Comparison of Microsoft SQL Server High Availability Technologies

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Technology** | **Scope of Protection** | **Complexity** | **Automatic Failover** | **Identical Hardware Required?** | **Relative Cost** | **Limitations** | **Can you query/report off the duplicate?** |
| **Failover Clustering** | Entire node failure, entire SQL instance. | Quite complex. | Yes. | Yes, basically. | High. | Doesn’t protect against the loss of a data center.Doesn’t protect against the loss of a storage cabinet/solution. | No, there is no duplicate data. |
| **Log Shipping** | Database by Database.Can configure more than one Log Shipped database destination. | Low to moderate. | NO. | No. | Low to Moderate. | Can’t protect system databases.Can’t protect the entire instance. | Yes. And possibly protect against “DB Ah-Oh” situations. |
| **Database Mirroring** | Database by Database. | Low. | Yes, only with the “High Availability” configuration. | No. | Low to Moderate. | The “High Availability” requires SQL Enterprise Edition, and requires THREE total SQL Servers.Can’t protect system databases.Can’t protect the entire instance.Can only have one mirrored destination. | No, but you can create a Database Snapshot of the mirror and query the Snapshot. |
| **Database Replication** | >= 1 Table in a DB>= 1 View in a DB>= 1 Sproc in a DB>= 1 Function in a DBThe unit of Publication is the scope of protection. | Low to psychotic. | NO. | No. | Low or higher. | Can’t protect at entire database, instance, or node. | Absolutely. Strong benefit of Replication. |
| **AlwaysOnAvailability Groups** | Collection of Databases (availability group). | HIGHEST complexity. | Possible, with synchronous commit option. | No. | Requires multiple machines and licenses. | Requires Windows Failover Clustering Service, but *not* shared storage. | Yes, conditionally. |