Securaa Sdlc Process

SECURAA Security Documentation

SECURAA Complete Secure SDLC Process Documentation

Comprehensive Secure SDLC for SECURAA SOAR Platform

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Executive Summary

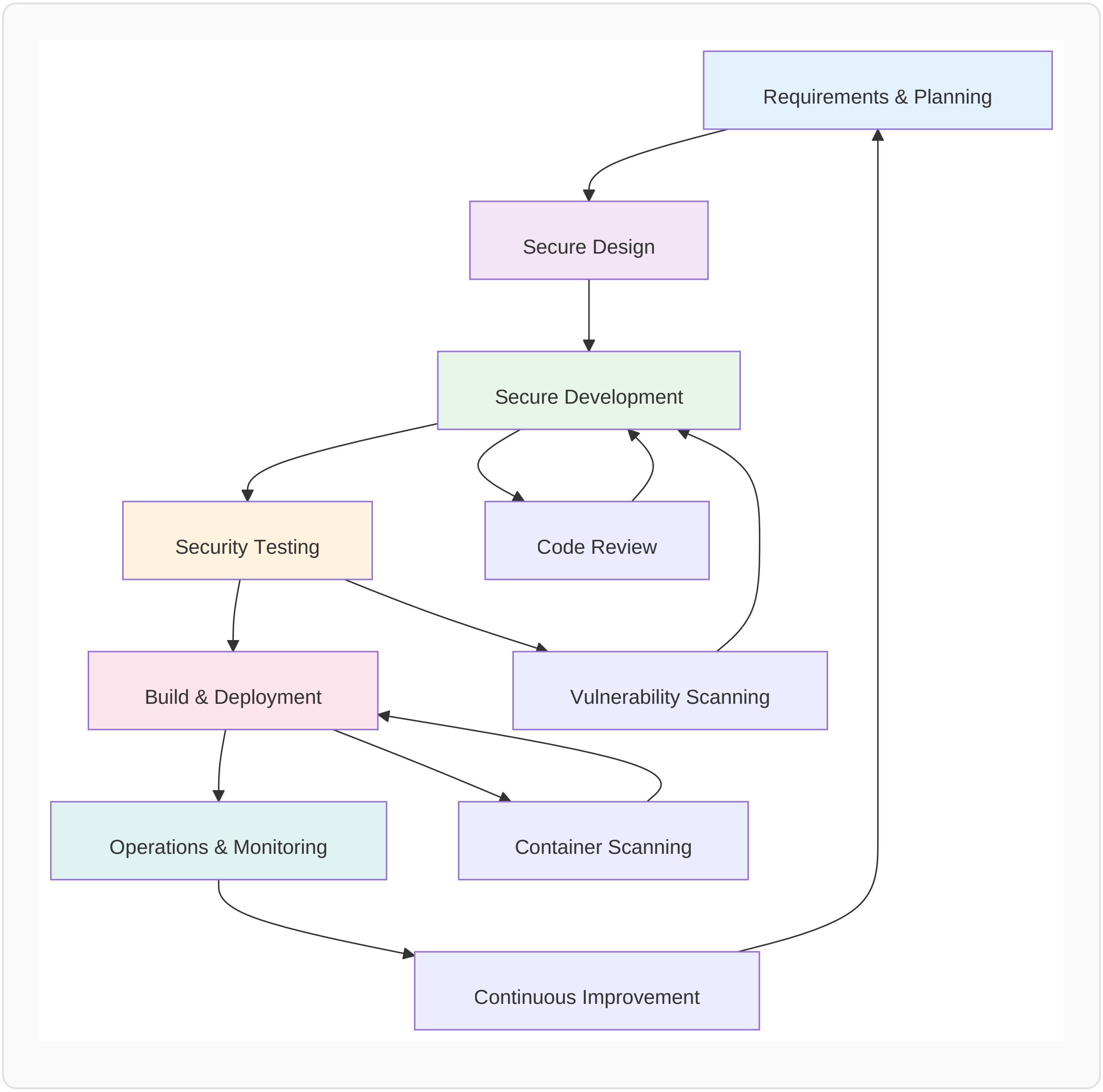
This document describes the complete Secure Software Development Lifecycle (SDLC) implemented for the SECURAA Security Orchestration, Automation and Response (SOAR) platform. The SDLC integrates security at every phase from requirements gathering through production operations.

Platform Overview

SECURAA is an enterprise SOAR platform with:

- **30+ Microservices** in the zona_services repository
- **300+ Third-Party Integrations** in the integrations repository
- **9 Primary Repositories** managed via AWS CodeCommit
- **Containerized Deployment** using Docker and AWS ECR
- **AWS Infrastructure** with CodeBuild, ECR, IAM, CloudWatch

SDLC Workflow



Technology Stack

Programming Languages

Language	Purpose	Version	Files/Services
Go	Backend microservices - APIs, Batch processing, integrations	1.17+	30+ services in zona_services, zona_batch, integrations

Language	Purpose	Version	Files/Services
HTML/CSS/JavaScript/React	Frontend UI	React 18.2+	zonareact repository
Python	Utils	3.8+	securaa_pylib, custom_python-utils, custom_python-utils-trial
Shell	Build automation, deployment	Bash	build_securaa scripts

Infrastructure Components

AWS Services in Use:

- **AWS CodeCommit** - Git repositories (9 repositories)
- **AWS CodeBuild** - CI/CD pipeline automation
- **Amazon ECR** - Docker image registry (xxxxxx.dkr.ecr.us-east-2.amazonaws.com)
- **Amazon EC2** - Application hosting
- **AWS IAM** - Access control and permissions
- **AWS CloudWatch** - Logging and monitoring
- **AWS Secrets Manager** - Credential storage

Databases:

- **MongoDB 7.0** - Primary database (mssp_core database)
- **Redis** - Secondary/Cache-Only database
- **InfluxDB** - Monitoring Dashboard's Time-series metrics

Container Platform:

- **Docker** - Containerization
- **AWS ECR** - Image registry
- **Docker Compose** - Local development

Repository Structure

SECURAA's codebase is organized across 9 specialized repositories in AWS CodeCommit:

1. build_securaa Repository

Purpose: Build automation and deployment

Key Components:

```
build_securaa/
├── build_securaa.sh              # Main build orchestration script
├── aws_codebuild/
│   ├── Core_BuildSpec.yaml       # Core services build (zona_services, zona_batch)
│   ├── Wrapper_BuildSpec.yaml    # Integration services build
│   └── UI_BuildSpec.yaml         # Frontend build
├── core_scripts/
│   ├── functions_aws.sh          # AWS-specific build functions
│   ├── functions.sh              # General build functions
│   ├── securaa_ecr_login.sh      # ECR authentication
│   └── docker_ecr_login.sh       # Docker ECR login
├── deployment_scripts/           # Deployment automation
├── pkg/                          # RPM package specifications
└── securaa/                      # Core application code
```

Build Options (from build_securaa.sh):

- `-i` Make core Docker images
- `-w` Make wrapper (integration) images
- `-u` Make UI build
- `-r` Make RPM packages
- `-a` Binary and zip export
- `-c` Checkout all repos
- `-s` Scan repositories
- `-b` Make batch images

Build Process:

```
./build_securaa.sh "-vi" $dev_image rpm_mssp_complete 0001 $dev_image
```

2. zona_services Repository

Purpose: Core microservices (30+ services)

Service Categories:

```
zona_services/
├── zona_user/                    # User management service
├── zona_integrations/            # Integration orchestration
├── zona_siem/                    # Incidents related services
├── zona_playbook/                # Playbook execution engine
├── zona_querybuilder/            # Query builder service
├── zona_custom/                  # Custom utilities
├── zona_custom_utils/            # Custom utility functions
├── zona_apis_manager/            # API management
├── zona_sshclient/               # SSH client service
├── zona_pdf/                     # PDF generation service
├── zona_primary_server_health_check/  # Primary Machine Health monitoring service from
Secondary
└── zona_sia_apis/                # SIA API services
```

Each service is independently deployable as a Docker container.

3. securaa Repository

Purpose: Common functions/library used for Integrations

Components:

- API endpoints
- Business logic layer
- Database operations
- Common utilities

4. securaa_lib Repository

Purpose: Shared library for core application

Key Features:

- **Encryption/Decryption**: AES-256-CBC encryption implementation
- **JWT Token Management**: Token generation and validation
- **Cryptographic Operations**: Secure crypto functions
- **Authentication Helpers**: Common auth utilities

5. zona_batch Repository

Purpose: Background batch processing jobs

Batch Services:

```
zona_batch/
├── core_process_batch/          # Core data processing
├── csam_connector/              # CSAM integration batch
├── auto_purge_batch/            # Data retention enforcement
├── report_batch/                # Report generation
├── sbot/                        # Security bot automation
└── sla_breach_monitor_batch/    # SLA monitoring
```

6. integrations Repository

Purpose: Third-party system integrations (300+ integrations)

Integration Categories:

- **SIEM Platforms**: Splunk, QRadar, LogRhythm, ArcSight
- **Threat Intelligence**: VirusTotal, AlienVault, ThreatConnect
- **Ticketing Systems**: ServiceNow, Jira, Remedy
- **EDR/Endpoint**: CrowdStrike, Carbon Black, SentinelOne
- **Cloud Security**: AWS Security Hub, Azure Sentinel, GCP SCC
- **Network Security**: Palo Alto, Cisco, Fortinet, Checkpoint
- **Email Security**: Proofpoint, Mimecast, Microsoft 365
- **Identity**: Active Directory, Okta, Azure AD

Integration Structure:

```
integrations/
├── zona_splunk/
├── zona_qradar/
├── zona_servicenow/
├── zona_virustotal/
├── zona_crowdstrike/
├── zona_aws_securityhub/
└── ... (300+ integration modules)
```

7. zonareact Repository

Purpose: Frontend React application

Technology:

- React 18.2+
- Redux for state management
- Material-UI components
- Chart visualizations
- Real-time updates via WebSockets

Features:

- User interface and dashboards
- Case management UI
- Playbook designer
- Custom widgets
- Report generation UI

8. securaa_db Repository

Purpose: Database schemas and migrations

Contents:

- MongoDB collection schemas
- Database initialization scripts
- Migration scripts
- Seed data for development
- Database versioning

Primary Database: `mssp_core` (MongoDB)

9. securaa_pylib Repository

Purpose: Python utility libraries

Components:

- Python utilities for custom integrations
- Data processing libraries
- Helper functions for playbooks

Phase 1: Requirements & Planning

Objective

Define requirements, assess risks, and model threats before development begins.

Requirements Gathering

Document requirements for each feature:

```
security_requirements:
  authentication:
    - Authentication method (JWT, OAuth, API Key)
    - Session management requirements
    - MFA requirements for sensitive operations

  authorization:
    - Role definitions
    - Permission model
    - Resource access controls

  data_protection:
    - Sensitive data identification
    - Encryption requirements (AES-256-CBC as per securaa_lib)
    - Data classification levels
    - Retention and deletion policies

  input_validation:
    - Input validation rules
    - Data type and format requirements
    - Size limits
    - Sanitization requirements

  audit_logging:
    - Security events to log
    - Log retention period (CloudWatch)
    - Log format requirements
    - SIEM integration requirements
```

Phase 2: Secure Design

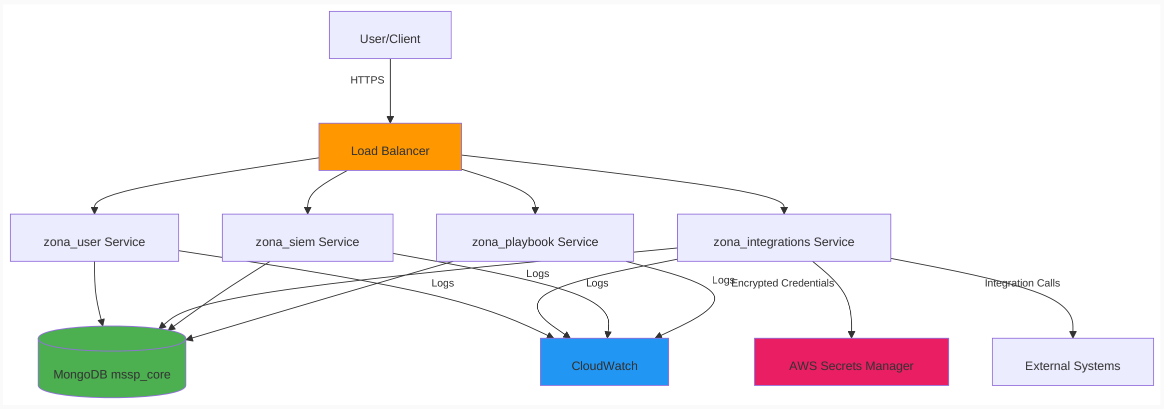
Objective

Translate requirements into technical architecture with built-in security controls.

Activities

2.1 Architecture Design

Microservices Architecture (Simplified):



2.2 Security Controls Design

Authentication Design:

```
authentication:
  primary_method: JWT
  algorithm: HS256
  token_expiry: 3600 seconds
  refresh_token_expiry: 604800 seconds  # 7 days
  secret_storage: AWS Secrets Manager

  api_key_method:
    format: "securaa_api_[32_char_random]"
    storage: Hashed with bcrypt

  mfa:
    methods: [TOTP, SMS, Email]
    required_for: Administrative operations
```

Authorization Design:

```
authorization:
  model: Role-Based Access Control (RBAC)
  roles:
    - admin:
        - Full system access
        - User management
        - Configuration changes

    - analyst:
        - Case management
        - Integration execution
        - Report access

    - viewer:
        - Read-only access
        - Report viewing
```

Data Protection Design:

```
encryption:
  at_rest:
    algorithm: AES-256-CBC
    implementation: securaa_lib.CredentialsEncryptV2()
    key_storage: AWS Secrets Manager

    encrypted_fields:
      - integration_credentials
      - api_tokens
      - user_passwords

  in_transit:
    protocol: TLS 1.2+
    certificate_provider: AWS Certificate Manager
    enforce_https: true
```

2.3 Database Security Design

MongoDB Configuration:

```
mongodb:
  database: mssp_core
  authentication:
    enabled: true
    mechanism: SCRAM-SHA-256
  authorization:
    role_based: true
    users:
      - securaa_app: readWrite access
      - securaa_readonly: read access

  network:
    bind_ip: Private subnet only
    port: 27017

  collections:
    - integrations
    - cases
    - playbooks
    - users
    - audit_logs
```

2.4 AWS Infrastructure Design

VPC Architecture:

```
vpc:
  cidr: 10.0.0.0/16

  subnets:
    public:
      cidr: 10.0.1.0/24
      components:
        - Application Load Balancer
        - NAT Gateway

    private:
      cidr: 10.0.2.0/24
      components:
        - EC2 instances (zona_services)
        - Application containers

    database:
      cidr: 10.0.3.0/24
      components:
        - MongoDB cluster
        - PostgreSQL
```

Security Groups:

```
security_groups:
  alb_sg:
    inbound:
      - port: 443, source: 0.0.0.0/0 (HTTPS)
      - port: 80, source: 0.0.0.0/0 (HTTP redirect)
    outbound:
      - port: 8080, destination: app_sg

  app_sg:
    inbound:
      - port: 8080, source: alb_sg
      - port: 22, source: bastion_sg (SSH)
    outbound:
      - port: 27017, destination: db_sg (MongoDB)
      - port: 443, destination: 0.0.0.0/0 (External APIs)

  db_sg:
    inbound:
      - port: 27017, source: app_sg (MongoDB)
    outbound: []
```

IAM Roles and Policies:

```
iam_roles:
  SecuraaCodeBuildRole:
    purpose: AWS CodeBuild service role
    permissions:
      - ecr:GetAuthorizationToken
      - ecr:BatchCheckLayerAvailability
      - ecr:PutImage
      - ecr:InitiateLayerUpload
      - ecr:UploadLayerPart
      - ecr:CompleteLayerUpload
      - s3:GetObject
      - s3:PutObject (securaa-artifacts bucket)
      - logs:CreateLogGroup
      - logs:CreateLogStream
      - logs:PutLogEvents
      - secretsmanager:GetSecretValue (securaa/* secrets)

  SecuraaEC2AppRole:
    purpose: EC2 application instances
    permissions:
      - ecr:GetAuthorizationToken
      - ecr:BatchGetImage
      - ecr:GetDownloadUrlForLayer
      - secretsmanager:GetSecretValue (securaa/prod/*)
      - logs:CreateLogGroup
      - logs:CreateLogStream
```

```
        - logs:PutLogEvents
        - cloudwatch:PutMetricData
```

Deliverables

- ☐ Architecture diagrams (component, data flow, network)
- ☐ Security controls specification
- ☐ Database security design
- ☐ API security specifications
- ☐ Infrastructure security design
- ☐ IAM policies and roles
- ☐ Security design review approval

Phase 3: Secure Development

Objective

Implement secure code following secure coding standards with Git workflow on AWS CodeCommit.

Activities

3.1 AWS CodeCommit Setup

Repository Access:

```
codecommit_repositories:
  - build_securaa
  - zona_services
  - securaa
  - securaa_lib
  - zona_batch
  - integrations
  - zonareact
  - securaa_db
  - securaa_pylib
```

```
authentication:
  methods:
    - HTTPS with Git credentials
    - SSH keys
    - AWS CLI with IAM credentials

iam_policy:
  read_permissions:
    - codecommit:GetRepository
    - codecommit:GetBranch
    - codecommit:GitPull

  write_permissions:
    - codecommit:GitPush
    - codecommit:CreateBranch
    - codecommit:CreatePullRequest

  admin_permissions:
    - codecommit:MergePullRequest (requires reviewer role)
```

Branch Protection:

```
protected_branches:
  main:
    require_pull_request: true
    required_approvals: 2
    restrict_push: true

  release:
    require_pull_request: true
    required_approvals: 1
    require_status_checks: true

  dev:
    require_pull_request: true
    required_approvals: 1
```

3.2 Branching Strategy

```
branch_naming:
  feature: "feature/[JIRA-ID]-short-description"
  bugfix: "bugfix/[JIRA-ID]-short-description"
  hotfix: "hotfix/[JIRA-ID]-short-description"
  release: "release/v[version]"

workflow:
  1: Create feature branch from dev
  2: Implement feature
  3: Dev unit testing & security testing
  4: Push to CodeCommit
  5: Create pull request
  6: Code review
  7: Merge to dev
  8: Integration testing
  9: QA team testing
  10: Merge to release branch post final load testing
```

3.3 Code Review Process

Pull Request Template:

```
## Description
[JIRA-ID]: Brief description

## Security Considerations
- [ ] No hardcoded credentials
- [ ] Input validation implemented
- [ ] Using securaa_lib for encryption
- [ ] Proper error handling
- [ ] Security events logged
- [ ] Authentication/authorization enforced

## Testing
- [ ] Manual testing completed
- [ ] Security tests included

## Security Scan Results
- [ ] GoSec: Pass
- [ ] Dependency scan: Pass

## Reviewers
@security-team @team-lead
```

Code Review Checklist:

- ☐ Authentication implemented correctly
- ☐ Authorization checks present
- ☐ Input validation comprehensive
- ☐ Sensitive data encrypted using securaa_lib

- [ ] Error messages don't expose details
- [ ] No credentials in code
- [ ] Logging doesn't contain PII
- [ ] Manual tests cover security scenarios
- [ ] Code follows SECURAA standards

Deliverables

- [ ] Code in feature branch
- [ ] Security tests
- [ ] Pull request created
- [ ] Code review completed
- [ ] Approved by 2 seniors
- [ ] Merged to dev branch

Phase 4: Security Testing

Objective

Validate security controls through automated and manual security testing.

Activities

4.1 Static Application Security Testing (SAST)

GoSec Configuration:

```
# .gosec.yml
{
  "global": {
    "nosec": false,
    "show-ignored": true,
    "confidence": "medium",
    "severity": "medium"
  },
  "rules": {
    "G101": "Look for hardcoded credentials",
    "G104": "Audit errors not checked",
    "G201": "SQL query construction using string building",
    "G401": "Detect MD5 usage",
    "G501": "Import blocklist: crypto/md5"
  }
}
```

Run GoSec:

```
# Install
go install github.com/securego/gosec/v2/cmd/gosec@latest

# Run scan
gosec -fmt=json -out=gosec-report.json ./...

# Check for critical issues
gosec -severity=high ./...
```

4.2 Dependency Vulnerability Scanning

govulncheck for Go:

```
# Install
go install golang.org/x/vuln/cmd/govulncheck@latest

# Run vulnerability check
govulncheck ./...
```

4.4 Container Security Scanning

AWS ECR for Docker Image scan

Deliverables

- [ ] GoSec scan completed & Security reports generated
- [ ] Critical/High issues resolved
- [ ] Dependency scans completed
- [ ]

Container scans completed

- ☐ Security test approval

Phase 5: Build & Deployment

Objective

Build secure artifacts and deploy to production using AWS CodeBuild and ECR.

Activities

5.1 AWS CodeBuild Configuration

Core_BuildSpec.yaml (Actual configuration from repository):

```
version: 0.2

phases:
  pre_build:
    commands:
      - echo CODEBUILD_SRC_DIR - $CODEBUILD_SRC_DIR
      - cd ..
      - pwd
      - wget --no-check-certificate https://xxxxxx/code_dependency/github.com.zip
      - wget --no-check-certificate https://xxxxxx/code_dependency/gopkg.in.zip
      - ls
      - unzip github.com.zip
      - unzip gopkg.in.zip
      - echo "After Unziping"
      - ls
      - pwd

  build:
    commands:
      - export GO111MODULE=on
      - export TAG_IMAGE=$dev_image
      - echo $TAG_IMAGE
      - go env
      - cd build_securaa
      - echo "Below are the build_securaa folders"
      - ls
      - echo "Entering in Core Script Folder"
      - cd core_scripts/
      - ls
      - chmod 777 *
      - ls -l
      - sudo ./securaa_ecr_login.sh
      - pwd
      - ls
      - cd ../
      - chmod 777 build_securaa.sh
      - export app=aws
      - echo "The value of app is $app"
      - ls -l
      - echo $GOPATH
      - echo $GOROOT
      - ./build_securaa.sh "-vi" $dev_image rpm_mssp_complete 0001 $dev_image
```

Wrapper_BuildSpec.yaml (Integration services):

```
version: 0.2

phases:
  pre_build:
    commands:
      - echo CODEBUILD_SRC_DIR - $CODEBUILD_SRC_DIR
      - cd ..
      - pwd
      - wget --no-check-certificate https://xxxxxx/code_dependency/github.com.zip
      - wget --no-check-certificate https://xxxxxx/code_dependency/gopkg.in.zip
      - ls
      - unzip github.com.zip
      - unzip gopkg.in.zip
      - echo "After Unziping"
      - ls
      - pwd

  build:
    commands:
      - export GO111MODULE=on
      - export TAG_IMAGE=$dev_image
      - echo $TAG_IMAGE
      - go env
      - cd build_securaa
      - echo "Below are the build_securaa folders"
      - ls
      - echo "Entering in Core Script Folder"
      - cd core_scripts/
      - ls
      - chmod 777 *
      - ls -l
      - sudo ./securaa_ecr_login.sh
      - pwd
```

```
        - ls
        - cd ../
        - chmod 777 build_securaa.sh
        - export app=aws
        - echo "The value of app is $app"
        - ls -l
        - echo $GOPATH
        - echo $GOROOT
        - ./build_securaa.sh "-vw" $dev_image rpm_mssp_complete 0001 $dev_image
```

5.2 Build Process

build_securaa.sh Options (from repository):

```
# Build core services and push to ECR
./build_securaa.sh "-vi" [TAG_IMAGE] rpm_mssp_complete [BUILD_NUMBER] [TAG_IMAGE]

# Build integration services
./build_securaa.sh "-vw" [TAG_IMAGE] rpm_mssp_complete [BUILD_NUMBER] [TAG_IMAGE]

# Build UI
./build_securaa.sh "-vu" [TAG_IMAGE] rpm_mssp_complete [BUILD_NUMBER] [TAG_IMAGE]

# Options:
# -v  Verbose mode
# -i  Make core images (zona_services, zona_batch)
# -w  Make wrapper images (integrations)
# -u  Make UI build (zonareact)
# -r  Make RPM packages
# -a  Binary and zip export
# -c  Checkout all repos
# -s  Scan repositories
# -b  Make batch images
```

Build Functions (from functions_aws.sh):

- `build_push_images()` - Build and push core service images
- `build_push_wrapper_images()` - Build and push integration images
- `make_ecr_login()` - Authenticate to AWS ECR
- `ui_build()` - Build React frontend

5.3 AWS ECR Configuration

ECR Registry:

```
xxxxxx.dkr.ecr.us-east-2.amazonaws.com
```

ECR Repositories:

- securaa/zona_user
- securaa/zona_integrations
- securaa/zona_siem
- securaa/zona_playbook
- securaa/zona_batch
- securaa/zonareact
- ... (one per service)

ECR Security Features:

```
ecr_configuration:
  image_scanning:
    scan_on_push: true
    severity_threshold: HIGH

  encryption:
    type: KMS
    kms_key: securaa-ecr-key

  image_tag_mutability: IMMUTABLE

  lifecycle_policy:
    - Keep last 10 production images
    - Remove untagged images after 7 days
```

ECR Authentication:

```
#!/bin/bash
# From securaa_ecr_login.sh

aws ecr get-login-password --region us-east-2 | \
  docker login --username AWS --password-stdin \
  xxxxxx.dkr.ecr.us-east-2.amazonaws.com
```

5.4 Container Security

Secure Dockerfile Pattern:

```
# Multi-stage build
FROM golang:1.17-alpine AS builder

# Create non-root user
RUN addgroup -S appgroup && adduser -S appuser -G appgroup

WORKDIR /app
COPY go.mod go.sum ./
RUN go mod download && go mod verify

COPY ../../Downloads .
RUN CGO_ENABLED=0 GOOS=linux go build -o main .

# Final stage - minimal image
FROM alpine:3.18

# Install security updates
RUN apk --no-cache add ca-certificates && \
    apk --no-cache upgrade

# Create non-root user
RUN addgroup -S appgroup && adduser -S appuser -G appgroup
USER appuser

WORKDIR /home/appuser
COPY --from=builder --chown=appuser:appgroup /app/main .

EXPOSE 8080

HEALTHCHECK --interval=30s --timeout=3s \
  CMD wget --no-verbose --tries=1 --spider http://localhost:8080/health || exit 1

CMD ["./main"]
```

5.5 Deployment Automation

Deployment Process:

```
deployment_flow:
  1_build:
    - CodeBuild triggered on daily basis for nightly builds
    - Dependencies downloaded from securaa repo public link
    - Go modules vendored (GO111MODULE=on)
    - Services built
    - Docker images created

  2_scan:
    - Container images scanned
    - Vulnerabilities checked
    - Scan results reviewed

  3_push:
    - Images tagged with build number
    - Push to ECR registry
    - Image signing

  4_deploy_on_nightly:
    - Update EC2 instances
    - Pull new images from ECR
    - Rolling deployment
    - Health checks

  5_verify:
    - Service health checks
    - Integration tests
    - Monitoring validation
```

Deliverables

- ☐ CodeBuild project configured
- ☐ Build scripts tested
- ☐ Docker images built
- ☐ Container scans passed
- ☐ Images pushed to ECR
- ☐ Deployment successful
- ☐ Health checks passing

Phase 6: Operations & Monitoring

Objective

Monitor the development systems and track overall server resource utilization.

Activities

6.1 CloudWatch Metrics

Application Metrics:

```
metrics:
  authentication:
    - AuthenticationSuccess (count)
    - AuthenticationFailure (count)
    - AuthenticationLatency (milliseconds)

  api:
    - APIRequestCount (count)
    - API4xxErrors (count)
    - API5xxErrors (count)
    - APILatency (milliseconds)

  integrations:
    - IntegrationExecutions (count)
    - IntegrationFailures (count)
    - IntegrationLatency (milliseconds)

  system:
    - CPUUtilization (percent)
    - MemoryUtilization (percent)
    - DiskUtilization (percent)
```

6.2 Alerting Configuration

CloudWatch Alarms:

```
alarms:
  high_authentication_failures:
    metric: ResourceUtilization
    threshold: 50
    period: 300  # 5 minutes
    comparison: GreaterThanThreshold
    action: SNS notification to engineering team

  critical_api_errors:
    metric: API5xxErrors
    threshold: 100
    period: 300
    evaluation_periods: 2
    action: SNS notification to ops team
  unauthorized_access:
    metric: API403Errors
    threshold: 30
    period: 300
    action: SNS notification to engineering team
```

Deliverables

- ☐ CloudWatch logging configured
- ☐ Metrics dashboards created
- ☐ Alarms configured

Phase 7: CI/CD Security Pipeline

Objective

Integrate automated security checks throughout the CI/CD pipeline.

Activities

7.1 Security Gates

Gate Configuration:

```
security_gates:
  gate_1_sast:
    name: "Static Analysis"
    fail_on_finding: false
    tools: [gosec]
    criteria:
      max_critical: 0
      max_high: 10
    action: "Fail build if criteria not met"

  gate_2_dependencies:
    name: "Dependency Vulnerabilities"
    fail_on_finding: false
    tools: [govulncheck]
    criteria:
      max_critical_cvss: 0  # No CVSS >= 9.0
      max_high_cvss: 5       # Max 5 with CVSS >= 7.0
    action: "Fail build if critical vulnerabilities"

  gate_3_container:
    name: "Container Security"
    fail_on_finding: false
    tools: [trivy]
    criteria:
      max_critical: 0
      max_high: 5
    action: "Block ECR push"
```

Security Tools Reference

Tools Used in SDLC

Tool	Purpose	Phase	Implementation
GoSec	Go SAST	Development, Testing	`gosec ./...`
govulncheck	Go vulnerability check	Testing	`govulncheck ./...`
AWS CodeBuild	CI/CD	Build	BuildSpec files
AWS ECR	Container registry	Build, Deploy	ECR API
CloudWatch	Logging, Monitoring	Operations	AWS SDK

Security Tool Installation

```
# Go security tools
go install github.com/securego/gosec/v2/cmd/gosec@latest
go install golang.org/x/vuln/cmd/govulncheck@latest
```

Roles & Responsibilities

Development Team

- Follow secure coding standards
- Write security-focused unit tests
- Participate in code reviews
- Address security findings promptly
- Use securaa_lib for encryption

Senior Engineering Team

- Define security requirements
- Review security architecture
- Approve production deployments

DevOps Team

- Maintain CI/CD pipeline (CodeBuild)
- Manage AWS infrastructure
- Configure security tools
- Monitor system health
- Manage ECR and deployments

QA Team

- Execute test cases
- Perform SAST scanning
- Validate security requirements
- Document security issues

Summary

This document provides a comprehensive overview of the SECURAA Secure SDLC process, covering all phases from requirements gathering through production operations. The SDLC integrates security at every stage using:

- **AWS Infrastructure**: CodeCommit, CodeBuild, ECR, IAM, CloudWatch

- **Security Tools**: GoSec, govulncheck
- **Secure Coding**: securaa_lib encryption, input validation, secure error handling
- **Automated Security**: CodeBuild security scans, container scanning
- **Comprehensive Monitoring**: CloudWatch logging, metrics, alerting

Key Artifacts

Repositories:

1. build_securaa - Build automation
2. zona_services - 30+ microservices
3. securaa - Common functions/library used for Integrations
4. securaa_lib - Shared library for core application
5. zona_batch - Batch processing
6. integrations - 300+ integrations
7. zonareact - React frontend
8. securaa_db - Database schemas
9. securaa_pylib - Python utilities

Build System:

- Core_BuildSpec.yaml - Core services
- Wrapper_BuildSpec.yaml - Integration services
- build_securaa.sh - Build orchestration
- ECR Registry: xxxxxx.dkr.ecr.us-east-2.amazonaws.com

Security Features:

- AES-256-CBC encryption (securaa_lib)
- JWT authentication
- MongoDB SCRAM-SHA-256 auth
- TLS 1.2+ for transit
- IAM policies (least privilege)
- Container security scanning
- Automated vulnerability detection

Document History

Version	Date	Author	Changes
1.0	October 2024	Engineering Team	Initial documentation
2.0	November 13, 2025	Engineering Team	Complete consolidated SDLC with codebase details

Contact Information

Document Owner: Engineering & Security Leadership

This document contains actual implementation details from the SECURAA codebase including real AWS infrastructure configurations, build scripts, repository structures, and security implementations. All information is based on concrete code analysis of the SECURAA platform.