



Sangfor PaaS

(Platform as a Service)

Sales Guide

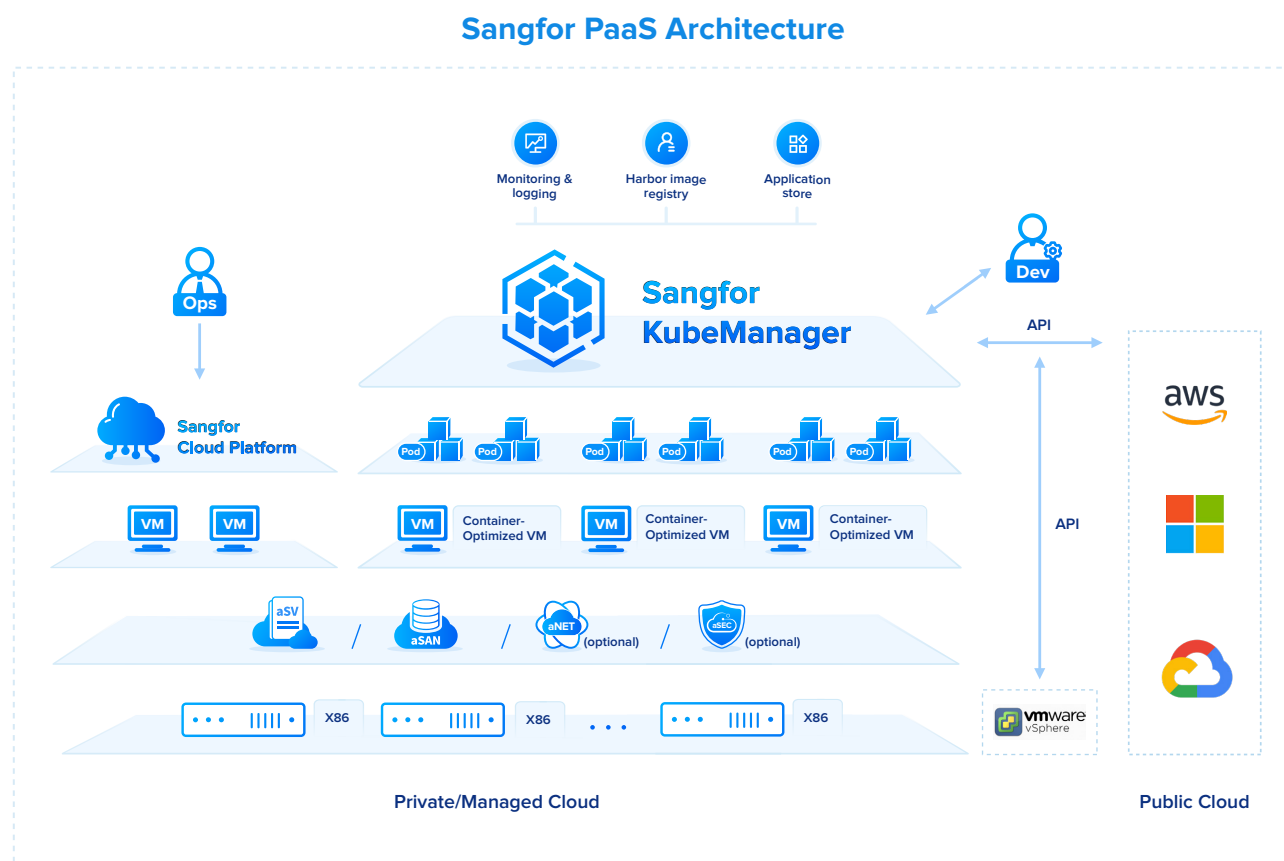


Solution Overview

The number of applications that are going to be built in the next five years will exceed the total number of applications that were built in the past 40 years. There's no doubt that most of the new applications will be built on microservices architecture which is more resilient, efficient and agile. Container is deemed to be the optimal choice for running microservices.

In the past few years, Container and Kubernetes have reshaped the landscape of modern applications. Based on the world's most widely adopted container management and orchestration platform Kubernetes, Sangfor provides its PaaS solution to help customers easily build an enterprise-grade Kubernetes platform to run and manage containerized applications with simplicity, security and agility.

Overall Architecture

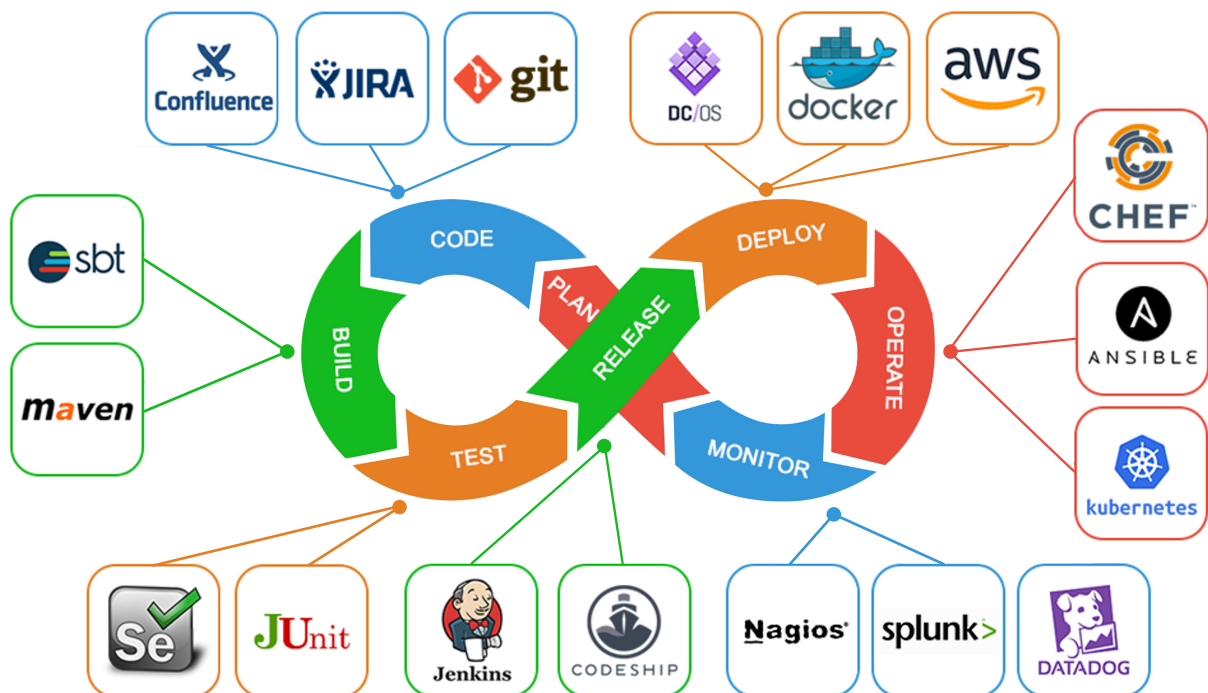


Deployed on Sangfor's renowned hyper-converged infrastructure platform, Sangfor PaaS extends traditional virtualization to modern containerization. Based on HCI, KubeManager offers comprehensive and unified management for K8s clusters across private, managed and public cloud environments.

Sangfor PaaS Features

<ul style="list-style-type: none"> • K8s multi-cluster management 	<ul style="list-style-type: none"> • LDAP integration
<ul style="list-style-type: none"> • Declarative management 	<ul style="list-style-type: none"> • Automated rollouts and rollbacks
<ul style="list-style-type: none"> • Horizontal Pod auto-scaling 	<ul style="list-style-type: none"> • Logging
<ul style="list-style-type: none"> • Monitoring & alerting 	<ul style="list-style-type: none"> • Harbor image registry
<ul style="list-style-type: none"> • App store 	<ul style="list-style-type: none"> • CSI (container storage interface)
<ul style="list-style-type: none"> • Canary release 	<ul style="list-style-type: none"> • Multi-tenancy
<ul style="list-style-type: none"> • And more... 	

The DevOps Workflow and Use Cases



1 Use Case 1: Development & Test



Need to develop cloud-native applications, they have their chosen code developing and testing tools, look for a platform to run packaged container-based applications.

Typical user: ISV, FSI

2 Use Case 2: Deployment & Operations



Looking for a platform to deploy containerized applications and run them in production with comprehensive monitoring and logging.

Typical user: healthcare provider, FSI

3 Use Case 3: Hybrid & Multi-cloud Deployment

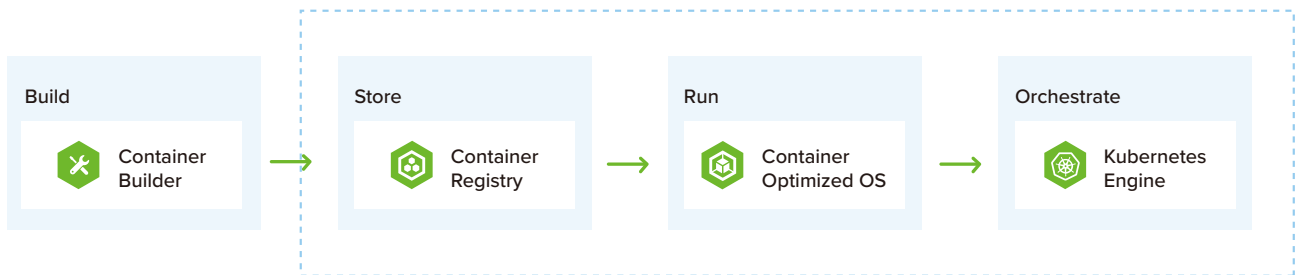
Applications that consist of multiple microservices between private and public cloud environments and require service mesh to orchestrate communications between microservices.

Typical user: Internet service provider, media & entertainment

Sangfor PaaS Target Use Cases

Sangfor PaaS is designed to store container images, run containers and manage containerized workloads. That's why at the moment Sangfor PaaS is largely focused on use case 1 and 2. Together with HCI, Sangfor PaaS targets the following use cases:

1. New containerized application deployment in addition to existing VM workloads
2. Look to build and run containerized applications, but can tolerate manual operations between development environment (for coding and testing) and deployment environment (for running and operations).



Typical User Portrait for Sangfor PaaS

Customers who have requirements for both VMs and containers, they must have a developer team to develop containerized applications and look for a platform to run the workloads. PaaS-only requirement may not be our target (e.g.: customers who are using 3rd-party virtualization platform but have requirement for only PaaS to run containers).



1. Existing HCI customers with a developer team



2. Potential HCI customers with a developer team

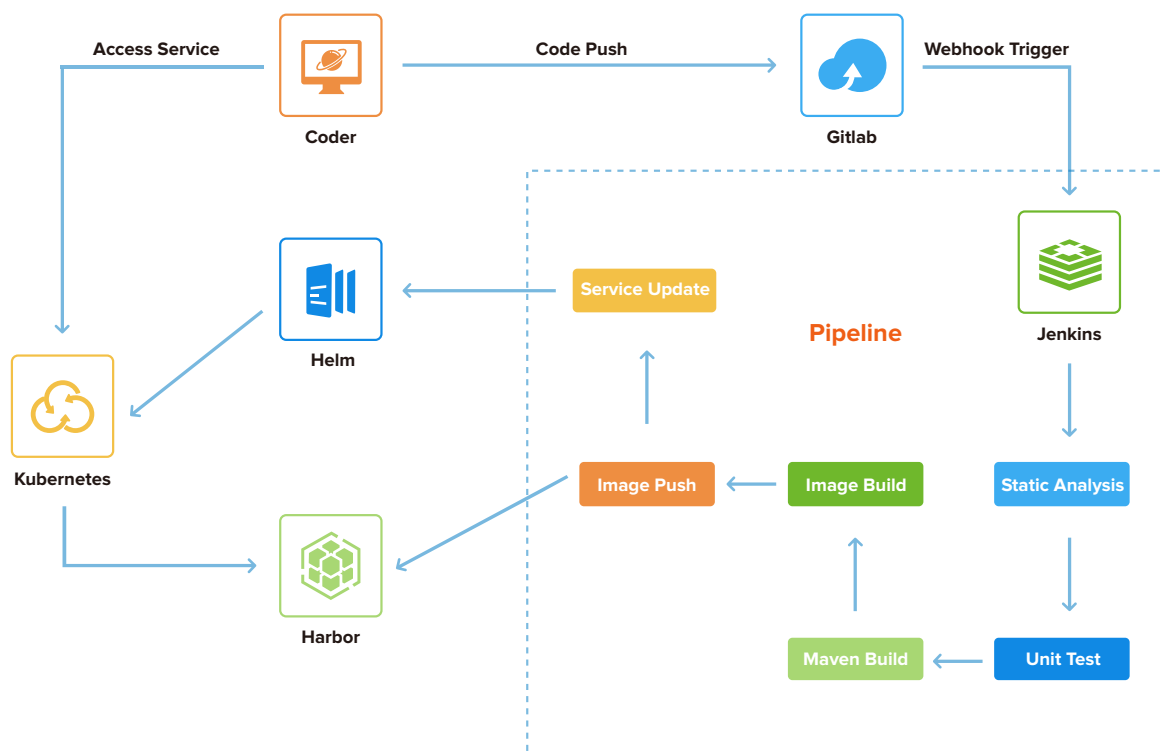
Restrictive Use Cases

Keywords: CI/CD, DevOps, Service Mesh, Microservice Governance

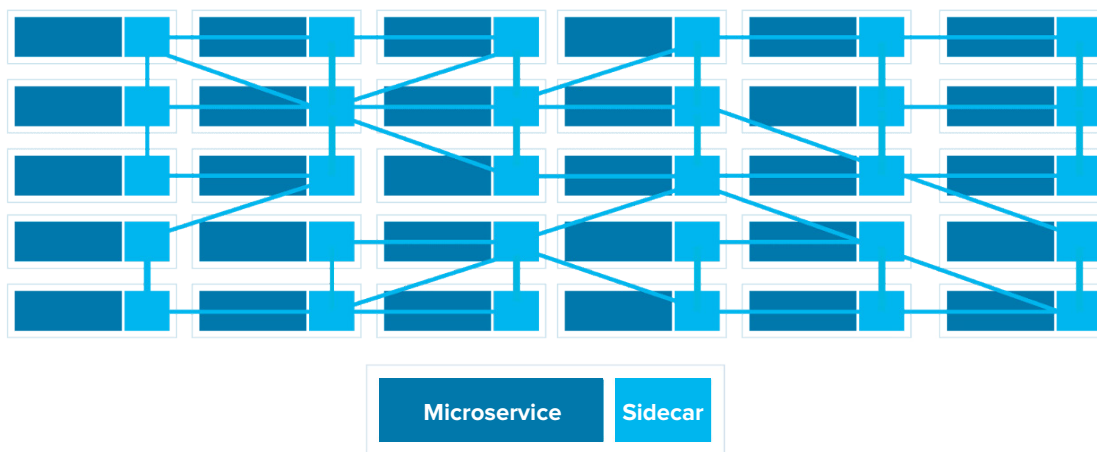
Sangfor PaaS could be part of CI/CD and DevOps, but is not yet capable to support end-to-end DevOps on its own. Coding, code testing and source code to image conversion, these procedures require 3rd-party tools such as Jenkins and Maven.

Applications that consist of hundreds or even thousands of microservices spreading private cloud and public cloud and need service mesh or microservice governance are also beyond our capability for the moment.

Continuous Integration / Continuous Delivery



Service Mesh



Solution Values



Unified Platform



Lifecycle Management



Secure



Cost-Effective

- IaaS+PaaS, unified platform for both VMs and containers, offering smooth transition from VMs to containers
- Easy lifecycle management for traditional and cloud-native workloads
- Highly secure: provide image scanning and reuse security capabilities on HCI
- Cost-effective: start from 2 nodes and scale out on demand

General Competitive Analysis

Vendor	Sangfor	VMware	Nutanix	Redhat	Open-source
PaaS Platform	KubeManager	Tanzu	Karbon	OpenShift	Rancher
Pros	<ul style="list-style-type: none"> - Simple and cost-efficient. - Built-in image registry, monitoring and logging. 	<ul style="list-style-type: none"> - Built into vSphere with consistent operations for developers. 	<ul style="list-style-type: none"> - Easy deployment and management with Prism UI. 	<ul style="list-style-type: none"> - A whole container development and orchestration platform out of the box, very developer-friendly. 	<ul style="list-style-type: none"> - Rancher is more of a management tool to deploy and manage one or multiple RKE clusters. - It is easy to use, and free if you don't want customer support.
Cons	<ul style="list-style-type: none"> - Lack of native support for DevOps and service mesh (need 3rd party tools such as Jenkins and Istio). 	<ul style="list-style-type: none"> - VMware has a very complex legacy between Pivotal, the new stuff they're doing with Tanzu and other acquisitions they've made – it's kind of a mash-up of different things that makes it complicated. High cost with per-core based subscription. 	<ul style="list-style-type: none"> - Lack of native support for DevOps (such as Jenkins for CI/CD). 	<ul style="list-style-type: none"> - Works only with Red Hat Enterprise Linux (a RHEL subscription is required and bundled into OpenShift). 	<ul style="list-style-type: none"> - Need add-on for monitoring, logging and registry, need 3rd party tools to support DevOps and service mesh.

Success Case - Jakarta Eye Center

Customer Requirement & Pain Points:

They have plan to expand and open multiple clinics in different cities across Indonesia.

This planning is new business expansion, so they don't have accurate forecast about the market and user response in each city. Therefore, the developer team decides to develop a new containerized application that is more scalable and flexible.



Project Milestone:

In the beginning customer and our partner have no idea that Sangfor can also provide PaaS solution. Therefore, the customer asks our partner for the container solution and the partner brings a 3rd-party software vendor for the container solution.

Then, they do the POC of the container application on bare metal servers. However, the customer has a plan to use their existing Sangfor HCI as the platform for the Kubernetes solution of the 3rd party software vendor.

After the Kubernetes POC is finished, the partner then contacted Sangfor Staff for the integration and compatibility of the 3rd party Kubernetes on top of Sangfor HCI. After further discussion we inform the partner and customer that we have PaaS solution on the roadmap and will be published soon.

Furthermore, the customer asks for the introduction of Sangfor PaaS solution with the sizing and pricing. We also offer the PaaS POC directly on Sangfor HCI and the customer approved our offers.

In the POC the customers already have result from previous POC, so they gave us the same requirement from the previous POC.

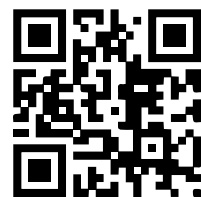
The Key Reasons Why We Win

- Sangfor managed to fulfil all POC requirement from the user
- Sangfor can build PaaS solution in the same environment as their existing environment which is Sangfor HCI
- Sangfor PaaS solution has a good pricing compared to the 3rd party software Vendor
- Sangfor as the principal can give full official support directly for the PaaS Solution



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