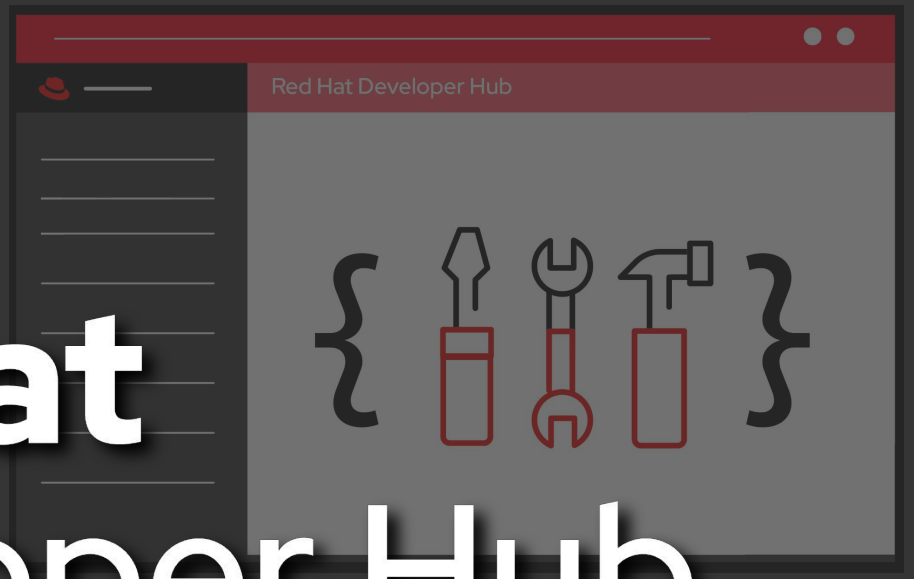
May/2024

Supported

Enterprise RBAC

Dynamic Plugins

OpenShift Integrated



Red Hat Developer Hub

Technical Overview

https://red.ht/rhdh

Based on Backstage.io

Red Hat

Self introduction

Name: Wanja Pernath

Email: wpernath@redhat.com

Base: Germany (very close to the Alps)

Role: EMEA Technical Partner Development Manager - OpenShift and MW

Experience: Years of Consulting, Training, PreSales at Red Hat and before

Twitter: https://twitter.com/wpernath

LinkedIn:https://www.linkedin.com/in/wanjapernath/

GitHub: https://github.com/wpernath

First book just published

Getting GitOps

A technical blueprint for developing with Kubernetes and OpenShift based on a REST microservice example written with Quarkus

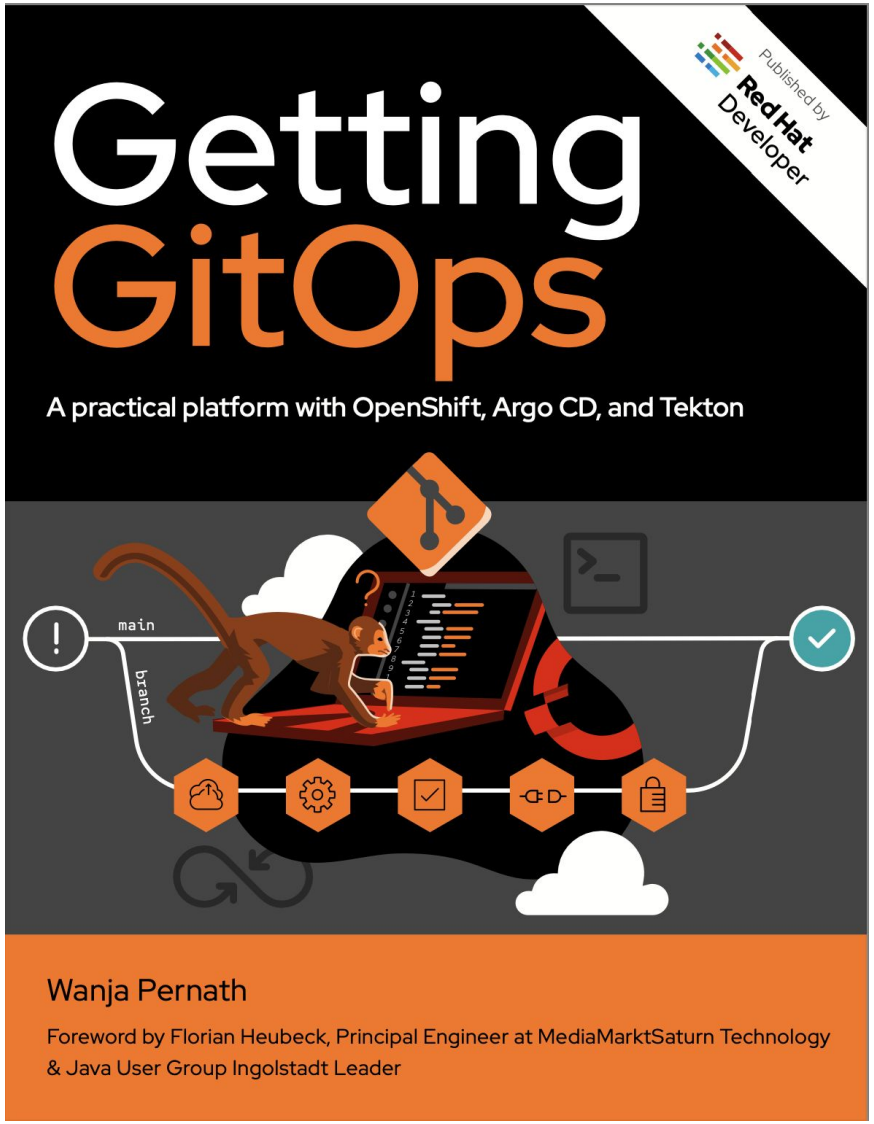
Technologies discussed:
Quarkus, Helm Charts, Kustomize, Tekton Pipelines, Kubernetes Operators, OpenShift Templates, ArgoCD, CI/CD, GitOps....

Download for free at:

https://developers.redhat.com/e-books/getting-gitops-practical-platform-openshift-argo-cd-and-tekton

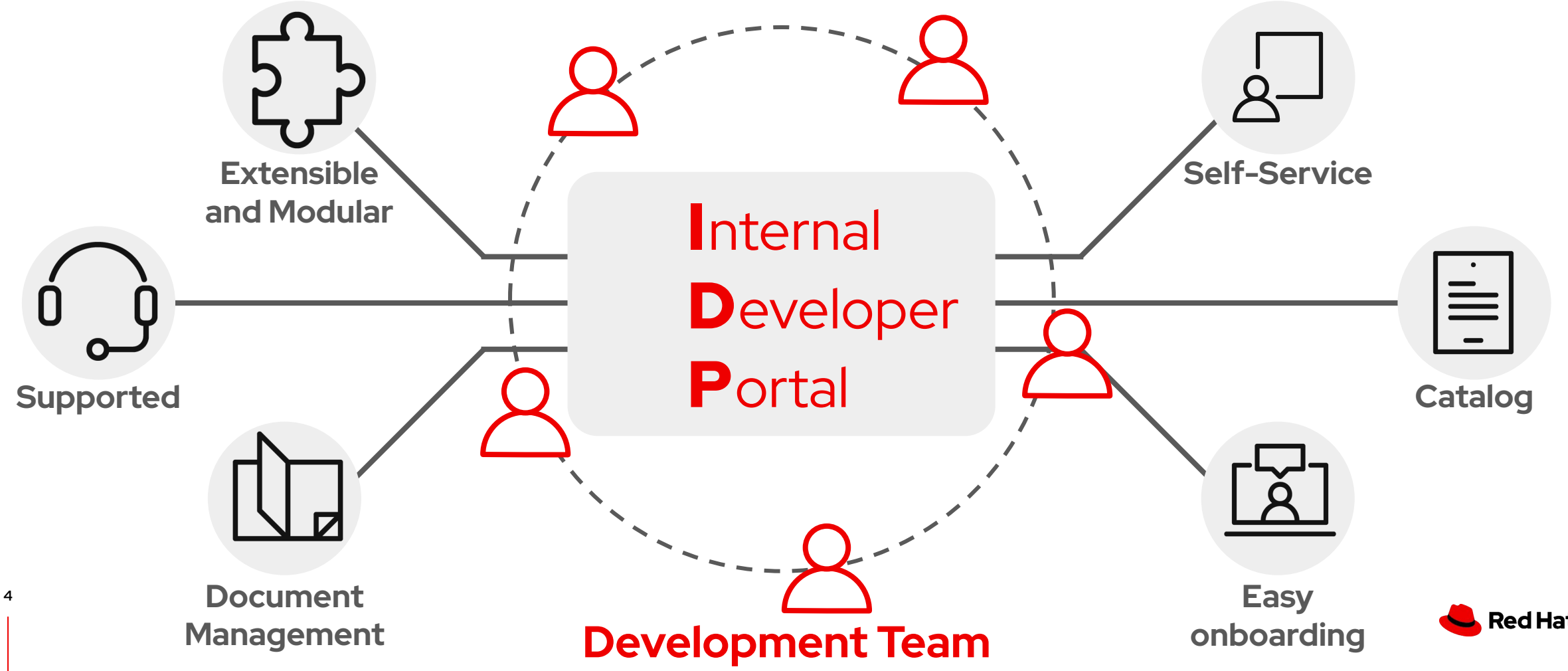
Interview with full GitOps Demo:

https://www.youtube.com/watch?v=znMfVqAIRzY&ab_channel=OpenShift



The solution is an Internal Developer Portal

Requirements to boost the development team productivity



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CNCF Backstage*

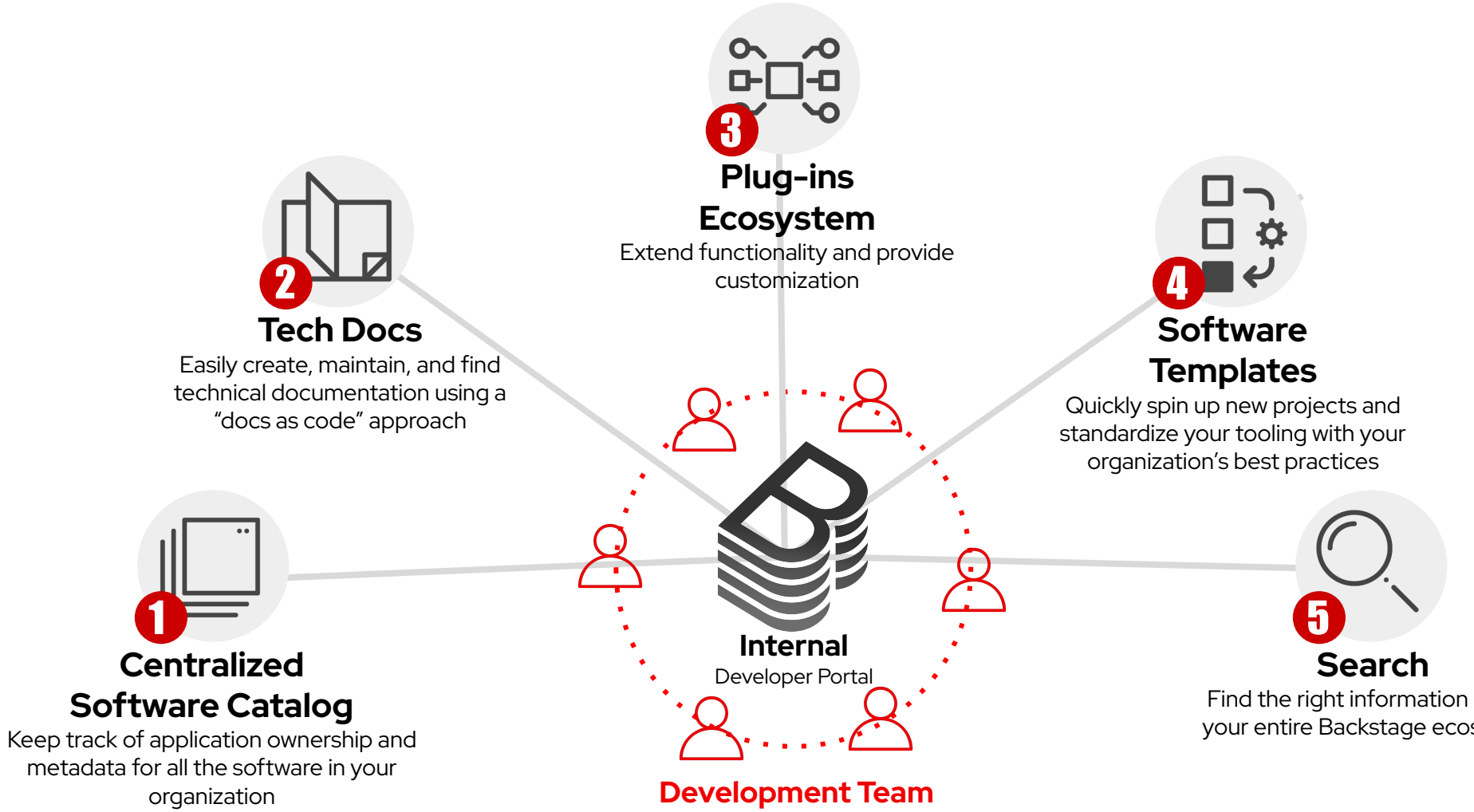
An **Internal Developer Portal** to help your development team become more productive

* Donated by **Spotify**

Red Hat

CNCF Backstage: Internal Developer Portal

The 5 fundamental pieces



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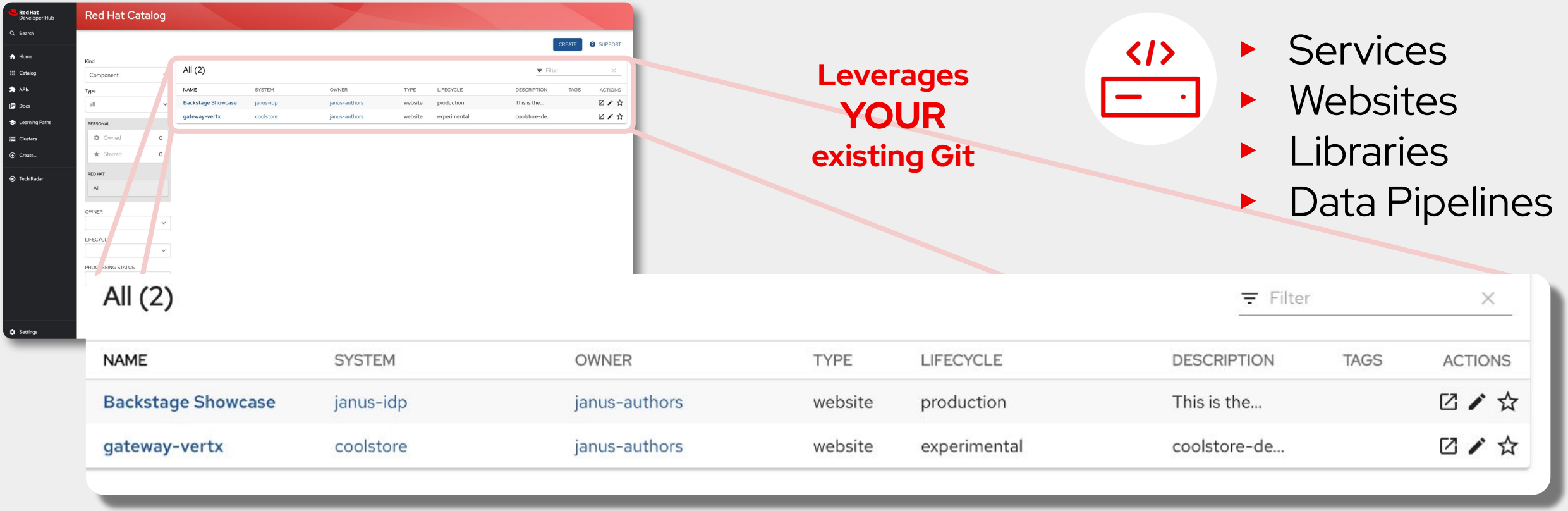
Centralized Self-Managed Software Catalog

Keep track of application ownership and metadata for all the software in your organization



Leverages YOUR existing Git

- Services
- Websites
- Libraries
- Data Pipelines

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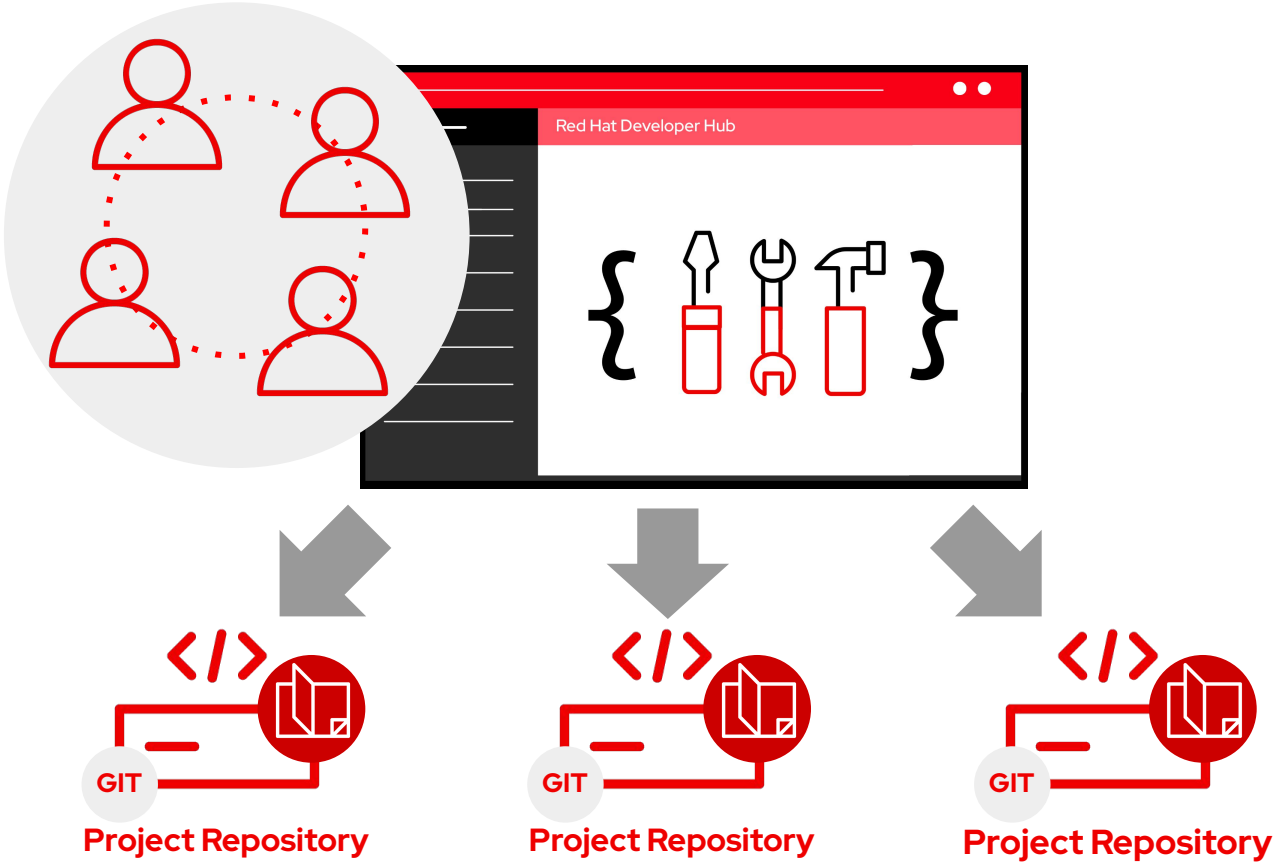
More Manageable Technical Documentation

Easily create, maintain and find technical documentation using "docs as code" approach



Access to system architecture & application documentation

Development team write documentation in Markdown files that live together with the code, giving others access to system architecture and application documentation when and where they need it.

Representation of documentation that isn't proprietary

All the necessary documentation can be stored in any Git repository and not tied to any proprietary solution

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Plug-ins

Extending the Backstage portal to fit your needs

Modular Extensions

Enhancing the functionality and capabilities of the platform

Connect to YOUR tools

Plug-ins allow to your preferred tooling to be connected to the portal and made available to your development team

Plug-in Catalog

Backstage maintains a plug-in catalog where platform engineers can quickly install new tools and customize the experience

Make your Own

Backstage allows you to create your own plug-ins easily

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- Supply Chain Management
- CI/CD
- Monitoring
- Issue Tracking
- Code Quality

Plug-ins Ecosystem

Extensible and allows to customize the development team needs

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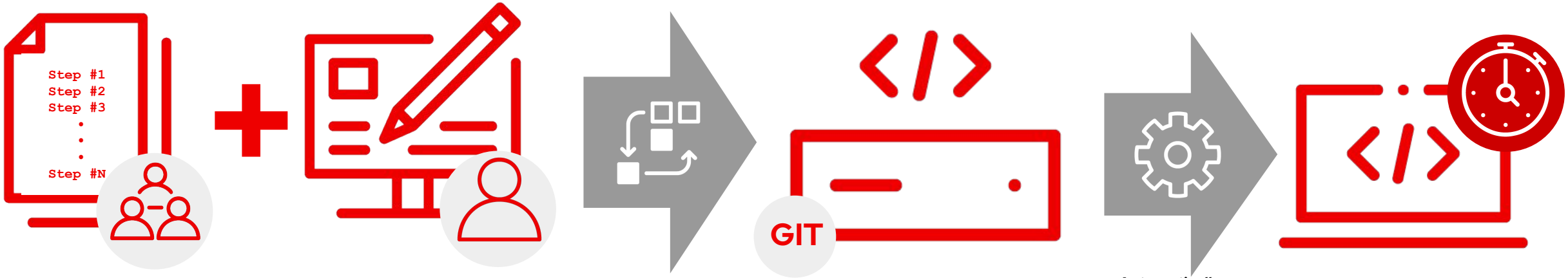
Simplified Onboarding with Software Templates

Quickly spin up new projects and standardize your tooling with your organization's best practices



Development Team Best Practices

Leverage existing practices and use company guidelines to automate the most common tasks

User fills out a form

Capture all the necessary data related to this task and automatically generate the desired outcome

Automatically create a new Git repository

Everything goes to a Git Repository so development can start straight away

Everything done in a matter of minutes

Code and config are automatically built following all your organization's guidelines

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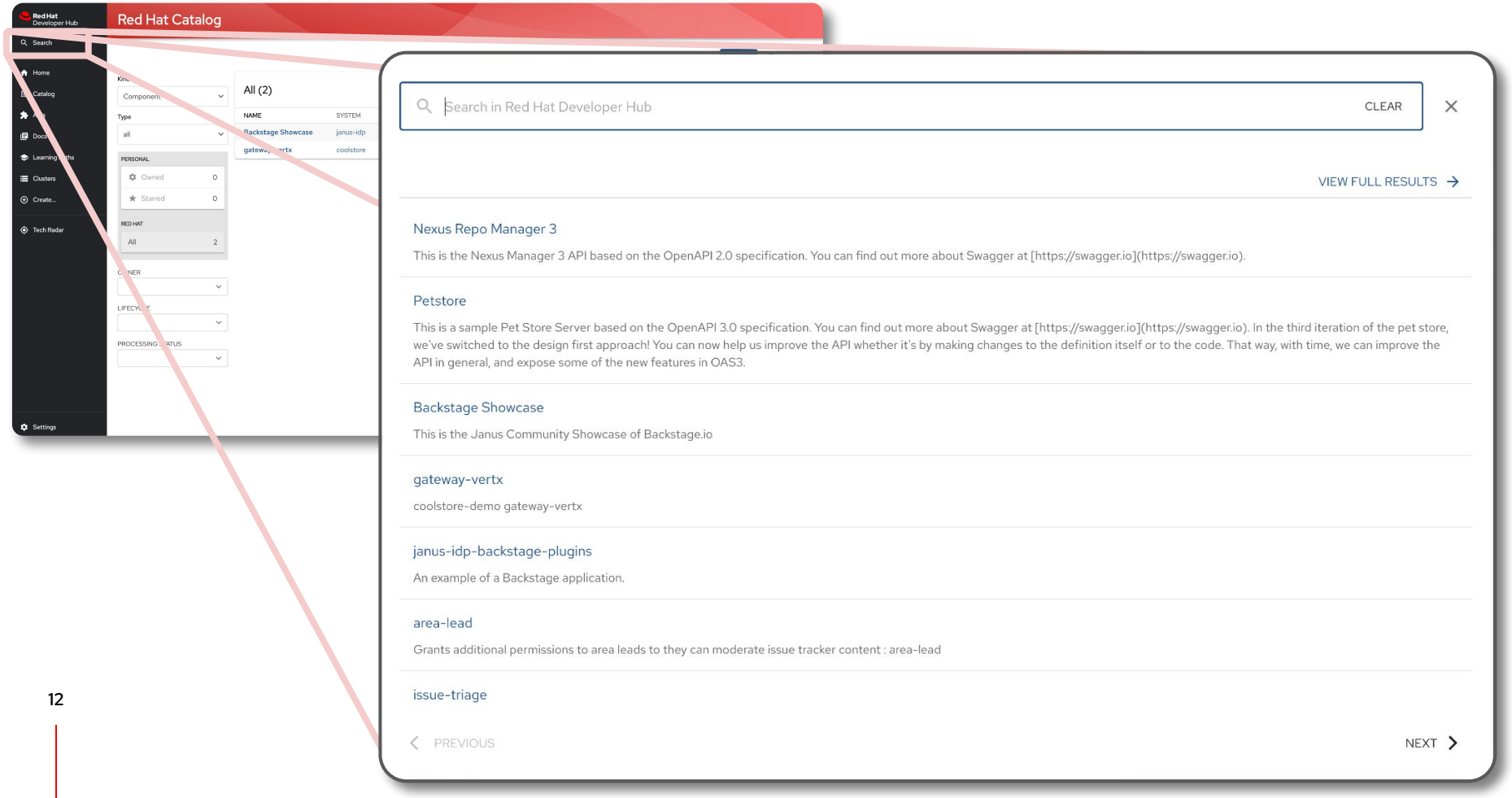
Quickly the right information

Everything in one place for your entire development team



Find anything YOU need

Search allows you to easily find information related to your coding, project, or documentation needs

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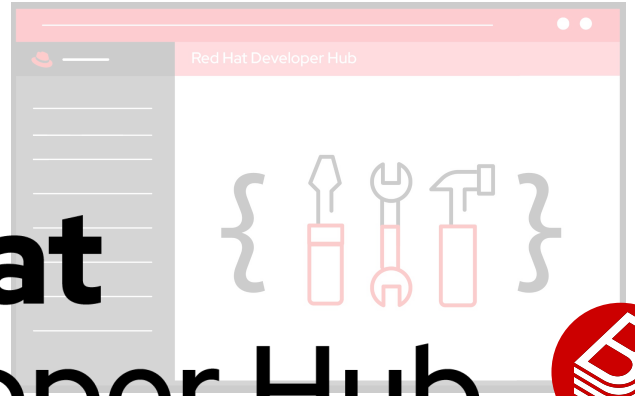
Red Hat's version of CNCF Backstage

Ensuring the development team is continually delivering



Red Hat
Developer Hub

Based on
Backstage.io

Centralized Catalog

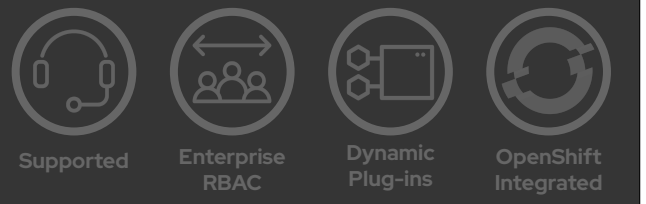
Self-Service

Search

Plug-ins Ecosystem

Software Templates

Technical Documentation



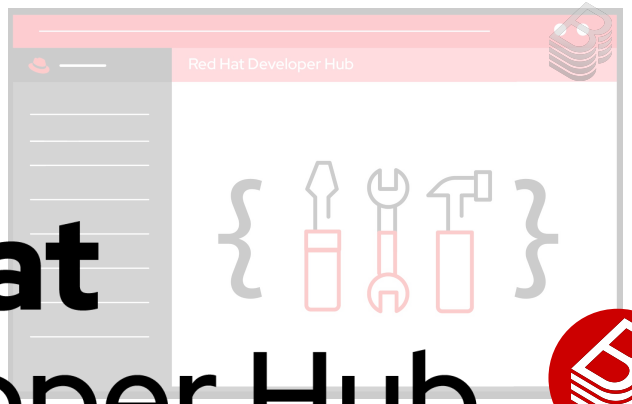
Red Hat Value Added

Red Hat ensures business continuity - the development team will be continuously delivering

Red Hat

A fully customizable Developer Portal

Compatible with community resources



Red Hat
Developer Hub

Based on
Backstage.io

Totally customizable

Custom Plug-ins

Community Template Compatible

Community Plugin Compatible

Red Hat

Enterprise Grade Support 24x7

Support for both Backstage environment and the supported plug-ins

Ensuring business continuity for your whole team

Experienced professionals can assist your team's success and ensure business continuity

Security Resources at your disposal

Constantly offering CVEs and patches to ensure your Backstage environment is secure, stable, and reliable at all times

Knowledge Base and Troubleshooting

A vast knowledge base regarding the most common problems and troubleshooting guides to speed up issue resolution

Red Hat

Red Hat
Supported

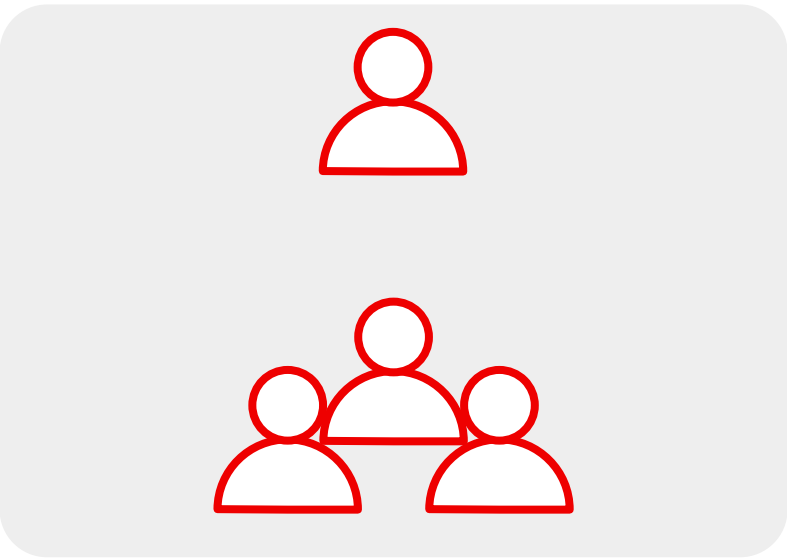
Supported for Red Hat Plug-ins

Red Hat is continuously adding new Red Hat plug-ins to Developer Hub

Red Hat

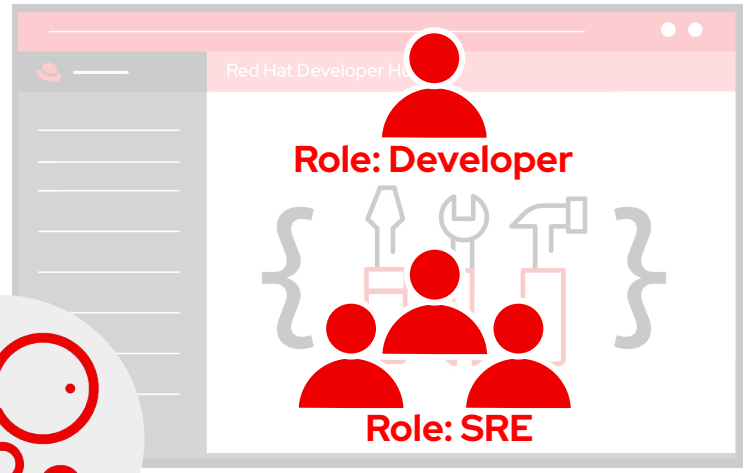
Enterprise Role Based Access Control (RBAC)

Simplify the RBAC management and adoption for Enterprise compliance



Users and Groups

Using YOUR authentication provider



Define **Roles** and granular security permissions to ensure robust access control in an Enterprise

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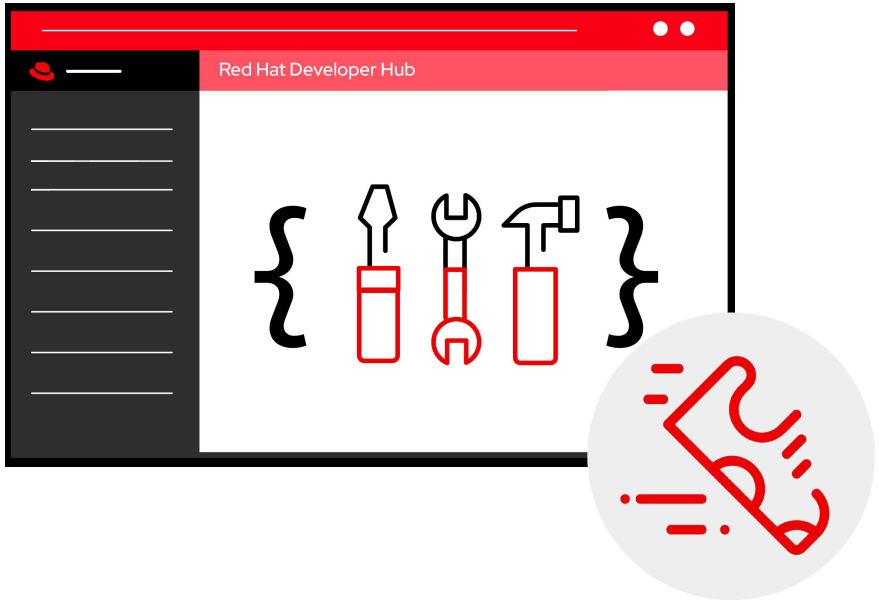
Dynamic plug-in Management

No more downtime for plug-in management



Always working

No need to rebuild when modifying plug-ins means less downtime for your Backstage environment

No More Rebuilds

Install New Plug-ins

Update Plug-ins

Remove Plug-ins

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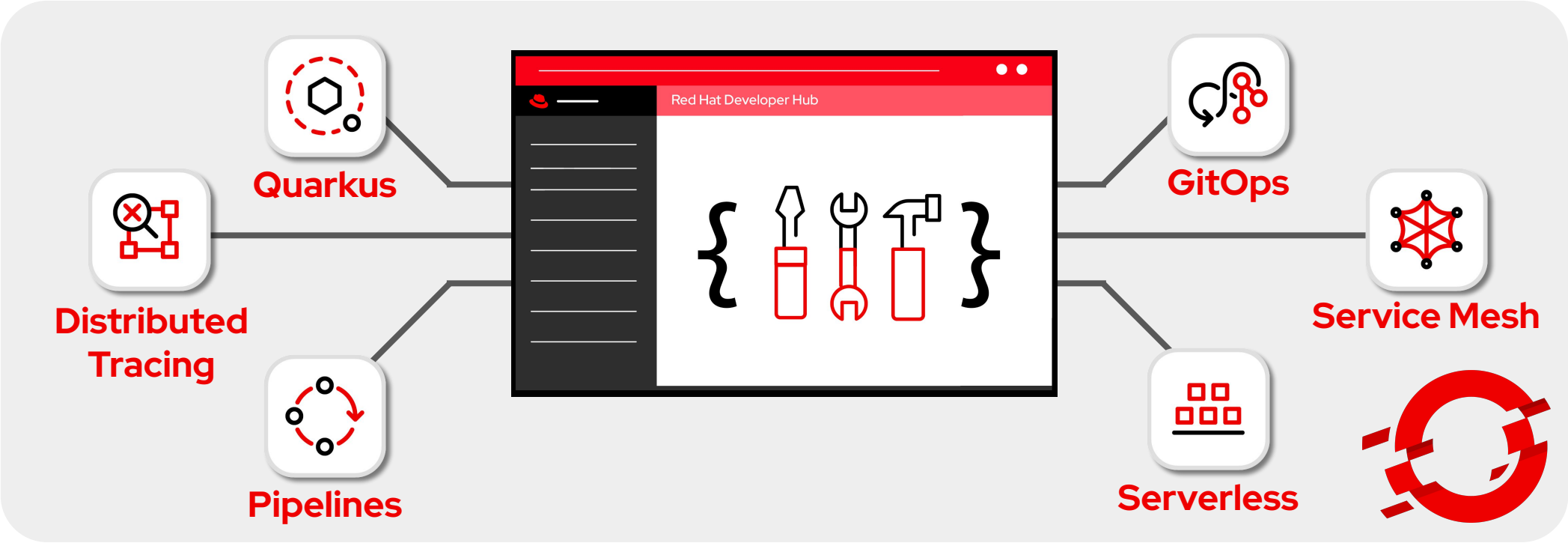
Fully integrated with Red Hat OpenShift

Leverages several technologies that come with OpenShift



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Enterprise RBAC

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OpenShift Integrated

Platform Design and Deployment

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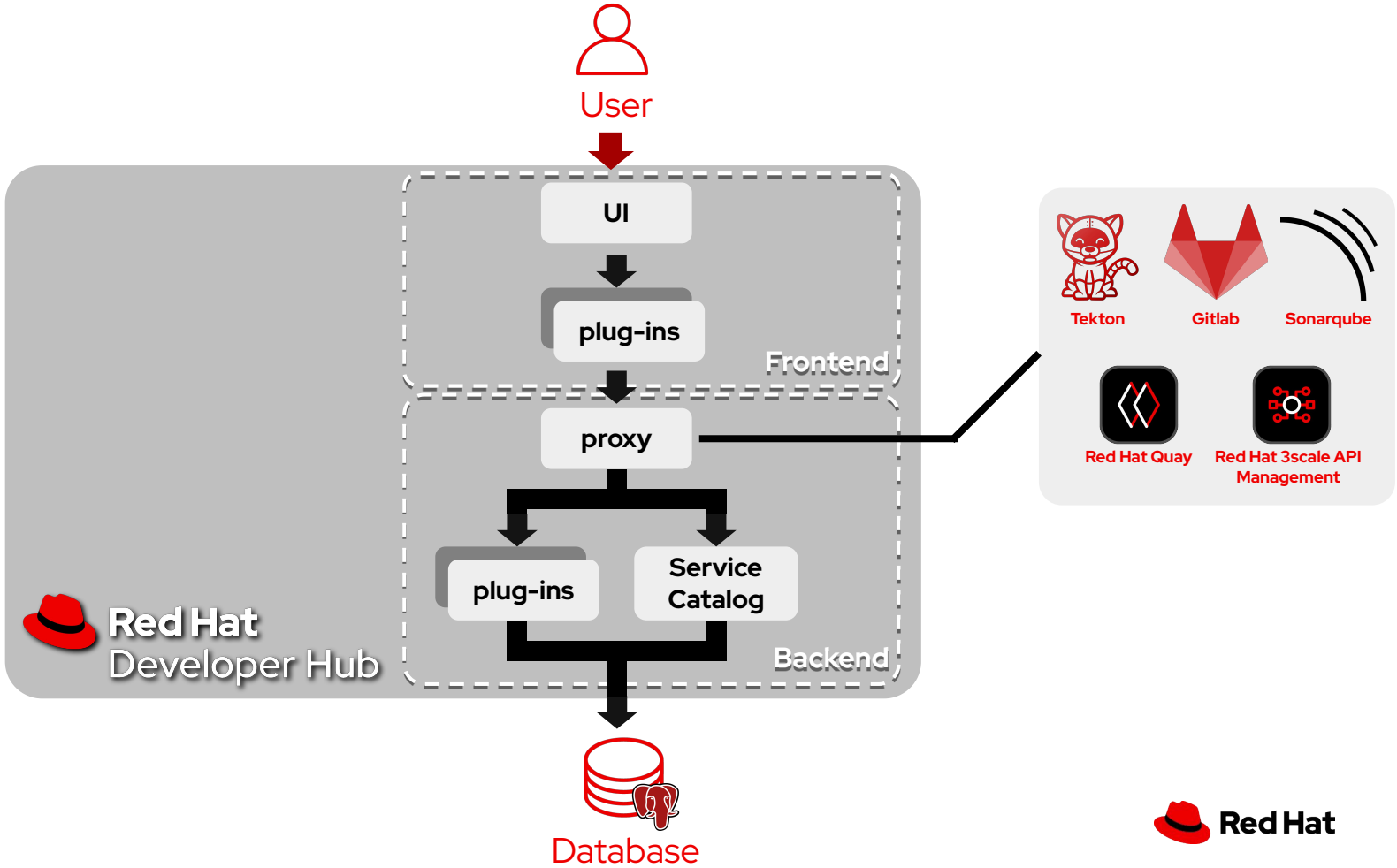
Developer Hub Architecture

Adopting constantly to your needs - at your pace

- Preferred to run on OpenShift
  - Can also run on AKS, EKS or GKE
- Certified Container Image
- Helm Chart
- Kubernetes Operator
- Postgres Database



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Configuration of RBAC

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Developer Hub Architecture

Setting up RBAC and a policy

- Developer Hub RBAC is different from backstage RBAC, where we'd have to do some TypeScript
- Developer Hub is using Casbin rules to create permissions and policies
- Add the policy file to the additional mounts section of the configuration

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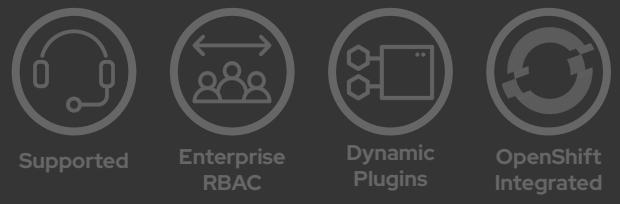

Demo Time

Watch the demo to see what you can do with Developer Hub

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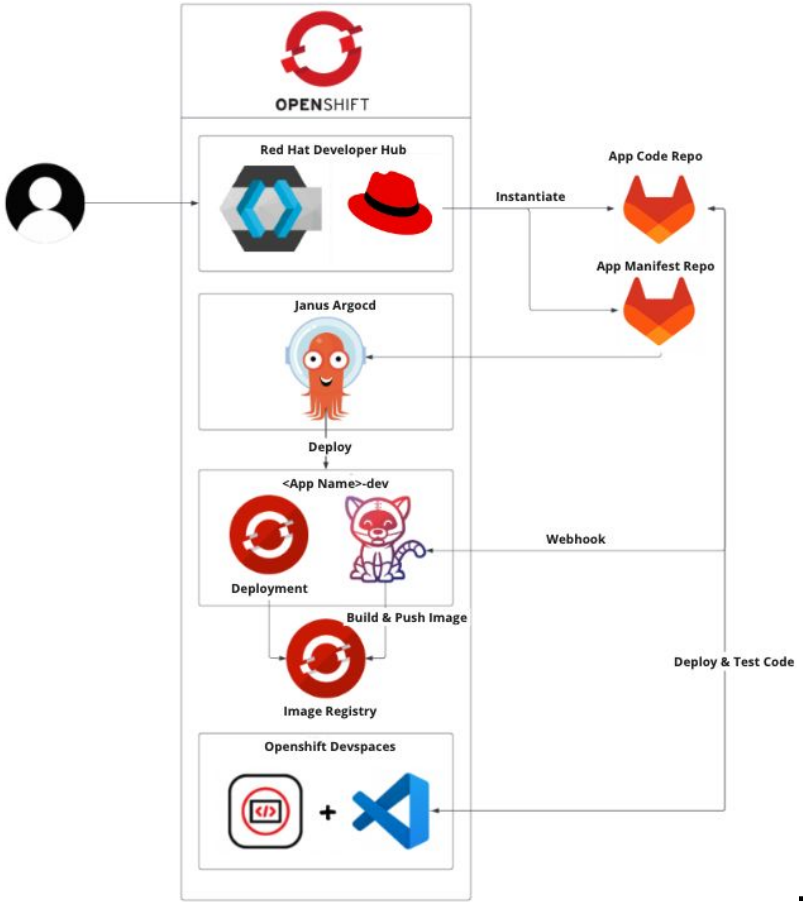
Developer Hub Demo

Workflow with Developer Hub

- This demo shows the workflow of the following
  - Creating a new component based on a golden path
  - Working with the component
  - Compiling the component
  - Staging the component
  - Promoting the component
- This demo contains the following technologies
  - Developer Hub as central unit of information
  - GitLab as code and config storage
  - Tekton Pipelines to build and stage the component
  - ArgoCD to deploy the component



Resources

Everything you need to get started with Developer Hub

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Developer Hub Installation

Several Options to install Developer Hub

- Via Helm Chart (manual installation and configuration)
  - Installation via OpenShift UI or via CLI
  - Provide your own extra configuration after helm chart installation
    - Enable / Disable plugins
    - Configure authentication and Git[Hub|Lab] access
- Via Kubernetes Operator (automatic installation and configuration)
  - For example via Kustomize
  - Have a look at the example here
  - This approach greatly benefits from the declarative nature of Kubernetes / OpenShift

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Learn from the best

The step-by-step to get the most out of Developer Hub

http://red.ht/backstage-book

Joshua Wood
Developer Advocate
at Red Hat

Hans-Peter Grahsl
Developer Advocate at
Red Hat

Ryan Jarvinen
Developer Advocate
at Red Hat

Red Hat

Red Hat Developer Hub

https://red.ht/rhdh

Thank You

ありがとう
谢谢
תודה לך
Gracias
Obrigado
Bedankt
Дякуємо
Merci
Спасибо
Tack
Danke
Děkuji
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