



### JENS NEUHALFEN



### FROM PASSWORD TO KEY

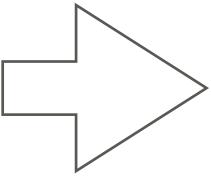
### SLEEP BETTER WITH CONTENT ENCRYPTION

## 128 bit key





## password





- A random password has
  - ~ 6 bits per character (\*)
- A 128 bit key needs >= 21 character passwords

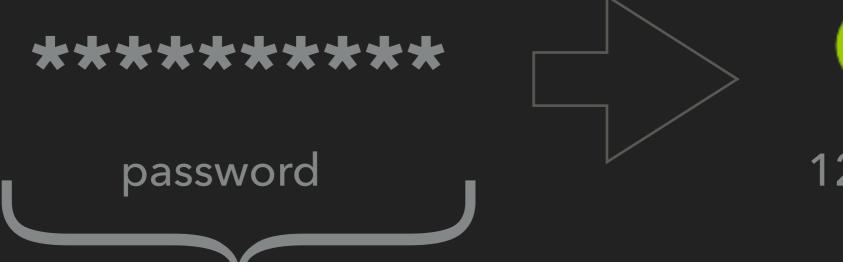
(\*) a-zA-Z0-9  $\rightarrow$  ~64 different values per character (2^6). A 128 bit passwords must be  $\Rightarrow$  21 characters long (128/6)

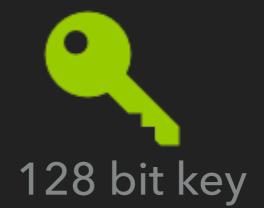
# Secure passwords are very long

### JENS NEUHALFEN

## FROM PASSWORD TO KEY







aw92SDAVglkqusabvgw38



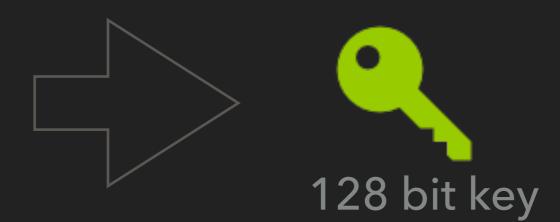
- ▶ 128 bit
- 308uGsdA
  - 8 chars, 48 bit (cracked in hours to days)

### FROM PASSWORD TO KEY









- A random password has
  - ~ 6 bits per character (\*)
- ► A 128 bit key needs >= 21 character passwords

## Secure passwords are very long