云原生技术趋势

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关于我

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Microsoft Research Asia, NetEase, and Wandou Labs.

Infrastructure software engineer and system architect, expert in distributed system and database development.

Co-author of Codis, a widely used distributed Redis solution
TiDB, a distributed HTAP database.

Hobbyist guitar player

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云原生的定义

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. **Containers, service meshes, microservices, immutable infrastructure, and declarative APIs** exemplify this approach.

These techniques enable **loosely coupled systems** that are **resilient, manageable, and observable**. Combined with **robust automation**, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

为什么云如此重要

弹性带来的成本优势？

为什么云如此重要

托管资源带来的易用性优势？

为什么云如此重要

对于计算的底层认知发生改变

云原生对于基础设施到底意味着什么？

- 让我们回想一下，每次对于计算的底层假设发生变化，都是 IT 的重大变革

Mainframe => x86

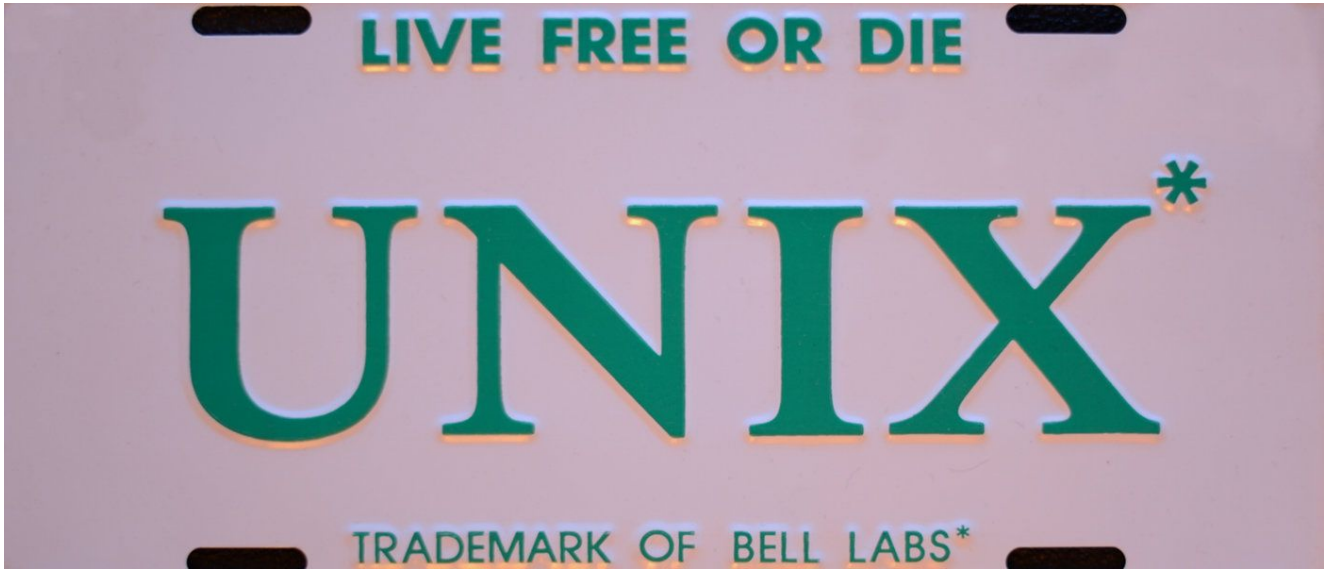
PC => Mobile

带着这个假设，那些事情一定会发生？

我们回想一下上世纪 70 年代...

DEC / Sun Microsystem / HP / IBM / Compaq / …

带着这个假设，那些事情一定会发生？



我们这个时代的 Unix（会）是谁？

kubernetes

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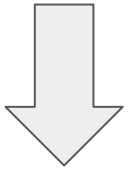
趋势1：Kubernetes 会变成云时代的‘操作系统’

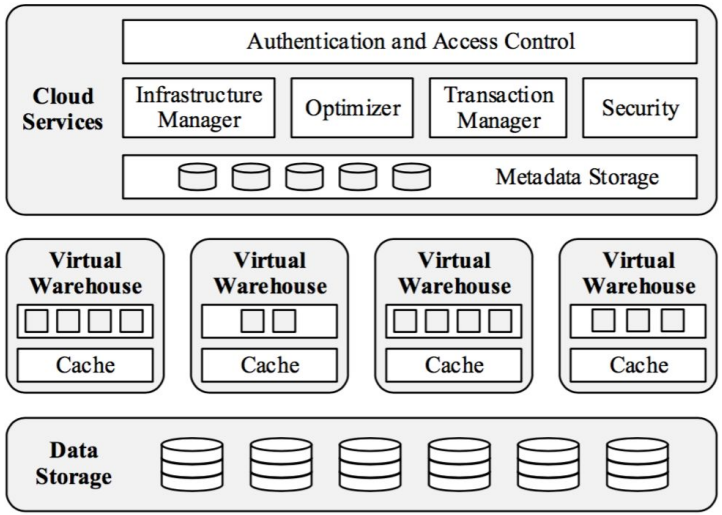
那到底是什么发生了改变？

那到底是什么发生了改变？

- 无限计算资源
  - 想象一个场景:科学计算
- 无限的存储资源



- 计算存储分离
  - 其实能分离的终将会分离
- ‘程序’的定义在发生变化
  - 最底层:操作‘硬件’ vs 操作‘服务’
- 全新安全体系



趋势2：基础软件先会迎来重构潮

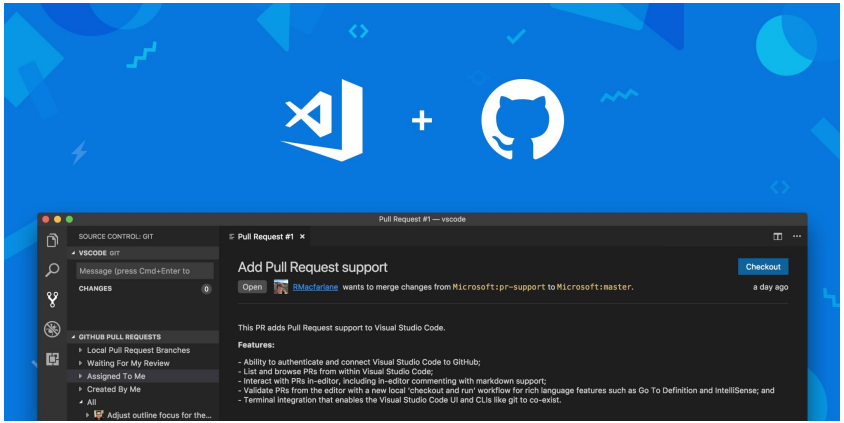
（存储，中间件，服务编排，应用开发框架。。。）

Snowflake 是第一个，但是不会是最后一个

推论:打造云原生基础设施的基础设施会普及


GitHub Copilot
Visual Studio Code


Cloud9

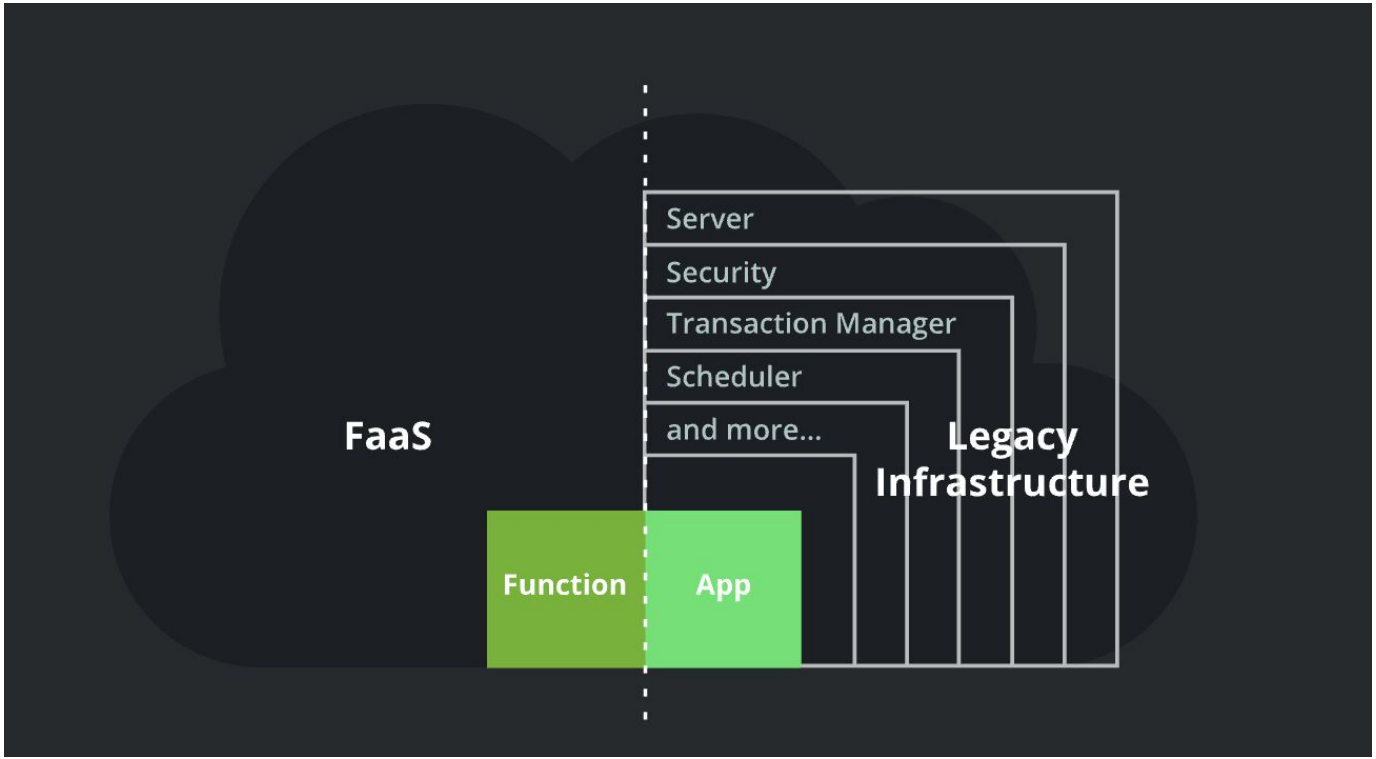

Pull Request #1 — vscode
SOURCE CONTROL: GIT
Pull Request #1
VSCODE GIT
Message (press Cmd+Enter to
CHANGES
GITHUB PULL REQUESTS
Local Pull Request Branches
Waiting For My Review
Assigned To Me
Created By Me
All
Add Pull Request support
Checkout
Open
RMacfarlane wants to merge changes from Microsoft:pr-support to Microsoft:master.
a day ago
This PR adds Pull Request support to Visual Studio Code.
Features:
- Ability to authenticate and connect Visual Studio Code to GitHub;
- List and browse PRs from within Visual Studio Code;
- Interact with PRs in-editor, including in-editor commenting with markdown support;
- Validate PRs from the editor with a new local 'checkout and run' workflow for rich language features such as Go To Definition and IntelliSense; and
- Terminal integration that enables the Visual Studio Code UI and CLIs like git to co-exist.

趋势3: 云原生安全会开启一个新市场

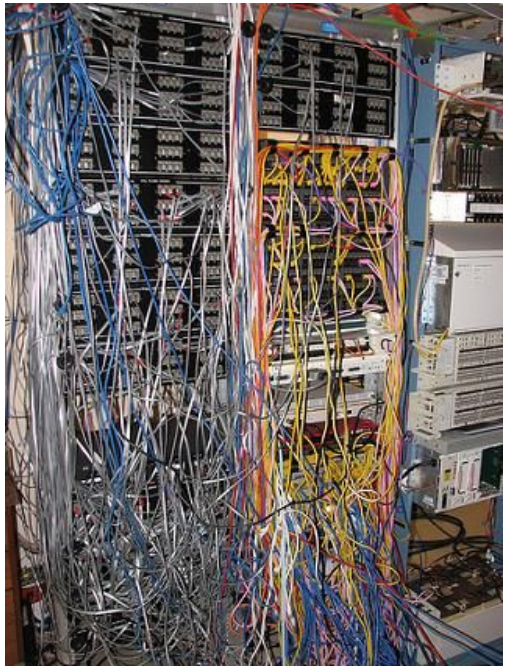
```
lrwxr-xr-x   1 root  wheel
```

vs

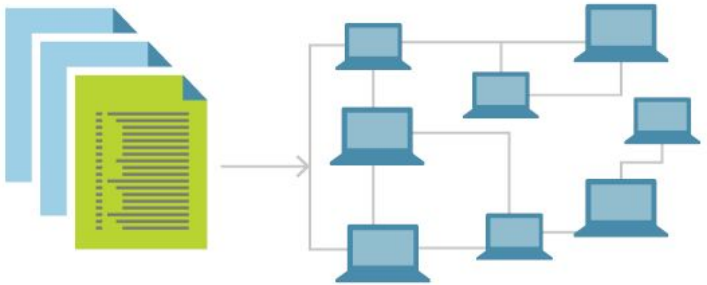
趋势4: Serverless 和 API 经济的兴起



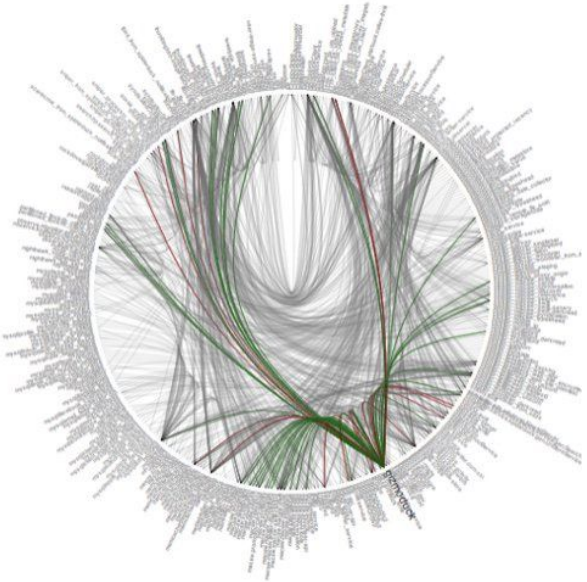
趋势5: IaC (Infrastructure as Code) 普及



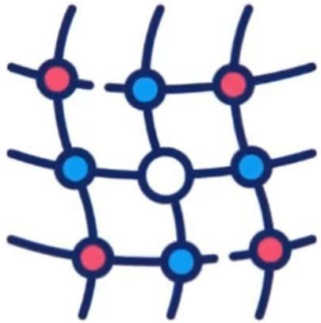
vs



趋势6: 云原生的软件测试和质量保证体系



NETFLIX



Chaos Mesh Simplifies & Organizes Chaos Engineering For Kubernetes

未来已来，放弃幻想，拥抱云原生

谢谢

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