Infrastructure as **Software**

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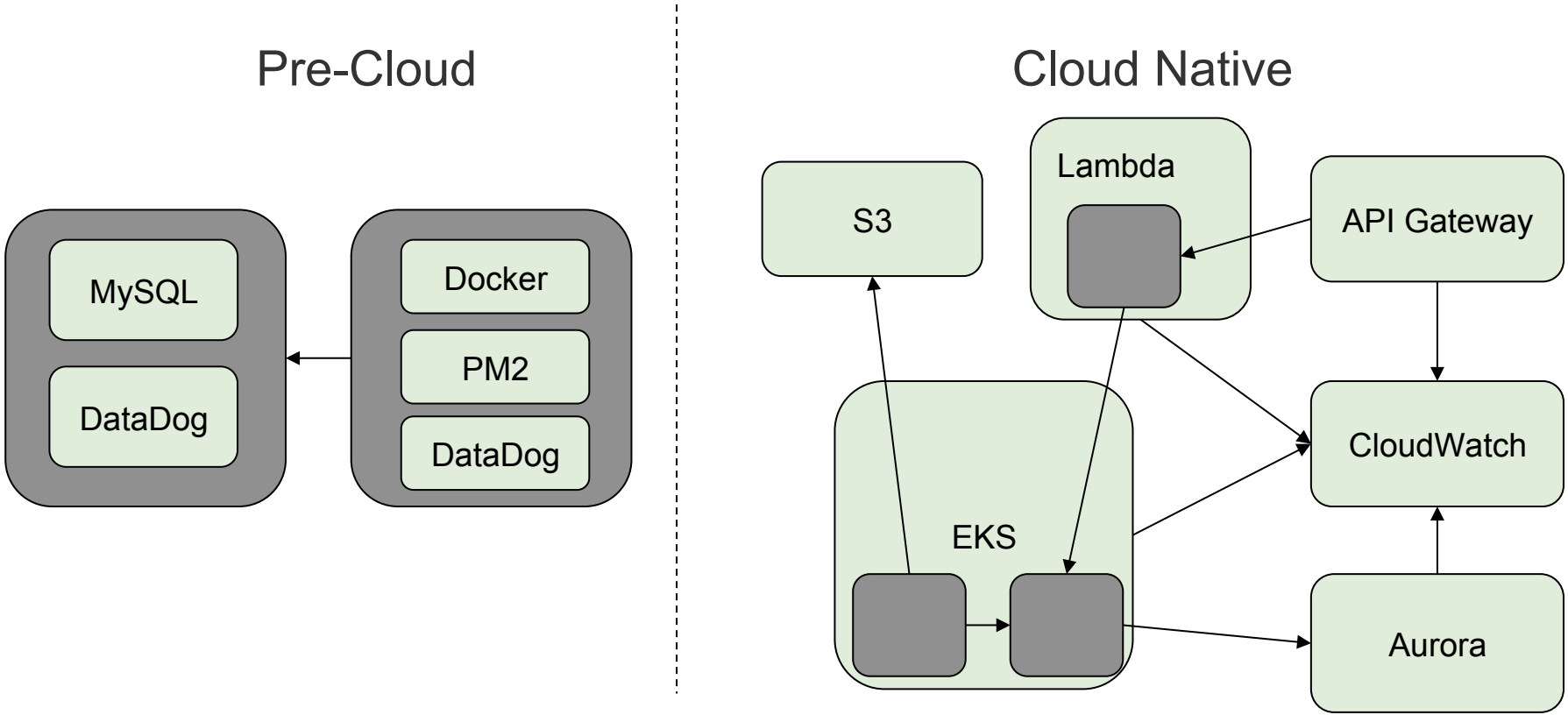
Cloud infrastructure is an increasingly critical component of modern application delivery.

Tools to manage and deploy cloud infrastructure are immature.

Implications of Cloud Native



Infrastructure as **Code**

Infrastructure as ~~**Code**~~ **Text**

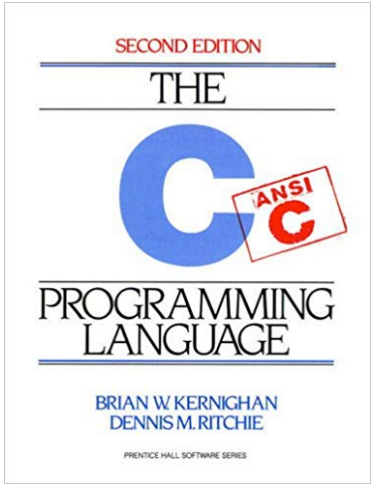
Infrastructure as **Software**

An Analogy

```
pushq   %rbp
movq    %rsp, %rbp
subq    $32, %rsp
leaq    71(%rip), %rdi
movl    $0, -4(%rbp)
movq    $13, -16(%rbp)
movq    -16(%rbp), %rsi
movb    $0, %al
callq   13
xorl    %ecx, %ecx
movl    %eax, -20(%rbp)
movl    %ecx, %eax
addq    $32, %rsp
popq    %rbp
retq
```

What's missing?

- Variables
- Loops
- Functions
- Abstraction
- Types
- C Standard Library
- IDE productivity
- Testability



Demo

Cloud Native Infrastructure as Software

Software Engineering Desiderata

Types (**correctness**)

IDE tooling (**productivity**)

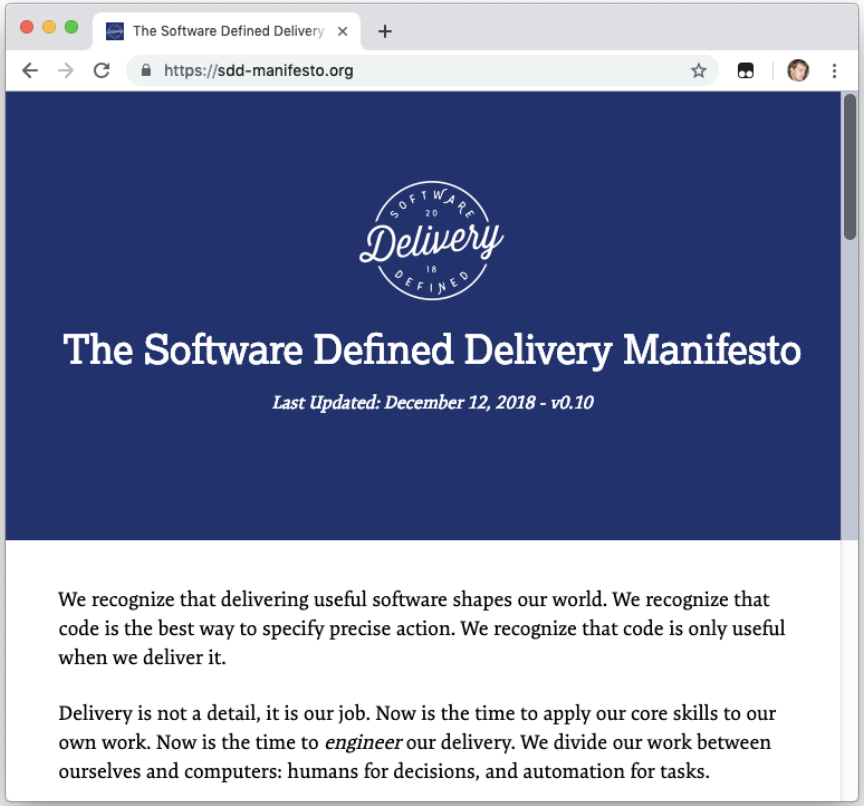
Variables and functions (**abstraction**)

Components and package management (**reuse**)

Standard library and open source ecosystem (**frameworks**)

Testing and CI/CD (**quality**)

Other Similar Approaches



ATOMIST

AWS CDK

Applying **software engineering** principles to our **cloud infrastructure** can enable us to **scale** with the rich **capabilities** and increasing **complexity** of today's cloud native infrastructure.

Thanks!

@lukehoban

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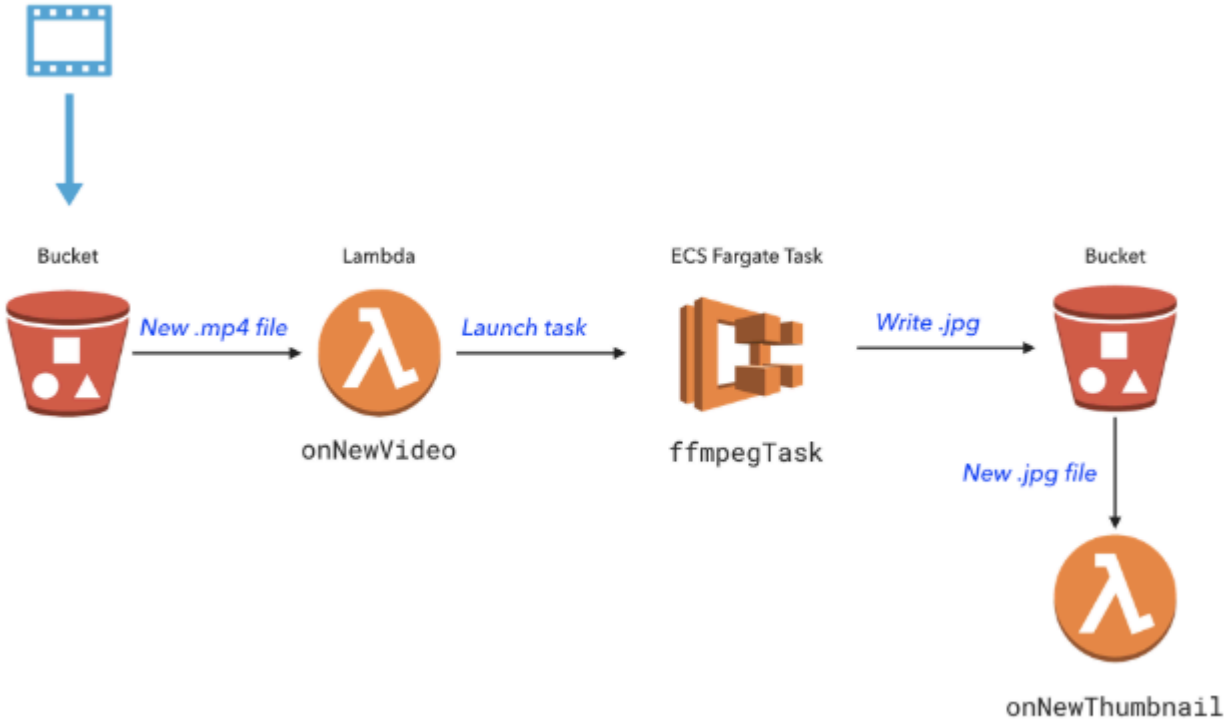
Programming at the level of Architecture Diagrams



Why am I interested in this topic?

Demo

Breaking Down Barriers Between App and Infrastructure