minikube

bringing k8s to the next billion users

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● Personal Context
● The role of a programmer
● Who are the next billion?
● Why do the next billion matter?
● What is minikube?
● How can we help the next billion?
历史
川托马斯？
“the programmer delivers satisfaction of a user need rather than any tangible product.”

人月神话
successful software *adapts* to the needs of users.

successful adaptation requires *empathy*. 
Tools to gather empathy:

- Surveys
- User journeys
- GitHub Issues

But what if like me, users are too embarrassed to speak?
Next billion?

43% of the world did not use the Internet last year

source: https://www.internetworldstats.com/stats.htm
The next billion users do not speak English.
The next billion users do not have **Gigabit Ethernet**...

but, the average speed is surprisingly good.

Source: https://en.wikipedia.org/wiki/List_of_countries_by_Internet_connection_speeds
The next billion users are not Linux experts.
A substantial portion of the next generation will be inspired to become programmers.
How do we adapt Kubernetes to make it applicable to the next billion users?

Empathy and accessibility.
You should not have to learn English to use the Internet.

You should not have to learn English to use Kubernetes.
If we fail to make Kubernetes accessible globally, we will end up with splintered solutions for managing compute resources.
Be the virtuous cycle
Of users install minikube to learn Kubernetes.
$ export LANG=zh_CN.UTF8

$ minikube start \
   --image-mirror-country=cn \
   --container-runtime=crio
Kubernetes features that fit

- NodePorts
- Ingress
- LoadBalancer
- DNS
- Runtimes
- Persistent Volumes
- ConfigMaps
- Secrets
- Dashboard
- RBAC
Causes of Friction

As with all things human, most software friction is due to a series of simple misunderstandings.
Meet users where they are.

- Language
- Environment
- Documentation
- Skill Level
Language

- Localized command-lines
- Localized documentation
- Localized feedback
- **We need help!**
```go
func inspectFile(e *state) error {
    fset := token.NewFileSet()
    r, err := ioutil.ReadFile(e.filename)
    if err != nil {
        return err
    }
    file, err := parser.ParseFile(fset, "", r, parser.ParseComments)
    if err != nil {
        return err
    }

    ast.Inspect(file, func(x ast.Node) bool {
        if fi, ok := x.(ast.File); ok {
            e.currentPackage = fi.Name.String()
            return true
        }

        if fd, ok := x.(ast.FuncDecl); ok {
            setParentFunc(e, fd.Name.String())
        }
    })
}
```
"Configuring environment for Kubernetes %s on %s %s": "Configurant l'environnement pour Kubernetes %s sur %s %s",
"Creating %s VM (CPUs=%d, Memory=%dMB, Disk=%dMB) ...": "Créant un VM %s (%s) avec %d CPU, %d MB de mémoire et %d MB de disque",
"Done! kubectl is now configured to use %q": "Fini! kubectl est maintenant configuré pour utiliser %q",
"Launching Kubernetes ... ": "Lançant Kubernetes ...",
"Pulling images ...": "Extrait les images ...",
"Waiting for SSH access ...": "Attendant l'accès SSH ...",
"minikube %s on %s (%s)": "minikube %s sur %s (%s)"
Networking Environment

- Offline mode: ~/.minikube/cache
- --image-mirror-country
  - Automate?
- Need to move release ISO to GitHub
- Improved proxy support
System Environment

- **Windows** as a first-class OS
  - A much higher market share outside of the US
- **HyperV & WSL2** as first-class solutions
System Environment

- VM-free
  - Improving on the “none” driver
  - Deploy to Docker or Podman
  - Goal: Kubernetes in 15 seconds
  - Prototyping using kind
Documentation

- Documentation drives adoption
- Hugo-based doc site coming soon
- Help wanted
  - Translators
  - Tech Writers for PR review
Skill Level

- **Actionable errors**
  - Point users to docs or issues
- **Single-step install**
  - Less involvement = less toil
- **No flags required**
Unsolicited Advice
Users!

- Overcome your embarrassment
- Badly translated inputs are better than no inputs
- Project owners have it in their best interest to have your help
Projects!

- The project with the most inclusive community wins
- Onboarding is as important as coding
- Gather Empathy: Surveys, Journeys
- Ignore the next billion at your peril
Come join us!

- [github.com/kubernetes/minikube](https://github.com/kubernetes/minikube)
- Slack: #minikube
- WeChat: thomstrom
- Twitter: tstomberg
- Non-English speakers welcome!
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