Expecto patronum!

can a gopher save you from ./dementor.sh ?
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About this

Disclaimer

- Ich bin "IT-Klempner"
- "Beware of the dragons"

Me. Bewaring of dragons.

Die Patientenakte

- Frontend in .js

- Backend in C++/QT

- Dazwischen eine json API

- Ganz unten "Sedimente"

Why not .sh?

Pop quiz

- ${#data[*]} vs ${data[@]} vs ${func}

- (${versions//:/ })

- $((...))

Evidence A

the famous emoji loop..

```
1. array=(${versions//:/ })
2. for i in "${!array[@]}"; do
3.     # show options
4.     echo -e "\t$(($i+1)))\t${array[i]}" >&2
5. done
```

- Code Sieht *immer* komisch aus

- Wir haben noch *nicht* über json gesprochen

Verdict

Ron Weaseley: Doesn't like what I did there.

Evidence B

"smart" code..

```
1.  newFile=$(mktemp)
2.  func=$(openssl -rand base64 6)
3.  echo "#!/bin/bash" > $newFile
4.  echo "function "$(echo $func)" () {" >> $newFile
5.  echo "    /usr/bin/rsync "$backupCommand >> $newFile
6.  echo '    return $?' >> $newFile
7.  echo "}" >> $newFile
8.  . $newFile
9.
10. logMsg="Starting: "$func
11. echo $logMsg >> $logFile
12.
13. ${func}
14. rc=$?
```

Don't try this at home

Verdict

Dumbledore: Not impressed.

ja, aber legacy code...

We analysed more than 40 000 000 questions and answers on stackoverflow.com (https://stackoverflow.com/) to bring you the top of most mentioned books (5720 in total)

How we did it:

- We got database dump of all user-contributed content on the Stack Exchange network (can be downloaded here (https://archive.org/details/stackexchange))
- Extracted questions and answers made on stackoverflow
- Found all amazon.com links and counted it
- Created tag-based search for your convenience
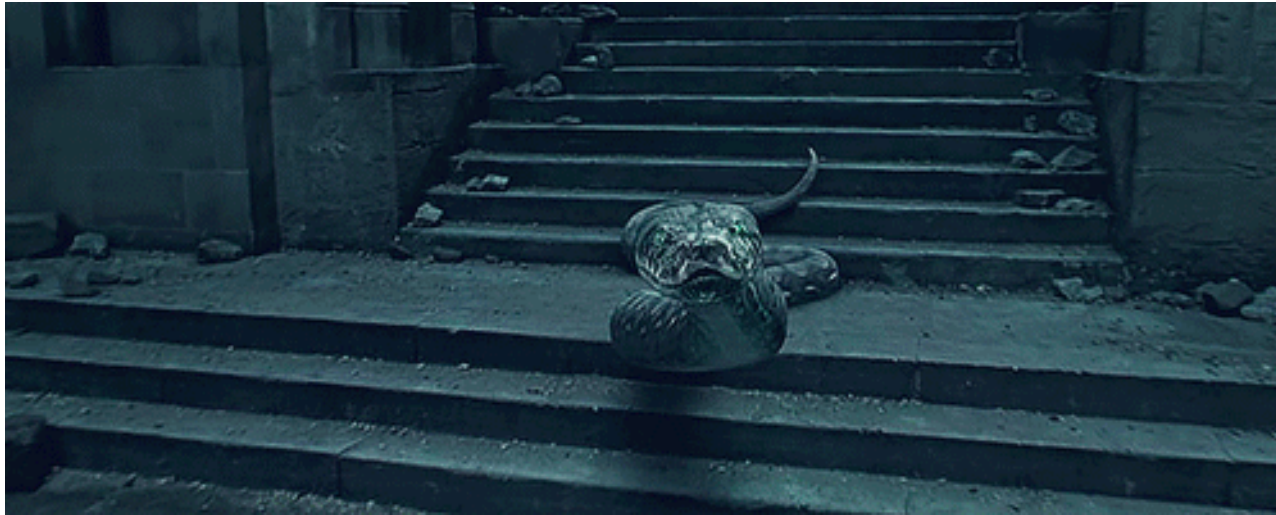- Brought it to you

For any feedback, any questions, any notes or just for chat - feel free to follow us on social networks

Ok, what about .py?

Python...

- Distributionen interpretieren "python" als python2 oder python3 (warum auch nicht?)

- Das gleiche gilt für "pip"

- Insgesamt schadet das der ...vorhersehbarkeit...

- Packaging (macht *nie* Spaß..)

Außerdem...

Snake collaborates with You-Know-Who

Einige Beispiele in go

Redirection Service

Those are not the URLs you're looking for

Überblick

- Domain only kaufen & Weiterleitung schalten
- API generiert config files
- Nginx im "Sedimentbereich"

Technik

- Warten auf inotify Event
- Config validierung (nginx -t) & nginx reload
- ... endlich eine Ausrede für inotify :)

How to inotify

```
88  func watch(dir string) {
89      watcher, _ := fsnotify.NewWatcher()
90      defer watcher.Close()
91      done := make(chan interface{})
92      go func() {
93          for {
94              select {
95              case event := <-watcher.Event:
96                  if event.IsCreate() {
97                      log.Println(label.Info + " New file: " + event.Name)
98                      process(event.Name)
99                  }
100             case err := <-watcher.Error:
101                 log.Println(err)
102             }
103         }
104     }()
105
106     watcher.Watch(dir)
107     log.Println(label.Info + " Startup done. Waiting for events")
108     <-done
109 }
```

Run

Demo

SSH "Jails"

... und die Gefangenen von hosting.de

- SSH Client kommt an Webserver an

- Server Startet Jail (oder benutzt vorhandenes)

- Client Appariert in Jail (wir schubsen)

- Kunde macht Dinge

```
curl -sSk https://example.com/secure-installer.sh | bash
```

- Kunde loggt sich aus

Problem: Zu viele container
Lösung: Weniger container

Jail janitor

Not a picture of *Cpt. Obvious*

Cleaning up...

```go
// Scan the dbus for running processes by pre- and suffix
func (s *SystemdUnit) Scan() error {
    defer s.setState()
    s.LastScan = time.Now()
    c, err := dbus.New()
    if err != nil {
        // we cannnot get a dbus connection
        s.Errors = append(s.Errors, err)
        return err
    }
    defer c.Close()
    units, err := c.ListUnitsFiltered([]string{"active", "loaded"})
    if err != nil {
        s.Errors = append(s.Errors, err)
        return err
    }
    for _, u := range units {
        if strings.HasPrefix(u.Name, s.Prefix) && strings.HasSuffix(u.Name, s.Suffix) {
            s.Units = append(s.Units, u)
        }
    }
    return nil
}
```

Honorable mentions

DHCP Server

- JSON REST API

- PXE -> Live Image (rescue oder install)

OS Installer

- JSON REST API

- Live Image holt Config und Daten aus API ab

- Prozess logging / Status report

- Neue VM in 30 Sek.

Managed Server Installer

- Ansible as an API

- Neuer Webserver in ~15 Minuten

- Inklusive Monitoring & Backup

Upcoming

- Mailfilter?

- SSH-Key Management?

- ...

Questions?

Thank you

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