

# High Availability & Disaster Recovery Architecture

## Overview

This architecture ensures continuous system operations, minimizes downtime, and provides recovery mechanisms in the event of failures or disasters.

## Architecture Diagram

## Main Components

- **Load Balancer:** Distributes traffic between redundant application servers.
- **Application Servers:** Hosts application logic; deployed in active-active or active-passive setup.
- **Primary Database:** Main data store located at the primary data center.
- **Disaster Recovery Site:** Separate site with replica infrastructure and synchronized data.
- **Replication Mechanism:** Real-time or scheduled replication of data from primary to DR database.

## Key Features

- Automatic failover to DR site during outages or disasters.
- Multiple layers of redundancy for critical components.
- Regular data replication ensures up-to-date backups.
- Scalable and testable recovery processes.

## Recovery & Failover Process

1. System monitors detect failure or disaster in the primary site.
2. Failover mechanisms reroute traffic and services to the DR site.
3. DR site applications use synchronized data for continuity.
4. Post-recovery, services can revert to the primary site when restored.

## Comparison Table

Aspect	High Availability	Disaster Recovery
Focus	Minimize downtime	Recover from disaster
Location	Same site	Secondary site
Activation	Automatic	Automatic or manual
Data Sync	Real-time	Real-time or delayed