

## Procedures

- Servers are monitored continually to ensure they are operational
- PlanningEdge staff is alerted immediately of any abnormal server operational states
- Secondary database and application server instances are in standby mode at datacenters in other geographic regions
- Database, database backups, and server instance backups reside on redundant storage
- Database backups are performed on intraday intervals
- Weekly backups are copied to a separate secure data center
- Backups are tested regularly for data integrity and reliability
- Database is replicated on secondary hardware in case of database server hardware failure
- PlanningEdge server application is redundantly hosted on secondary hardware in case of application server hardware failure
- Vulnerability and security scans are done on all servers on a monthly basis
- All vulnerabilities are patched as discovered
- All server applications are updated with the latest fixes and software updates
- Disaster Recovery procedures are tested quarterly in a parallel environment, reviewed and updated as needed
- Disaster Recovery Plan is reviewed semi-annually and is updated as needed

## Recovery Tasks

1. Incident detected/reported
2. Response team notification
3. Response team investigation
4. Response team recommended action
  - a. Application Server hardware failure – failover to secondary application server
  - b. Database Server hardware failure – failover to secondary database server
  - c. Datacenter unreachable – failover to standby instances at datacenter in other geographic region
  - d. Application error – notify software development of error and failover if applicable
  - e. Full outage (failover failure) – restore instances, data and software from backups
5. Validate operation
6. Resume normal operation
7. Report incident and resolution
8. Schedule maintenance period to resume operation on primary hardware
9. Restore data and software / Resume operation on primary hardware
10. Resume normal operation