## Overview

# HPE Data Services

Today, organizations are focused on accelerating innovation and transformation for their own business. However, when it comes to the storage infrastructure, they face key challenges that slow down their progress. They confront fragmented data management tools operating across data lifecycle and infrastructure silos spanning edge to cloud, which makes it difficult to make progress

HPE Data Services break down these silos and removes the inefficiency that beset data management today. It empowers organizations to transform faster with unified data operations as a service. It provides a cloud-native data console that brings the cloud operational experience and agility to wherever data lives, unifies data management across the data lifecycle, and accelerates innovation for data-driven apps and insights.

## At A Glance

HPE Data Services are built on a unique cloud-native architecture that abstracts and orchestrates infrastructure and data workflows from edge-to-cloud. It transforms complex data operations into a simplified and integrated experience across clouds through a comprehensive set of cloud platform services, cloud infrastructure services, and cloud data services.

## Key Features and Benefits

### Unify data management across the data lifecycle

HPE Data Services provide the foundation for cloud data services that will enable a single, seamless experience for data managers and data consumers to access, protect, search and mobilize data across edge-to-cloud data infrastructure. This will equip organizations with the unified data experience they need to accelerate data-driven innovation, protect data everywhere, and intelligently move data across clouds.

### Deliver cloud operations for data infrastructure

HPE Data Services enables a cloud operating and consumption experience for data infrastructure. Separating the data infrastructure control plane from the data plane and moving it to the cloud delivers a single and consistent operational experience – bringing enterprises cloud agility wherever their data lives. HPE Data Services simplify and automate infrastructure management at scale – empowering IT admins to easily orchestrate data infrastructure fleet across its lifecycle with simple deployment, and intent-based provisioning – globally managed through a consumer-simple, SaaS-based cloud console accessible from anywhere and from any device. HPE Data Services makes managing infrastructure so effortless it becomes invisible - enabling IT to refocus resources and skills to higher-value strategic initiatives.

### Accelerate innovation for data-driven apps and insights

HPE Data Services will accelerate data driven innovation – delivering a platform for accelerating app development lifecycles and unlocking data insights. It will empower data innovators with data as code to streamline access to production data securely and instantly with self-service. HPE Data Service's unified API across edge-to-cloud data infrastructure will enable organizations to tap into the full potential of their data with new data services, from HPE as well as third parties in the future.

## Standard Features

### HPE Data Services Architecture

HPE Data Services are built on a unique cloud-native architecture that abstracts and controls infrastructure and data workflows across the data lifecycle – test/dev, production, protection, to analytics – and infrastructure lifecycle – deploy, manage, upgrade, and scale – from edge-to-cloud (see Figure 1). It is designed to simplify and integrate data operations through a comprehensive set of cloud platform services, cloud infrastructure services, and cloud data services. HPE Data Services is a highly extensible, API-first control plane that provides a fully programmable single API end-point in the cloud. This enables customers to automate data infrastructure management at cloud speed and scale with their orchestration tool of choice. Northbound APIs through a unified API namespace also facilitate a portfolio of data services that can be HPE-built, or in the future, partner-delivered, or custom applications.

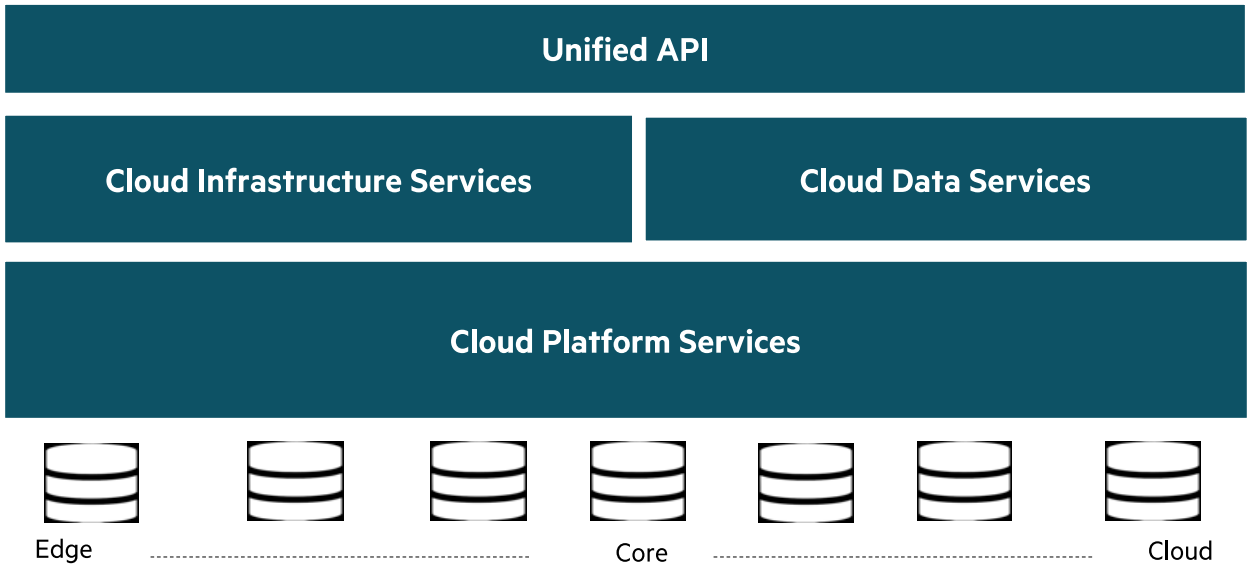


**Figure 1: HPE Data Services Architecture**

HPE Data Services are designed to simplify data operations by providing a single destination for a comprehensive set of data and infrastructure services. Our initial May release, will focus in introducing a suite of cloud infrastructure services followed by the introduction of cloud data services later in the year.

**Cloud data services** will collapse the data silos and eliminate the complexity of traditional data management operations - enabling a unified experience for data managers and data consumers to access, protect, search and mobilize data. These data services will bring together policies and automation for simple and efficient end to end workflows – based on the SLO requirements of data throughout its lifecycle - orchestrated across edge-to-cloud data infrastructure.

**Cloud infrastructure services** will automate infrastructure management at scale, bringing cloud operational agility across the lifecycle – from deployment to upgrade. Two services are initially introduced:

### Intent Based Provisioning

Every vendor is going to claim they can provision with minimal steps. While that may be true, the hard part is figuring out where that application should actually be deployed. Provisioning data for workloads today is currently a complex, time-consuming and LUN-centric driven task – with admins having to work through spreadsheets to work out capacity and performance headroom across their fleet of data infrastructure to decide how to meet workload and app service levels. This challenge only gets harder as you scale and add more systems into the mix.

Intent based provisioning of workloads across a customer's global fleet of data infrastructure delivers a paradigm shift in workload-optimized infrastructure provisioning and is a key capability of HPE Data Services cloud operational experience. It allows IT to move from time-consuming, LUN-centric, guesswork-based provisioning to automated intent-based provisioning of application workloads on infrastructure best suited for optimizing SLAs – making it possible to manage 100s of systems in minutes.

## Standard Features

With intent based provisioning, an infrastructure admin only has to specify the workload type, capacity and host groups that need access to that workload. The intent provisioning service in Data Services decides where to place the workload across the customer's using intelligence that includes real time context, what-if simulations, and automated decisions.

### HPE Data Ops Manager to simplify Infrastructure Operations with cloud agility

**HPE Data Ops Manager** lets customers manage their fleet from anywhere - simplifying infrastructure operations with cloud agility. It delivers global unified management, enabling customers to manage data infrastructure across edge to cloud from a single web interface. Everything organizations need to easily manage their fleet of data infrastructure across its lifecycle is available at their fingertips with an intuitive SaaS-based user experience – accessible from anywhere and from any device. Deploy apps faster by transforming provisioning from LUN based to intent based. Orchestrate infrastructure workflows at scale so managing hundreds of systems is as simple as managing one. Deploy, manage infrastructure on demand with simple discovery, activation, and configurations. Everything is delivered as a software as a service so for our customers there is no software to deploy, manage or maintain.

**Initial set of capabilities includes:**

- Intent based provisioning of application data
- Recommendations for capacity balanced provisioning of application data
- Snapshot management
- Rapid provisioning of clones
- Alerts and notifications
- Context aware software upgrades
- Capacity and performance trends
- Enables availability and capacity management
- Audit logging
- Role based access controls

### Cloud Platform Services Powered by a Common Cloud Platform

**HPE Data Services are built on a common cloud platform which provides:**

- Proven Technology: Built on the same proven technology foundation that powers Aruba Central which serves millions of devices connected across thousands of customers in clusters deployed around the world.
  - 7 years proven experience
  - 90,000+ customers
  - 10M end devices under management
- Secured by Design: HPE Data Services ensure the secure management of global infrastructure and data services with multi-level advanced security capabilities that include encrypted connectivity to assets through certificates and tunnels, multi-factor authentication, auditing and role-based access control policies.
- Cloud Native: HPE Data Services are architected as a framework of microservices and workflows which 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 will become seamlessly available to customers to simplify how they manage infrastructure and data.

Cloud Platform Services consist a group of microservices, developed to provide infrastructure for the cloud operations and data management services. These services are not standalone services, but rather enablers or components of the higher-level applications. Each of these microservices is leveraged by multiple customer-facing standalone services. The advantage of having a set of common foundational services is twofold: it provides a consistent customer experience across applications and improves efficiency in developing and bringing those applications to market.

These microservices run over a spectrum of visibility as far as the customer is concerned. Two examples are follows to illustrate. The Tunnel service is an example of an "invisible" microservice, meaning that is totally transparent to the user. The "Global Search microservice, on the other hand, illustrates an example of one directly usable (visible) to the customer.

## Standard Features

### Tunnel Microservice

It provides an essential, secure link between the customer-facing cloud service and an on-premises element/devices that the service needs to interface with (for instance, a storage array). Any service talking to an on-premise device will leverage this service. HPE Data Ops Manager will use this service to get information from the array on available capacity, events, or any other array-specific information that needs to be collected

### Global Search

Provides a google-like, text-based search function that can be used across multiple applications. The service returns ranked objects with your keywords highlighted. From there, users can perform actions with a single click. Search is an important feature for most modern application software, as it increases productivity and usability of the application. A common search microservice improves consistency of the customer experience across application.

As with Tunnel service, many different higher-level applications with leverage these microservices. For backup and recovery applications, users can search for a specific database they are backing up or even a tablespace within a database. This function enables users to find that quickly and perform the necessary actions.

**Available microservices:**

- Public APIs (coming later in the year)
- UI Portal
- Tunnel Connectivity
- Tasks
- Audit
- Role based access Control (Authorization)
- Issues/Alerts
- Global Search (coming later in the year)
- Authentication.

## Service and Support

Get the most from your HPE products with the expertise you need at every step of your IT journey. **HPE Services** help 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 will give you access to the following enterprise-level support:

- 24x7 telephone and email support for all entitled services available through HPE Data Services
- Direct connection to support
- Guidance and troubleshooting of any configuration and interoperability within your cloud and/or on-premises environment
- Services-term period is same term as the one for your storage device support term period

### Additional HPE Services

HPE Tech Care is the new operational service experience for HPE products. HPE Tech Care goes beyond traditional support by providing access to product specific experts, an AI-driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. Tech Care has been reimagined from the ground up to support a customer-centric, AI-driven, and digitally enabled customer experience to move your business forward. HPE Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

Learn more**: https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00108652enw**

## Configuration Information

### Startup and Configuration

**Getting your HPE Data Services application ready to manage your array requires 3 simple steps.**

1. Provisioning the Subscription Key
2. Onboarding your device after account creation (first time only)
3. Connecting your array to HPE Data Services

### Step 1: Provisioning the Subscription Key

When acquiring your new HPE Storage Array, a new HPE Data Ops Manager subscription is included. You will need to activate your subscription key by using the standard HPE software subscription process.

**Here are the basic steps:**

- Before your storage device leaves the HPE Factory, you will receive an e-mail confirming your order, and providing a link to "HPE Software Center" to activate your subscription Key
- Click on the embedded link and proceed to "My HPE SW Center"
- For existing customers, please log in with your HPE Passport credentials and follow the instructions.
- New users can easily create an HPE Passport account in the same page, if they do not have one
- After successful log in, users will be presented with a summary of their order
- Proceed to activate the subscription
- You will arrive to a downloadable page containing the array SN, the Subscription key, and the URL to the Common Cloud Portal
- Save this information, which will be required for device onboarding in the application

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### Step 2: Onboarding your device.

With HPE Data Services, you will be able to bring the cloud operational experience and agility to the hybrid cloud. You will be able to manage your storage infrastructure from a cloud console with access to a progressively larger set of data services to unify your data management activities.

**Proceed to setup your accounts and onboard application and device:**

- Login to the HPE Common Cloud Portal and set up your user account (first time only).
- Next, you will be asked to create your Cloud Account. It represents your company account and will be the one holding all the users, devices and applications. This will be done the first time only by the customer's cloud account administrator.
- Proceed to Application Catalogue. Select the HPE Data Services and Region to provision the Instance. An instance is a compute cluster running in one of the HPE Regions. They are needed to provide adequate scalability and to be compliant with data sovereignty regulations. HPE Data Services is a truly global application.
- The steps above are all done only the first time.
- Now you can add your storage device (done every time you add a new device). Navigate to the device management section and select --> add device. Provide the requested information: SN and subscription key
- Device will now appear in the Global inventory for the Account
- The final step is to assign the device to the specific HPE Data Services instance. Currently, you can have up to three (3) instances. First, navigate to Device management --.> assign device. Select the device, and complete the assignment
- You can now navigate to the main dashboard and proceed to HPE Data Services

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## Configuration Information

### Step 3: Automatic connection of storage device to HPE Data Services

After the setup is completed and you power on the device, it will establish automatically a secure bi-directional path of communication to the SC application instance. No user intervention required.

**At a high level, the process is as follows:**

- Storage system connects to CCS end-point through an encrypted link (mTLS) with its device certificate as Client Certificate
- CCS validates Client certificate using its trust anchors. Looks up customer and SC instance
- Returns address of SC Instance to use
- Storage system connects to SC instance using an encrypted link (mTLS) with its device certificate as the client certificate
- SC instance validates client certificate using trust anchors
- Lookups Tenant ID using SN and registers the Device ID against the SN
- Calls token Service to create a JWT Issuer for Tenant ID and returns Issuer ID
- SC returns the Issuer ID and Storage system adds Issuer ID to its Trusted Issuer list

For additional Technical details with configuration and setup, please refer to our Welcome Center at:
**https://infosight.hpe.com/welcomecenter/**

### HPE Data Services SKUs

Data Services is a SaaS-based console that delivers unified data operations as a service through a suite of cloud services. It automates and orchestrates integrated data and infrastructure workflows to deliver cloud operational agility and simplified data management.

| Description | SKU |
|---|---|
| HPE Data Ops Manager Reserved SaaS | R7N52AAE |
| 1-year Subscription | #CTE |
| 3-year Subscription | #CTF |
| 4-year Subscription | #CTG |
| 5-year Subscription | #CTH |

## Summary of Changes

| Date | Version History | Action | Description of Change |
|---|---|---|---|
| 04-May-2021 | Version 1 | New | New QuickSpecs |

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