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IBM Rings in Hybrid Cloud 2.0

STRATEGIC ANALYSIS OF IBM'S ACQUISITION OF RED HAT

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IBM RINGS IN HYBRID CLOUD 2.0: STRATEGIC ANALYSIS OF IBM'S ACQUISITION OF RED HAT

"Combining IBM apps and Red Hat infrastructure is going to make magic," said Arvind Krishna, SVP Hybrid Cloud and Director of Research of IBM, at the Red Hat Summit in May. The announced \$34 billion acquisition of Red Hat underlines the seriousness of Krishna's statement and leads us to believe that with Red Hat as a part of IBM, Big Blue aims to further increase their ability to "make magic."

Enterprise Management Associates (EMA) applauds IBM's bold strategy, which is based on shifting focus from cost-cutting toward unlocking new use cases to capture the at least 80 percent of enterprise applications that are still waiting in line for onboarding into the cloud. This is an important number for everyone to consider when evaluating today's state of the cloud, container management, and serverless market. To paint an even brighter picture of the remaining potential of the hybrid cloud market, we anticipate that the 80 percent of apps that are still untapped will lead to use cases that go beyond the simple "let's drive more cost out of our stack" mantra and into the realm of experimenting with solutions, leading to increased customer value.

IBM APPS AND AI ACROSS DATA CENTERS AND CLOUDS

The acquisition of Red Hat is aimed toward enabling IBM to create a hybrid ecosystem of integrated software and services across multiple clouds and data center infrastructure based on a consistent open platform. This will enable customers to develop, deploy, and operate modern, cloud-native applications within the same hybrid platform that also hosts traditional enterprise applications. Placing all corporate applications and services on one platform allows companies, for example, to add voice interfaces, chatbots, visual recognition, content summarization, and other Watson services to traditional enterprise applications that can run bare metal or VMware vSphere in the corporate data center or on AWS, Azure, Google Cloud, IBM Cloud, or any other Kubernetes-driven infrastructure platform.

A UNIFIED DATA PLANE AS THE SECRET INGREDIENT

While running a consistent set of AI algorithms and models across data centers and cloud is exciting, IBM's hybrid cloud value proposition becomes even more interesting when adding Cloud Private for Data to the mix. IBM Cloud Private for Data received the EMA Top 3 Award for artificial intelligence because the solution provides a centralized data compliance and collaboration framework. Combined with Red Hat OpenShift Container Management, IBM Cloud Private for Data should be able to govern corporate data independently of whether it is stored on a locked-down SAN in the data center or in an AWS S3 bucket. At the same time, we would expect customers to be able to create audit reports for their data, independently of the applications to which it is connected.

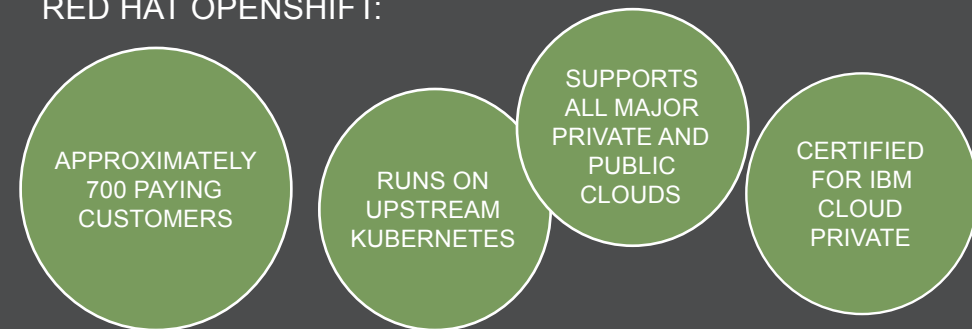
"Now millions of apps can be modernized and made available on any cloud."

Arvind Krishna, SVP Hybrid Cloud, IBM

EMA RESEARCH FACTS

- Unified management between data center and cloud environments is the primary DevOps priority for IT in 2018.
- Consistent and continuous management of security and compliance is the main DevOps pain point in 2018.
- Red Hat Enterprise Linux (RHEL) has an approximate market share of 60 percent for enterprise Linux distributions.

RED HAT OPENSIFT:



IBM CLOUD PRIVATE: IBM WATSON/IBM APPS/DATA SERVICES/IBM MIDDLEWARE/OPERATIONS

RED HAT ENTERPRISE LINUX/RED HAT OPENSIFT CONTAINER MANAGEMENT/OPENSTACK IAAS/ANSIBLE AUTOMATION



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TECHNOLOGY FIT

To fully understand how IBM intends to complete its hybrid cloud stack in a manner that offers cloud independence on one hand and full control over the entire infrastructure and application stack on the other, we need to look at three core Red Hat assets: Red Hat Enterprise Linux (RHEL), OpenShift Container Management, and Ansible.

RED HAT ENTERPRISE LINUX (RHEL)

RHEL currently holds approximately 60 percent of enterprise Linux market share and includes its own container runtime. This means that since version 7.5, RHEL no longer relies on the Docker runtime, but can now directly communicate with the Kubernetes container scheduler based on the Open Container Institute (OCI) standard. Combining control over the OS and container runtime as one integrated solution lowers the risk and speeds up the remediation of bugs that can occur at

the interface between containers and the OS kernel. Through Red Hat's 2018 acquisition of CoreOS, RHEL should soon be able to receive Linux kernel updates over the air. This would finally turn Linux servers into cattle, operating in an entirely stateless fashion, leading to significant improvements in scalability, management effort, and overall stability.

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RED HAT OPENSIFT CONTAINER MANAGEMENT

OpenShift sits on top of RHEL and provides enterprises with the Kubernetes management and developer services that are required for the centralized and simplified operation of the Kubernetes container scheduling and orchestration platform. OpenShift comes with a built-in service broker, enabling customers to offer third-party services in a controlled and compliant manner. Today, customers can already deploy IBM Cloud Private services, such as Watson, WebSphere, or DB2, as well as services like AWS Lambda, Azure Machine Learning Studio, or Google Visual Recognition. This flexibility enables customers to create truly hybrid applications that can, for example, extend the capabilities of legacy software by adding modern cloud services.

ANSIBLE FOR END-TO-END AUTOMATION, ORCHESTRATION, AND AUTO-REMEDICATION

Since the acquisition in 2015, Red Hat has established Ansible as the automation backbone for its entire software portfolio. In short, Ansible is responsible for the deployment of most Red Hat products. For automatic issue remediation, Ansible works together with Red Hat's Insights

operations management platform. Ansible's focus on simplicity in combination with its user-friendly GUI and API seem to make the platform an excellent tool for IBM to tie together and simplify its own portfolio.

CONTAINERS WILL REPLACE VMS

Both Red Hat and IBM share the strong belief that the containers will continue to rapidly grow as an alternative to VMs for an expanding set of workloads. To underline this "changing of the guard," Red Hat recently labelled OpenShift as its hybrid cloud management platform, while demoting CloudForms to an infrastructure orchestration platform. Whether or not this bet on containers and Kubernetes as their scheduling and orchestration platform works out is not critical when evaluating this acquisition, since all customers want is a unified hybrid application and infrastructure platform with robust security and compliance built in.

THE ROLE OF OPEN SOURCE

Red Hat's key argument behind the company's open-source vision and commitment is based on the belief that to enable customers to stitch together multiple heterogeneous services into an integrated, consistent, and easy-to-use business application, enterprise customers require the flexibility to contribute their own adjustments and integration to an open codebase, instead of having to wait for commercial vendors to provide the necessary changes.

HYBRID CLOUD IS BECOMING REALITY

The concept of stretching and scaling applications across cloud is not new, and originated from the idea of "cloud bursting." However, enterprises are typically unable to take advantage of this concept due to compliance and security concerns. "To stay GDPR-compliant, we need to be able to continuously trace where end-user data is stored, how it is secured, and what it is used for," said the Director of DevOps Services for a global ecommerce platform. "This slows down our digital transformation significantly and leaves many legacy applications behind within their existing silos." IBM Cloud Private, in combination with Red Hat OpenShift and Ansible, provides a secure governance, management, and automation layer that aims to unlock more and more of the use cases that are currently viewed as too high-risk to shift to the public cloud and too costly to attack within the corporate data center.

EMA PERSPECTIVE: In the past, we often criticized IBM for being too tentative in its acquisition strategy when it came to filling in portfolio gaps. With the announcement of the Red Hat acquisition, we have to lay this criticism to rest. The joint enterprise could offer customers what nobody else has managed to achieve: a balanced and policy-driven digital transformation platform that finally eliminates silos and technology lock-in.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blog.enterprisemanagement.com. You can also follow EMA on [Twitter](#), [Facebook](#), or [LinkedIn](#).

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