SOLUTION BRIEF

DKP Product Family

Overview

The D2iQ Product Family consists of the following products:

DKP Essential — a single-cluster entry-level cloud container platform that is easy to deploy and manage and that can seamlessly expand and scale as your needs grow.

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

DKP Edge/IoT — an enterprise-grade Kubernetes platform optimized for managing edge devices, such as retail endpoints, remote data centers, remote vehicles and ships, manufacturing controls, medical devices, kiosks, and scores of other Internet of Things (IoT) devices and sensors.

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 insights rather than configuring complex Kubernetes and Kubeflow infrastructures.

For customers with lighter and less complex workloads, DKP Essential provides everything needed to gain the maximum benefits from an easy-to-manage, easy-to-deploy, single-cluster Kubernetes solution. A seamless and painless upgrade path is always available to the more robust, full-featured DKP Enterprise multi-cluster solution.

For devices at the edge, DKP Edge/IoT provides all the core functionality demanded for management at edge locations, including lightweight deployment, monitoring, and logging. Thousands of edge sites can be managed through the centralized management plane that DKP Enterprise provides, with a reach that can span all environments, including firewalls and air-gapped environments.

With Kaptain AI/ML, the complexity of setting up AI/ML operations is reduced to enable data analysts to focus on attaining business results rather than wrestling with the underlying Kubernetes infrastructure. A notebook-based approach enables data scientists to work in the manner in which they are most comfortable and productive.

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

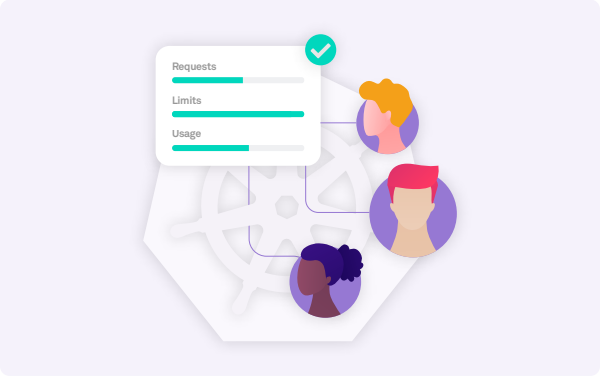
D2iQ is a Certified Kubernetes Training Partner (KTP) and delivers instructor-led courses that can equip your staff with the skills and knowledge to successfully plan, build, and operate on Day 2 in production, both for Kubernetes and its supporting platform services.

Full Range of Kubernetes Capabilities

The D2iQ Product Family gives your organization all the agility, reliability, manageability, and productivity benefits that you are seeking when implementing a Kubernetes platform.

Based on the D2iQ Kubernetes Platform (DKP), the D2iQ Product Family offers a full range of deployment capabilities—single cluster, multicluster, edge/IoT, and AI/ML deployments, across single-cloud, multi-cloud, hybrid cloud, on-premise, edge, and air-gapped environments.

DKP uses a cloud-agnostic approach that provides a stable, resilient, and scalable environment that is consistent across different infrastructures. This versatility ensures that software developed on one type of infrastructure will work the same way wherever it is run.



The D2iQ Difference

DKP is built on pure upstream open-source Kubernetes, giving you complete portability and the freedom to leverage continual open-source innovation with immunity from lock-in to proprietary solutions, all while yielding the lowest total cost of ownership (TCO).

The hallmark of DKP is ease of use. DKP enables organizations to be up and running in minutes and hours rather than weeks and months, with complete stability, reliability, military-grade security, and rapid time-to-value. Complexity is reduced through packaging, automation, integration, and elegant design.

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

A unified graphical user interface and command-line interface simplify and enhance the customer experience from deployment to production.

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

GitOps workflow is a key DKP feature that is based on Cluster API (CAPI) and FluxCD. The work required to develop, deploy, monitor, and manage applications is reduced by taking a declarative approach to Kubernetes by leveraging CAPI and FluxCD for continuous development and infrastructure management.

Enhanced diagnostics for Kubernetes components and node-level instrumentation around CPU, memory, disk usage, and operating system (OS) health reduce the time needed to diagnose and fix problems, resulting in less downtime for customers. Resiliency and productivity are enhanced by continuously monitoring application health and automating container provisioning, updates, restarts, and deprovisioning.

Auto-scaling enables you to scale applications up and down automatically, optimizing resource utilization while minimizing cost. Real-time visibility into costs enables you to minimize operating costs and achieve the lowest possible TCO.

DKP Key Features

Integrated GitOps Workflow	GitOps workflow is the most bulletproof way to manage a cloud-native infrastructure. GitOps eases Kubernetes management and provides a single source of truth. DKP employs Cluster API (CAPI) from top to bottom to simplify infrastructure management through GitOps, automating many of the formerly manual processes required to keep systems running and scaling. DKP also integrates FluxCD to enable GitOps for applications and infrastructure, supporting canary deployments and A/B rollouts.
Cluster API (CAPI)	DKP is architected around CAPI, an innovative CNCF technology. CAPI provides a declarative approach to infrastructure management, 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	FluxCD is the foundation of GitOps. 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 centralized 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, and in air-gapped scenarios.
Multi-tenant and Workspace-level Logging	DKP enables you to manage logs by tenant or workspace, for more granular control and simpler troubleshooting.
Observability	A centralized command module provides the ability to visualize, monitor, and manage clusters across distributed multi-cloud and hybrid cloud environments from a single point. Observability also includes user visualizations within the three types of tenancy views for business units and developers.
Real-Time Cost Management	Integrated cost visualization enables you to minimize costs and maximize ROI. There is 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 also can zoom in and calculate the cost of each application, team, and namespace.
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 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	The Service Catalog enables you to quickly and easily deploy applications and complex data services from a centralized location 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.
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.
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.
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.
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.
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. For more detailed information about each of the D2iQ Product Family products, see the individual DKP Essential, DKP Enterprise, DKP Edge/IoT, and Kaptain AI/ML solution briefs.

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