

Racing Thru the Last Mile

Cloud Delivery & Web-Scale Deployment

Qcon London 2013

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My 3 Bullet Point Résumé

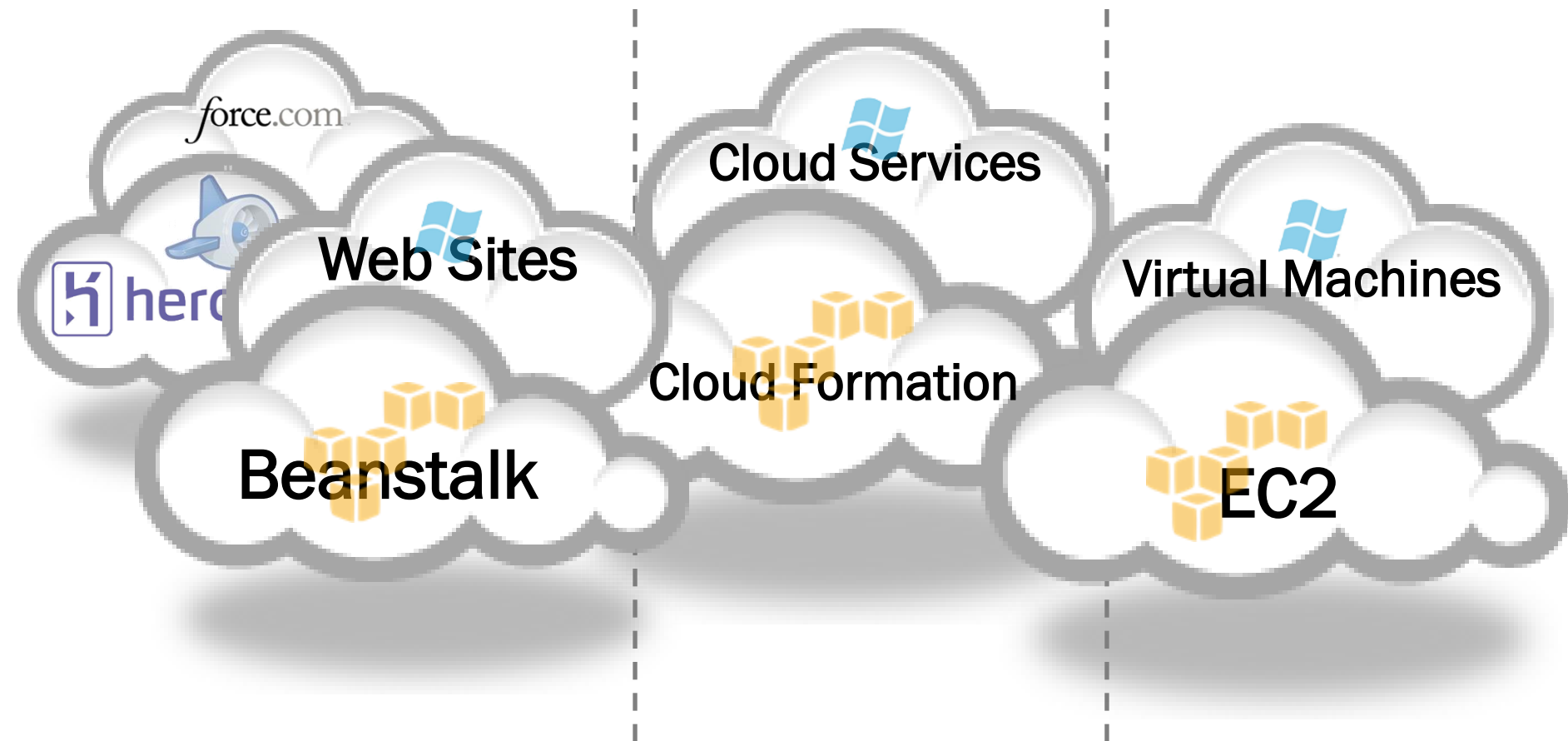
- **Been in software for a while**
- **Worked on a bunch of different systems**
- **Worked at a bunch of different places**



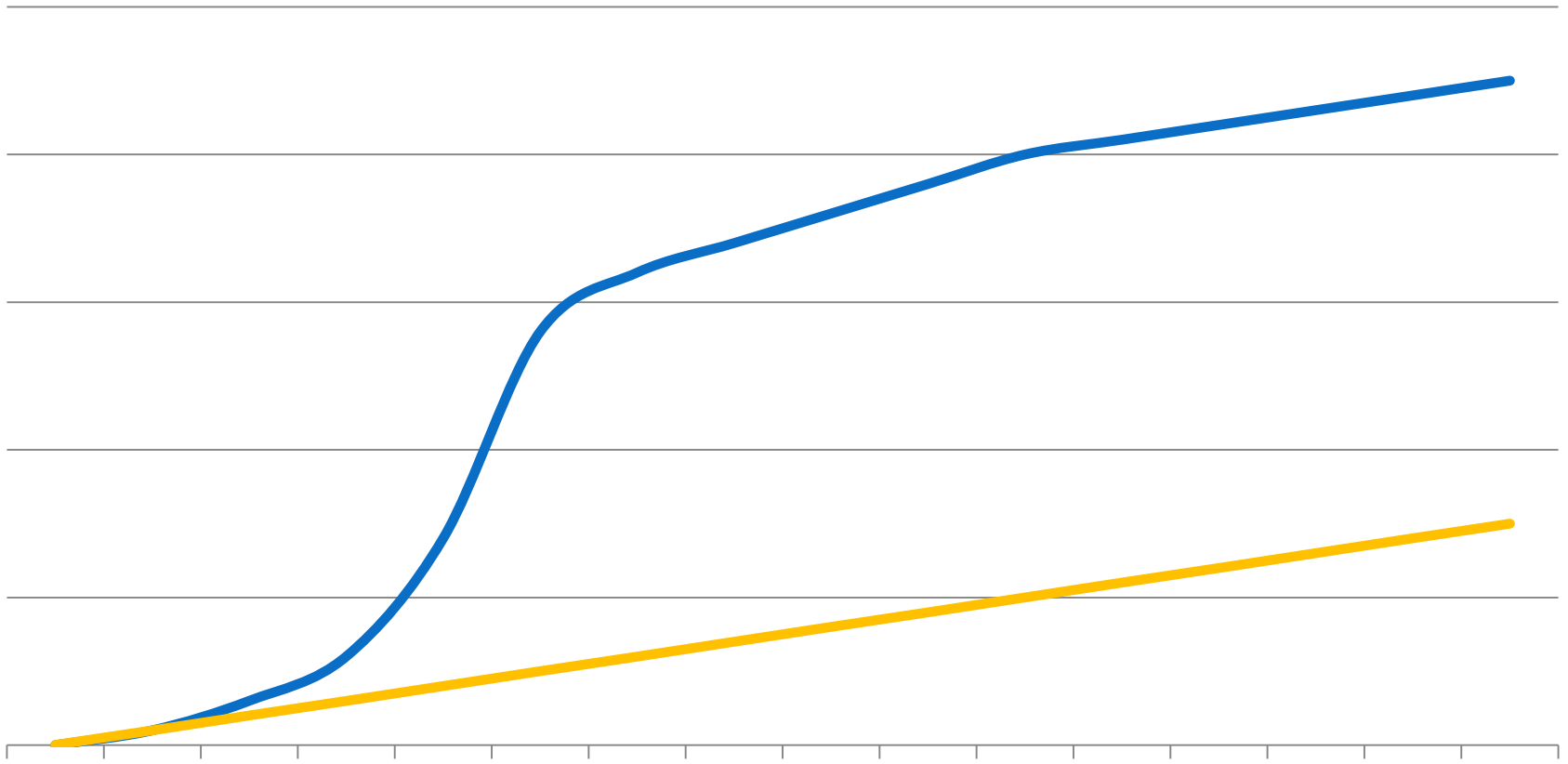
- I founded
- BuildMaster
 - “DevOps in a box”
- ProGet
 - “NuGet for the enterprise”



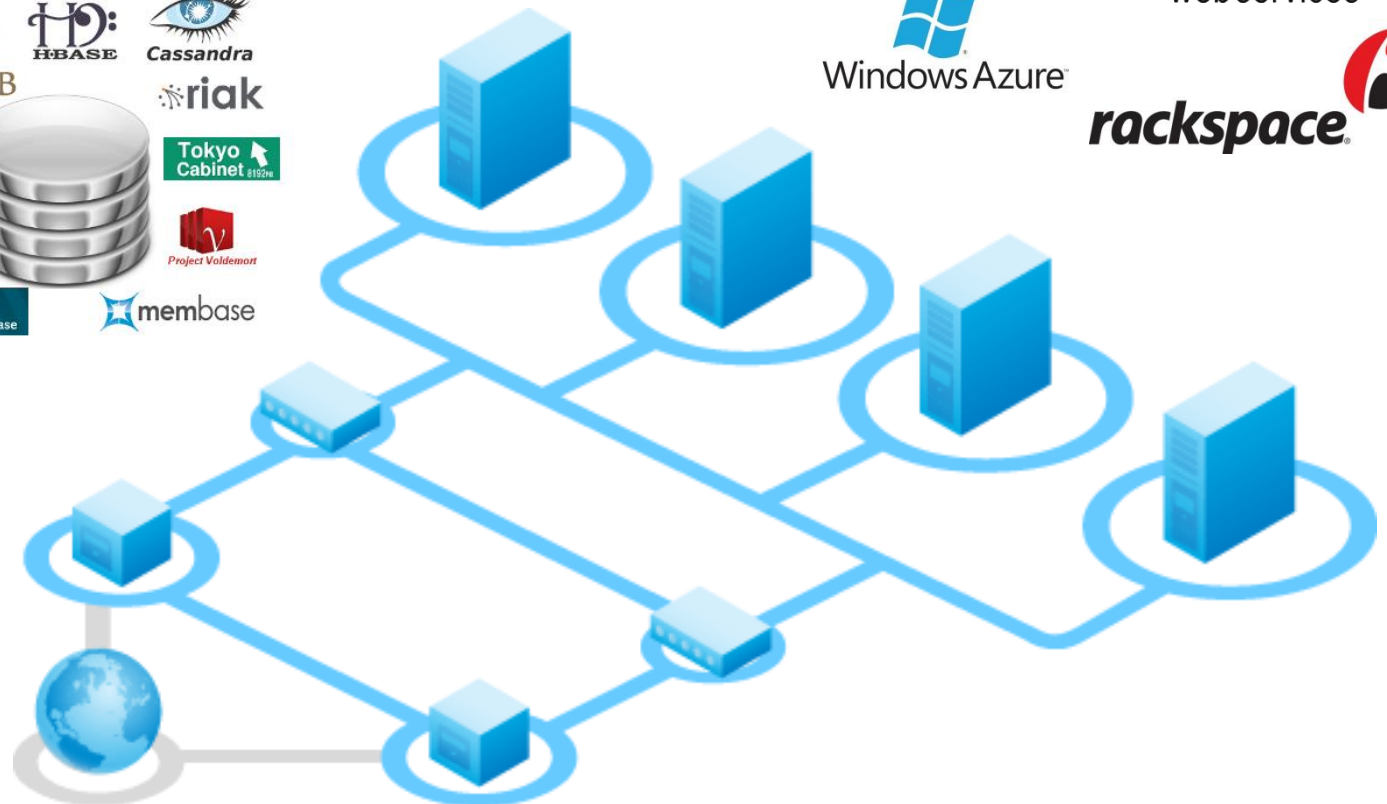
What is the Cloud?



What is Web Scale?



What is Web Scale?



Windows Azure™

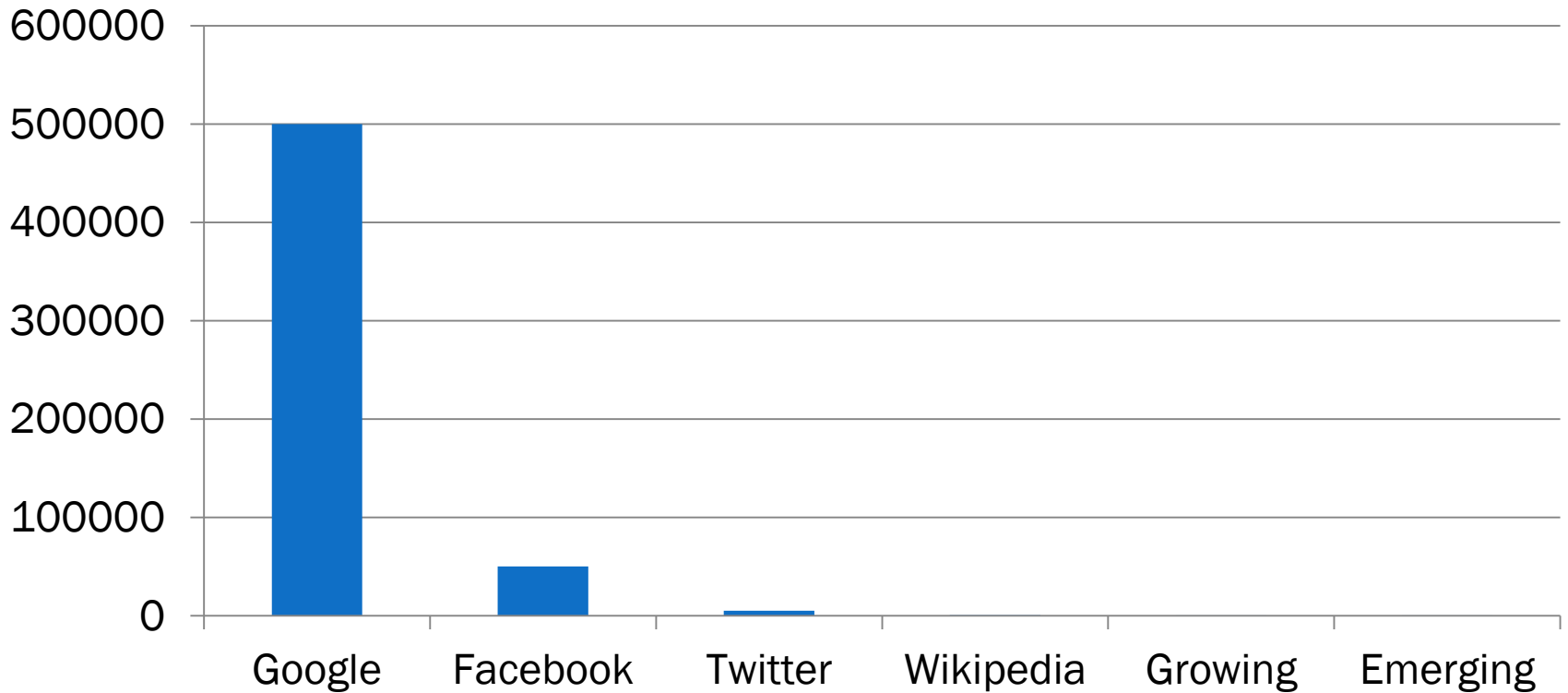


What is Web Scale?



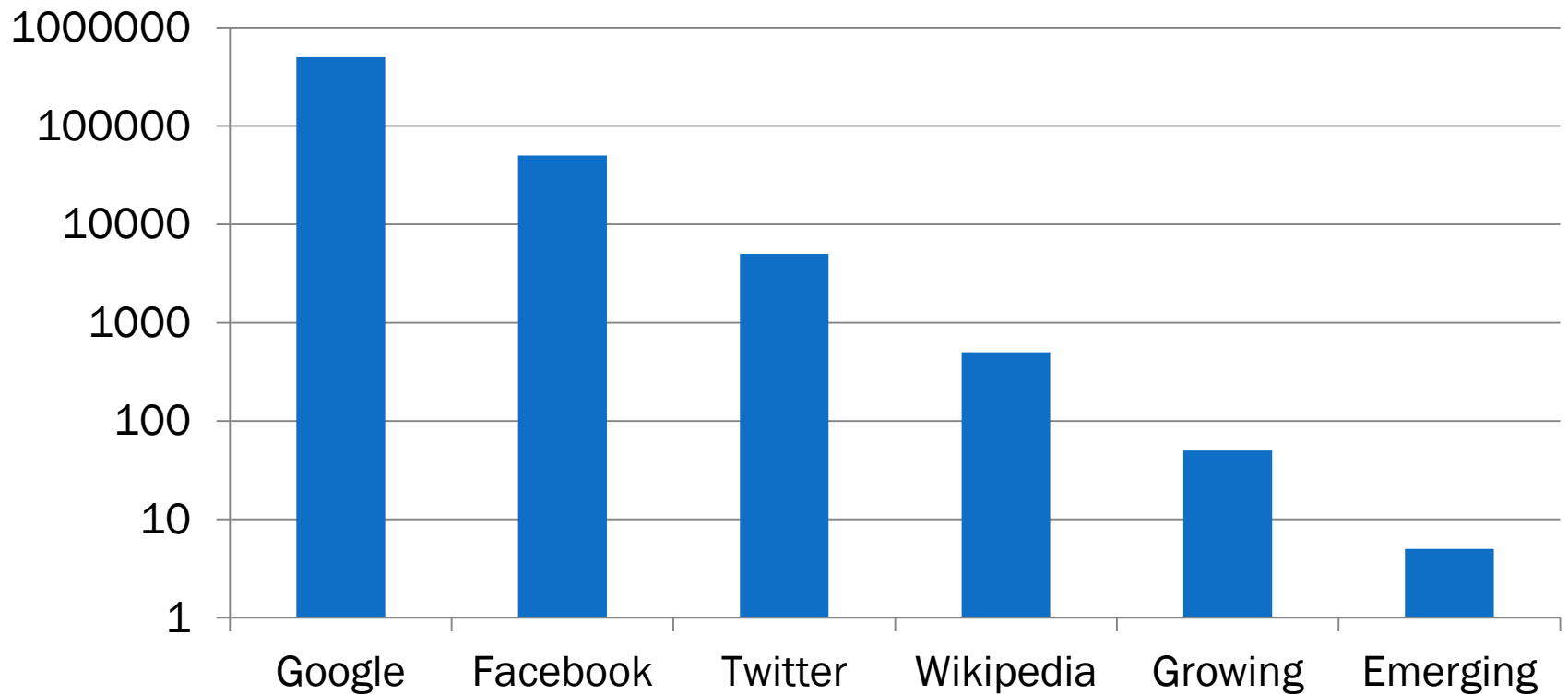
Scale of Web Scale

Number of Servers

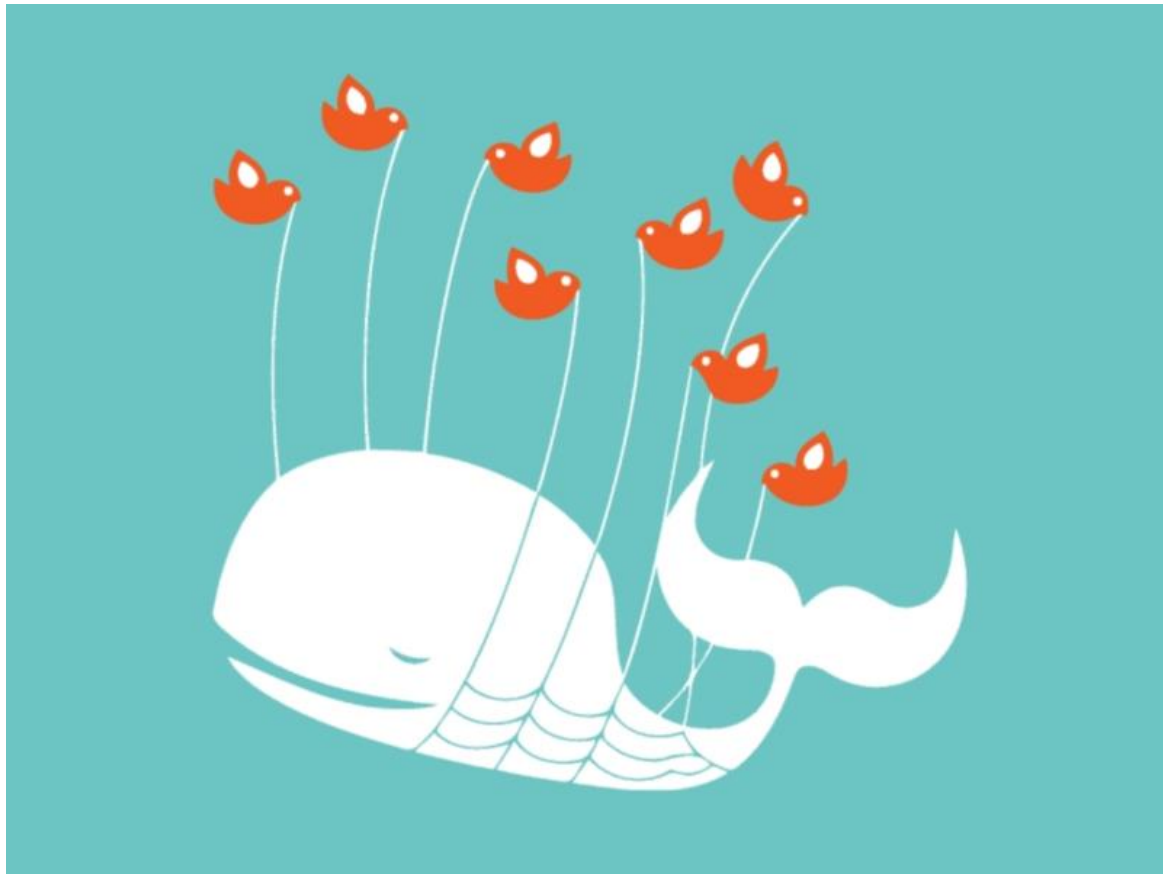


Scale of Web Scale

Number of Servers



Deployment Matters



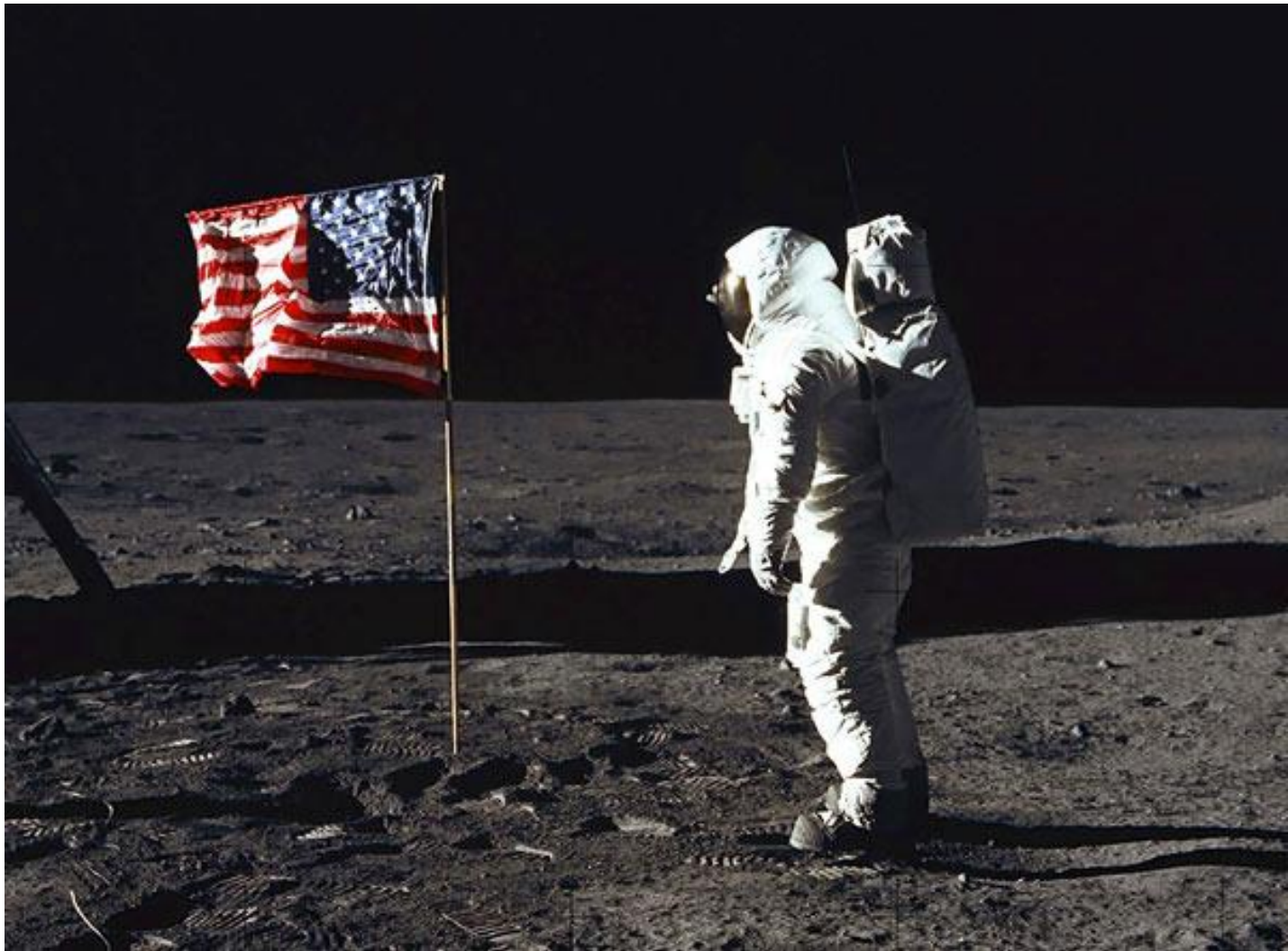
Web-scale Deployments

- Fast
- Often
- Reliable

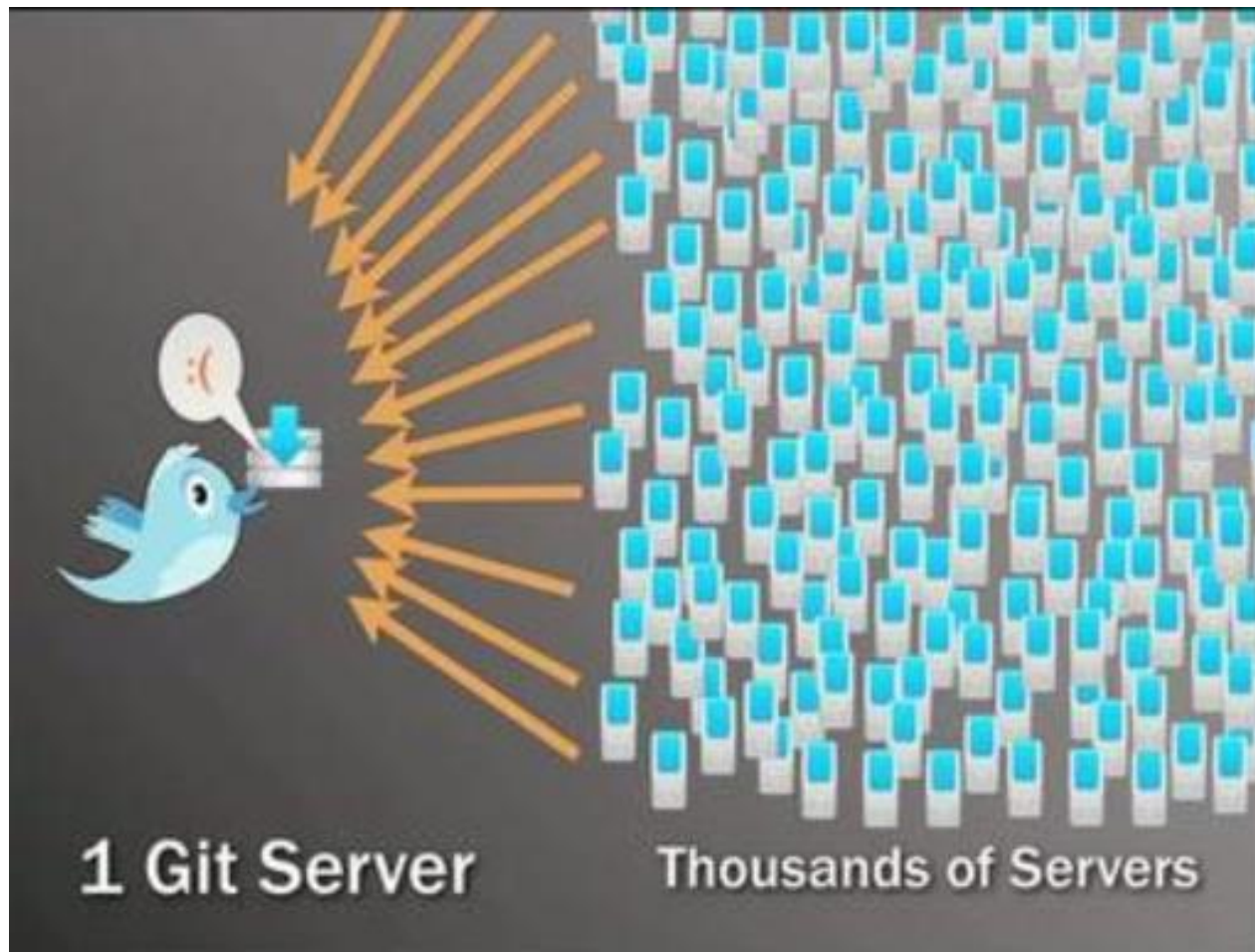
Google's Secret Weapon

- Same as Facebook
- Same as Twitter





Twitter's Murder









Applications

Services

Auth

CDN
Proxy

Data
Access

API

User
Account

User Files

Web

Logon

Search

Uploader

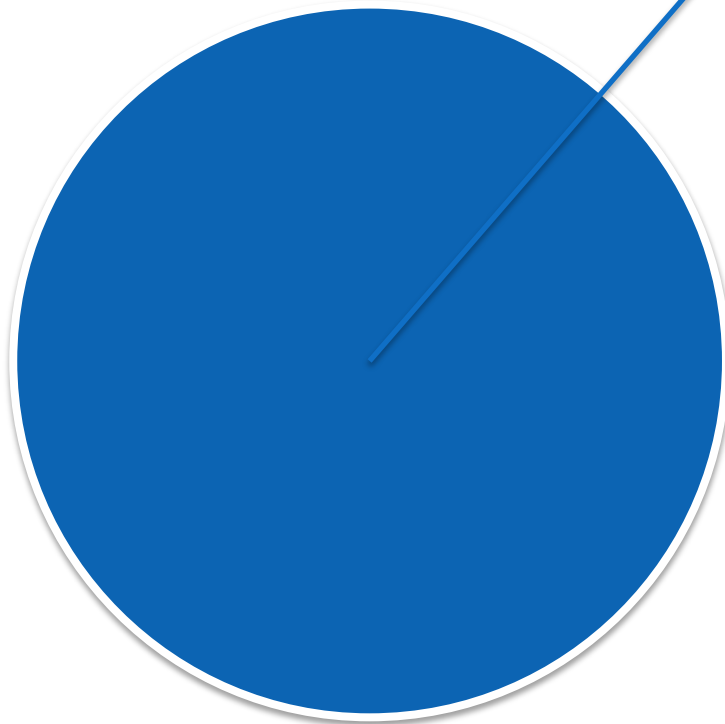
Environments



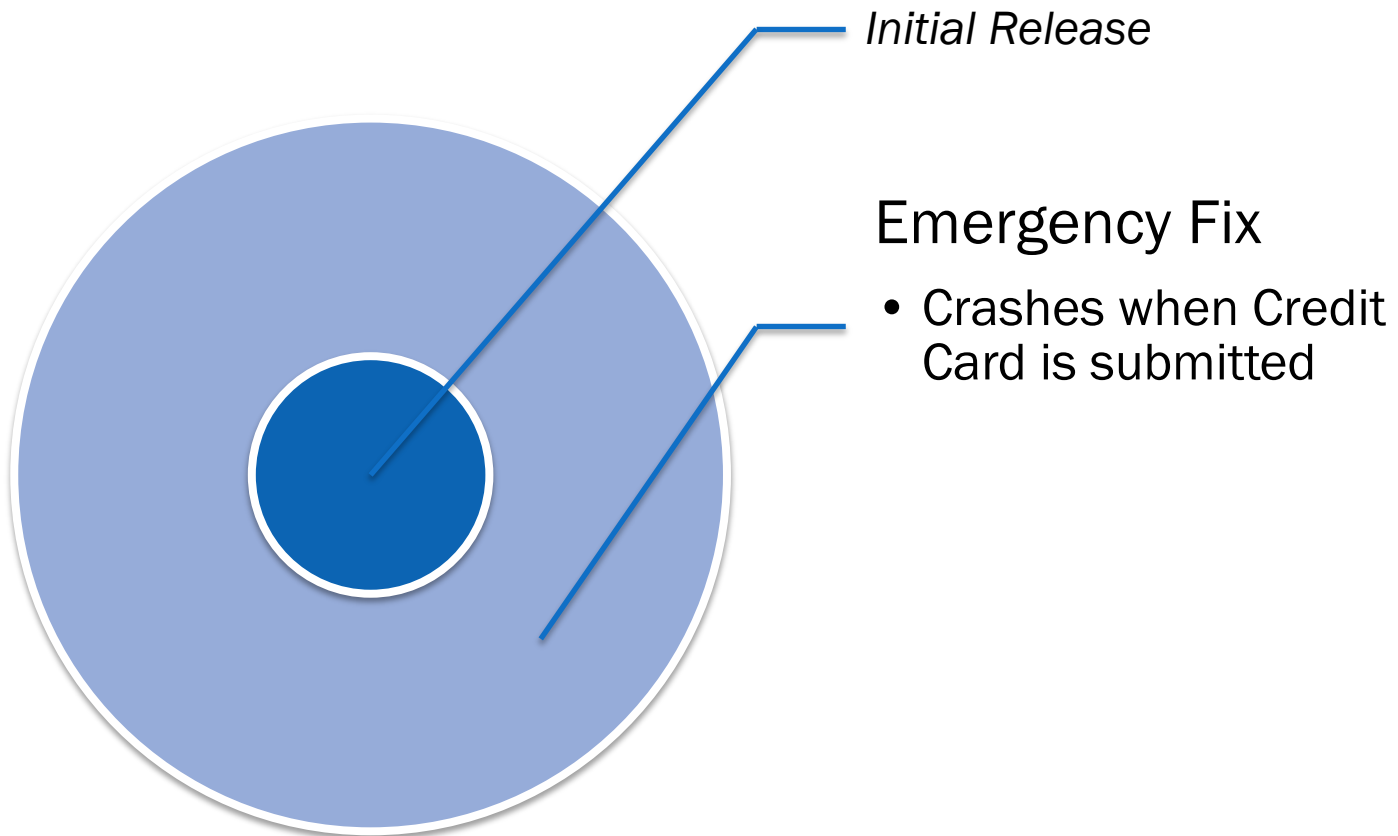
Releases

Initial Release

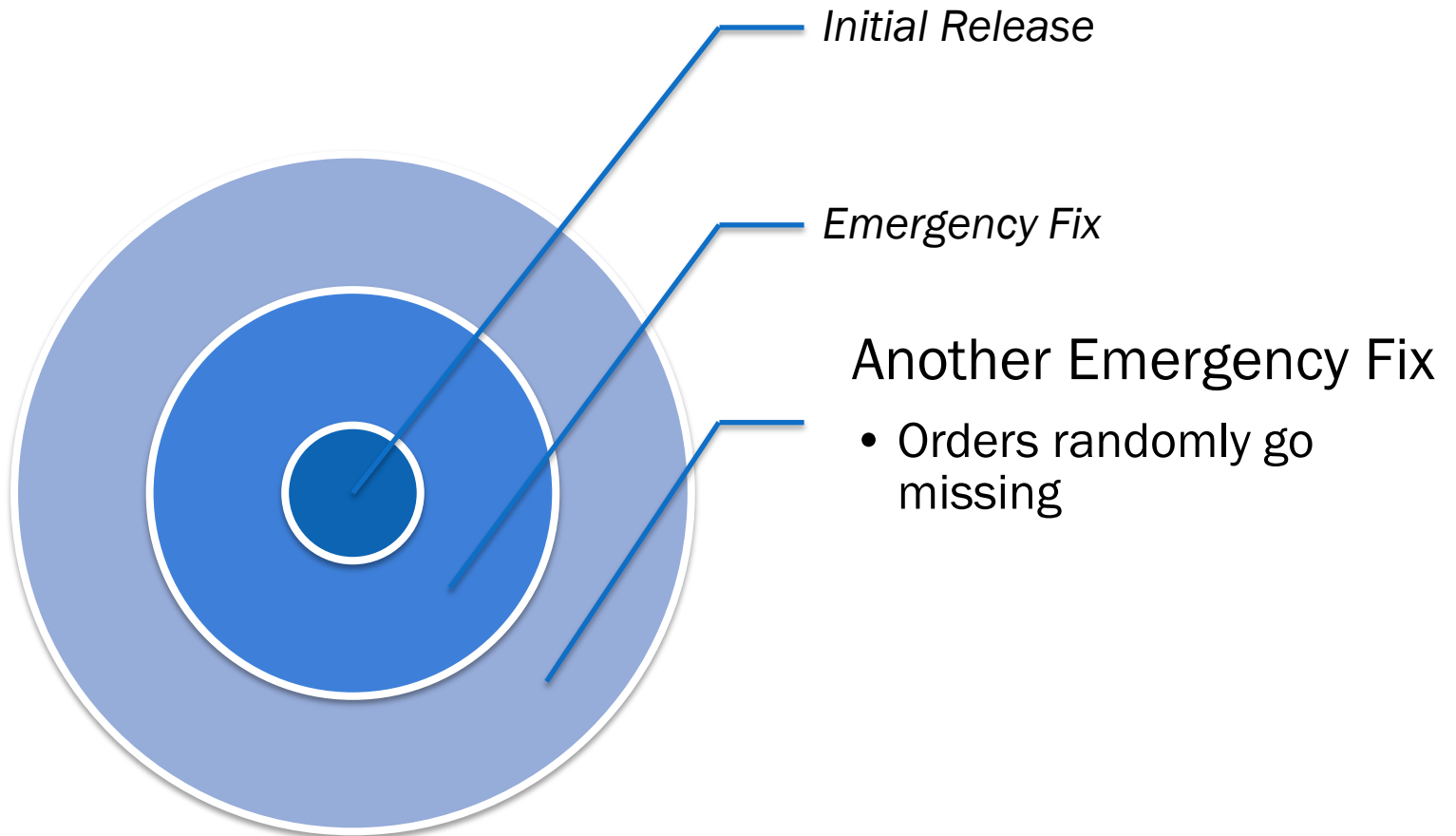
- Perfect



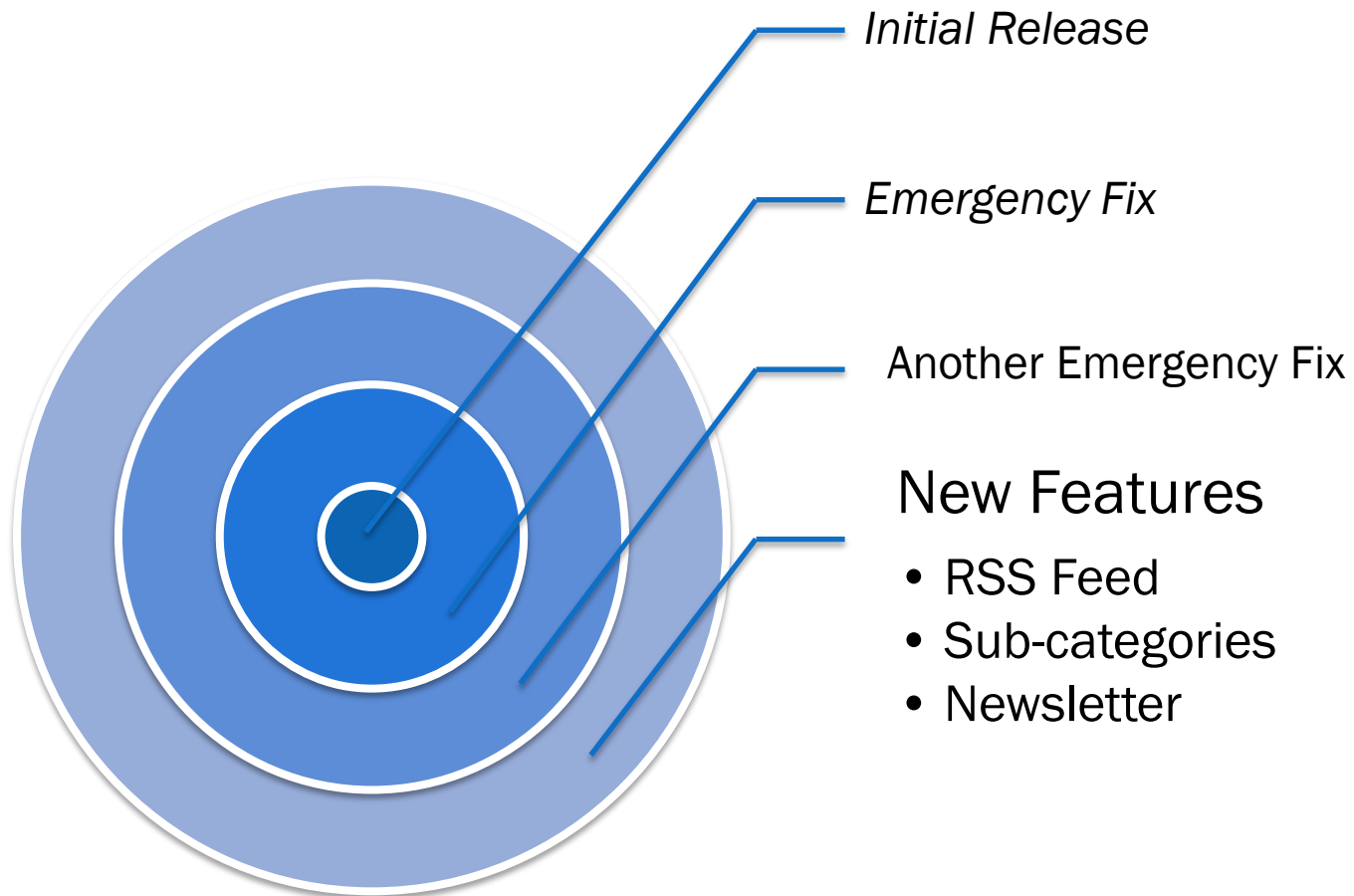
Releases



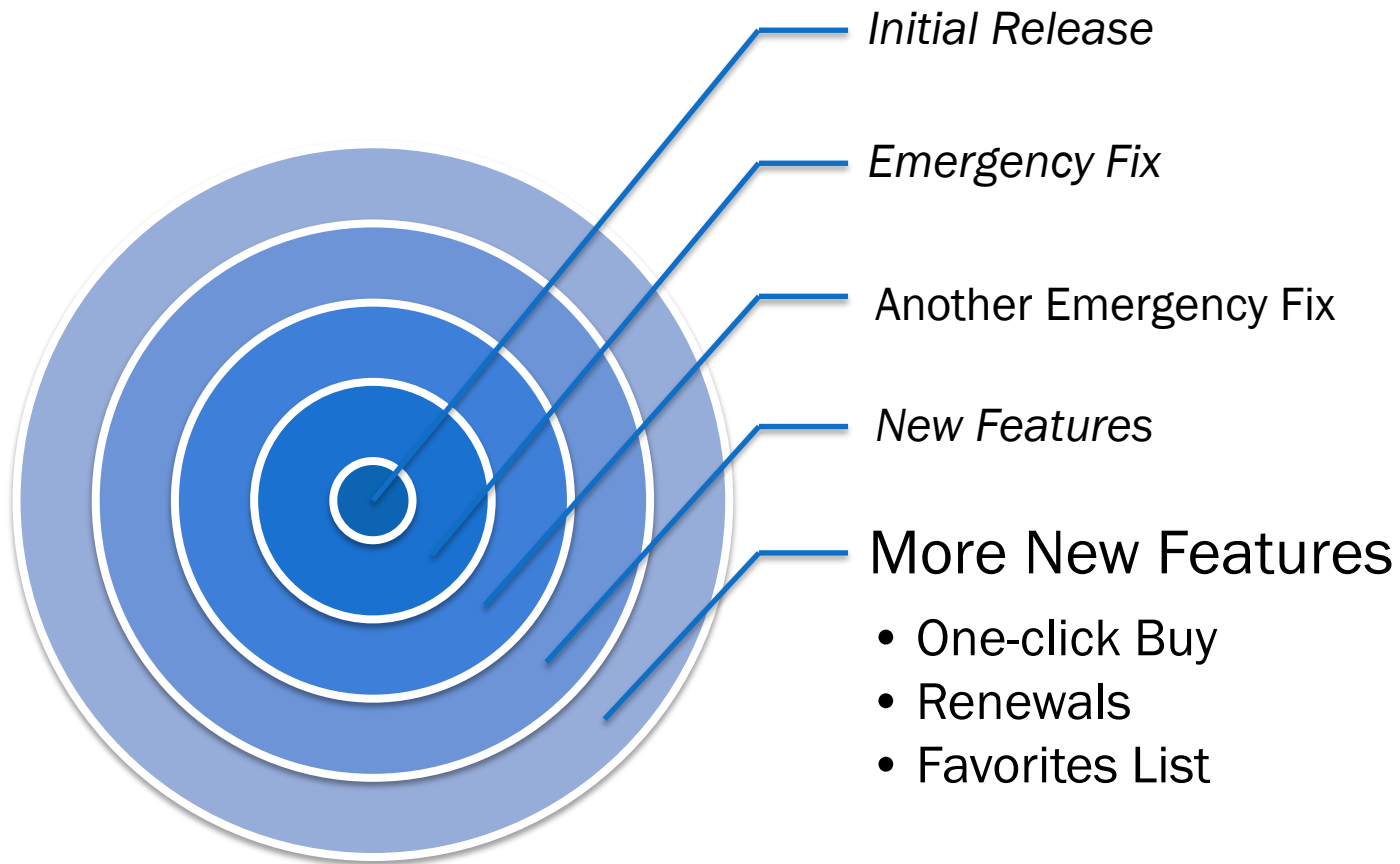
Releases



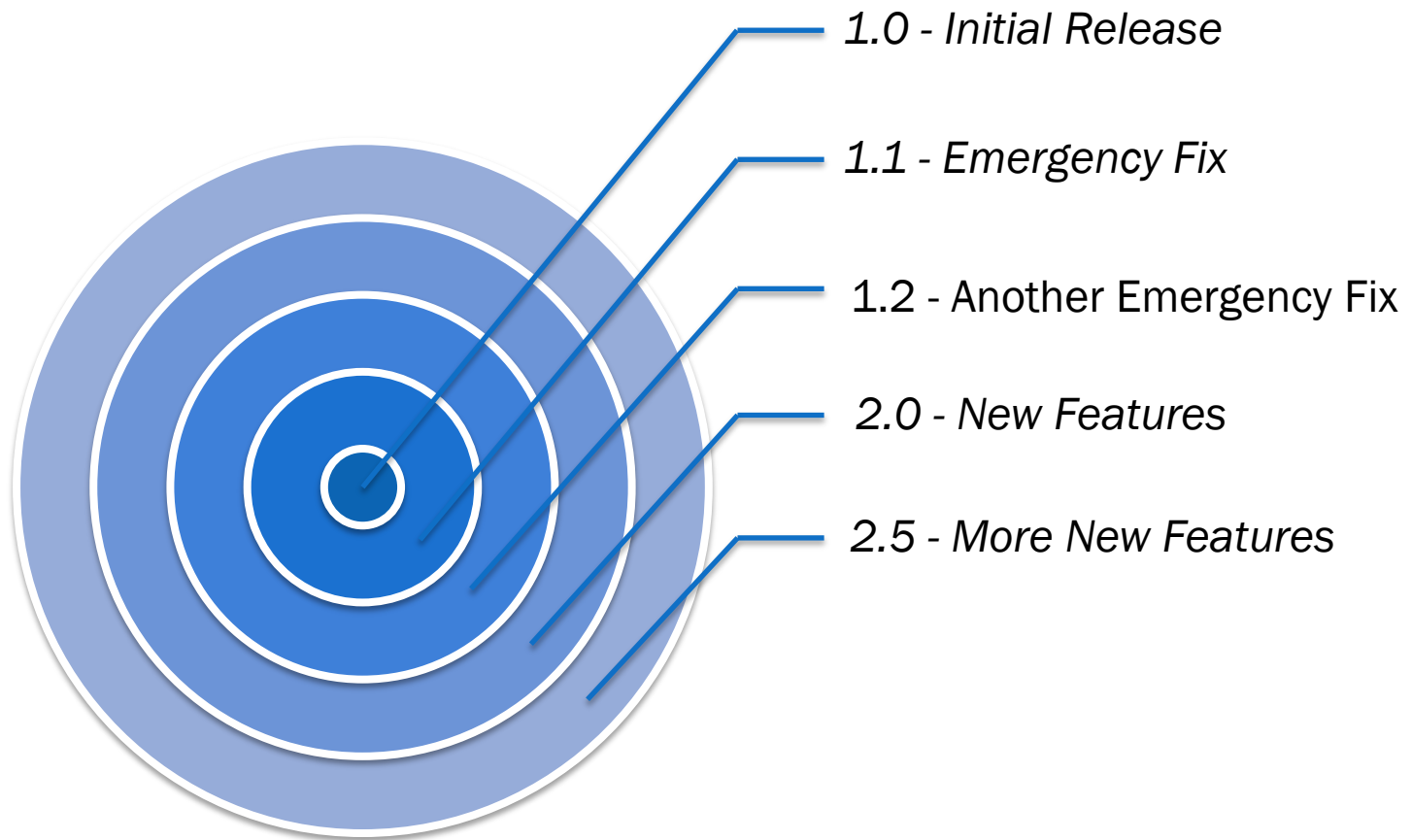
Releases



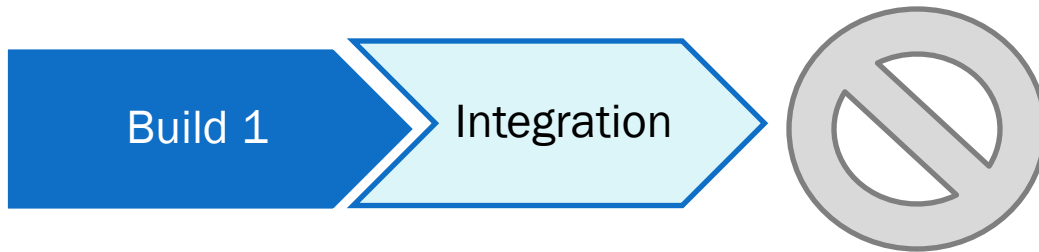
Releases



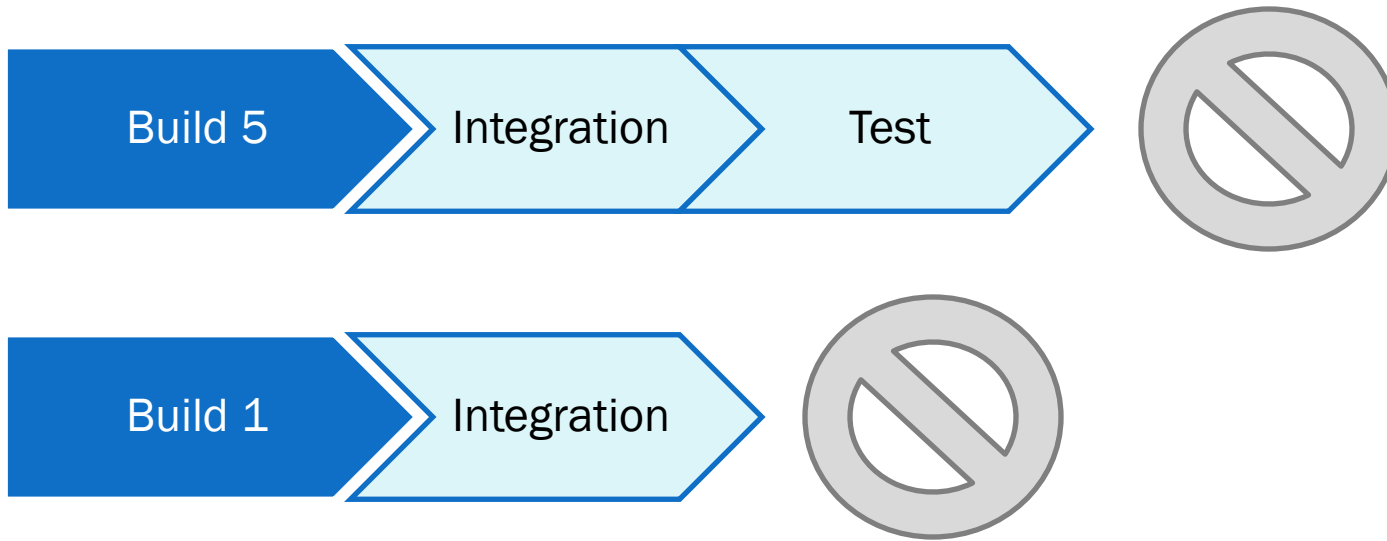
Releases



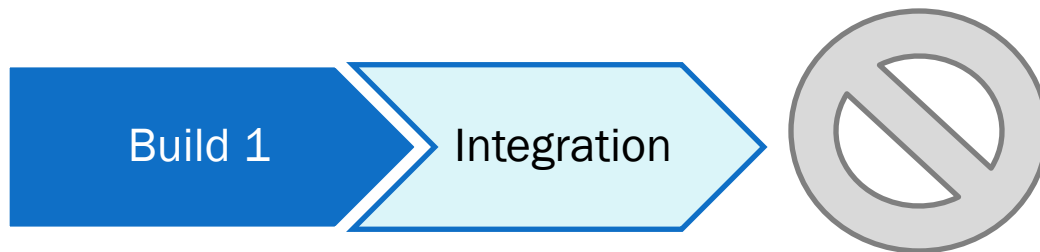
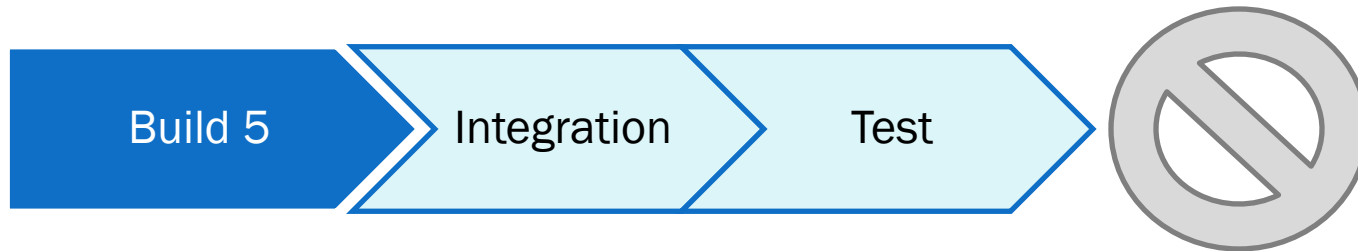
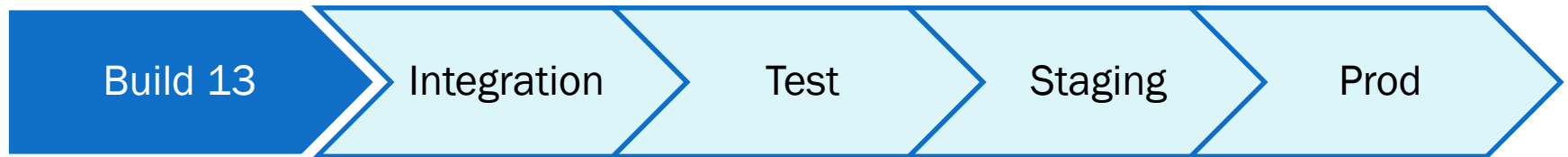
Builds



Builds



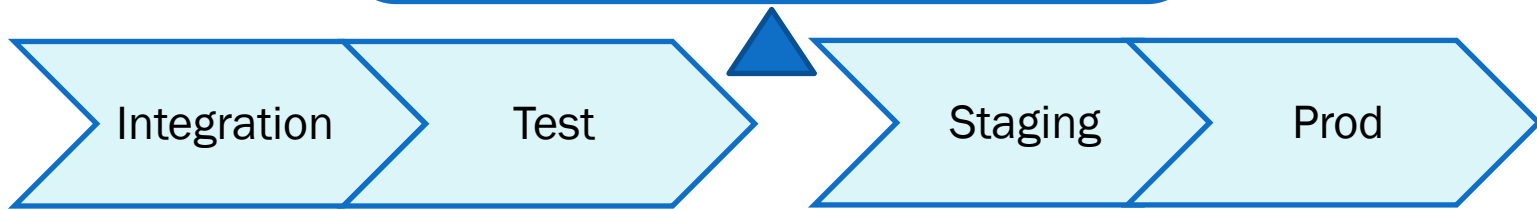
Builds



Promotions

Before Staging:

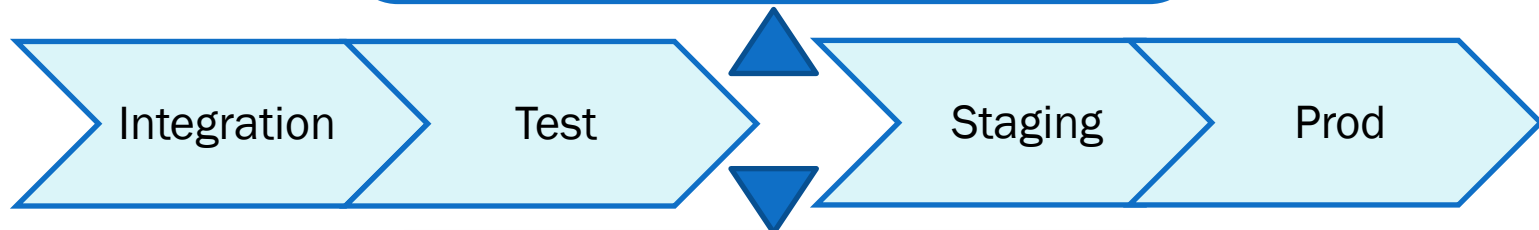
- ☐ Automated Acceptance Test Passed
- ☐ Manual Smoke Test Passed
- ☐ Release Issues Resolved



Deployments

Before Staging:

- ✓ Automated Acceptance Test Passed
- ✓ Manual Smoke Test Passed
- ✓ Release Issues Resolved



Staging Deployment:

1. Transfer Files to tmpDir
2. Stop Web Services
3. Swap tmpDir and liveDir
4. Start Web Services

Common Terminology

Applications

Releases

Builds

Promotions

Deployments



Deployment

Distribution

Delivery

Abstracting Delivery



Deliverables

- **Files**
- **Database**
- **Environmental**

File Components

- **Staging Directory**
- **Changed Files Only**
- **Assets on CDN**

Database Components

- **Can't Rollback**
- **Backwards Compatibility (Deploy First)**
- **Test via Staging**

Environment Components

- *Really* can't rollback
- Minimize
- Application-only

Delivery Mechanism



Push Basics

```
servers = ["appsv1", "appsv2", "appsv3"];

for each (s in servers) {
    transfer_files(s);
    copy_config_file(s);
    deploy_database(s);
    set_environment(s);
}
```

Pull Basics

There are no basics

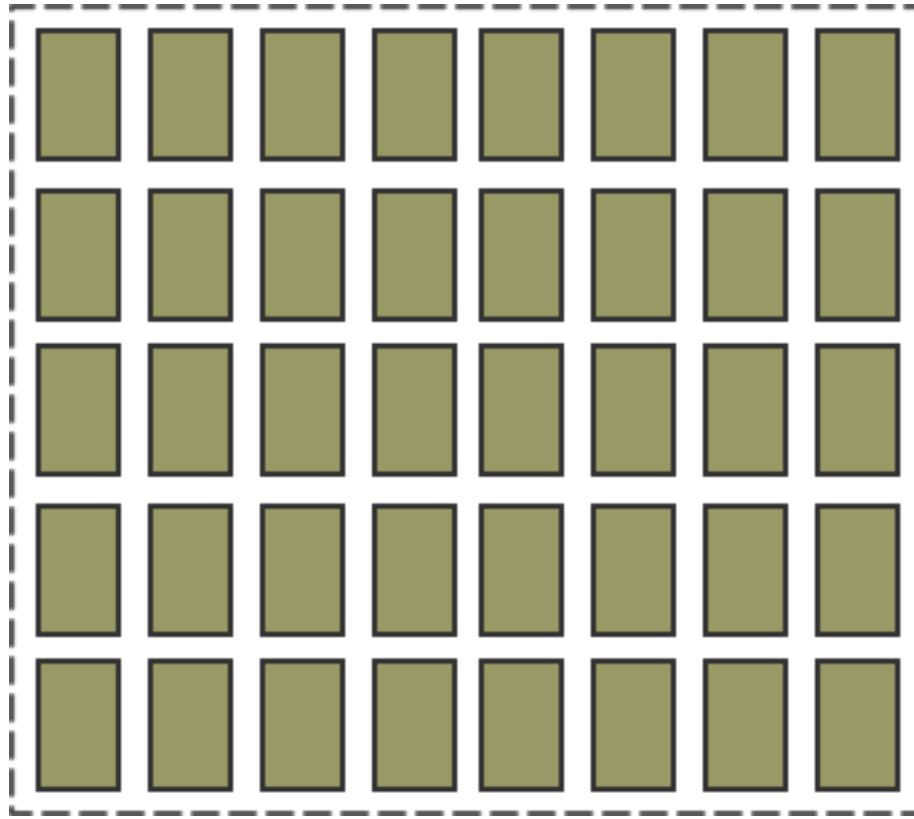
Pull Challenges

- **Instruction Complexity**
- **Orchestration**
- **Monitoring**

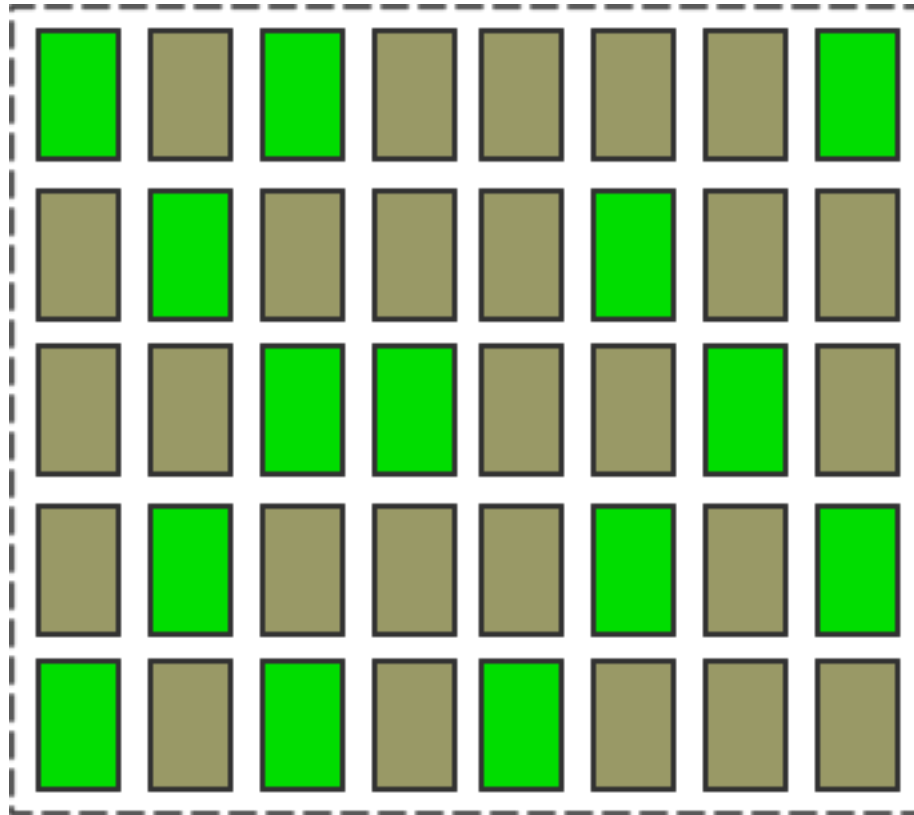
Pull Helpers



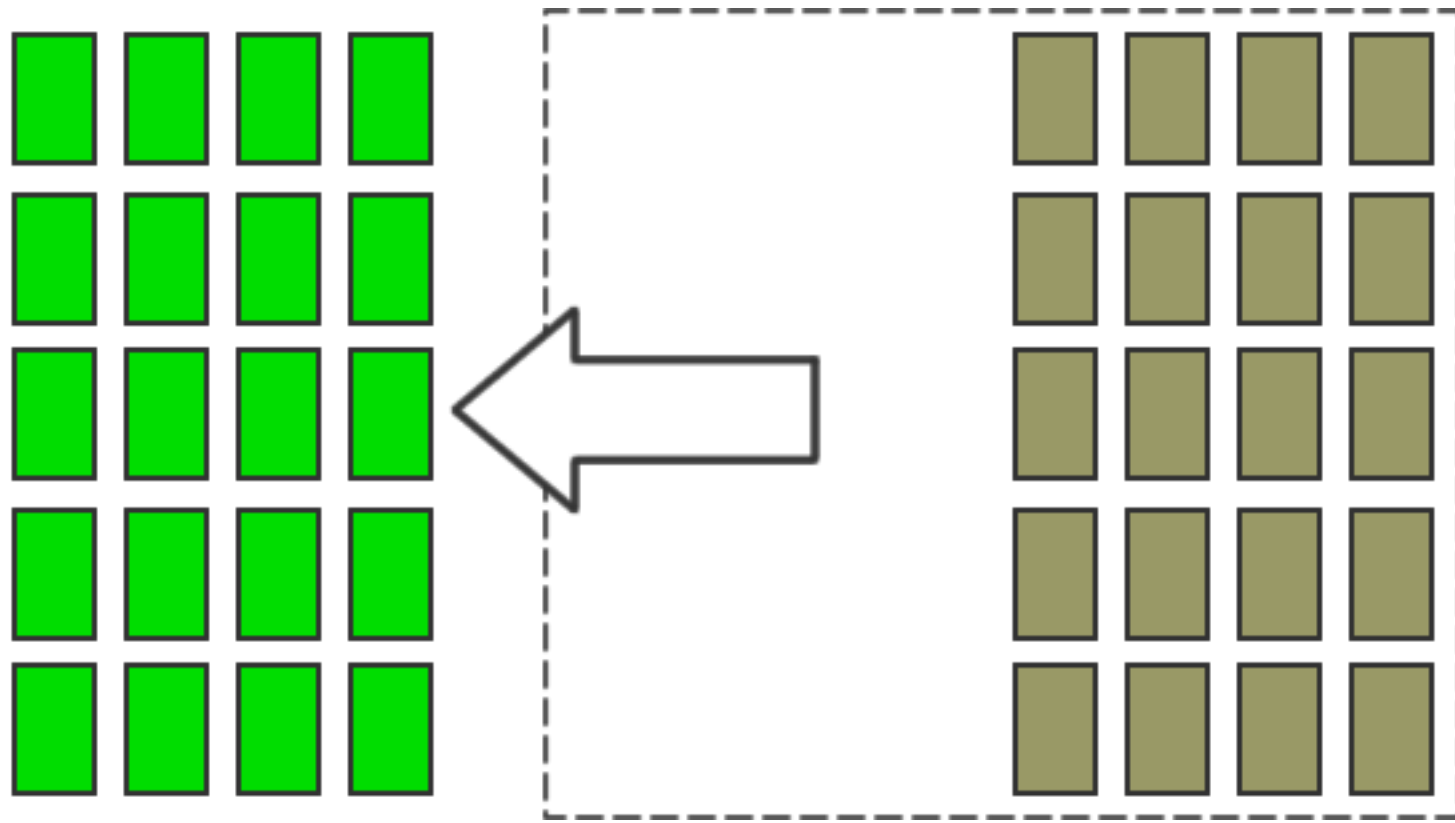
Rollout Techniques



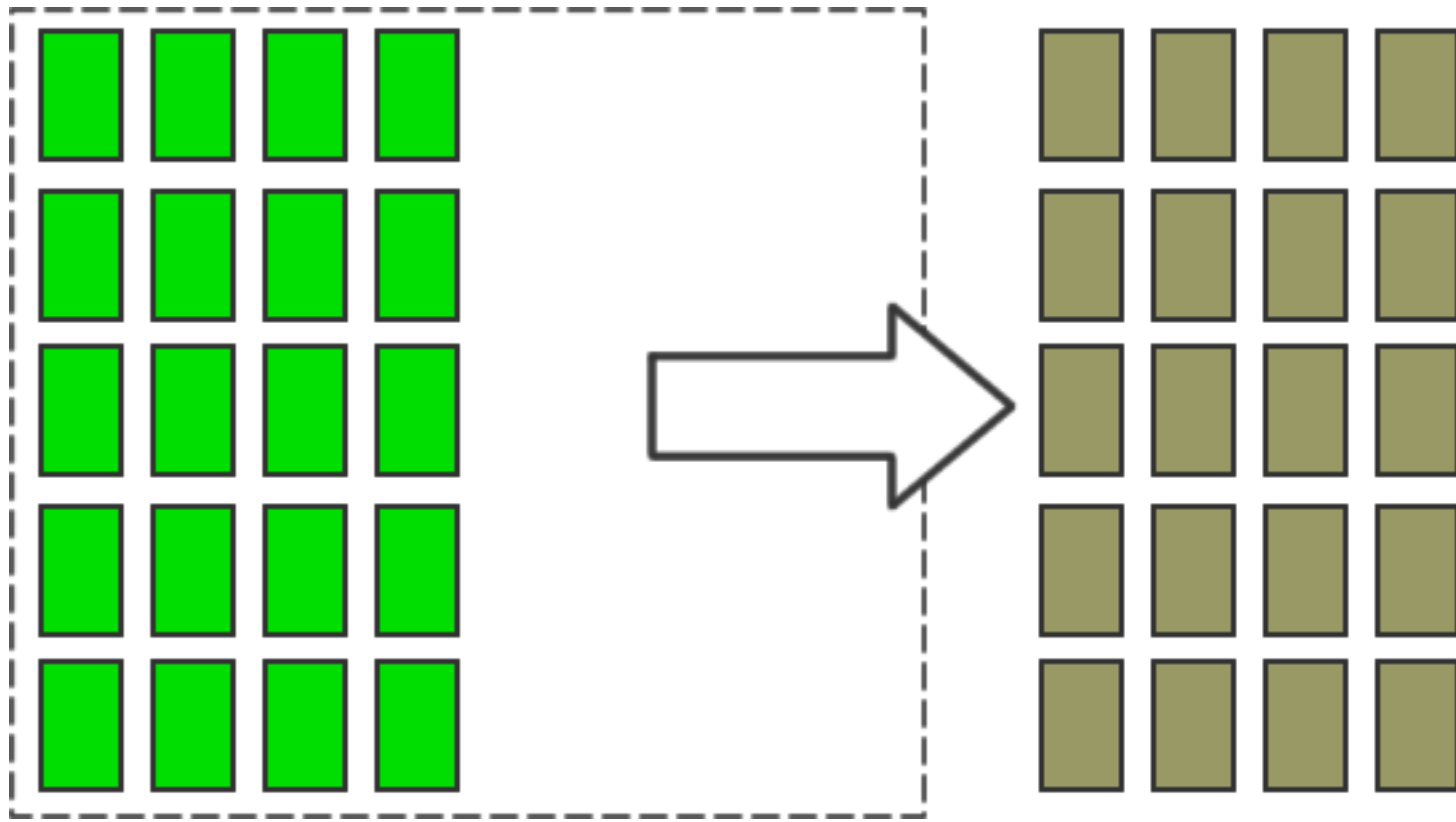
Live



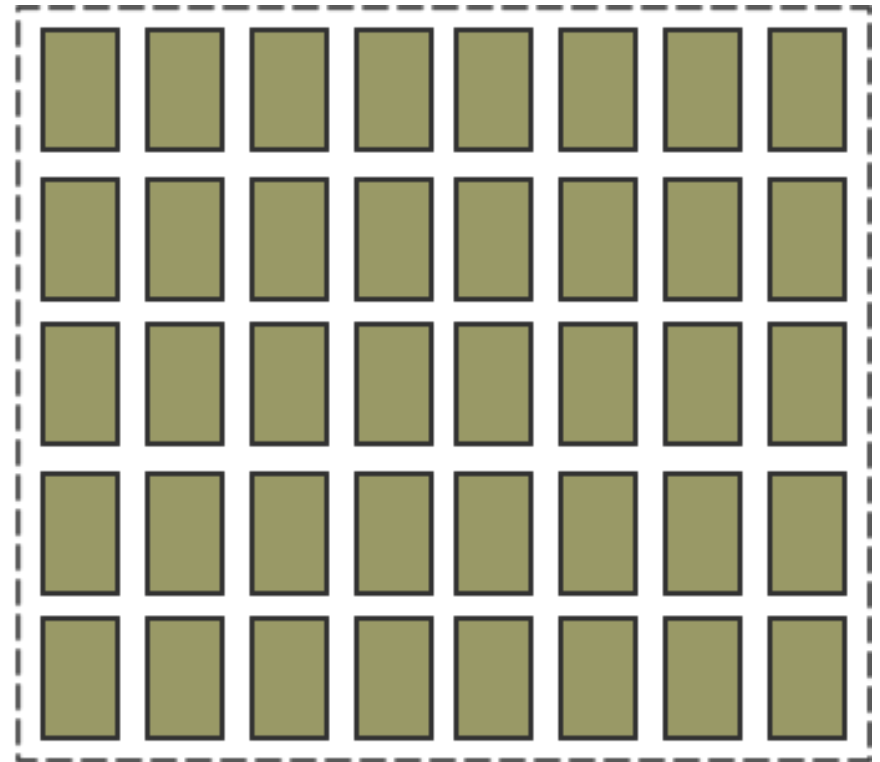
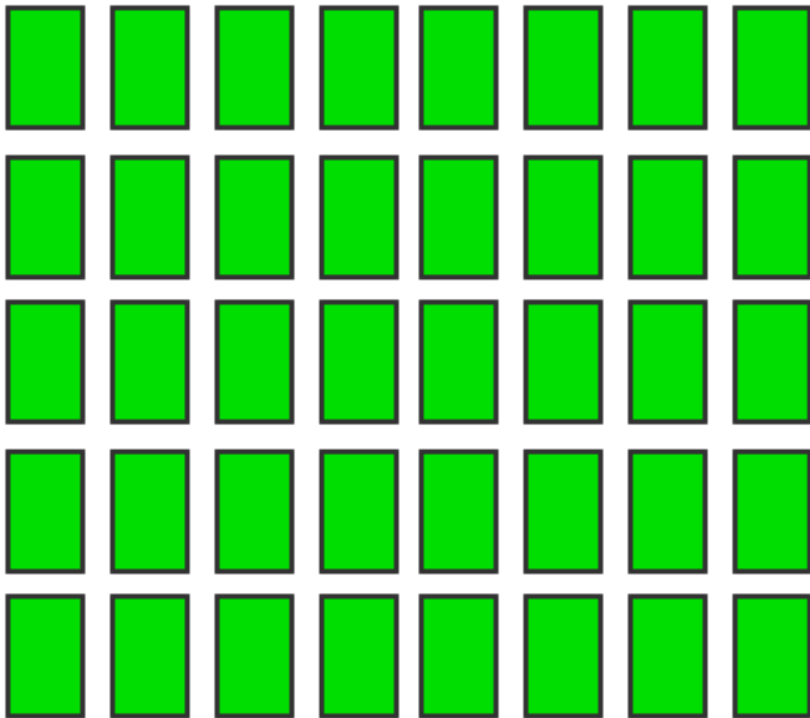
Rolling



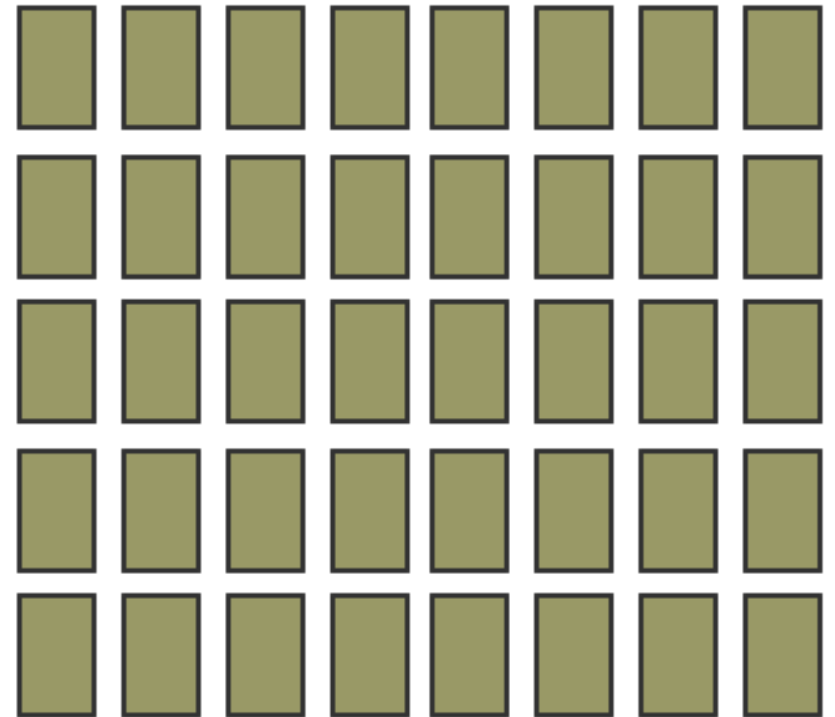
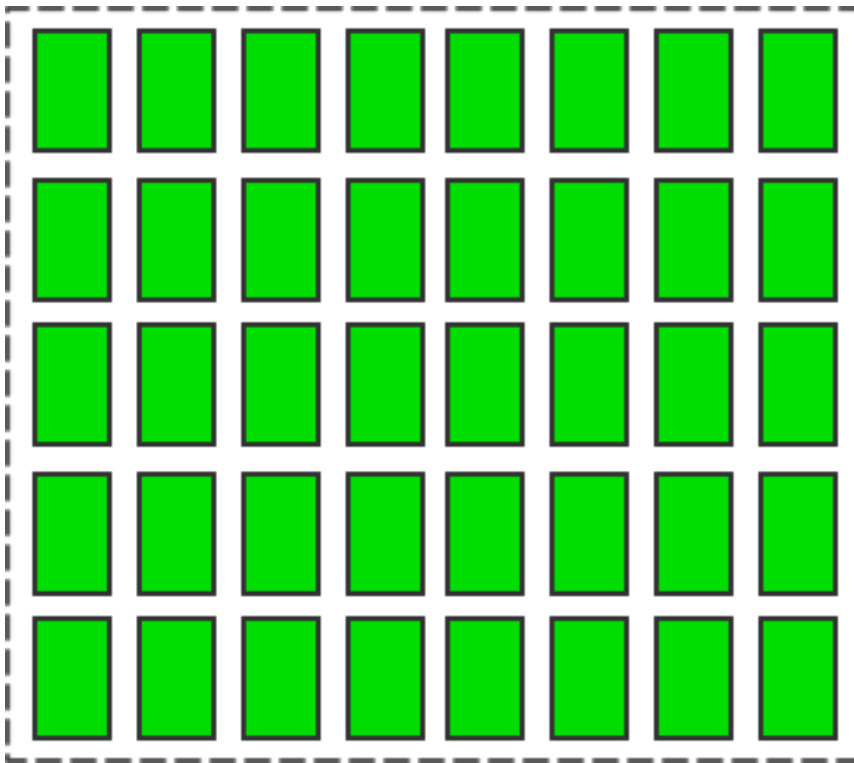
Rolling



Parallel



Parallel



Not Rollouts

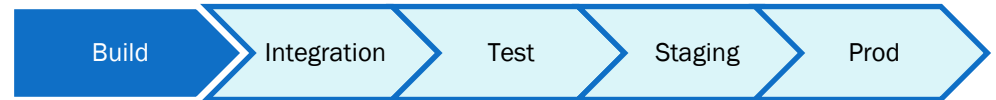
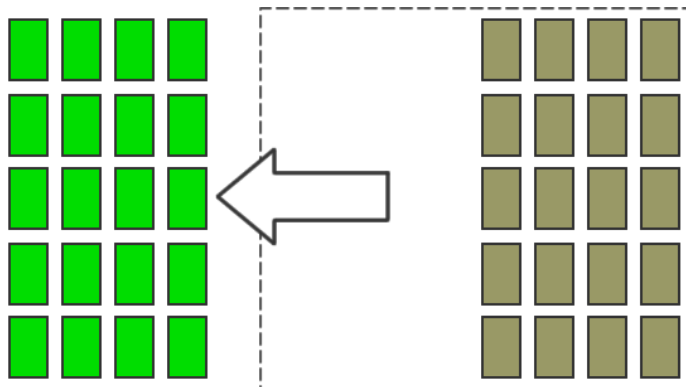
- **Piloting**
- **Feature Toggle**

Cloud Delivery

- **Not Much, Really**
- **Simplifies Environments**
- **Simplifies Mistakes**

Build Your Own Plan

- **Application Segregation**
- **Environments**
- **Release Workflow**
- **Delivery**
 - **Components**
 - **Push vs Pull**
 - **Rollouts**
- **Cloud Application**



Deployment Matters

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