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* [Groovy DSL Reference](http://docs.google.com/dsl/)
* [Gradle API Javadoc](http://docs.google.com/javadoc/)
* [Core Plugins](http://docs.google.com/userguide/plugin_reference.html)
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* [Plugin Development Guides](https://gradle.org/guides/?q=Plugin+Development)

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# Gradle Kotlin DSL

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| **💡** | If you are looking into migrating an existing build to the Gradle Kotlin DSL, please check out the [migration guide](https://guides.gradle.org/migrating-build-logic-from-groovy-to-kotlin/). |
| --- | --- |

[The kotlin-dsl plugin](#4d34og8)

When applied to a project, the kotlin-dsl Gradle plugin configures the project’s Kotlin source sets to enable Gradle Kotlin DSL features.

It is useful for all projects implementing build logic: [buildSrc](http://docs.google.com/organizing_gradle_projects.html#sec:build_sources), [included builds](http://docs.google.com/composite_builds.html#composite_builds) for build logic or [Gradle plugin](https://guides.gradle.org/designing-gradle-plugins/) builds.

The kotlin-dsl plugin can be applied as follows:

**buildSrc/build.gradle.kts**

plugins {  
 `kotlin-dsl`  
}  
  
repositories {  
 // The org.jetbrains.kotlin.jvm plugin requires a repository  
 // where to download the Kotlin compiler dependencies from.  
 jcenter()  
}

The kotlin-dsl plugin

* applies the [org.jetbrains.kotlin.jvm](https://kotlinlang.org/docs/reference/using-gradle.html#targeting-the-jvm) plugin,
* configures an embedded repository that contains all Kotlin libraries embedded with the Gradle Kotlin DSL, pins them to the embedded Kotlin version,
* adds the kotlin-stdlib-jdk8, kotlin-reflect and gradleKotlinDsl() dependencies to the compileOnly and testImplementation configurations,
* and, configures the Kotlin compiler with the same set of Kotlin compiler settings that is used for Gradle Kotlin DSL scripts.

| **⚠** | The kotlin-dsl plugin enables experimental Kotlin compiler features. See the [Kotlin compiler arguments](#2s8eyo1) section below for more information. |
| --- | --- |

By default, the kotlin-dsl plugin warns about using experimental features of the Kotlin compiler. You can silence the warning by setting the experimentalWarning property of the kotlinDslPluginOptions extension to false as follows:

**buildSrc/build.gradle.kts**

plugins {  
 `kotlin-dsl`  
}  
  
kotlinDslPluginOptions {  
 experimentalWarning.set(false)  
}

[Kotlin compiler arguments](#2s8eyo1)

These are the Kotlin compiler arguments used for compiling Gradle Kotlin DSL scripts and Kotlin sources and scripts in a project that has the kotlin-dsl plugin applied:

-jvm-target=1.8

Sets the target version of the generated JVM bytecode to 1.8.

-Xjsr305=strict

Sets up Kotlin’s Java interoperability to strictly follow JSR-305 annotations for increased null safety. See [Calling Java code from Kotlin](https://kotlinlang.org/docs/reference/java-interop.html#compiler-configuration) in the Kotlin documentation for more information.

-XX:NewInference

Enables the experimental Kotlin compiler inference engine (required for SAM conversion for Kotlin functions).

-XX:SamConversionForKotlinFunctions

Enables SAM (Single Abstract Method) conversion for Kotlin functions in order to allow Kotlin build logic to expose and consume org.gradle.api.Action<T> based APIs. Such APIs can then be used uniformly from both the Kotlin and Groovy DSLs.

As an example, given the following hypothetical Kotlin function with a Java SAM parameter type:

fun kotlinFunctionWithJavaSam(action: org.gradle.api.Action<Any>) = TODO()

SAM conversion for Kotlin functions enables the following usage of the function:

kotlinFunctionWithJavaSam {  
 // ...  
}

Without SAM conversion for Kotlin functions one would have to explicitly convert the passed lambda:

kotlinFunctionWithJavaSam(Action {  
 // ...  
})

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