

Python API Reference Manual

1. Introduction

This manual provides a comprehensive reference for the Python REST API framework. The framework enables developers to quickly build scalable web services with minimal boilerplate code. It includes features for authentication, rate limiting, and automatic documentation generation.

2. Installation

To install the framework, use pip: `pip install python-api-framework` Requirements: - Python 3.8 or higher
- asyncio support - PostgreSQL 12+ for database operations

3. Basic Usage

Here's a simple example of creating an API endpoint: `from api_framework import APIRouter, Response`
`router = APIRouter()` `@router.get("/users/{user_id}")` `async def get_user(user_id: int) -> Response:` `user = await fetch_user(user_id)` `return Response(data=user, status=200)` The framework automatically handles JSON serialization, error responses, and request validation based on type hints.

4. Configuration

Configuration is managed through environment variables or a config file: `API_HOST`: Server host (default: localhost) `API_PORT`: Server port (default: 8000) `DATABASE_URL`: PostgreSQL connection string `JWT_SECRET`: Secret key for JWT token generation `RATE_LIMIT`: Requests per minute (default: 100)

5. Error Handling

The framework provides built-in error handling with proper HTTP status codes: - 400: Bad Request - Invalid input parameters - 401: Unauthorized - Missing or invalid authentication - 403: Forbidden - Insufficient permissions - 404: Not Found - Resource does not exist - 500: Internal Server Error - Unexpected server error Custom error handlers can be registered for specific exceptions.