



Version 1.10 offers compiler toolchain and performance improvements but no substantive language changes

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The team behind [Google's Go language](#), aka Golang, has released the release candidate of Go 1.10, the next version of the popular open source language.

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The new features in Google Go 1.10 beta

The upgrade offers compiler tool chain and performance improvements but no substantive language changes.

Expected to be available in a production version in February 2018, Go 1.10 now provides these key features in its release candidate:

- Improved performance of code generated by the compiler, spread across supported architectures.
- Programs should run a bit faster due to speedups in garbage collection, better code generation, and core library optimizations.
- Dwarf debug information in binaries has been improved, with constant values now recorded. Also, line-number information is more accurate.
- The linux/ppc64le port now needs external linking with any programs using the `cgo` command.

• The `go build` command detects out-of-date packages based on the content of build flags, and metadata in stored packages. Modification times are no longer relevant.

- The `go install` command now only installs packages and commands listed on the command line. To force installation of dependencies, developers should use the `go install -i` flag
- An update to the grammar for method expressions relaxes the syntax so any type expression is allowed as a receiver, thus matching how compilers already operated.
- Test results are now cached via `go test`.
- The Unicode package has been upgraded from Unicode 9.0 to version 10.0, adding 8,518 characters, including a bitcoin currency symbol and 56 emojis.

Where to download the Go 1.10 beta

You can download the release candidate of Go 1.10 from [the Go project site](#).

The new features in Google Go 1.9

Google released Go 1.9 in August 2017. Here's what is new and improved:

- Speedups in the garbage collector, better-generated code, and core library optimizations should make programs run a bit faster.
- The `math/bits` package offers optimized implementations to manipulate bits. Functions in this package are treated by the compiler as intrinsics to boost performance.
- The Go 1.9 compiler supports parallel compilation of functions in a package, leveraging multiple processor cores. Go 1.9 retains the previous versions' `go` command's support for parallel compilation of separate packages. Parallel compilation is on by default but can be disabled.
- For scalability, Go 1.9 adds support for type-alias declaration for code repair. A change to the Go language, type aliases support gradual code repair while moving a type between packages. It should aid code repair during large-scale refactoring,



moving a type from a package in a way that code referring to an old name still refers to the new name. Essentially, the introduction of type aliases provides a transition period in which the API is available from both new and old packages, making references to old and new versions interoperable.

- Go 1.9 adds transparent monotonic time support, which makes computing durations between two Time values a safe operation in the presence of wall-clock adjustments.
- Go 1.9 improves test helper capabilities, with new methods to mark the calling function as a test helper function.
- A new type in the sync package serves as a concurrent map with amortized-constant-time loads, stores, and deletes. Thus, multiple go routines can call a map's methods concurrently.

Paul Krill is an editor at large at InfoWorld, whose coverage focuses on application development.

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