





Production Patterns




Error Handling
Wrap API errors with context. Return meaningful messages Claude can relay.




Caching
LRU cache with TTL. Reduces API calls, improves response time.




Bulk Operations
Batch requests when possible. 77 tools in Miro, batch updates save time.



Authentication
Support env vars for API keys. Never hardcode. Validate on startup.



Rate Limiting
Token bucket or sliding window. Respect API limits, add backoff.



Retries
Exponential backoff for transient failures. Don't retry 4xx errors.