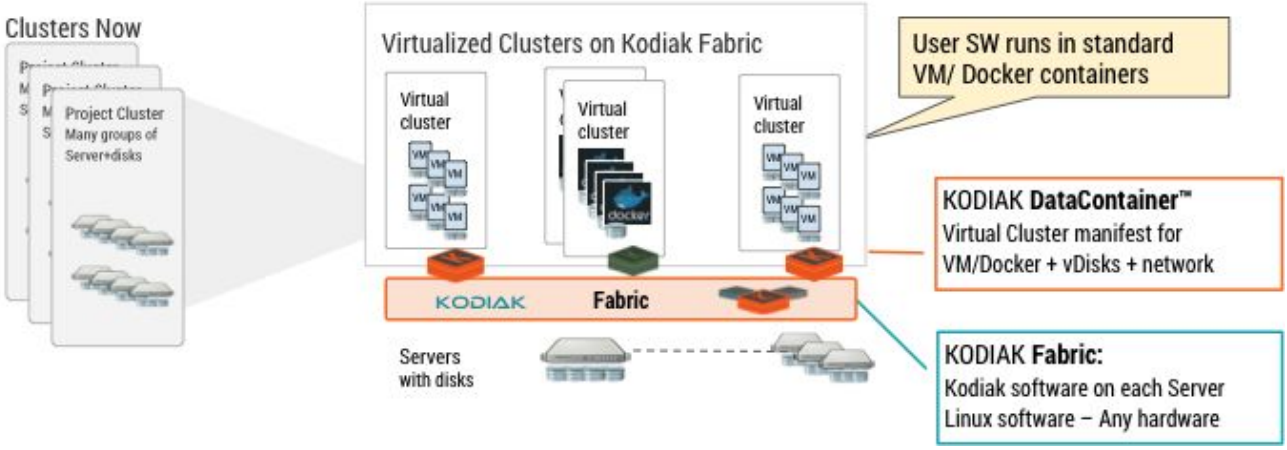
Kodiak Data's Cloud Fabric: Virtual Cluster Infrastructure (VCI)

Kodiak Data's cloud infrastructure is built around its patent pending "Cloud Fabric," the Virtual Cluster Infrastructure (VCI). It was designed from the ground up to address the following requirements:

1. Efficient cluster-level virtualization: Cloud infrastructure before Kodiak Data were built around separate and isolated layers of Compute virtualization, storage virtualization and network virtualization. This was necessary to retain the separate compute/network/storage layers in legacy applications. Kodiak Data VCI, in contrast, combines network, compute and data knowledge, and virtualization -- all three in unison. This allows very high efficiency of Kodiak clouds, typically 5X better than public clouds.
2. Swarm functionality inside the Kodiak Data cloud fabric: An intermediate, granular data abstraction layer is introduced to facilitate very high degrees of interconnect mobility, provisioning, and tiering of the data stores in Kodiak Data VCI. This enables very high concurrent data operation in the Kodiak cloud fabric, typically resulting in cluster and multi-cluster performance 5X higher than public cloud.
3. Composable infrastructure: A very flexible, high-level XML-based compiler that allows arbitrary clusters to be specified and constructed on Kodiak Data cloud fabric. This truly revolutionary technology allows a 10X reduction in steps and scripts needed to provision logical IaaS and PaaS clouds compared to other technologies. e.g., Openstack.

Kodiak Data Virtual Cluster Infrastructure (VCI) shares all compute, RAM, networking and disk resources across multiple clusters. Multi-tenancy is inherent and CPU efficiency is increased by eliminating the performance limits of the dedicated physical disks. Disks (SSDs or HDDs) are shared and virtualized as vDisks.



Kodiak Data's Virtual Cluster Infrastructure Solution

Benefits of VCI

VCI provides many benefits which are similar to VSI, but for large applications and big data clusters which require many more servers and disks. Each Enterprise will find its own path and pace to deploy the new technology. The major benefits that will drive adoption are expected to be:

CAPEX Budgets: Virtual clusters benefit from thin provisioning and sharing of resources. Like VSI, VCI can increase resource efficiency by 4X.

Sandboxing: Clusters can be rapidly and cost-effectively built and then torn down with wasting valuable data science resources.

Fault Management: Virtual disks are isolated from physical disk failure. Nodes do not fail and disks are replaced without OS or application outages.

Performance Management: Clusters share physical resources and burst their usage when necessary, eliminating hot spots. Additional flash and RAM assets can be added without reconfiguring the application nodes. Tiering between disk, flash and RAM can be customized for each cluster.

Power Costs: Fewer servers and better use of new technologies like flash will also enable 4X power efficiency and reduce annual budgets. Avoiding new data center build-outs is even more important to budgets and the planet.

Data Center Operations: Additional nodes and capacity can be added to any cluster without any physical changes to the infrastructure. Virtual nodes and physical servers can be added independently. Compute and storage can be scaled independently.

About Kodiak Data

Kodiak Data is a leading cluster virtualization technology company that allows customers to easily deploy and scale Big Data infrastructure in both public and private clouds. The Kodiak Data Virtual Cluster Infrastructure (VCI) platform is the only solution than can create, within minutes, code-ready virtual clusters that run at memory-speed and scale to the needs of big data applications. For more information about Kodiak Data, visit www.kodiakdata.com.

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