

# Architecture Decision Record (ADR)

## Architecture Decision Record — ADR-{{NUMBER}}

“ **Project:** {{PROJECT\_NAME}} **ADR Number:** ADR-{{NUMBER}} **Title:** {{SHORT\_DECISION\_TITLE}} **Version:** 1.0 **Date:** {{DATE}} **Author:** {{AUTHOR}} **Status:** Proposed | Accepted | Deprecated | Superseded by [ADR-{{NEW\\_NUMBER}}](#) **Reviewers:** {{REVIEWERS}} ”

## Document History

Version	Date	Author	Changes
0.1	{{DATE}}	{{AUTHOR}}	Initial draft
1.0	{{DATE}}	{{AUTHOR}}	Accepted after review

## ADR Numbering Scheme

**Convention:** `ADR-{{NNN}}-{{short-slug}}.md` — e.g., `ADR-001-use-postgresql.md`

### 1. Context

#### 1.1 Situation

{{DESCRIBE\_THE\_SITUATION\_REQUIRING\_A\_DECISION}}

## 1.2 Forces & Constraints

### Technical forces:

- {{TECHNICAL\_FORCE\_1}} — e.g., "We need horizontal scalability for 100K+ concurrent users"
- {{TECHNICAL\_FORCE\_2}} — e.g., "The team has strong expertise in TypeScript but limited Go experience"
- {{TECHNICAL\_FORCE\_3}}

### Business forces:

- {{BUSINESS\_FORCE\_1}} — e.g., "Time-to-market is critical; MVP must launch in 3 months"
- {{BUSINESS\_FORCE\_2}} — e.g., "Budget limits managed services to under \$2K/month"

### Compliance & regulatory:

- {{COMPLIANCE\_FORCE}} — e.g., "GDPR requires data residency in EEA"

### Existing decisions that constrain this:

- [ADR-{{PARENT\\_NUMBER}}](#): {{PARENT\_DECISION}} — constrains us to {{CONSTRAINT}}
- Existing infrastructure: {{EXISTING\_SYSTEM}}

## 1.3 Problem Statement

“ We need to decide: {{CLEAR\_ONE\_SENTENCE\_PROBLEM\_STATEMENT}} ”

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## 2. Decision

**We will:** {{CLEAR\_DECISION\_STATEMENT}}

**Rationale (summary):** {{ONE\_PARAGRAPH\_WHY}}

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# 3. Alternatives Considered

## Option A: {{OPTION\_A\_NAME}} ? Selected

**Description:** {{OPTION\_A\_DESCRIPTION}}

**Pros:**

- {{PRO\_1}}: {{EXPLANATION}}
- {{PRO\_2}}: {{EXPLANATION}}
- {{PRO\_3}}: {{EXPLANATION}}

**Cons:**

- {{CON\_1}}: {{EXPLANATION}}
- {{CON\_2}}: {{EXPLANATION}}

**Cost/Effort:** {{ESTIMATE}} — {{NOTES}}

**Risk:** {{RISK\_LEVEL}} — {{RISK\_DESCRIPTION}}

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## Option B: {{OPTION\_B\_NAME}}

**Description:** {{OPTION\_B\_DESCRIPTION}}

**Pros:**

- {{PRO\_1}}: {{EXPLANATION}}
- {{PRO\_2}}: {{EXPLANATION}}

**Cons:**

- {{CON\_1}}: {{EXPLANATION}}
- {{CON\_2}}: {{EXPLANATION}}
- {{CON\_3}}: {{EXPLANATION}}

**Cost/Effort:** {{ESTIMATE}} — {{NOTES}}

**Risk:** {{RISK\_LEVEL}} — {{RISK\_DESCRIPTION}}

**Why not chosen:** {{SPECIFIC\_REASON\_REJECTED}}

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# Option C: {{OPTION\_C\_NAME}}

**Description:** {{OPTION\_C\_DESCRIPTION}}

**Pros:**

- {{PRO\_1}}: {{EXPLANATION}}

**Cons:**

- {{CON\_1}}: {{EXPLANATION}}
- {{CON\_2}}: {{EXPLANATION}}

**Cost/Effort:** {{ESTIMATE}}

**Why not chosen:** {{SPECIFIC\_REASON\_REJECTED}}

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## Comparison Matrix

Criterion	Weight	Option A (Selected)	Option B	Option C
{{CRITERION_1}}	{{1-5}}	{{SCORE}}	{{SCORE}}	{{SCORE}}
{{CRITERION_2}}	{{1-5}}	{{SCORE}}	{{SCORE}}	{{SCORE}}
{{CRITERION_3}}	{{1-5}}	{{SCORE}}	{{SCORE}}	{{SCORE}}
Team expertise	4	{{SCORE}}	{{SCORE}}	{{SCORE}}
Operational complexity	3	{{SCORE}}	{{SCORE}}	{{SCORE}}
Cost (3-year TCO)	4	{{SCORE}}	{{SCORE}}	{{SCORE}}
Community/support	2	{{SCORE}}	{{SCORE}}	{{SCORE}}
<b>Weighted Total</b>		<b>{{TOTAL_A}}</b>	<b>{{TOTAL_B}}</b>	<b>{{TOTAL_C}}</b>

Score: 1 (poor) to 5 (excellent)

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## 4. Consequences

### 4.1 Positive Consequences

- {{POSITIVE\_1}}: {{DETAIL}}

- {{POSITIVE\_2}}: {{DETAIL}}
- {{POSITIVE\_3}}: {{DETAIL}}

## 4.2 Negative Consequences

- {{NEGATIVE\_1}}: {{DETAIL}} — Mitigation: {{MITIGATION}}
- {{NEGATIVE\_2}}: {{DETAIL}} — Mitigation: {{MITIGATION}}

## 4.3 Neutral / Secondary Effects

- {{NEUTRAL\_1}}: {{DETAIL}}
- {{NEUTRAL\_2}}: {{DETAIL}}

## 4.4 Technical Debt Created

- {{DEBT\_ITEM}}: {{PLAN\_TO\_ADDRESS}}
- Acceptable because: {{REASON}}

# 5. Compliance Impact

Regulation	Impact	Notes
GDPR	{{NONE/LOW/MEDIUM/HIGH}}	{{DETAILS}}
PCI-DSS	{{NONE/LOW/MEDIUM/HIGH}}	{{DETAILS}}
HIPAA	{{NONE/LOW/MEDIUM/HIGH}}	{{DETAILS}}
SOC2	{{NONE/LOW/MEDIUM/HIGH}}	{{DETAILS}}

**Data residency implications:** {{NONE / DATA\_MUST\_STAY\_IN\_REGION}}

# 6. Performance Impact

Metric	Before	After (Expected)	Source
Latency (p99)	{{BEFORE}}	{{AFTER}}	{{BENCHMARK_SOURCE}}
Throughput	{{BEFORE}}	{{AFTER}}	{{BENCHMARK_SOURCE}}
Memory footprint	{{BEFORE}}	{{AFTER}}	{{BENCHMARK_SOURCE}}
Cost (monthly)	{{BEFORE}}	{{AFTER}}	{{ESTIMATE_SOURCE}}

# 7. Migration / Implementation Notes

## 7.1 Migration Plan

Phase 1 ({{DURATION}}): {{PHASE\_1\_DESCRIPTION}}

- [ ] {{TASK\_1}}
- [ ] {{TASK\_2}}

Phase 2 ({{DURATION}}): {{PHASE\_2\_DESCRIPTION}}

- [ ] {{TASK\_3}}
- [ ] {{TASK\_4}}

Phase 3 ({{DURATION}}): {{PHASE\_3\_DESCRIPTION}} (if needed)

- [ ] {{TASK\_5}}

## 7.2 Rollback Strategy

**Can we roll back?** {{YES/NO/PARTIAL}} — {{EXPLANATION}}

If yes: {{ROLLBACK\_STEPS}}

## 7.3 Feature Flags

Flag	Purpose	Default
{{FLAG_NAME}}	{{PURPOSE}}	{{DEFAULT_VALUE}}

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# 8. Related ADRs

ADR	Relationship	Notes
<a href="#">ADR-{{N}}</a>	Prerequisite	{{HOW_IT_RELATES}}
<a href="#">ADR-{{N}}</a>	Supersedes	This decision replaces {{OLD_DECISION}}

ADR	Relationship	Notes
<a href="#">ADR-{{N}}</a>	Affected	This decision impacts {{HOW}}

## 9. Review Date

**Next review:** {{REVIEW\_DATE}} or when {{TRIGGER\_CONDITION}}

**Review trigger conditions:**

- {{TRIGGER\_1}} — e.g., "If load exceeds 500K req/day, revisit caching strategy"
- {{TRIGGER\_2}} — e.g., "If vendor pricing changes by more than 50%"
- {{TRIGGER\_3}} — e.g., "After 6 months in production"

**Superseded by:** — (fill in if this ADR is later superseded)

## Approval

Role	Name	Date	Signature
Author			
Tech Lead			
Security (if compliance impact)			
CTO / Architect			

Revision #6

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