

Getting started with Go

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About me



- gopher for ~3.5 years
- Go plugin for IntelliJ maintainer
- GoBridge Core Member - Workshop Logistics
- Open-Source contributor

What is Go?

What is Go?

"Go is an open source programming language that makes it easy to build simple, reliable, and efficient software."

golang.org (<https://golang.org>)

The Go Programming Language

Documents

Packages

The Project

Help

Blog

Search

Try Go

Pop-out

```
// You can edit this code!  
// Click here and start typing.  
package main  
  
import "fmt"  
  
func main() {  
    fmt.Println("Hello, 世界")  
}
```

Hello, World!

Run

Share

Tour

Go is an open source programming language that makes it easy to build simple, reliable, and efficient software.



Download Go

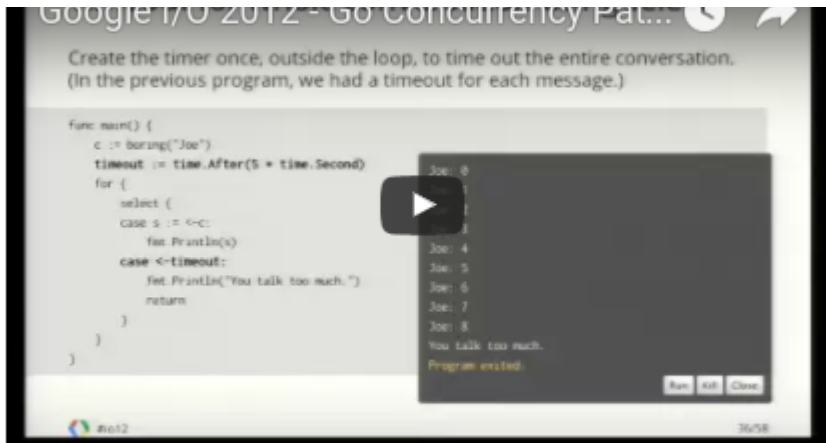
Binary distributions available for Linux, Mac OS X, Windows, and more.

Featured video



Featured articles

Smaller Go 1.7 binaries



Go was designed for writing servers. That is how it is most widely used today, and as a result a lot of work on the runtime and compiler is focused on issues that matter to servers: latency, ease of deployment, precise garbage collection, fast startup time, performance.

Published 18 August 2016

Go 1.7 is released

Today we are happy to announce the release of Go 1.7. You can get it from the [download page](#). There are several significant changes in this release: a port for [Linux on IBM z Systems](#) (s390x), compiler improvements, the addition of the [context](#) package, and support for [hierarchical tests and benchmarks](#).

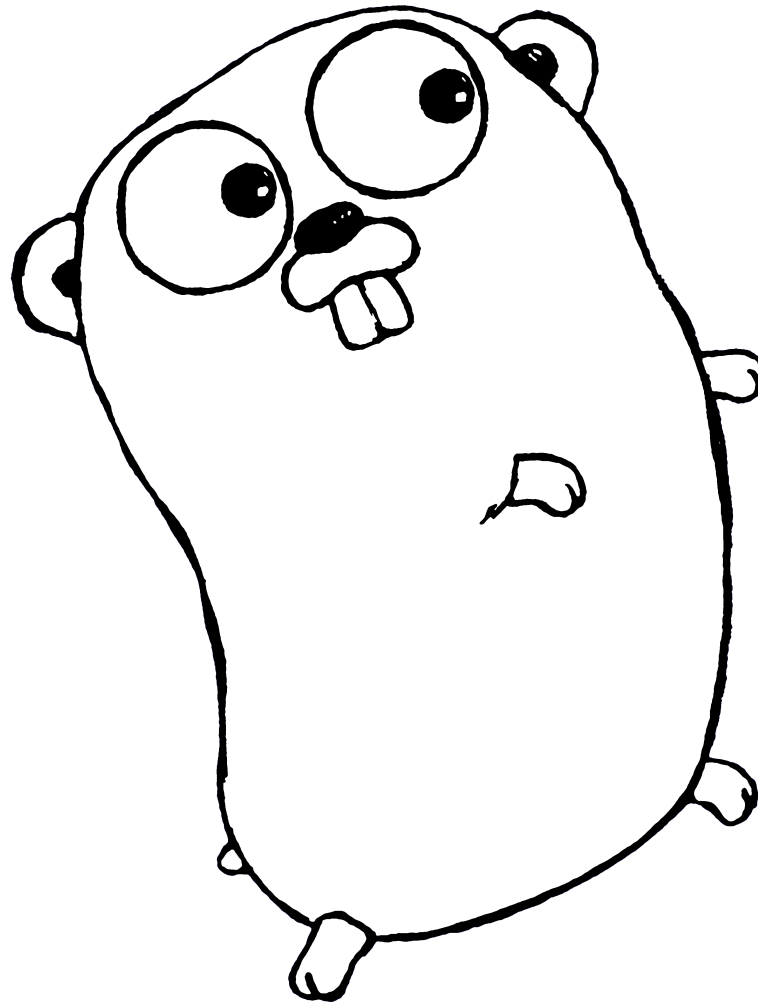
Published 15 August 2016

What is Go for me?

- Go makes programming fun (again)
- allows me to focus on the algorithm rather than how to implement the solution
- mature community, growing at a good rate

Why should you learn Go?

Great mascot



Copyright Renee French

Join the Go side



Copyright "someone from the Internet"

If you are new to programming

- Go is much simpler than many other languages
- the syntax is not in your way
- introduces the advanced concepts of concurrency w/o the usual overhead
- exposure to how parts of the computer work

Disclaimer

Depending on your goals, Go might not be the very best language to learn as a beginner. Languages such as Python or even Javascript might be more suitable.

If you know dynamic programming languages

- type safety at compile time
- syntax that sometimes feels like a dynamic language
- simple and fast build system
- much faster than the others (almost always)
- single binary to deploy = love from your ops team

If you know C/C++/Java

- fast compiler even with large projects
- simplified syntax that allows you to focus on solving the problem
- compiles to native code, cross-compiles to other OS-es (when possible)
- can interact with C code via CGO
- can be compiled to a binary with no external dependencies

If you are as an Ops person...

The main reason would be: better tools.

- replace your complex bash scripts with testable Go apps
- write tools that help you create / maintain infrastructure
- write tools that help you simulate protocols interactions: github.com/adrianco/spigo
(<https://github.com/adrianco/spigo>)
- all the new tools such as Docker, Kubernetes, CloudFoundry etc are written in Go

Go features

Go features

- easy to read / write
- statically typed
- garbage collected
- fast to compile
- concurrency is baked into the language
- functions are first class citizens
- composable types
- interfaces satisfied implicitly
- return multiple values
- produces a single executable
- cross platform, natively compiled

Go supported platforms

android/amd64	
android/arm	netbsd/arm
android/arm64	openbsd/386
darwin/386	openbsd/amd64
darwin/amd64	openbsd/arm
darwin/arm	plan9/386
darwin/arm64	plan9/amd64
dragonfly/amd64	plan9/arm
freebsd/386	solaris/amd64
freebsd/amd64	windows/386
freebsd/arm	nacl/arm
linux/386	netbsd/386
linux/amd64	netbsd/amd64
linux/arm	
linux/arm64	
linux/mips64	
linux/mips64le	
linux/ppc64	
linux/ppc64le	
linux/s390x	
nacl/386	
nacl/amd64p32	

Oh and Javascript via GopherJS

Go's missing features

- generics
- overloads
- implicit type conversions

Go tooling

Go tooling

- goimports (or gofmt)
- golint and govet
- go-staticcheck (or gometalinter)
- guru
- [Go Playground](https://play.golang.org) (https://play.golang.org)
- etc.

Write your own tools using go/ast package

Go editors

- IntelliJ IDEA (or any JetBrains IDE), including the free Community Edition
- VSCode
- emacs
- Atom
- vim
- LiteIDE
- Sublime 3
- many others

Is it production ready?

Users of Go out there

- Google
- CloudFlare
- Canonical (Ubuntu)
- Microsoft, Facebook, AWS, Heroku
- Rkt, Docker, Kubernetes
- Almost all HashiCorp tools

List of Go users github.com/golang/go/wiki/GoUsers (https://github.com/golang/go/wiki/GoUsers)

Some success stories github.com/golang/go/wiki/SuccessStories (https://github.com/golang/go/wiki/SuccessStories)

Probably your are using Go w/o knowing

The maturity of the eco-system

A lot of libraries are very stable and battle tested

Go favors composition thus gophers are focusing on making interchangeable libraries

Concrete examples of mature libraries

To create a web app all you need is the standard library.

However, if you want to add some convenience:

- gorilla/mux or httprouter (to handle the routing)
- sqlx (for SQL database interaction)
- go-mysql-driver / libpq
- logrus or gokit/kit/log
- gokit to enable overall better app design

The Go Community

Go Code of Conduct

Go has a Code of Conduct which enables gophers to be safe and welcomed in any official Go environment as well as places which choose to adhere to it.

golang.org/conduct (<https://golang.org/conduct>)

Go Mailing Lists

We have a mailing list for general questions or Go related things

groups.google.com/forum/#!forum/golang-nuts (<https://groups.google.com/forum/#!forum/golang-nuts>)

We also have a mailing list for development of Go itself

groups.google.com/forum/#!forum/golang-dev (<https://groups.google.com/forum/#!forum/golang-dev>)

Go Forum

forum.golangbridge.org (<https://forum.golangbridge.org>)

Go Forum

all categories

Latest

New (25)

Unread

Top

Categories

+ New Topic

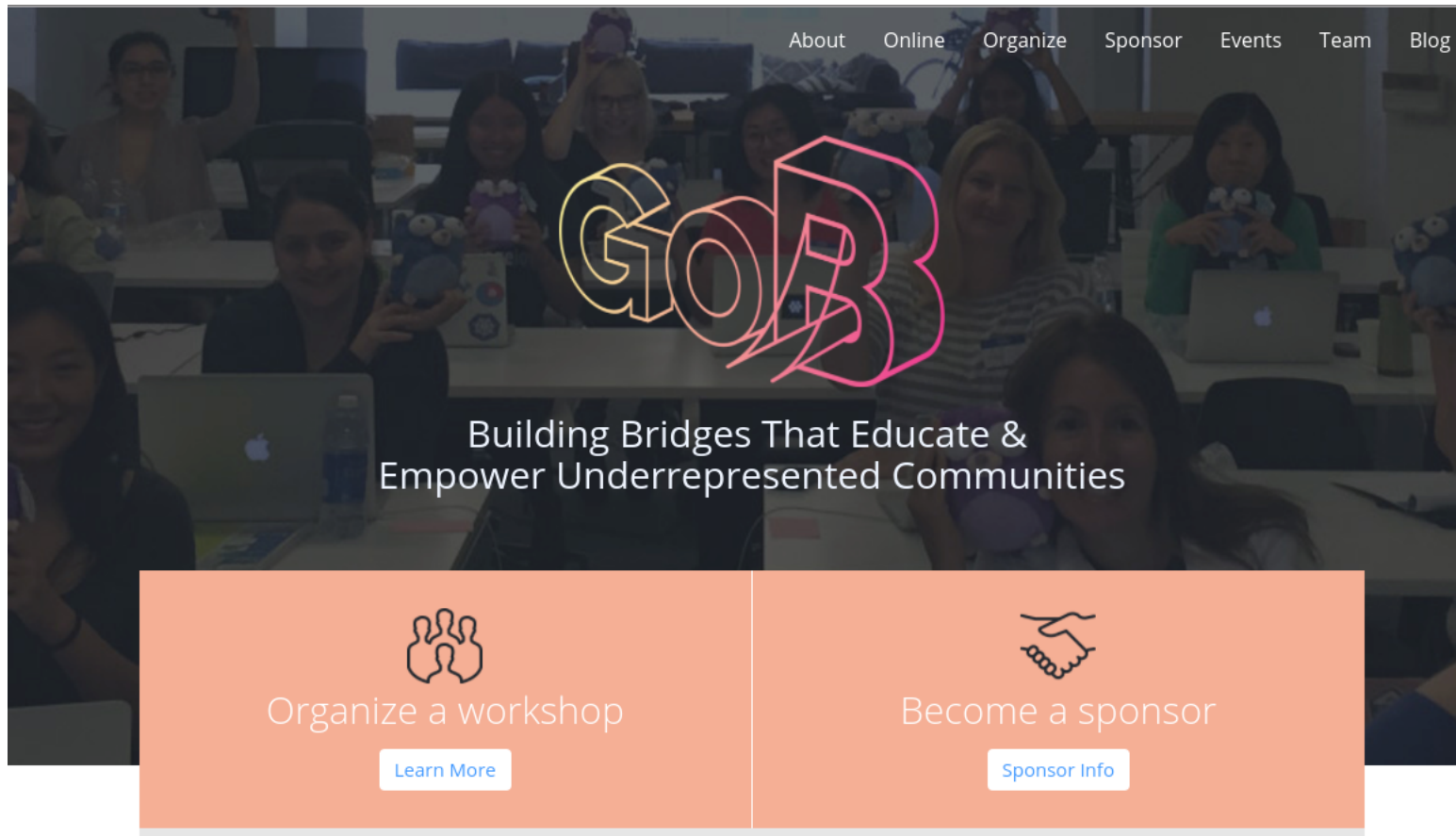
Topic	Category	Users	Replies	Views	Activity
<div><div><div><div></div><div></div></div><div>Welcome to the Go Forum</div></div><div>Welcome to the Go Forum! This is a place for people who use the Go programming language or want to learn more about it. We hope you'll participate with us. Here you'll find: Go questions and answers, Discussions and... read more</div></div>	<div><div></div><div>Site Feedback</div></div>	<div><div></div><div></div></div>	1	2.7k	Sep '15
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<div><div><div><div></div><div></div></div><div>How is implicit better than explicit interface implementation? new</div></div></div>	<div><div></div><div>Technical Discussion</div></div>	<div><div>2</div><div></div></div>	2	48	3h
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<div><div><div><div></div><div></div></div><div>Install Go on OS X without escalated privileges? new</div></div></div>	<div><div></div><div>Getting Help</div></div>	<div><div>J</div><div></div><div></div><div></div><div></div></div>	8	48	7h
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<div><div><div><div></div><div></div></div><div>Locales - a set of locales generated from the CLDR Project which can be used independently or within an i18n package new</div></div></div>	<div><div></div><div>Releases</div></div>	<div><div></div></div>	0	21	1d

Slack

gophers.slack.com (https://gophers.slack.com)

- over 10500 Gophers (growing at a rate of ~150 gophers / week)
- one of the largest known open Slacks for programmers
- gophers from everywhere in the World
- usually most questions are answered in real-time by always friendly gophers
- governed by an enhanced CoC, GoBridge specific

Invites: <https://invites.slack.golangbridge.org> (https://invites.slack.golangbridge.org)



About Us

GoBridge is the newest member of the [BridgeFoundry](#) umbrella organization. We build bridges to educate underrepresented communities to teach technical skills and to foster diversity in Go.

Core mission

Our core mission is to enable minorities in tech to use Go as a tool to learn and teach programming and, ultimately, to empower underrepresented groups in tech to help increase diversity in the Go community.

Core vision

We believe education is most effective when it is tailored to and provided by local communities. We are dedicated to growing and supporting local teams of individuals and companies who will have ownership in the work they do.

GoBridge

Core mission

Our core mission is to enable minorities in tech to use Go as a tool to learn and teach programming and, ultimately, to empower underrepresented groups in tech to help increase diversity in the Go community.

GoBridge

How do we do this?

- create safe spaces where everyone is welcomed
- organize workshops
- remote meetups
- write training material
- teach the teachers / organizers
- try and connect organizers with sponsors

Resources

Official

The language tour: tour.golang.org (<https://tour.golang.org>)

Official:

- golang.org/doc/code.html (<https://golang.org/doc/code.html>) - to learn how to organize your Go workspace
- golang.org/doc/effective_go.html (https://golang.org/doc/effective_go.html) - be more effective at writing Go
- golang.org/ref/spec (<https://golang.org/ref/spec>) - learn more about the language itself
- golang.org/doc/#articles (<https://golang.org/doc/#articles>) - a lot more reading material
- blog.golang.org (<https://blog.golang.org>) - the Go blog

And you can find even more material here: github.com/golang/go/wiki (<https://github.com/golang/go/wiki>)

Websites

There are some awesome websites as well:

- blog.gopheracademy.com (<https://blog.gopheracademy.com>) - great resources for Gophers in general
- gotime.fm (<http://gotime.fm>) - awesome weekly podcast of Go awesomeness
- gobyexample.com (<https://gobyexample.com>) - examples of how to do things in Go
- go-database-sql.org (<http://go-database-sql.org>) - how to use SQL databases in Go
- gophervids.appspot.com (<http://gophervids.appspot.com>) - list of Go related videos from various authors

Blogs, social media & meetups

- Peter Bourgon [@peterbourgon](https://twitter.com/peterbourgon) - peter.bourgon.org/blog
- Carlisia Campos [@carlisia](https://twitter.com/carlisia)
- Dave Cheney [@davecheney](https://twitter.com/davecheney) - dave.cheney.net
- Jaana Burcu Dogan [@rakyll](https://twitter.com/rakyll) - golang.rakyll.org
- Jessie Frazelle [@jessfraz](https://twitter.com/jessfraz) - blog.jessfraz.com
- William "Bill" Kennedy [@goinggodotnet](https://twitter.com) - www.goinggo.net
- Brian Ketelsen [@bketelsen](https://twitter.com/bketelsen) - www.brianketelsen.com/blog

List of Go meetups go-meetups.appspot.com

- Women Who Go Berlin www.meetup.com/women-who-go-berlin
- [@WWGBerlin](http://www.meetup.com/women-who-go-berlin) (2nd largest in the world)

- GDG Berlin Golang www.meetup.com/golang-users-berlin (<https://www.meetup.com/golang-users-berlin>) -
[@GDGBerlinGolang](https://twitter.com/GDGBerlinGolang) (<https://twitter.com/GDGBerlinGolang>) (7th largest Go meetup in the world)

Books

- The Go Programming Language www.gopl.io (<http://www.gopl.io>)
- Go In Action www.manning.com/books/go-in-action (<https://www.manning.com/books/go-in-action>)

For more books, see: github.com/golang/go/wiki/Books (<https://github.com/golang/go/wiki/Books>)

Final thoughts

What is Go?

- a general purpose cross-platform programming language
- optimized for readability and maintenance (and speed)
- it's particularly good for networking, service side long running processes and tools
- great in 80% of the times for 100% of those tasks

Conclusion

Why should you learn Go?

- because it's easy, fun yet very powerful even with all it's quirks
- it will make you rethink the way you program in other languages
- it will save you some money from running servers
- it has a great community and a bright future ahead

Thank you

24 Oct 2016

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<http://github.com/dlsniper> (http://github.com/dlsniper)

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