

# Load Balancer - Discussion Topics

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## Architecture & Design

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### 1. Layer 4 vs Layer 7 load balancing: When to use which?

- Performance implications
- Feature trade-offs
- Use case scenarios

### 2. How do you design for high availability in load balancing?

- Active-active vs active-passive
- Health check strategies
- Failover mechanisms

### 3. What are the trade-offs of client-side vs server-side load balancing?

- Service mesh patterns
- Complexity and control
- Performance considerations

## Real-World Scenarios

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### 1. Design a load balancing strategy for a microservices architecture

- Service discovery integration
- Dynamic scaling considerations
- Circuit breaker patterns

### 2. How would you handle sticky sessions in a distributed system?

- Session affinity approaches

- Stateless design alternatives
- Trade-offs with scalability

## Performance & Optimization

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### 1. How do you choose the right load balancing algorithm?

- Round-robin vs least connections vs weighted
- Application characteristics
- Monitoring and tuning

### 2. What metrics matter most for load balancer performance?

- Latency (P50, P99)
- Connection pooling efficiency
- Backend health and distribution

## Advanced Topics

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### 1. How do you implement global load balancing across regions?

- DNS-based GSLB
- Anycast routing
- Latency-based routing

### 2. What's your approach to zero-downtime deployments with load balancers?

- Blue-green deployments
- Canary releases
- Connection draining strategies

### 3. How do you handle WebSocket connections with load balancers?

- Connection persistence
- Scaling challenges
- Protocol upgrade handling