MAGIC OF THE **NEW ZABBIX AGENT**

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ZABBIX SUMMIT '19

WHAT IS ZABBIX AGENT?

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Zabbix Agent

- Is a daemon, that gathers metrics locally from the OS
- Available for UNIX-like and Windows operating systems
- Low resource consumption.
- Can customize time intervals with a help of Flexible/Scheduled intervals option

What Zabbix Agent can gather?

- Disk statistics, NIC statistics...
- Memory consumption, CPU usage...
- Generic metrics like hostname or OS release
- Listening port state

What Zabbix Agent can gather?

- Read logs or simple file contents
- Read Windows event logs
- Gather stats from a friendly Zabbix Server/Proxy
- and more (Read The Lovely Manual!)

Still not enough? Hungry for more?

Can be extended using

- Custom modules
- User Parameters
- system.run [*]

Custom modules – coding jedies!

- As fast as native Zabbix Agent me
- But learn how to C

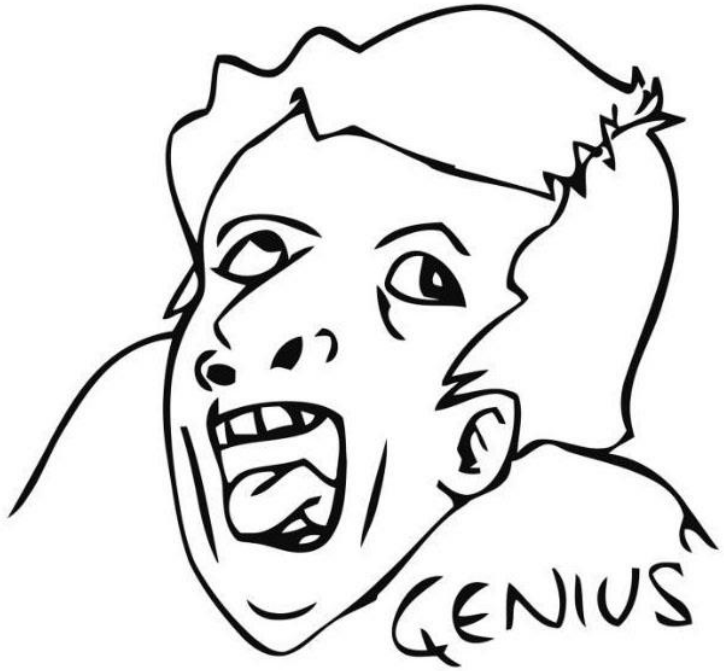
```
main {
 printf("How to C learn, young padawan!")
}
```

User Parameters – scripting ninja!

- Can run any command respecting Zabbix Agent user privileges
- Runs as fork
- Better to be Active

User Parameters

```
UserParameter=awesome.command, sleep 45 &&
echo "I'm a scripting genius!"
```



system.run[*] – simple yet powerful!

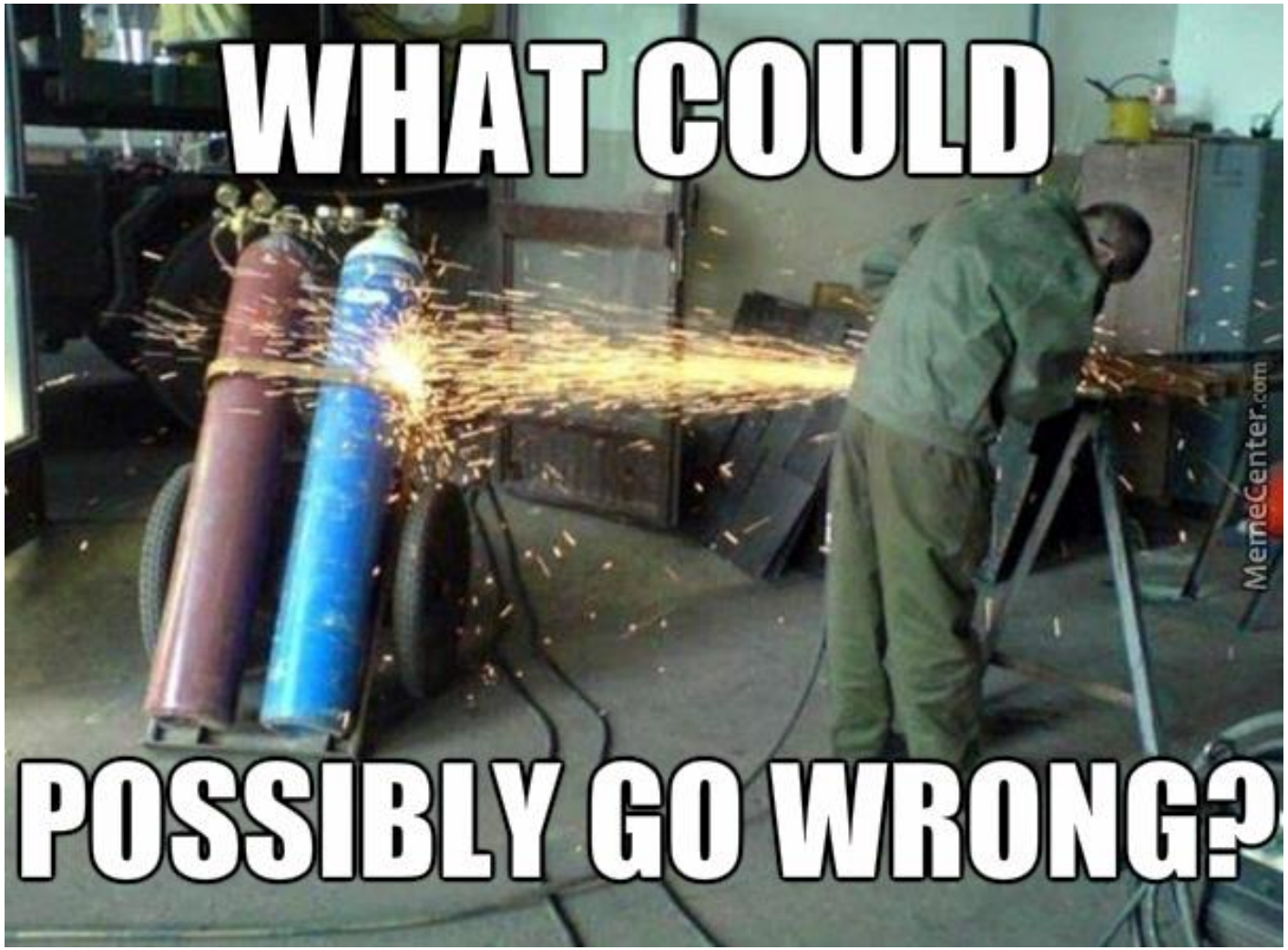
- No need to worry if UserParameter line or if file had been deployed to the config
- No need to restart Zabbix Agent if you like to change command
- "With great power comes great responsil

system.run[*]

- Server=0.0.0.0/0
- EnableRemoteCommands=1
- LogRemoteCommands=0
- User=root
- AllowRoot=1

- shell> iptables -F
- shell> systemctl stop firewalld
- shell> setenforce 0

system.run[*]



CURRENT CHALLENGES

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Limitations of current Zabbix Agent

- Lack of ability to receive 3rd party traps
- No Scheduled/Custom intervals for Active checks
- One active checks process for each Zabbix Server/Proxy record.
- Not everybody wants to learn/knows C language

MEET THE BRAND NEW AGENT

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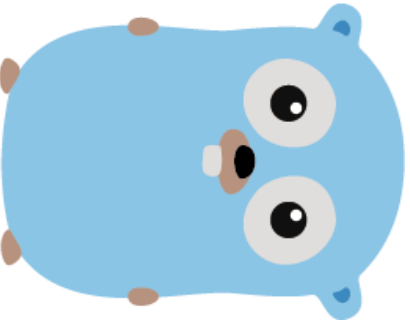
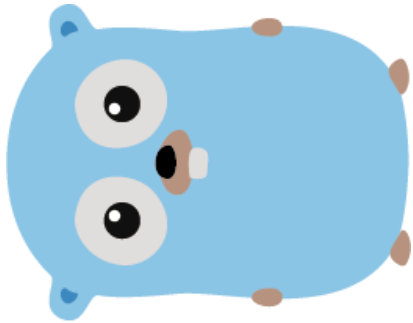
Yes, NEW!

- It’s not **C** anymore
- It’s **Go**!





Why Go?

- Compile into a single binary and deploy!*
- In our days Go is one of the most popular development languages
- A little bit easier than C.

*dependency limitations may apply in certain variations

Limitless Zabbix Agent 2

- Scheduled/Flexible intervals for both types of checks
- Support of older .conf file
- Multiple parallel log file reading
- systemd monitoring out of the box!
- Timeouts implemented on plugin level

Components

- Connector:
  - Manages communication with server
  - Item configuration
  - Metrics buffer
  - 1 connector per 1 ServerActive

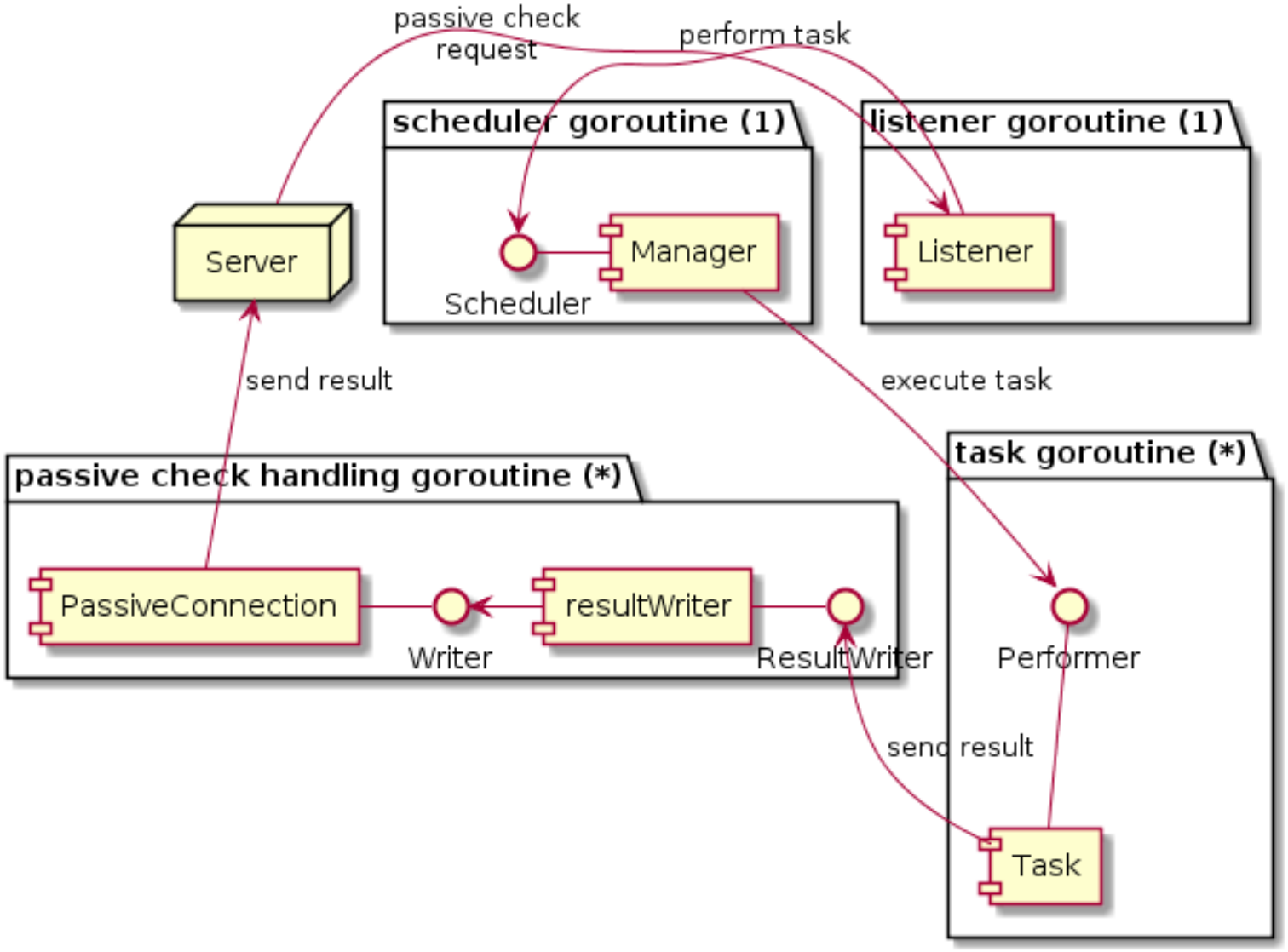
Components

- Listener
  - Accepts passive requests and forwards them to scheduler

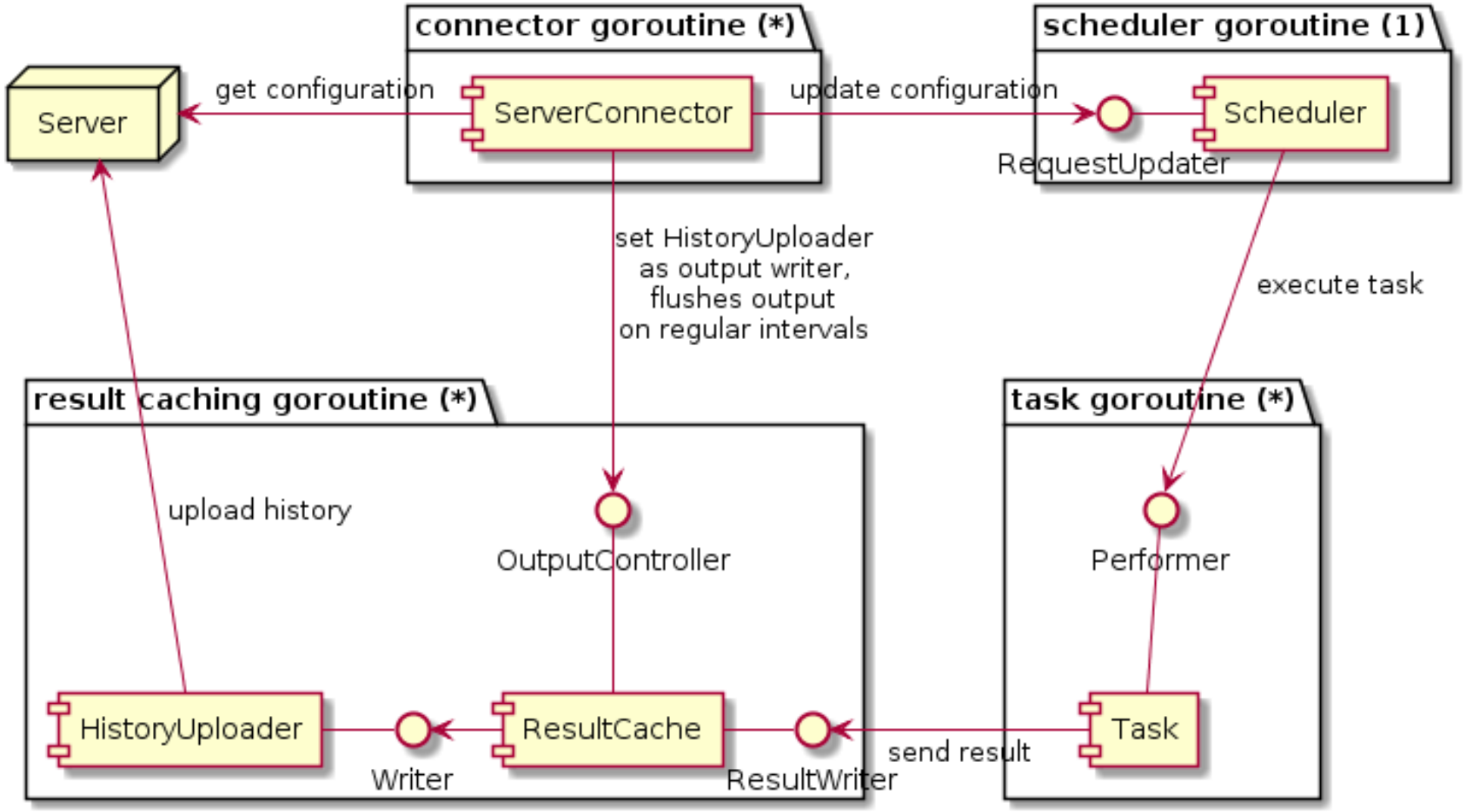
Components

- Scheduler
  - Manages the task queue respecting schedule and task concurrency
  - Only one Scheduler per agent

Passive checks

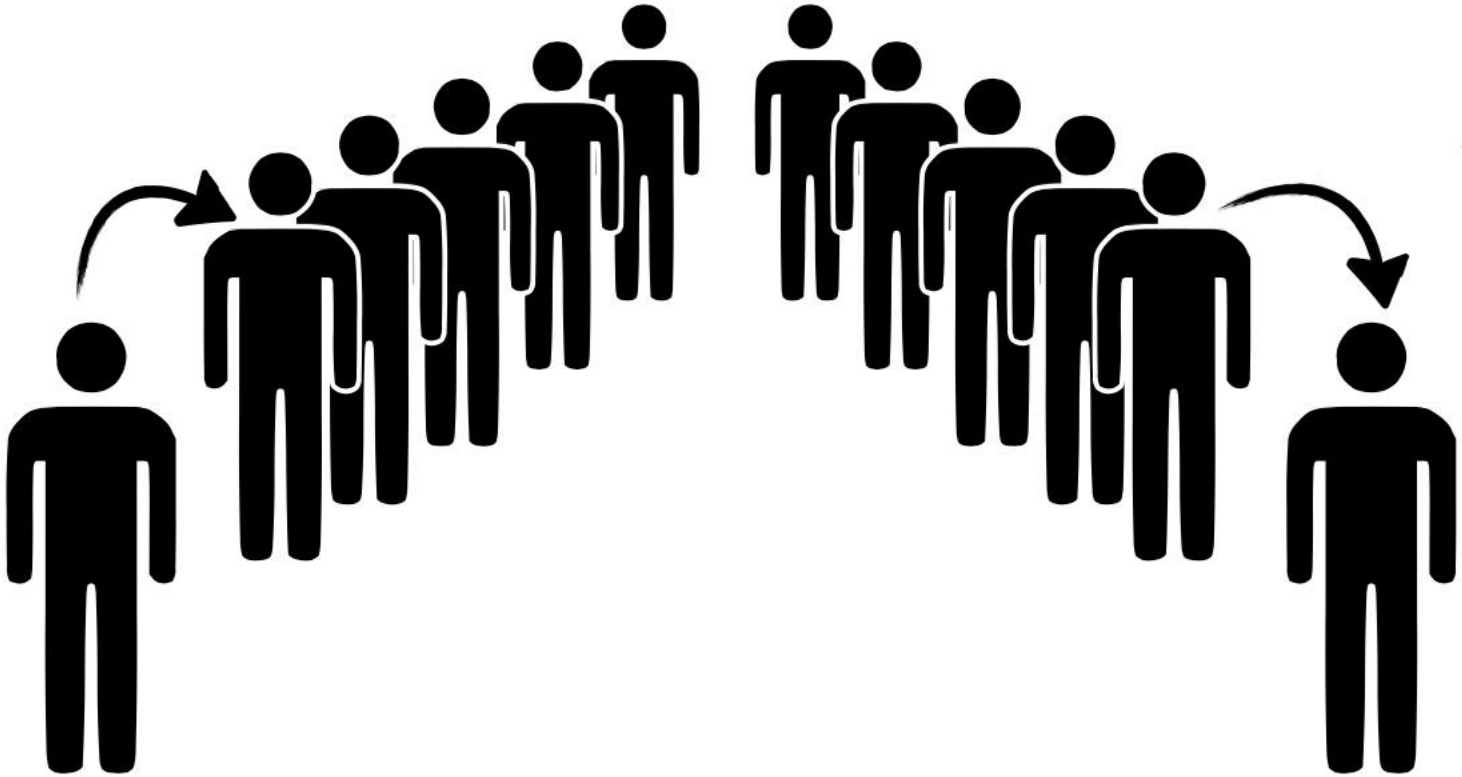


Active checks



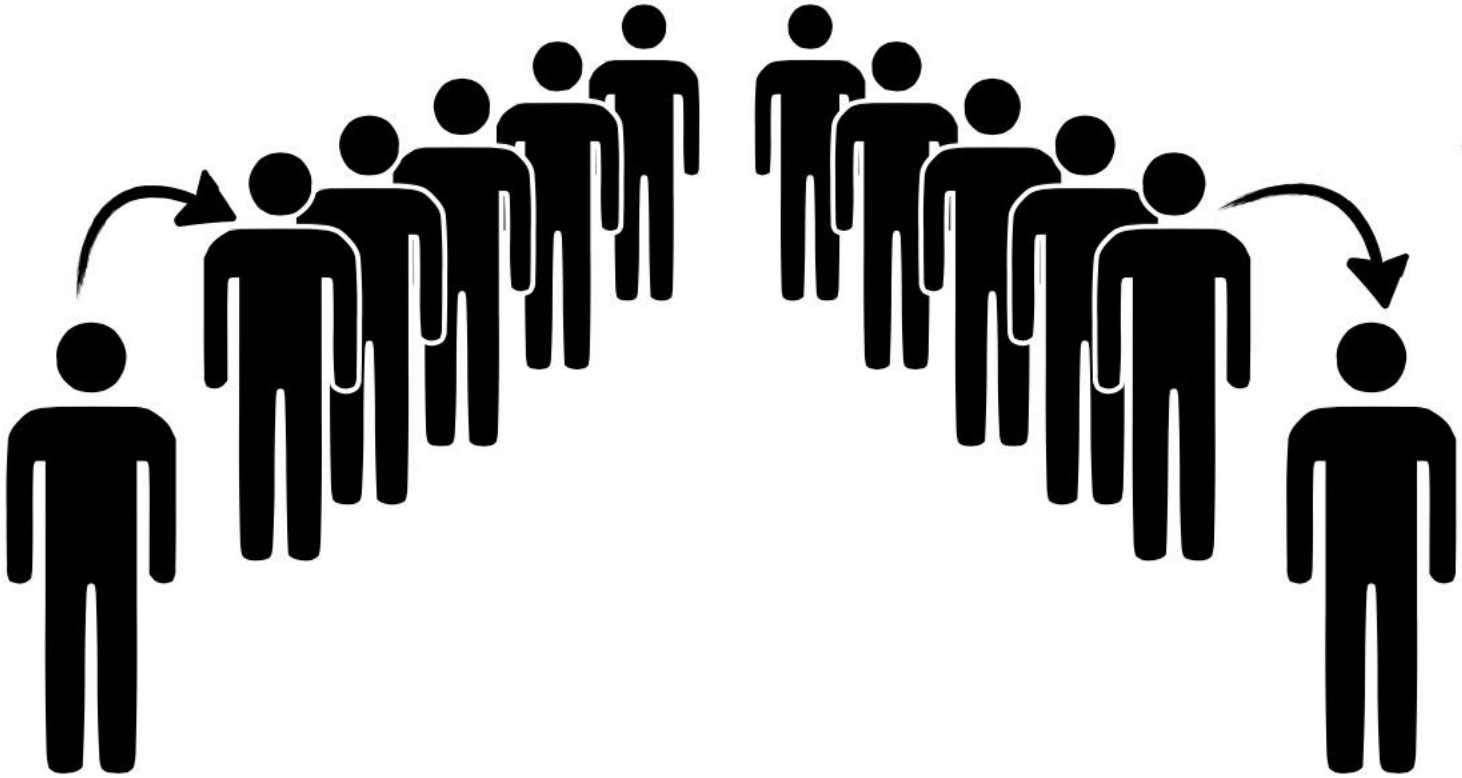
Queue the task

- Two level queue:
  - Each plugin has a queue of the requested check
  - Scheduler has a queue of active plugins



Queue the task

- When a task cannot be executed because of concurrency limits the plugin is taken from scheduler queue and returned only when next task can be executed.



IT'S ALL ABOUT THE PLUGINS

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brand new means BRAND NEW!

- It’s not just “yet another Zabbix Agent”!
- It’s the whole new **platform**!

Everyone is a Dev right now

- Writing your own plugins for Zabbix Agent never been that easy.
- Multiple plugin interfaces for different types of tasks.

Framework for every purpose.

- Exporter
- Runner
- Watcher
- Collector

Exporter

- Performs poll and returns:
  - nothing
  - an error
  - single/multiple values

Watcher

- Allows to implement your own gathering method.
  - Listen to a specific port.
  - Good for supporting different trap-based communication methods

Collector

- Use it when you need to gather data on a regular basis. For example, CPU related metrics.

Runner

- For example plugin could start/stop some background goroutine by implementing Runner interface.

Just Go with it

1. Write the code

```
return string("Hello World!")
```

2. Register the metric

```
plugin.RegisterMetrics(&impl, "HelloWorld","helloworld", "My hello to the World!")
```

3. Place your plugin into the source folder
4. Add your plugin to the list

```
_ "zabbix/plugins/helloworld"
```

5. Compile

```
./configure --enable-agent2 && make install
```

6. Run and reuse your old .conf file

```
package helloworld
import (
        "zabbix/pkg/plugin"
)
type Plugin struct {
    plugin.Base
}
var impl Plugin


func (p *Plugin) Export(key string, params []string, ctx plugin.ContextProvider) (result
interface{}, err error) {

        return string("Hello World!"),nil
}
func init() {
    plugin.RegisterMetrics(&impl, "helloworld", "helloworld", "My hello to the World!")
}
```

Availability

- Named as Zabbix Agent 2
- 4.4 – experimental, 5.0 – production ready
- Currently only Linux-like systems.
- Zabbix Agent 2 for Windows – already in development!
- Documentation - coming soon. Checkout our git!

https://git.zabbix.com

TUTIN', ROOTIN', PLUGIN BOOTIN'

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Who? What? Where?

- Date: 11.10.2019
- Time:
  - Session 1: 8:30 AM
  - Session 2: 9:30 AM

What should I bring?

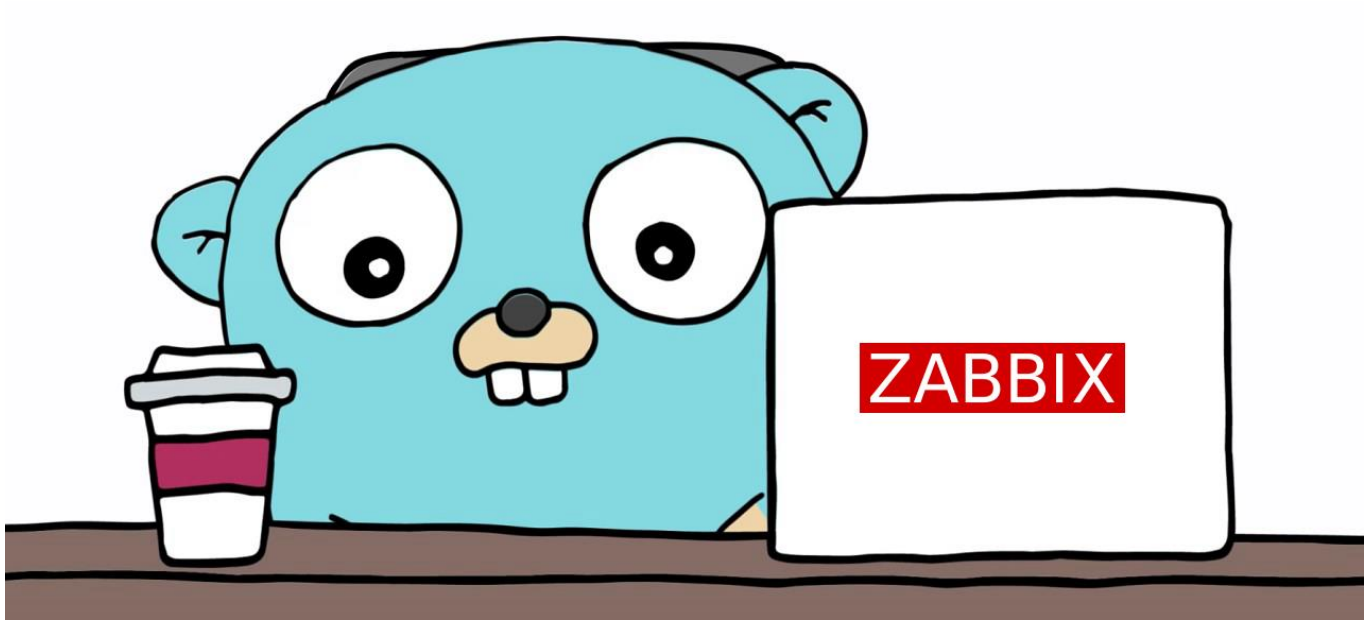
- Yourself ;)
- Awesome mood is a must!
- Mad skils are welcome but not mandatory
- Laptop with Zabbix Appliance

Our plan

- We will not learn Go, sorry :D
- To build a very simple yet functional Go plugin for brand new Zabbix Agent!

Our goal

- Make it work!
- Have fun!



THANK YOU!

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