🚨 The Great Traffic Jam of 2024: A Postmortem

Issue Summary

Duration of the Outage:
Start Time: June 5, 2024, 2:00 PM (UTC)
End Time: June 5, 2024, 5:00 PM (UTC)

Impact:
The e-commerce website experienced a significant outage, leaving users unable to browse or purchase products. Approximately 80% of users were affected, resulting in a substantial revenue hit and numerous customer complaints.

Root Cause:
A misconfiguration in the load balancer led to all traffic being directed to a single server, causing it to overload and crash.

Timeline

- **2:00 PM:** 🚨 *Issue detected* - Monitoring alert shows high response times and server errors.
- **2:05 PM:** 🔍 *Initial investigation* - Focused on potential database issues.
- **2:15 PM:** ✅ *Database cleared* - Database team confirms no issues.
- **2:30 PM:** 🤔 *Deployment rollback* - Recent deployment suspected; rollback initiated.
- **2:45 PM:** ❌ *Rollback failed* - Issue persists despite rollback.
- **3:00 PM:** 📈 *Escalation* - Issue escalated to the network engineering team.
- **3:15 PM:** 🕵️ *Traffic pattern analysis* - Network engineers find abnormal traffic patterns.
- **3:30 PM:** 💡 *Root cause found* - Misconfiguration in load balancer settings discovered.
- **3:45 PM:** 🔧 *Configuration corrected* - Load balancer settings updated and restarted.
- **4:00 PM:** 📉 *Monitoring* - Traffic distribution gradually returns to normal.
- **5:00 PM:** ✅ *Resolution confirmed* - Services fully operational, no more user issues.

Root Cause and Resolution

Root Cause:
The load balancer was incorrectly configured, directing all traffic to a single server. This server became overloaded and crashed, leading to the site outage.

Resolution:
The network engineering team corrected the load balancer settings to properly distribute traffic across all servers and restarted the load balancer. Monitoring was enhanced to ensure proper traffic distribution.

Corrective and Preventative Measures

Improvements/Fixes:

- 🛠️ Implement additional validation checks for load balancer configuration changes.
- 👀 Enhance monitoring to detect traffic distribution anomalies earlier.
- 📝 Improve the rollback procedure to include network configuration checks.

Tasks:

1. **Patch Load Balancer Configuration:** Add automated validation scripts to check for common misconfigurations before applying changes.
2. **Add Monitoring on Traffic Distribution:** Implement monitoring alerts for abnormal traffic patterns across servers.
3. **Update Deployment Procedure:** Include network configuration validation in the rollback process to ensure no misconfigurations are present.
4. **Training Session:** Conduct a training session for engineers on the importance of load balancer configurations and how to handle them.

Humorous Takeaway

Our load balancer decided to throw a solo party, but the server couldn't handle all the guests! We've now made sure to distribute invitations more evenly.

Diagram