Hybrid-cloud computing has been a dominant focus of recent enterprise information technology industry events. Already this year, Wikibon has seen significant hybrid-cloud solution announcements from Cisco Systems Inc., IBM Corp. and Google LLC. This week at its annual developer event in Boston, Red Hat Inc. took its already-strong hybrid-cloud portfolio to the next level of automated sophistication. In advance of its pending acquisition [...]
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In advance of its pending acquisition by IBM, Red Hat significantly deepened its differentiation in addressing a wide range of hybrid and multicloud computing scenarios in the enterprise, while laying out a compelling vision for AI-driven automation throughout its comprehensive solution portfolio. Red Hat also make announcements that evolve its well-established partner ecosystem to address a wide spectrum of hybrid and multicloud use cases.

Wikibon is impressed with the principal product launches that Red Hat announced this week at its conferences, which squarely address the following key enterprise cloud-computing trends:

- Enterprises are flocking to hybrid clouds.
- Open-source container orchestration is the foundation of the hybrid and multicloud.
- Public clouds are an onramp to hybrid and multicloud environments.
- Software-defined data centers are spanning clouds of growing complexity.
- AI is the fastest growing workload on the multicloud.

Here are our perspectives on each of the corresponding announcements:

**Enterprises are flocking to hybrid clouds**

The vast majority of enterprises will implement hybrid cloud infrastructure by 2020, according to Gartner Group.

This trend is quite evident in Red Hat's financials. During Red Hat Summit, the vendor presented solid sales and revenue growth numbers across all of its core solution areas. It is sustaining strong growth in enterprise customer adoption for hybrid and multiclouds. It now has more than 1,000 customers using its Kubernetes-based container orchestration platform, OpenShift.

This growth represents a near doubling of Red Hat OpenShift's customer base in a single year. Red Hat now counts nearly half of the Fortune 100 companies as OpenShift users, including the leading enterprises in many industries, with many of those deploying it in hybrid and multicloud initiatives.

**Open-source container orchestration is the foundation of the hybrid and multicloud**

The Kubernetes-based application container software market will grow to more than $5.5 billion by 2023, according to 451 Research, representing a compound annual growth rate of 28 percent.

Red Hat is a clear beneficiary of this trend. In addition to its leadership position in Kubernetes, the vendor provides the most popular open-source Linux operating system for the enterprise. This week, it announced the next major versions of its core orchestration and OS platforms, with most new features addressing customers’ growing requirements in what it’s calling “open hybrid clouds.”

Announced this week, the new Red Hat OpenShift 4 incorporates sophisticated new automation, storage, and other cloud-native development capabilities geared for hybrid multiclouds. It also introduces Knative-
At Red Hat Summit, automation of hybrid cloud management steps to the forefront

This release marks the first time that Red Hat has presented developers with serverless abstractions, which will become fundamental to developer experiences going forward. As Steve Speicher, Red Hat senior principal product manager of developer tools, told theCUBE at Red Hat Summit, serverless “is a different way we thought about how we would do this on Kubernetes.”

“It’s really interesting to see things like that and also the recent work announcements with Microsoft and the Azure Functions, where people will like they may be into the event sources there,” he added. “They want to make sure that workloads that they’re doing and the functions they’re building are running on good Kubernetes. Our Kubernetes is OpenShift, so it’s really completing the lifecycle.”

In addition, the vendor has designed the new **Red Hat Enterprise Linux 8** for deployment across hybrid and multiclouds. The new operating system — a lightweight version of which is the foundation of OpenShift 4 — supports on-demand workloads and operations that stretch from enterprise data centers to multiple public clouds.

Stefanie Chiras, vice president and general manager for RHEL told theCUBE that the RHEL 8 launch is very much a portfolio launch.

“There are enterprises who are looking for that RHEL experience on OpenShift or on RHEL,” she added. “Pulling in capabilities like management with insights, pulling that directly into every RHEL subscription.”

RHEL 8 supports comprehensive hybrid and multicloud management across heterogeneous physical, virtual and cloud platforms. Key new features support end-to-end visibility, automation, optimization, management, in-place upgrade, write-once-run-anywhere image building and DevOps orchestration across these myriad cloud deployment platforms. Another key new feature of RHEL 8 is **Red Hat Insights**, which is bundled into every license and, alongside the new **Red Hat Smart Management** feature, supports AI-driven closed-loop monitoring, optimization, and remediation of distributed deployments of the OS across hybrid and multiclouds.

Public clouds are an onramp to hybrid and multicloud environments

Though public clouds have come far and fast in this market, they have not monopolized enterprise computing, nor do they seem likely to in the near future. Instead, enterprise IT professionals are starting to regard public cloud as an on-ramp to hybrid and multicloud target architectures for elastic computing.

Addressing those requirements, Red Hat this week announced availability of OpenShift as a jointly managed enterprise-grade container orchestration service on one of the leading public clouds, Microsoft Azure. The service will deliver to customers an integrated Kubernetes experience, including unified sign-up, onboarding, service management, billing and technical support. It offers enterprise DevOps teams speedy connection of on-premises and Azure-based OpenShift clusters, while providing the flexibility to move applications between those environments.

Wikibon considers this partnership a foundation of Red Hat’s bonafide commitment to a truly platform-agnostic multicloud capability. The new jointly managed service provides users with easier on-demand access to Azure Cosmos DB, Azure Machine Learning and Azure SQL DB. In addition, the partners are collaborating on the development of containerized solutions with Red Hat Enterprise Linux 8, Red Hat Ansible Engine 2.8 and Ansible Certified modules running in Azure, as well as SQL Server 2019 with RHEL 8...
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support and performance enhancements. This will enable the development of more sophisticated multicloud AI DevOps pipelines that are orchestrated via Kubernetes.

Software-defined data centers are spanning clouds of growing complexity

Server virtualization has been the foundation for the truly platform-agnostic modern data center, which has increasingly been distributed across clusters, data centers and clouds through technologies pioneered two decades ago by VMware Inc.

Red Hat has had a strong technology partnership with VMware for many years. RHEL has been certified on VMware vSphere for more than a decade, while OpenShift has supported VMware NSX-T networking for almost 3 years and VMware vSAN for almost a year, based on VMware’s Kubernetes contributions.

This week the partners announced that Red Hat and VMware are extending the relationship, by working together on a reference architecture and validated design to bring Red Hat OpenShift to VMware’s SDDC stack in a supported fashion. Wikibon applauds this deepening of their partnership, which will spare mutual customers from having to do a lot of custom work to integrate VMware vSphere, NSX-T and vSAN with Red Hat OpenShift and RHEL.

AI is the fastest-growing workload on distributed clouds

No multicloud solution provider can last if it doesn’t continue to improve its ability to manage scalable artificial intelligence, deep learning and machine learning workloads.

Red Hat has been continuing to build out its solution portfolio’s ability to support scalable AI data engineering, modeling, training, serving, and inferencing workloads. Last year, Red Hat announced the certification of RHEL on Nvidia Corp. DGX-1 to enable enterprises to more easily move GPU-accelerated AI workloads from experimental, sandbox test environments into production. And the partners have recently certified RHEL on additional Nvidia-powered computing platforms, including Nvidia DGX-2 AI systems and Nvidia T4 GPU-powered systems available from various server manufacturers.

This week, the partners announced the launch of an early access program for prospective customers, combining Red Hat’s software solutions with Nvidia’s GPU hardware, CUDA-X acceleration libraries and NGC GPU-accelerated registry of AI/ML and data analytics containers that can run on RHEL and OpenShift on-premises and in the cloud. They are also demonstrating new capabilities for running GPU-accelerated workloads across the hybrid cloud. Furthermore, they are working on a joint reference architecture that takes advantage of OpenShift Operators to better streamline customer implementations in enterprise data centers.

Wikibon applauds Red Hat’s deepening partnership with Nvidia. We hope that Red Hat will continue to develop the partnership even as it pursues an equivalent level of tight integration with likely future corporate parent IBM’s comprehensive AI and machine learning software, hardware and services portfolio.

Wikibon’s concerns about Red Hat

Wikibon considers Red Hat one of the leading providers of multicloud management tools that are truly agnostic to the underlying platforms — be they on-premises, virtual, bare-metal or public clouds — that enterprises are trying to bind into unified infrastructure. We also believe that, if the company’s acquisition by IBM closes promptly, Red Hat will prove to be a formidable asset in Big Blue’s efforts to dominate the hybrid and multicloud arena.

However, Wikibon has several concerns regarding Red Hat’s growth prospects going forward in the hybrid/multicloud arena:

- Hemmed in by aggressive public cloud vendors: Amazon Web Services, Microsoft Azure and Google
At Red Hat Summit, automation of hybrid cloud management steps to the forefront

Cloud Platform are already addressing hybrid deployment scenarios in their solution and partnering strategies. Just as important, they all have the deep pockets, technical prowess, extensive partner ecosystems and global sales presence needed to blunt any attempt by a converged IBM/Red Hat in this arena.

- **Hobbled by perceptions of not being agnostic**: Red Hat’s pending acquisition by IBM may create the impression that the converged vendor primarily addresses IBM-centric multicloud deployments, thereby deterring customers of rival private and public cloud solutions from using its offerings in these scenarios. In addition, Red Hat already boasts considerable solution-level hybrid-cloud integration with IBM, a fact that may exacerbate the perception because of the inevitable delays in bringing integrations with other public and private cloud solution providers up to parity.

- **Having rivals with more compelling hybrid and multicloud solution assets**: Though it has a comprehensive hybrid-cloud portfolio, Red Hat suffers from the fact that it lacks the software-defined wide-area networking assets of a VMware or Cisco Systems Inc. It would need these to address diverse hybrid and multicloud internetworking scenarios. If and when its acquisition by IBM Corp. is closed and official, Red Hat will be able to address this lack, which would also help it defend against Google in addressing mesh internetworking through Istio. Likewise, Red Hat still has an underdeveloped Alops capability for multicloud DevOps, though it has promising “Federator.ai” foundation techs for Alops in RHEL 8 and OpenShift 4, and the pending acquisition by IBM would provide access to a multicloud management tool with foundational technology to develop those capabilities further.

Many enterprises have already made significant investments in RHEL, which is one of the most popular enterprise Linux distributions. Wikibon recommends that they upgrade to the new RHEL8 as soon as possible to take advantage of the new Red Hat Smart Management feature. This new feature provides rich capabilities to automate management, patching, configuration, and provisioning of RHEL deployments within and across any cloud — on-premises, public, hybrid and more — on which the OS is deployed.

Enterprises should also strongly consider adopting OpenShift 4 as the foundation for Kubernetes container orchestration in their hybrid and multiclouds. Existing RHEL users will benefit from OpenShift 4’s tight integration with that OS as well as the automation, storage, and DevOps features that make it highly competitive in this arena. For those organizations who need the flexibility to evolve their cloud-native computing with serverless functions and mesh deployments, OpenShift 4’s support for Knative and Istio open the door to those possibilities.

However, enterprise IT should be aware that, if and when IBM’s acquisition of Red Hat is final, the companies will need to address the significant overlaps between their hybrid and multicloud solution portfolios. Though IBM Chief Executive Ginni Rometty assured the Red Hat Summit keynote audience of Big Blue’s intention to respect Red Hat’s independence, it would be prudent for Red Hat users to hedge their commitments to its offerings until the inevitable product shakeout occurs in a year or two.
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