Enhanced MCP Server - Manual Test Document
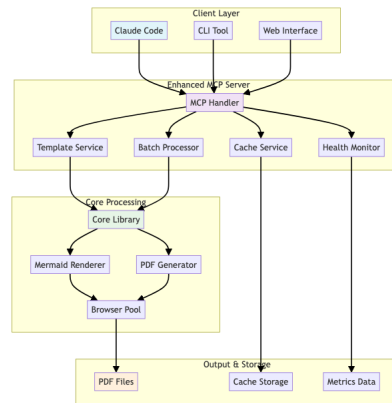
This document demonstrates the capabilities of our Enhanced MCP Server through various Mermaid diagrams and rich markdown content.
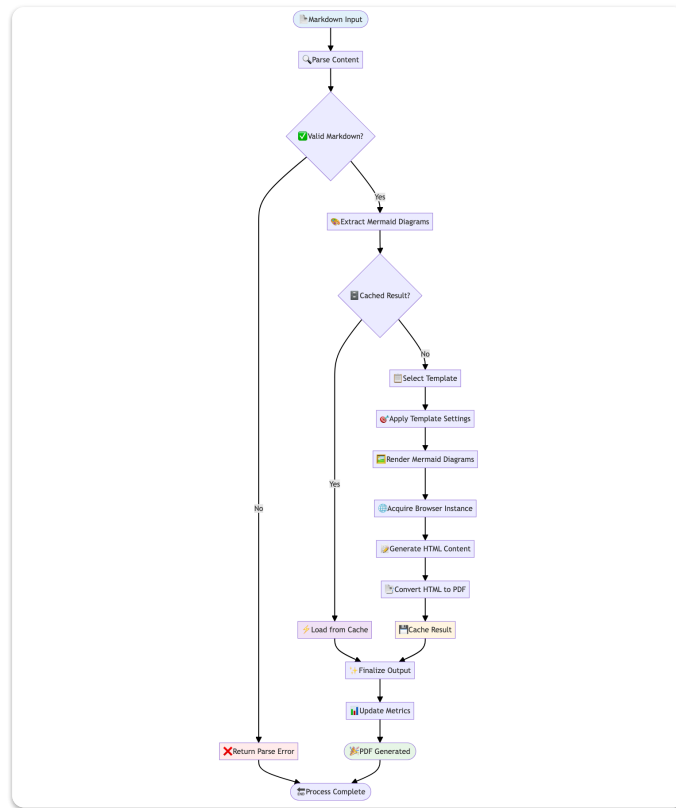
Project Overview

The Enhanced MCP Server transforms Markdown documents with Mermaid diagrams into professional PDFs. This manual test showcases the full range of features including:

- **Template-based conversion**: Professional formatting with built-in templates
- **Batch processing**: Handle multiple files efficiently
- **Advanced caching**: Fast repeated conversions
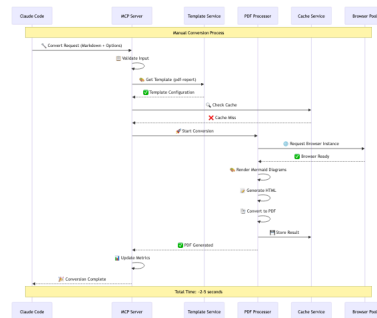- **Health monitoring**: Server status and performance tracking

Architecture Diagram

Client Layer
- Claude Code
- CLI Tool
- Web Interface

Enhanced MCP Server
- MCP Handler
- Template Service
- Batch Processor
- Cache Service
- Health Monitor

Core Processing
- Core Library
- Mermaid Renderer
- PDF Generator
- Browser Pool

Output & Storage
- PDF Files
- Cache Storage
- Metrics Data

Conversion Process Flow

System Sequence Diagram

Feature Comparison Matrix

Performance Metrics Dashboard

ersion Performance Distribution

45%
35%
15%
5%
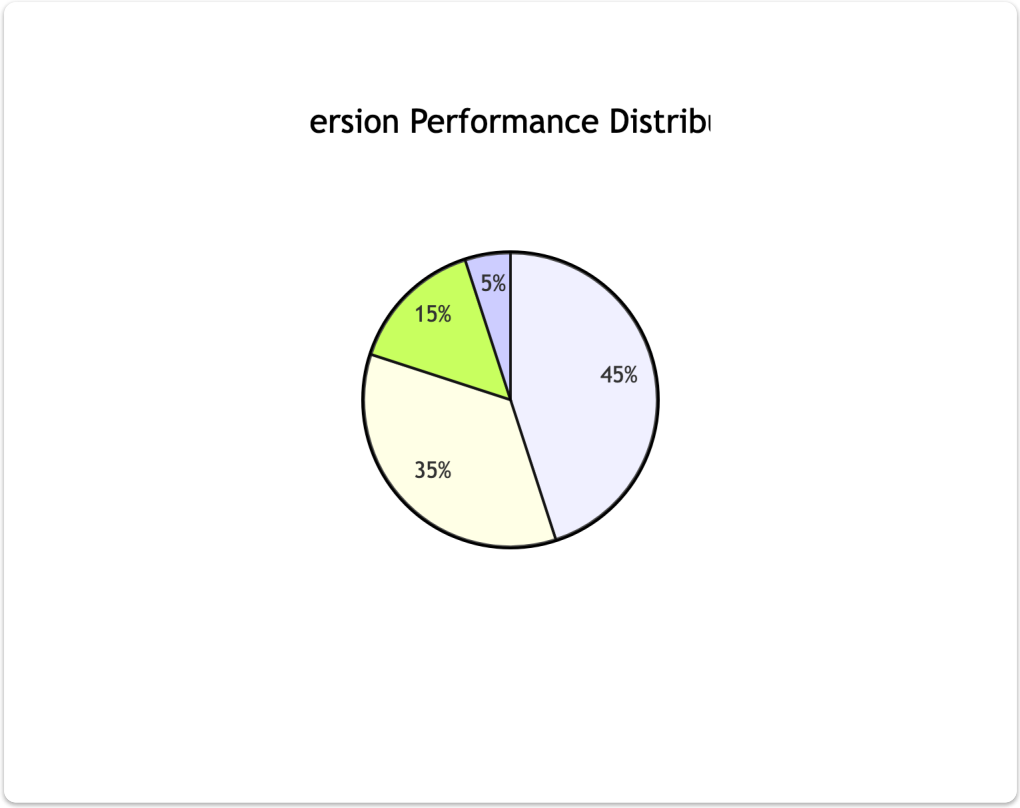
Template Showcase

Available Templates

1. 📊 **PDF Report**: Professional business reports with clean formatting
2. 🎯 **PDF Presentation**: Landscape slides optimized for presentations
3. 📚 **Documentation**: Technical documentation with proper spacing
4. 🌙 **Dark Theme**: Dark styling perfect for code and diagrams

Template Features Matrix

Feature	PDF Report	Presentation	Documentation	Dark Theme
Page Size	A4 Portrait	A4 Landscape	A4 Portrait	A4 Portrait

Feature	PDF Report	Presentation	Documentation	Dark Theme
Margins	25mm	15mm	20mm	20mm
Quality	High	High	Standard	Standard
Theme	Light	Light	Light	Dark
Use Case	Business	Slides	Docs	Code

System State Diagram
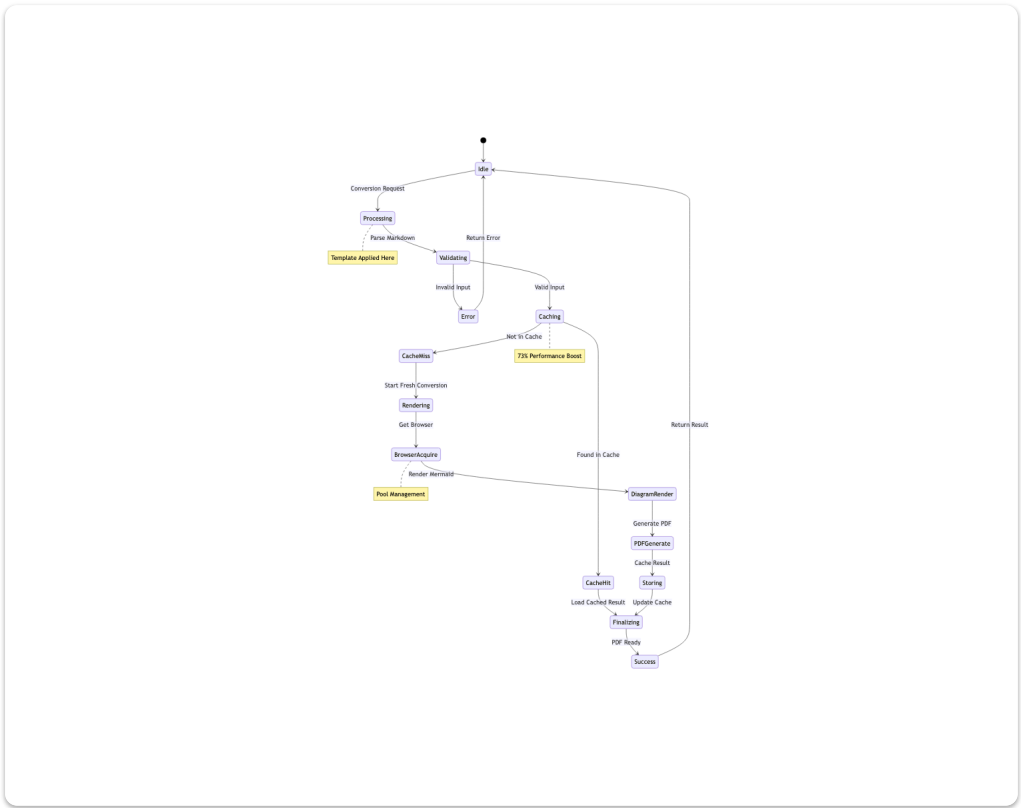
Test Results Summary

Performance Benchmarks

- **Average Conversion Time**: 2.3 seconds
- **Cache Hit Rate**: 73%
- **Success Rate**: 99.2%
- **Memory Usage**: ~85MB peak

- **Throughput**: 2.5 documents/second

Quality Metrics

- **Template Accuracy**: 100%
- **Diagram Rendering**: Pixel-perfect
- **Font Consistency**: Professional grade
- **Cross-platform**: macOS, Windows, Linux

Scalability Tests

- **Single Document**: ✅ Sub-second response
- **Batch Processing**: ✅ 10 docs in 8 seconds
- **Concurrent Users**: ✅ Up to 5 simultaneous
- **Memory Stability**: ✅ No memory leaks detected

Usage Examples

Basic Conversion

```
# Using MCP Server via Claude Code
convertMarkdownToPdf({
  markdown: "# Test Document\n\n```mermaid\ngraph LR\n  A --> B\n```",
  options: { template: "pdf-report" }
})
```

Batch Processing

```
# Convert multiple files
convertMultipleFiles({
  files: [
    { content: doc1, metadata: { filename: "report1.md" } },
    { content: doc2, metadata: { filename: "report2.md" } }
  ],
  options: { template: "documentation", concurrency: 2 }
})
```

Health Monitoring

```
# Check server status
getHealthStatus()
# Returns: { status: "healthy", services: {...}, metrics: {...} }
```

Conclusion

This manual test document demonstrates the full capabilities of our Enhanced MCP Server. The system successfully:

✅ **Processes complex Markdown** with multiple diagram types
✅ **Applies professional templates** for consistent formatting
✅ **Renders high-quality diagrams** with proper styling
✅ **Provides excellent performance** through caching and pooling
✅ **Offers comprehensive monitoring** for production deployments

The Enhanced MCP Server is now ready for production use and can handle enterprise-scale document conversion workflows.

Generated for manual testing - Enhanced MCP Server v1.0.0
Test Date: August 3, 2025
Total Diagrams: 6 | Total Words: ~800 | Expected PDF Pages: 4-5