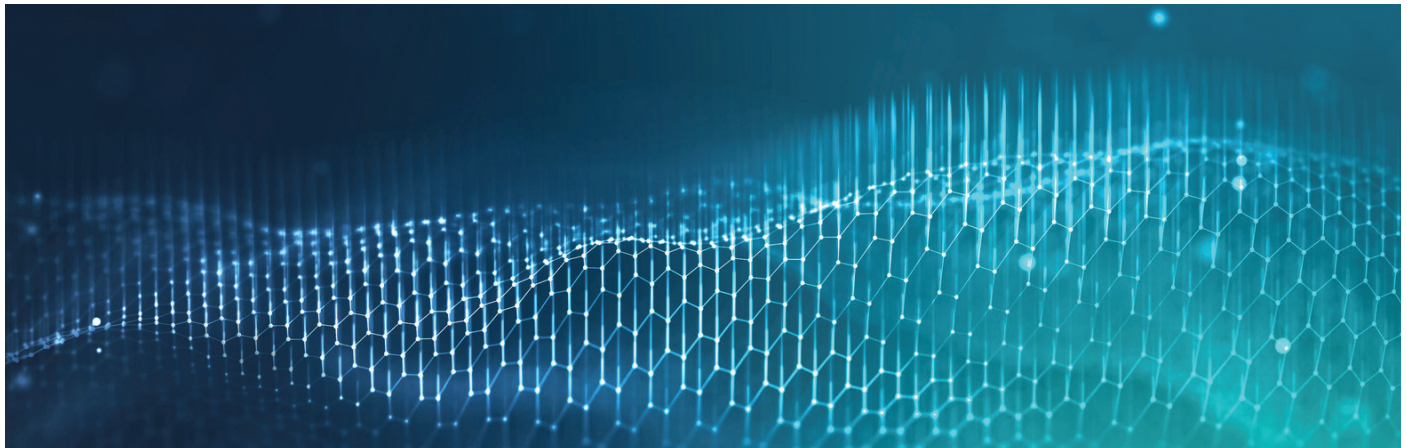**Hewlett Packard Enterprise**

DATA SERVICES CLOUD CONSOLE

TRANSFORMING INFRASTRUCTURE AND DATA MANAGEMENT—EDGE TO CLOUD

Every organization wants to unleash the power of their data to drive digital transformation. But fragmented data management tools, manual processes, and infrastructure silos spanning edge to cloud are impeding data-driven innovation and agility and creating business risk.

Data Services Cloud Console breaks down the barriers and removes the complexity that beset data and infrastructure management today—empowering organizations to transform faster with unified data operations as a service. It's an intuitive software-as-a-service (SaaS)-based console—available through the HPE GreenLake cloud platform—that delivers a suite of cloud data services designed to enable cloud operational agility for data infrastructure everywhere and to unify data operations across the data lifecycle.

Data Services Cloud Console is built on a unique cloud-native architecture that automates and orchestrates infrastructure and data workflows from edge to cloud. It transforms complex data operations into a streamlined data management experience with a single destination for a comprehensive set of cloud infrastructure services, cloud data services, and cloud platform services.
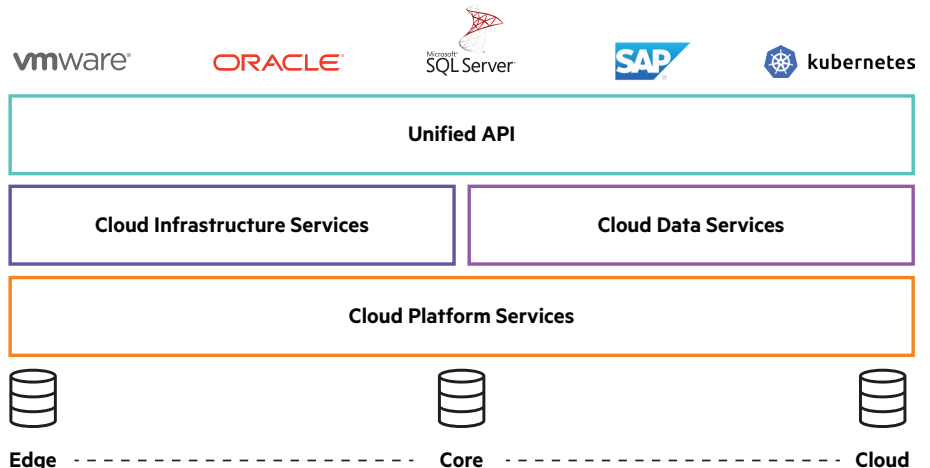
FIGURE 1. Data Services Cloud Console architecture

DELIVER CLOUD OPERATIONS FOR DATA INFRASTRUCTURE

Data Services Cloud Console brings the agility of the cloud operational model to data infrastructure wherever it's located—be that on-premises, at the edge, or in the cloud. It does this by separating the control plane from the underlying hardware and moving it to the cloud. Data Services Cloud Console unifies management silos under a single web interface with global visibility and a consistent experience from edge to cloud. This abstraction of control enables a suite of cloud infrastructure services—delivered through the Data Services Cloud Console—that radically simplify how customers manage infrastructure at scale across the lifecycle.

HPE Data Ops Manager: Simplify infrastructure operations with cloud agility

HPE Data Ops Manager—delivered through the Data Services Cloud Console—enables global management and monitoring of data infrastructure from any location, from any device, and intent-based provisioning that brings a paradigm shift from LUN-centric to AI-driven, app-centric storage provisioning. Bringing the power of cloud agility, speed, and simplicity to data infrastructure wherever it lives delivers transformational outcomes—empowering organizations to manage data infrastructure in 99% less time.[1] This enables IT to reduce operating costs while helping optimize resource utilization, move to a generalist model, and shift from managing storage to managing data, thereby refocusing resources and skills on higher value strategic initiatives.
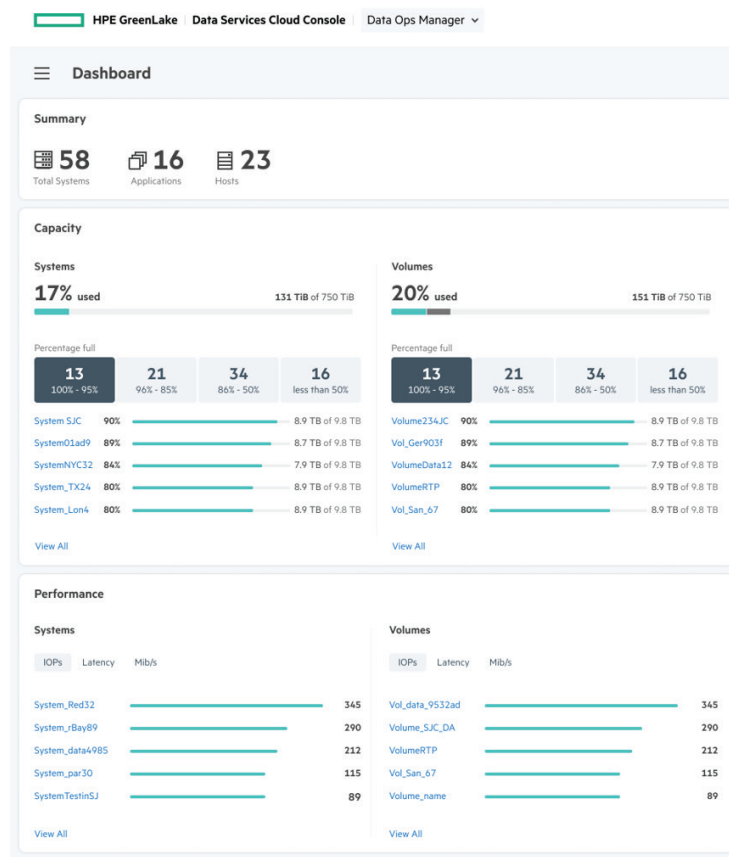

FIGURE 2. HPE Data Ops Manager dashboard

HPE Data Ops Manager: Key features

• **Global data infrastructure management**—HPE Data Ops Manager helps eliminate the inefficiency of using disjointed, domain-specific data infrastructure management tools. It provides 100% cloud-managed infrastructure, which means you have everything you need at your fingertips to globally deploy, manage, upgrade, and optimize your entire fleet of data infrastructure—wherever it is in the world—from any location, and on any device. The cloud-native control plane scales autonomously with infrastructure, so managing hundreds of systems across geographies is as simple as managing one.

FIGURE 3. HPE Data Ops Manager—Single web interface for instant global visibility of data infrastructure

- **Intent-based provisioning:** Automate and help optimize app deployment with intent-based provisioning. This unique service helps eliminate guesswork and spreadsheets by helping ensure workloads are deployed on the right resource across a global fleet. Intent-based provisioning transforms storage provisioning from a LUN-centric, manual process to an AI-driven approach that leverages real-time context into resource headroom and application-specific SLAs to help optimize where your data is stored—automatically. Infrastructure admins only have to specify the workload type, capacity, and number of volumes and host groups that need access to that workload. The service abstracts away all the low-level details traditionally demanded by provisioning such as having to specify and understand RAID types, block size, and data reduction (compression, dedupe).

- **Self-service experience:** Intent-based provisioning, combined with role-based access control, enables self-service provisioning without the need for storage domain expertise. It enables developers to deploy applications faster by shortening data infrastructure provisioning from days to minutes. This accelerates application development cycles and makes possible the effortless app provisioning experience demanded by today's fast-paced dev/ops processes.

- **Automate at scale:** Data Services Cloud Console is a highly extensible control plane with a fully programmable, unified application programming interface (API) across edge-to-cloud infrastructure. This single API endpoint for your infrastructure allows organizations to automate self-service operations at cloud speed and scale without worrying about API versions, feature compatibility, or multiple scripting.

- **Operational dashboard:** It provides an at-a-glance summary of your entire fleet of storage systems, volumes, and host servers including capacity and performance summaries and any reported issues. From this single dashboard, storage admins can readily gain visibility into the health and utilization of their global fleet, determine how resource utilization will grow across performance and capacity based on historical workload patterns, and zero in on specific systems that require their immediate attention.

Intent-based provisioning: How it works

FIGURE 4. Intent-based provisioning step one: Determine the workload characteristics

Create Volumes

FIGURE 5. Intent-based provisioning step two: AI-driven provisioning selects the right data infrastructure resource for your workload deployment

FIGURE 6. Intent-based provisioning step three: Search for alternative systems to deploy the workload

Create Volumes

FIGURE 7. Intent-based provisioning step four: Customize the workload

CLOUD PLATFORM SERVICES POWERED BY A PROVEN PLATFORM

Data Services Cloud Console is powered by the same market-proven, secure technology foundation that supports Aruba Central, which today has several years in the field, serving more than one hundred thousand customers and more than a million end devices connected to clusters deployed around the world.[2] It delivers a suite of cloud platform services that features multilevel security, a resilient, scalable, and flexible microservices architecture and simplified application and device onboarding—all delivered through a subscription-based, SaaS model.

Secure by design

Data Services Cloud Console is architected and designed to help ensure the secure management of global infrastructure and data services with multilevel advanced security capabilities. It delivers secure entry points end-to-end—from identity and access management, secure connectivity, through to back-end hardening and intrusion detection.

- **Single sign-on (SSO) authentication:** Access the Data Services Cloud Console with your organization's existing set of Security Assertion Markup Language (SAML) 2.0 SSO credentials enabling secure, 1-click login from any location, on any device. Centrally manage the authentication and authorization of Data Services Cloud Console users by integrating organization security policies for access control to infrastructure resources.

- **Multi-factor authentication (MFA):** Implement multiple levels of authentication to give assurance that users are who they say they are: strengthening security, preventing data breaches, and at the same time providing a smooth user experience. Enable MFA using third-party software-based authenticators from providers such as Google™ and Microsoft.

- **Role-based access control:** Help ensure that the correct level of access is given to each user with a single location to configure sophisticated, role-based access control authorization policies for employees, guests, contractors, and other user groups. Use granular access controls to assign users with predefined or custom roles, and authorize the resources that the user has access to.

- **Secure communications:** Communication between Data Services Cloud Console and on-premises data infrastructure is via a bidirectional secure and encrypted network tunnel connection using mutual Transport Layer Security (mTLS) v1.2 with trusted third-party-signed, certificate-based authentication for the highest level of protection. The request for a secure connection is always initiated by the on-premises data infrastructure and no application data stored on the data infrastructure is ever sent to the Data Services Cloud Console.

- **Audit log:** Monitor all user-initiated activity across your fleet of data infrastructure with the Data Services Cloud Console audit log service. This single audit log provides a comprehensive audit trail to assist in monitoring potentially sensitive data or systems for possible security breaches, vulnerabilities, or misuse of data. Data Services Cloud Console audit log access is customer configurable to allow regular auditor checks for compliance purposes.
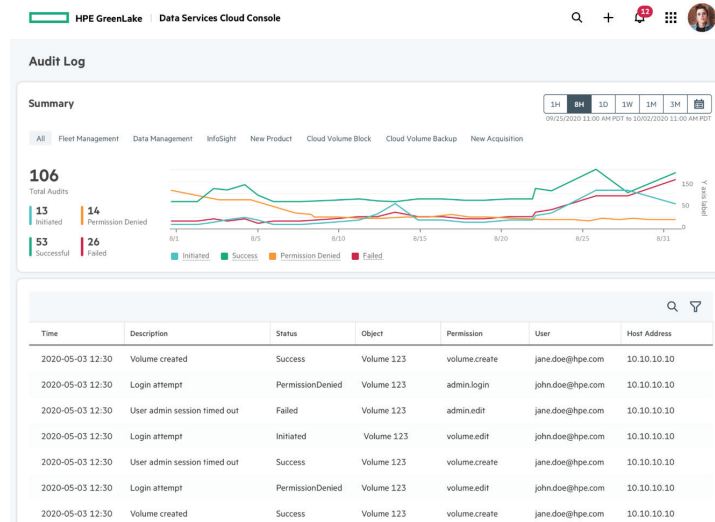
[2] Hewlett Packard Enterprise announces breakthrough HPE GreenLake cloud platform innovations spanning silicon, software and security to power edge-to-cloud era

FIGURE 8. Audit log

- **Intrusion detection:** Data Services Cloud Console utilizes end-to-end cloud-native security capabilities, cloud security tools, best practices, and distributed denial-of-service (DDoS) protection combining an Intelligent Web Application Firewall (iWAF) with load balancing, rate limiting, intrusion protection, and a threat-monitoring security service.

- **Compliance and certification standards:** Data Services Cloud Console has been tested and passed privacy compliance and impact assessment reviews, undergone security penetration testing by external vendors, and been aligned with multiple compliances and certifications.

Built on cloud-native architecture
Data Services Cloud Console is architected as a framework of microservices and workflows that enables the rapid development, deployment, and scaling of new services with a consistent user experience. It provides the foundation for a portfolio of services that become seamlessly available to customers to simplify how they manage infrastructure and data.

- **Faster innovation:** Data Services Cloud Console is built on modular, independent microservices and processes that enables faster innovation. HPE and partner SaaS developers can rapidly deliver as-a-service apps in a more agile manner by leveraging a common set of services and back-end IT integrations.

- **Always-on:** Data Services Cloud Console helps ensure high availability through a stable and reliable microservices design and service redundancy, hosted from data centers worldwide in multiple locations, enabling the highest possible disaster tolerance.

- **Infinitely scalable:** Data Services Cloud Console is an elastic cloud-native software platform that scales autonomously with your data infrastructure, spanning different use cases and environments.

Simplified onboarding experience
Onboarding, configuring, and provisioning data infrastructure is a key activity in any environment, but it can be time-consuming and complex. Data Services Cloud Console delivers a simplified and streamlined device deployment process that can be completed in minutes. New systems are automatically discovered and onboarded. Simply cable up your system and turn it on, and after a few simple configuration steps, the system is available for use in your fleet.

Move faster with SaaS
Data Services Cloud Console is delivered as SaaS, so there is no software to deploy, manage, or maintain. You can constantly stay current on the latest software features without any action or involvement required. And you can move from an ownership model to an access model with the agility and convenience of flexible subscription.

UNIFY DATA MANAGEMENT

Data Services Cloud Console provides the foundation for cloud data services that enables a unified experience for data managers and data innovators to access, protect, search, and mobilize data across edge-to-cloud data infrastructure.

Integrated, automated, and policy-driven data services enable data orchestration across its lifecycle—from dev/test, production, protection, and analytics—collapsing data silos and helping eliminate the complexity of traditional data management operations. This equips organizations with the one data experience they need to accelerate data-driven innovation, protect data everywhere, and intelligently move data across clouds.

SERVICE AND SUPPORT

Get the most from your HPE products with the expertise you need at every step of your IT journey. HPE Pointnext Services helps you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally.

Your HPE Data Ops Manager subscription gives you access to the following enterprise-level support:

- 24x7 telephone and email support for entitled HPE Data Services available through Data Services Cloud Console

- Direct connection to support

- Guidance and troubleshooting of any configuration and interoperability within your cloud and/or on-premises environment

ORDERING INFORMATION

Data Services Cloud Console delivers unified data operations as a service through a suite of HPE Data Services. Subscriptions are available in 3-, 4-, and 5-year increments, making it easy for customers to align requirements for data infrastructure management with both current and future budgets.

TABLE 1. HPE Data Ops Manager SKUs

Description	SKU
HPE Data Ops Manager Reserved SaaS	Base SKU R7N52AAE
3-year Subscription	Option Code #CTF
4-year Subscription	Option Code #CTG
5-year Subscription	Option Code #CTH

SUPPORTED DATA INFRASTRUCTURE

Data Services Cloud Console provides cloud management for the HPE Alletra portfolio of cloud-native data infrastructure. Supported workload-optimized systems include:

- HPE Alletra 6010, HPE Alletra 6030, HPE Alletra 6050, HPE Alletra 6070

- HPE Alletra 9060, HPE Alletra 9080

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