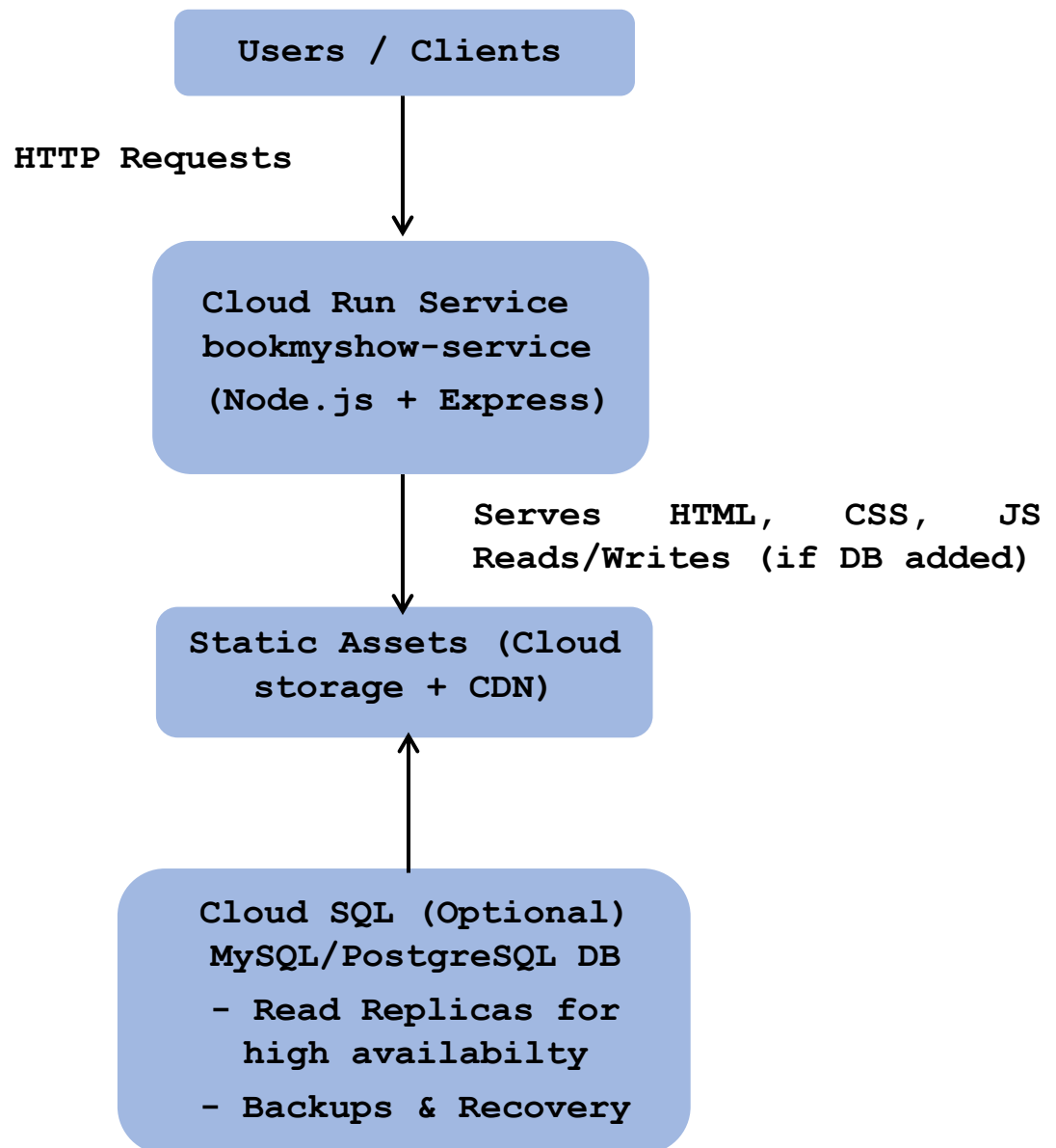


1. System Architecture Diagram



Explanation: - Users/Clients access the website through browsers. - Cloud Run Service handles requests and serves the frontend. - Cloud Storage + CDN delivers static assets efficiently. - Optional Cloud SQL handles event/ticket data with high availability.

2. Performance Bottleneck Analysis (k6 Results)

Metric	Observation	Impact / Bottleneck
avg http_req_duration = 302 ms	Very good avg response time	Overall latency is acceptable
max http_req_duration = 1.44s	Some requests slower	Likely cold start in Cloud Run
iteration_duration avg = 2.1s	Each virtual user iteration ~2s	Slight delay due to request-response + JS processing
p(95) iteration_duration = 3.44s	95% of iterations <3.44s	Some users may experience slower responses during peak load
http_req_failed = 0%	No failed requests	Good stability; 100 VUs handled successfully
CPU/Memory usage	Low	Cloud Run efficiently handling traffic, scales automatically

Recommendations: 1. Reduce cold starts by setting **min-instances** = 1 in Cloud Run. 2. Enable caching and Cloud CDN for static content to reduce response times. 3. If using Cloud SQL, implement read replicas and optimize queries for better performance.

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