



ARCHITECTURE DECISION RECORD (ADR)

Decision Summary: Designate Sidekiq as an Enterprise Standard Utility within the SWF category Background Processing.

Approved by the VA Chief Architect (OIT/OCTO) on March 2024

Context

VA.gov and other VA digital services require reliable background processing capabilities to support asynchronous workloads such as notifications, data processing, and scheduled jobs. These workloads must execute independently of user-facing application flows to ensure responsiveness and scalability.

Without a consistent enterprise-aligned background processing solution, teams may introduce multiple job-processing frameworks, resulting in fragmented tooling, inconsistent operational patterns, and duplicative infrastructure.

Within Ruby-on-Rails environments, several background processing frameworks are available. Sidekiq has been evaluated against alternatives including Sidekiq Pro, GoodJob, and Delayed Job using metrics such as concurrency, reliability, latency, and operational complexity. Sidekiq is already adopted within VA.gov environments, reducing migration complexity and operational risk.

This ADR formalizes the designation of Sidekiq as the enterprise standard utility for background processing within Ruby-on-Rails environments.

Decision

Sidekiq is designated as the Enterprise Standard Utility for the Software Factory (SWF) category Background Processing.

Sidekiq will serve as the default background processing framework for asynchronous job execution in Ruby-on-Rails applications across VA digital services. Alternative frameworks may be considered but require architectural justification during intake and review.



This designation promotes reuse, reduces duplicative tooling, and strengthens architectural consistency across VA application platforms.

Rationale

Designating Sidekiq as the Enterprise Standard Utility aligns with VA's architectural principles of reuse, operational efficiency, and standardized platform capabilities.

Sidekiq provides a mature and widely adopted framework for asynchronous background processing in Ruby-on-Rails environments. Its architecture supports high-throughput job execution, reliable processing, and efficient handling of asynchronous workloads.

Adopting a single background processing utility for Rails-based services:

- Promotes consistent asynchronous processing patterns
- Reduces fragmentation of job-processing frameworks
- Simplifies operational support and monitoring
- Improves scalability and reliability of background workloads
- Enables reuse of established infrastructure and operational practices already used within VA.gov

Alternative frameworks were evaluated but did not provide sufficient advantages to justify introducing additional operational complexity or migration risk.

Impact(s)

Operational Impacts

- Teams developing Ruby-on-Rails applications will adopt Sidekiq for background processing workloads.
- Redis will be used as the message broker supporting Sidekiq job execution.
- OCTO will provide implementation guidance and best practices to promote consistent configuration and secure deployment.
- Initial setup requires Redis infrastructure and monitoring but supports scalable asynchronous processing.

Architectural Impacts

- Establishes a default background processing standard within the SWF category.
- Reduces introduction of alternative job-processing technologies within Rails environments.



- Improves consistency, maintainability, and interoperability across VA applications.
- Strengthens reuse and architectural governance during solution intake and review.

For questions or further clarification, contact the Enterprise Architecture team at ea@va.gov.

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