Finanzas SD - AWS Architecture Diagrams

Finanzas SD – Architecture, Flows & SOPs

Arquitectura, Flujos y Procedimientos

November 11, 2025

1 Finanzas SD - AWS Architecture Diagrams

This directory contains enterprise-grade AWS architecture diagrams for the Finanzas SD (Service Delivery Financial Planning) module. All diagrams follow AWS 2025 architecture framework standards with professional styling and comprehensive documentation.

1.1 Diagram Inventory

1.1.1 1. AWS Architecture Overview (`01-aws-architecture-overview.mmd`)

Purpose: High-level system architecture showing all AWS services and their interactions
Style: Horizontal AWS web application hosting layout
Components: - CloudFront CDN with `/finanzas/*` path pattern - Cognito User Pool (JWT authentication, RBAC groups) - API Gateway REST with Verified Permissions - Lambda Functions (PMO, SDMT, Forecast, Analytics, Reconciliation) - DynamoDB Tables (Projects, Budgets, Forecasts, Invoices) - S3 Buckets (UI assets, documents) - EventBridge scheduled jobs - SNS/SES notifications - CloudWatch & X-Ray observability

Export Formats: PNG, SVG, PDF

1.1.2 2. CI/CD Pipeline (`02-cicd-pipeline.mmd`)

Purpose: Multi-stage deployment pipeline with quality gates
Style: AWS CI/CD with GitHub Actions integration
Components: - GitHub Actions workflows (frontend, backend, docs) - Lint, test, build, security scan stages - OIDC authentication to AWS - Multi-environment deployment (dev, staging, prod) - SAM deploy for backend - S3 sync + CloudFront invalidation for frontend - Smoke tests and monitoring - Rollback strategy

Export Formats: PNG, SVG, PDF

1.1.3 3. Data Lifecycle & Analytics (`03-data-lifecycle-analytics.mmd`)

Purpose: Time-series data processing for forecasting and cash flow analysis
Style: AWS time series analytics pipeline
Components: - Data ingestion (API Gateway, S3 raw bucket) - ETL processing (Lambda functions) - DynamoDB time-series storage - Analytics Lambda (cash flow, variance,

reporting) - S3 export bucket - SharePoint integration - EventBridge scheduled jobs - CloudWatch metrics & X-Ray tracing

Export Formats: PNG, SVG, PDF

1.1.4 4. Business Process Flow (`04-business-process-flow.mmd`)

Purpose: End-to-end finance operations workflow
Style: Business process flow / BPMN hybrid
Phases: 1. **Planning & Estimation** - PMO project initiation, budget estimator 2. **Budget Baseline Creation** - Service tier selection, digital signature 3. **Forecast Allocation** - 60-month grid, period-by-period allocation 4. **Execution & Tracking** - Actuals recording, invoice receipt 5. **Invoice Reconciliation** - Automated matching, ML algorithm 6. **Analytics & Reporting** - Cash flow, variance, margin analysis 7. **Approval & Governance** - Alerts, approval workflow, audit trail 8. **Document Generation** - PDF/Excel export, SharePoint upload

Export Formats: PNG, SVG, PDF

1.1.5 5. Network & Security Architecture (`05-network-security.mmd`)

Purpose: Security architecture and network connectivity
Style: AWS network diagram with security layers
Components: - Route 53 DNS - AWS WAF + Shield (DDoS protection) - CloudFront with SSL/TLS - S3 with Origin Access Control (OAC) - Cognito + Verified Permissions (authentication & authorization) - API Gateway with custom authorizer - Lambda IAM roles and execution policies - DynamoDB & S3 encryption (KMS) - Secrets Manager (credentials rotation) - CloudTrail (audit logs) - CloudWatch & X-Ray (monitoring)

Export Formats: PNG, SVG, PDF

1.2 🎨 Design Standards

1.2.1 Color Coding

All diagrams follow AWS 2025 color palette:

Color	Hex Code	Usage
AWS Orange	#FF9900	CDN, Storage, Frontend

Color	Hex Code	Usage
AWS Blue	#146EB4	API Gateway, Auth, Networking
AWS Purple	#8B5CF6	Compute (Lambda), Processing
AWS Green	#3F8624	Data Layer (DynamoDB, Analytics)
AWS Red	#D13212	Security, Monitoring, Alerts
AWS Dark	#232F3E	Borders, Text
AWS Gray	#545B64	Connection Lines

1.2.2 Connection Arrow Meanings

- **Solid arrows** (- ->) - Primary data flow or request path
- **Dotted arrows** (- . ->) - Secondary flow, monitoring, or event-driven
- **Labeled arrows** - Numbered steps or action descriptions

1.3 Generating Diagrams

1.3.1 Prerequisites

```
[] npm install -g @mermaid-js/mermaid-cli@11.4.1
```

1.3.2 Generate All Diagrams

```
[] # From repository root ./scripts/docs/render-docs.sh
```

This will: 1. Validate Mermaid syntax 2. Render diagrams to SVG, PNG, and PDF 3. Output to `public/docs/latest/diagrams/`

1.3.3 Generate Single Diagram

```
[] # SVG output mmdc -i docs/diagrams/01-aws-architecture-overview.mmd -o output.svg -t base
   # PNG output (high resolution) mmdc -i docs/diagrams/01-aws-architecture-overview.mmd -o output.png -t base -w 2400 -H 1600
   # PDF output mmdc -i docs/diagrams/01-aws-architecture-overview.mmd -o output.pdf -t base
```

1.4 Export Locations

Generated diagrams are exported to multiple locations:

1. **Public Documentation**: `public/docs/latest/diagrams/`
   - Included in documentation website
   - Accessible via CloudFront at `/docs/latest/`
2. **GitHub Actions Artifacts**:
   - Workflow: `.github/workflows/docs-generator.yml`
   - Retention: 90 days
   - Download from Actions tab
3. **Client Deliverables**: `public/docs/releases/`
   - Packaged in branded ZIP files
   - Includes bilingual documentation

1.5 Automatic Updates

Diagrams are automatically regenerated when: 1. Any `.mmd` file in `docs/diagrams/` or `diagrams/` is modified 2. Documentation generation workflow is manually triggered 3. A new release is created
Workflow: `.github/workflows/docs-generator.yml`

1.6 Maintenance

1.6.1 Updating Diagrams

1. Edit the `.mmd` file using Mermaid syntax
2. Validate syntax: `./scripts/docs/validate-diagrams.sh`
3. Commit changes to feature branch
4. Open PR - diagrams will be rendered in CI/CD
5. Review rendered output in PR artifacts

1.6.2 Adding New Diagrams

1. Create `.mmd` file in `docs/diagrams/` with sequential naming: `06-diagram-name.mmd`
2. Include frontmatter with title and description
3. Follow existing color scheme and styling
4. Update this README with diagram details
5. Commit and open PR

1.6.3 Best Practices

- **Keep diagrams focused**: One diagram per architectural concern
- **Use consistent naming**: Service names should match AWS SAM template
- **Label connections**: All arrows should have descriptions
- **Include legends**: When introducing new symbols or colors
- **Test rendering**: Always validate before committing

1.7 □ References

1.7.1 Mermaid Documentation

- Mermaid Official Docs
- Flowchart Syntax
- Sequence Diagrams
- Theming

1.7.2 AWS Architecture Icons

- AWS Architecture Icons
- AWS Architecture Center
- AWS Well-Architected Framework

1.7.3 Related Documentation

- AWS_Architecture.md - Technical architecture details
- Data_Flows.md - Data flow descriptions
- deploy.md - Deployment procedures
- DEPLOYMENT_GUIDE.md - Full deployment guide

1.8 □ Security Considerations

These diagrams are **internal documentation** and should be treated accordingly: - □ Safe to share with internal teams and stakeholders - □ Include in client deliverables (sanitized) - ⚠ Redact sensitive information before external sharing: - Account IDs - API endpoint URLs - CloudFront distribution IDs - S3 bucket names - Cognito Pool IDs

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1.9 Version History

Version	Date	Changes	Author
1.0	2025-11-10	Initial diagram set (5 diagrams)	Copilot

1.10 Future Enhancements

Planned additions: - [ ] Cost optimization diagram (Reserved Capacity, Savings Plans) - [ ] Disaster recovery architecture - [ ] Multi-region deployment (if needed) - [ ] Integration architecture with external systems - [ ] Database schema ERD with relationships - [ ] User journey flow diagrams

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1.11 Support

For questions or issues with diagrams: 1. Check DOCUMENTATION_PIPELINE.md 2. Review DOCS_PIPELINE_SUMMARY.md 3. Open an issue in GitHub with label `documentation`

Last Updated: November 10, 2025
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