Cloudera | Red Hat

Embrace the Cloud with Control

Enabling an Enterprise Data Platform
for Financial Services

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Enabling an Enterprise Data Platform for Financial Services

Financial services organizations globally are implementing digital transformation initiatives in order to remain competitive and accelerate growth while operating in a highly regulated environment. While this transformation was already underway, the pandemic accelerated digital engagement and customer expectations. MasterCard reported a 40% increase in contactless payments.[1] 35% of customers increased their online banking usage.[2] Unfortunately, the uptick in digital acceptance also brought out the fraudsters. In the UK alone, fraud rates rose by 33% across all financial products[3].

As financial services organizations evolve their digital strategies, diligent attention must be placed on customer experience and financial crime prevention, while balancing usability and privacy. Operational efficiency in these areas as well as risk management and regulatory compliance will underpin profitability.

Data, advanced analytics and AI are key capabilities for advancing these digital initiatives. Properly leveraging the data available enables a firm to provide a more relevant, timely experience. Intelligent automation using AI can streamline operational and compliance activities to reduce costs. The detection and prevention of financial crime remains a high priority and increasingly complex issue for firms. There is no tolerance for breaches, as fines run into the millions of dollars and brand reputation is at risk.

At the same time, cloud deployment options are increasingly important to support these initiatives to drive scalability and agility. Cloudera and Red Hat provide a modern data platform on hybrid cloud to help speed up the development of data and AI powered software capabilities that help achieve key business goals while offering control over data security to ensure compliance and reduce business risks.

The Data Challenge for Financial Services

Data is everywhere and the effort to organize it and gain insight across the enterprise is a massive undertaking for financial services companies. While there is ample data available to drive digital initiatives forward, it is a complex problem.

Longstanding financial services organizations still have the familiar historical challenges of data silos and sensitive data that limits their ability to obtain a holistic view of the customer and their portfolios. At the same time, new data sets are available and real-time data offers capabilities for more timely action.
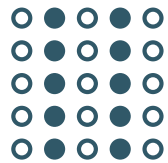
Data Silos

In financial services organizations, data tends to reside in silos. Much of it is unstructured, and it may reside in multiple, redundant repositories across business lines. Often the data lives in a legacy mainframe environment, which can make it difficult to access and utilize effectively.

Data Privacy/Regulation

Sensitive data proliferates in the highly regulated financial services industry, and organizations must be thoughtful about these concerns as they look to make the best and most relevant use of the data available. They must be prudent about where the data is stored and maintain data governance.
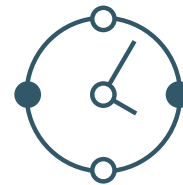
Real-time Data

To enable "right time" information and actions, financial services organizations must incorporate data from new and emerging sources including clickstream data, location data, data from connected devices, social media streams and alternative data from 3rd party sources.

Data Growth

Data is growing rapidly. In fact, it's estimated that 463 exabytes of data will be created each day globally by 2025.[4] As data volumes multiply, traditional techniques of rules-based analytics are becoming more challenging. Advanced analytics and machine learning (ML) is proving effective in its ability to assist in processing and analyzing vast quantities of data.

Cloud: A Real Opportunity

The need for greater agility and speed is accelerating adoption of cloud technologies. Cloud deployments offer additional benefits including simplified innovation, scalability and reduced risk.
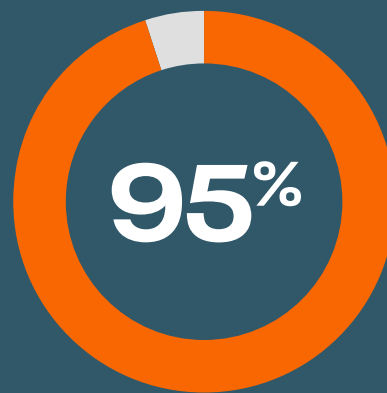
5 to 10%
Labor improvements

10 to 15%
Savings from capacity utilization

90%
Improvement in time to market

95%
Time reduction for adding digital feature

80%
Reduction in outages

All stats[5]

Enterprise Data Cloud

The wide adoption of cloud computing and the need to manage increasing quantities of data from an explosion of digital interactions has led to the development of the next generation big data platform – an Enterprise Data Cloud. An Enterprise Data Cloud is key for organizations looking to drive value in insight from their data across public, private and hybrid cloud. With consistent security and governance across all environments, data and analytics deployments are continually optimized to meet ever changing business imperatives. An Enterprise Data Cloud unlocks the power of data to serve customers better, operate with greater efficiency and strengthen security.
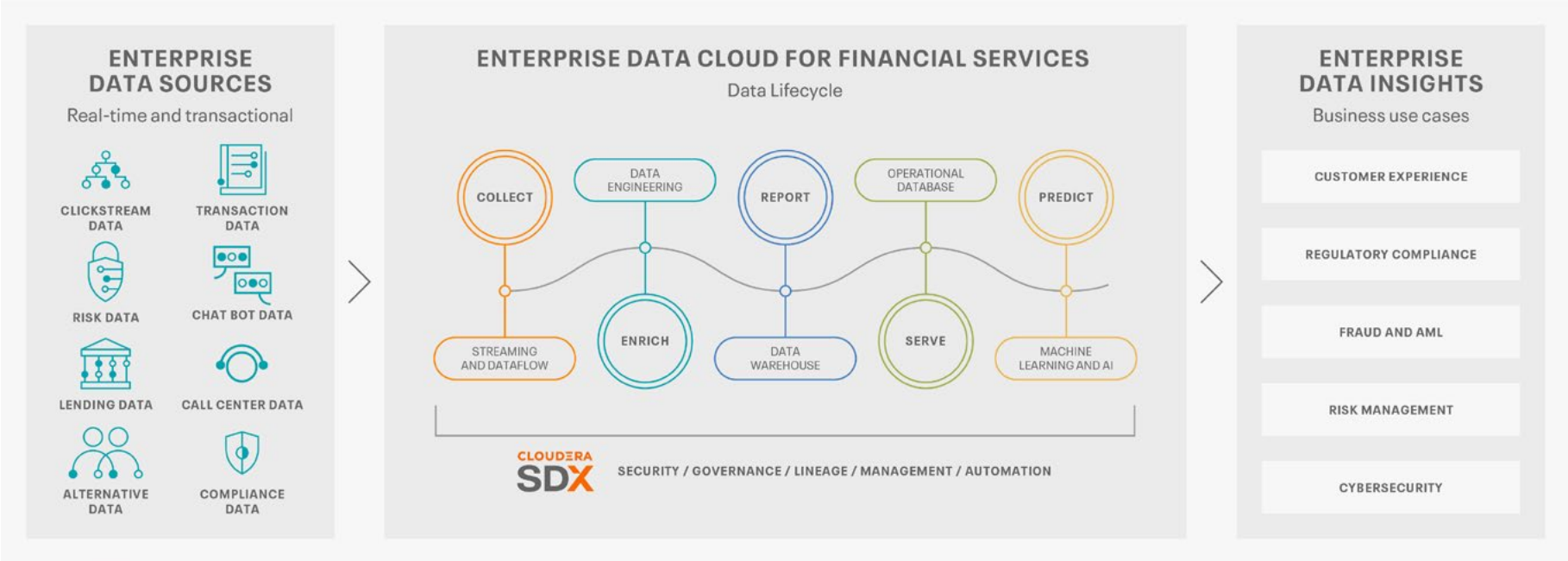
Containers and Kubernetes

Kubernetes

An open source platform for container orchestration. In its own words, Kubernetes automates the "deployment, scaling, and management of containerized applications." This declarative form of automation simplifies operational complexity and reduces manual effort.
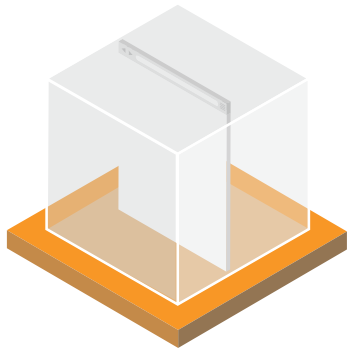
Containers

A software container is a means of packaging up application code and everything it needs to run properly in any environment, from a developer's laptop to a bare-metal server to a private or public cloud.

Because they are lightweight and immutable, running containers at scale can enable the management of hundreds or even thousands of containerized workloads in production.

A Hybrid Data Cloud powered by containers, Kubernetes and ecosystem integration enables agility, flexibility, scalability, consistency, and portability.

Red Hat OpenShift

Red Hat® OpenShift® is the leading enterprise Kubernetes platform, built for an open hybrid cloud strategy. Red Hat OpenShift's full-stack automated operations, consistent experience—across all environments—and self-service provisioning for developers lets teams work together to more efficiently move ideas from development to production.
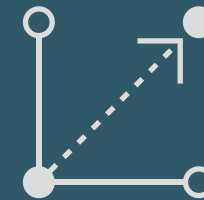
Red Hat OpenShift is available as a fully managed cloud service on leading public clouds, or as a self-managed software offering for organizations requiring more customization.

RED HAT OPEN HYBRID CLOUD PLATFORM WITH ISV ECOSYSTEM

Red Hat OpenShift Platform Plus

MULTICLUSTER MANAGEMENT	CLUSTER SECURITY	GLOBAL REGISTRY
Red Hat Advanced Cluster Management for Kubernetes	**Red Hat** Advanced Cluster Security for Kubernetes	**Red Hat** Quay

Red Hat OpenShift Container Platform

MANAGE WORKLOADS	BUILD CLOUD-NATIVE APPS	DATA-DRIVEN INSIGHTS	DEVELOPER PRODUCTIVITY
PLATFORM SERVICES	APPLICATON SERVICES	DATA SERVICES	DEVELOPER SERVICES

Red Hat OpenShift Container Platform

KUBERNETES CLUSTER SERVICES

KUBERNETES (ORCHESTRATION)

Red Hat LINUX (CONTAINER HOST OPERATING SYSTEM) **Red Hat**

Physical — Virtual — Private cloud — Public cloud — Edge

Red Hat OpenShift (continued)

With Red Hat OpenShift, financial services organizations can automate and accelerate the provisioning, management and scaling of modernized cloud applications and associated compute resources in a consistent way across on-premises, edge, and public clouds.

On premises, Red Hat OpenShift allows financial services organizations to run applications on a private cloud with greatly reduced provisioning times and far higher levels of hardware utilization.
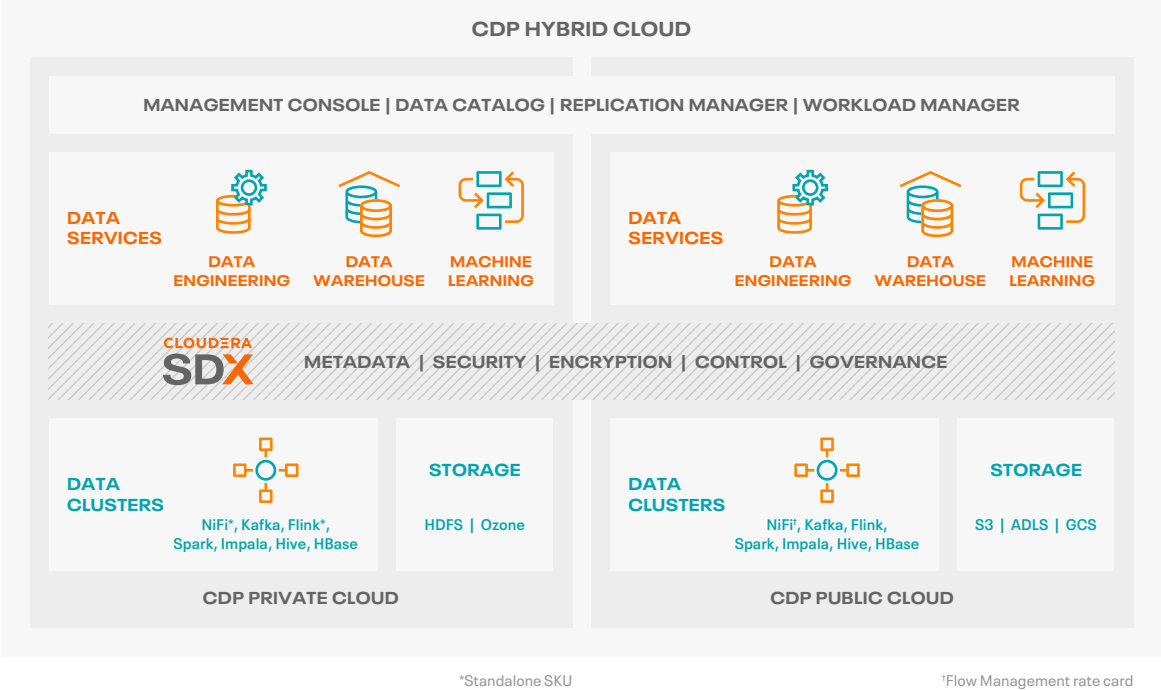
Cloudera Data Platform

Cloudera Data Platform (CDP) is an enterprise data cloud that manages the end-to-end data lifecycle—from collecting raw data at the source, to driving actionable insights and use cases.

Financial services organizations can easily ingest data from multiple sources, combining and correlating real-time mobile-banking or market data streams with account activity, borrowing history, core banking and call center data to generate actionable insights.

Cloudera offers an integrated suite of proven and open data management tools and analytics engines, to run multiple analytical workloads that drive insights, intelligence, and action from the data—personalized credit offers and financial advice, predictive risk modelling, improved regulatory reporting, timely fraud detection, etc.
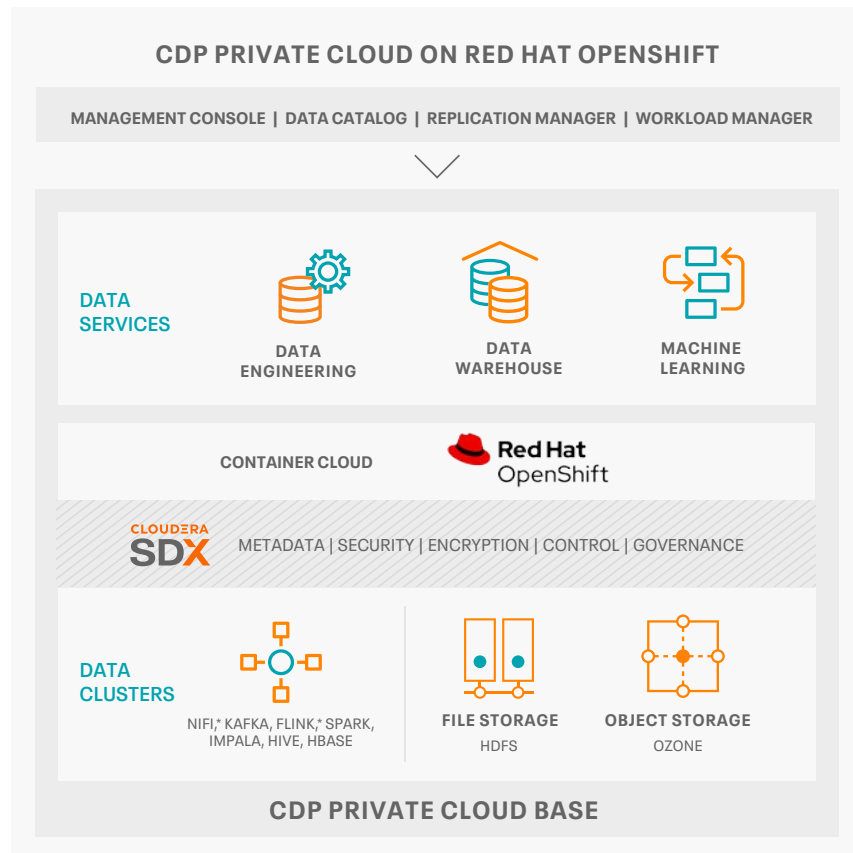
Cloudera's Shared Data Experience (SDX) enables safe and compliant self-service access to data and analytics, offering deeper insights from data with increased agility, at lower cost and with reduced risk. SDX delivers an integrated set of security and governance technologies built on metadata and delivers persistent context across all analytics as well as public and private clouds.

CDP HYBRID CLOUD

MANAGEMENT CONSOLE | DATA CATALOG | REPLICATION MANAGER | WORKLOAD MANAGER

DATA SERVICES — DATA ENGINEERING | DATA WAREHOUSE | MACHINE LEARNING

CLOUDERA SDX — METADATA | SECURITY | ENCRYPTION | CONTROL | GOVERNANCE

DATA CLUSTERS — NiFi*, Kafka, Flink*, Spark, Impala, Hive, HBase

STORAGE — HDFS | Ozone

CDP PRIVATE CLOUD

DATA SERVICES — DATA ENGINEERING | DATA WAREHOUSE | MACHINE LEARNING

DATA CLUSTERS — NiFi†, Kafka, Flink, Spark, Impala, Hive, HBase

STORAGE — S3 | ADLS | GCS

CDP PUBLIC CLOUD

*Standalone SKU

†Flow Management rate card

Embrace the Cloud with Confidence

Cloudera Data Platform Private Cloud on Red Hat OpenShift is the enterprise data cloud built on the foundation of containers, Kubernetes and other important day-2 operations services that solves the business and IT challenges of financial services firms on premises today and in the future.

- Deliver self-service analytics on massive amounts of verified data to thousands of users without compromising cost, speed or security.

- Quickly deploy and monitor ML models with optimized workflows and integrated DevOps capabilities.

- Orchestrate and automate complex data pipelines securely and at any scale with a rich data engineering toolset.

- Analyze massive volumes of real-time streaming data.

- Quickly onboard new data use cases as they're needed, run them anywhere consistently with OpenShift's robust portability and automatically scale up and down the resources as needed.

- Reduce costs with a subscription-based cloud model that better utilizes infrastructure – no more overprovisioning.

- Reduce or eliminate data silos – no more point solutions to bypass slow implementations.

- Maintain complete oversight over governance, compliance, and security with powerful control and audit capabilities.

CDP PRIVATE CLOUD ON RED HAT OPENSHIFT

MANAGEMENT CONSOLE | DATA CATALOG | REPLICATION MANAGER | WORKLOAD MANAGER

DATA SERVICES

DATA ENGINEERING DATA WAREHOUSE MACHINE LEARNING

CONTAINER CLOUD — Red Hat OpenShift

CLOUDERA SDX — METADATA | SECURITY | ENCRYPTION | CONTROL | GOVERNANCE

DATA CLUSTERS

NIFI,* KAFKA, FLINK,* SPARK, IMPALA, HIVE, HBASE FILE STORAGE HDFS OBJECT STORAGE OZONE

CDP PRIVATE CLOUD BASE

Maintain Control and Avoid Cloud Concentration Risk

CDP Private Cloud on Red Hat OpenShift uniquely provides financial services organizations with the ability to migrate towards a hybrid, multi-cloud environment while addressing several regulator concerns around Cloud Concentration Risks (CCR).[6] Firms avoid cloud lock-in with portability of data and applications across any infrastructure endpoint.

Financial Institutions and Insurers

- Avoid Cloud Lock-in
- Consistent Data Security & Governance
- Portability of Data & Applications
- Reduce Cloud Regulatory Concerns

Regulators

- Portability of Data & Applications
- Model Systemic Risk Triggers
- Reduce Cloud Regulatory Concerns
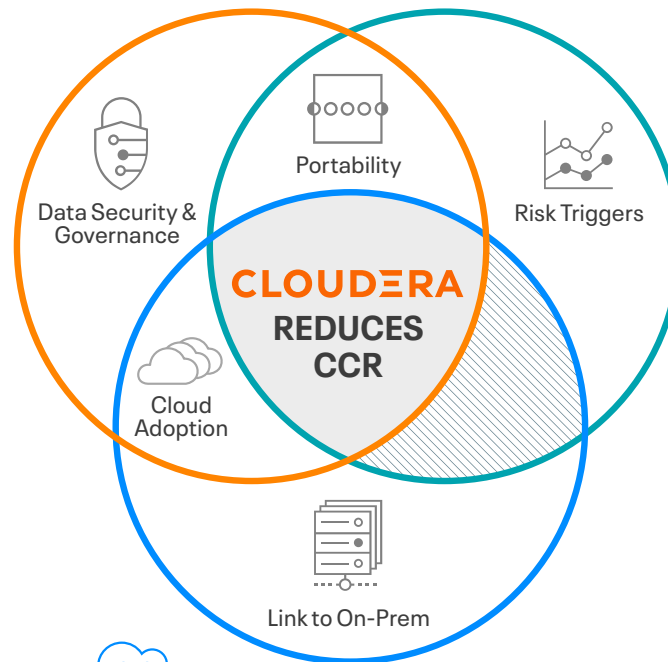
Cloud Service Providers

- Accelerate Cloud Adoption
- Linkage to On-Premise Landscape
- Reduce Cloud Regulatory Concerns

Diagram labels: Data Security & Governance, Portability, Risk Triggers, Cloud Adoption, CLOUDERA REDUCES CCR, Link to On-Prem

The Best of Both Worlds

Open source leaders Cloudera and Red Hat have partnered to help financial services organizations embrace the cloud with control. With the rich data analytics and engineering of CDP Private Cloud and the Red Hat OpenShift hybrid data cloud platform, financial services have the capabilities, agility, scalability, security, and portability needed to adapt to changing conditions.

Financial services institutions can:

- Rapidly deploy analytics workloads in a private cloud, getting cloud-like capabilities with the cost efficiencies and security of on-premises infrastructure.
- Avoid vendor lock-in and achieve the flexibility needed to move data analytics workloads as conditions change, including across hybrid cloud and multi-cloud environments.
- Retain complete visibility and control over their data with the security of a private cloud and robust compliance capabilities built for the needs of the financial services industry.

CDP Private Cloud on **Red Hat OpenShift** helps financial services harness and manage their data to transform complex data into clear and actionable insights.

Learn more about Cloudera's financial services data capabilities leveraging CDP Private Cloud and Red Hat OpenShift.

About Cloudera

At Cloudera, we believe that data can make what is impossible today, possible tomorrow. We empower people to transform complex data into clear and actionable insights. Cloudera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. Powered by the relentless innovation of the open source community, Cloudera advances digital transformation for the world's largest enterprises.

Learn more at cloudera.com | US: +1 888 789 1488 | Outside the US: +1 650 362 0488

Sources

1 Deloitte, Realizing the Digital Promise, 2020

2 Deloitte, Realizing the Digital Promise, 2020

3 Experian, Fraud Rate Rises 33% During Covid-19 Lockdown, Experian, June 2020

4 World Economic Forum, How Much Data is Generated Each Day?, April 2019

5 McKinsey, Accelerating Hybrid-Cloud Adoption in Banking and Securities, January 2021

6 Cloudera, Identifying and Mitigating Cloud Concentration Risk, December 2020