



Apache Maven

Beginner to Guru

Maven Build Lifecycles



Maven Build Lifecycles

- Maven is based on the concept of build lifecycles
- A lifecycle is a pre-defined group of build steps called **phases**
- Each phase can be bound to one or more plugin **goals**
- Keep in mind all work done in Maven is done by plugins!
- Lifecycles and phases provide the framework to call plugin goals in a sequence





Maven Build Lifecycles

- Maven has three pre-defined lifecycles: **clean**, **default**, **site**.
- **Clean**
 - Does a clean of the project, removes all build artifacts from working directory
 - Defined with plugin bindings
- **Default**
 - Does the build and deployment of your project
 - Defined without plugin bindings, bindings are defined for each packaging





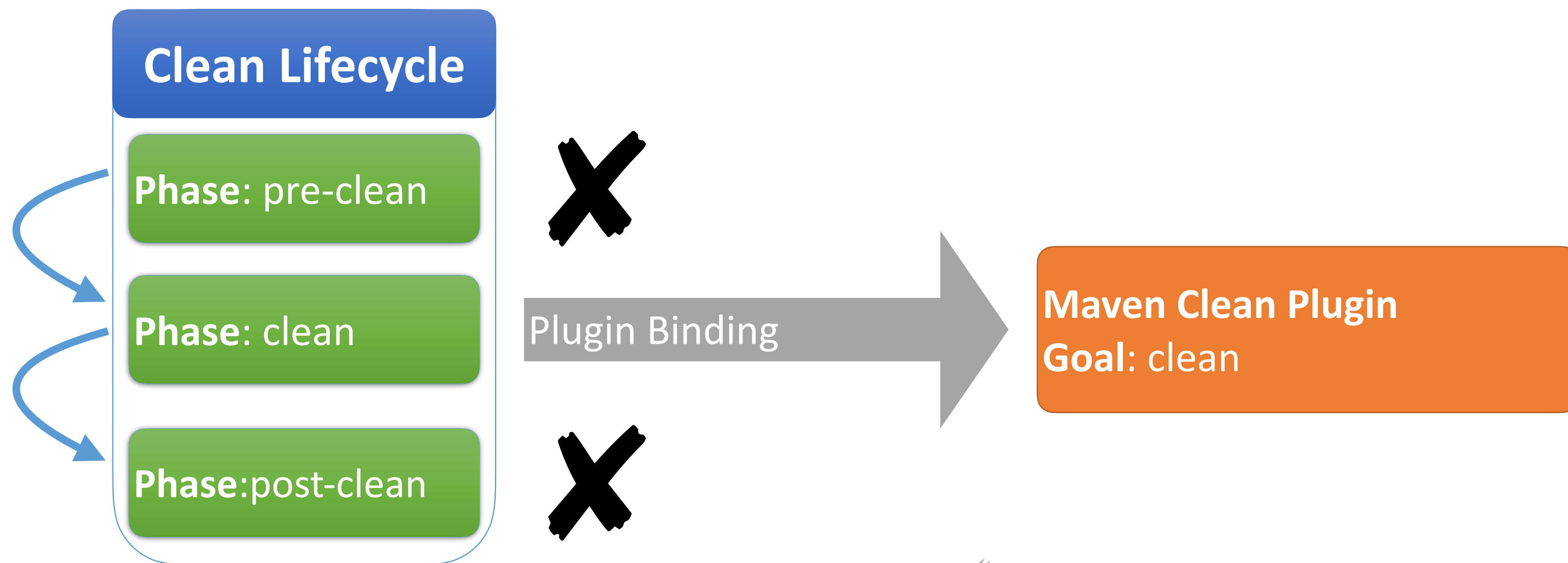
Site Build Lifecycle

- Site
 - Creates the a website for your project
 - Defined with plugin bindings
 - Least used in the enterprise
 - See any of the Maven websites for examples
 - All are built using the Maven site lifecycle.





Clean Lifecycle





Default Lifecycle - High-level

- **Validate** - Verify project is correct
- **Compile** - Compile Source Code
- **Test** - Test Compiled Source Code
- **Package** - Package compiled files to packaging type
- **Verify** - Run Integration Tests
- **Install** - Install to local Maven Repository
- **Deploy** - Deploy to shared Maven Repository





Default Lifecycle All Phases

- Validate
- Initialize
- Generate Sources
- Process Sources
- Generate Resources
- Process Resources
- Compile
- Process Classes
- Generate Test Sources
- Process Test Sources
- Generate Test Resources
- Process Test Resources
- Test Compile
- Process Test Classes
- Test
- Prepare Package
- Package
- Pre-Integration Test
- Integration Test
- Post Integration Test
- Verify
- Install
- Deploy





Default Lifecycle - JAR Packaging

- **Phase:** process-resources - **Plugin:** maven-resources-plugin : resources
- **Phase:** compile - **Plugin:** maven-compiler-plugin : compile
- **Phase:** process-test-resources - **Plugin:** maven-resources-plugin : testResources
- **Phase:** test-compile - **Plugin:** maven-compiler-plugin : testCompile
- **Phase:** test - **Plugin:** maven-surefire-plugin : test
- **Phase:** package - **Plugin:** maven-jar-plugin : jar
- **Phase:** install - **Plugin:** maven-install-plugin : install
- **Phase:** deploy - **Plugin:** maven-deploy-plugin : deploy





Site Build Lifecycle

- Site Lifecycle Phases
 - **Phase:** Pre-site - **Plugin:** none
 - **Phase:** Site - **Plugin:** maven-site-plugin : site
 - **Phase:** Post-site - **Plugin:** none
 - **Phase:** Site-Deploy - **Plugin:** maven-site-plugin : deploy



