Data Loss Protection Levels

1st level: Redundant Array of Independent [Inexpensive] Disks

Intent: Utilize a storage technology that combines multiple disk drive components into a logical unit and then distribute data across independent disk drives to provide redundancy and performance (via parallel communication) in each member file server.

Implementation: Each member server has a four to six drive array installed and configured to provide fault tolerance for one to two drive failures per server.

2nd level: "Shadow Copies"

Intent: Provide the backup infrastructure for the Microsoft Windows family of workstation and server operating systems, as well as a mechanism for creating consistent point-in-time backups of open files and applications and provide quick recovery in the need of restoring files and data.

Implementation: Each member server participating in network storage 'Cloud' [Distributed File System] maintains a designated Shadow drive that is separate from main data volume.

3rd level: Site Replication

Intent: Replicate all site data into a distributed cloud environment in order to provide fault tolerance against server failures, site environmental failures [power outage or other service interruptions] and provide high-data availability and uptime, also makes information available worldwide and offers consistent information sharing and collaboration across sites between users.

Implementation: All sites member servers communicate and synchronize in real-time over Wide Area Network (WAN) using MS DFSR.

4nd level: External Backup

Provide on-site backup of file-servers in order to reduce recovery time in the event of branch server failure [restore from backup vs. reinitializing over the wire for single-server sites].

Implementation: Each site is outfitted with an external USB drive connected to a participating member server. Backups are then scheduled in Grandfather-father-son configuration. Three sets of backups are defined for daily, weekly and monthly. The daily, or son, backups are rotated on a daily basis with one graduating to father status each week. The weekly or father backups are rotated on a weekly basis with one graduating to grandfather status each month.