SOLUTION BRIEF

DKP Enterprise

Overview

DKP Enterprise is D2iQ's flagship Kubernetes offering, providing the most advanced, feature-rich, easy-to-deploy, easy-to-manage, and cost-effective multi-cluster Kubernetes environment available.

Built on pure open-source Kubernetes, DKP Enterprise enables you to avoid vendor lock-in and take full advantage of open-source community innovation. DKP Enterprise provides platform services for networking, storage, logging, monitoring, and more, all of which have been carefully selected from the Cloud Native Computing Foundation (CNCF) landscape and rigorously tested to work together.

Ease of use is the hallmark of the D2iQ Kubernetes Platform (DKP). DKP Enterprise enables organizations to be up and running in minutes and hours rather than weeks and months, with complete stability, reliability, ironclad security, and rapid time-to-value. Complexity is reduced through packaging, automation, integration, and elegant design.

A Day-2 operations-ready cluster can be quickly set up in any environment with a single command. Fast data pipelines and other services can be provisioned automatically from a catalog of platform applications. Clusters can be created, upgraded, and deprovisioned with ease from a centralized management plane.

Also available as an add-on product is Kaptain AI/ML, which is a comprehensive artificial intelligence (AI) and machine learning (ML) platform that simplifies AI/ML operations, enabling data scientists to focus on attaining actionable business results rather than configuring complex Kubernetes and Kubeflow infrastructures.

Complete Multi-cluster Lifecycle Management

DKP Enterprise eases the management of Kubernetes clusters through a centralized management plane, a user-friendly control panel that acts as a single point of observability and control. This centralized control panel enables you to manage and deploy all D2iQ platform applications–such as logging, monitoring, networking, access control, backup and restore, and policy service–to any CNCF-conformant Kubernetes distribution from any environment. DKP performs cluster lifecycle management of not only DKP distribution, but for other Kubernetes distributions as well.

Platform + People = Kubernetes Success

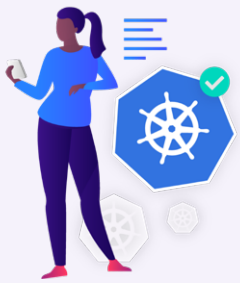
D2iQ enables customers to successfully deploy Kubernetes through a combination of simplified platform and expert support and training services.

Support Services

D2iQ provides a wide range of Kubernetes 24/7 support offerings to help you quickly resolve issues for core Kubernetes and its supporting platform services. Our team delivers a unique mixed workload testing methodology that ensures your stack of technologies are initially and continuously tested to ensure interoperability of key services.

Training Services

D2iQ is a Certified Kubernetes Training Partner (KTP) and delivers instructor-led courses that can equip your staff with the skills and knowledge to successfully plan, build, and operate on Day 2 in production, both for Kubernetes and its supporting platform services.



The work required to manage applications and infrastructure is reduced by taking a top-to-bottom declarative approach to Kubernetes through Cluster API (CAPI) for infrastructure management and FluxCD for application lifecycle management.

Besides simplifying deployment and management, DKP Enterprise helps you monitor costs and achieve the lowest total cost of ownership (TCO) by giving you real-time visibility into costs. Detailed cost data, plus additional insights generated by D2iQ, ensure transparency of the cost and health of clusters.

Applications can be deployed in any Kubernetes-managed or self-attached clusters, giving you complete flexibility to operate across cloud, on-premise, edge, and air-gapped scenarios, with support for a full spectrum of operating systems, including immutable OSs.

The DKP Difference

As the leading independent platform for Kubernetes in production, DKP provides a holistic approach and a complete set of enterprise-grade technologies, services, training, and support to build and run containerized applications in production at scale.

Pure Open-Source Kubernetes — DKP is built on pure upstream open-source Kubernetes, giving you complete portability and the ability to leverage continual open-source innovation with immunity from vendor lock-in. A fully interoperable and CNCF-conformant Kubernetes experience enables you to leverage the best innovation the industry has to offer while ensuring optimal security, resilience, and TCO.

Declarative Programming — Using a top-to-bottom declarative approach based on Cluster API (CAPI), DKP becomes the single, centralized point of control for your organization's application infrastructure, empowering you to more easily deploy, manage, and scale Kubernetes workloads in Day-2 production environments. DevOps efficiency and productivity are maximized through continuous delivery and agile development.

Simplify Ongoing Operations — Automation, a centralized management plane, and the use of declarative APIs throughout are key to simplifying Kubernetes operations. DKP uses a declarative approach to Kubernetes based on CAPI and FluxCD, which automates many of the manual operational tasks for continuous delivery and lifecycle management. This enables you to dramatically reduce operational costs and free up IT resources to focus on more strategic projects.

Single-Command Cluster Provisioning — Through the reduction of steps needed to provision or remove clusters, from eight steps to one, DKP enables provisioning and managing of clusters from a single command, making it easy to get your Kubernetes infrastructure up and running quickly.

Flexible, Scalable, and Continuous Deployments — DKP radically simplifies the deployment of applications across distributed heterogeneous infrastructures — including on-premise, cloud, air-gapped, and edge, and in multi-cluster and multi-tenant environments — which gives you tremendous flexibility to achieve success wherever you need it, now and in the future.

Leverage Cloud-Native Expertise — D2iQ provides consulting services, training, and end-to-end support for Kubernetes and your entire cloud-native stack of services and applications. By leveraging our expertise and operational guidance, you can avoid common pitfalls and ensure faster time-to-market.

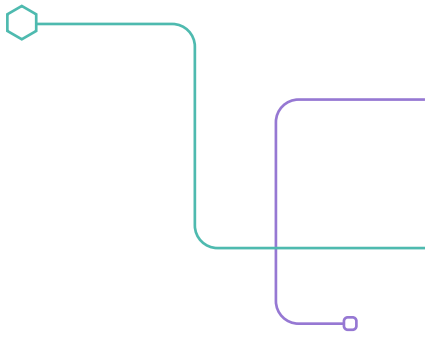
Eliminates Kubernetes Skills Gap — Through automation, a centralized control plane, user-friendly interface, and expert training services, D2iQ simplifies Kubernetes management and enables DevOps teams to manage a Kubernetes deployment with ease.

Key DKP Enterprise Features

Integrated GitOps Workflow	GitOps workflow, which is enabled by Cluster API (CAPI) and FluxCD, is the most bulletproof way to manage a cloud-native infrastructure. GitOps eases Kubernetes management and provides a single source of truth.
Cluster API (CAPI)	DKP is architected around CAPI, an innovative CNCF technology. DKP employs CAPI throughout to simplify declarative infrastructure management through GitOps, automating many of the formerly manual processes required to keep systems running and scaling. CAPI enables you to manage fleets of clusters across multiple infrastructure providers.
FluxCD	DKP supports continuous delivery and deployment using FluxCD, which is designed for Kubernetes and supports multi-cluster and multi-tenant use cases. Customers can configure projects with continuous deployments, which enables canary and A/B deployments, as well as roll-back. This enables you to rapidly build, test, and deploy applications at scale, without requiring configuration changes.
Multi-cluster Platform Lifecycle Management	All platform applications for Day-2 readiness—including, logging, monitoring, networking, and more—are deployed and managed through the central management panel. Multi-cluster support means these critical Day-2 applications can be deployed in any Kubernetes-managed or self-attached clusters on premise, in the cloud, on premise, and in air-gapped scenarios.
Multi-tenant and Workspace-level Logging	DKP provides the ability to manage logs by tenant or workspace, for more granular control and simpler troubleshooting. Multi-tenant logging and role-based access control (RBAC) enable your organization to allocate resource access at a granular level.
Observability	A centralized management plane enables you to visualize, monitor, and manage clusters across distributed multi-cloud, and hybrid cloud environments from a single point. Observability also includes user visualizations within three types of tenancy views for business units and developers.
Real-Time Cost Management	There is cost visibility down to the level of individual applications, but at the same time you can zoom out and have cost visibility for your entire infrastructure. You can also zoom in and calculate the cost of each application, each team, and each namespace. Detailed cost data, plus additional insights generated by D2iQ, ensure transparency of the cost and health of clusters.
Military-Grade Security	DKP is security hardened following enterprise security best practices, including access control through single sign-on, encrypted data addresses, and a network policy quota. DKP meets NSA/CISA Kubernetes security hardening guidelines and validates Federal Information Processing Standards (FIPS) 140-2 compliance. The container images that are shipped as part of the platform, including Day-2 applications, are scanned for Common Vulnerabilities and Exposures (CVE) before every major and minor release.

Service Catalog	Quickly and easily deploy applications and complex data services from a centralized service catalog to specific or multiple clusters, with governance. Customers can simplify and accelerate the provisioning of fast data pipelines, such as Apache Spark, Cassandra, and Kafka, in all environments, including edge, from the Service Catalog. Kaptain AI/ML also can be provisioned from the catalog.
Service Mesh	DKP provides service mesh integration leveraging Istio, including advanced networking capabilities such as multi-cluster and cross-cluster service discovery, load balancing, and security, across a variety of hybrid cloud, multi-cloud, and multi-cluster environments.
Automated Cloud Service Provider Deployment and Enhancement	DKP deployment and management options include Amazon Elastic Container Service for Kubernetes (EKS), Azure Kubernetes Service (AKS), and Google Kubernetes Engine (GKE). DKP enables customers to provision, spin up, and de-provision EKS and AKS in a fully automated way. The result is a consistent, repeatable approach to managing the end-to-end lifecycle of EKS and AKS clusters from a single, centralized point of control. DKP can enhance EKS and AKS Kubernetes deployments by enabling customers to: • Deploy and manage a multi-cloud, mullti-cluster, hybrid Kubernetes platform • Enhance EKS with additional Day-2 add-ons and multi-cluster management • Implement Kubeflow-based AI/ML models
Deployment Flexibility	Besides a full range of cloud, hybrid cloud, on-premise, edge, and air-gapped environments, DKP deployment options include bare metal servers and VMware vSphere. DKP provides integration with Cluster API Provider for VMware vSphere to enable enterprises to deploy and manage a DKP cluster in a VMware environment, simplifying lifecycle management for infrastructure operation teams and improving productivity and speed of deployment.
Enhanced Diagnostic Bundles	DKP can collect enhanced diagnostics for Kubernetes components and node-level instrumentation around CPU, memory, disk usage, and operating system (OS) health, to reduce the time needed to diagnose and fix problems, resulting in less downtime for customers.
Immutable Operating System (OS) Support	Enhanced security and stability is provided by an immutable OS, such as Flatcar Linux.

World-Class Support	DKP Enterprise is available with Premium 24x7 support or Confirmed Stateside Support (CSS) 24x7 options. Your success is ensured by the dedicated service of an expert support team with years of experience developing and implementing Kubernetes technology.
Professional Services	D2iQ's professional services team provides expert guidance from Day-0 design to Day-2 operations —and beyond: Advise — Our Advisory Services answer your most pressing questions and guide your wide-ranging cloud-native endeavors to achieve enterprise-grade outcomes. Activate — Our Activation Services are tailored to ensure that Kubernetes is customized to meet your cloud-native application needs for scalability, efficiency, and speed. Adopt — Our Adoption Services are designed to help with Day-2 operations enablement and continuous support and improvement in the lifecycle of your applications.



To learn more about how D2iQ can be your partner in the cloud native journey, visit to D2iQ.com