

Write Protect Mode	When Write Protect Mode is enabled on a cluster, host commands fail if they are sent to logical devices in that cluster and attempt to modify a volume's data or attributes. The FlashCopy is created on a cluster when it is in the write protect mode only. Also, only write-protected virtual tapes are flash accessible. Virtual tapes that are assigned to the excluded categories surface live data and live attributes versus the time zero instance.
Time zero	The time when the FlashCopy is taken within a DR family. The time zero mimics the time when a real disaster occurs. Customers can establish the time zero by using LI REQ (Library Request command).

2.4.36 Grid resiliency functions

A TS7700 Grid is made up of two or more TS7700 clusters that are interconnected through Ethernet connections. It is designed and implemented as a business continuance solution with implied enterprise resiliency. When a cluster in the grid encounters a problem, the multi-cluster grid should accommodate the outage and continue the operation, even if the state of the grid is degraded.

Grid-wide problems might occur because of a single cluster in the grid experiencing a problem. When problems exist in one cluster that cause it to be sick or unhealthy but not completely dead (Sick But Not Dead (SBND), the peer clusters might be greatly affected, and customer jobs end up being affected (long mount time, failed sync mode writes, much more than degraded).

Grid Resiliency Improvements are the functions to identify the symptoms and make the grid more resilient when a single cluster experiences a problem by removing the sick or unhealthy cluster from the grid explicitly or implicitly through different methods. By removing it, the rest of peer clusters can then treat it as "dead" and avoid further handshakes with it until it can be recovered.

The grid resiliency function is designed to detect permanent effects. It is not designed to react to the following situations:

- ▶ Temporarily impacts (like small network issues)
- ▶ Performance issues due to high workload

Note: Because of the nature of a TS7700 grid, this isolation is not comparable to a mechanism in the disks, such as IBM HyperSwap® or similar techniques. Such techniques are based on local installed devices, whereas TS7700 grids can span thousands of miles. Therefore, the detection can take much longer than in a disk world, and also the actions might take longer.

The customer can specify different thresholds (for example, mount timing, handshake and token timings, and error counters) and other parameters to influence the level of sensitivity to events that affect performance. To avoid a false fence condition, use the defaults for the thresholds at the beginning and adjust the parameters only if necessary.

The following mechanisms exist in the grid:

- ▶ Local Fence
- ▶ Remote Fence