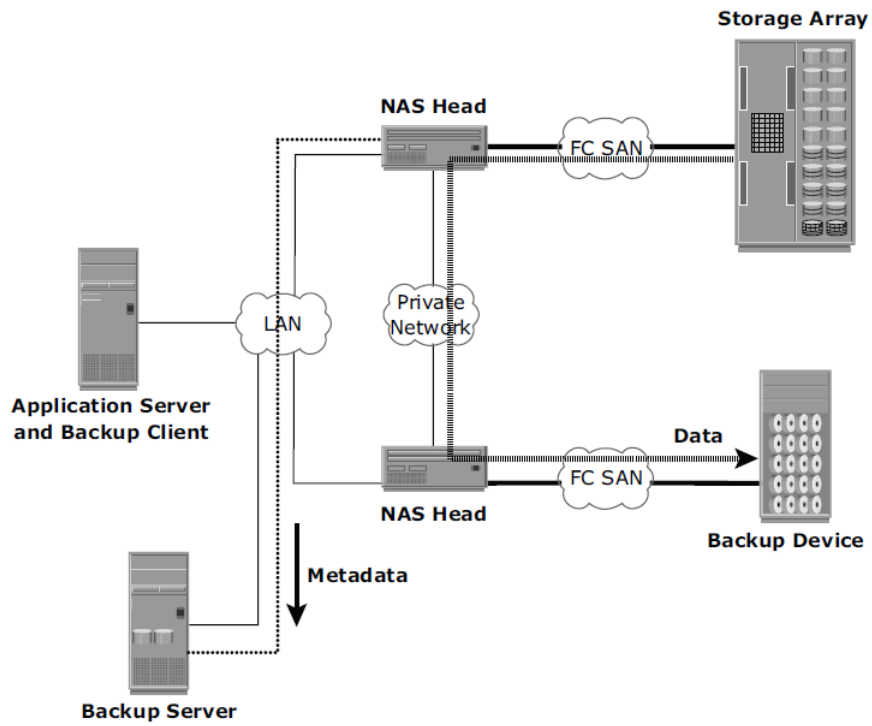
[2 marks each total 8 marks]

1. c)

Ans:

To satisfy the company requirements:

- 1) Use single Backup Server based on Network Data Movement Protocol NDMP 3-way



- 2) Add database backup agents to provide hot backup and reduce the downtime
- 3) Use cumulative backup to reduce the tape amount when recovery.

[3 marks each total 9 marks]