# Advanced Topics

Advanced patterns, customizations, and enterprise features for AWS CDK.

## 🚀 Advanced Features

### CI/CD and Pipelines

* [CDK Pipelines](create-cdk-pipeline.md) - Continuous deployment ([detailed guide](cdk-pipelines/))
* [Stages](stages.md) - Multi-stage deployments
* [Blueprints](blueprints.md) - Reusable infrastructure patterns

### Customization and Extension

* [Customize Synthesis](customize-synth.md) - Custom synthesis behavior
* [Customize Permissions Boundaries](customize-permissions-boundaries.md) - IAM boundaries
* [Aspects](aspects.md) - Cross-cutting concerns and policies
* [Libraries](libraries.md) - Building and using CDK libraries

### CloudFormation Integration

* [CFN Layer](cfn-layer.md) - Low-level CloudFormation constructs
* [Use CFN Template](use-cfn-template.md) - Integrating existing CloudFormation
* [Use CFN Public Registry](use-cfn-public-registry.md) - Third-party resources

### Advanced Utilities

* [Get CloudFormation Values](get-cfn-val.md) - Retrieving CloudFormation outputs
* [Get Context Variables](get-context-var.md) - Working with context
* [Get Environment Variables](get-env-var.md) - Environment variable access
* [Get Secrets Manager Values](get-sm-val.md) - Secrets integration
* [Get SSM Parameter Values](get-ssm-val.md) - Parameter Store integration
* [Set CloudWatch Alarms](set-cw-alarm.md) - Monitoring and alerting

### Migration and Toolkit

* [Migration Guide](migrate.md) - Migrating from CDK v1 to v2
* [Toolkit Library](toolkit-library.md) - CDK Toolkit programmatic usage
* [Toolkit Actions](toolkit-library-actions.md) - Custom toolkit actions
* [Toolkit Configuration](toolkit-library-configure.md) - Toolkit customization
* [Toolkit Getting Started](toolkit-library-gs.md) - Toolkit library basics
* [Toolkit CA Configuration](toolkit-library-configure-ca.md) - CA certificates
* [Toolkit Messages](toolkit-library-configure-messages.md) - Custom messages

### Policy and Validation

* [Policy Validation](policy-validation-synthesis.md) - Policy validation during synthesis

## 🎯 Learning Paths

### CI/CD Pipeline Setup

1. [**CDK Pipelines**](create-cdk-pipeline.md) - Start with pipeline overview
2. [**Stages**](stages.md) - Understand deployment stages
3. [**Blueprints**](blueprints.md) - Use reusable patterns

### CloudFormation Integration

1. [**CFN Layer**](cfn-layer.md) - Low-level constructs
2. [**Use CFN Template**](use-cfn-template.md) - Template integration
3. [**Migration**](migrate.md) - Moving from CloudFormation

### Enterprise Features

1. [**Aspects**](aspects.md) - Policy enforcement
2. [**Customize Permissions**](customize-permissions-boundaries.md) - Security boundaries
3. [**Policy Validation**](policy-validation-synthesis.md) - Compliance checking

## 🔗 Related Sections

* [Core Concepts](../02-core-concepts/) - Foundation knowledge required
* [Development](../03-development/) - Development best practices
* [Deployment](../04-deployment/) - Basic deployment knowledge needed