



**RUNTIME CHANGES
ARE THE WEEDS
KILLING YOUR CROPS**

PROGRAMMATICALLY GENERATED IMAGES

- PGI TOOLCHAIN (WORK IN PROGRESS, TBR OPEN SOURCE)
- DEVELOPED AT LINDEN LAB
- 10K MACHINES INFRA WITH COMPLEX SERVICES
- ROLLOUT HARDER THAN DEVELOPMENT, HUGE MIND-SHIFT AND
YET **HUGE WIN**



AGENDA

- WHY? PGI'S FUNDAMENTAL POSTULATE
- A FARM IS A FARM
- IMAGE BASED SYSTEMS
- THE PEOPLE FACTOR



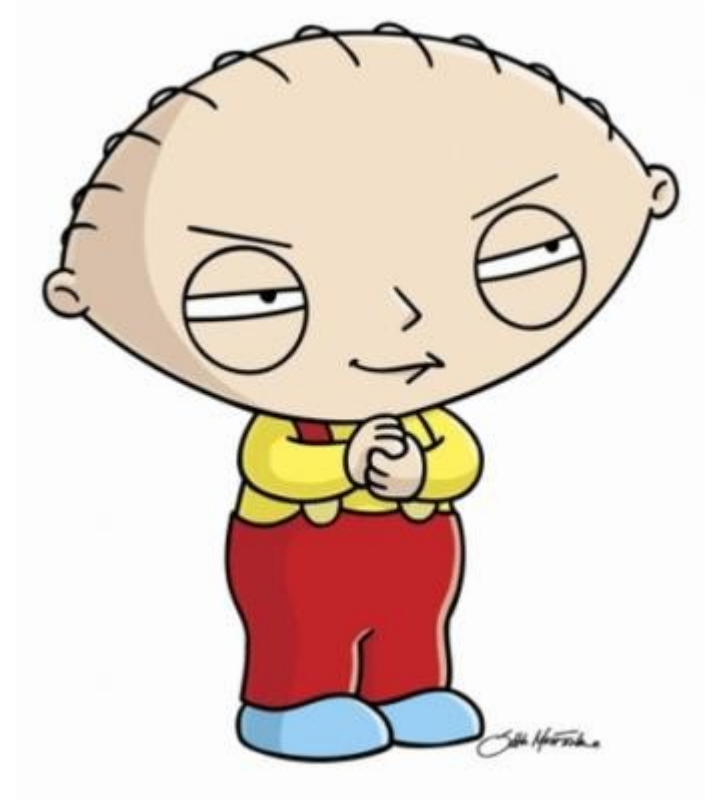
THE POSTULATE

RUNTIME =



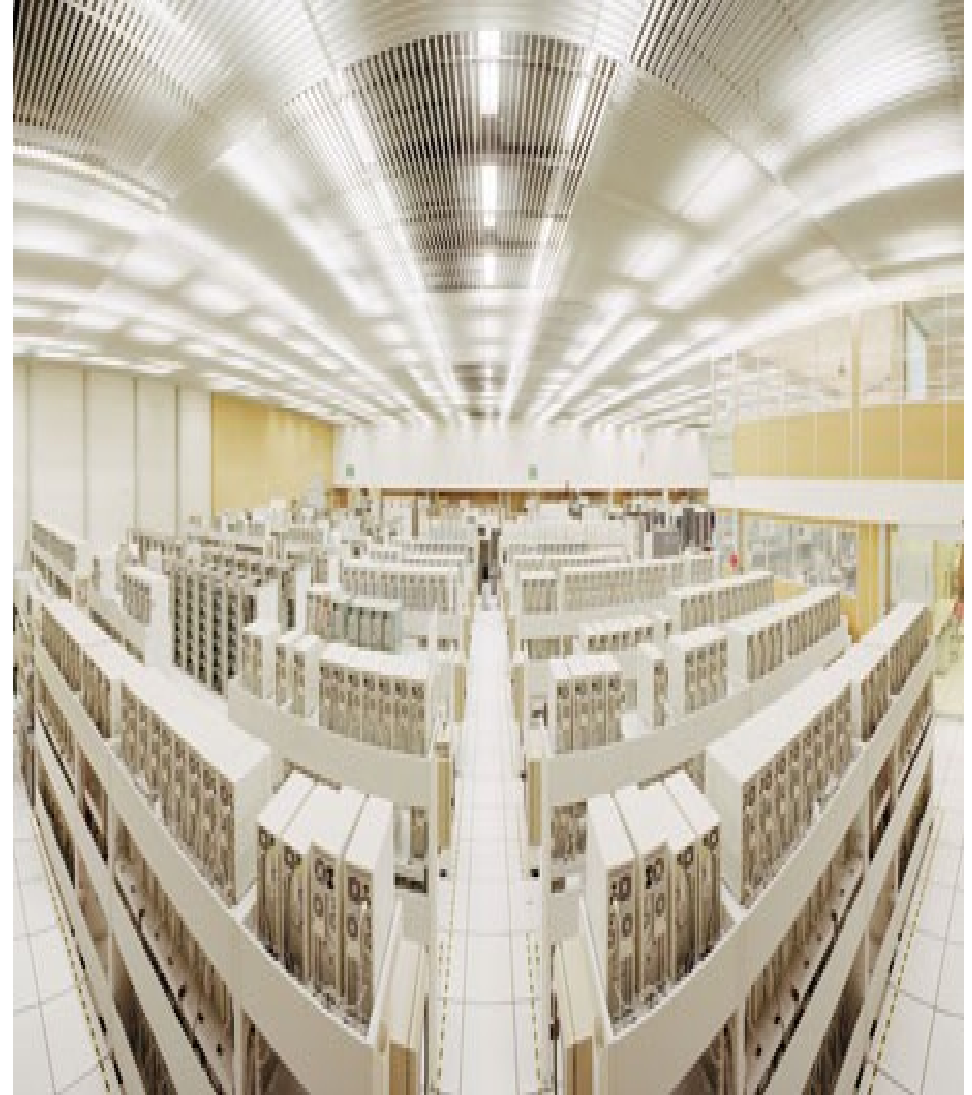
**CHANGES AT
RUNTIME**

=



BUT THINGS GOTTA RUN

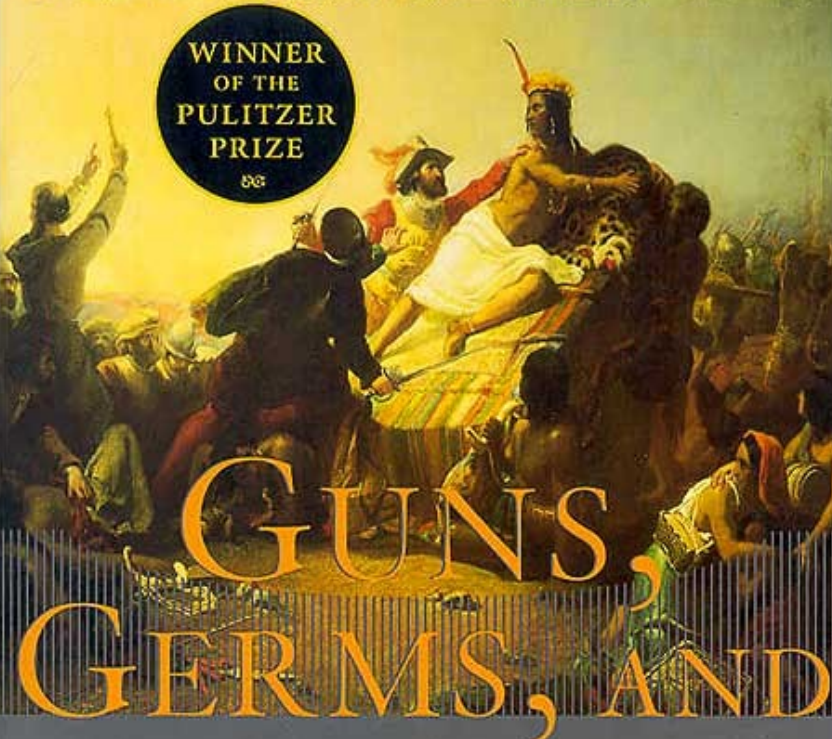
A FARM IS A FARM...



NEW YORK TIMES BESTSELLER

"The scope and the explanatory power of this book are astounding." —*The New Yorker*

WINNER
OF THE
PULITZER
PRIZE

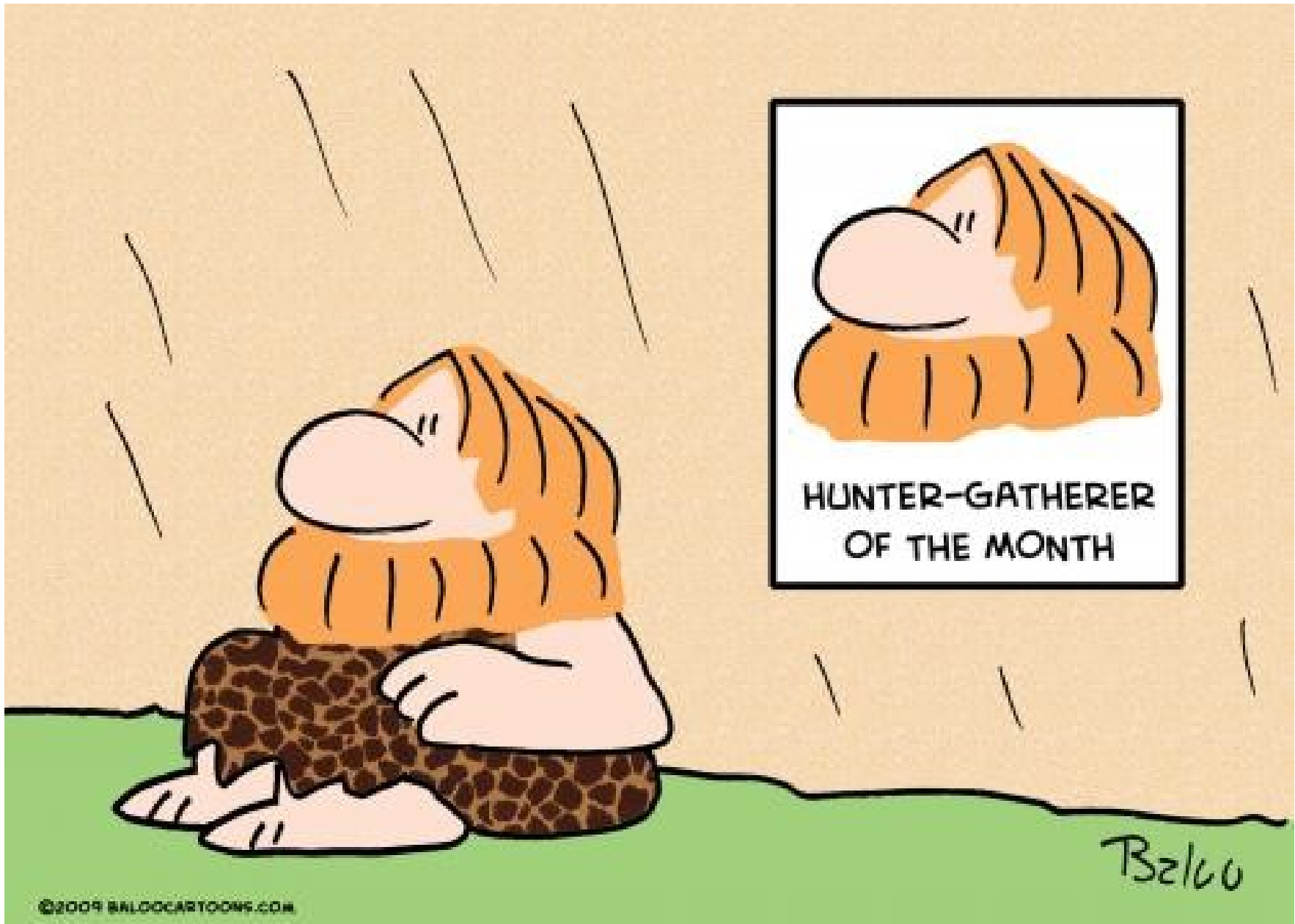


GUNS, GERMS, AND STEEL

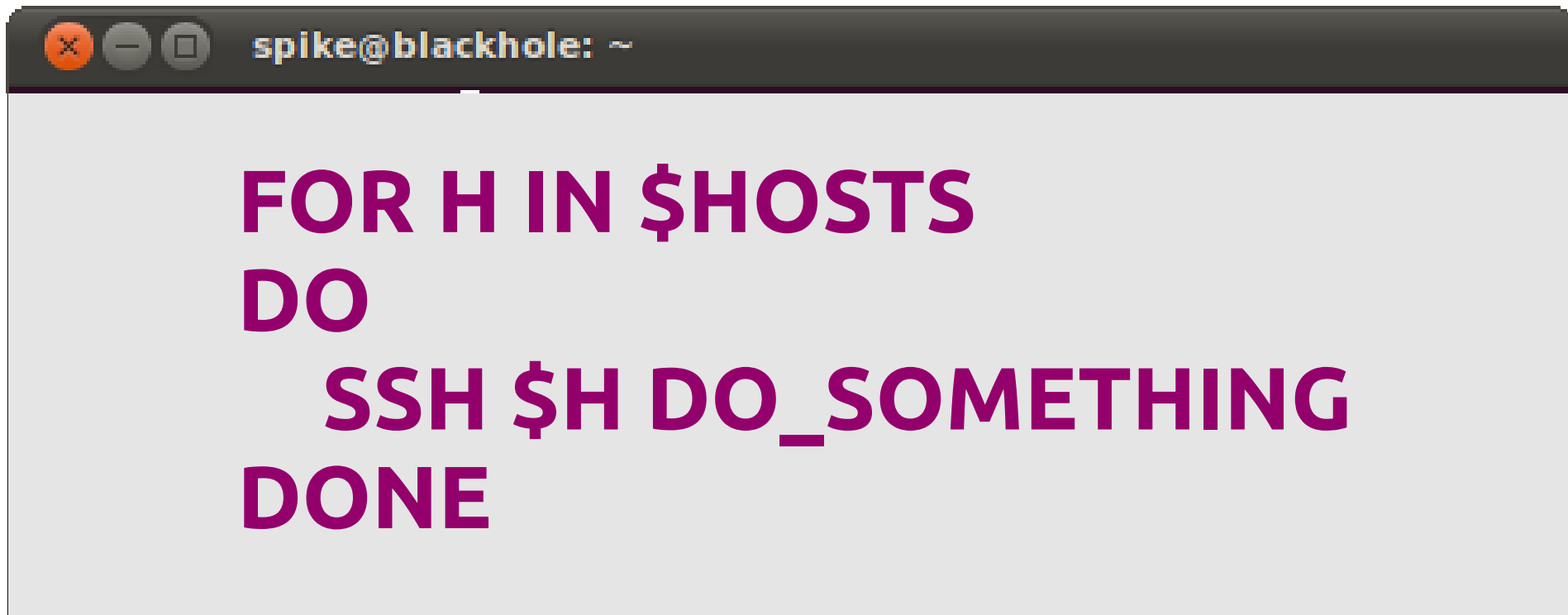
The FATES of HUMAN SOCIETIES

JARED DIAMOND

WITH A NEW AFTERWORD ABOUT THE MODERN WORLD



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A terminal window with a dark grey title bar containing three window control buttons (close, minimize, maximize) and the text "spike@blackhole: ~". The main area of the terminal is light grey and contains a shell script snippet in purple text.

```
FOR H IN $HOSTS
DO
    SSH $H DO_SOMETHING
DONE
```





PEST CONTROL



**RUNTIME
CHANGES**

(we don't even have a pic for it)

PEST CONTROL IN A COMPUTER FARM

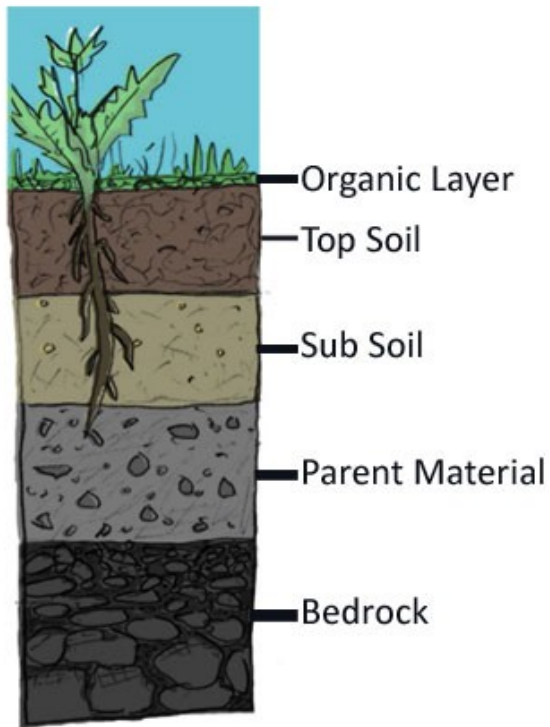


RUNTIME CHANGES

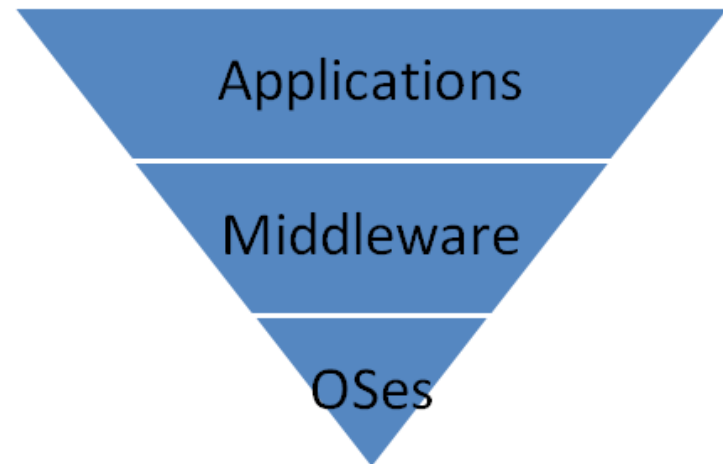
-
- CI
 - TDD
 - QA

→ ?

ABOUT ABSTRACTION AND RUNTIME

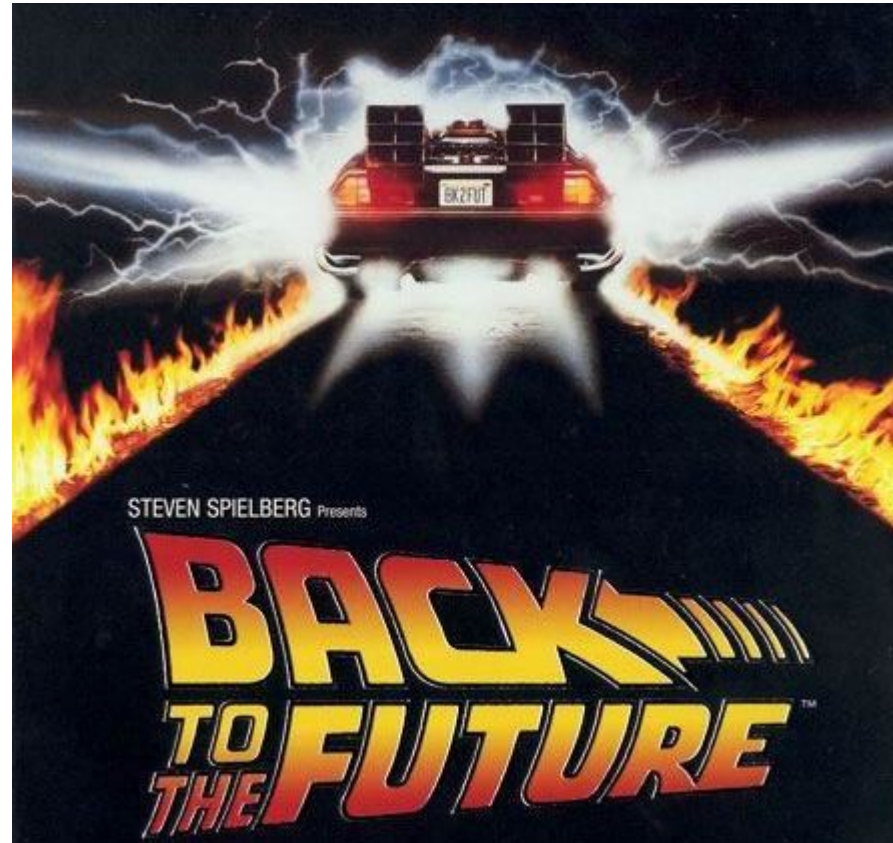


VS



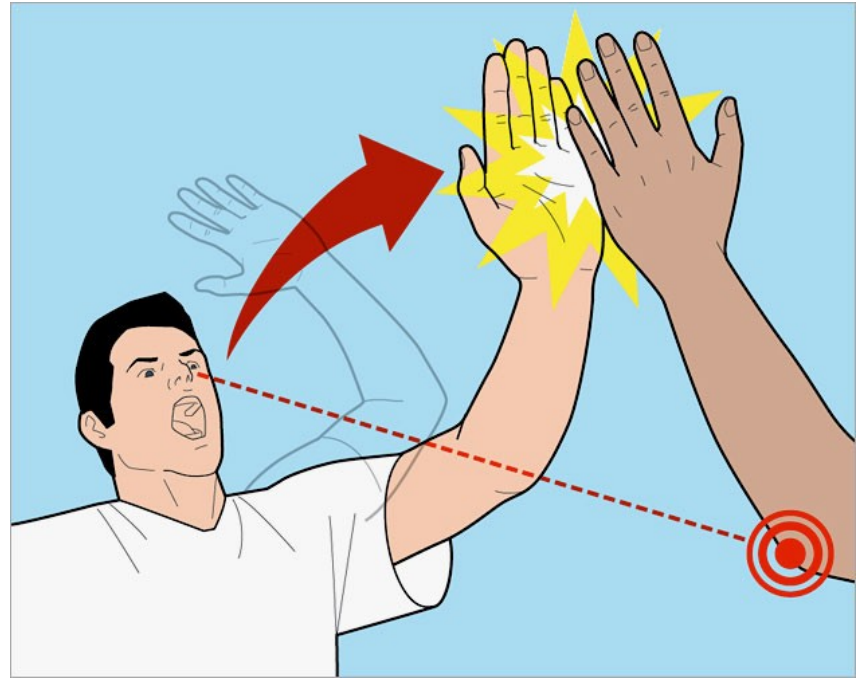
IF A PICTURE IS WORTH A THOUSAND WORDS
THEN A SYSTEM IMAGE IS WORTH A
THOUSAND RUNTIME CHANGES

IMAGE BASED INFRASTRUCTURES



**SOUNDS VERY 1980
BUT WORKS VERY 2010**

HOW TO



- IF YOU EVER INSTALLED AN OS AND CUSTOMIZED IT YOU ALREADY KNOW HOW TO BUILD IMAGES
- **ONCE YOU HAVE BUILT AN IMAGE YOU ARE NOT ALLOWED TO MAKE CHANGES TO IT**

CONFIG FILES vs DATA

`listen_on = xx.xx.xx.xx:yy`

ADVANTAGES

- FORCES YOU TO THINK STATELESS (GREAT TO SCALE)
- BEST REPEATABILITY YOU'LL EVER GET
- HIGHLIGHTS DEPENDENCIES LIKE NOTHING ELSE
- BRINGS PEOPLE TOGETHER
- IT'S A WET DREAM FOR ANYBODY DOING COMPLIANCE STUFF



PAIN POINTS

- IT'S HARD FOR PEOPLE TO DO THE MIND-SHIFT
- QUITE A BIT OF WORK TO ADAPT SERVICES TO RUN THAT WAY
- DATABASES ARE AS USUAL A TOUGH CUSTOMER
- ADDITIONAL INFRA REQUIRED FOR FASTER DEPLOYMENTS

DEVELOPERS LOVE IT

- FINALLY *"IT WORKS ON MY LAPTOP"* IS A VALID STATEMENT
- NO MORE GOING NUTS AFTER INCONSISTENCY BETWEEN ENVIRONMENTS
- EASIER TO DO INTEGRATION TESTS
- HAVE AS MANY DIFFERENT ENVIRONMENT AS YOUR MACHINE CAN RUN

CI AND RELEASES

- CONTINUOUS IMAGES^W INTEGRATION
- TEST YOUR OS
- ON BARE METAL OR EC2
- ONE SINGLE PROCESS TO RELEASE THE ALL



PEOPLES' FRONT OF DEVOPS

CONWAY'S LAW

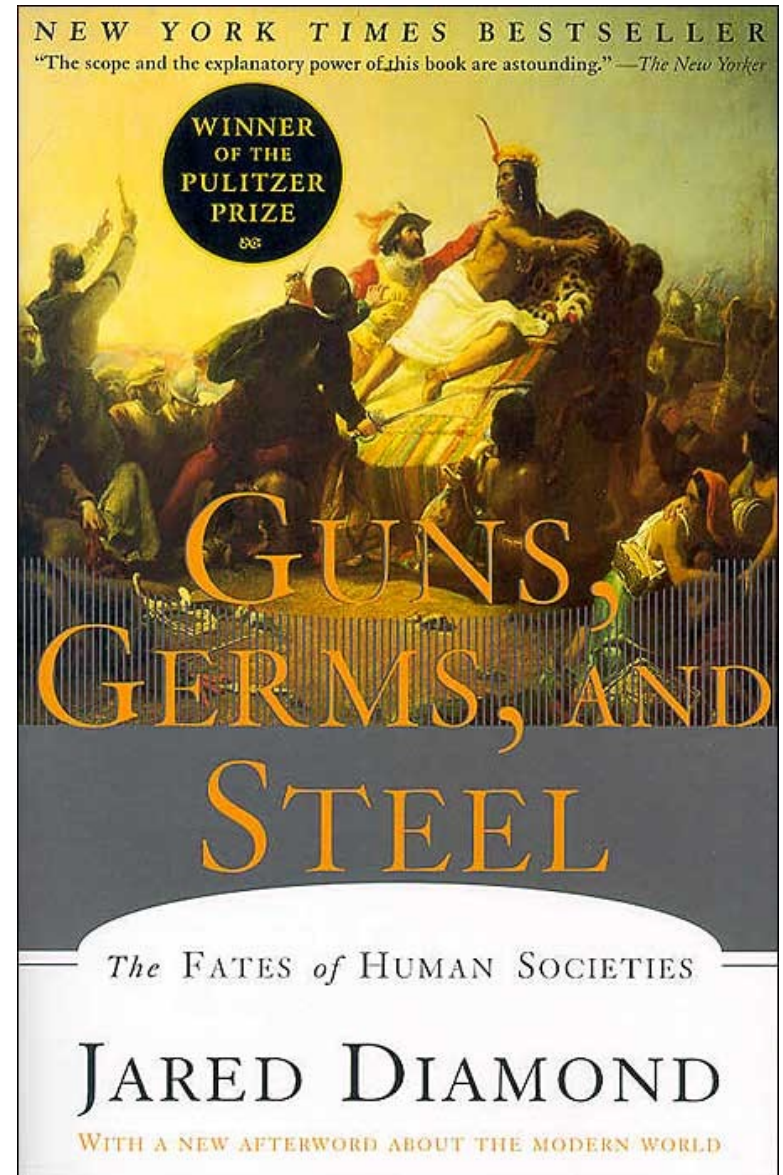
“... ARE CONSTRAINED TO PRODUCE DESIGNS WHICH ARE COPIES OF THE COMMUNICATION STRUCTURES OF THESE ORGANIZATIONS.”



Innovation



DIAMOND POINTS OUT THAT NEARLY ALL OF HUMANITY'S ACHIEVEMENTS LARGELY STEMMED FROM THE EARLY RISE OF AGRICULTURE AFTER THE LAST ICE AGE.



**COME TALK TO ME:
QUESTIONS,
MORE PGI DETAILS**

ALL WELCOME!!!

THANKS EVERYBODY