Whitepaper

Application Delivery Solutions

SUSE Cloud Application Platform with Microsoft Azure Kubernetes Service

The faster you can put new applications to work, the faster your organization can achieve its goals. Empower your developers and enable a DevOps model with an application delivery platform from SUSE and Microsoft.

Give Your Developers the Tools They Need.

Developers power today's innovative and competitive organizations. Their code can help you launch applications to improve efficiency, build customer loyalty and move into new markets. However, to accomplish all this, you need a platform that empowers developers and your operations team to act as one. With container-based workloads on a cloud platform, you can improve developer flexibility and operational efficiency while scaling to any size challenge. SUSE Cloud Application Platform with Microsoft Azure Kubernetes Service on Microsoft Azure infrastructure gives you a faster, more predictable way to develop and launch applications.

The Struggle Between Speed and Stability

Organizations need to develop new applications faster than ever. Traditionally, fast development has led to challenges in testing and production. With developers prizing speed, and operations teams more concerned about stability, organizations struggled.

Enter DevOps

The DevOps models blends the two teams to deliver what both want: fast development and stable apps. Containers and microservices are key to making this model work. However, building a service-oriented DevOps team also requires standardized processes and configurations and potentially requires industry standard hardware. Developers must also be able to access resources easily -- preferably through self-service -- and operations must be able to trust that all the code provided will run in the production environment.

Building a container and microservices-based infrastructure from scratch is possible, but is not necessarily simple. Likewise, establishing the automation levels that will help you realize the full value of DevOps, is not easy. The more time your IT team has to spend building and maintaining that infrastructure, the lower your return on investment.

A better path is to take advantage of cloud resources and open source solutions such as Cloud Foundry and Kubernetes. By working with SUSE and Microsoft, two companies with a history of enterprise software and a dedication to empowering developers, you can get both open source innovation and enterprise stability in a solution designed with developers in mind.

Unlike other Cloud Foundry distributions, SUSE Cloud Application Platform runs in containers, not virtual machines. That means it consumes a fraction of the memory of other distributions, while delivering faster recovery and scalability.

Boost Your Developers' Productivity

SUSE Cloud Application Platform with Azure Kubernetes Service provides a platform with developer tools that don't complicate your IT environment. It is easy to manage, designed to grow along with you, and can help you bring the benefits of DevOps to your organization.

Flexibility

The flexibility of the cloud is what leads many organizations to begin building cloud native applications. SUSE Cloud Application Platform with Azure Kubernetes Service can help you capture this flexibility in the development of both traditional and cloud native apps. One of the key features is the ability to scale rapidly with you. SUSE Cloud Application Platform can get Azure Kubernetes Service to spin up new containerized applications and services as needed, all supported by the hyperscale Microsoft Azure cloud.

The solution also provides valuable flexibility for developers. They can work with multiple languages, protocols and runtimes. This gives you the ability to create apps for mixed IT environments.

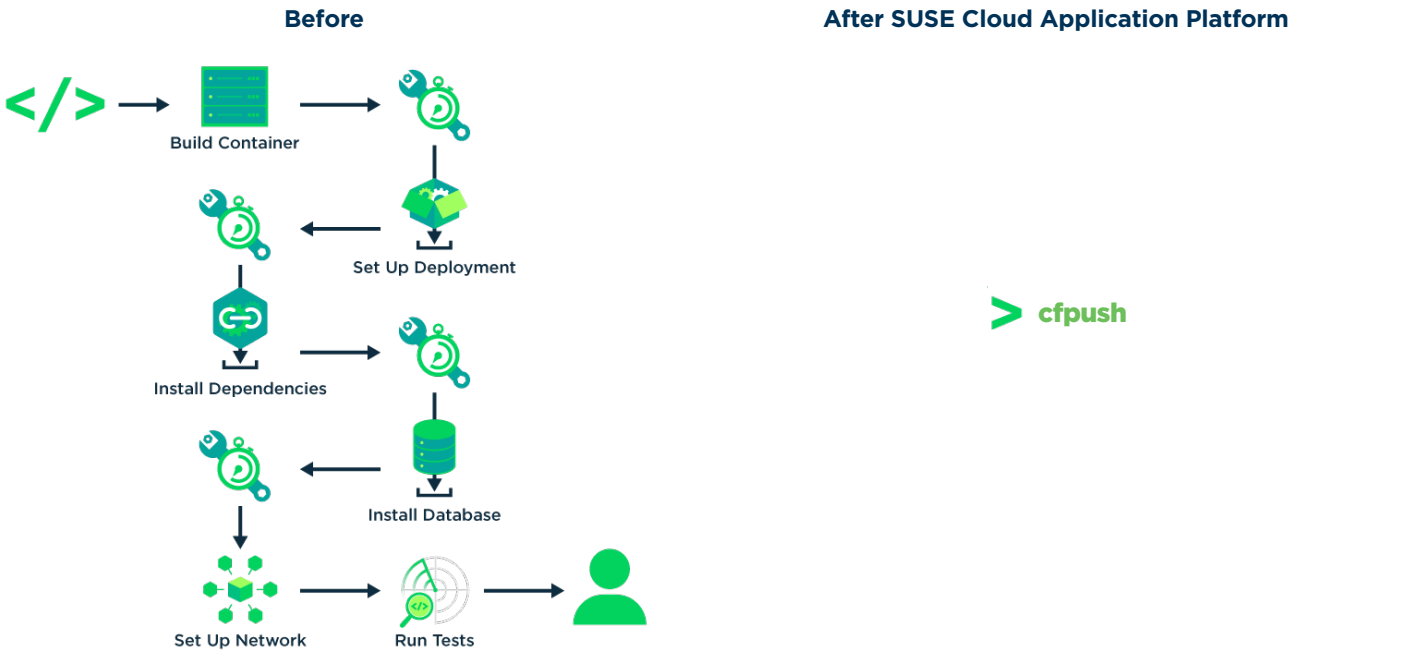

Figure 1. *Streamlined operations.*

Microsoft's Open Service Broker API enables developers to connect with external Azure services as needed. Developers thus get the tools they need to stay focused on the end goal: apps that support your organization.

Predictability

Cloud Foundry workflows are straightforward and predictable. Developers can move from one project to the next without having to relearn systems.

The combined solution also delivers predictability once an application leaves the developer's hands. Because containerized applications carry their dependencies with them, they work the same on the developer's workstation, and on the testing system or in production. There is no re-platforming or modification needed. This predictable behavior is key to unlocking the savings in time and frustration that come with a DevOps model.

New cloud native applications are not the only apps that can benefit. You can also build traditional applications in the solution, or use it to help break apart legacy applications into small, containerized pieces that you can then run in a much more predictable and scalable fashion on Microsoft Azure.

Streamlined operations are another benefit of the way the solution approaches application delivery.

Streamlined Operations

Without a cloud application delivery platform, an operations team has a long list of tasks to do to make an application work. They must first build the container and set up deployment. They have to install a number of dependencies as well as one (or more) databases. They must configure the networking to support the app and then test the stack to ensure everything works.

With an application delivery platform such as SUSE Cloud Application Platform, that entire process is automated and reduced to a single command: > cf push. Along with the orchestration provided by Kubernetes, you get a combined level of automation that eliminates enormous amounts of provisioning, configuration and management.

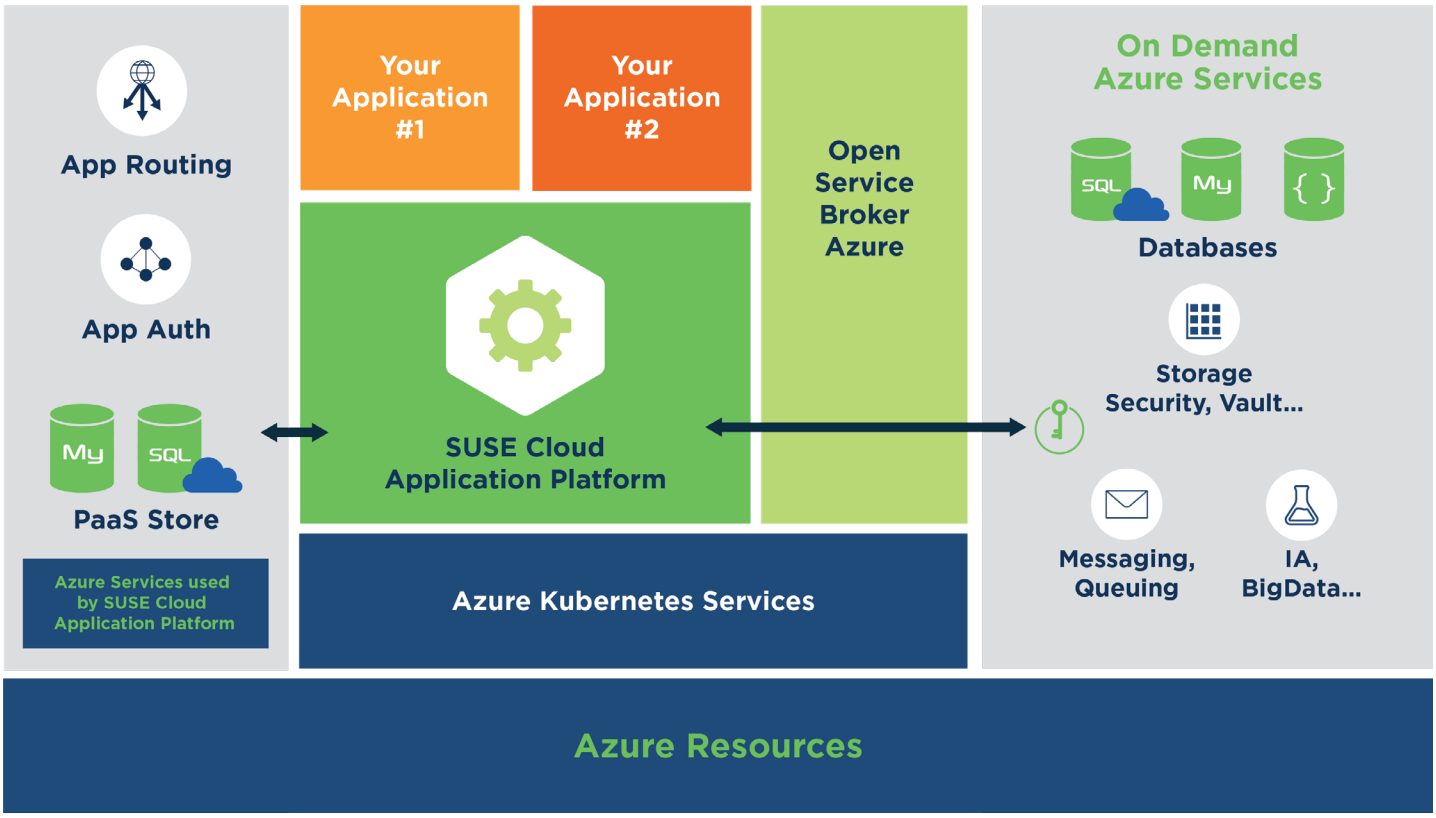

Figure 2. *SUSE Cloud Application Platform and Azure Kubernetes Service can take advantage of on-demand Azure resources and services. A large and growing number of these services can be automatically provisioned through the Open Service Broker API.*

Open Standards

SUSE Cloud Application Platform is based on Cloud Foundry and built to run on Kubernetes. Both Cloud Foundry and Kubernetes are popular open source projects. That gives you the benefit of diverse and innovative communities, while helping you retain flexibility. You can avoid being locked in to a single vendor's offering.

SUSE and Microsoft solutions have stood the test of enterprise, with security backed by decades of experience. We know enterprise requirements and understand what it takes to make secure and highly available enterprise solutions.

Solution Components

SUSE Cloud Application Platform

SUSE Cloud Application Platform provides a modern application delivery platform that brings an advanced cloud-native developer experience to Kubernetes. It can help you shrink the software development lifecycle and simplify application deployment. It automates provisioning and configuration of resources for both application deployment and scaling.

SUSE Cloud Application Platform is based on Cloud Foundry, but unlike other Cloud Foundry distributions, it runs in containers, not virtual machines. That means it consumes a fraction of the memory footprint of other distributions, while being faster to recover and scale.

Microsoft Azure Kubernetes Service

Azure Kubernetes Service offers a fast path to getting Kubernetes running on the Azure cloud; you can be up and running in three simple commands. It is also easy to use and manage. A Kubernetes cluster features one or more master nodes and multiple worker or agent nodes. Microsoft Azure manages your master virtual machines (VMs), the control plane, hardware and individual Kubernetes components so you can focus on your agent VMs.

The solution helps you minimize your administration with automated upgrades and patching and a self-healing control plane. Azure Kubernetes Service enables you to scale easily and grow quickly. It uses open APIs and 100% upstream Kubernetes.

Microsoft Azure

Azure is a hyperscale cloud with the largest portfolio of compliance offerings in the industry. Developers can take advantage of more than 100 services to power your applications, including advanced analysis and pre-trained machine learning modules. A large and growing list of these services—such as those for databases, storage and messaging—are available through the Open Service Broker API, which provides for automatic provisioning and easy inclusion into applications.

Designed to Meet Enterprise Demands

The combined solution can be applied to multiple use cases and scenarios to solve the challenges facing today's enterprises.

Keep Up with the Line of Business

SUSE Cloud Application Platform with Azure Kubernetes Service gives operations a tool to keep up with business demands. By automating application delivery and workload management, this solution can help make the development process more agile and responsive. The operations team can deploy changes faster, while automated scaling means the system can respond to demand faster.

Adapt Existing Applications

Every organization has hard-to-replace applications it relies on. Managing them separately from newer applications, such as cloud native ones, increases the burden on the operations team. The combined SUSE and Microsoft solution can help organizations that wish to move these existing applications to public clouds. By containerizing these existing applications, organizations can move them to a Kubernetes-based platform to gain the orchestration and automation benefits available there.

Manage Large Application Environments

Managing high volumes of applications can be extremely challenging without central control and automation. Operations teams often end up duplicating efforts by implementing new systems or services to support each new application. SUSE Cloud Application Platform with Azure Kubernetes Service can systematize load balancing and the sharing of systems, user management, security and more. These common systems create an additional benefit as well.

Reuse Services to Reduce Costs

Duplicative application environments can lead to virtual machine and container sprawl and the need for additional hardware. This increases costs, not only for the hardware itself but for management, power and cooling. A platform-as-a-service (PaaS) solution facilitates reusing services through various multi-tenancy, load balancing and resource sharing. Not only does this reuse help reduce costs, it can speed innovation. Upgrading a shared service results in improving all the applications using it.

Implement Best Practices

In fast moving environments, it can be challenging to keep rules for applications from drifting. Different staff may end up using different methods, leading to losses in efficiency, and potentially, compromising security. A PaaS solution, such as the SUSE Cloud Application Platform with Azure Kubernetes Service, incorporates best practices for application management to systematize operations—no matter how many applications you have, or how fast your organization changes.

Finally, SUSE Cloud Application Platform with Azure Kubernetes Service enables DevOps and true cloud-native applications. Organizations get repeatable, controlled application development services on top of a container platform. This helps them deploy applications quickly on the public cloud, iterate and scale those applications and respond quickly to business demands.

Faster Development for a Better Future

Investing in your developers is an investment in the future success of your organization. The faster and more efficiently your development and operations teams can work, the better chance your organization will have of achieving its goals. Enable a DevOps model and speed your application delivery with a cloud-based application delivery platform from SUSE and Microsoft.

Additional contact information and office locations:
www.suse.com

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