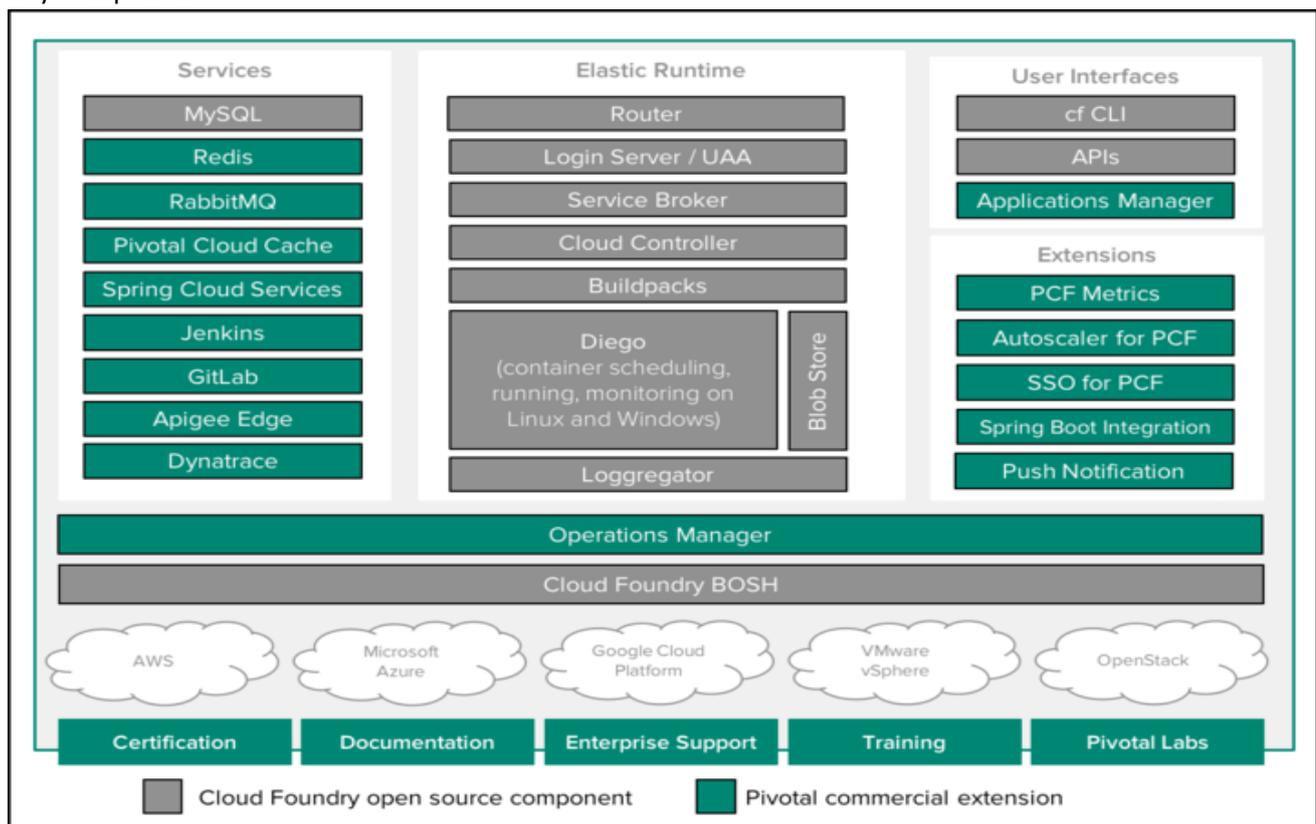


Introduction

Pivotal Cloud Foundry

Pivotal Cloud Foundry is commercial distribution of Cloud Foundry with support by Pivotal Software. Cloud Foundry is an open source, multi cloud application platform as a service (PaaS) governed by the Cloud Foundry Foundation, a non-profit organization, Currently Cloud foundry foundation has 70 Members including giants like EMC, SAP, VMWare, SAP, IBM, Microsoft, Google. It was originally developed in-house at VMware. It is now owned by Pivotal Software, which is a joint venture made up of VMware, EMC, and General Electric.

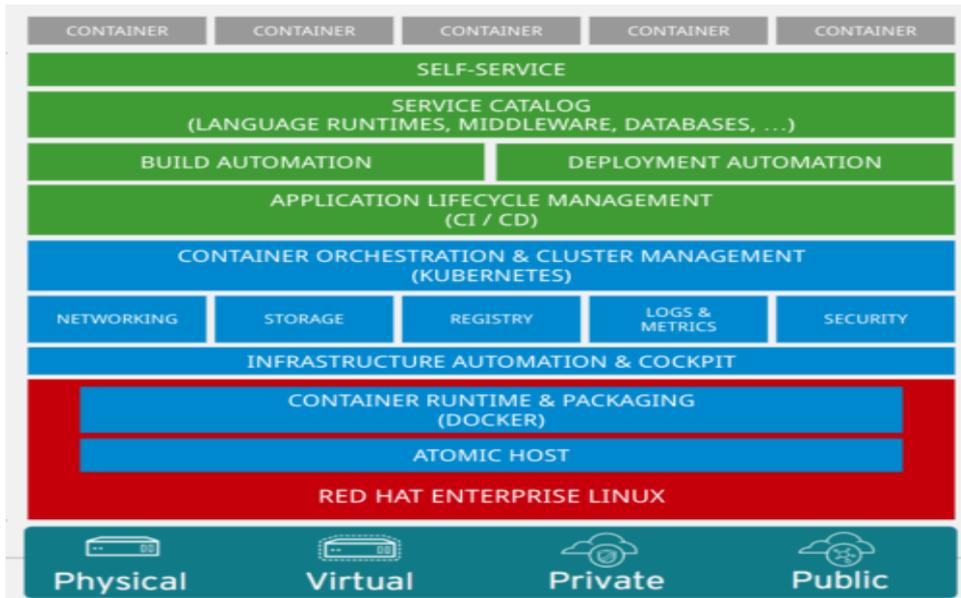
Key Components-



OpenShift –

OpenShift is a complete container application platform that natively integrates technologies like Docker and Kubernetes and includes an enterprise foundation in Red Hat Enterprise Linux. OpenShift integrates the architecture, processes, platforms, and services needed to empower development and operations teams. OpenShift powered by RedHat’s Openshift Origin upstream community project, built around a core of Docker container packaging and Kubernetes container cluster management with devops tooling.

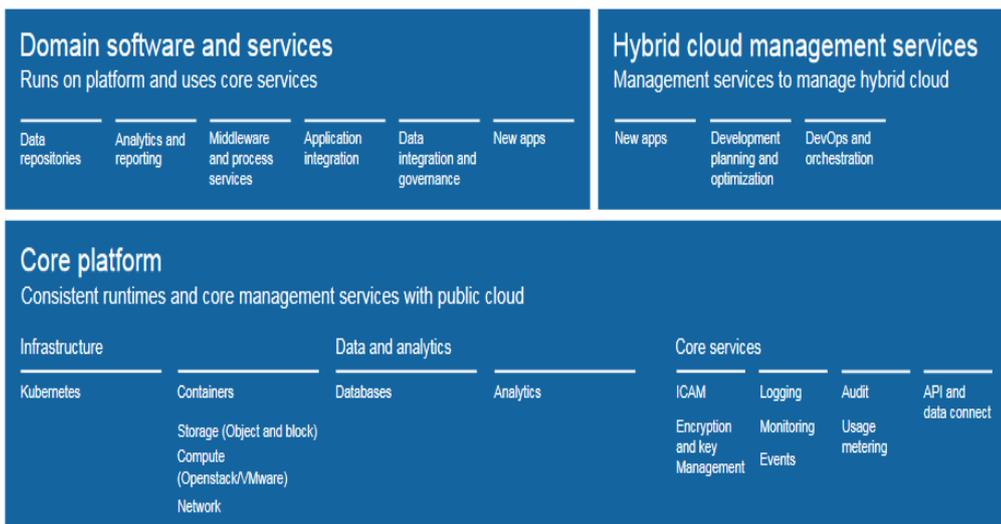
Key Components

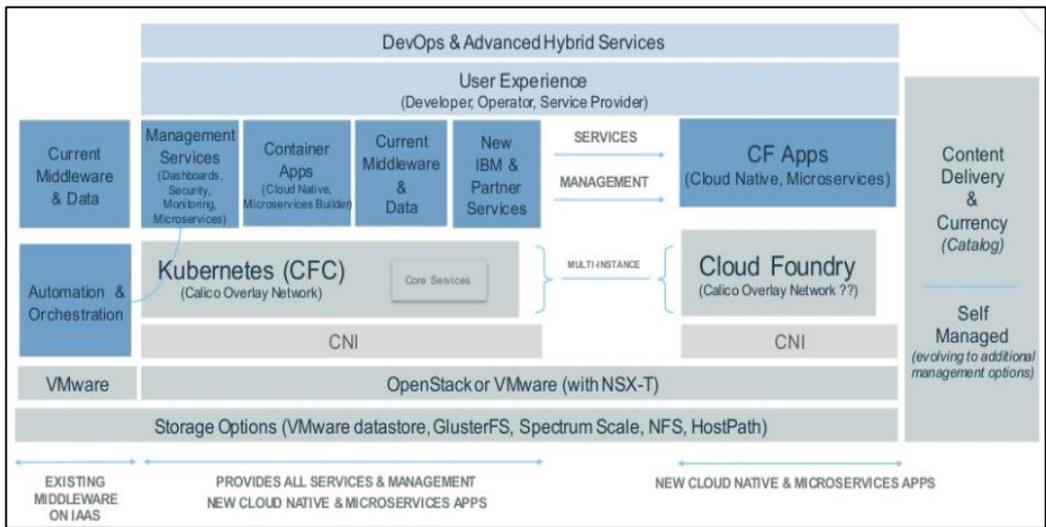


IBM Private Cloud

IBM Private cloud is a pre-package enterprise class solution to provide a Hybrid PaaS platform to Design, develop, deploy, and manage on premises, containerized cloud applications. It's built on open-source frameworks, like containers, Kubernetes and Cloud Foundry, with common services for self-service deployment, monitoring, logging and security, as well as a portfolio of middleware, data and analytics.

Architecture





Comparison of key Features

Features	Pivotal Cloud Foundry	Red Hat OpenShift	IBM Cloud Private
Solution category	Pre-packaged enterprise-class Hybrid PaaS	Pre-packaged enterprise-class Hybrid PaaS	Pre-packaged enterprise-class Hybrid PaaS
Developer	Non profit organization- Cloud Foundry Foundation	RedHat led Openshift Origin	IBM
Enterprise service provider	Pivotal	RedHat	IBM
Core Component	Diego, Bosh	Docker, Kubernetes, RHEL	Kubernetes, Cloud Foundry
On-boarding Applications	CF Push, Docker Containers	Source 2 Image, Docker Containers	bx dev deploy
Application Framework and runtime	Buildpacks	ImageStream	
Container Scheduler	Diego (CF Internal)	Kubernetes	Kubernetes, Cloud Foundry
Private Cloud Infrastructure	VM Ware, Openstack	Openstack	VM Ware, Openstack, Canonical, Bare Metal
Public Cloud Infrastructure	Any(Linux), GCP, AWS, Azure, Pivotal Web Services, OpenStack	Any(Linux), GCP, AWS, Azure, Openshift Online, OpenStack	

Runtimes	Java, .Net, Nodejs, Scala, Groovy, Go, PHP, Javascript, Ruby & Extensible	Java, Nodejs, Perl, PHP, Javascript, Ruby, DotNet & Extensible	Java, Nodejs, Go, PHP, Javascript, Ruby & Extensible
Services	Elasticserach, Hadoop, Neo4j, MongoDB, MySql, RabbitMQ, Redis	Jenkins, MySql, Redis, PostgresSql, MongoDB	
Scaling	Vertical, Horizontal, Auto Scaling	Vertical, Horizontal, Auto Scaling	Vertical, Horizontal, Auto Scaling
Logging	Loggregator	EFK stack (F - Fluentd)	ELK stack
Architecture			

Views on Three Platform.....

Cloud Foundry was pioneer in development of bundled PaaS solution before even Docker become leader in container technology. It developed in the background of IaaS, Configuration as a code, Microservices, API . Integrated automated development and service platform with auto scaling and agility was key demand and major player of IT industry came together to create the same with cloud foundry org.

When Docker and Kubernetes OS took the Microservice world by surprise and Cloud became the core aspect of computing. All the major public cloud infra was dominated by Linux. Red Hat came into the picture by combining these three market leading tools and became major player in the arena of PaaS Solution.

Cloud native is now the way industry is going. Container and container orchestration by Kubernetes became default environment. IBM also came up with solution, although IBM has offering in PaaS arena but industry was also looking into Hybrid and private cloud hence Bluemix was not enough. IBM is also member of Cloud foundry Organization. Hence IBM combined dual offering and provided both Kubernetes and Cloud foundry in its bundled PaaS solution.

Although all the three solutions are similar in functionality. There are some differences in architecture, cost and proprietary bundling.

Cloud Foundry needs large number of VMs and has more complex architecture. But it is also capable of handling very large industry solution. Cloud foundry has larger community base, more technology offering, its growing faster, and it is not controlled by a single vendor.

OpenShift has benefit of simpler architecture, out of box solution around Docker, Kubernetes, Linux, JBoss etc these are the market leader. its adoption deployment is much quicker for some of the technologies(java, Php, NodeJS). Its has a benefit of focused development.

IBM Private cloud includes both Kubernetes and Cloud foundry with support of some of its proprietary platform and solution like System Z, Analytics and data integration. Its new player in Private/Hybrid PaaS.

All these are very promising solutions. Deciding factor should be cost, technical needs, skills and future requirement.

