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Kubernetes is an open source container management platform designed to run enterprise-class, cloud-enabled and web-scalable IT workloads. It is built upon the foundation laid by Google based on 15 years of experience in running containerized applications.

Though their popularity is a mostly recent trend, the concept of containers has existed for over a decade. Mainstream Unix-based operating systems (OS), such as Solaris, FreeBSD and Linux, had built-in support for containers, but it was Docker that truly democratized containers by making them manageable and accessible to both the development and IT operations teams. Docker has demonstrated that containerization can drive the scalability and portability of applications. Developers and IT operations are turning to containers for packaging code and dependencies written in a variety of languages. Containers are also playing a crucial role in DevOps processes. They have become an integral part of build automation and continuous integration and continuous deployment (CI/CD) pipelines.

While core implementations center around the life cycle of individual containers, production applications typically deal with workloads that have dozens of containers running across multiple hosts. The complex architecture dealing with multiple hosts and containers running in production environments demands a new set of management tools. Some of the popular solutions include Docker Datacenter, [Kubernetes](http://kubernetes.io/), and Mesosphere DC/OS.

Container orchestration has influenced traditional Platform as a Service (PaaS) architecture by providing an open and efficient model for packaging, deployment, isolation, service discovery, scaling and rolling upgrades. Most mainstream PaaS solutions have embraced containers, and there are new PaaS implementations that are built on top of container orchestration and management platforms. Customers have the choice of either deploying core container orchestration tools that are more aligned with IT operations, or a PaaS implementation that targets developers.

