Red Hat OpenShift 4.2 Delivers Bevy of Developer Tools That Enhance Cloud-Native Development

Arnal Dayaratna

EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: An Overview of Red Hat OpenShift 4.2

On October 26, 2019, Red Hat announced the release of Red Hat OpenShift 4.2, its Kubernetes-based platform as a service that specializes in modern application development. OpenShift 4.2 features a slew of developer-focused enhancements such as a dedicated developer console, a command line interface that simplifies deployment to Kubernetes (odo), connectors to a multitude of IDEs, and a deployment extension for Microsoft Azure DevOps.

Key Takeaways

- The topology view illustrates Red Hat's recognition of the importance of visually guided development tools to contemporary development. IDC believes this visually guided view into application architecture enriches the development experience by delivering valuable guidance regarding application architecture.

- Odo's simplification of deployment to Kubernetes-based infrastructures is notable because it takes ownership of the deployment of applications to Kubernetes, thereby absolving developers of the need to understand the minutia of Kubernetes.

- By reducing the friction associated with developing on OpenShift, OpenShift Connectors provide a means for developers to use familiar IDEs. This ability to use IDEs in which developers are well versed means that OpenShift Connectors enable developers to transition existing projects and code to OpenShift deployments.

- Azure DevOps provides developers with access to a well-defined operational pathway for integrating DevOps practices into OpenShift deployments. All this means that developers can swiftly operationalize practices such as rapid provisioning, automated releases, application performance management, and the implementation of security by using a turnkey, enterprise-grade DevOps platform.

Source: IDC, 2019

IN THIS MARKET NOTE

On October 26, 2019, Red Hat announced the release of Red Hat OpenShift 4.2, its Kubernetes-based platform as a service (PaaS) that specializes in modern application development. OpenShift 4.2 features a slew of developer-focused enhancements such as a dedicated developer console, a command line interface that simplifies deployment to Kubernetes, connectors to a multitude of IDEs, and a deployment extension for Microsoft Azure DevOps. Collectively, the enhancements to Red Hat OpenShift 4.2 enhance the developer experience and introduce new development functionality to the OpenShift platform.

In addition, OpenShift 4.2 features a multitude of enhancements that deliver enhanced automation and simplicity as they relate to the operational management of container-based applications. This conjunction of developer-centric and operator-related enhancements in OpenShift 4.2 consolidates the positioning of Red Hat OpenShift as one of the industry's leading platforms for modern application development. In particular, the developer-specific enhancements in Red Hat OpenShift 4.2 render it easier for developers to create container-native applications and integrate them with familiar development and DevOps tools that they already use.

Highlights of the enhancements specific to Red Hat OpenShift 4.2 include:

- A dedicated developer console
- Odo, a command line interface that streamlines Kubernetes deployments
- An OpenShift connector for Microsoft Visual Studio Code, JetBrains IDE (including IntelliJ), and Eclipse Desktop IDE
- Red Hat OpenShift Deployment Extension for Microsoft Azure DevOps

IDC'S POINT OF VIEW

Developer Console

The topology view in the developer console empowers developers to visualize an application and its constituent components. Developers can define relationships between components of an application and view the status of pods and builds. Developers can also access links to source code. The visually guided quality of the topology view helps developers understand interrelationships between components of a container-based application. The topology view helps developers accelerate their understanding of the architecture of a container-native application and drill down to obtain further information about that architecture as necessary.

In addition, developers can obtain further information about a specific component of an application as well as leverage visually guided tooling to expedite deployments from a Git repository, a developer catalog, Dockerfile, and YAML/JSON definitions or, otherwise, to deploy to a container image. The developer console can also be used to create builds and manage DevOps pipelines that automate builds.

The topology view illustrates Red Hat's recognition of the importance of visually guided development tools to contemporary development. While command line scripting remains the dominant modality of development for professional developers, the development landscape has, in recent years, been radically transformed by the profusion of low-code and no-code development tools within the broader developer tools landscape.

The availability of a topology view that helps developers understand the relationship between nodes in a Kubernetes cluster empowers developers to complement command line scripting with visually guided insight into the architecture of their application. IDC believes this visually guided view into application architecture enriches the development experience by delivering valuable guidance regarding application architecture.

That said, the obvious question raised by the topology view concerns its ability to scale for applications that feature scores or hundreds of nodes. As applications become larger and more complex, the UI controls specific to the topology view will need to support navigation through application architectures that may feature hundreds of microservices.

Odo

OpenShift Do (odo) is a command line interface that empowers developers to develop and deploy applications to OpenShift. Odo abstracts away the complexity of deploying applications to Kubernetes by absolving developers of the requirement of creating a YAML file. Odo simplifies the deployment of applications to Kubernetes clusters by enabling developers to use an "odo push" command to deploy applications to Kubernetes in much the same way that the Cloud Foundry platform as a service has a "cf push" command for deployment to Kubernetes.

Odo's simplification of deployment to Kubernetes-based infrastructures is a notable contribution to the landscape of developer tools for container-native applications. Given that developers are still in the process of deepening their knowledge both of containers and Kubernetes, Odo empowers developers to deploy code to production without knowledge of the intricacies of Kubernetes. As such, Odo's management of Kubernetes-related deployment accelerates and simplifies development and enables developers to focus on the business logic used for developing applications in contrast to operational responsibilities.

OpenShift Connectors

OpenShift Connector by Red Hat enables developers to use IDEs with which they are familiar to develop applications on Red Hat OpenShift. Red Hat's OpenShift Connectors support Microsoft Visual Studio Code, JetBrains IDE (including IntelliJ), and Eclipse Desktop IDE. Developers can use OpenShift Connectors to develop, deploy, and update applications on an OpenShift cluster by using a local instance of OpenShift in the form of minishift or Red Hat CodeReady Containers. Importantly, OpenShift Connector by Red Hat empowers developers to create OpenShift applications using developer tools with which they are familiar, thereby lessening the learning curve associated with interacting with an OpenShift cluster.

By reducing the friction associated with developing on OpenShift, OpenShift Connectors provide a means for developers to use familiar IDEs. This ability to use IDEs in which developers are well versed means they can expeditiously transition existing projects and code to OpenShift deployments. As such, OpenShift Connectors facilitate OpenShift adoption and cloud-native development that leverages microservices, containers, container orchestration frameworks, and DevOps.

Red Hat OpenShift Extension for Azure DevOps

The OpenShift extension for Azure DevOps enables developers to integrate OpenShift into build-and-release pipelines that is part of Azure DevOps. Developers can use the extension to deploy applications either to Azure Red Hat OpenShift or OpenShift clusters on other platforms by using Microsoft Azure DevOps.

This extension streamlines the implementation of DevOps practices such as automated release management, continuous integration (CI), and continuous delivery (CD) into OpenShift deployments. Developers and DevOps engineers have the choice of leveraging Azure DevOps on the Azure platform itself by means of Azure Red Hat OpenShift or, otherwise, by using Azure DevOps on OpenShift deployments hosted elsewhere.

The key point worth noting is that developers have access to a well-defined operational pathway for integrating DevOps practices into OpenShift deployments. All this means that developers can swiftly operationalize practices such as rapid provisioning, automated releases, application performance management, and the implementation of security by using a turnkey, enterprise-grade DevOps platform that obviates the need to automate each of these practices using custom code.

Other Announcements

In addition to these developer tools-related announcements, Red Hat elaborated on the following:

- A service mesh that leverages technologies from Istio, Kialo, and Jaeger to provide observability and monitoring capabilities for applications that feature microservices architectures
- OpenShift serverless that provides tooling that empowers developers and operators to automate the scaling of application infrastructure up or down and even to down to zero as necessary
- CI/CD functionality delivered through OpenShift pipelines and a cloud-native CI/CD platform based on the open source Tekton project that provides developers with an option for CI/CD tooling separate from Jenkins

Red Hat's service mesh, OpenShift serverless, and cloud-native CI/CD functionality illustrate the depth of Red Hat's developer tools portfolio for supporting cloud-native development. Service mesh functionality is essential to microservices-based development because developers need distributed tracing and advanced observability functionality to analyze performance metrics in a microservices architecture.

Meanwhile, OpenShift serverless enables cloud-native development by automating infrastructure-related operations such as provisioning and scaling. OpenShift serverless' ability to automate the scaling of application infrastructures up, down, and to zero absolves developers of the need to manage the infrastructure used for container-native deployments. As a result, developers can focus on the business logic for their container-native applications instead of concerning themselves with provisioning and scalability.

Finally, indigenous CI/CD functionality by means of OpenShift pipelines delivers enhanced support for cloud-native approaches to CI/CD such as GitOps approaches to the development of CI/CD pipelines. By conceiving of pipelines as code, OpenShift pipelines deliver enhanced operational agility and automation to the development of pipelines.

Synopsis

This IDC Market Note provides an overview of Red Hat OpenShift 4.2 platform released on October 26, 2019.

Red Hat OpenShift 4.2's release of a bevy of developer-focused enhancements consolidate Red Hat's positioning as a market leader in cloud-native development tools. The availability of a topology view, a command line interface for OpenShift deployment, connectors to a multitude of IDEs, and a deployment extension for Microsoft Azure enhance the freedom, control, and operational agility of developers that are developing Kubernetes-based applications. Moreover, Red Hat OpenShift 4.2 delivers a portfolio of developer tools for Kubernetes-based development that provides an abstraction layer with respect to Kubernetes-based development. Taken together with Red Hat's announcement of service mesh, serverless, and CI/CD functionality, Red Hat OpenShift 4.2 represents a breakthrough in the space of cloud-native development tools, given its ability to support DevOps, serverless, observability, and monitoring as well as functionality for the development of net-new Kubernetes-based applications. Considered in conjunction with Red Hat's portfolio of development tools for application migration and modernization, Red Hat OpenShift 4.2 also supports the refactoring of legacy applications by facilitating the development of microservices that reduce the dependency of a legacy application on a monolithic code base.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com