# AWS SAM CLI Serverless on AWS

## CONCEPTS

A SAM template is CloudFormation with shorthand resources (AWS::Serverless::Function). sam build prepares code, sam deploy hands the template to CloudFormation.

**template.yaml** SAM template
↓ sam build
**.aws-sam/build** built artifacts
↓ sam deploy
**CloudFormation** change set
↓ creates
**Lambda, API, ...** per stack

sam deploy --guided writes samconfig.toml; later runs of sam deploy need no flags.

## PROJECT

**sam init**
Create a project interactively

**sam validate**
Check the template is valid

## BUILD

**sam build**
Build all functions and layers

**sam build --use-container**
Build in a Lambda-like container

**sam build --cached --parallel**
Reuse unchanged builds, build in parallel

## LOCAL TESTING

**sam local invoke**
Run the only function once

**sam local invoke** *<FunctionId>* **--event** *<file>*
Run a function with an event file

**sam local invoke --env-vars** *<file>*
Set environment variables from JSON or .env

## LOCAL TESTING (cont.)

**sam local start-api**
Serve the API on localhost:3000

**sam local generate-event** *<service> <event>*
Print a sample event

## DEPLOY

**sam deploy --guided**
Answer prompts, save samconfig.toml

**sam deploy**
Deploy using saved config

**sam deploy --no-confirm-changeset**
Skip the changeset prompt

**sam deploy --profile** *<profile>* **--region** *<region>*
Pick credentials and region

## SYNC & REMOTE

**sam sync --stack-name** *<name>* **--watch**
Auto-sync code and infra changes

**sam remote invoke** *<FunctionId>* **--stack-name** *<name>*
Invoke the deployed function

## LOGS & TRACES

**sam logs --stack-name** *<name>*
Fetch recent logs for the stack

**sam logs --stack-name** *<name>* **--tail**
Follow logs live

**sam logs -n** *<FunctionId>* **--stack-name** *<name>*
Logs for one function

## CONFIG & CLEANUP

**sam delete**
Delete the stack (prompts)

**sam** *<command>* **--help**
Show a command's options