



## MasterCard Advisors

### Industry

System Integration

### Website

[www.mastercardadvisors.com/safeandsound](http://www.mastercardadvisors.com/safeandsound)

### Company Overview

As leaders in data security and the first to become PCI compliant, MasterCard has joined with Cloudera to combat fraud and help customers proactively prevent breaches rather than react to them. Our vision is to bring security and compliance to your customer data as it grows and gain more value from your big data strategy.

### Solution Overview

Cloudera and MasterCard provide the education and technical guidance teams require to comply with security standards as their big data needs evolve. MasterCard brings decades of technology, data, and process expertise to help organizations of all sizes reduce the time to production with Hadoop and cut the total cost of passing an annual PCI audit by more than half.

# Build a PCI-Compliant Hadoop Environment with Cloudera and MasterCard

## Security and Compliance: Table Stakes for Card Data

As customer and transaction data continues to grow at Internet scale, a variety of new security, risk, transparency, and technology standards are forcing banks, payment processors, and retailers to contend with major compliance challenges. Industry regulations have introduced new complexity and costs related balancing big data analytics with customer privacy. Striking the right balance, security becomes the foundational capability on which valuable customer insights and competitive advantage are built.

In the credit card industry, the primary goal of information management is ensuring that cardholder data is properly secured and protected and that merchants and third-party solution providers meet minimum privacy levels for any application, database, or file system that plays a role in storing, processing, or transmitting account-related data. The Payment Card Industry Data Security Standard (PCI DSS) was formalized as an industry-wide standard in 2004, originating as separate data security standards established by the five major credit card companies: MasterCard, VISA, Discover, American Express, and the Japan Credit Bureau (some of whom are Cloudera Enterprise customers).

The most straightforward way to comply with PCI DSS is to encrypt all data-at-rest and data-in-motion and manage the encryption keys away from the protected data. However, the security standards have historically required specialized software, which, at times, has failed to prevent infiltration by nefarious actors—technology alone is insufficient to stop attacks. In the event of a security breach resulting from non-compliance, the breached organization could be subject to stiff penalties, huge legal fees, chargeback of all fraudulent transactions, and increased government scrutiny. In recent months, credit card data security breaches have not only led to fines, but also to consumer mistrust, massive brand damage, and sharp declines in revenues for the merchants managing the point of sale.

## Hadoop as Secure Data Vault

As Apache Hadoop becomes the de facto data management solution for payment processors who want to keep more and more of their data online, an enterprise data hub (EDH) featuring Cloudera Navigator is the only platform offering native encryption for data-in-motion between processes and systems, as well as for data-at-rest as it persists on disk or other storage media. Navigator is the first fully integrated data security and governance application for Hadoop-based systems.

Of equal importance, Cloudera Enterprise enables the most complete data security protocols and helps banks and retailers prevent data breaches before they happen. Tools like Apache Sentry and MIT Kerberos protect the Hadoop cluster from both outside

## Solution Highlights

- Cloudera Navigator offers the only native encryption and key management for data-at-rest and data-in-motion
- Sentry and Kerberos authenticate and authorize access at the application and data levels
- Cloudera Manager integrates all security tools to validate administrative privileges and further safeguard sensitive data
- Certify the deployment and compliance process to cut time to production and the cost of passing a PCI audit by half
- Apply best practices to avoid configs that could lead to breaches on presumed compliant systems
- Build a partnership with the leaders in big data security and Hadoop to maintain compliance as standards change

## Enablement For Your EDH

Successful EDH deployments tailor existing capabilities and resources to best practices. Cultivate the skills of your team to execute a big data strategy and customize your architecture to industry standards.

### Administrator Training

- Configure, install, and monitor your cluster for optimal performance
- Implement security measures and multiuser functionality

### Security Integration

- Customize a secure reference architecture
- Meet requirements for authentication, authorization, access control

### Data Analyst Training

- Apply SQL to much larger data sets using Hadoop tools: Hive, Impala, Pig
- Master advanced techniques that boost end-user accessibility

### PCI Readiness

- Establish processes to protect and utilize data on the Hadoop platform
- Configure the cluster to improve defense against data breaches

hackers and insider threats by delivering multi-stage, role-based authentication and authorization at the application and data levels. They also fully integrate with Cloudera Manager to validate administrative privileges and further safeguard sensitive data.

## MasterCard and Cloudera: Safeguarding Expertise

Because of the stringency of complete data security, it has historically taken up to 24 months to build a fully PCI-compliant big data infrastructure. Even then, a faulty privacy configuration could lead to a devastating data breach on a presumed compliant system. In response, Cloudera has partnered with MasterCard Advisors to simplify and certify the deployment and compliance process for an EDH. MasterCard was the first company to achieve PCI certification on a Hadoop system and brings decades of technology, data, and process expertise to help organizations of all sizes cut the time to production and the total cost of passing an annual PCI audit by more than half. MasterCard Advisors and Cloudera can provide education and technical guidance for your team and can be long-term partners as standards change and data needs evolve.

By developing a certification plan for your big data infrastructure that leverages Cloudera's leading Hadoop platform and MasterCard Advisors' proven PCI architecture, you can remove the cost and uncertainty of achieving and maintaining compliance and focus on realizing the business value of all your data in an EDH.

## About Cloudera

Cloudera is revolutionizing enterprise data management by offering the first unified Platform for Big Data, an enterprise data hub built on Apache Hadoop. Cloudera offers enterprises one place to store, process and analyze all their data, empowering them to extend the value of existing investments while enabling fundamental new ways to derive value from their data. Only Cloudera offers everything needed on a journey to an enterprise data hub, including software for business critical data challenges such as storage, access, management, analysis, security and search. As the leading educator of Hadoop professionals, Cloudera has trained over 40,000 individuals worldwide. Over 1400 partners and a seasoned professional services team help deliver greater time to value. Finally, only Cloudera provides proactive and predictive support to run an enterprise data hub with confidence. Leading organizations in every industry plus top public sector organizations globally run Cloudera in production. [www.cloudera.com](http://www.cloudera.com).

## About MasterCard Advisors

MasterCard Advisors, the professional services arm of MasterCard Worldwide, provides real-time transaction data and proprietary analysis, data-driven consulting, and marketing services solutions to help clients optimize, streamline, and grow their businesses. Our three divisions provide distinctive approaches that combined, offer comprehensive solutions for measurable improvements: information services, implementation services, consulting services. With solutions tailored for individual clients, as well as turnkey offerings, MasterCard Advisors provides valuable insights, data-driven-solutions, and actionable campaigns to drive business.

[cloudera.com](http://cloudera.com)

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