# Open source @ scale

10,000 engineers and counting

@jeffmcaffer
@jeffwilcox
Microsoft Open Source Programs Office

| | | |
|---|---|---|
| **10,000**<br>members | **7,000**<br>repos | **27,000**<br>use registrations |
| **1,000**<br>release requests | **2X**<br>yearly growth | **1000s**<br>vulnerabilities |

# 100

# Evolution



"All in"

Test the waters

Centralized

Denial
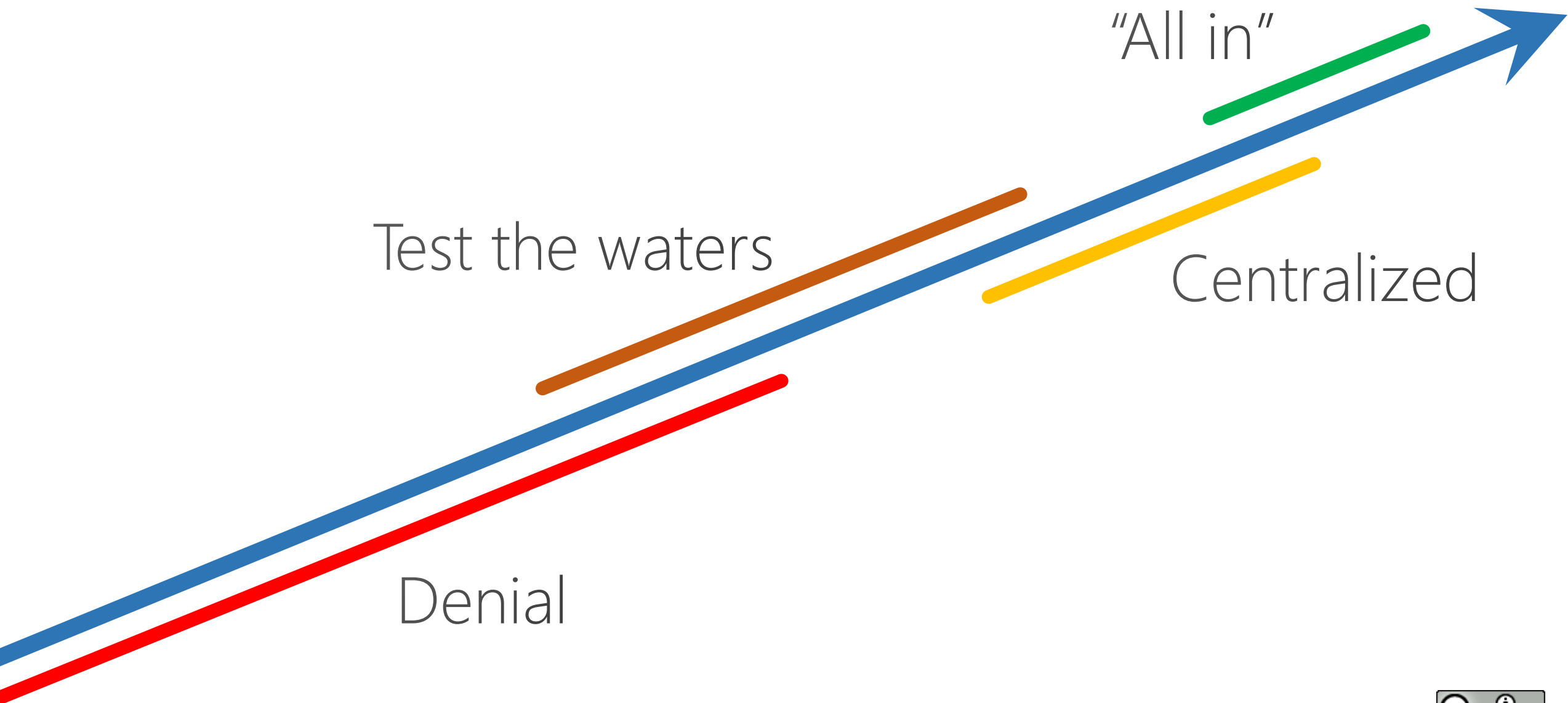
# Open Source Programs Office

Evolved out of legal, into engineering

Board of directors of execs from major businesses

Highly collaborative

Engineering, legal, security, business, accessibility, …

Major initiatives around

Policy and process
Tools
Culture

# What does our OSPO do?

## Culture

Coordinate interested parties
Drive culture
Management buy in
**Business Playbooks**
Rewards, recruiting and retention
**Industry collaboration**
Internal/external community
**Conferences**
Create open source tools

## Processes and Tools

**Define policies and processes**
**GitHub management**
Repo landing pages
Open source repo linters
Disaster recovery/backup
Use, Contribute, Release workflows
**Automation**
IP scanning workflows
Component security
Attribution service
CLA
Source code disclosure site
Package (e.g., NPM) publishing
Operational systems
GitHub API proxy / operations API

## Information

Public presence
**Data and insights** – GitHub, package managers, build, social, governance
Track org/product structure
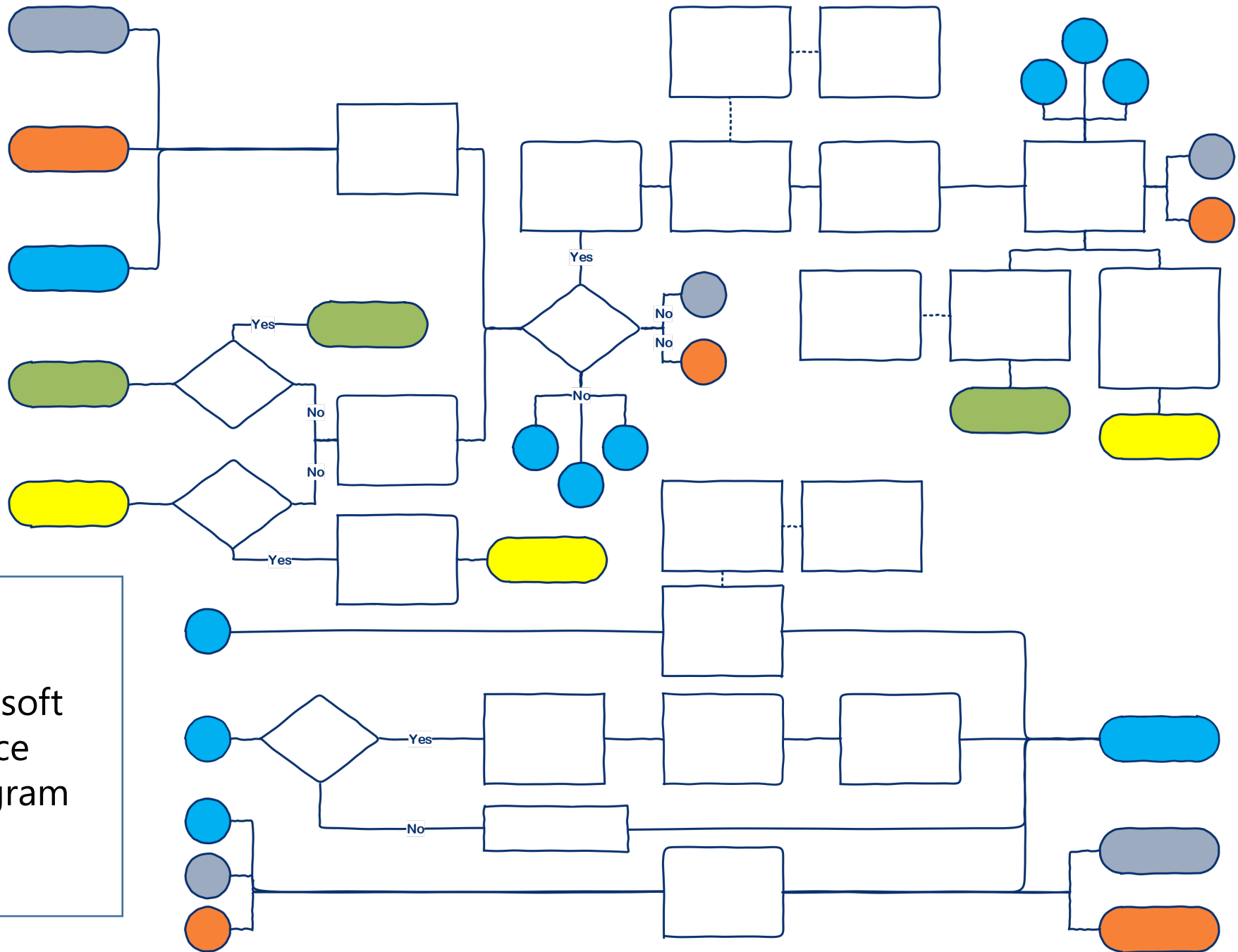GitHub-Microsoft id mapping
Share data publicly
Training
Documentation
Open source policy

# Less is more...
# // Some code required

Actual Microsoft
open source
decision diagram

Yes

Yes

No

No

Yes

No

No

No

Yes

Yes

No

# Simplify & unify policy

## Using open source

Registering use

IP separation

Contributing

IP scanning

Component security

## Release open source

Is approval needed?

Approval process

Patent review

# Automation & delegate everywhere

Codified policies

Machine-readable data
Licenses, copyrights, company directory, product definitions, GitHub data


Approval workflow integration

People management

Repo linters

Component use registration

# uild succeeded

> **Run node** 🖨
>
> Ran for 5.1 minutes (Hosted Agent), completed 12 days ago

17-02-02T17:45:44.5376608Z register
17-02-02T17:45:45.0406618Z runtimeDependencies: 0
17-02-02T17:45:45.0416616Z devDependencies: 314
17-02-02T17:45:45.0416616Z totalDependencies: 314
17-02-02T17:45:45.0456623Z Registering dependencies...
17-02-02T17:45:45.0496617Z '{"context":{"user":"willbar","ms.internal":true,"ms.group":"C+E
17-02-02T17:47:21.2613688Z '{"context":{"user":"willbar","ms.internal":true,"ms.group":"C+E
17-02-02T17:48:51.7141315Z '{"context":{"user":"willbar","ms.internal":true,"ms.group":"C+E
17-02-02T17:50:36.4353621Z '{"context":{"user":"willbar","ms.internal":true,"ms.group":"C+E
17-02-02T17:50:50.1303307Z Registration completed:
17-02-02T17:50:50.1443307Z Registered: 314
17-02-02T17:50:50.1443307Z See results in bin/osscg/osscg-result.json
17-02-02T17:50:50.1443307Z See pending review components in bin/osscg/osscg-pending.json

# Our six-month 2FA challenge

## [Insert your own favorite corporate process jokes here]

Two-factor auth is important to protecting the brand & pending releases

Our self-service GitHub already enforces 2FA

GitHub's API identifies our members without 2FA, nice

Why are people turning off 2FA?

Let's ping folks to enable it

Hard deadline of October

How do we get in touch with our GitHub members?

Let's ping folks to enable it again

This should be easier, FYI GitHub

GitHub is shipping a new org security checkbox feature!

We should warn machine accounts

Oh wait, what about collaborators?

Good, this new API is great

Communicate again

---

GitHub Admin

Security ×

🔒 GitHub, Inc. [US] https://github.com/organizations/Microsoft/settings/security  ☆  ⋮

This organization    Search       Pull requests    Issues    Gist

Microsoft

📓 Repositories      👥 People       🐱 Teams       📋 Projects      ⚙ Settings

Organization settings

Two-factor authentication

Profile

Requiring an additional authentication method adds another layer of security for your organization.

Member privileges

☑ **Require two-factor authentication for everyone in the Microsoft organization.**
Members, billing managers, and outside collaborators who do not have two-factor authentication enabled for their personal account will be removed from the organization and will receive an email notifying them about the change.

Billing

Security

Save

Audit log

# Authentic open source experiences

Great feedback loop in place with GitHub

Let GitHub do what it's great at

Immediately use new features

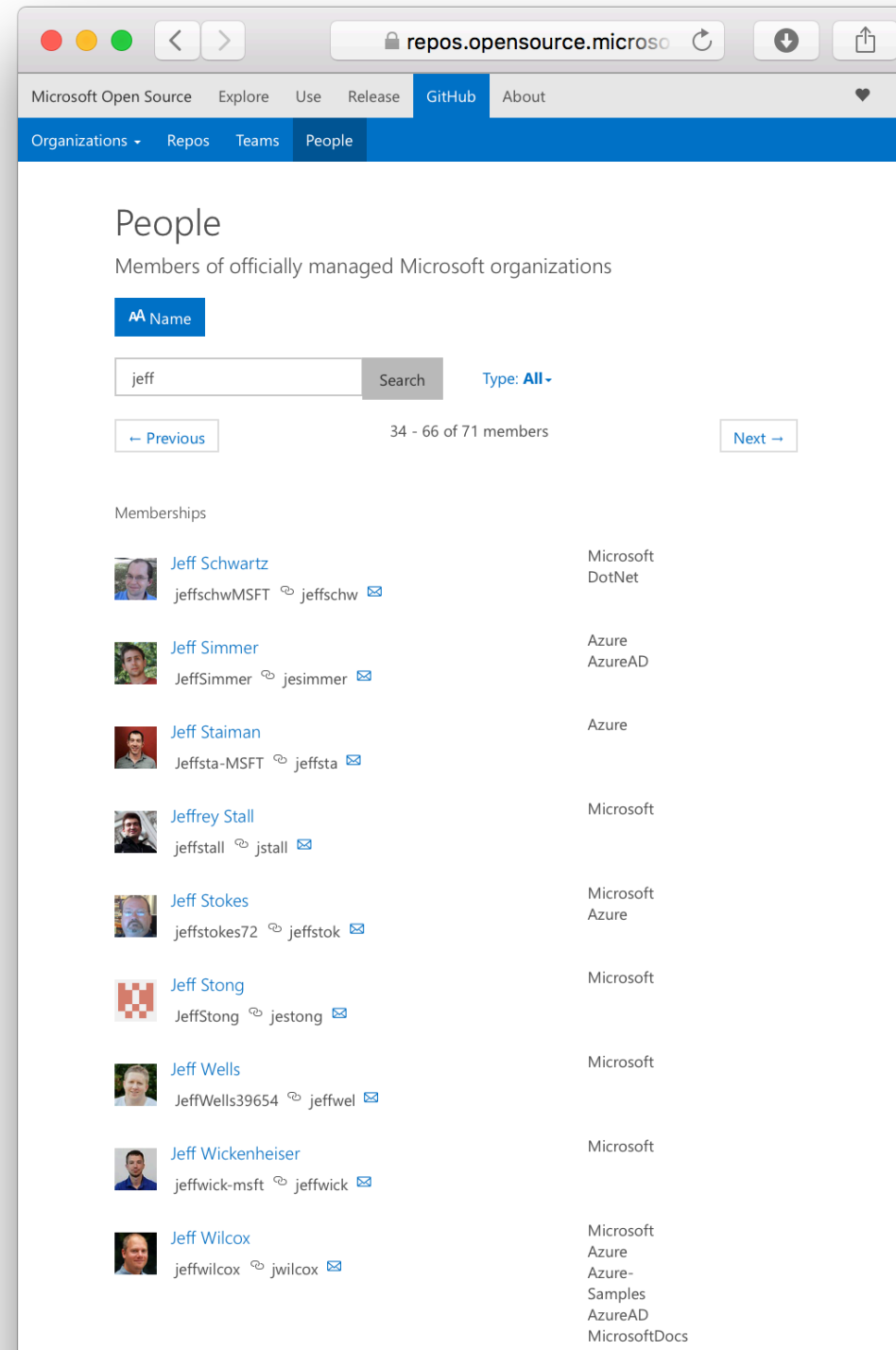Attract & retain engineers – tools we love

# People management

Who is this username?

How can I identify peers?

Self-service onboarding

Automated employment cycle

Delegated permission decisions

# Your Microsoft GitHub organizations

## Azure

Official Azure SDKs, products and resources predating the official Microsoft GitHub org

## Azure-Samples

Azure Samples as indexed by Azure.com

## AzureAD

Azure Active Directory SDKs

## Microsoft

The official Microsoft GitHub organization for open source projects

# Available Microsoft GitHub organizations

### aspnet [Join]

ASP.NET and ASP.NET Core open source project

### Additional Organizations

The following organizations are specialized for specific teams and projects, but not general-purpose membership. Please only join if you have a business need.

Azure-AppService-Samples [Join]

Azure App Service product samples separate from the Microsoft and Azure-Samples orgs

CNTK-components [Join]

Extra Microsoft CNTK components that have license restrictions

Microsoft-Notes [Join]

Private organization for Microsoft Notes engineering
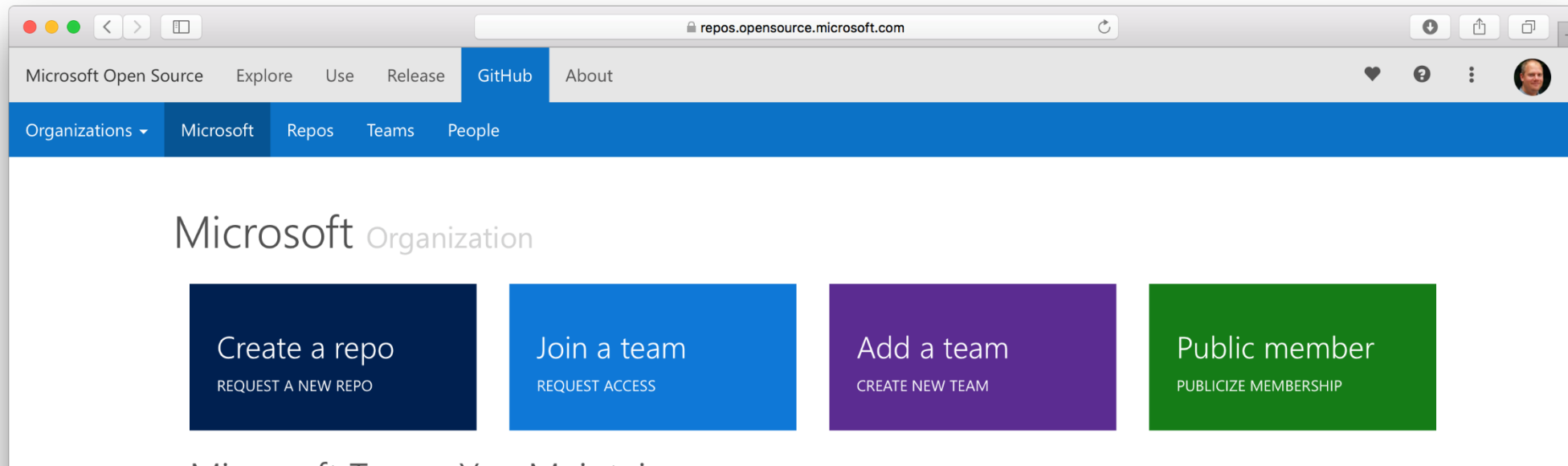
MicrosoftArchive [Join]

# GitHub management

Diverse corporate GitHub user base

Approach evolved from the wild west

Enable cross-organization scenarios

Our repo create wizard is efficient, easy, adds value

**Left window:**

repos.opensource.microsoft.com

Microsoft Open Source | Explore | Use | Release | GitHub | About

Organizations ▾ | Repos | Teams | People

# Repositories

Across all officially managed Microsoft organizations

⟳ Recent commits | ★ Stars | ⑂ Forks | AA Name | 🗓 Updated | ⚡ Created date

[Search repositories...] Search | Type: **public** ▾ | Language: **All** ▾

Teams: **myadmin** ▾

**100** results for **public** repositories and **my admin** team permissions | ✕ Clear filter

← Previous | 1 - 20 of 100 | Next →

## ospo-ghcrawler

GitHub crawler

● JavaScript  ⑂ 4  Updated 2 hours ago  Created 4 months ago

Microsoft organization

## service-fabric-dotnet-data-aggregation

### Need to create a repo?

To create a new repo, first you need to select which organization will host it.

## Organizations

Azure

Azure-AppService-Samples

Azure-Readiness

Azure-Samples

AzureAD

AzureCAT-GSI

CNTK-components

DotNet

**Right window:**

repos.opensource.microsoft.com

Microsoft Open Source | Explore | Use | Release | GitHub | About

Organizations ▾ | Azure-Samples | Repos | Teams | People

# service-fabric-dotnet-data-aggregation

Azure-Samples organization

Learn about large-scale data aggregation and management of large volumes of end-user devices with Service Fabric.

● JavaScript  ⚖ MIT License  ★ 12  ⑂ 12

## Metrics

### 34 watchers

### 6 open issues

Pull requests: **3**

Pull requests applied: **2**

Pull requests NOT applied: **0**

Average days taken to close pull requests: **5**

Average hours taken for first response to pull requests: **0**

Pull requests opened per day: **1**

Pull requests applied per day: **0**

Closed issues: **0**

Average days taken to close issues: **0**

## GitHub URL

https://github.com/Azure-Samples/service-fabric-dotnet-data-aggregation

## Timeline

Commits pushed
**21 hours ago**

Updated
**16 days ago**

Created
**a year ago**

## Clone

HTTPS

https://github.com/Azure-Samples/service-fabric-dotnet-data-aggregation.git

SSH

git@github.com:Azure-Samples/service-fabric-dotnet-data-aggregation.git

## Team permissions

# 28.3495 grams of prevention

2FA & 3rd-party app approval on for GitHub orgs

Have a clear, enforced private repo policy

Minimize organization owners

Guidance engineers grok

Comms plan

# In progress

# Playbooks

Frame the conversation
Business, engineering, governance

Learn and collaborate across the company

Across the industry
https://opensource.guide
Linux Foundation
TODOgroup.org

# Insights

## Gather data

GitHub, company systems, social media, packaging systems, ...

## Analysis

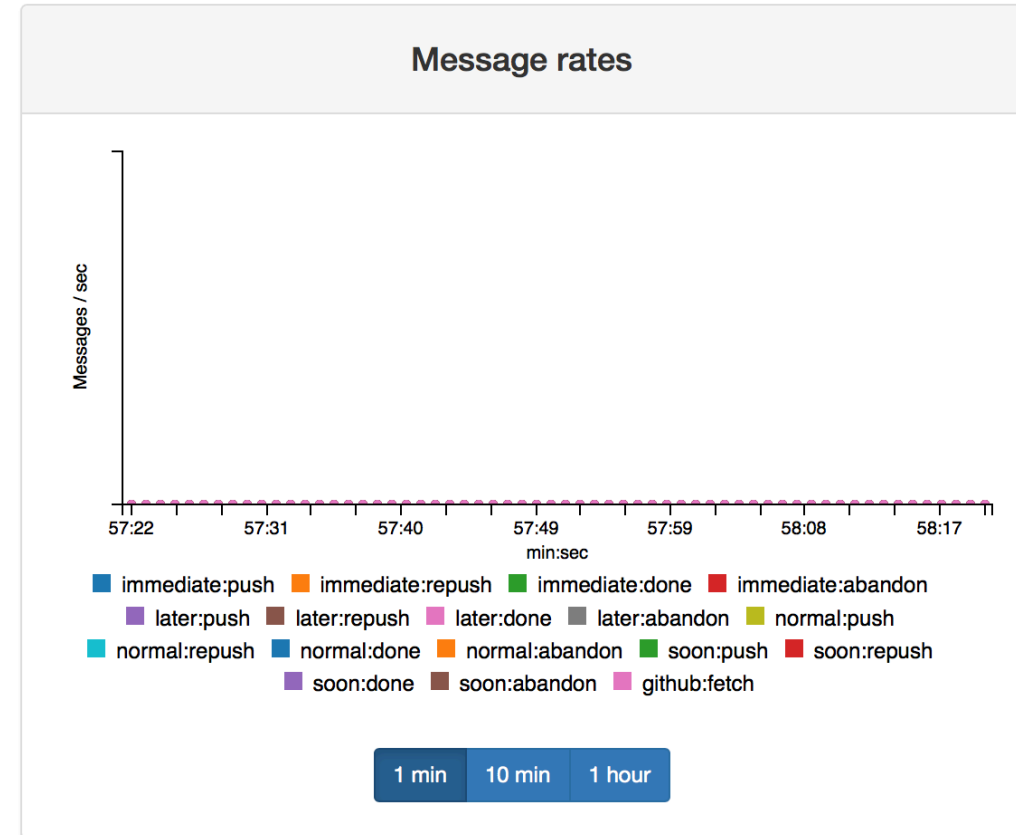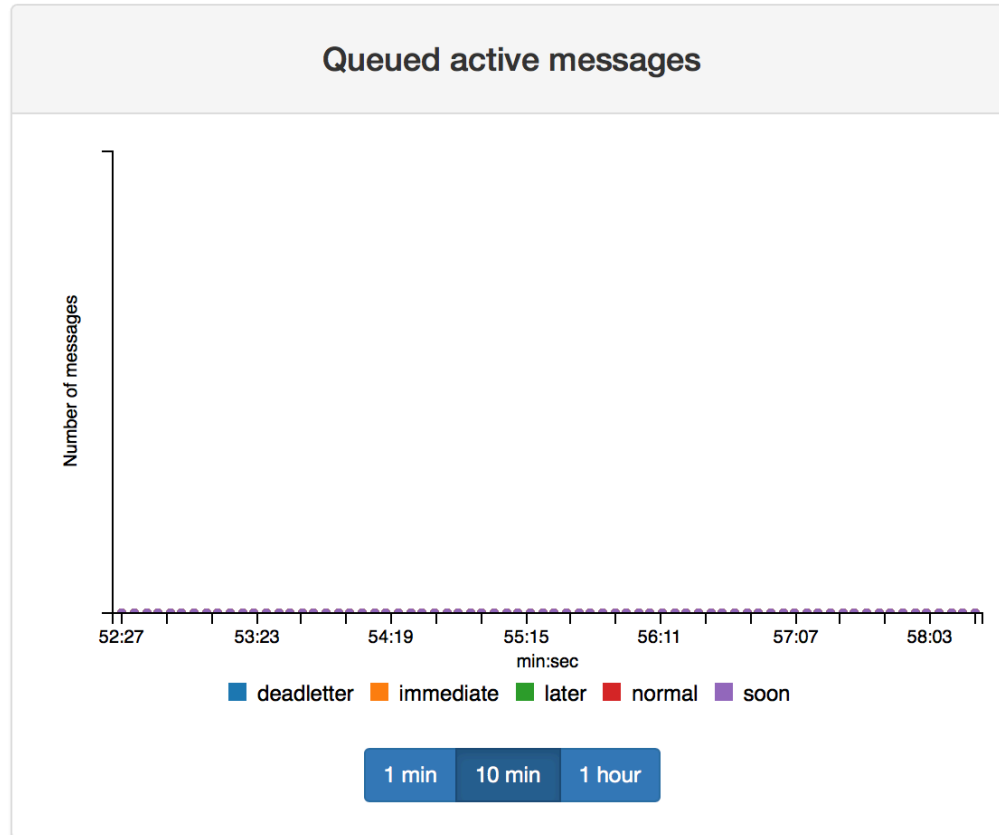Project health, API use, community shape, trends, product uptake, ...

## Make widely available

Crawler-in-a-box (CIABatta) – https://github.com/microsoft/ospo-ghcrawler
Raw data – https://github.com/microsoft/ghinsights
Insights dashboards– coming

# Crawler in a box

## Crawler Dashboard

### Queued active messages

Number of messages

min:sec

52:27   53:23   54:19   55:15   56:11   57:07   58:03

■ deadletter  ■ immediate  ■ later  ■ normal  ■ soon

[ 1 min | 10 min | 1 hour ]

### Message rates

Messages / sec

min:sec

57:22   57:31   57:40   57:49   57:59   58:08   58:17

■ immediate:push  ■ immediate:repush  ■ immediate:done  ■ immediate:abandon
■ later:push  ■ later:repush  ■ later:done  ■ later:abandon  ■ normal:push
■ normal:repush  ■ normal:done  ■ normal:abandon  ■ soon:push  ■ soon:repush
■ soon:done  ■ soon:abandon  ■ github:fetch

[ 1 min | 10 min | 1 hour ]

TODOgroup.org

https://opensource.microsoft.com

@jeffmcaffer
@jeffwilcox

*Thanks!*