

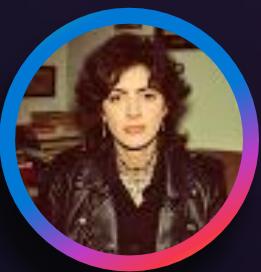


# Three Horizons

by Red Hat®, Microsoft® e GitHub®

Transform Development. Transform Business. Transform Everything.

# Get to know our amazing team



**Paula Silva**

Software Global Black Belt Team  
**Microsoft**



**Ana Basso**

Ecosystem Solution Architect  
**Red Hat**



**João Peixoto**

Senior Cloud Services Black Belt  
**Red Hat**



**Marcos Falcirilli**

Partner Development Manager  
**Microsoft**

# DevOps practices are delivering results

## Speed & quality

Security and testing are “shifting left”, enabling faster delivery

## Choice & flexibility

Cloud native trends have created choice and flexibility for dev teams

## Expert utilization

Central teams provide recommendations on security, governance, technology & risk assessments

# But has limits



# Complexity creates challenges

## Limits scaling

Teams have limited bandwidth

Approved projects take **days to weeks** to get started

Developers just want to code

## Poor developer experience

Develop a new approach for every project

Must win approval from key stakeholders

Unclear processes lead to uncertainty and rework

## Organizational waste

Wasteful reworking of previously solved problems

Lack of process documentation

"Organizational amnesia"

# Developers determine speed to innovation



# The developer experience matters



## Centering developers

Helps identify system problems that are typically overlooked



## Improving systems

Enhance speed and impact, reliability and availability, security and compliance

# Four key areas drive developer Experience

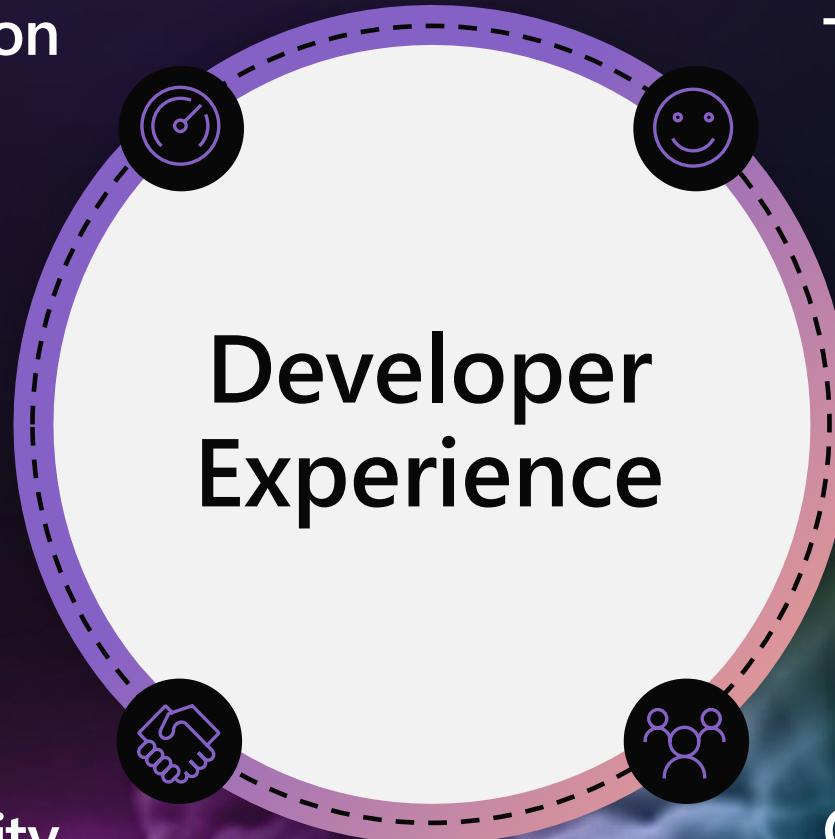
Speed & Innovation

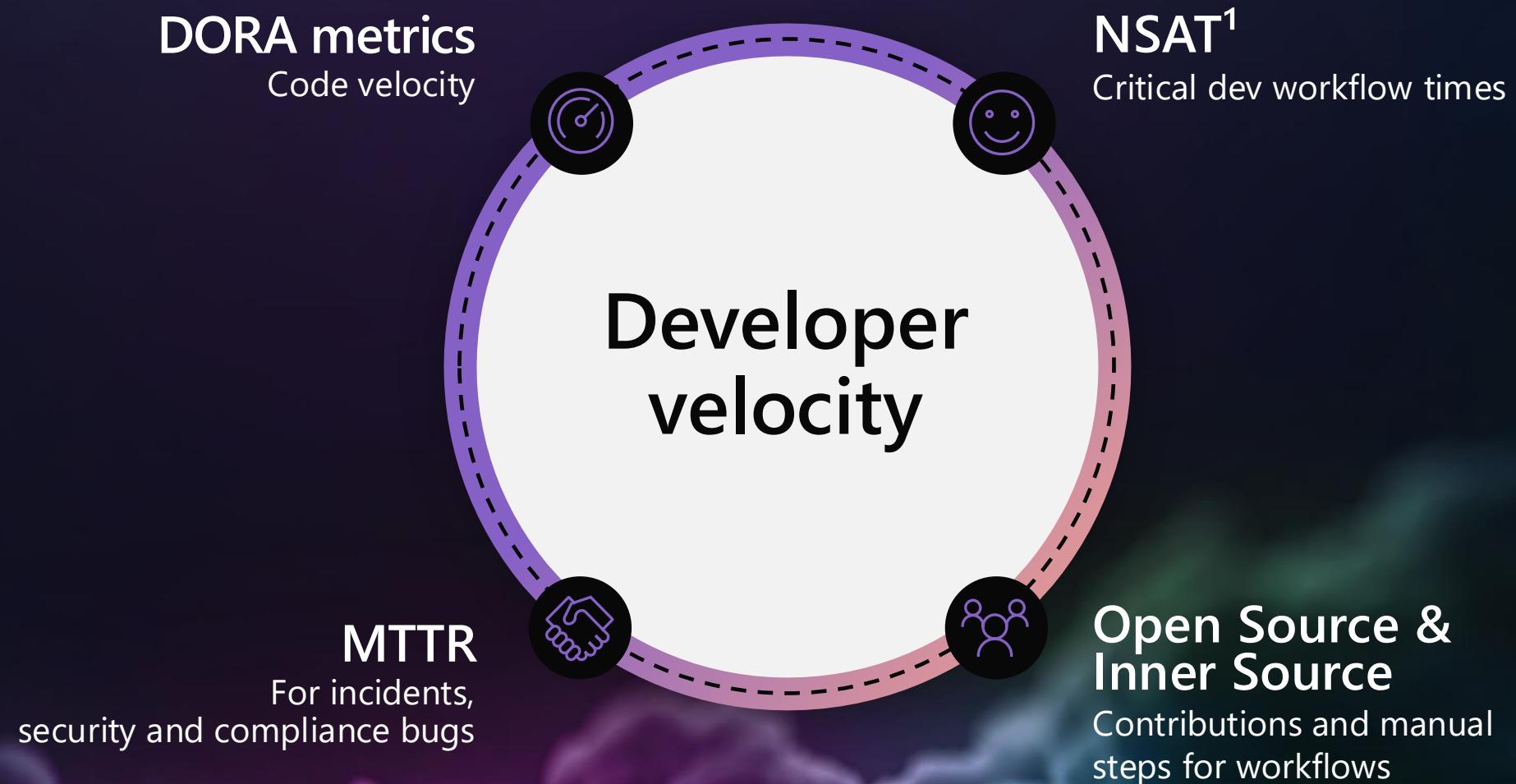
Talent & Happiness

Developer  
Experience

Trust & Quality

Collaboration & Scale





<sup>1</sup> NSAT = Net satisfaction score

<sup>2</sup> MTTR = Mean-time-to-remediate



Common challenges...

# DevOps practices are maturing...

## Challenges

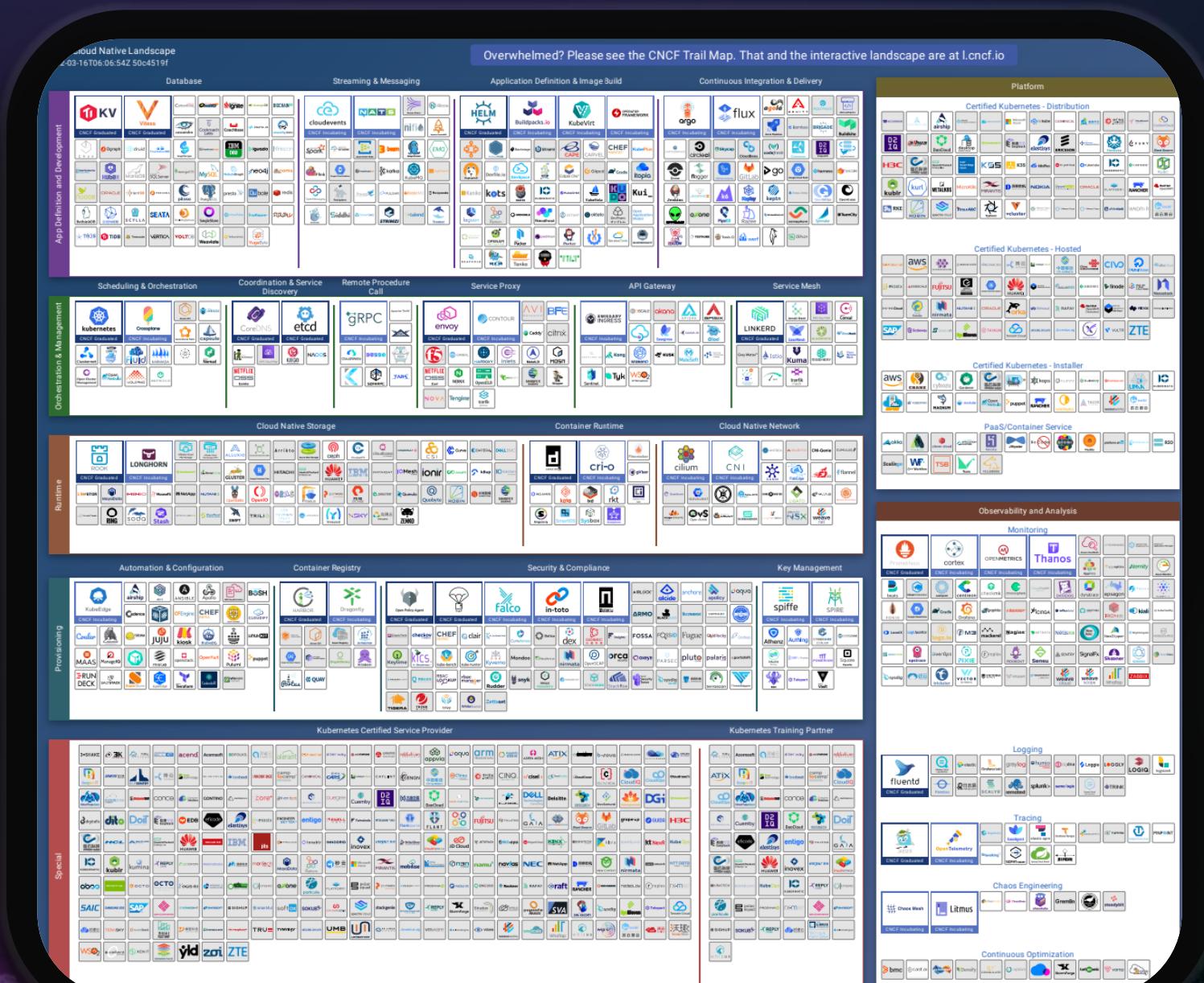
- Central teams need to support...
  - Variable app stacks, infra, software
  - Complex integrations across diverse stacks
  - The same "agile" pace of multiple dev teams
- Dev teams need to manually understand, maintain compliance, and other recommendations
- Tribal knowledge and organizational amnesia

## Some of the jobs to be done...

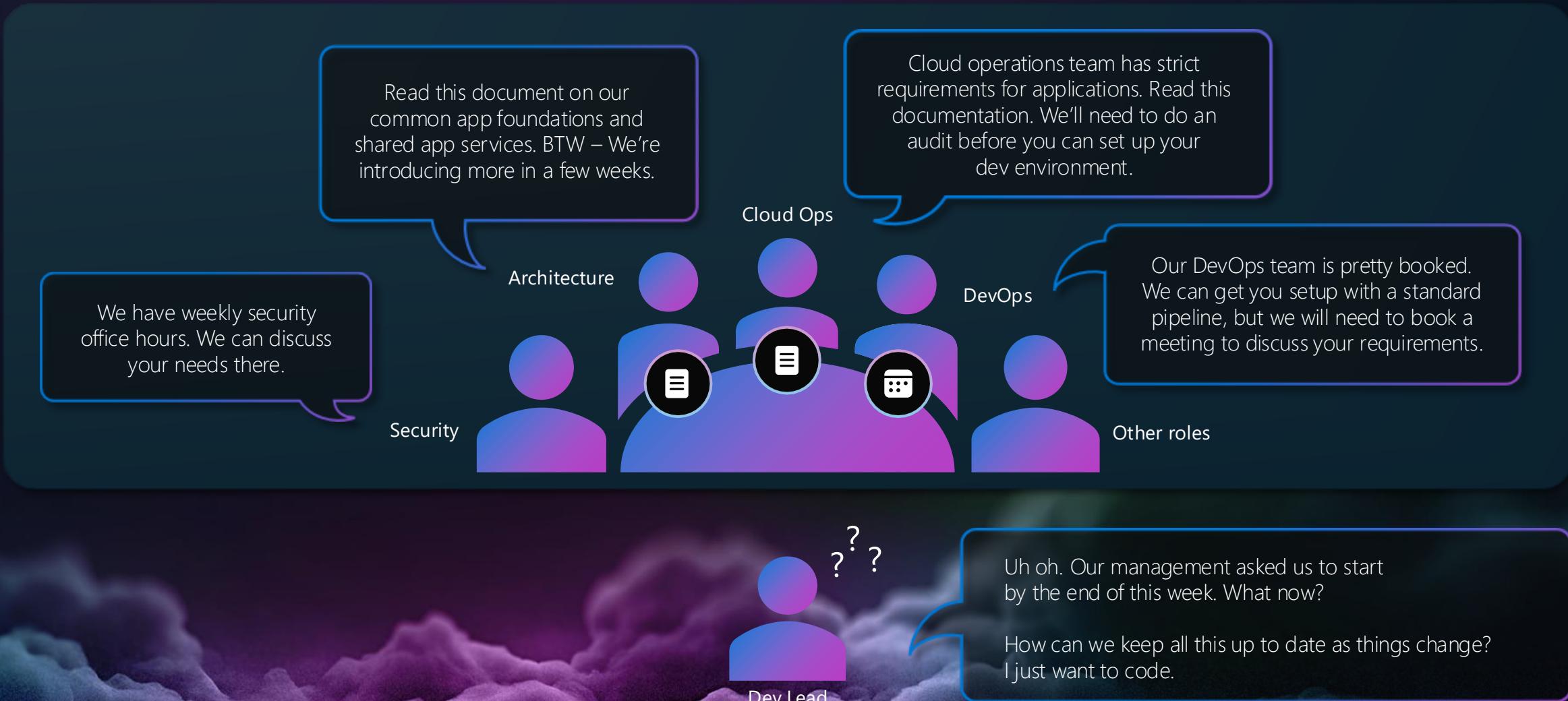
- Standardization: frameworks, opinionated stacks, ...
- Discovery, e.g. catalog for apps, infra, docs
- Common approaches & solution templates
- Isolation (projects, workloads)
- User management/RBAC
- UX – CLI / UX
- Tool flexibility/addons
- App deployment
- Policies (infra, build, deployment, ...)
- Observability
- Cost / Quotas
- Maintenance

## Result

- Inconsistent standardization and compliance
- Potential for sub-optimal designs, lack of reuse
- Increased cost, risk
- Manual process reduces developer velocity and time to business value



# Just starting projects is challenging





What is it Platform Engineering?

Platform Engineering is the discipline of **designing**  
**and building self-service capabilities** to  
**minimize cognitive load for developers**  
and to enable fast flow software delivery.

Platform Engineering is about **solution**.

# Balancing the needs

## Developers

-  Agility
-  Collaboration
-  Flexibility
-  Productivity

## Platform engineers

-  Security
-  Governance
-  Standardization
-  Cost management

# Common goals for Platform Engineering practices

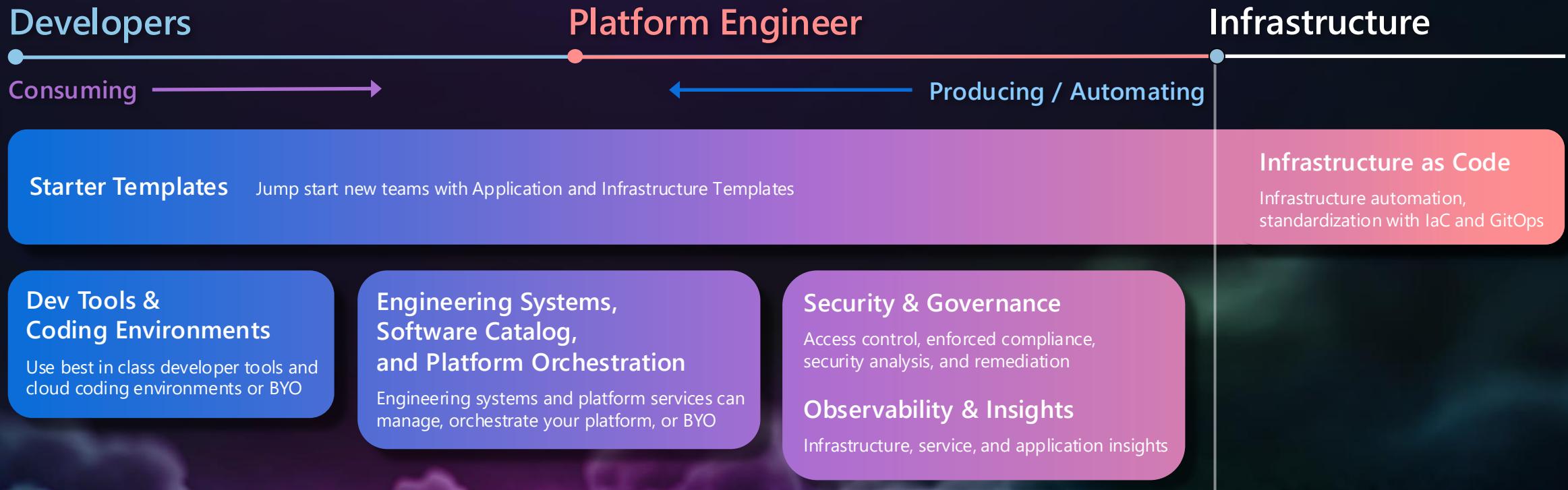
## Self-service with guardrails

- ✓ Keep developers focused on delivering business value
- ✓ Secure & governed development, with flexibility
- ✓ Rapid & secure onboarding/offboarding
- ✓ Improve collaboration
- ✓ Costs optimization

## Culture shift to product mentality

- ✓ Engineering Platform managed as a product
- ✓ Devs are the primary customer
- ✓ Automate away as much as possible
- ✓ Security, architecture, operations are key stakeholders

# Key aspects of an Engineering Platform



# Platform engineering first steps

At each step, establish metrics that are key to your success at that stage.

Use these to distill insights that determine if, and when, to move to the next step.

## Establish platform engineering “product team”

Create a dedicated product team, which could be virtual, responsible for working across the organization to create a self-service developer platform.

## Inventory & centralization

Perform an inventory of existing tools, engineering systems, and application platforms. Evaluate usage to determine where to invest and candidates for deprecation. Begin centralizing and reducing redundancy.

## Automate “high toil” areas

Identify areas of high developer toil and automate them. These may be areas of “human in the loop” processes, etc.

## Blaze paved paths

Use templates to create “paved paths” that help developers “fall into the pit of success” by easily following organizational best practices --- orchestration.

## Deploy environments as a service

Develop guardrails and ensure separation of concerns security, e.g. leverage techniques for “on-behalf-of” infrastructure provisioning to prevent over privileged access.

## Optimize self-service developer experiences

Create self-service with guardrails that are easy to consume, secure and are compliant by design. Platform is offered as a “product”.



Our solution...

**Three Horizons** is an enterprise **engineering platform** that addresses the growing complexity of **modern software development**. By integrating **Red Hat Developer Hub, Microsoft Azure, and GitHub Platform**, it provides organizations with a **unified solution** for application development, deployment, and operations.



# Three Horizons Platform Overview

## Developer self-service capabilities



Dev identity



Orchestration & automation



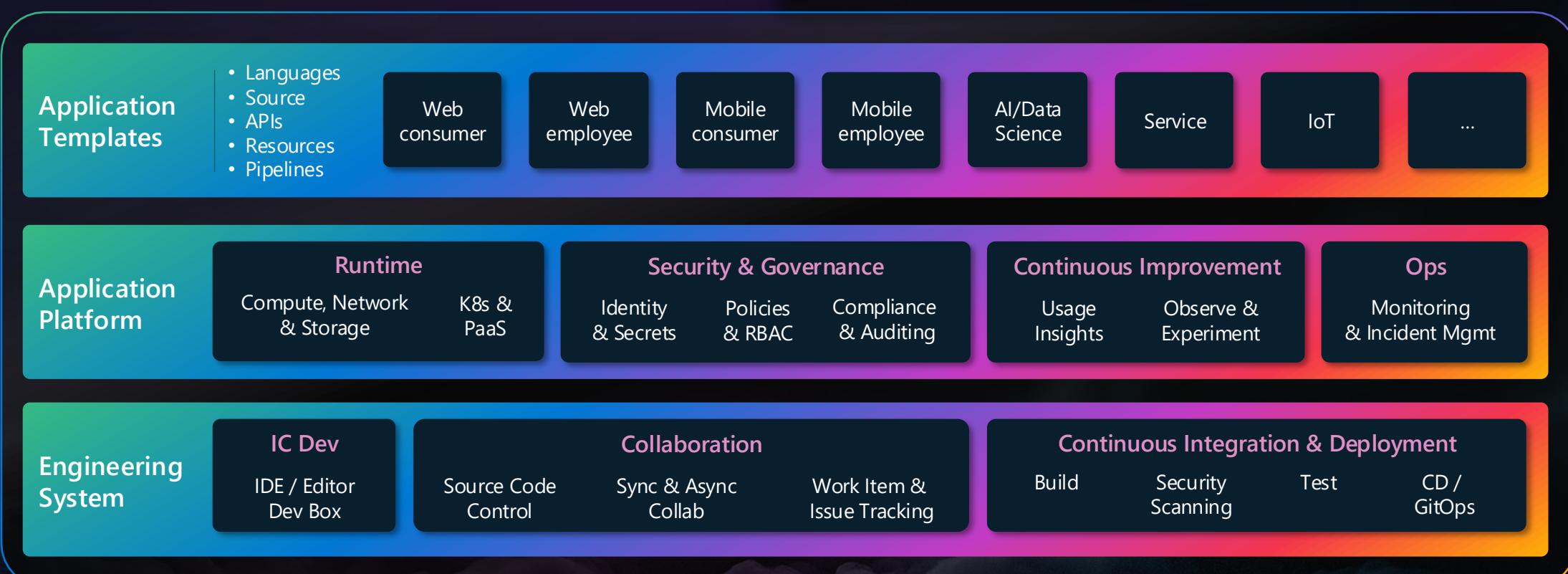
Component & API catalog



Team insights



Dev UX



**Three Horizons** is not just a platform.  
It is a new way to structure your development with more practicality and results.

### Key Differentiators

- ✓ **Unified Portal:** Red Hat Developer Hub installable on ARO or AKS based on customer preference
- ✓ **Complete Automation:** Infrastructure provisioning and CI/CD via GitHub Actions and Ansible templates
- ✓ **Flexibility:** Applications can be developed and deployed on AKS, ARO, or both
- ✓ **Developer Experience:** Accelerated complete cycle, with AI assistance via GitHub Platform
- ✓ **Transformation Potential:** Integrated engineering platforms enable significant reduction in environment setup time and accelerate development cycles, transforming software delivery from a barrier to a strategic business enabler.

### For Development Teams

- 🚀 Accelerated Onboarding - Developers become productive in minutes, not days or weeks
- 🌐 Consistent Environments - Standardized [DevBox templates](#) ensure everyone works in identical environments
- 🧠 Reduced Cognitive Load - [Golden Paths](#) guide developers through common workflows without requiring deep platform knowledge
- 🤖 AI-Assisted Development - GitHub Copilot integration enhances developer productivity and code quality
- 🕒 Streamlined Lifecycle - Seamless transitions from [Inner Loop Development](#) to [Outer Loop Deployment](#) deployment

### For Platform Teams

- 🔧 Simplified Management - Single pane of glass for administering the entire developer platform
- 📊 Enhanced Visibility - Comprehensive monitoring and analytics across all platform components
- 🔒 Integrated Security - Unified security controls and [Security Policies](#)
- ⚙️ Standardized Operations - Consistent [Operations](#) and automation
- 💼 Governance Compliance - Built-in controls to meet organizational and regulatory requirements

### For Business Leaders

- ⌚ Faster Time-to-Market - Reduce development cycles and accelerate innovation
- 💰 Lower Operational Costs - Optimize resource utilization and reduce platform maintenance overhead
- 🔍 Improved Quality - Consistent processes and automated testing increase overall software quality
- 🌐 Scalable Solutions - Easily scale from small teams to enterprise-wide adoption
- 💡 Competitive Advantage - Deploy new features and capabilities ahead of competitors

# Enterprise challenges addressed



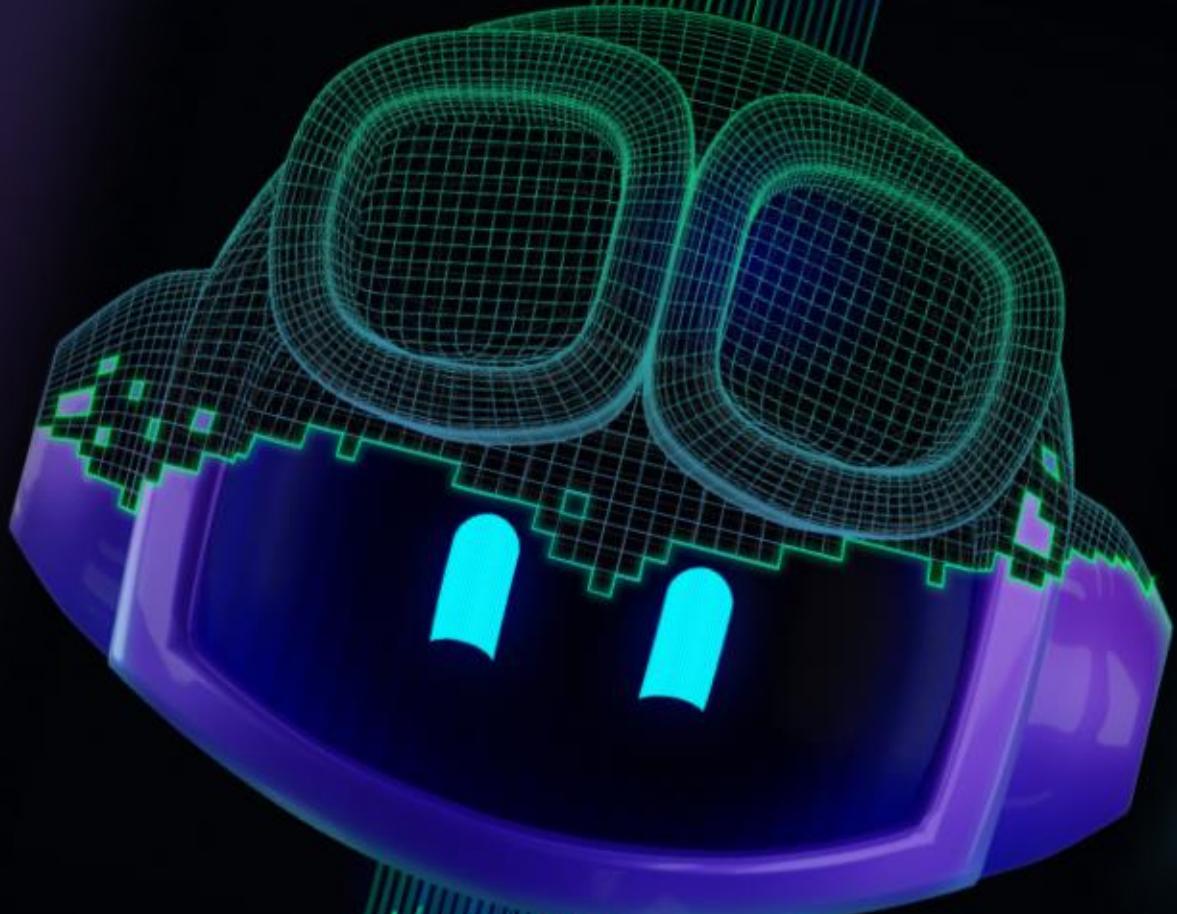
This integrated approach solves critical platform engineering challenges:

- **Developer cognitive overload:** Reducing the burden on developers through curated toolchains and contextual guidance [Microsoft](#)
- **Technical debt accumulation:** Addressing long-term sustainability through infrastructure as code and automated testing [Red Hat](#)
- **Complexity management:** Abstracting complexity through standardized interfaces and workflows [GitHub](#)
- **Security and compliance struggles:** Embedding controls directly into development pathways
- **Multi-environment inconsistency:** Providing uniform experiences across diverse infrastructure [Microsoft](#)

The screenshot shows the Red Hat Developer Hub interface. The left sidebar includes links for Red Hat Developer Hub, Search, Home, Catalog, APIs, Docs, Learning Paths, Clusters, Create..., and Tech Radar. The main content area features a "Welcome to Red Hat Developer Hub!" banner and a "Quick Access" section with sections for COMMUNITY, DEVELOPER TOOLS, CI/CD TOOLS, and OPENSHIFT CLUSTERS. The "DEVELOPER TOOLS" section contains icons for GitHub Enterprise, GitHub Copilot, Advanced Security, Microsoft DevBox, VS Code, and Azure DevOps. The "CI/CD TOOLS" section contains icons for GitHub Actions and Azure Pipelines. The "OPENSHIFT CLUSTERS" section contains icons for OpenShift and Azure. On the right, there is a "Your Starred Entities" sidebar listing "arm-aro-dev-hub-template-dev" and "arm-azure-dev-hub-template-dev" each with a yellow star icon.

# Demo

## Software Catalog



video Self-service provisioning with Red Hat Developer Hub (Platform...)

Welcome back!

Red Hat Developer Hub is a developer portal brings operations and platform engineers knowledge to end-users in a **self-service approach**

Search

Home

My Group

Catalog

APIs

Learning Paths

Create...

Tech Radar

Docs

Clusters

Orchestrator

Notifications

Administration

Settings

https://backstage-backstage.apps.cluster-nbsvf.nbsvf.sandbox163.coentlc.com/catalog

Quick Access

COMMUNITY

DEVELOPER TOOLS

Podman Desktop

CI/CD TOOLS

ArgoCD SonarQube Quay.io

OPENSOURCE CLUSTERS

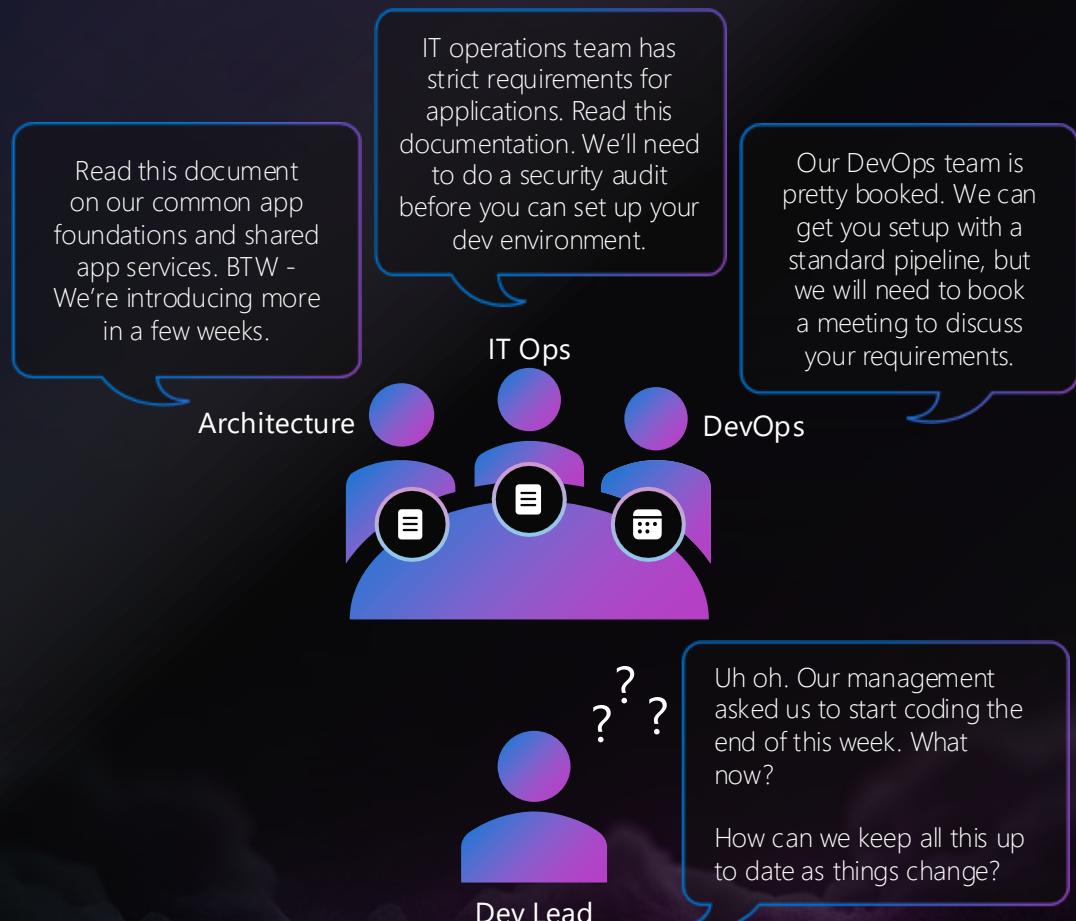
Your Starred Entities

Clear

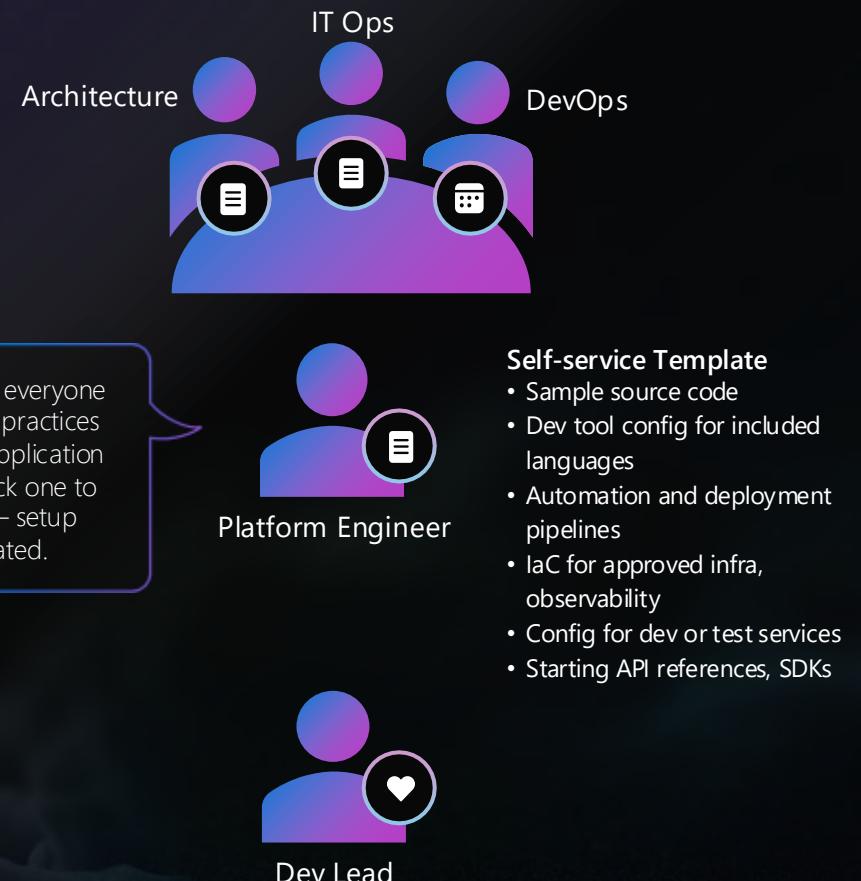
Click the star beside an entity name to add it to this list!

# Simplifying a governed project lifecycle

## Before: Manual



## After: Self-service





## Solution Overview

# Evolving DevOps



## DevOps

“Union of **people, process, and technology** to enable continuous delivery of value to end users.”

## DevSecOps

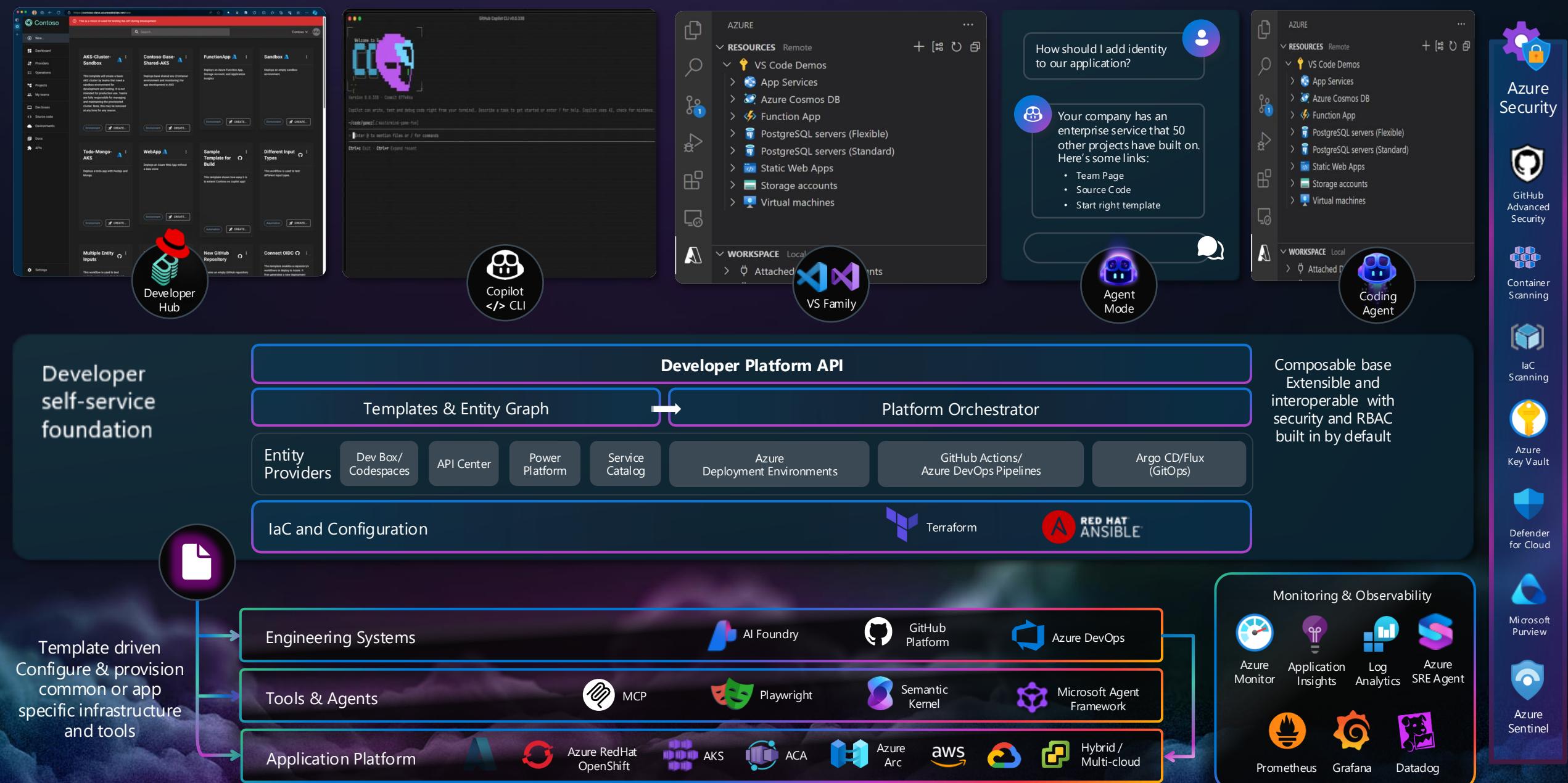
“Union of **people, process, and technology with security** as a shared responsibility to enable continuous delivery of value to end users.”

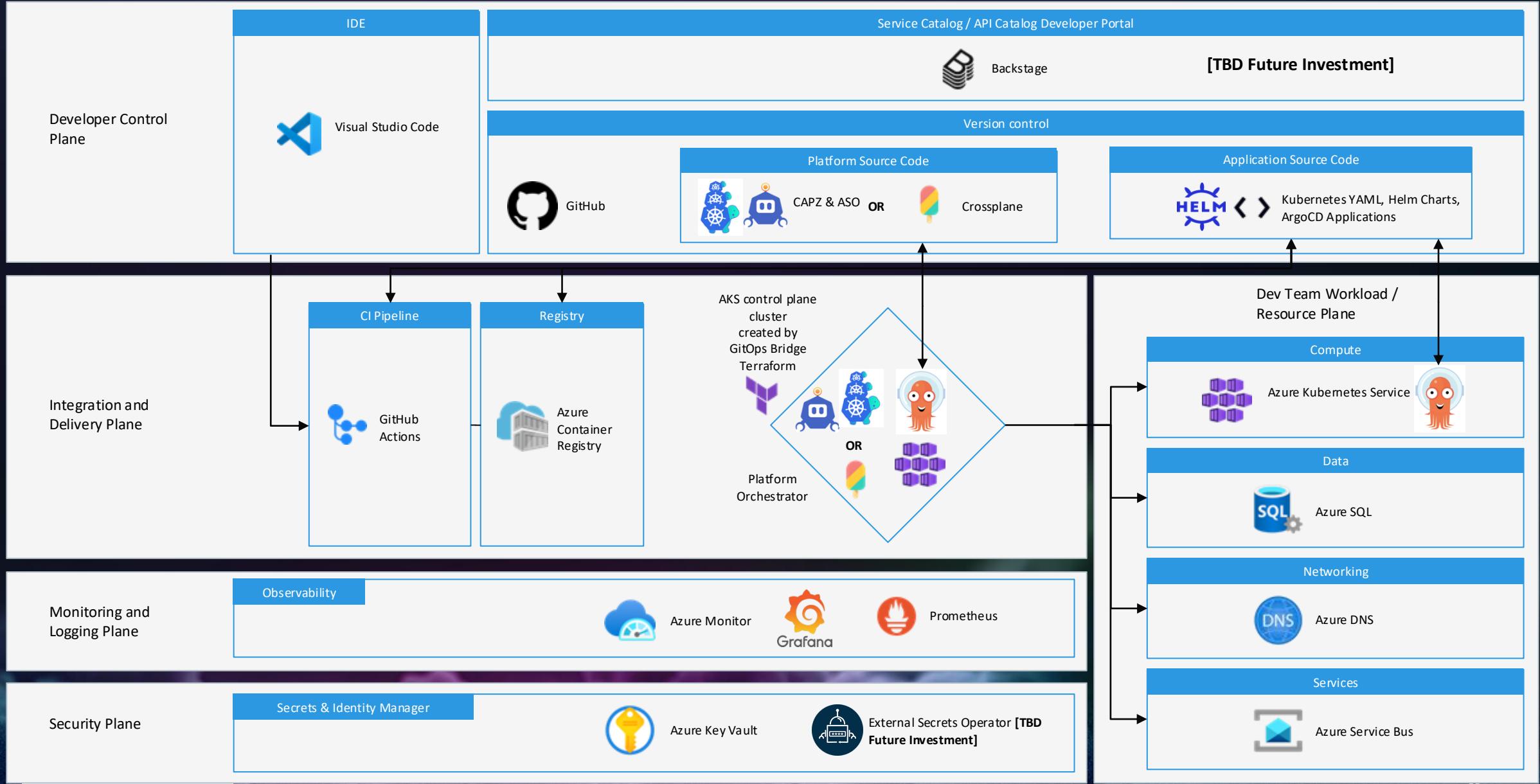
## Agentic DevOps

**AI-powered agents** operating as a member of your dev team to **automate, optimize, and accelerate every stage** of the software development lifecycle.

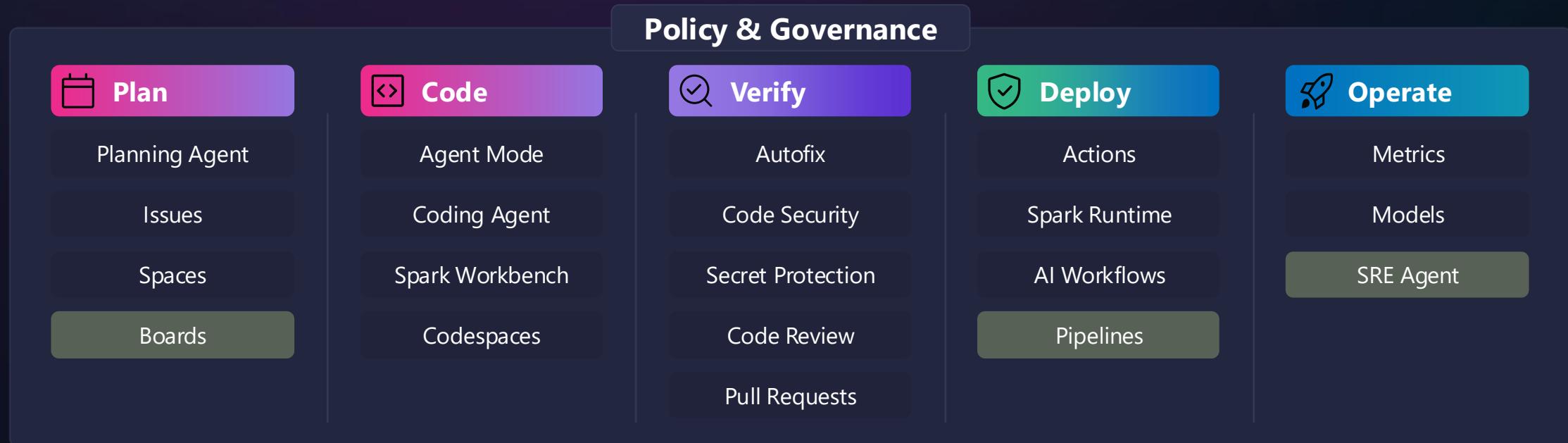


# Three Horizons & Agentic DevOps Platform





# Across the SDLC



Integrations & MCP

# Agentic DevOps

AI-powered agents operating as a member of your dev team—automating, optimizing, and accelerating every stage of the software lifecycle



## GitHub Copilot

### Agent Mode

AI-powered pair programmer, performing multi-step tasks at the developer's command

### Coding Agent

AI-powered peer programmer, automating routine tasks and jobs to be done across the software lifecycle

### App Modernization

GitHub Copilot extends AI-assisted capabilities to accelerate modernization and upgrades for .NET and Java apps



## SRE Agent

AI-powered operator, continuously monitoring and optimizing apps in production



## GitHub Models

Every developer can be an AI developer with full model accessibility and fine-tuning in GitHub to speed app development

Public Preview

Public Preview

Public Preview

Azure DevOps + GitHub



No longer separate choices

**Azure DevOps with GitHub Repos**  
**Your path to Agentic AI**



## GitHub Copilot SWE Agent “Padawan”

AI-powered peer programmer,  
automating routine tasks and jobs to be  
done across the software lifecycle.



## Azure SRE Agent

AI-powered operator, continuously  
monitoring and optimizing apps in  
production.

# Platform architecture



## Horizon 1: Foundation

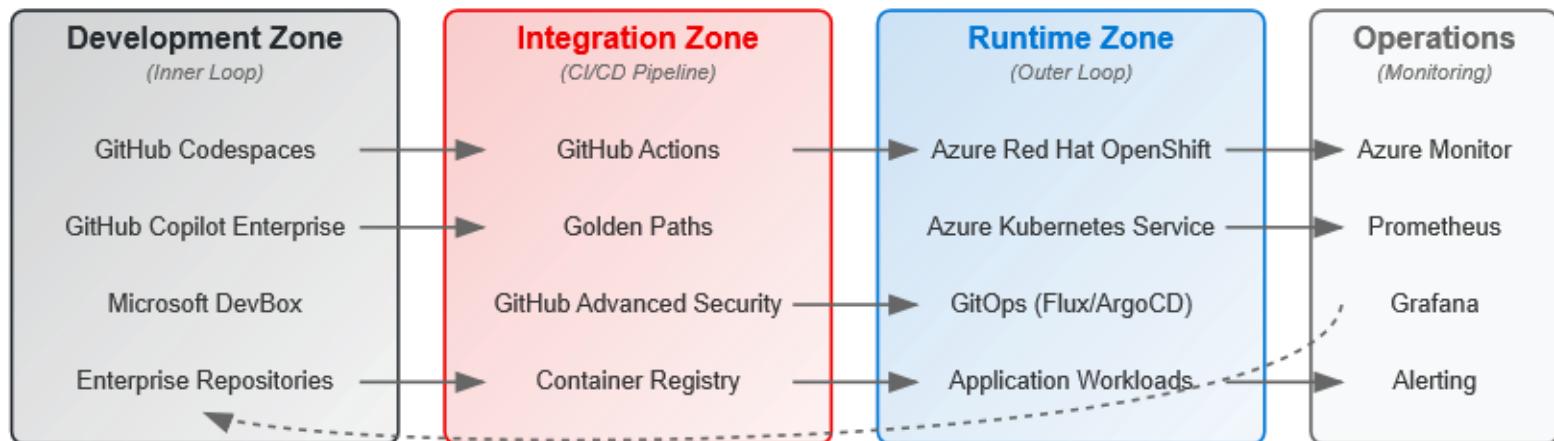
Core infrastructure, basic services, and essential capabilities

## Horizon 2: Enhancement

Advanced features, optimization, and increased automation

## Horizon 3: Innovation

AI-driven features, advanced analytics, and transformation capabilities



Red Hat Advanced Developer Suite (Developer Portal)

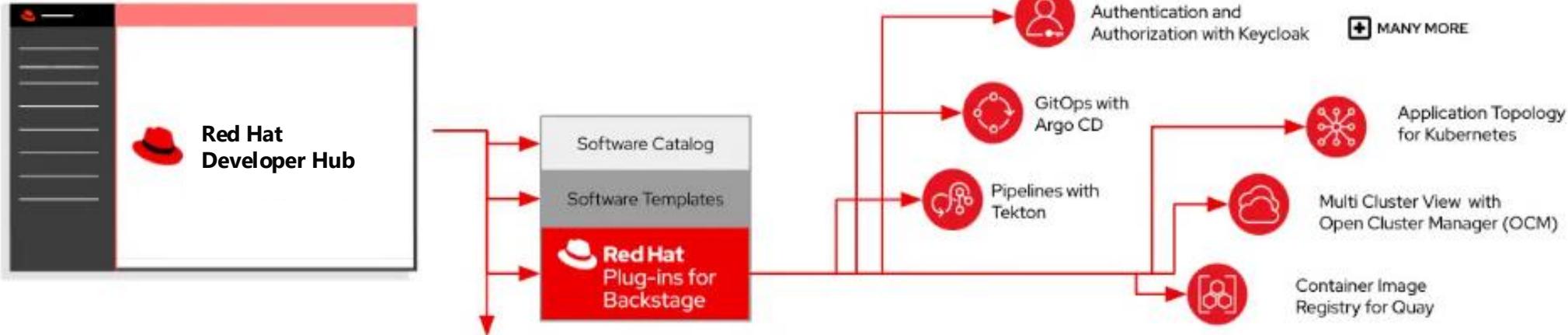
The Three Horizons Playbook for platform engineering provides a strategic framework for building, implementing, and evolving enterprise platform engineering capabilities across three-time horizons:

- **Horizon 1 (Present):** Optimizing current platform capabilities, focusing on immediate value
- **Horizon 2 (Near Future):** Developing emerging capabilities like internal developer platforms and golden paths
- **Horizon 3 (Future):** Exploring transformative innovations including AI-powered developer experiences



Developer Hub

# Implementing platform engineering



Integrates with industry standards and technologies through a broad ecosystem.



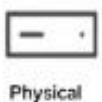
Github  
Copilot



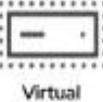
Based on Backstage, an open source platform for building developer portals.



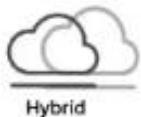
Consistent developer experience across environments.



Physical



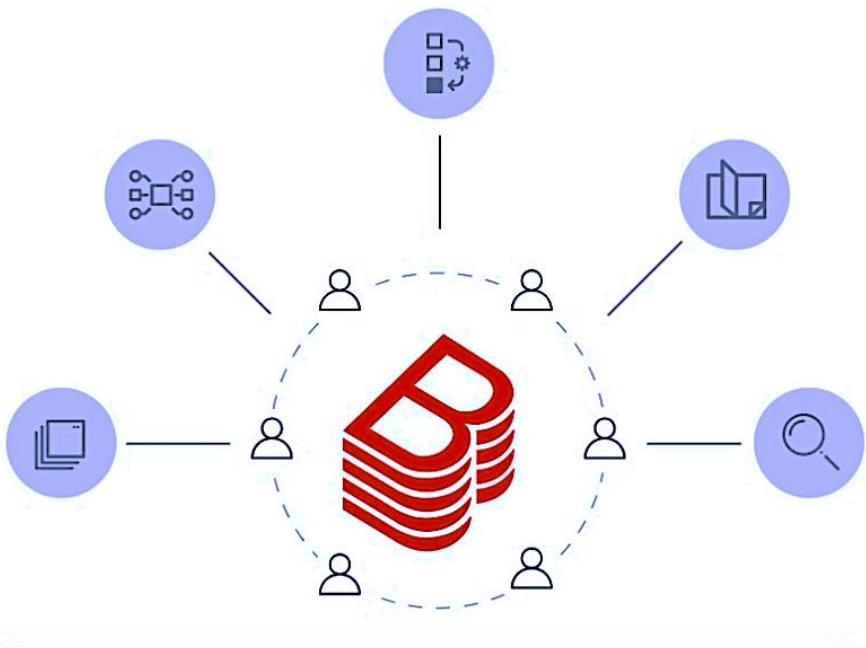
Virtual



Hybrid



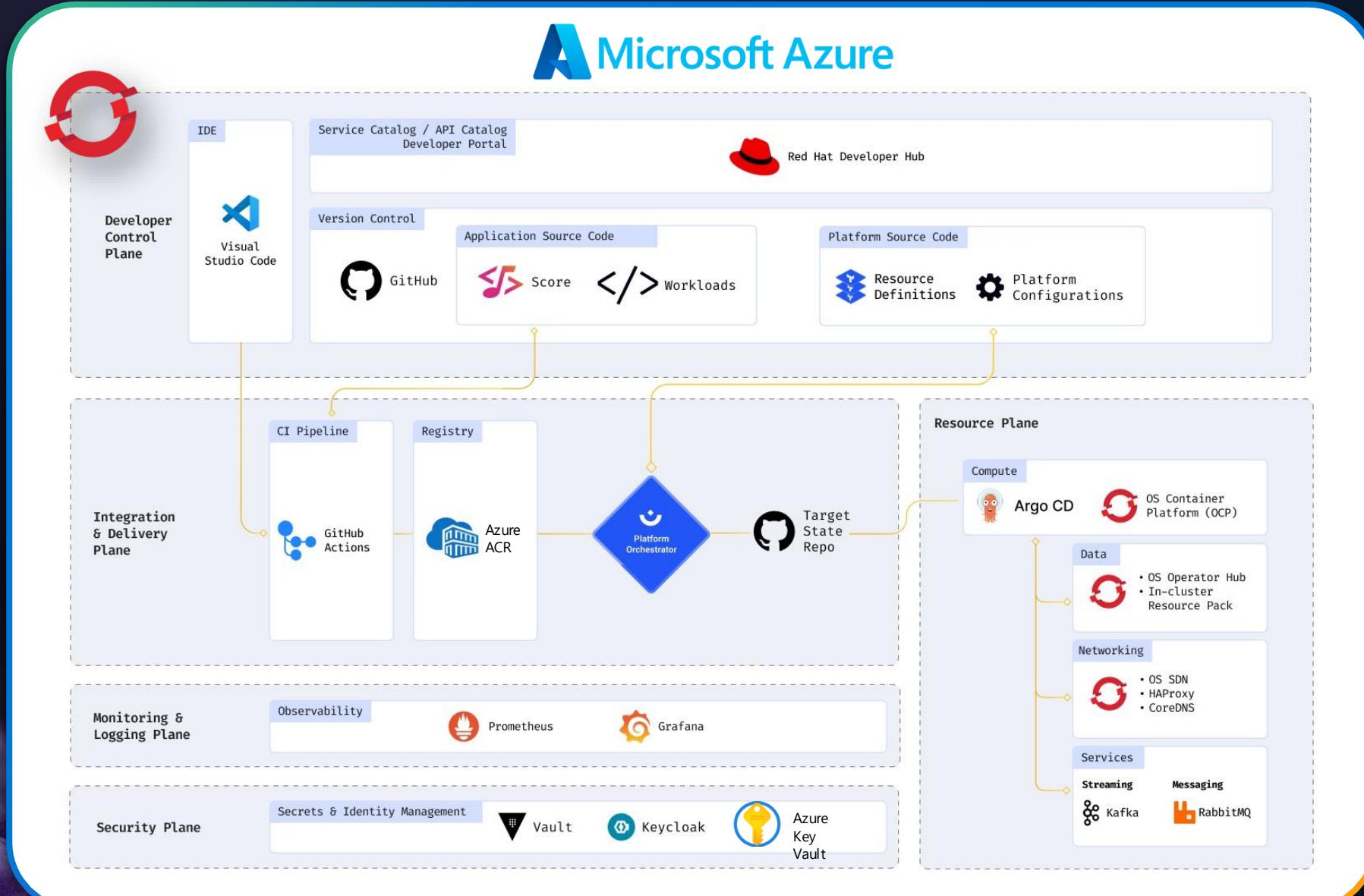
# Extending Backstage functionality...



**Red Hat Developer Hub** and its associated plugins extend the upstream Backstage product by providing additional features such as integration with OpenShift, enterprise role-based access control (RBAC), and dynamic plugins.

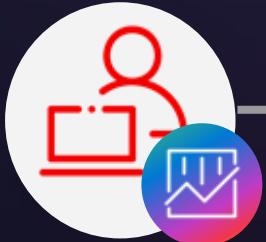
- The ability to aggregate data from different sources, CI/CD, cloud providers, access management, source control, etc.
- A Software Catalog that functions as the central source to locate applications, APIs, and resources.
- An ecosystem of additional open-source plugins that extend Backstages' functionality.
- Software Templates to create templates to start a new application/microservice. Dozens of templates already exist, but enterprises can create and utilize their own custom to their environment.
- Tech Docs are simpler to update with Markdown and Git. Easily index content from plugins and other sources, searching across systems.

# Internal Developer Platform on OpenShift



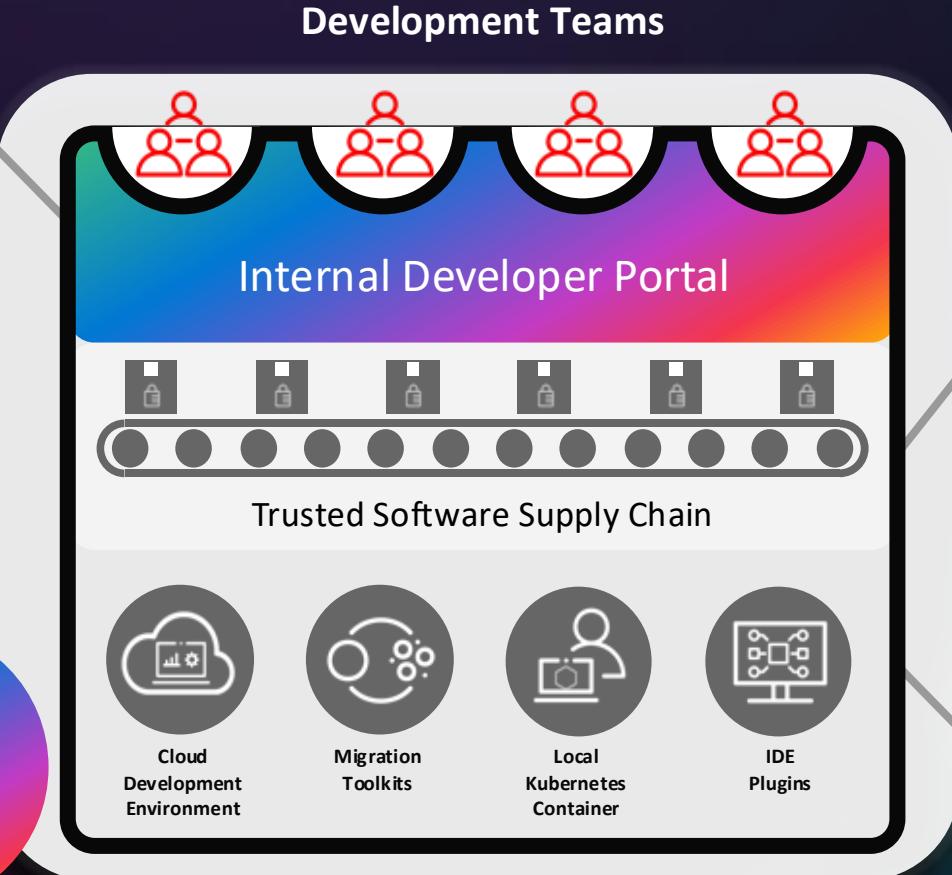


# Red Hat Developer Hub



## Increase Developer Productivity & Experience

Simplifies development with self-service access to a centralized source of truth, consistent workflows, automated templates.



## Enhanced Software Supply Chain Security

Delivers turnkey supply chain security with automated signing, provenance tracking, trusted content guidance, and real-time risk monitoring

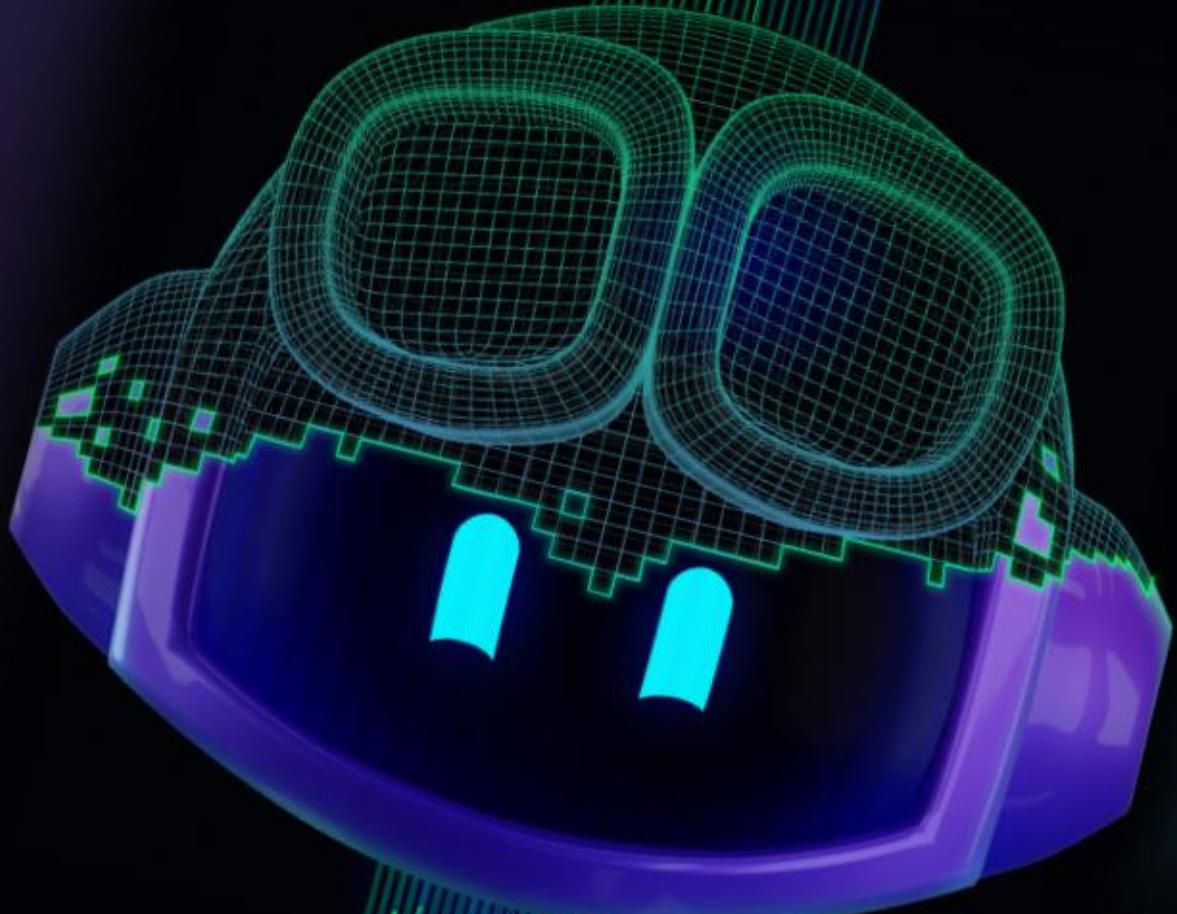


## Modernization & Infrastructure Adaptability

Streamlines modernization with CI/CD integration, automated workload migration, easy application upgrades, and secure, rootless container management.

# Demo

## VM Deployment



video Self-service provisioning with Red Hat Developer Hub (Platform)

## Software Templates

Create new software components using standard templates in your organization

Available Templates

Register Existing Component Support

Search X

Personal Starred 2

My Org All 20

Categories Vm

Service Application-Capabilities Project Tags

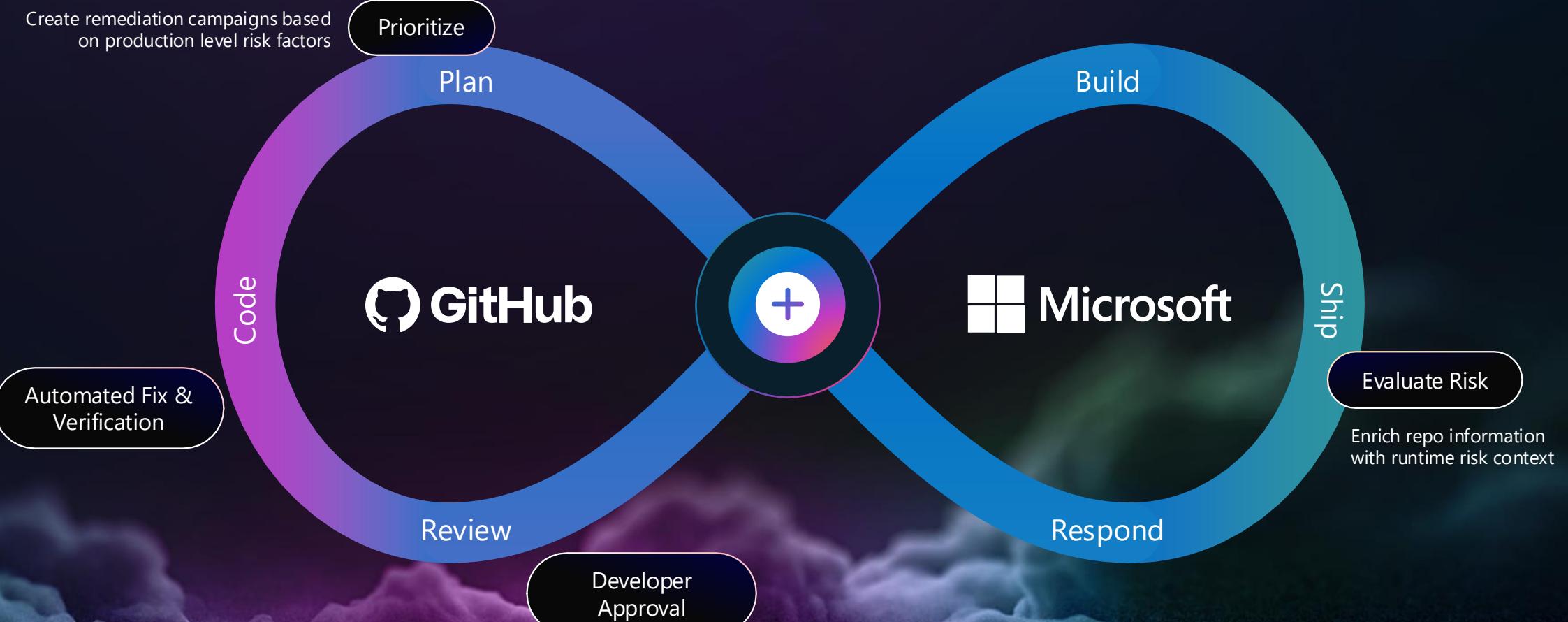
Templates

<p>Service</p> <p>Catalog microservice with Spring Boot (Coolstore)</p> <p>Create a Spring Boot microservice for Catalog built on a trusted software supply chain</p> <p>coolstore demo java springboot maven</p> <p>rhdh Choose</p>	<p>Service</p> <p>Gateway microservice with Vertx (Coolstore)</p> <p>Create a Vertx microservice for Gateway built on a trusted software supply chain</p> <p>coolstore demo java vertx maven</p> <p>rhdh Choose</p>	<p>Service</p> <p>Inventory microservice with Quarkus (Coolstore)</p> <p>Create a Quarkus microservice for Inventory built on a trusted software supply chain</p> <p>coolstore demo java quarkus maven</p> <p>rhdh Choose</p>	<p>Service</p> <p>Web app microservice with NodeJS (Coolstore)</p> <p>Create a NodeJS microservice for web app built on a trusted software supply chain</p> <p>coolstore demo nodejs web maven</p> <p>rhdh Choose</p>
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# Securing Developer Workflow



# Secure with AI from Code to Cloud



# Secure AI apps from code to cloud

## Secure apps with AI



GitHub Advanced Security  
with Copilot autofix



Microsoft Defender for Cloud



Azure AI Foundry  
SDK



Microsoft Purview  
SDK



Code

Deploy

Run



Azure AI Foundry



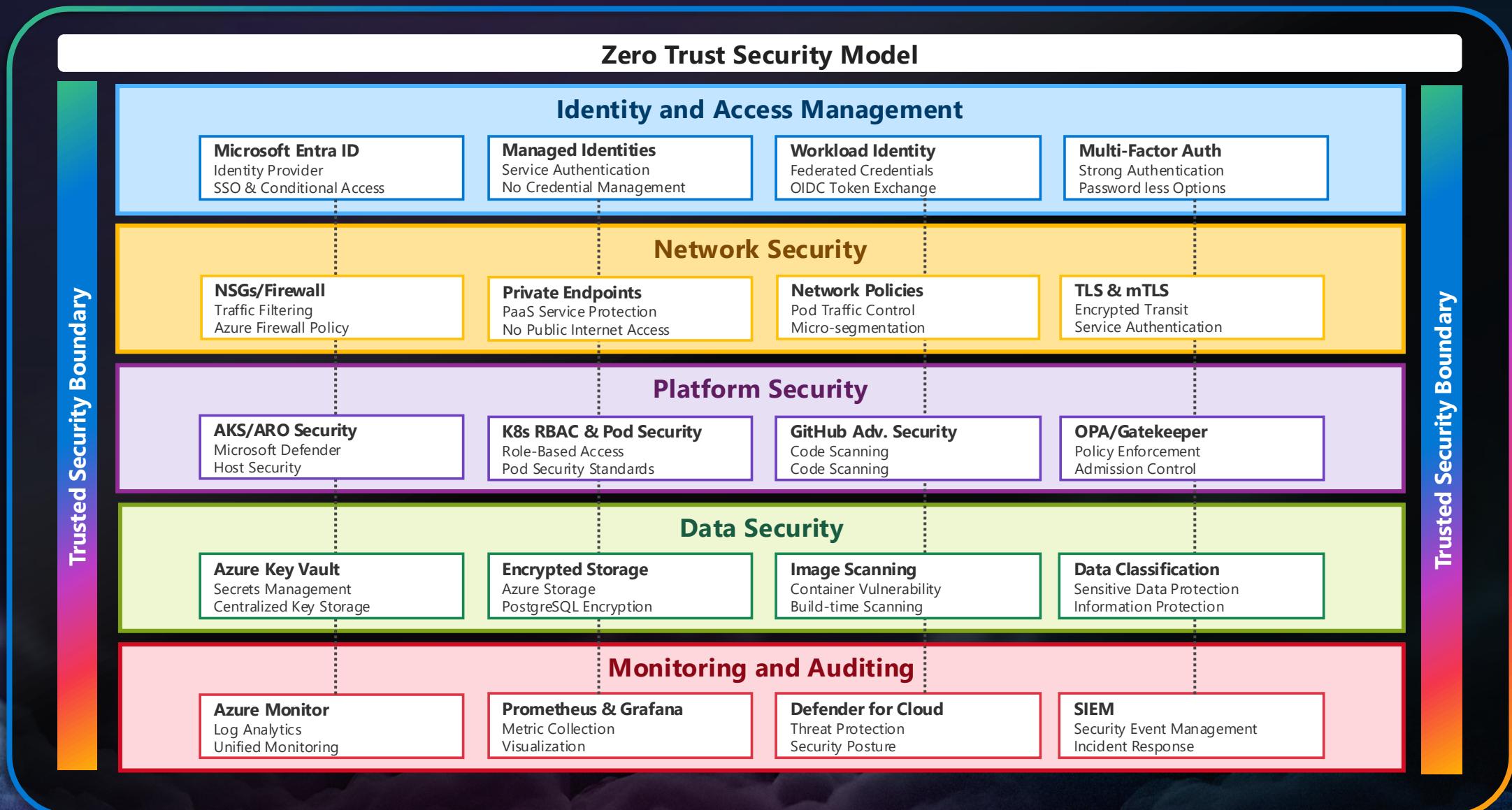
Azure

Build secure AI apps

# Develop apps securely with a unified solution



# Security architecture



The screenshot shows the Red Hat Developer Hub interface, specifically the 'Software Templates' section. The left sidebar includes links for Home, My Group, Catalog, APIs, Learning Paths, Create..., Tech Radar, Docs, Clusters, Orchestrator, Notifications, Administration, and Settings. The main content area displays a grid of software templates. A large red callout box highlights the following points:

- Platform Engineering removes friction for everyone in the IT organization**
- Creates differentiation and addresses the end user needs**
- The self-service approach is critical**
- to scale operational knowledge and Platform Engineering best practices to boost Developer Productivity**

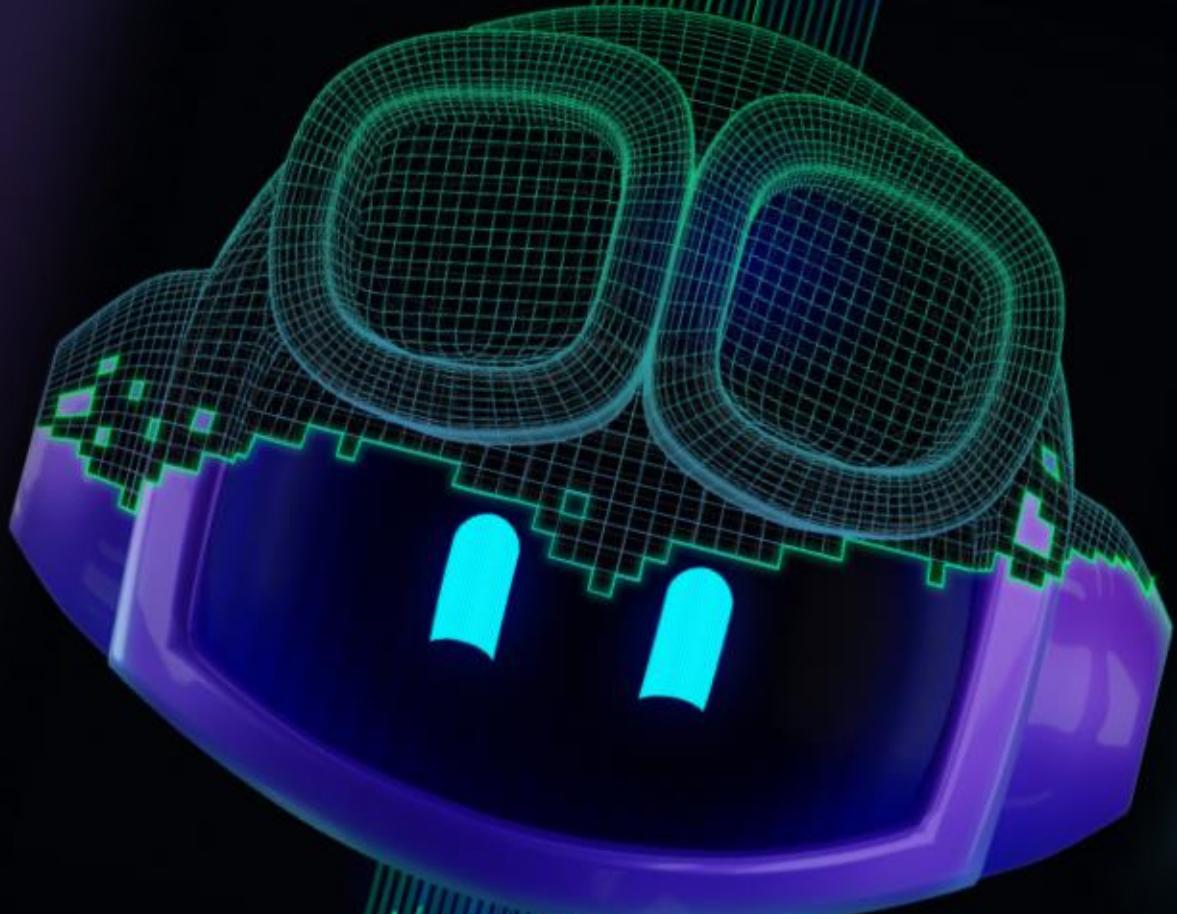
The grid lists several templates:

- Service: Gateway microservice with Vertx (Coolstore)
- Service: Inventory microservice with Quarkus (Coolstore)
- Service: Web app microservice with Node.js (Coolstore)
- Application-Capabilities: Enabling Jaeger (Distributed Tracing)
- VM: Microsoft Windows Server 2022 VM
- Application-Capabilities: MongoDB Atlas

Each template card includes a star icon for rating, a 'Choose' button, and a list of associated tags.

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## Software Catalog



video Self-service provisioning with Red Hat Developer Hub (Platform...)

Welcome back!

Red Hat Developer Hub is a developer portal brings operations and platform engineers knowledge to end-users in a **self-service approach**

Search

Home

My Group

Catalog

APIs

Learning Paths

Create...

Tech Radar

Docs

Clusters

Orchestrator

Notifications

Administration

Settings

https://backstage-backstage.apps.cluster-nbsvf.nbsvf.sandbox163.coentlc.com/catalog

Quick Access

COMMUNITY

DEVELOPER TOOLS

Podman Desktop

CI/CD TOOLS

ArgoCD SonarQube Quay.io

OPENSOURCE CLUSTERS

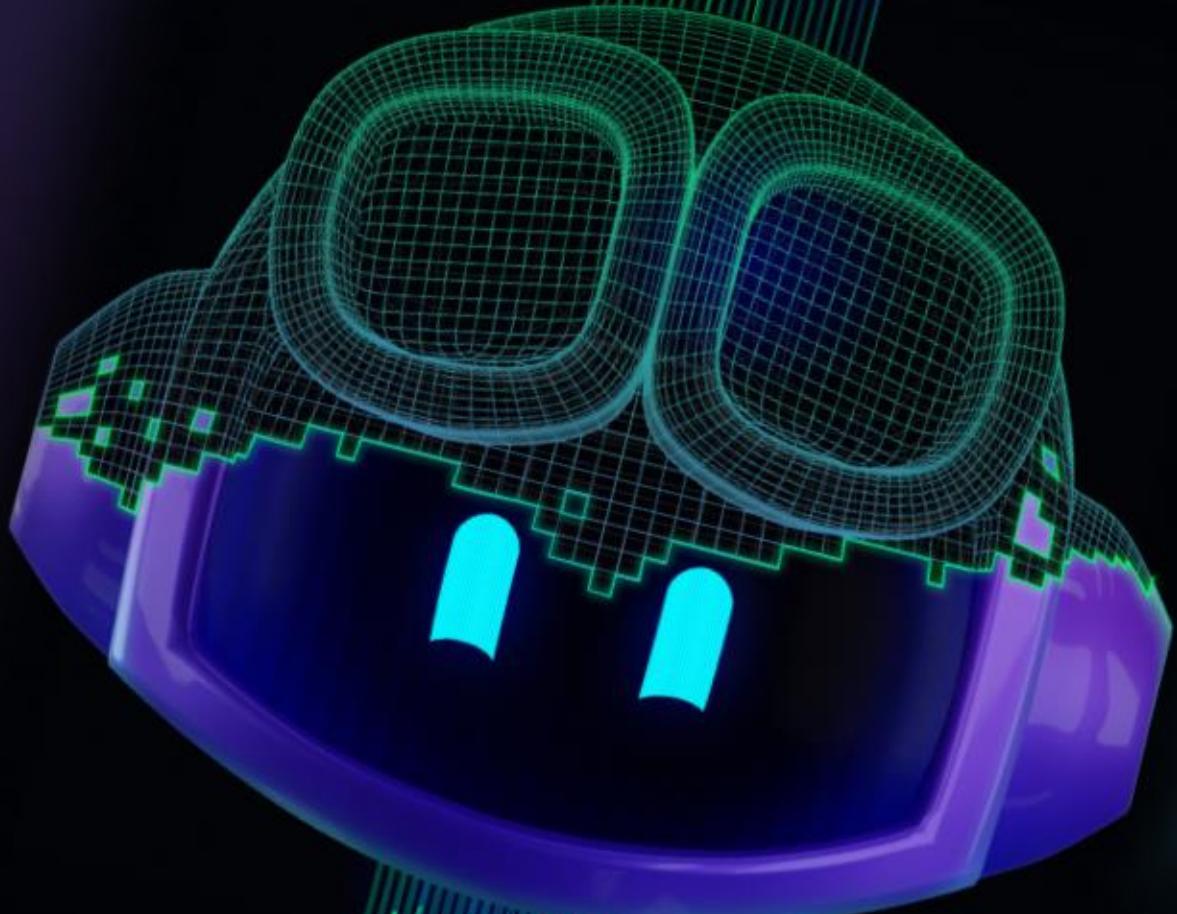
Your Starred Entities

Clear

Click the star beside an entity name to add it to this list!

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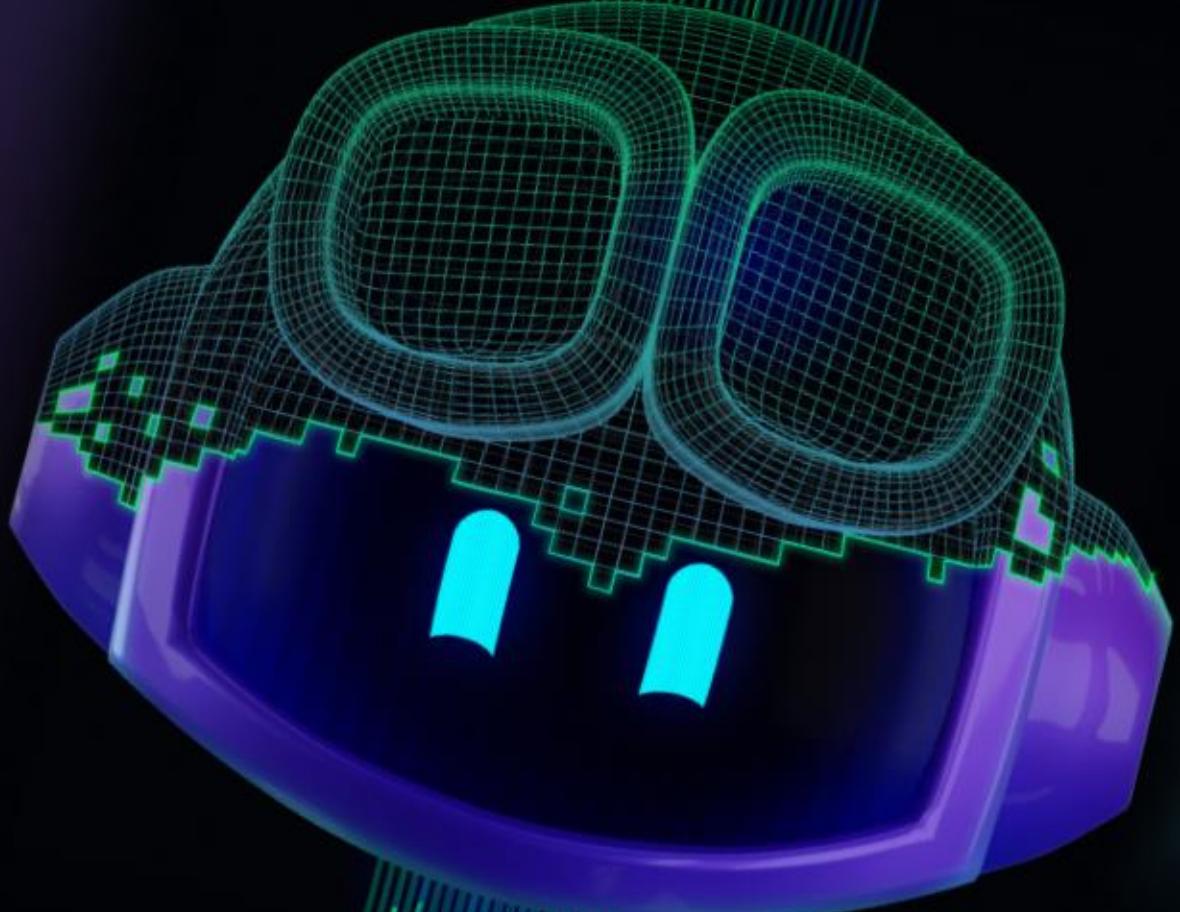
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<p>Application-Capabilities</p> <p>Enabling Jaeger (Distributed Tracing)</p> <p>Creates a Jaeger Instance on the desired namespace</p> <p>application-capabilities jaeger workshop</p> <p>architecture-team Choose</p>	<p>VM</p> <p>Microsoft Windows Server 2022 VM</p> <p>Creates a Microsoft Windows Server 2022 VM</p> <p>windows2022-vm vm workshop</p> <p>legacy-backend-team Choose</p>	<p>Application-Capabilities</p> <p>MongoDB Atlas</p> <p>Build a MongoDB Atlas instance in a specific namespace</p> <p>databases mongodb-db workshop</p> <p>architecture-team Choose</p>	<p>Service</p> <p>Quarkus Backend Application for Points-of-Interest Map</p> <p>Creates the quarkus poi backend app for the workshop</p> <p>java quarkus maven workshop</p> <p>rhdeveloper-workshop-authors Choose</p>

# Demo

.Net with Azure DevOps



Red Hat Developer Hub

Search...

Sumiran Chugh

Home

My Group

Catalog

APIs

Learning Paths

Docs

Administration >

## Software Templates

Create new software components using standard templates in your organization

Create a .NET Frontend application in Azure DevOps with a CI pipeline

Create a starter .NET frontend application with a CI pipeline

Choose a location      Provide information about the new component      Review

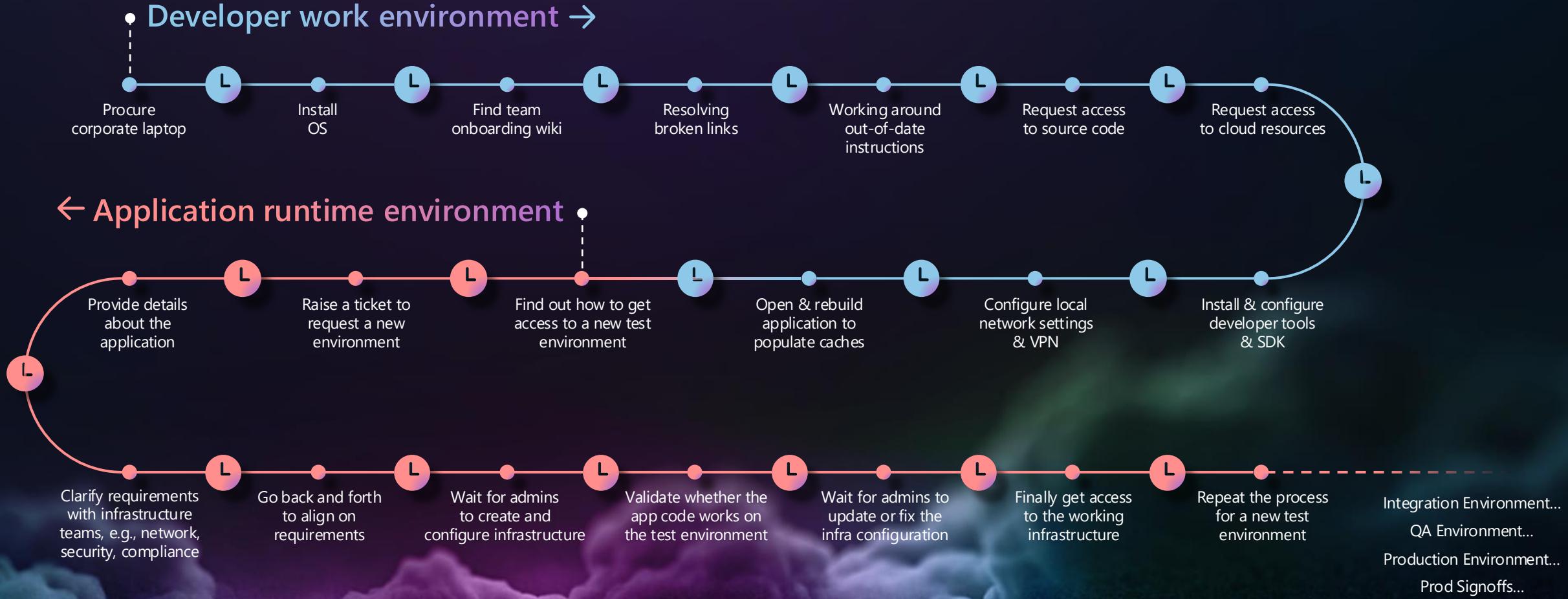
Organization \*  
sumiranchugh  
The Organization that this repo will belong to

Project \*  
rhdh-ado-project  
The Project that this repo will belong to

Repository \*  
The name of the repository

Back      Next

# Onboarding



# Microsoft Dev Box

Secure cloud workstations built for developer productivity



**Ready-to-code:** Self-service, on-demand access to task-specific workstations with scalable compute, available instantly.



**Project-based:** Preconfigured workstations built by dev teams with the right tools and resources for their projects.



**Managed and secure:** Centralized governance enables zero trust while maximizing security, compliance, and cost controls.

Add a dev box

Name  
customized-main-devbox

Project  
Widget-Catalog

Network and Region  
WestUS3-General-Dev

Create Dev Box from:

Dev Box Template Library

Repository (with [Dev Box Definition](#))

Repository  
[https://dev.azure.com/Contoso/WidgetCatalog/\\_git/DataServices](https://dev.azure.com/Contoso/WidgetCatalog/_git/DataServices)

Branch or Tag  
Main

# Microsoft Dev Box

## Self-service at the Dev Portal



**Dev Box 1:**  
high-compute  
workspace



**Dev Box 2:**  
data engineer  
workspace



### Developers

Deploy the Dev Boxes they need  
to work in their current projects

## Configure dev boxes by project



Dev Box SKU



Cost controls



Toolset  
customization



Dev experience  
settings



Network  
configurations



Security  
settings



Organizational  
policies



### Dev Leads

Create pools of Dev Boxes tailored  
to developers' projects and tasks

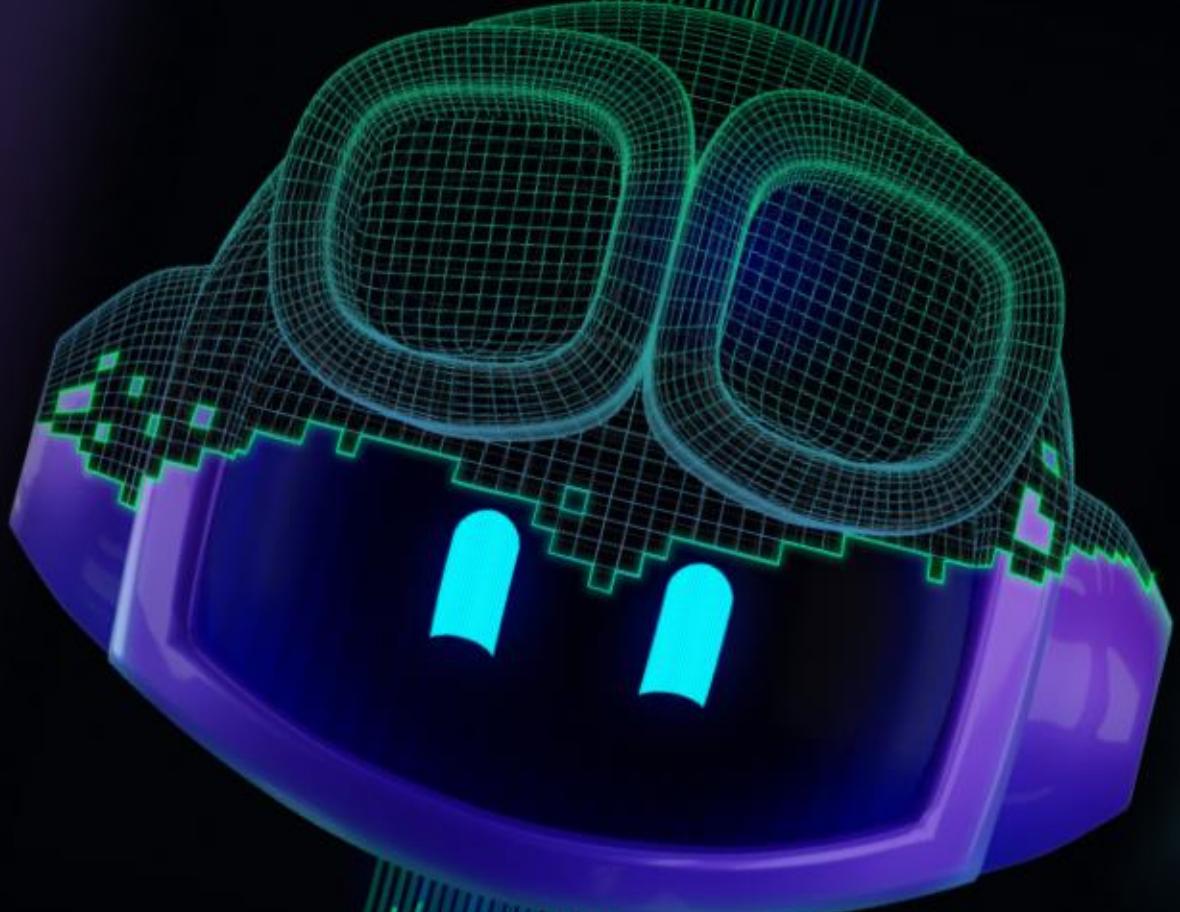


### IT / Dev Infra Teams

Manage Dev Boxes via Intune and  
Microsoft Endpoint Manager

# Demo

DevBox Integration



Chrome Arquivo Editar Visualização Histórico Favoritos Perfil Guia Janela Ajuda

Welcome back! | Red Hat Dev... x +

localhost:7007

Search... System Administrator

Home Catalog APIs Learning Paths Docs Azure Dev Box

Welcome back!

Good afternoon System Administrator!

 Get started Learn about Red Hat Developer Hub. [Read documentation →](#)

Explore Explore components, APIs and templates. [Go to Catalog →](#)

Learn Explore and develop new skills. [Go to Learning Paths →](#)

Explore Your Software Catalog

 Browse the Systems, Components, Resources, and APIs that are available in your

RHDH Local RHDH Local is used by platform engineers to test and experiment with RHDH configuration with a faster inner loop cycle time. RHDH Local uses Docker or PodMan to run the RHDH

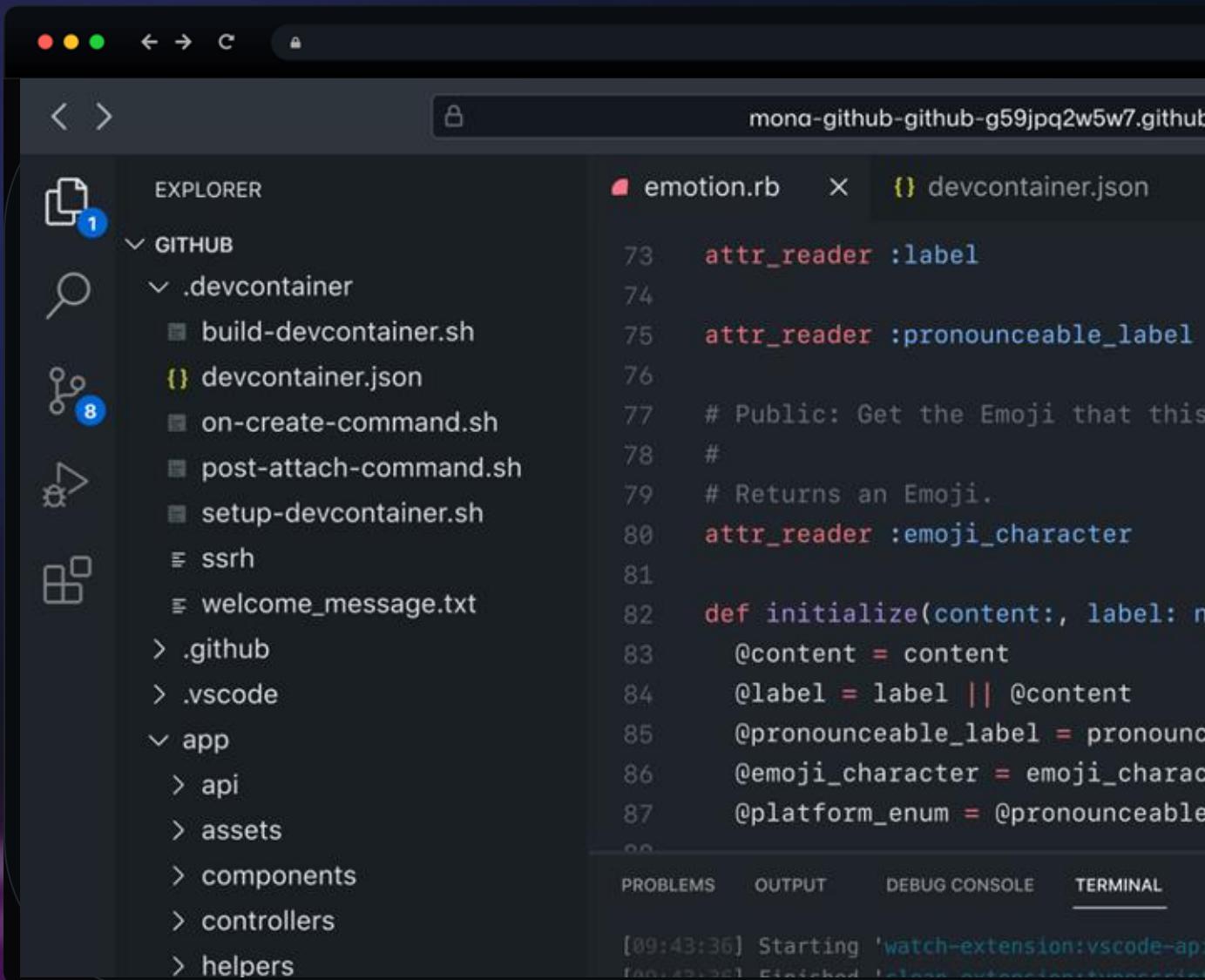
Administration >

localhost:7007/azure-devbox

# GitHub Codespaces

Blazing fast cloud developer environments

Use Visual Studio Code, Jupyter, or JetBrains with the editor, terminal, debugger, version control, settings sync, and all of your extensions. Work from any device in a browser, or hand off to your desktop.



The screenshot shows a GitHub Codespace interface. The top bar displays the URL "mona-github-github-g59jq2w5w7.github.dev". The left sidebar has an "EXPLORER" tab selected, showing a tree view of a GitHub repository. The repository structure includes ".github", ".vscode", "app", "api", "assets", "components", "controllers", "helpers", ".devcontainer", and "welcome\_message.txt". The ".devcontainer" folder contains "build-devcontainer.sh", "devcontainer.json", "on-create-command.sh", "post-attach-command.sh", and "setup-devcontainer.sh". The "devcontainer.json" file is open in the main editor area. The code in "devcontainer.json" is a Ruby script with several "attr\_reader" definitions and methods like "initialize", "content", "label", "pronounceable\_label", and "emoji\_character". The bottom navigation bar includes "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", and "TERMINAL". A status message in the terminal says "[09:43:36] Starting 'watch-extension:vscode-ap...".

```
emotion.rb
```

```
attr_reader :label
attr_reader :pronounceable_label
# Public: Get the Emoji that this
# Returns an Emoji.
attr_reader :emoji_character

def initialize(content:, label: nil)
  @content = content
  @label = label || @content
  @pronounceable_label = pronounceable_label_for(@label)
  @emoji_character = emoji_character_for(@label)
  @platform_enum = @pronounceable_label ? Platform::Pronounceable : Platform::Normal
```

```
devcontainer.json
```

# Inner Loop Developer Experience

## Visual Studio 2022

Optimized for Dev Box

- ✓ IDE and GCM single-sign-on
- ✓ Config as code for settings and extensions
- ✓ Prepopulated caches
- ✓ Detect and default to dev drives
- ✓ VS 2022 and 2019 pre-built images
- ✓ WinGet packages for VS
- ✓ Intune policies for VS

## Microsoft Dev Box

```
builder.Services.AddRazorComponents().AddInterceptors();
builder.AddAuthenticationServices();
builder.AddRabbitMqEventBus("EventBus")
    .AddEventBusSubscriptions();

// Application services
builder.Services.AddScoped<BasketState>();
builder.Services.AddScoped<LogOutService>();
builder.Services.AddSingleton<BasketService>();
builder.Services.AddSingleton<OrderStatusNotifier>();

// Backend services
builder.Services.AddGrpcClient<Basket.BasketClient>();
builder.Services.AddHttpClient<CatalogService>()
    .ConfigureHandler(x => x
        .AllowAutoRedirect(true)
        .EnableHttp2(true));
builder.Services.AddHttpClient<OrderingService>()
    .ConfigureHandler(x => x
        .AllowAutoRedirect(true)
        .EnableHttp2(true));

var app = builder.Build();

app.MapDefaultEndpoints();

app.MapGet("/scrub", () =>
{
    string x = Math.PI.ToString();
    for (int i = 0; i < 1000; i++)
    {
        string y = x + " " + i;
    }
})
```

## GitHub Copilot

GitHub Copilot chat  
Explain what Program.cs is used for  
GitHub Copilot

Program.cs is a C# source code file that is the entry point for a .NET Core console application. It contains the Main method, which is the starting point of the application. The Main method is responsible for initializing the application and executing the logic that performs the application's logic.

The Program.cs file is automatically generated when you create a new .NET Core console application. It is located in the root directory of the project.

AI suggestions might

Ask Copilot

GitHub Copilot chat Solution Explorer Git Changes

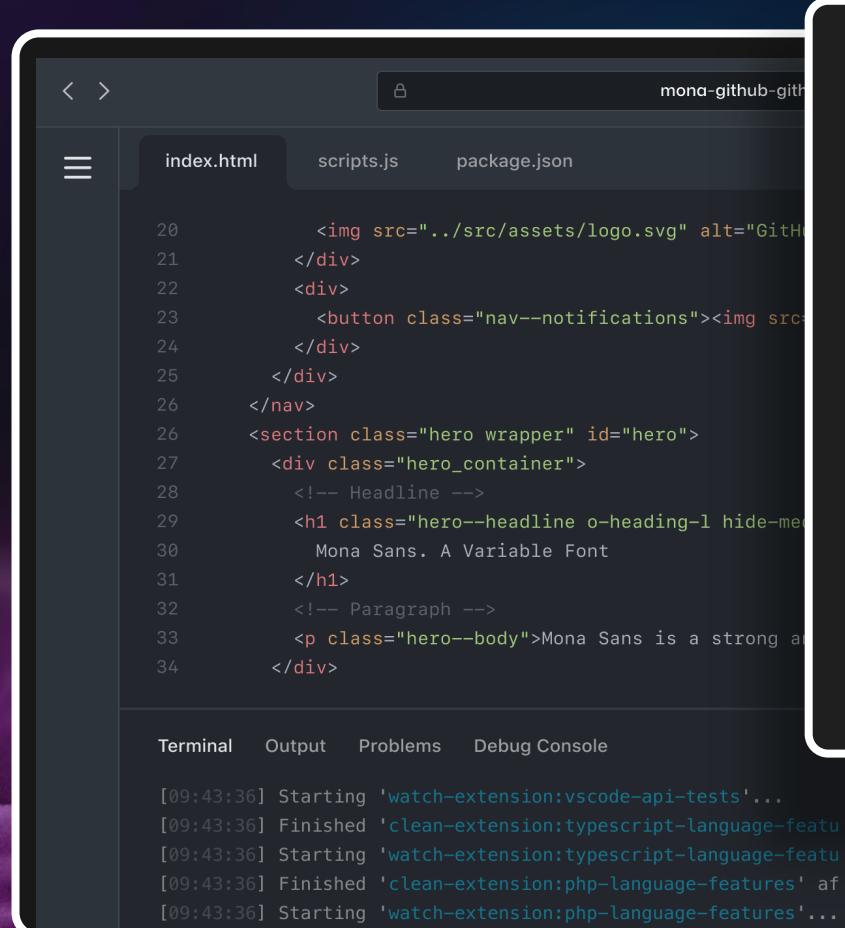
GitHub Copilot chat Solution Explorer Git Changes

# Inner Loop Developer Experience

## Visual Studio Code

- ✓ Built-in Git
- ✓ Extensible, Customizable
- ✓ Any platform, any language
- ✓ IntelliSense
- ✓ Run & Debugging experience

## GitHub Codespaces



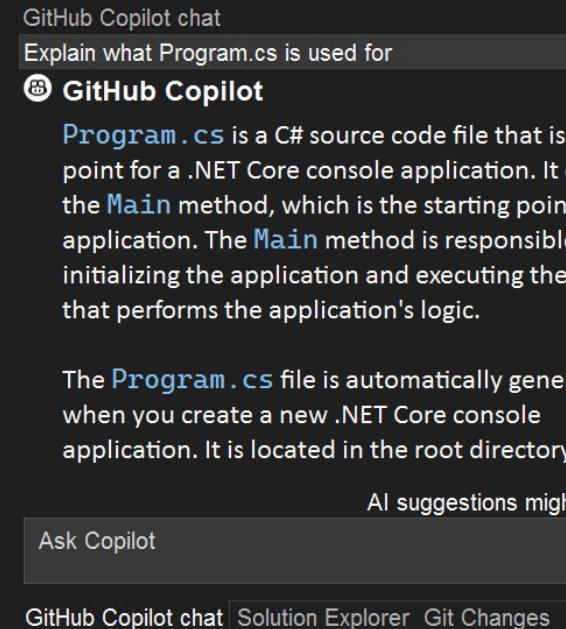
A screenshot of the GitHub Codespaces interface. At the top, there's a navigation bar with icons for back, forward, and search. Below it is a tab bar with 'index.html', 'scripts.js', and 'package.json'. The main area shows a portion of the 'index.html' file with some code. At the bottom, there's a terminal window displaying command-line logs.

```
20      
21      </div>
22      <div>
23          <button class="nav--notifications"></button>
24      </div>
25      </div>
26  </nav>
27  <section class="hero wrapper" id="hero">
28      <div class="hero_container">
29          <!-- Headline -->
30          <h1 class="hero--headline o-heading-l hide-me" style="font-family: Mona Sans. A Variable Font">Mona Sans. A Variable Font</h1>
31          <!-- Paragraph -->
32          <p class="hero--body">Mona Sans is a strong and clean sans-serif font with a variable font. It's designed to be used in both digital and print environments, and it's perfect for web and mobile applications.</p>
33      </div>
34  </section>
```

Terminal

```
[09:43:36] Starting 'watch-extension:vscode-api-tests'...
[09:43:36] Finished 'clean-extensiontypescript-language-features'
[09:43:36] Starting 'watch-extensiontypescript-language-features'
[09:43:36] Finished 'clean-extensionphp-language-features' af
[09:43:36] Starting 'watch-extensionphp-language-features'...
```

## GitHub Copilot



A screenshot of the GitHub Copilot interface. It features a dark-themed UI with a sidebar on the left containing a list of AI-generated suggestions. The main area shows a code editor with some C# code and a terminal at the bottom. A sidebar on the right displays a conversation log with GitHub Copilot.

GitHub Copilot chat

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AI suggestions might

Ask Copilot

GitHub Copilot chat | Solution Explorer | Git Changes

# Benchmarking

Ability	Three Horizons	Fragmented Platforms	Custom Build Solution
Infrastructure	Native Azure integration with full automation	Multiple disconnected tools	Significant integration effort
App Innovation	Automated CI/CD with built-in modern practices	Technology-isolated pipelines	Requires constant maintenance and evolution
Data & AI	Simplified integration of AI data and models into applications	Silos between data and development teams	Complexity in integrating data and models
Governance	Unified policies and controls across stack	Gaps between platforms	Manual and inconsistent implementation
Implementation Time	Weeks with pre-integrated components	Months per component	Years to full maturity
Maintenance	Continuous evolution via established platforms	Overhead of multiple systems	High reliance on in-house competencies
Scalability	From MVP to enterprise scale without redesign	Limitations by fragmentation	Frequent redevelopment to scale



# The three main pillars

## RedHat Advanced Developer Suite

- Backstage-based Internal Developer Portal (*Self-Service*)

## GitHub Platform

- Source control, GitHub Advanced Security, Actions CI/CD, and GitHub Copilot Enterprise, Coding Agent, GitHub Models
- CodeSpaces

## Azure Infrastructure

- Developer Hub deployment on ARO (*Azure RedHat OpenShift*)
- Postgres Managed
- Defender for Cloud
- Azure Monitor, Grafana, Prometheus, Application Insights
- Azure AI Foundry
- Agentic Framework
- Azure SRE Agent
- Microsoft Purview
- Microsoft Sentinel
- Azure Arc for Containers (*Multi-cloud and hybrid deployment scenarios*)
- Microsoft DevBox (Optional)

## Azure + GitHub as Development & Productivity Hub



Tool Consolidation

Environment Standardization

Pipeline Templates

Developer Portal

Red Hat Developer Hub

Github Copilot Integration

Unified Development Experience

Code Quality Automation

Developer Self-Service

## Azure + GitHub as Security Control Plane



Shift-Left Security

GHAS

AI-Powered Remediation

Copilot Autofix

Unified Security Platform

Compliance Automation

Vulnerability Management

Security Policy Enforcement

Threat Detection & Response

Security Metrics & Reporting

## Observability & Intelligent Operations



Unified Monitoring

Azure Monitor

AI-Powered Operations

SRE Agent

Predictive Analytics

Self-Healing Workflows

Performance Optimization

Incident Management

Capacity Planning

Operational Intelligence

## Call to Action

Learn how Three Horizons can streamline your development process and deliver measurable improvements in productivity and efficiency. Schedule a consultation to discuss your specific requirements and see a demonstration of the platform capabilities.

Transform Development. Transform Business. Transform Everything.

