

Postmortem: Database Connection Timeout

Incident Summary: On August 15th, 2024, from 10:00 AM to 11:30 AM UTC, multiple applications experienced connection timeouts to the production PostgreSQL database, resulting in service unavailability for about 30% of users. The issue caused a significant delay in transaction processing and retrieval of user data.

Root Cause: The root cause was traced to a sudden surge in connection requests due to a traffic spike caused by a marketing campaign. The PostgreSQL server's connection pool limit was set too low, and the database was unable to handle the increased number of concurrent connections, leading to timeouts.

Impact:

- 30% of users faced delays and failures in service requests.
- Transaction failures resulted in approximately 15% of abandoned user sessions.
- Customer support was overwhelmed with inquiries regarding the downtime.

Resolution:

- Increased the PostgreSQL connection pool limit from 100 to 500 to accommodate higher traffic.
- Applied query optimization for frequently used database queries to reduce the load on the server.
- Performed load testing to simulate high traffic and adjusted database resources accordingly.

Preventive Measures:

- Implement autoscaling for the database cluster to dynamically adjust connection capacity.
- Set up early warning systems to monitor connection pool saturation and query performance.
- Plan for high-traffic events (e.g., marketing campaigns) by scaling resources in advance.