UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended January 31, 2019

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from________to________

Commission File Number: 001-38069

CLOUDERA, INC.

(Exact name of registrant as specified in its charter)

Delaware	**26-2922329**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. employer identification no.)**

395 Page Mill Road
Palo Alto, CA 94306
(650) 362-0488
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, $0.00005 par value per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by a check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by checkmark if the registrant has not elected to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2 (B) of the Securities Act ☐

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of voting stock and non-voting common equity held by non-affiliates of the Registrant as of July 31, 2018 , based on the closing price of $13.39 for shares of the Registrant's common stock as reported by the New York Stock Exchange on such date, was approximately $1.4 billion . Shares of common stock beneficially owned by each executive officer, director, and holder of more than 10% of our common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 28, 2019 , there were 268,937,661 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Information required in response to Part II and Part III of Form 10-K is hereby incorporated by reference to portions of the Registrant's Proxy Statement for the Annual Meeting of Stockholders to be held in 2019. The Proxy Statement will be filed by the Registrant with the Securities and Exchange Commission no later than 120 days after the end of the Registrant's fiscal year ended January 31, 2019.

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NOTE ABOUT FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements within the meaning of the federal securities laws regarding future events and our future results that are based on our current expectations, estimates, forecasts and projections about our business, our results of operations, the industry in which we operate and the beliefs and assumptions of our management. Words such as "believe," "may," "will," "estimate," "continue," "anticipate," "would," "could," "should," "intend" and "expect," variations of these words, and similar expressions are intended to identify those forward-looking statements. These forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. Factors that might cause or contribute to such differences include, but are not limited to, those discussed in this Report under the section entitled "Risk Factors" in Item 1A of Part I and elsewhere herein, and in other reports we file with the Securities and Exchange Commission (SEC). While forward-looking statements are based on the reasonable expectations of our management at the time that they are made, you should not rely on them. We undertake no obligation to revise or update publicly any forward-looking statements for any reason, whether as a result of new information, future events or otherwise, except as may be required by law.

PART I

ITEM 1. BUSINESS

Overview

Cloudera is the enterprise data cloud company. We empower people to transform data into clear and actionable insights through an integrated suite of data analytics and management products from the Edge to artificial intelligence (AI). Our portable, multi-cloud platform with common security, governance and data management functions underpins products that include streaming analytics at the edge, data engineering, data warehousing, real-time operational analytics, exploratory data science and machine learning offerings. Today these products are implemented in private and co-location datacenters, multiple public clouds and hybrid cloud environments with common data analytics and management capabilities across all workloads and architectures. Our offerings are based predominantly on open source software, utilizing data stored natively in public cloud object stores as well as in various open source data stores. Using our software, organizations are able to capitalize on vast amounts of data from a variety of sources to better serve and market to their customers, design connected products and services and protect their enterprises.

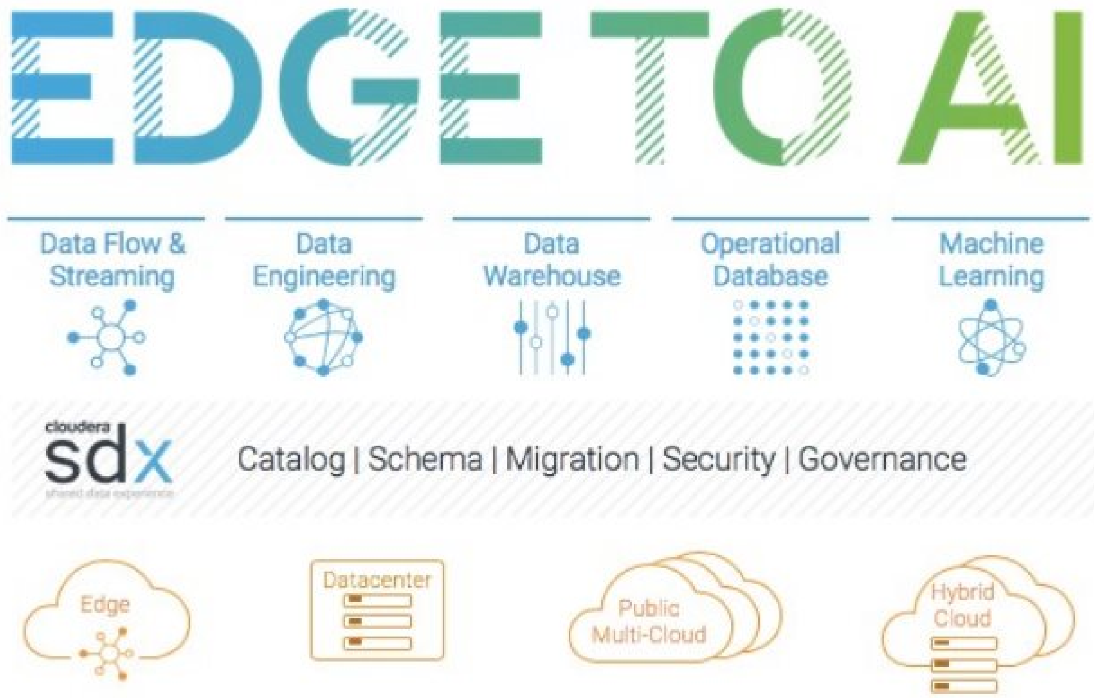
We collaborate extensively with the global open source community, continuously innovating data management and analytics technologies to support Internet of Things (IoT), data warehousing and machine learning applications. We leverage the latest advances in infrastructure technology, such as containers and container orchestration software, to deliver our solutions across all major public clouds – Amazon Web Services, Microsoft Azure, Google Cloud Platform, IBM Cloud and Oracle Cloud – as well as private cloud. Our shared data experience (SDX) technologies provide a common security, governance and management layer across all these environments, enabling customers to easily migrate data, comply with data privacy regulations and safeguard intellectual property. Customers can manage infrastructure, data and analytic workloads across these hybrid and multi-cloud environments through a single control plane. This flexibility and control allow customers to continually determine and implement the most cost-efficient strategies for managing and analyzing their data, optimizing for cost, performance and data locality while avoiding cloud lock-in.

We offer our software primarily on a subscription basis and focus our selling efforts on the largest corporate enterprises and public sector organizations globally. We target these organizations because they capture and manage the majority of the world’s data and operate highly complex information technology (IT) environments. These customers often demand the interaction of multiple analytic functions to perform the use cases required by their enterprises, and typically have data dispersed in public cloud and datacenters as well as geographically. We have developed a growing, vibrant ecosystem of systems integrators, software developers, resellers, OEMs, data systems vendors and public cloud providers to support the distribution of our solutions. As part of this ecosystem, we have formed strategic partnerships with IBM, Microsoft and Intel Corporation to optimize our software for use with these strategic partners’ offerings.

Our Offerings

Cloudera completed its merger with Hortonworks in January 2019, creating the world’s leading open source data management and analytics solutions provider. In addition to the complementary offerings of the two companies, we plan to combine our assets and technical expertise to deliver the industry’s first ‘Enterprise Data Cloud from the Edge to AI’. Our enterprise data cloud (EDC) will provide a public cloud-like experience everywhere for data anywhere. It will offer the agility, elasticity and ease-of-use of public cloud infrastructure across private cloud, hybrid-cloud, multi-cloud and all major public clouds. An EDC enables multiple analytic functions -- from real-time streaming at the edge to artificial intelligence -- working together on the same data to support the most demanding business use cases. An EDC is secure and governed, meeting the strict data privacy, compliance, data migration and metadata management requirements of large enterprises across all their environments. Lastly, an EDC is defined by openness, powered by open source software, open compute architectures and open data stores like Amazon S3 and Azure Data Lake Storage.

Underpinning the enterprise data cloud vision is our next generation platform, Cloudera Data Platform (CDP), which once released, will combine the best of Hortonworks' and Cloudera's offerings in a public cloud, hybrid cloud service. CDP will enable customers to easily extend their datacenter implementations to the public cloud. CDP is expected to be "cloud-native" with separate compute and storage and the ease-of-use, self-service and user experience typically associated with public cloud services.



Current Offerings

We primarily offer subscriptions for our software to address the most common and critical data challenges enterprises face. Our current offerings include the following platforms, products, and services:

- **Cloudera Enterprise Data Hub.** The Enterprise Data Hub combines our Data Warehouse, Operational DB, and Data Science and Engineering products with our SDX technology. It allows companies to execute multiple analytic functions against a shared set of governed and secure data in public clouds, private clouds and data centers in bare metal configurations.

- **Cloudera Data Warehouse.** Cloudera Data Warehouse is a modern data warehouse that delivers an enterprise-grade, hybrid cloud solution designed for self-service analytics. It has the flexibility to optimize traditional data warehouses, and support data lake or data mart use cases. It is powerful, scalable and affordable—enabling organizations to share petabytes of data across thousands of users with the security, governance and availability that large enterprises demand.

- **Cloudera Data Science and Engineering.** Cloudera Data Science and Engineering enables users to streamline, simplify, and scale big data processing (ETL) regardless of where data is stored - on-premises, across public clouds, or both. It accelerates exploratory data science and machine learning models at scale by taking advantage of massive parallel compute and expanded data streams .

- **Cloudera Operational DB.** Cloudera Operational DB enables stream processing and real-time analytics on continuously changing data. It delivers a secure low latency, high-concurrency experience that processes more data, from more sources (including IoT), powered by HBase, a column-based NoSQL store for unstructured data, and Kudu, a relational store for structured data.

- **Cloudera DataFlow (CDF). C** DF is a scalable, real-time streaming data platform that collects, curates and analyzes data so customers gain key insights for immediate actionable intelligence. It meets the challenges faced with data-in-motion, such as real-time stream processing, data provenance and data ingestion from IoT devices and other sources. CDF supports secure and governed data ingestion, data transformation and content routing. CDF helps customers deliver a better customer experience, boost their operational efficiency and stay ahead of the competition across all their strategic digital initiatives.

- **Hortonworks Data Platform (HDP).** HDP is a scalable data management platform that helps organizations securely store, process and analyze any data asset. With HDP, organizations can easily build and deploy modern data architectures on-premises and in the cloud. It is an enterprise grade platform that provides all of the components necessary to manage large, multi-source data sets.

- **Cloudera Data Science Workbench** . Cloudera Data Science Workbench enables self-service data science for the enterprise. Data Science Workbench is a multi-user, multi-language development environment for data science and machine learning applications. It manages the various steps of the model development lifecycle including versioning, dependency management, scheduling, multi-user collaboration and training models on disparate types of compute.

Other Technologies and Services

We continue to innovate and develop new technologies and services to extend our market leadership for multi-function analytics and machine learning from the Edge to AI. These offerings include:

- **Cloudera Altus.** Cloudera Altus is our platform-as-a-service (PaaS) offering. Altus is a cloud service that simplifies the use of our platform by eliminating the need to install, manage and update our software. With Altus, we enable customers to address a new set of elastic and transient workloads that would otherwise be impractical to run in the datacenter.

- **Cloudera Fast Forward Labs.** Cloudera Fast Forward Labs delivers applied research in machine learning and artificial intelligence to our customers. Fast Forward Labs surveys academic and industrial research for developments in the field, enabling customers to benefit from advances in applied machine learning and artificial intelligence and is designed primarily to drive increased consumption of our software.

- **Cloudera SDX.** Cloudera SDX, shared data experience, enables common security, governance and metadata management for multiple analytics functions running against shared or overlapping sets of data. SDX allows customers to set policies and rules once and have them persist through any range of workloads without regard to where the job is run. This portability provides customers the freedom to run multiple analytics anywhere they want without public cloud lock-in or proprietary data formats. SDX makes building enterprise applications that require multi-function analytics less expensive to deploy and more secure.

- **Cloudera Workload XM** – Cloudera Workload XM is an analytic workload experience management cloud service. It provides enhanced visibility and actionability to efficiently migrate, analyze, optimize and scale analytic workloads ultimately resulting in reduced migration risk, faster troubleshooting and root cause analysis, greater uptime and higher resource utilization. Customers can quickly gain access to the performance of specific queries and jobs to ensure their highest priority workloads do not compete for resources with less essential queries. This enables more effective management of infrastructure for better utilization and overall infrastructure return on investment.

- **Hortonworks DataPlane Service (DPS).** DPS is a data fabric that enables businesses to discover, manage and govern their data spread across hybrid environments. DPS provides a single pane of glass so that businesses can reliably access, discover, classify and process their data assets on-premises and in the cloud. DPS provides the foundation for modern workloads and applications.

- **Hortonworks Cybersecurity Platform (HCP)** offers a single, comprehensive view of business risk through a security lens. HCP provides an accelerated path to a single view of relevant threat data and ways to address them, realized through specific data, analytical models and user interfaces to increase efficiency of security operations.

Our Differentiation

Cloudera empowers organizations to become data-driven enterprises by maximizing the value of their most valuable asset - their data - to grow, connect and protect their business. Through our merger with Hortonworks, Cloudera is building the industry's first enterprise data cloud, which will enable our customers to manage and analyze 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. The key benefits and differentiators of our solution include:

- ***Integrated analytics from the Edge to AI.*** We provide an integrated suite of multi-function analytics, operating on diverse sets of data. Addressing real-world business problems generally requires the application of multiple analytic functions working together on the same data. Examples include connected and autonomous vehicles, optimizing 5G mobile networks, anti-money laundering, fraud detection and risk modeling. We enable customers to run massively iterative algorithms, including machine learning algorithms, over large volumes of data, to support a diverse range of relational and non-relational schemas and to express analytic workloads in multiple development and data science languages. These capabilities allow enterprises to identify trends in historical data, to recognize events in current or streaming data and to predict events in the future, continuously improving with experience

- ***Cloud and on-premises deployment at scale and across hybrid and multiple public cloud environments.*** Our platforms allow enterprises to manage both long-lived and transient workloads across environments, mixing on-premises and public cloud infrastructure, including all major public cloud vendors – Amazon Web Services, Microsoft Azure, Google Cloud Platform, IBM Cloud and Oracle Cloud. Customers can deploy, configure and monitor their clusters and workloads at scale from a centralized interface across these environments. We offer configurable monitoring, reporting robust troubleshooting to provide management of large, growing data sets and concurrent use cases.

- ***Enterprise-grade data security and governance.*** Our platform uses proprietary authentication, network isolation, user-and role-based permissions, access logging, auditing, lineage and encryption including sophisticated key management to provide comprehensive, enterprise-grade data security across multiple analytic workloads. The native security features of our platforms require no additional third-party licenses, further reducing costs to customers. In addition, our platforms enable regulatory and industry-specific compliance through comprehensive data governance, including data discovery, data lineage, metadata tagging and policy enforcement.

- ***Enable customers to leverage the latest open source innovation.*** Our platforms integrate the latest innovations in open source data management technology. We were the first data platform vendor to incorporate Spark, and have demonstrated continuous commitment to open source through our adoption of projects such as Solr, Kafka, Impala, Kudu, Hive and more. We enable customers to capitalize on the business value of the latest open source technologies through our integrated, secure and high-performance platform.

- ***High performance scalability for low total cost of ownership.*** Our platform delivers performance improvements over legacy systems at lower cost. Using our software, customers can scale to hundreds of petabytes of data under management, and select the infrastructure environment- cloud and/or datacenter- that is most cost-effective and appropriate for each use case.

- ***Convenience of a cloud service.*** Cloudera Altus is our cloud platform-as-a-service (PaaS) offering. It is designed to simplify the use of our platform by eliminating the need to install, manage and update our software. With Altus, we enable customers to address a new set of elastic and transient workloads that would otherwise be impractical to run in the datacenter.

Our Strategy

Key elements of our strategy include:

- ***Leading the enterprise data cloud market.*** Having recently completed our merger with Hortonworks, we plan to combine our assets and technical expertise to deliver the industry's first enterprise data cloud from the Edge to AI, providing a public cloud-like experience everywhere for data anywhere. Our enterprise data cloud will deliver the agility, elasticity and ease-of-use of public cloud infrastructure across private cloud, hybrid-cloud, multi-cloud and all major public clouds.
- ***Growing our addressable market by expanding our multi-function analytic offerings and the range of use cases our platform can support.*** We intend to introduce complementary technology and offerings as well as to develop our platform's capabilities in order to support a wider range of data types, access patterns and use cases.
- ***Extending our position as a leader in open source software for data management and analytics.*** We intend to continue to pioneer data-related open source software from the Edge to AI.
- ***Accelerating existing customer expansion; cross-selling complementary products.*** Our goal is to enable customers to access all available data and to extract greater value from it. We intend to broaden our relationships with existing customers by helping them identify new use cases, modernize their data architectures and gain more insight from their data. We also expect to sell Cloudera products to former Hortonworks customers and to sell Hortonworks products to former Cloudera customers.
- ***Continuing to rapidly acquire new customers.*** We focus our go-to-market efforts on large enterprises; as well as large public sector organizations globally. We target these organizations because they capture and manage the majority of the world's data and operate highly complex IT environments with use cases that require multiple analytic functions working together.
- ***Leveraging our partner ecosystem.*** We intend to maintain strong engagement with our partner ecosystem to gain increased reach and greater distribution of our software, develop new applications, accelerate customer expansion and penetrate new markets.
- ***Showcasing a data-driven business with our own operations.*** We use our own platform to capture, process and analyze information across our organization to improve our engineering, sales, support and finance functions.
- ***Cultivating a passion for solving the world's greatest challenges through data.*** We aim to create a culture and build passion among our employees, our partners and our customers for using data to solve the world's biggest problems.

Customers

We focus on the largest corporate enterprises and public sector organizations globally. These organizations are likely to realize the greatest value from utilizing our enterprise-grade platform. As of January 31, 2019 , we had more than 2,000 customers.

No individual customer represented more than 10 percent of revenue in fiscal 2019, 2018 or 2017.

Customer Support, Services and Education

We have built a company culture that focuses on consistently delivering value for our customers and ensuring their success and satisfaction. We deliver exceptional support, professional services and training to ensure our customers get the most out of our technology. We offer technical assistance through our large and experienced global support organization. Built on powerful predictive analytics using our own technology, we proactively monitor our customers' platforms to prevent issues before they arise, avoid common cluster misconfigurations, and suggest optimization based on similar cases at other customers. Our predictive analytics allow us to proactively initiate a substantial fraction of our support engagements for customers, before they realize that they have a problem themselves.

In addition, our services organization provides expertise for adoption and optimization of our solutions. Our experienced solution architects, business value consultants and training professionals enhance the customer experience with personalized assistance, from implementation and best practices to education and online training. These services help our customers accelerate time to value, modernize their data architecture, and maximize insight from their data.

We believe that we can further advance the clients' goals through education. In addition to offering online training, we have trained thousands of individuals through January 31, 2019 . Through the Cloudera Academic Program, we provide access to curriculum, software and training to colleges and universities to accelerate the adoption of the platform.

Sales and Marketing

We primarily sell through our direct sales force, which comprises field and inside sales personnel and was organized by enterprise size and geography in fiscal 2018. Based on our experience and analysis of customer buying behavior, beginning in fiscal 2019, we have refined our sales methodology to include field personnel dedicated primarily to acquiring new customers and field personnel dedicated primarily to expanding our relationships with existing customers.

Our sales force is supported by sales engineers with deep technical expertise and responsibility for pre-sales technical support, solutions engineering for our end-customers, and technical training for our channel and strategic partners.

We generate customer leads, accelerate sales opportunities, and build brand awareness through our marketing programs and through our strategic partner relationships. Our marketing programs target both the C-suite and the line of business owners, technology professionals and risk professionals, as well as software developers and data scientists.

Our principal marketing programs include:

- webinars, user conferences and events that we sponsor, such as Strata Data Conference;
- cooperative marketing efforts with partners; and
- use of our website.

Partners and Strategic Alliances

We believe that strong engagement with our partner ecosystem affords us increased reach and greater distribution of our software, enhancing our field organization's efforts. We have developed a large partner network in order to facilitate the establishment of industry standards, ensure an open ecosystem for our customers, accelerate the adoption of our platform and extend our sales capabilities and coverage. Over 3,000 vendors – a variety of systems integrators, resellers, software and OEM partners, managed service providers, data systems vendors and cloud and platform vendors comprising have registered under our Cloudera Connect partner program to gain access to marketing, sales, training and support resources.

Our partners and strategic alliances include:

- ***Systems integrators and resellers.*** Hundreds of systems integrators offer professional services to create custom solutions built on our platform for their customers across a variety of industry verticals. Resellers offer our platform to their customers in combination with their products and services.

- ***Software and OEM partners.*** Our technology partners offer solutions designed to work with or built on our platform. Hundreds of certified solutions have been tested and validated to run on our platform.
- ***Managed services and data systems vendors.*** We ensure that our platform is tested and made available by managed services providers and is interoperable with a variety of traditional data systems vendors.
- ***Cloud and platform vendors.*** To ensure our customers can run our software in any environment, we nurture relationships with public cloud providers and other enterprise platforms to integrate and achieve the highest interoperability across architectures.

Intel Strategic Partnership

In 2014, in connection with an equity investment in the company, we entered into a strategic collaboration and optimization agreement with Intel. This agreement was renewed and expanded in February 2018. Consistent with Intel's data center, IoT, machine learning and artificial intelligence technology initiatives, the primary objective of the partnership is to ensure that our solutions deliver optimal performance and security with Intel processors and platform technology today and in the future.

Research and Development

Our research and development organization is responsible for the design and development of our solutions. We focus on developing new services and technologies and further enhancing the functionality, reliability and performance of our existing solutions.

Competition

We operate in an intensely competitive data management, analytics and machine learning market that is characterized by the constant development of new products and continued innovation, particularly in the open source community and among the major public cloud infrastructure providers.

Our main sources of current and potential competition fall into five categories:

- public cloud providers who include proprietary data management, machine learning and analytics offerings, such as Amazon Web Services, Google Cloud Platform and Microsoft Azure;
- legacy data management product providers such as HP, IBM, Oracle and Teradata;
- strategic and technology partners who may also offer our competitors' technology or otherwise partner with them, including our strategic partners who provide Partner Solutions (see "Business—Partners and Strategic Alliances") as they may offer a substantially similar solution based on a competitor's technology;
- cloud-only data management companies and open source companies; and
- internal IT organizations that provide open source self-support for their enterprises.

As the market for data management, analytics and machine learning platforms continues to grow and offerings based on the open source data management ecosystem continue to gain traction, we expect more highly specialized vendors will enter the market or larger competitors will bundle solutions with their products more effectively.

The principal competitive factors in our market include:

- ability to deploy in a variety of infrastructure environments, including hybrid and multi-cloud capability;
- ability to identify and leverage innovative open source technologies;
- product price, functionality, and ease of use;
- enablement of machine learning and other advanced technologies;

- enterprise-grade performance and features such as scalability, security, cost of ownership and ease of deployment and use of applications;
- breadth, depth and quality of application functionality;
- domain expertise and understanding of customer requirements across verticals;
- ability to innovate and respond to customer needs rapidly;
- quality and responsiveness of services and support organizations and level of customer satisfaction;
- brand awareness and reputation;
- size of customer base and level of user adoption; and
- ability to integrate with legacy and other enterprise infrastructures and third-party applications.

We believe that we compete favorably on the basis of these factors. Our ability to remain competitive will largely depend on our ongoing performance in the areas of public cloud, hybrid cloud, multi-cloud and private cloud as well as industry adoption of enterprise data cloud technologies.

Intellectual Property

Intellectual property is an important aspect of our business, and we actively seek protection for our intellectual property as appropriate. To establish and protect our proprietary rights, we rely upon a combination of patent, copyright, trade secret and trademark laws and contractual restrictions such as confidentiality agreements, licenses and intellectual property assignment agreements. We maintain a policy requiring our employees, contractors, consultants and other third parties to enter into confidentiality and proprietary rights agreements to control access to our proprietary information. These laws, procedures and restrictions provide only limited protection, and any of our intellectual property rights may be challenged, invalidated, circumvented, infringed or misappropriated. Furthermore, the laws of certain countries do not protect proprietary rights to the same extent as the laws of the United States, and we therefore may be unable to protect our proprietary technology in certain jurisdictions. Moreover, our platform incorporates software components licensed to the general public under open source software licenses such as the Apache 2.0 Software License. We obtain many components from software developed and released by contributors to independent open source components of our platform. Open source licenses grant licensees broad permissions to use, copy, modify and redistribute our platform. As a result, open source development and licensing practices can limit the value of our software copyright assets.

As of January 31, 2019, we had been granted 36 U.S. patents and had 18 U.S. patent applications pending. Our patents expire between 2020 and 2036. We also had 10 issued patents and four patent applications pending in foreign jurisdictions. We continually review our development efforts to assess the existence and patentability of new intellectual property. We pursue the registration of our domain names, trademarks and service marks in the United States and in certain locations outside the United States. To protect our brand, we file trademark registrations in some jurisdictions

Employees

As of January 31, 2019 , we had 2,947 full-time employees. Of these employees, 1,697 are in the United States and 1,250 are in our international locations. None of our employees is represented by a labor union or covered by collective bargaining agreements. We have not experienced any work stoppages. We consider our relationship with our employees to be good.

Cloudera Foundation

In January 2017, we established the Cloudera Foundation as an independent non-profit organization and issued 1,175,063 shares of our common stock to it. In conjunction with the initial public offering, we contributed one percent of the net proceeds of our initial public offering, or $2.4 million, to fund the Cloudera Foundation. The Cloudera Foundation was created to use the power of data to improve the lives of people around the world. We believe that the Cloudera Foundation fosters employee morale, strengthens our community presence and provides increased brand visibility.

Information about Geographic Revenue

Information about geographic revenue is described in Note 12, "Segment Information" in the notes to our consolidated financial statements.

Corporate Information

We were incorporated in the state of Delaware in June 2008. In January 2019, we completed a merger with Hortonworks, Inc, pursuant to which Hortonworks, Inc. became a subsidiary of Cloudera. Our principal executive offices are located at 395 Page Mill Road, Palo Alto, California 94306 and our telephone number is (650) 362-0488. Our website address is www.cloudera.com. The information on, or that can be accessed through, our website is not part of this Annual Report on Form 10-K. Our common stock is listed on the New York Stock Exchange under the symbol "CLDR."

Unless the context indicates otherwise, the terms "Cloudera," "the Company," "we," "us," and "our" refer to Cloudera, Inc., a Delaware corporation, together with its consolidated subsidiaries, unless otherwise noted.

Cloudera, the Cloudera logo, and other registered or common law trade names, trademarks, or service marks of Cloudera appearing in this Annual Report on Form 10-K are the property of Cloudera. This Annual Report on Form 10-K contains additional trade names, trademarks and service marks of other companies that are the property of their respective owners. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with us, or endorsement or sponsorship of us by these other companies. Solely for convenience, our trademarks and tradenames referred to in this Annual Report on Form 10-K appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor, to these trademarks and tradenames.

Available Information

We file annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to reports filed or furnished pursuant to Sections 13(a), 14 and 15(d) of the Exchange Act. The SEC maintains a website at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding us and other companies that file materials with the SEC electronically. Copies of our reports on Forms 10-K, Forms 10-Q, and Forms 8-K, may be obtained, free of charge, electronically through our corporate website at www.cloudera.com as soon as reasonably practicable after we file such material electronically with, or furnish to, the SEC.

ITEM 1A. RISK FACTORS

Our operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, growth prospects, and the trading price of our common stock.

Risks Related to our Business

We have a history of losses, and we may not become profitable in the future.

We have incurred net losses since our founding in 2008, including net losses of $192.6 million , $369.7 million and $158.4 million and for the years ended January 31, 2019 , 2018 , and 2017 respectively, and expect to continue to incur net losses for the foreseeable future. As a result, we had an accumulated deficit of $1.1 billion at January 31, 2019 . These losses and accumulated deficit reflect the substantial investments we made to acquire new customers, commercialize our platform, participate in the open source development community and develop our proprietary software components, and continue to develop our platform. In addition, as a result of our merger with Hortonworks, we have incurred substantial transaction costs and expect to incur further increases in our cost of revenue and operating expenses in connection with the integration of the Hortonworks' platform. Furthermore, to the extent we are successful in increasing our customer base, we may also incur increased losses because customer acquisition costs and upfront costs associated with new customers are higher in the first year than the aggregate revenue we recognize from those new customers in the first year.

We expect to continue to make significant future expenditures related to the development and expansion of our business, including:

- investments in our research and development team and in the development of new solutions and enhancements of our platform, including contributions to the open source data management ecosystem;
- investments in sales and marketing, including expanding our sales force, increasing our customer base, increasing market awareness of our platform and development of new technologies;
- other merger integration investments, such as ongoing engagement of integration consultants;
- expanding of our operations and infrastructure, including internationally;
- hiring additional employees; and
- incurring costs associated with general administration, including legal, accounting and other expenses related to being a public company.

As a result of these increased expenses, we will have to generate and sustain increased revenue to be profitable in future periods. Further, in future periods, our revenue growth rate could decline, and we may not be able to generate sufficient revenue to offset higher costs and achieve or sustain profitability. If we fail to achieve, sustain or increase profitability, our business and operating results could be adversely affected.

We have a limited operating history, which makes it difficult to predict our future results of operations.

We have a limited operating history, which limits our ability to forecast our future results of operations and subjects us to a number of uncertainties, including our ability to plan for and anticipate future growth. Our historical revenue growth should not be considered indicative of our future performance. Further, in future periods, our revenue growth could slow or our revenue could decline for a number of reasons, including slowing demand for our solutions, increasing competition, a decrease in the growth of our overall market, or our failure, for any reason, to continue to capitalize on growth opportunities and merger integration plans. We have also encountered and will encounter risks and uncertainties frequently experienced by growing companies in rapidly changing industries, such as determining appropriate investments of our limited resources, market reception of our platform and open source model, competition from other companies, attracting and retaining customers, hiring, integrating, training and retaining skilled personnel, developing new solutions and unforeseen expenses. If our assumptions regarding these risks and uncertainties, which we use to plan our business, are incorrect or change, or if we do not address these risks successfully, our operating and financial results could be adversely affected.

If the market for our data management, machine learning and analytics platform develops more slowly than we expect, our growth may slow or stall, and our operating results could be harmed.

The market for a data management, machine learning and analytics platform is relatively new, rapidly evolving and unproven. Our future success will depend in large part on our ability to penetrate the existing market for data management, machine learning and analytics platforms, as well as the continued growth and expansion of that market. It is difficult to predict customer adoption and renewals of our subscriptions, customer demand for our platform, the size, growth rate and expansion of this market, the entry of competitive products or the success of existing competitive products. Our ability to penetrate the existing market for data management, machine learning and analytics platforms and any expansion of that market depends on a number of factors, including the cost, performance and perceived value associated with our platform, as well as potential customers' willingness to adopt an alternative approach to data collection, storage and processing. If we or other data management providers experience security incidents, loss of customer data, disruptions in delivery or other problems, the market for data management, machine learning and analytics platforms as a whole, including our solutions, may be negatively affected. Furthermore, many potential customers have made significant investments in legacy data collection, storage and processing software and may be unwilling to invest in new solutions. If data management, machine learning and analytics platforms do not achieve widespread adoption, or there is a reduction in demand caused by a lack of customer acceptance, technological challenges, weakening economic conditions, security or privacy concerns, competing technologies and products, decreases in corporate spending or otherwise, it could result in decreased revenue and our business could be adversely affected.

We face intense competition and could lose market share to our competitors, which could adversely affect our business, financial condition and results of operations.

The market for data management, machine learning and analytics platforms is intensely competitive and characterized by rapid changes in technology, customer requirements, industry standards and frequent new product introductions and improvements. We anticipate continued challenges from current competitors, which in many cases are more established and enjoy greater resources than us, as well as by new entrants into the industry. If we are unable to anticipate or effectively react to these competitive challenges, our competitive position could weaken, and we could experience a decline in our growth rate or revenue that could adversely affect our business and results of operations.

Our main sources of current and potential competition fall into five categories:

- public cloud providers who include proprietary data management, machine learning and analytics offerings, such as Amazon Web Services, Google Cloud Platform and Microsoft Azure;
- legacy data management product providers such as HP, IBM, Oracle and Teradata;
- strategic and technology partners who may also offer our competitors' technology or otherwise partner with them, including our strategic partners who provide Partner Solutions (see "Business—Partners and Strategic Alliances") as they may offer a substantially similar solution based on a competitor's technology
- cloud-only data management companies and open source companies; and
- internal IT organizations that provide open source self-support for their enterprises.

Many of our existing competitors have, and some of our potential competitors could have, substantial competitive advantages such as:

- greater name recognition, longer operating histories and larger customer bases;
- larger sales and marketing budgets and resources and the capacity to leverage their sales efforts and marketing expenditures across a broader portfolio of products;

- broader, deeper or otherwise more established relationships with technology, channel and distribution partners and customers;
- wider geographic presence or greater access to larger customer bases;
- greater focus in specific geographies;
- greater ease of use for cloud-only deployments;
- lower labor and research and development costs;
- larger and more mature intellectual property portfolios; and
- substantially greater financial, technical and other resources to provide support, to make acquisitions and to develop and introduce new products.

In addition, some of our larger competitors have substantially broader and more diverse product and service offerings and may be able to leverage their relationships with distribution partners and customers based on other products or incorporate functionality into existing products to gain business in a manner that discourages users from purchasing our platform, including by selling at zero or negative margins, product bundling or offering closed technology platforms such as IBM Watson. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier regardless of platform performance or features. As a result, even if the features of our platform are superior, customers may not purchase our solutions. These larger competitors often have broader product lines and market focus or greater resources and may therefore not be as susceptible to economic downturns or other significant reductions in capital spending by customers. If we are unable to sufficiently differentiate our solutions from the integrated or bundled products of our competitors, such as by offering enhanced functionality, performance or value, we may see a decrease in demand for those solutions, which could adversely affect our business, operating results and financial condition.

In addition, new innovative start-up companies, including emerging cloud-only data management companies, and larger companies that are making significant investments in research and development, may introduce products that have greater performance or functionality, are easier to implement or use, or incorporate technological advances that we have not yet developed or implemented or may invent similar or superior products and technologies that compete with our platform. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their resources.

Some of our competitors have made or could make acquisitions of businesses or enter into partnerships that allow them to offer more competitive and comprehensive solutions. As a result of such arrangements, our current or potential competitors may be able to accelerate the adoption of new technologies that better address customer needs, devote greater resources to bring these products and services to market, initiate or withstand substantial price competition, or develop and expand their product and service offerings more quickly than we do. These competitive pressures in our market or our failure to compete effectively may result in fewer orders, reduced revenue and gross margins and loss of market share. In addition, it is possible that industry consolidation may impact customers' perceptions of the viability of smaller or even mid-size software firms and consequently customers' willingness to purchase from such firms.

We may not compete successfully against our current or potential competitors. If we are unable to compete successfully, or if competing successfully requires us to take costly actions in response to the actions of our competitors, our business, financial condition and results of operations could be adversely affected. In addition, companies competing with us may have an entirely different pricing or distribution model. Increased competition could result in fewer customer orders, price reductions, reduced revenue and gross margins and loss of market share. Further, we may be required to make substantial additional investments in research, development, marketing and sales in order to respond to such competitive threats, and we cannot assure you that we will be able to compete successfully in the future.

We may acquire or invest in companies and technologies, which may divert our management's attention, and result in additional dilution to our stockholders. We may be unable to integrate acquired businesses and technologies successfully or achieve the expected benefits of such acquisitions or investments, including our recent merger with Hortonworks.

As part of our business strategy, we have acquired companies in the past and may evaluate and consider potential strategic transactions, including acquisitions of, or investments in, businesses, technologies, services, products and other assets in the future. For example, on January 3, 2019, we completed our merger with Hortonworks. We also may enter into relationships with other businesses to expand our solutions or our ability to provide services. An acquisition, investment or business relationship may result in unforeseen operating difficulties and expenditures. In particular, we may encounter difficulties assimilating or integrating the businesses, technologies, products, personnel or operations of the acquired companies, particularly if the key personnel of the acquired company choose not to work for us, their technology is not easily adapted to work with ours, or we have difficulty retaining the customers of any acquired business due to changes in ownership, management or otherwise. Negotiating these transactions can be time-consuming, difficult and expensive, and our ability to close these transactions may often be subject to conditions or approvals that are beyond our control. Consequently, these transactions, even if undertaken and announced, may not close.

Even if we are able to complete acquisitions or enter into alliances and joint ventures that we believe will be successful, such transactions are inherently risky. Acquisitions, including the recently completed merger with Hortonworks, involve many risks, including the following:

- an acquisition may negatively impact our results of operations because it:
  - may require us to incur charges, including integration and restructuring costs, both one-time and ongoing, as well as substantial debt or liabilities, including unanticipated and unknown liabilities,
  - may cause adverse tax consequences, substantial depreciation or deferred compensation charges,
  - in the future may require the amortization, goodwill and other intangible assets, or
  - may not generate sufficient financial returns for us to offset our acquisition costs;
- we may encounter difficulties or unforeseen expenditures in integrating the business, technologies, products, personnel or operations of any company that we acquire, particularly if key personnel of the acquired company decide not to work for us;
- an acquisition and integration process is complex, expensive and time consuming, and may disrupt our ongoing business, divert resources, increase our expenses and distract our management;
- an acquisition may result in a delay or reduction of customer purchases for both us and the company acquired due to customer uncertainty about continuity and effectiveness of service from either company;
- an acquisition may result in increased regulatory and compliance requirements;
- an acquisition may result in increased uncertainty if we enter into businesses, markets or business models in which we have limited or no prior experience and in which competitors have stronger market positions;
- we may encounter difficulties in maintaining the key business relationships and the reputations of the businesses we acquire, and we may be dependent on unfamiliar affiliates and partners of the companies we acquire;
- we may fail to maintain sufficient controls, policies and procedures, including integrating any acquired business into our control environment;
- we may fail to achieve anticipated synergies, including with respect to complementary software or services;

- we may obtain unanticipated or unknown liabilities, including intellectual property or other claims, or become exposed to unanticipated risks in connection with any acquisition; and
- an acquisition may involve the entry into geographic or business markets in which we have little or no prior experience.

If we are unable to address these difficulties and challenges or other problems encountered in connection with any future acquisition or investment, we might not realize the anticipated benefits of that acquisition or investment, we might incur unanticipated liabilities or we might otherwise suffer harm to our business generally.

To the extent we pay the consideration for any future acquisitions or investments in cash, the payment would reduce the amount of cash available to us for other purposes. The merger with Hortonworks resulted in, and future acquisitions or investments could also result in, dilutive issuances of our equity securities or the incurrence of debt, contingent liabilities, amortization expenses, or impairment charges against goodwill on our balance sheet, any of which could harm our financial condition and negatively impact our stockholders.

The integration of our and Hortonworks' platforms, each of which has operated independently prior to and may continue to operate independently for some time after the closing of the merger, presents significant challenges and we may not be successful at integrating the independent platforms or realizing the anticipated synergies and other expected benefits of the merger.

We completed our merger with Hortonworks in January 2019. Our efforts following the merger involve the integration of our and Hortonworks' platforms and the development of new software offerings. While we expect to benefit from cost synergies due to increased operating efficiencies and leveraging economies of scale, those cost synergies may not be realized, or may not be realized to the extent forecasted. We will be required to devote significant management attention and resources to the integration of the platforms. The potential difficulties we may encounter in the integration process include, but are not limited to, the following:

- the inability to successfully consolidate our incumbent operations with Hortonworks' in a manner that permits us to achieve the cost savings anticipated to result from our merger, which would result in the anticipated benefits of the merger not being realized in the time-frame currently anticipated or at all;
- the complexities associated with integrating personnel from our merged companies who are familiar with each of the respective platforms, including combining independent employee cultures which could impact morale;
- the failure to retain, or the extra costs associated with retaining, key employees of either of the two companies;
- the complexities of combining two companies in general with different histories, cultures and portfolio assets;
- the complexities of combining two independently operated platforms and releasing an integrated platform (and possible delays associated therewith);
- difficulties associated with developing and adopting a combined company product roadmap;
- possible negative reaction to the discontinuation of support for projects or products historically offered by either Cloudera or Hortonworks;
- the difficulty of cross-selling to each of the two companies' customer bases;
- hesitation or unwillingness by existing or new customers to purchase or expand consumption, in anticipation of an integrated platform offering in the future, or to purchase subscriptions based on our integrated platform following launch;
- the uncertainty of the integrated company to our employees, customers and suppliers;

- unanticipated impediments in integrating facilities, departments, systems (including accounting systems and sales operations systems), technologies, books and records, procedures and policies, and in maintaining uniform standards and controls, including internal control over financial reporting; and
- performance shortfalls as a result of the diversion of management's attention caused by completing the merger and integrating the companies' operations and platforms.

In addition, events outside our control, including changes in regulations and laws as well as economic trends, could adversely affect our ability to realize the expected benefits from this merger. For all these reasons, it is possible that the integration process could result in the distraction of our management, the disruption of our ongoing business or inconsistencies in its operations, services, standards, controls, policies and procedures, any of which could adversely affect our ability to successfully integrate the independently operated platforms, to achieve the anticipated benefits of the merger, or could otherwise materially and adversely affect its business and financial results.

Because of the characteristics of open source software, there may be fewer technology barriers to entry in the open source market by new competitors and it may be relatively easy for new and existing competitors with greater resources than we have to compete with us.

One of the characteristics of open source software is that the governing license terms generally allow liberal modifications of the code and distribution thereof to a wide group of companies and/or individuals. As a result, others could easily develop new software products or services based upon those open source programs that compete with existing open source software that we support and incorporate into our platform. Such competition with use of the open source projects that we utilize can materialize without the same degree of overhead and lead time required by us, particularly if the customers do not value the differentiation of our proprietary components. It is possible for new and existing competitors, including those with greater resources than ours, to develop their own open source software or hybrid proprietary and open source software offerings, potentially reducing the demand for, and putting price pressure on, our platform. In addition, some competitors make open source software available for free download or use or may position competing open source software as a loss leader. We cannot guarantee that we will be able to compete successfully against current and future competitors or that competitive pressure and/or the availability of open source software will not result in price reductions, reduced revenue and gross margins and loss of market share, any one of which could seriously harm our business.

If our customers do not renew or expand their subscriptions, or if they renew on less favorable terms, our future revenue and operating results will be harmed.

Our future success depends, in part, on our ability to sell renewals of subscriptions and expand the deployment of our platform with existing customers. While we generally offer subscriptions of up to three years in length, our customers often purchase one-year subscriptions which generally do not provide for automatic renewal or a right to terminate the subscription early. Our customers may not renew or expand the use of their subscriptions after the expiration of their current subscription agreements. In addition, our customers may opt for a lower-priced edition of our platform or decrease their usage of our platform. Our existing customers generally have no contractual obligation to expand or renew their subscriptions after the expiration of the committed subscription period and given our limited operating history, we may not be able to accurately predict customer renewal rates. Our customers' renewal and/or expansion pricing rates may decline or fluctuate as a result of factors, including, but not limited to, their satisfaction with our platform and our customer support, including the integrated platform we are developing combining Cloudera and Hortonworks technologies, the frequency and severity of software and implementation errors, our platform's reliability, the pricing of our subscriptions and services or of competing solutions or services, the effects of global economic conditions and their ability to continue their operations and spending levels. If our customers renew their subscriptions, they may renew for shorter contract lengths, less usage or on other terms that are less economically beneficial to us. We have limited historical data with respect to rates of customer subscription renewals, so we may not accurately predict future renewal trends. We cannot assure you that our customers will renew or expand their subscriptions, and if our customers do not renew their agreements or renew on less favorable terms or for less usage, our revenue may grow more slowly than expected or decline and our business could suffer.

Achieving renewal or expansion of subscriptions may require us to increasingly engage in sophisticated and costly sales efforts that may not result in additional sales. In addition, the rate at which our customers expand the deployment of our platform depends on a number of factors, including general economic conditions, the functioning of our solutions, the ability of our field organization, together with our partner ecosystem, to assist our customers in identifying new use cases, modernizing their data architectures, and achieving success with data-driven initiatives and our customers' satisfaction with our customer support. If our efforts to expand penetration within our customers are not successful, our business may suffer.

Our sales cycles can be long, unpredictable and vary seasonally, particularly with respect to large subscriptions, and our sales efforts require considerable time and expense.

Our results of operations may fluctuate, in part, because of the resource-intensive nature of our sales efforts, the length and variability of the sales cycle for our platform and the difficulty in making short-term adjustments to our operating expenses. The timing of our sales is difficult to predict. The length of our sales cycle, from initial evaluation to payment for our subscriptions is generally four to nine months, but can vary substantially from customer to customer. Our sales cycle can extend to more than 18 months for some customers. Our sales efforts involve educating our customers about the use, technical capabilities and benefits of our platform, solutions and open source model. Customers often undertake a prolonged evaluation process, which frequently involves not only our platform but also those of other companies. Some of our customers initially deploy our platform on a limited basis, with no guarantee that these customers will deploy our platform widely enough across their organization to justify our substantial pre-sales investment. As a result, it is difficult to predict exactly when, or even if, we will make a sale to a potential customer or if we can increase sales to our existing customers. Large individual sales have, in some cases, occurred in quarters subsequent to those we anticipated, or have not occurred at all. If our sales cycle lengthens or our substantial upfront investments do not result in sufficient revenue to justify our investments, our operating results could be adversely affected.

We have seasonal and end-of-quarter concentration of our sales, which impacts our ability to plan and manage cash flows and margins. Our sales vary by season, with the fourth quarter typically being our largest. In addition, within each quarter, most sales occur in the last month of that quarter. Therefore, it is difficult to determine whether we are achieving our quarterly expectations until near the end of the quarter, with seasonality magnifying the difficulty for determining whether we will achieve annual expectations. Most of our expenses are relatively fixed or require time to adjust. Therefore, if expectations for our business are not accurate, we may not be able to adjust our cost structure on a timely basis and margins and cash flows may differ from expectations.

We do not have an adequate history with our subscription or pricing models to accurately predict the long-term rate of customer adoption or renewal, or the impact these will have on our revenue or operating results.

We have limited experience with respect to determining the optimal prices and pricing models for our solutions, especially as we integrate with Hortonworks and develop new offerings such as the Cloudera Data Platform. As the markets for our solutions mature, or as new competitors introduce new products or services that compete with ours, we may be unable to attract new customers at the same price or based on the same pricing model as we have used historically. Moreover, large customers, which are the focus of our sales efforts, may demand greater price concessions. Additionally, the renewal rate of our large customers may have more significant impact period to period on our revenue and operating results. As a result, in the future we may be required to reduce our prices, which could adversely affect our revenue, gross margin, profitability, financial position and cash flow. In addition, as an increasing amount of our business may move to our cloud-based solutions for transient workloads and the use of our consumption-based pricing model may represent a greater share of our revenue, our revenue may be less predictable or more variable than our historical revenue from a time period-based subscription pricing model. Moreover, a consumption-based subscription pricing model may ultimately result in lower total cost to our customers over time, or may cause our customers to limit usage in order to stay within the limits of their existing subscriptions, reducing overall revenue or making it more difficult for us to compete in our markets.

Our results may fluctuate significantly from period to period, which could adversely impact the value of our common stock.

Our results of operations, including our revenue, net revenue expansion rate, gross margin, profitability and cash flows, may vary significantly in the future, and period-to-period comparisons of our operating results may not be meaningful. Accordingly, our results for any particular period should not be relied upon as an indication of future performance. Our financial results may fluctuate from period to period as a result of a variety of factors, many of which are outside of our control. Fluctuation in periodic results may adversely impact the value of our common stock. Factors that may cause fluctuations in our periodic financial results include, without limitation, those listed elsewhere in this “Risk Factors” section and those listed below:

- the budgeting cycles and purchasing practices of our customers, including their tendency to purchase in the fourth quarter of our fiscal year, near the end of each quarter, and the timing of subsequent contract renewals;
- the achievement of milestones in connection with delivery of services, impacting the timing of services revenue recognition;
- subscriptions from large enterprises;
- price competition;
- our ability to attract and retain new customers;
- our ability to expand penetration within our existing customer base;
- the timing and success of new solutions by us and our competitors;
- the timing and success of our product releases following our merger with Hortonworks;
- changes in customer requirements or market needs and our ability to make corresponding changes to our business;
- changes in the competitive landscape, including consolidation among our competitors or customers;
- general economic conditions, both domestically and in our foreign markets;
- the timing and amount of certain payments and expenses, such as research and development expenses, sales commissions and stock-based compensation;
- our inability to adjust certain fixed costs and expenses, particularly in research and development, for changes in demand;
- increases or decreases in our revenue and expenses caused by fluctuations in foreign currency exchange rates, as an increasing portion of our revenue is collected, and expenses are incurred and paid in currencies other than the U.S. dollar;
- the cost of and potential outcomes of existing and future claims or litigation, which could have a material adverse effect on our business;
- future accounting pronouncements and changes in our accounting policies; and
- changes in tax laws or tax regulations.

Any one of the factors above or the cumulative effect of some of the factors above may result in significant fluctuations in our operating results. This variability and unpredictability could result in our failure to meet our revenue or other operating result expectations or those of investors for a particular period. The failure to meet or exceed such expectations could have a material adverse effect on our business, results of operations and financial condition that could ultimately adversely affect our stock price.

Because we derive substantially all of our revenue from a single software platform, failure of this platform to satisfy customer demands or to achieve increased market acceptance could adversely affect our business, results of operations, financial condition and growth prospects.

We derive and expect to continue to derive substantially all of our revenue from our data management, machine learning and analytics platform. As such, the market acceptance of our platform is critical to our continued success. Demand for our platform is affected by a number of factors beyond our control, including continued market acceptance, the timing of development and release of new products by our competitors, technological change, any developments or disagreements with the open source community and growth or contraction in our market. We expect the growth and proliferation of data to lead to an increase in the data analysis demands of our customers, and our platform may not be able to scale and perform to meet those demands or may not be chosen by users for those needs. If we are unable to continue to meet customer demands or to achieve more widespread market acceptance of our platform and solutions, our business operations, financial results and growth prospects will be materially and adversely affected.

We have been, and may in the future be, subject to intellectual property rights claims by third parties, which are extremely costly to defend, could require us to pay significant damages and could limit our ability to use certain technologies.

Companies in the software and technology industries, including some of our current and potential competitors, own large numbers of patents, copyrights, trademarks and trade secrets and frequently enter into litigation based on allegations of infringement or other violations of intellectual property rights. In addition, many of these companies have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. The litigation may involve patent holding companies or other adverse patent owners that have no relevant product revenue and against which our patents may therefore provide little or no deterrence. From time-to-time, third parties, including certain other companies, have asserted and may assert patent, copyright, trademark or other intellectual property rights against us, our partners or our customers. We or our customers have received, and may in the future receive, notices that claim we have misappropriated, misused or infringed other parties' intellectual property rights, and, to the extent we gain greater market visibility, we face a higher risk of being the subject of intellectual property infringement claims, which is not uncommon with respect to the enterprise software market.

There may be third-party intellectual property rights, including issued or pending patents, that cover significant aspects of our technologies, or the technologies in our platform or business methods. We may be exposed to increased risk of being the subject of intellectual property infringement claims as a result of acquisitions, such as our merger with Hortonworks, and our incorporation of open source software into our platform, as, among other things, we have a lower level of visibility into the development process with respect to such technology or the care taken to safeguard against infringement risks. Any intellectual property claims, with or without merit, could be very time-consuming, could be expensive to settle or litigate and could divert our management's attention and other resources. These claims could also subject us to significant liability for damages, potentially including treble damages if we are found to have willfully infringed patents or copyrights. These claims could also result in our having to stop using, distributing or supporting technology found to be in violation of a third-party's rights. We might be required to seek a license for the intellectual property, which may not be available on reasonable terms or at all. Even if a license were available, we could be required to pay significant royalties, which would increase our operating expenses. As a result, we may be required to develop alternative non-infringing technology, which could require significant effort and expense. If we cannot license or develop technology for any infringing aspect of our business, we could be forced to limit or stop sales of our offerings and may be unable to compete effectively. Any of these results could adversely affect our business operations and financial results.

Third parties may also assert such claims against our customers or partners whom we typically indemnify against claims that our solutions infringe, misappropriate or otherwise violate the intellectual property rights of third parties, including in the third-party open source components included in our platform, as well as our own open source and proprietary components. As the numbers of products and competitors in our market increase and overlaps occur, claims of infringement, misappropriation and other violations of intellectual property rights may increase.

Also, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited or have divulged proprietary or other confidential information.

Any failure to protect our intellectual property rights could impair our ability to protect our proprietary technology and our brand.

Our success depends, in part, on our ability to protect proprietary methods and technologies that we develop under patent and other intellectual property laws of the United States and other jurisdictions outside of the United States so that we can prevent others from using our inventions and proprietary information. If we fail to protect our intellectual property rights adequately, our competitors may gain access to our technology, and our business may be harmed. In addition, defending our intellectual property rights may entail significant expense. Any of our patents, trademarks or other intellectual property rights may be challenged by others or invalidated through administrative process or litigation. While we have patents and patent applications pending, we may be unable to obtain patent protection for the technology covered in our patent applications or the patent protection may not be obtained quickly enough to meet our business needs. In addition, our existing patents and any patents issued in the future may not provide us with competitive advantages, or may be successfully challenged by third parties.

Moreover, despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our platform or offerings or obtain and use information that we regard as proprietary. We generally enter into confidentiality or license agreements with our employees, consultants, vendors and customers, and generally limit access to and distribution of our proprietary information. However, we cannot be certain that we have entered into such agreements with all parties who may have or have had access to our confidential information or that the agreements we have entered into will not be breached. We cannot guarantee that any of the measures we have taken will prevent misappropriation of our technology. Because we may be an attractive target for cybersecurity attacks, we may have a greater risk of unauthorized access to, and misappropriation of, our proprietary information.

Furthermore, legal standards relating to the validity, enforceability and scope of protection of intellectual property rights are uncertain, and we also may face proposals to change the scope of protection for some intellectual property right. Effective patent, trademark, copyright and trade secret protection may not be available to us in every country in which our products or services are available. The laws of some countries may not be as protective of intellectual property rights as those in the United States, and mechanisms for enforcement of intellectual property rights may be inadequate. Also, our involvement in standard setting activity or the need to obtain licenses from others may require us to license our intellectual property. Accordingly, despite our efforts, we may be unable to prevent third parties from using our intellectual property.

We may be required to spend significant resources to monitor and protect our intellectual property rights and we may conclude that in at least some instances the benefits of protecting our intellectual property rights may be outweighed by the expense. We may initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Any litigation, whether or not it is resolved in our favor, could result in significant expense to us and divert the efforts of our technical and management personnel.

We do not control and may be unable to predict the future course of open source technology development, including the ongoing development of open source components used in our platform, which could reduce the market appeal of our platform and damage our reputation.

We do not control many aspects of the development of the open source technology in our platform. Different groups of open source software programmers collaborate with one another to develop the software projects in our platform. Given the disparate inputs from various developers, we cannot control entirely how an open source project develops and matures. Also, different open source projects may overlap or compete with the ones that we incorporate into our platform. The technology developed by one group for one project may become more widely used than that developed by others. If we acquire or adopt a new technology and incorporate it into our platform but a competing technology becomes more widely used or accepted, the market appeal of our platform may be reduced and that could harm our reputation, diminish our brand and result in decreased revenue.

If open source software programmers, many of whom we do not employ, or our own internal programmers do not continue to develop and enhance open source technologies, we may be unable to develop new technologies, adequately enhance our existing technologies or meet customer requirements for innovation, quality and price.

We rely to a significant degree on a number of open source software programmers, or committers and contributors, to develop and enhance components of our platform. Additionally, members of the corresponding open source project management committees, many of whom are not employed by us, are primarily responsible for the oversight and evolution of the codebases of important components of the open source data management ecosystem. If the open source data management committers and contributors fail to adequately further develop and enhance open source technologies, or if the committees fail to oversee and guide the evolution of open source data management technologies in the manner that we believe is appropriate to maximize the market potential of our solutions, then we would have to rely on other parties, or we would need to expend additional resources, to develop and enhance our platform. We also must devote adequate resources to our own internal programmers to support their continued development and enhancement of open source technologies, and if we do not do so, we may have to turn to third parties or experience delays in developing or enhancing open source technologies. We cannot predict whether further developments and enhancements to these technologies would be available from reliable alternative sources. In either event, our development expenses could be increased and our technology release and upgrade schedules could be delayed. Delays in developing, completing or delivering new or enhanced components to our platform could cause our offerings to be less competitive, impair customer acceptance of our solutions and result in delayed or reduced revenue for our solutions.

Our software development and licensing model could be negatively impacted if the Apache License, Version 2.0 is not enforceable or is modified so as to become incompatible with other open source licenses.

Important components of our platform have been provided under the Apache License 2.0. This license states that any work of authorship licensed under it, and any derivative work thereof, may be reproduced and distributed provided that certain conditions are met. It is possible that a court would hold this license to be unenforceable or that someone could assert a claim for proprietary rights in a program developed and distributed under it. Any ruling by a court that this license is not enforceable, or that open source components of our platform may not be reproduced or distributed, may negatively impact our distribution or development of all or a portion of our solutions. In addition, at some time in the future it is possible that important components of the open source projects in our platform may be distributed under a different license or the Apache License 2.0, which governs Hadoop, Spark and other current elements of our platform, may be modified, which could, among other consequences, negatively impact our continuing development or distribution of the software code subject to the new or modified license.

Further, full utilization of our platform may depend on software, applications, hardware and services from various third parties, and these items may not be compatible with our platform and its development or available to us or our customers on commercially reasonable terms, or at all, which could harm our business.

Our use of open source software in our solutions could negatively affect our ability to sell our platform and subject us to possible litigation.

Our solutions include software covered by open source licenses, which may include, by way of example, GNU General Public License and the Apache License. We do not own all of the open source technology in our platform and the ownership of the open source technology in our platform may not be easily determinable by us. Rather, we rely on the Apache Software Foundation (ASF) as well as certain other third-party open source contributors to ensure that the open source contributions to our platform are properly owned by the committers and contributors who contribute the open source technology and that such contributions do not infringe on other parties' intellectual property rights. Moreover, the terms of certain of the open source licenses have not been interpreted by United States or other courts, and there is a risk that such licenses could be construed in a manner that is incompatible with our current business model, imposing unanticipated conditions or restrictions on our ability to market our solutions. We, our customers and the ASF may have received, or may in the future receive, notices that claim we have misappropriated, misused or infringed other parties' intellectual property rights, and, to the extent products based on the open source data management ecosystem gain greater market visibility, we, our customers, and the ASF, face a higher risk of being the subject of intellectual property infringement claims. In addition, we or our customers could be subject to lawsuits by parties claiming ownership of (or that different license terms apply to) what we believe to be open source software, or seeking to enforce the terms of an open source license. By the terms of certain open source licenses, we could be required to release the source code of our proprietary software, and to make our proprietary software available under open source licenses, if we combine our proprietary software with open source software in a certain manner. In the event that portions of our proprietary software are determined to be impacted by an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies and services, each of which could reduce or eliminate the value of our technologies and cause us to have to significantly alter our current business model. These claims could also result in litigation (including litigation against our customers or partners, which could result in us being obligated to indemnify our customers or partners against such litigation), require us to purchase a costly license or require us to devote additional research and development resources to change our solutions, any of which could have a negative effect on our business and operating results. In addition, if the license terms for the open source code change, we may be forced to re-engineer our solutions or incur additional costs to find alternative tools. Further, changes in our software licensing model may impact future revenue growth rates.

In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties, support, indemnity or assurance of title or controls on origin of the software. Further, some open source projects have known vulnerabilities and architectural instabilities and are provided on an “as-is” basis. Many of these risks associated with usage of open source software, such as the lack of warranties or assurances of title, cannot be eliminated, and could, if not properly addressed, negatively affect the performance of our platform and our business. In addition, we are often required to absorb these risks in our customer and partner relationships by agreeing to provide warranties, support and indemnification with respect to such third-party open source software. While we have established processes intended to alleviate these risks, we cannot assure that these measures will reduce these risks.

Because our business relies on the Apache Software Foundation, our business could be harmed by the decisions made by the ASF or claims or disputes directed at or reputational harm otherwise suffered by the ASF.

Our business relies on the ASF, a non-profit corporation that supports Apache open source software projects. We do not control nor can we predict the decisions the ASF will make with respect to the further development and enhancement of open source technologies which may impact our business. For example, the reduction or elimination of support of Hadoop, Spark or other technologies by the ASF, the migration of Hadoop, Spark and other open source data management technology to an organization other than the ASF, or any other actions taken by the ASF or the Hadoop project may impact our business model. Moreover, if the ASF is subject to claims, disputes or otherwise suffers reputational harm, our business, results of operations, financial condition and growth prospects could be harmed if customers perceive our solutions to be risky or inferior to data management solutions which do not rely on the ASF for continued development and enhancement of open source technologies.

Security and privacy breaches may hurt our business.

Any security breach, including those resulting from a cybersecurity attack, or any unauthorized access, unauthorized usage, virus or similar breach or disruption could result in the loss of confidential information, damage to our reputation, early termination of our contracts, litigation, regulatory investigations or other liabilities. If our security measures or the security measures we have provided to customers are breached as a result of third-party action, employee error, malfeasance or otherwise and, as a result, someone obtains unauthorized access to our customers’ confidential information, our reputation may be damaged, our business may suffer and we could incur significant liability.

Techniques used to obtain unauthorized access or to sabotage systems change frequently and generally are not recognized until launched against a target. As a result, we may be unable to anticipate these techniques or to implement adequate preventative measures. If an actual or perceived security breach occurs, the market perception of our security measures could be harmed and we could lose sales and customers.

In addition, many of our customers use our platform to store and process vast quantities of private and otherwise sensitive data that are critical to their businesses. They may have a greater sensitivity to security defects in our products than to defects in other, less critical, software products. An actual or perceived security breach or theft of the business-critical data of one of our customers, regardless of whether the breach is attributable to the failure of our products or services, could adversely affect the market's perception of our security products. Moreover, if a high-profile security breach occurs with respect to another data management, machine learning and analytics platform provider, our customers and potential customers may lose trust in the security of data management, machine learning and analytics platforms generally, which could adversely impact our ability to retain existing customers or attract new ones.

Real or perceived errors, failures, bugs or disruptions in our platform and solutions could adversely affect our reputation and business could be harmed.

Our platform and solutions are very complex and have contained and may contain undetected defects or errors, especially when solutions are first introduced or enhanced, or as we combine our previously separate (and separately developed) Cloudera and Hortonworks technologies. In addition, our platform employs open source software and to the extent that our solutions depend upon the successful operation of open source software in conjunction with our solutions, any undetected errors or defects in this open source software could prevent the deployment or impair the functionality of our solutions, delay new solutions' introductions, result in a failure of our solutions, result in liability to our customers, and injure our reputation.

If our platform is not implemented or used correctly or as intended, inadequate performance and disruption in service may result. Moreover, as we acquire companies, such as through our merger with Hortonworks, and integrate new open source data management projects, we may encounter difficulty in incorporating the newly-obtained technologies into our platform and maintaining the quality standards that are consistent with our reputation.

Since our customers use our platform and solutions for important aspects of their business, any errors, defects, disruptions in service or other performance problems could hurt our reputation and may damage our customers' businesses. Furthermore, defects in our platform and solutions may require us to implement design changes or software updates. Any defects or errors in our platform and solutions, or the perception of such defects or errors, could result in:

- expenditure of significant financial and product development resources in efforts to analyze, correct, eliminate or work around errors or defects;
- loss of existing or potential customers or channel partners;
- delayed or lost revenue;
- delay or failure to attain market acceptance;
- delay in the development or release of new solutions or services;
- negative publicity, which will harm our reputation;
- warranty claims against us, which could result in an increase in our provision for doubtful accounts;
- an increase in collection cycles for accounts receivable or the expense and risk of litigation; and
- harm to our results of operations.

Although we have contractual protections, such as warranty disclaimers and limitation of liability provisions, in our standard terms and conditions of sale, they may not fully or effectively protect us from claims by customers, partners or other third parties. Any insurance coverage we may have may not adequately cover all claims asserted against us, or cover only a portion of such claims. In addition, even claims that ultimately are unsuccessful could result in our expenditure of funds in litigation and divert management's time and other resources.

If we are unable to hire, retain, train and motivate qualified personnel and senior management, our business could be harmed.

Our future success depends, in part, on our ability to continue to attract, integrate and retain qualified and highly skilled personnel. In particular, we are substantially dependent on the continued service of our existing engineering personnel because of the complexity of our platform and are also highly dependent on the contributions of our executive team. The loss of any key personnel could make it more difficult to manage our operations and research and development activities, reduce our employee retention and revenue and impair our ability to compete. Although we have entered into employment offer letters with our key personnel, these agreements have no specific duration and constitute at-will employment. We do not maintain key person life insurance policies on any of our employees. The loss of one or more of our key employees could seriously harm our business. If we are unable to attract, integrate, or retain the qualified and highly skilled personnel required to fulfill our current or future needs, our business, financial condition and operating results could be harmed.

Competition for highly skilled personnel is often intense, especially in the San Francisco Bay Area where we have a substantial presence and need for highly skilled personnel. We may not be successful in attracting, integrating or retaining qualified personnel to fulfill our current or future needs. We have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining highly skilled employees with appropriate qualifications. In addition, job candidates and existing employees often consider the value of the equity awards they receive in connection with their employment. If the perceived value of our common stock declines, it may adversely affect our ability to hire or retain highly skilled employees. In addition, we may periodically change our equity compensation practices, which may include reducing the number of employees eligible for equity awards or reducing the size of equity awards granted per employee. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be harmed.

We have experienced rapid growth in recent periods and expect our growth to continue. If we fail to effectively manage our growth, our business and operating results could be adversely affected.

We have experienced and may continue to experience rapid growth in our headcount and operations, which has placed and will continue to place significant demands on our managerial, administrative, operational, financial and other resources. For example, our employee headcount after our merger with Hortonworks increased from 1,648 employees as of January 31, 2018 to 2,947 employees as of January 31, 2019 , of which 1,377 employees are from our merger with Hortonworks. This growth has placed, and any future growth will place, significant demands on our management and our operational and financial infrastructure. To manage this growth effectively, we must continue to improve our operational, financial and management systems and controls by, among other things:

- recruiting, training, integrating and retaining new employees, particularly for our sales and research and development teams;
- developing and improving our internal administrative infrastructure, particularly our financial, operational, compliance, recordkeeping, communications and other internal systems;
- managing our international operations and the risks associated therewith;
- integrating the employees, infrastructure and operations associated with the Hortonworks merger;
- maintaining high levels of satisfaction with our platform among our customers; and
- effectively managing expenses related to any future growth.

If we fail to manage our growth, or if we fail to implement improvements or maintain effective internal controls, our costs and expenses may increase more than we plan and our ability to expand our customer base, enhance our platform, develop new solutions, expand penetration within existing customers, respond to competitive pressures or otherwise execute our business plan, our business and operating results could be adversely affected.

Because we recognize a substantial portion of our subscription revenue from our platform over the subscription term, downturns or upturns in new sales and renewals will not be immediately reflected in our operating results.

We generally recognize subscription revenue ratably over the term of the subscription period. As a result, most of the revenue we report in each quarter is derived from the recognition of deferred revenue relating to subscriptions entered into during previous quarters. Consequently, a decline in new or renewed subscriptions, or a reduction in expansion rates, in any single quarter could have only a small impact on our revenue results during that quarter or subsequent period. Such a decline or deceleration, however, will negatively affect our revenue or revenue growth rates in future quarters. Accordingly, the effect of these changes or events may not be fully reflected in our results of operations until future periods. Given the ratable nature of our revenue recognition, our subscription model also makes it difficult for us to rapidly increase our revenue through additional sales in any period. We may be unable to adjust our cost structure to reflect the changes in revenue. In addition, a significant majority of our costs are expensed as incurred, while revenue is generally recognized over the life of the customer agreement. As a result, increased growth in the number of our customers could result in our recognition of more costs than revenue in the earlier periods of the terms of our agreements.

Our revenue growth depends in part on the success of our strategic relationships with third parties and their continued performance.

We seek to grow our partner ecosystem as a way to grow our business. To grow our business, we anticipate that we will continue to establish and maintain relationships with third parties, such as resellers, OEMs, system integrators, independent software and hardware vendors and platform and cloud service providers. In addition, we work closely with select vendors (Partner Solutions) to design solutions to specifically address the needs of certain industry verticals or use cases within those verticals. As our agreements with strategic partners terminate or expire, we may be unable to renew or replace these agreements on comparable terms, or at all. Moreover, we cannot guarantee that the companies with which we have strategic relationships will continue to devote the resources necessary to expand our reach, increase our distribution and increase the number of Partner Solutions and associated use cases. In addition, customer satisfaction with Partner Solutions may be less than anticipated, negatively impacting anticipated revenue growth and results of operations. Further, some of our strategic partners offer competing products and services or also work with our competitors. As a result of these factors, many of the companies with which we have strategic alliances may choose to pursue alternative technologies and develop alternative products and services in addition to or in lieu of our platform, either on their own or in collaboration with others, including our competitors. If we are unsuccessful in establishing or maintaining our relationships with third parties, our ability to compete in the marketplace or to grow our revenue could be impaired and our operating results may suffer. Even if we are successful in establishing and maintaining these relationships with third parties, we cannot assure you that these relationships will result in increased customer usage of our platform or increased revenue.

The sum of our revenue and changes in deferred revenue may not be an accurate indicator of business activity within a period.

Investors or analysts sometimes look to the sum of our revenue and changes in deferred revenue as an indicator of business activity in a period for businesses such as ours, sometimes referred to as “estimated billings.” However, these measures may significantly differ from underlying business activity for a number of reasons including:

- a relatively large number of transactions occur at the end of the quarter. Invoicing of those transactions may or may not occur before the end of the quarter based on a number of factors including receipt of information from the customer, volume of transactions and holidays. A shift of a few days has little economic impact on our business, but will shift deferred revenue from one period into the next;
- multi-year upfront billings that may distort trends;
- subscriptions that have deferred start dates;
- services that are invoiced upon delivery; and

- changes in revenue recognition resulting from ASC 606 adoption.

Accordingly, we do not believe that estimated billings is an accurate indicator of future revenue for any given period of time. However, many companies that provide subscriptions report changes in estimated billings as a key operating or financial metric, and it is possible that analysts or investors may view this metric as important. Thus, any changes in our estimated billings could adversely affect the market price of our common stock.

If our new components and enhancements to our platform do not achieve sufficient market acceptance, our financial results and competitive position will suffer.

We spend substantial amounts of time and money to research and develop new components and enhancements of our platforms to incorporate additional features, improve functionality or add other enhancements in order to meet our customers' rapidly evolving demands. When we develop a new component or enhancement to our platform, whether open source or proprietary, we typically incur expenses and expend resources upfront to develop, market and promote the new component. Therefore, when we develop and introduce new components or enhancements to our platform, they must achieve high levels of market acceptance in order to justify the amount of our investment in developing and bringing them to market.

Our new components or enhancements to our platform and changes to our platform could fail to attain sufficient market acceptance for many reasons, including:

- our failure to predict market demand accurately in terms of platform functionality, including curating new open source projects, and to supply a platform that meets this demand in a timely fashion;
- delays in releasing to the market our new components or enhancements to our platform to the market;
- defects, errors or failures;
- complexity in the implementation or utilization of the new components and enhancements;
- negative publicity about the platform's performance or effectiveness;
- introduction or anticipated introduction of competing platforms by our competitors;
- poor business conditions for our end-customers, causing them to delay IT purchases; and
- reluctance of customers to purchase platforms incorporating open source software or to purchase hybrid platforms.

If our new components or enhancements and changes do not achieve adequate acceptance in the market, our competitive position will be impaired, and our revenue will be diminished. The adverse effect on our financial results may be particularly acute because of the significant research, development, marketing, sales and other expenses we will have incurred in connection with the new solutions or enhancements.

If we do not effectively hire, retain, train and oversee our direct sales force, we may be unable to add new customers or increase sales to our existing customers, and our business may be adversely affected.

We continue to be substantially dependent on our direct sales force to obtain new customers and increase sales with existing customers. There is significant competition for sales personnel with the skills and technical knowledge that we require. Our ability to achieve significant revenue growth will depend, in large part, on our success in recruiting, training and retaining sufficient numbers of sales personnel to support our growth, particularly in international markets. In addition, partly due to our merger with Hortonworks, a large percentage of our sales force is new to our company. New hires require significant training and may take significant time before they achieve full productivity, especially as the legacy Hortonworks sales personnel and legacy Cloudera sales personnel learn to sell products previously offered by the other company, as well as new offerings developed by the combined company. Our recent hires and planned hires may not become productive as quickly as we expect, and we may be unable to hire or retain sufficient numbers of qualified individuals in the markets where we do business or plan to do business. In addition, growth of our direct sales force leads to increasing difficulty and complexity in its organization, management and leadership, at which we may prove unsuccessful. If we are unable to hire and train a sufficient number of effective sales personnel, we are ineffective at overseeing a growing sales force, or the sales personnel we hire are otherwise unsuccessful in obtaining new customers or increasing sales to our existing customer base, our business will be adversely affected.

As we expand internationally, our business will become more susceptible to risks associated with international operations.

We have expanded internationally and intend to continue such international expansion. For example, we sell the various editions of our platform through our direct sales force, which is comprised of inside sales and field sales personnel, and is located in a variety of geographic regions, including the United States, Europe and Asia, and have customers located in over 90 countries as of January 31, 2019 . We intend to continue to expand internationally.

Conducting international operations subjects us to risks that we have not generally faced in the United States. These risks include:

- challenges caused by distance, language, cultural and ethical differences and the competitive environment;
- heightened risks of unethical, unfair or corrupt business practices, actual or claimed, in certain geographies and of improper or fraudulent sales arrangements that may impact financial results and result in restatements of, and irregularities in, financial statements;
- foreign exchange restrictions and fluctuations in currency exchange rates, including that, because a majority of our international contracts are denominated in U.S. dollars, an increase in the strength of the U.S. dollar may make doing business with us less appealing to a non-U.S. dollar denominated customer;
- application of multiple and conflicting laws and regulations, including complications due to unexpected changes in foreign laws and regulatory requirements;
- risks associated with trade restrictions and foreign import requirements, including the importation, certification and localization of our solutions required in foreign countries, as well as changes in trade, tariffs, restrictions or requirements;
- new and different sources of competition;
- potentially different pricing environments, longer sales cycles and longer accounts receivable payment cycles and collections issues;
- management communication and integration problems resulting from cultural differences and geographic dispersion;
- potentially adverse tax consequences, including multiple and possibly overlapping tax structures, the complexities of foreign value-added tax systems, restrictions on the repatriation of earnings and changes in tax rates;
- greater difficulty in enforcing contracts, accounts receivable collection and longer collection periods;
- the uncertainty and limitation of protection for intellectual property rights in some countries;
- increased financial accounting and reporting burdens and complexities;
- lack of familiarity with local laws, customs and practices, and laws and business practices favoring local competitors or partners; and
- political, social and economic instability abroad, terrorist attacks and security concerns in general.

The occurrence of any one of these risks could harm our international business and, consequently, our results of operations. Additionally, operating in international markets requires significant management attention and financial resources. We cannot be certain that the investment and additional resources required to operate in other countries will produce desired levels of revenue or profitability.

Some of our business partners also have international operations and are subject to the risks described above. Even if we are able to successfully manage the risks of international operations, our business may be adversely affected if our business partners are not able to successfully manage these risks.

Our business in countries with a history of corruption and transactions with foreign governments increase the risks associated with our international activities.

As we operate and sell internationally, we are subject to the Foreign Corrupt Practices Act (FCPA), the United Kingdom Bribery Act of 2010, or the UK Bribery Act, and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties for the purpose of obtaining or retaining business. We have operations, deal with and make sales to governmental customers in countries known to experience corruption, particularly certain emerging countries in Africa, East Asia, Eastern Europe, South America and the Middle East. Our activities in these countries create the risk of unauthorized payments or offers of payments by one of our employees, consultants, sales agents or channel partners that could be in violation of various anti-corruption laws, even though these parties may not be under our control. While we have implemented policies and controls intended to prevent these practices by our employees, consultants, sales agents and channel partners, our existing safeguards and any future improvements may prove to be less than effective, and our employees, consultants, sales agents or channel partners may engage in conduct for which we might be held responsible. Violations of the FCPA, the UK Bribery Act and other laws may result in severe criminal or civil sanctions, including suspension or debarment from U.S. government contracting, and we may be subject to other liabilities, which could negatively affect our business, operating results and financial condition.

We are subject to governmental export control, sanctions and import laws and regulations that could subject us to liability or impair our ability to compete in international markets.

Because we incorporate encryption functionality into our platform (including any products comprising the platform), we are subject to certain U.S. export control laws that apply to encryption items. As such, our platform may be exported outside the United States through an export license exception; an export license is required to certain countries, end-users and end-uses. If we were to fail to comply with such U.S. export controls laws, U.S. customs regulations, U.S. economic sanctions, or other similar laws, we could be subject to both civil and criminal penalties, including substantial fines, possible incarceration for employees and managers for willful violations, and the possible loss of our export or import privileges. Obtaining the necessary export license for a particular sale or offering may not be possible and may be time-consuming and may result in the delay or loss of sales opportunities. Furthermore, U.S. export control laws and economic sanctions prohibit the export of products to certain U.S. embargoed or sanctioned countries, governments and persons, as well as for prohibited end-uses. Monitoring and ensuring compliance with these complex U.S. export control laws is particularly challenging because our platform and related services are widely distributed throughout the world and are available for download without registration. Even though we take precautions to ensure that we and our reseller partners comply with all relevant export control laws and regulations, any failure by us or our reseller partners to comply with such laws and regulations could have negative consequences for us, including reputational harm, government investigations and penalties.

In addition, various countries regulate the import of certain encryption technology, including through import permit and license requirements, and have enacted laws that could limit our ability to distribute our platform or could limit our end-customers' ability to implement our products in those countries. Changes in our products or changes in export and import regulations in such countries may create delays in the introduction of our platform into international markets, prevent our end-customers with international operations from deploying our products globally or, in some cases, prevent or delay the export or import of our platform to certain countries, governments or persons altogether. Any change in export or import laws or regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing export, import or sanctions laws or regulations, or change in the countries, governments, persons, or technologies targeted by such export, import or sanctions laws or regulations, could result in decreased use of our platform by, or in our decreased ability to export or sell our platform to, existing or potential end-customers with international operations. Any decreased use of our platform or limitation on our ability to export to or sell our platform in international markets could adversely affect our business, financial condition and operating results.

We are exposed to fluctuations in currency exchange rates, which could negatively affect our operating results.

Our sales contracts are primarily denominated in U.S. dollars, and therefore substantially all of our revenue is not subject to foreign currency risk. However, a strengthening of the U.S. dollar could increase the real cost of our platform to our customers outside of the United States, which could adversely affect our operating results. In addition, an increasing portion of our operating expenses is incurred and an increasing portion of our assets is held outside the United States. These operating expenses and assets are denominated in foreign currencies and are subject to fluctuations due to changes in foreign currency exchange rates. If we are not able to successfully hedge against the risks associated with currency fluctuations, our operating results could be adversely affected.

Our failure to raise additional capital could reduce our ability to compete and could harm our business.

We expect that our existing cash and cash equivalents will be sufficient to meet our anticipated cash needs for the foreseeable future. However, if we change our business strategy, we may need to raise additional funds in the future, and we may not be able to obtain additional debt or equity financing on favorable terms, if at all. If we raise additional equity financing, our stockholders may experience significant dilution of their ownership interests and the per share value of our common stock could decline. Furthermore, if we engage in debt financing, the holders of debt would have priority over the holders of common stock, and we may be required to accept terms that restrict our ability to incur additional indebtedness. We may also be required to take other actions that would otherwise be in the interests of the debt holders and force us to maintain specified liquidity or other ratios, any of which could harm our business, operating results and financial condition.

We are exposed to the credit risk of some of our resellers and customers and to credit exposure in weakened markets, which could result in material losses.

Most of our sales are on an unsecured basis. Although we seek to mitigate these risks, we cannot be certain that these efforts will be effective in reducing our credit risks, especially as we expand our business internationally. If we are unable to adequately control these risks, our business, results of operations and financial condition could be harmed.

Federal, state, foreign government and industry regulations, as well as self-regulation related to privacy and data security concerns, pose the threat of lawsuits and other liability.

We collect and utilize demographic and other information, including personally identifiable information, from and about our employees and our existing and potential customers and partners. Such information may be collected from our customers and partners when they visit our website or through their use of our products and interactions with our company and employees such as when signing up for certain services, registering for training seminars, participating in a survey, participating in polls or signing up to receive e-mail newsletters.

A wide variety of domestic and international laws and regulations (e.g., the General Data Protection Regulation) apply to the collection, use, retention, protection, disclosure, transfer and other processing of personal data. These data protection and privacy-related laws and regulations are evolving and may result in regulatory and public scrutiny and escalating levels of enforcement and sanctions. Our failure to comply with applicable laws and regulations, or to protect such data, could result in enforcement action against us, including fines, claims for damages by customers and other affected individuals, damage to our reputation and loss of goodwill (both in relation to existing customers and prospective customers), any of which could have a material adverse effect on our operations, financial performance and business. Evolving and changing definitions of personal data and personal information within the European Union, the United States, and elsewhere may limit or inhibit our ability to operate or expand our business. Even the perception of privacy concerns, whether or not valid, may harm our reputation, inhibit adoption of our products by current and future customers or adversely impact our ability to attract and retain workforce talent.

Loss, retention or misuse of certain information and alleged violations of laws and regulations relating to privacy and data security, and any relevant claims, may expose us to potential liability and may require us to expend significant resources on data security and in responding to and defending such allegations and claims. In addition, future laws, regulations, standards and other obligations, and changes in the interpretation of existing laws, regulations, standards and other obligations could impair our customers' ability to collect, use or disclose data relating to individuals, which could decrease demand for our platform, increase our costs and impair our ability to maintain and grow our customer base and increase our revenue.

A portion of our revenue is generated by sales to government entities and heavily regulated organizations, which are subject to a number of challenges and risks.

A portion of our sales are to governmental entities. Additionally, many of our current and prospective customers, such as those in the financial services and health care industries, are highly regulated and may be required to comply with more stringent regulations in connection with subscribing to and deploying our platform. Selling to these entities can be highly competitive, expensive and time consuming, often requiring significant upfront time and expense without any assurance that these efforts will result in a sale. Government and highly regulated entities often require contract terms that differ from our standard arrangements and impose compliance requirements that are complicated, require preferential pricing or "most favored nation" terms and conditions, or are otherwise time consuming and expensive to satisfy. If we undertake to meet special standards or requirements and do not meet them, we could be subject to increased liability from our customers or regulators. Even if we do meet them, the additional costs associated with providing our services to government and highly regulated customers could harm our margins. Moreover, changes in the underlying regulatory conditions that affect these types of customers could harm our ability to efficiently provide our services to them and to grow or maintain our customer base.

Additionally, government certification requirements for platforms like ours may change and in doing so restrict our ability to sell into certain government sectors until we have attained the revised certification. Government demand and payment for our solutions may be impacted by public sector budgetary cycles and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our solutions. Additionally, government entities routinely investigate and audit government contractors' administrative processes, and any unfavorable audit could result in the government entity refusing to continue buying our solutions, a reduction of revenue, fines or civil or criminal liability if the audit uncovers improper or illegal activities, which could adversely impact our operating results. Furthermore, engaging in sales activities to foreign governments introduces additional compliance risks specific to the FCPA, the UK Bribery Act and other similar statutory requirements prohibiting bribery and corruption in the jurisdictions in which we operate.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain executive management and qualified board members.

As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, the rules and regulations of the listing standards of the New York Stock Exchange and other applicable securities rules and regulations. Compliance with these rules and regulations increases our legal and financial compliance costs, makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources, particularly since we are no longer an "emerging growth company." The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and operating results. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could adversely affect our business and operating results. Although we have already hired additional employees to comply with these requirements, we may need to hire more employees in the future or engage outside consultants, which will increase our costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

As of January 31, 2019, we are no longer an “emerging growth company” as defined in the Jumpstart our Business Startups Act of 2012, or the JOBS Act, and are now required to comply with additional disclosure and reporting requirements, including an attestation report on internal control over financial reporting as of January 31, 2019 issued by our independent registered public accounting firm.

In addition, we have previously taken advantage of the JOB Act’s reduced disclosure requirements applicable to “emerging growth companies” regarding executive compensation and exemptions from the requirements of holding advisory say-on-pay votes on executive compensation. We are no longer eligible for such reduced disclosure requirements and exemptions and as such, we will be required to include additional information regarding executive compensation in our fiscal 2020 proxy statement and hold a nonbinding advisory vote on executive compensation at our fiscal 2020 annual meeting of stockholders. We will also have to comply with any new or revised financial accounting standards applicable to public companies without an extended transition period. These additional reporting requirements may increase our legal and financial compliance costs and cause management and other personnel to divert attention from operational and other business matters to devote substantial time to these public company requirements. Failure to comply with these requirements could also subject us to enforcement actions by the SEC, further increase costs and divert management’s attention, damage our reputation and adversely affect our business, operating results or financial condition.

These new rules and regulations will make it more expensive for us, as a public company, to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

As a result of disclosure of information in this Annual Report on Form 10-K and in filings required of a public company, our business and financial condition are more visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business and operating results could be adversely affected, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and adversely affect our business and operating results.

If we fail to maintain an effective system of internal controls, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, and the rules and regulations of the listing standards of the New York Stock Exchange. We expect that the requirements of these rules and regulations will continue to increase our legal, accounting, and financial compliance costs, make some activities more difficult, time-consuming, and costly, and place significant strain on our personnel, systems, and resources.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we will file with the Securities and Exchange Commission (SEC) is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. We are also continuing to improve our internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our operating results or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will be required to include in our periodic reports that will be filed with the SEC now that we are no longer an “emerging growth company.”

Our independent registered public accounting firm is required to formally attest to the effectiveness of our internal control over financial reporting for the year ended January 31, 2019. Our independent registered public accounting firm has to issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed, or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could have a material and adverse effect on our business and operating results and could cause a decline in the price of our common stock.

In connection with the implementation of the necessary procedures and practices related to internal control over financial reporting, we may identify deficiencies that we may not be able to remediate in time to meet the deadline imposed by the Sarbanes-Oxley Act for compliance with the requirements of Section 404. If we have material weaknesses in our internal control over financial reporting, we may also not detect errors on a timely basis and our financial statements may be materially misstated. Failure to comply with Section 404 could subject us to regulatory scrutiny and sanctions, impair our ability to raise revenue, cause investors to lose confidence in the accuracy and completeness of our financial reports, subject us to stockholder or other third-party litigation as well as investigations and delisting, as applicable, by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, and negatively affect the trading price of our common stock.

Our financial results may be adversely affected by changes in accounting principles applicable to us.

Generally accepted accounting principles in the United States (GAAP) are subject to interpretation by the Financial Accounting Standards Board (FASB), the SEC, and other various bodies formed to promulgate and interpret appropriate accounting principles. For example, in May 2014, the FASB issued accounting standards update No. 2014-09 (Topic 606), Revenue from Contracts with Customers, which became effective for our annual reporting period for the year ended January 31, 2019. Topic 606 supersedes nearly all existing revenue recognition guidance under GAAP. Under the Topic 606 standard, revenue is recognized when a customer obtains control of promised goods or services and is recognized in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. Topic 606 has had a material impact on the amount and timing of revenue recognition. Refer to Note 2 in the notes to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information on Topic 606 and its impact on our consolidated financial statements.

Changes in our provision for income taxes or adverse outcomes resulting from examination of our income tax returns could adversely affect our results.

We are subject to income taxation in the United States and numerous foreign jurisdictions. Determining our provision for income taxes requires significant management judgment. In addition, our provision for income taxes is subject to volatility and could be adversely affected by many factors, including, among other things, changes to our operating or holding structure, changes in the amounts of earnings in jurisdictions with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities and changes in tax laws. We could be subject to tax examinations in various jurisdictions. Tax authorities may disagree with our use of research and development tax credits, intercompany charges, cross-jurisdictional transfer pricing or other matters and assess additional taxes. While we regularly assess the likely outcomes of these examinations to determine the adequacy of our provision for income taxes, there can be no assurance that the outcomes of such examinations will not have a material impact on our operating results and cash flows.

In addition, we may be subject to the examination of our income tax returns by the U.S. Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our results of operations.

The enactment of legislation implementing changes in the United States of taxation of international business activities or the adoption of other tax reform policies could materially impact our financial position and results of operations.

Recent changes to United States tax laws, including limitations on the ability of taxpayers to claim and utilize foreign tax credits and the deferral of certain tax deductions until earnings outside of the United States are repatriated to the United States, as well as changes to United States tax laws that may be enacted in the future, could impact the tax treatment of our foreign earnings. Due to expansion of our international business activities, any changes in the United States taxation of such activities may increase our worldwide effective tax rate and adversely affect our financial position and results of operations.

Uncertainties in the interpretation and application of the 2017 Tax Cuts and Jobs Act could materially affect our tax obligations and effective tax rate.

The 2017 Tax Cuts and Jobs Act (the Tax Act) was enacted on December 22, 2017, and significantly changes how the U.S. imposes income tax on multinational corporations. The U.S. Department of Treasury has broad authority to issue regulations and interpretative guidance that may significantly impact how we will apply the law and affect our results of operations in the period issued.

The Tax Act requires complex computations not previously provided in U.S. tax law. As such, the application of accounting guidance for such items is currently uncertain. Further, compliance with the Tax Act and the accounting for such provisions require accumulation of information not previously required or regularly produced. As a result, we have provided a provisional estimate of the effect of the Tax Act in our financial statements. In the fourth quarter of fiscal 2019, we completed our analysis to determine the effect of the Tax Act and recorded adjustments as of January 31, 2019 that were not material.

Our ability to use our net operating losses to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the United States Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating losses (NOLs) to offset future taxable income. If our existing NOLs are subject to limitations arising from previous ownership changes, our ability to utilize NOLs could be limited by Section 382 of the Code. For example, we recently performed an analysis to determine whether an ownership change had occurred since our inception which identified two historical ownership changes. While these limitations did not result in a material restriction on the use of our NOLs, future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations. Additionally, with our recent merger with Hortonworks, our existing NOLs may be subject to limitations and our combined company may not be able to fully use these NOLs to offset future taxable income. In addition, if the combined company undergoes any subsequent ownership change, its ability to utilize NOLs could be further limited. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities. For these reasons, we may not be able to utilize a portion of the NOLs reflected on our balance sheet, even if we attain profitability.

We have business and customer relationships with certain entities who are stockholders or are affiliated with our directors, or both, and conflicts of interest may arise because of such relationships.

Some of our customers and other business partners are affiliated with certain of our directors or hold shares of our capital stock, or both. For example, we have entered into strategic relationships and/or customer relationships with Intel Corporation, or Intel. Our director, Rose Schooler, is an employee of Intel, and Intel is a stockholder. We believe that the transactions and agreements that we have entered into with related parties are on terms that are at least as favorable as could reasonably have been obtained at such time from third parties. However, these relationships could create, or appear to create, potential conflicts of interest when our board of directors is faced with decisions that could have different implications for us and these other parties or their affiliates. In addition, conflicts of interest may arise between us and these other parties and their affiliates. The appearance of conflicts, even if such conflicts do not materialize, might adversely affect the public's perception of us, as well as our relationship with other companies and our ability to enter into new relationships in the future, including with competitors of such related parties, which could harm our business and results of operations.

Adverse economic conditions may negatively impact our business.

Our business depends on the overall demand for information technology and on the economic health of our current and prospective customers. Any significant weakening of the economy in the United States or Europe and of the global economy, more limited availability of credit, a reduction in business confidence and activity, decreased government spending, economic uncertainty and other difficulties may affect one or more of the sectors or countries in which we sell our applications. Global economic and political uncertainty may cause some of our customers or potential customers to curtail spending, and may ultimately result in new regulatory and cost challenges to our international operations. In addition, a strong dollar could reduce demand for our products in countries with relatively weaker currencies. These adverse conditions could result in reductions in sales of our applications, longer sales cycles, reductions in subscription duration and value, slower adoption of new technologies and increased price competition. Any of these events could have an adverse effect on our business, operating results and financial position.

Our business is subject to the risks of earthquakes, fire, power outages, floods and other catastrophic events, and to interruption by man-made problems such as terrorism.

A significant natural disaster, such as an earthquake, fire or a flood, or a significant power outage could have a material adverse impact on our business, financial condition and results of operations. Our corporate headquarters are located in Palo Alto, California, in a region known for seismic activity, and we have significant offices in San Francisco, Austin and New York City in the United States and internationally in Bangalore, Budapest, London, Ireland and Singapore. Further, if a natural disaster or terrorist event occurs in a region from which we derive a significant portion of our revenue, customers in that region may delay or forego purchases of our products, which may materially and adversely impact our results of operations for a particular period. For example, the west coast of the United States contains active earthquake zones and the eastern seaboard is subject to seasonal hurricanes while New York and the United Kingdom have suffered significant terrorist attacks. Additionally, we rely on our network and third-party infrastructure and enterprise applications, internal technology systems and our website for our development, marketing, finance, customer support, operational support, hosted services and sales activities. In the event of a major earthquake, hurricane or catastrophic event such as fire, power loss, floods, telecommunications failure, cyber-attack, war or terrorist attack, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our development of solutions, lengthy interruptions in our services, breaches of data security and loss of critical data, all of which could have an adverse effect on our operating results. All of the aforementioned risks may be augmented if the business continuity plans for us and our service providers prove to be inadequate. To the extent that any of the above results in delays or cancellations of customer orders, or the delay in the deployment of our products, our business, financial condition and results of operations could be adversely affected.

Risks Related to Ownership of Our Common Stock

The stock price of our common stock has been, and may continue to be, volatile or may decline regardless of our operating performance.

The market price for our common stock has been, and may continue to be, volatile. Since shares of our common stock were sold in our initial public offering in April 2017 at a price of $15.00 per share, our stock price has ranged from $ 10.07 to $ 23.35 , through January 31, 2019 . The market price of our common stock may continue to fluctuate significantly in response to numerous factors, many of which are beyond our control, including the factors included in this Risk Factors section as well as:

- overall performance of the equity markets;
- actual or anticipated fluctuations in our operating results or net revenue expansion rate;
- changes in the financial projections we may provide to the public or our failure to meet these projections;
- failure of securities analysts to initiate or maintain coverage of us, changes in financial estimates by any securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors, even if we meet our own projections;
- recruitment or departure of key personnel, including as a result of our merger with Hortonworks;
- the economy as a whole and market conditions in our industry;
- rumors and market speculation involving us or other companies in our industry;
- announcements by us or our competitors of significant technical innovations, acquisitions, strategic partnerships, joint ventures, or capital commitments;
- actual or anticipated developments in our business or our competitors' businesses or the competitive landscape generally;
- developments or disputes concerning our intellectual property or our offerings, or third-party proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors, including our recent merger with Hortonworks;
- our ability to achieve the planned synergies in the recent merger with Hortonworks;
- dilution associated with our merger with Hortonworks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- lawsuits threatened or filed against us;
- other events or factors, including those resulting from war, incidents of terrorism, or responses to these events; and
- sales of shares of our common stock by us or our stockholders.

In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. Stock prices of many companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, stockholders have instituted securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business, and adversely affect our business.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts initiate research with an unfavorable rating or downgrade our common stock, provide a more favorable recommendation about our competitors, publish inaccurate or unfavorable research about our business or cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

Our directors, executive officers and principal stockholders continue to have substantial control over us, which could limit your ability to influence the outcome of key transactions, including a change of control.

Our directors, executive officers and our stockholders who own greater than 5% of our outstanding common stock, together with their affiliates, beneficially own, in the aggregate, approximately 23.8% of our outstanding common stock, based on the number shares outstanding as of February 28, 2019 . As a result, these stockholders, if acting together, have the ability to influence or control matters requiring approval by our stockholders, including the election of directors and the approval of mergers, acquisitions or other extraordinary transactions. In addition, these stockholders, acting together, have the ability to influence or control the governance, management and affairs of our company. They may also have interests that differ from yours and may vote in a way with which you disagree, and which may be adverse to your interests. This concentration of ownership may have the effect of delaying, preventing or deterring a change of control of our company, could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company and might ultimately affect the market price of our common stock.

Intel holds approximately 9.7% of our outstanding common stock, based on the number shares outstanding as of February 28, 2019 . As such, Intel could have considerable influence over matters such as approving a potential acquisition of us. Intel's investment in and position in our company could also discourage others from pursuing any potential acquisition of us, which could have the effect of depriving the holders of our common stock of the opportunity to sell their shares at a premium over the prevailing market price.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any cash dividends on our common stock and do not intend to pay any cash dividends in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

Defensive measures in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;

- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of our board of directors, our chief executive officer, our lead director, or a majority vote of our board of directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 $^{2}/_{3}$% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation relating to the issuance of preferred stock and management of our business or our amended and restated bylaws, which may inhibit the ability of an acquirer to effect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our board of directors to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend the bylaws to facilitate an unsolicited takeover attempt;
- the requirement that in order for a stockholder to be eligible to propose a nomination or other business to be considered at an annual meeting of our stockholders, such stockholder must have continuously beneficially owned at least 1% of our outstanding common stock for a period of one year before giving such notice, which may discourage, delay or deter stockholders or a potential acquirer from conducting a solicitation of proxies to elect their own slate of directors or otherwise attempting to obtain control of us or influence over our business; and
- advance notice procedures with which stockholders must comply in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage, delay or deter stockholders or a potential acquirer from conducting a solicitation of proxies to elect their own slate of directors or otherwise attempting to obtain control of us or influence over our business.

In addition, our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for: any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our restated certificate of incorporation, or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

In addition, because we are incorporated in Delaware, we are governed by the provisions of the anti-takeover provisions of the Delaware General Corporation Law, which may discourage, delay or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer rejected by our board was considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We currently lease approximately 225,000 square feet of space for our current corporate headquarters in Palo Alto, California under a lease agreement that expires in 2027 with an option to renew for an additional 84 months. In addition, we entered into a five-year sublease agreement with a third-party subtenant for approximately 105,000 square feet of this space. Upon the completion of merger with Hortonworks, we added approximately 92,000 square feet of space in Santa Clara, California under a lease agreement that expires in 2026.

We lease office spaces in various locations throughout the United States primarily for local sales and professional services personnel. Our foreign subsidiaries lease office space in a number of countries in Europe, North America, Asia, South America and Australia for our international operations, primarily for local sales and professional services personnel.

We believe that our facilities are adequate to meet our needs for the immediate future and that, should it be needed, suitable additional space will be available to accommodate expansion of our operations.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we are a party to or act as an indemnitor to our customers or partners on various litigation matters, and we or our customers or partners are subject to claims that arise in the ordinary course of business. In addition, we or our customers or partners have received, and may in the future receive, various types of claims including potential claims from third parties asserting, among other things, infringement of their intellectual property rights.

Future litigation may be necessary to defend ourselves, or our customers or partners on indemnity matters, by determining the scope, enforceability and validity of third-party proprietary rights or to establish our proprietary rights. Further, the ultimate outcome of any litigation is uncertain and, regardless of outcome, litigation can have an adverse impact on us because of defense costs, potential negative publicity, diversion of management resources and other factors. While we are not aware of pending legal matters or claims, individually or in the aggregate, that are expected to have a material adverse impact on our business, consolidated financial position, results of operations or cash flows, our analysis of whether a claim may proceed to litigation cannot be predicted with certainty, nor can the results of litigation be predicted with certainty. Accordingly, there can be no assurance that existing or future legal proceedings arising in the ordinary course of business or otherwise will not have a material adverse effect on our business, consolidated financial position, results of operations or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information for Common Stock

Our common stock has been listed on the New York Stock Exchange under the symbol "CLDR" since April 28, 2017. Prior to that date, there was no public trading market for our common stock.

Holders

As of February 28, 2019 , we had 154 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock, and we do not currently intend to pay any cash dividends for the foreseeable future. We expect to retain future earnings, if any, to fund the development and growth of our business.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this item will be included in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the fiscal year ended January 31, 2019 , and is incorporated herein by reference.

Use of Proceeds

On April 27, 2017, the SEC declared our registration statement on Form S-1 (File No. 333-217071) for our IPO effective. There have been no material changes in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on April 28, 2017 pursuant to Rule 424(b)(4).

Unregistered Sales of Equity Securities

We had no unregistered sales of our securities in fiscal 2019 not previously reported.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers.

None.

Stock Performance Graph

The following performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act of 1934, (Exchange Act), or otherwise subject to the liabilities thereunder, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The graph below compares the cumulative total stockholder return on our common stock with the cumulative total return on the S&P 500 Index and the S&P 500 Information Technology Index. The graph assumes $100 was invested at the market close on April 28, 2017 which was the initial trading day of our common stock following the IPO. Data for the S&P 500 Index and the S&P 500 Information Technology Index assume reinvestment of dividends. The offering price of our common stock in our IPO, which had a closing stock price of $18.10 on April 28, 2017, was $15.00 per share.

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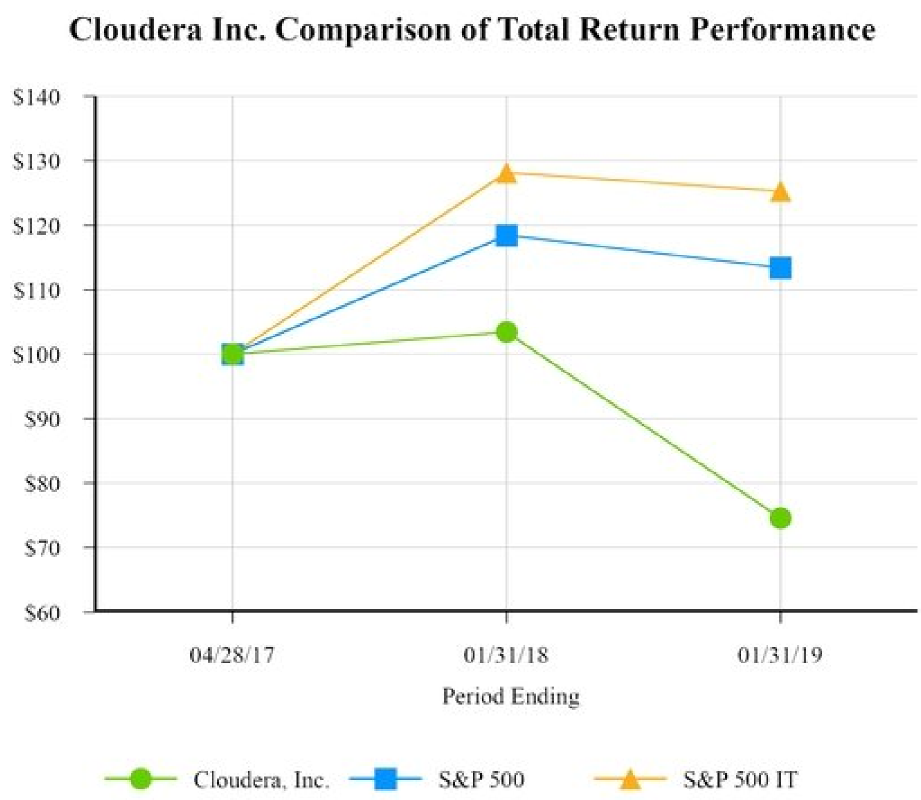
The comparisons in the graph below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our common stock.



	Base Period		
Company/Index	04/28/2017	1/31/2018	1/31/2019
Cloudera, Inc.	$ 100.00	$ 103.43	$ 74.59
S&P 500 Index	100.00	118.44	113.42
S&P 500 Information Technology Index	100.00	128.17	125.30

ITEM 6. SELECTED FINANCIAL DATA

The selected consolidated statement of operations data for the years ended January 31, 2019 , 2018 and 2017 and the selected consolidated balance sheet data as of January 31, 2019 and 2018 have been derived from our audited consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. The selected consolidated statement of operations data for the years ended January 31, 2016 and 2015 and the selected consolidated balance sheet data as of January 31, 2017 , 2016 and 2015 , have been derived from our audited consolidated financial statements that are not included in this Annual Report on Form 10-K. The consolidated statements of operations data for each of the years ended January 31, 2019, 2018 and 2017 and the selected consolidated balance sheet data as of January 31, 2019 and 2018 set forth in the tables below have been updated to comply with the adoption of the new standard Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), including previously reported amounts, which are labeled "as adjusted". The consolidated statements of operations data for each of the years end January 31, 2016 and 2015 and the selected consolidated balance sheet data as of January 31, 2017 and 2016 and 2015 set forth in the tables below do not reflect the adoption of Topic 606 and continue to be reported under the standards in effect for those periods. Further, the selected consolidated results of operations data for the year ended January 31, 2019 includes Hortonworks' results of operations from January 3, 2019 to January 31, 2019, and the selected consolidated balance sheet data as of January 31, 2019 includes Hortonworks' as of January 31, 2019 including the effects of accounting for the merger. See Note 3 to our consolidated financial statements. You should read the following selected consolidated financial data in conjunction with our consolidated financial statements and the accompanying notes and the information in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained elsewhere in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that may be expected for any other period in the future.

	Years Ended January 31,				
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*	2016	2015
	(in thousands, except per share data)				
Consolidated Statements of Operations Data:					
Revenue:					
Subscription	$ 406,333	$ 302,617	$ 208,335	$ 119,150	$ 72,615
Services	73,608	69,676	64,208	46,898	36,503
Total revenue	479,941	372,293	272,543	166,048	109,118
Cost of revenue: (1) (2) (4)					
Subscription	63,329	70,902	38,704	30,865	18,314
Services	72,785	87,133	48,284	44,498	32,148
Total cost of revenue	136,114	158,035	86,988	75,363	50,462
Gross profit	343,827	214,258	185,555	90,685	58,656
Operating expenses: (1) (2) (3) (4)					
Research and development	173,814	215,695	102,309	99,314	66,431
Sales and marketing	253,164	287,196	185,421	161,106	103,736
General and administrative	110,613	85,539	55,907	34,902	25,041
Total operating expenses	537,591	588,430	343,637	295,322	195,208
Loss from operations	(193,764)	(374,172)	(158,082)	(204,637)	(136,552)
Interest income, net	9,011	5,150	2,431	2,218	327
Other income (expense), net	(2,478)	1,429	(547)	386	(490)
Net loss before provision for income taxes	(187,231)	(367,593)	(156,198)	(202,033)	(136,715)
Benefit from (provision for) income taxes	(5,418)	(2,079)	(2,187)	(1,110)	1,285
Net loss	(192,649)	(369,672)	(158,385)	(203,143)	(135,430)
Deemed dividend to preferred stockholders	—	—	—	—	(43,207)
Net loss attributable to common stockholders	$ (192,649)	$ (369,672)	$ (158,385)	$ (203,143)	$ (178,637)
Net loss per share, basic and diluted	$ (1.21)	$ (3.24)	$ (4.35)	$ (6.21)	$ (6.53)
Weighted-average shares used in computing net loss per share, basic and diluted (5)	159,816	114,141	36,406	32,724	27,348

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

(1) Amounts include stock-based compensation expense as follows:

	Years Ended January 31,				
	2019	2018	2017	2016	2015
	(in thousands)				
Cost of revenue – subscription	$ 9,959	$ 24,826	$ 1,426	$ 3,363	$ 996
Cost of revenue – services	11,492	31,843	1,803	4,301	1,376
Research and development	41,430	100,143	5,606	23,048	11,687
Sales and marketing	27,918	90,420	5,757	19,187	11,530
General and administrative	26,566	42,774	7,122	13,691	8,477
Total stock-based compensation expense	$ 117,365	$ 290,006	$ 21,714	$ 63,590	$ 34,066

(2) Amounts include amortization of acquired intangible assets as follows:

	Years Ended January 31,				
	2019	2018	2017	2016	2015
	(in thousands)				
Cost of revenue – subscription	$ 3,251	$ 2,230	$ 1,997	$ 1,732	$ 906
Sales and marketing	5,878	1,493	1,723	1,723	1,149
Total amortization of acquired intangible assets	$ 9,129	$ 3,723	$ 3,720	$ 3,455	$ 2,055

(3) In January 2017, we donated 1,175,063 shares of our common stock to the Cloudera Foundation. We recorded a non-cash charge of $21.6 million for the fair value of the donated shares, which was recognized in general and administrative expense for the year ended January 31, 2017, see Note 11 to our consolidated financial statements for further discussion.

(4) On April 27, 2017, the effective date of our IPO, the liquidity event-related performance condition was achieved for the majority of our restricted stock units (RSUs) and became probable of being achieved for the remaining RSUs. We recognized stock-based compensation expense using the accelerated attribution method with a cumulative catch-up of stock-based compensation expense in the amount of $181.5 million during fiscal 2018, attributable to service prior to such effective date. See Note 9 to our consolidated financial statements for further discussion.

(5) See Notes 2 and 13 to our consolidated financial statements for an explanation of the calculations of our basic and diluted net loss per share and the weighted-average number of shares used in the computation of the per share amounts.

	As of January 31,				
	2019	2018 (As Adjusted)*	2017	2016	2015
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 158,672	$ 43,247	$ 74,186	$ 35,966	$ 359,814
Marketable securities, current and noncurrent	378,546	399,422	181,480	362,279	138,448
Working capital	304,397	281,141	110,616	142,717	387,096
Total assets	2,196,643	751,811	442,544	512,887	575,239
Deferred revenue, current and noncurrent	507,569	237,400	217,424	158,175	116,089
Redeemable convertible preferred stock	—	—	657,687	657,687	657,687
Total stockholders' equity (deficit)	1,562,069	428,174	(483,756)	(343,509)	(222,640)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

Non-GAAP Financial Measure

In addition to our results determined in accordance with U.S. generally accepted accounting principles (GAAP), we believe the following non-GAAP financial measure is useful in evaluating our operating performance.

	Years Ended January 31,				
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*	2016	2015
	(in thousands)				
Other Financial Statement Data:					
Non-GAAP operating loss	$ (67,270)	$ (80,443)	$ (111,074)	$ (137,592)	$ (100,431)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

We define non-GAAP operating loss as loss from operations before stock-based compensation expense, amortization of acquired intangible assets and donation of our common stock to the Cloudera Foundation. We believe that this non-GAAP financial measure, when taken together with the corresponding GAAP financial measure, provides meaningful supplemental information regarding our performance by excluding certain items that may not be indicative of our business, operating results or future outlook. Our management uses, and believes that investors benefit from referring to, this non-GAAP financial measure in evaluating our operating results, as well as when planning, forecasting, budgeting and analyzing future periods. We also use non-GAAP operating loss in conjunction with traditional GAAP measures to communicate with our board of directors concerning our financial performance.

We believe non-GAAP operating loss provides investors and other users of our financial information consistency and comparability with our past financial performance and facilitates period to period comparisons of operations. We believe non-GAAP operating loss is useful in evaluating our operating performance compared to that of other companies in our industry as this metric generally eliminates the effects of certain items that may vary for different companies for reasons unrelated to overall operating performance. Our definition may differ from the definitions used by other companies and therefore comparability may be limited. In addition, other companies may not publish this or similar metrics. Thus, our non-GAAP operating loss should be considered in addition to, not as a substitute for or in isolation from, measures prepared in accordance with GAAP.

We compensate for these limitations by providing investors and other users of our financial information a reconciliation of non-GAAP operating loss to loss from operations, the related GAAP financial measure. We encourage investors and others to review our financial information in its entirety, not to rely on any single financial measure and to view non-GAAP operating loss in conjunction with loss from operations. The following table provides a reconciliation of loss from operations to non-GAAP operating loss:

	Years Ended January 31,				
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*	2016	2015
	(in thousands)				
Loss from operations	$ (193,764)	$ (374,172)	$ (158,082)	$ (204,637)	(136,552)
Stock-based compensation expense	117,365	290,006	21,714	63,590	$ 34,066
Amortization of acquired intangible assets	9,129	3,723	3,720	3,455	$ 2,055
Donation of common stock to the Cloudera Foundation	—	—	21,574	—	$ —
Non-GAAP operating loss	$ (67,270)	$ (80,443)	$ (111,074)	$ (137,592)	$ (100,431)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

For the reasons set forth below, we believe that excluding the components described below provides useful information to investors and others in understanding and evaluating our operating results and future prospects in the same manner as we do and in comparing our financial results across accounting periods and to financial results of peer companies.

- *Stock-Based Compensation Expense.* We exclude stock-based compensation expense from our non-GAAP financial measure consistent with how we evaluate our operating results and prepare our operating plans, forecasts and budgets. Further, when considering the impact of equity award grants, we focus on overall stockholder dilution rather than the accounting charges associated with such equity grants. The exclusion of the expense facilitates the comparison of results and business outlook for future periods with results for prior periods in order to better understand the long-term performance of our business.
- *Amortization of Acquired Intangible Assets.* We exclude the amortization of acquired intangible assets from our non-GAAP financial measure. Although the purchase accounting for an acquisition necessarily reflects the accounting value assigned to intangible assets, our management team excludes the GAAP impact of acquired intangible assets when evaluating our operating results. Likewise, our management team excludes amortization of acquired intangible assets from our operating plans, forecasts and budgets. The exclusion of the expense facilitates the comparison of results and business outlook for future periods with results for prior periods in order to better understand the long-term performance of our business.
- *Donation of common stock to the Cloudera Foundation.* During the fourth quarter of fiscal 2017, we issued 1,175,063 shares of our common stock to the Cloudera Foundation for no consideration. This resulted in a one-time non-cash charge of $21.6 million , which was recorded in general and administrative expenses on the consolidated statement of operations. Our management team does not consider this expense when evaluating our operating performance and we do not expect to make future grants of shares to the Cloudera Foundation

and therefore consider this charge non-recurring and exclude the GAAP impact of the donation when evaluating our operating results. The exclusion of the expense facilitates the comparison of results and business outlook for future periods with results for prior periods in order to better understand the long - term performance of our business.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the consolidated financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section titled "Risk Factors" included elsewhere in this Annual Report on Form 10-K. Our fiscal year end is January 31, and references throughout this Annual Report to a given fiscal year are to the twelve months ended on that date.

Overview

Cloudera is the enterprise data cloud company. We empower people to transform data into clear and actionable insights through an integrated suite of data analytics and management products from the Edge to artificial intelligence (AI). Our portable, multi-cloud platform with common security, governance and data management functions underpins products that include streaming analytics at the edge, data engineering, data warehousing, real-time operational analytics, exploratory data science and machine learning offerings. Today these products are implemented in private and co-location datacenters, multiple public clouds and hybrid cloud environments with common data analytics and management capabilities across all workloads and architectures. Our offerings are based predominantly on open source software, utilizing data stored natively in public cloud object stores as well as in various open source data stores. Using our software, organizations are able to capitalize on vast amounts of data from a variety of sources to better serve and market to their customers, design connected products and services and protect their enterprises.

In January 2019, as more fully described in Note 3 to our consolidated financial statements, we completed the merger of Hortonworks, Inc. (Hortonworks), a publicly-held company headquartered in Santa Clara, California (Hortonworks merger). The combined company operates under the Cloudera name. Our results of operations for the year ended January 31, 2019 includes the results of operations of Hortonworks from January 3, 2019 to January 31, 2019.

We generate revenue from subscriptions and services. Subscription revenue relates to term (or time-based) subscription agreements for both open source and propriety software including support. Services revenue relates to professional services for the implementation and use of our subscriptions, machine learning expertise and consultation, training and education services and related reimbursable travel costs. We price our subscription offerings based on the number of servers in a cluster, or nodes, core or edge devices, data under management and/or the scope of support provided. During the year ended January 31, 2019, we adopted Accounting Standards Update (ASU) 2014-09, Revenue from Contracts with Customers (Topic 606) (ASC 606), the new accounting standard related to revenue recognition. Prior period information presented has been adjusted to reflect the adoption of this new standard. See Note 2 to consolidated financial statements for details.

We market and sell our platform to a broad range of organizations, although we focus our selling efforts on the largest enterprises globally. We target these organizations because they capture and manage the vast majority of the world's data and operate highly complex IT environments. We market our platform primarily through a direct sales force while benefiting from business driven by our ecosystem of technology partners, resellers, OEMs, MSPs, independent software vendors and systems integrators. As of January 31, 2019 , we had more than 2,000 customers.

We have a broad customer base that spans industries and geographies. For the years ended January 31, 2019 , 2018 and 2017 , no customer accounted for more than 10% of our total revenue. We have significant revenue in the banking and financial services, manufacturing, technology, business services, telecommunications, public sector, consumer and retail, and healthcare and life sciences verticals, and continue to expand our penetration across many other data-intensive industries. Sales outside of the United States represented approximately 34% , 30% and 27% of our total revenue for the years ended January 31, 2019 , 2018 and 2017 , respectively.

Our business model is based on a "land and expand" strategy designed to use the initial sale as a foothold to increase revenue per customer by increasing the amount of data and number of use cases each customer runs through our platform. After an initial purchase of our platform, we work with our customers to identify new use cases that can be developed on or moved to our platform, ultimately increasing the amount of data managed on our platform as well as the number and size of our platform deployments.

Components of Results of Operations

As a result of Hortonworks merger, our results of operations for fiscal 2019 includes Hortonworks' results of operations from January 3 to January 31, 2019.

During fiscal 2018, our IPO was declared effective and the performance-based condition for the RSUs was either achieved or probable of being achieved (see "—Significant Impacts of Stock-based Compensation Expense"). As such we recognized a cumulative catch-up of stock-based compensation expense attributable to service prior to such effective date for RSUs.

Revenue

We generate revenue from subscriptions and services. Subscription revenue relates to term (or time-based) subscription agreements for both open source and propriety software, including support. Subscription arrangements are typically one to three years in length but may be up to seven years in limited cases. Arrangements with our customers typically do not include general rights of return. Services revenue relates to professional services for the implementation and use of our subscriptions, machine learning expertise and consultation, training and education services and related reimbursable travel costs. We price our subscription offerings based on the number of servers in a cluster, or nodes, core or edge devices, data under management and/or the scope of support provided. Our consulting services are priced primarily on a time and materials basis, and to a lesser extent, a fixed fee basis, and education services are generally priced based on attendance. We expect our revenue to increase in future periods as a result of our continued growth, in addition to increased revenue resulting from the Hortonworks merger in January 2019.

Cost of Revenue

Cost of revenue for subscriptions primarily consists of personnel costs including salaries, bonuses, travel costs, benefits and stock-based compensation for employees providing technical support for our subscription customers, allocated shared costs (including rent and information technology) and amortization of certain acquired intangible assets from business combinations. Cost of revenue for services primarily consists of personnel costs including salaries, bonuses, benefits and stock-based compensation, fees to subcontractors associated with service contracts, travel costs and allocated shared costs (including rent and information technology). We expect cost of revenue to increase in absolute dollars for the foreseeable future as we continue to obtain new customers and expand our relationship with existing customers, in addition to increased costs resulting from the Hortonworks merger in January 2019.

Operating Expenses

Research and Development. Research and development expenses primarily consist of personnel costs including salaries, bonuses, travel costs, benefits and stock-based compensation for our research and development employees, contractor fees, allocated shared costs (including rent and information technology), supplies, and depreciation of equipment associated with the continued development of our platform prior to establishment of technological feasibility and the related maintenance of the existing technology. We expect our research and development expenses to increase in absolute dollars for the foreseeable future as we continue to enhance and add new technologies, features and functionality to our subscriptions, in addition to increased costs resulting from the Hortonworks merger in January 2019.

Sales and Marketing. Sales and marketing expenses primarily consist of personnel costs including salaries, bonuses, travel costs, sales-based incentives, benefits and stock-based compensation for our sales and marketing employees. In addition, sales and marketing expenses also includes costs for advertising, promotional events, corporate communications, product marketing and other brand-building activities, allocated shared costs (including rent and information technology) and amortization of certain acquired intangible assets from business combinations.

Most sales-based incentives are capitalized and expensed over the period of benefit from the underlying contracts. We expect our sales and marketing expenses to increase in absolute dollars as we continue to invest in selling and marketing activities to attract new customers and expand our relationship with existing customers, in addition to increased costs resulting from the Hortonworks merger in January 2019.

General and Administrative. General and administrative expenses primarily consist of personnel costs including salaries, bonuses, travel costs, benefits and stock-based compensation for our executive, finance, legal, human resources, information technology and other administrative employees. In addition, general and administrative expenses include fees for third-party professional services, including consulting, legal and accounting services, merger related costs, other corporate expenses, and allocated shared costs (including rent and information technology). We expect our general and administrative expenses to increase in absolute dollars due to the anticipated growth of our business and related infrastructure, in addition to increased costs resulting from the Hortonworks merger in January 2019.

Interest Income, net

Interest income primarily relates to amounts earned on our cash and cash equivalents and marketable securities.

Other Income (Expense), net

Other income (expense), net primarily relates to foreign currency transactions, realized gains and losses on our marketable securities, and other non-operating gains or losses.

Provision for Income Taxes

Provision for income taxes primarily consists of income taxes for certain foreign jurisdictions in which we conduct business. Due to cumulative losses, we maintain a valuation allowance against our U.S and certain foreign deferred tax assets. We consider all available evidence, both positive and negative, in assessing the extent to which a valuation allowance should be applied against our deferred tax assets.

Significant Impacts of Stock-based Compensation Expense

We have granted RSUs to our employees and members of our board of directors under our 2008 Equity Incentive Plan, or the 2008 Plan, and our 2017 Equity Incentive Plan, or the 2017 Plan. Prior to our IPO in May 2017, the employee RSUs vested upon the satisfaction of both a service-based condition and a liquidity event-related performance condition. The service-based vesting condition for these awards was generally satisfied pro-rata over four years. The liquidity event-related performance condition was achieved for the majority of our RSUs and probable of being achieved for the remaining RSUs on April 27, 2017, the effective date of our IPO. We recognized stock-based compensation expense using the accelerated attribution method with a cumulative catch-up of stock-based compensation expense in the amount of $181.5 million during fiscal 2018, attributable to service prior to such effective date.

The total stock-based compensation expense recorded on the effective date of our IPO associated with the achievement of the liquidity event-related performance condition was as follows (in thousands):

Cost of revenue – subscription	$	15,292
Cost of revenue – services		19,695
Research and development		65,250
Sales and marketing		58,219
General and administrative		23,080
Total stock-based compensation expense	$	181,536

As a result of the Hortonworks merger, we issued 4,076,157 stock options to purchase shares of our common stock and RSUs for 7,704,004 shares of our common stock to Hortonworks employees in exchange for their outstanding stock options and awards. The total fair value of the stock-based awards assumed is $63.5 million which will be recognized as stock-based compensation expense over a weighted-average period of 1.5 years. Additionally, we recognized $13.1 million of additional stock-based compensation expense during the year ended January 31, 2019 due to the acceleration and modification of certain stock awards assumed as part of the Hortonworks merger.

During the year ended January 31, 2019, we incurred $6.2 million of additional stock-based compensation expense related to modifications of stock awards held by certain employees.

Results of Operations

Our results of operations for the year ended January 31, 2019 includes the results of operations of Hortonworks from January 3, 2019 to January 31, 2019. See Note 3 to our consolidated financial statements.

The consolidated statements of operations data for each of the years ended January 31, 2019, 2018 and 2017 set forth in the tables below have been updated to comply with the new standards under Topic 606, including previously reported amounts, which are labeled "as adjusted". See Note 2 to our consolidated financial statements.

The following table sets forth our results of operations for the periods indicated:

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
	(in thousands)		
Revenue:			
Subscription	$ 406,333	$ 302,617	$ 208,335
Services	73,608	69,676	64,208
Total revenue	479,941	372,293	272,543
Cost of revenue: (1) (2)			
Subscription	63,329	70,902	38,704
Services	72,785	87,133	48,284
Total cost of revenue	136,114	158,035	86,988
Gross profit	343,827	214,258	185,555
Operating expenses: (1) (2) (3)			
Research and development	173,814	215,695	102,309
Sales and marketing	253,164	287,196	185,421
General and administrative	110,613	85,539	55,907
Total operating expenses	537,591	588,430	343,637
Loss from operations	(193,764)	(374,172)	(158,082)
Interest income, net	9,011	5,150	2,431
Other income (expense), net	(2,478)	1,429	(547)
Net loss before provision for income taxes	(187,231)	(367,593)	(156,198)
Provision for income taxes	(5,418)	(2,079)	(2,187)
Net loss	$ (192,649)	$ (369,672)	$ (158,385)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

(1) Amounts include stock-based compensation expense as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Cost of revenue – subscription	$ 9,959	$ 24,826	$ 1,426
Cost of revenue – services	11,492	31,843	1,803
Research and development	41,430	100,143	5,606
Sales and marketing	27,918	90,420	5,757
General and administrative	26,566	42,774	7,122
Total stock - based compensation expense	$ 117,365	$ 290,006	$ 21,714

(2) Amounts include amortization of acquired intangible assets as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Cost of revenue – subscription	$ 3,251	$ 2,230	$ 1,997
Sales and marketing	5,878	1,493	1,723
Total amortization of acquired intangible assets	$ 9,129	$ 3,723	$ 3,720

(3) In January 2017, we donated 1,175,063 shares of common stock to the Cloudera Foundation. We recorded a non-cash charge of $21.6 million for the fair value of the donated shares, which was recognized in general and administrative expense for the year ended January 31, 2017, see Note 11 to our consolidated financial statements for further discussion.

The following table sets forth selected consolidated statements of operations data for each of the periods indicated as a percentage of total revenue:

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Revenue:			
Subscription	85 %	81 %	76 %
Services	15	19	24
Total revenue	100	100	100
Cost of revenue (1) (2) :			
Subscription	13	19	14
Services	15	23	18
Total cost of revenue	28	42	32
Gross margin	72	58	68
Operating expenses (1) (2) (3) :			
Research and development	36	58	38
Sales and marketing	53	77	68
General and administrative	23	23	20
Total operating expenses	112	158	126
Loss from operations	(40)	(100)	(58)
Interest income, net	2	1	1
Other income (expense), net	(1)	1	0
Net loss before provision for income taxes	(39)	(98)	(57)
Provision for income taxes	(1)	(1)	(1)
Net loss	(40) %	(99) %	(58) %

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

(1) Amounts include stock-based compensation expense as a percentage of total revenue as follows:

	Years Ended January 31,		
	2019	2018	2017
Cost of revenue – subscription	2%	7%	1%
Cost of revenue – services	2	9	1
Research and development	9	27	2
Sales and marketing	6	24	1
General and administrative	6	12	3
Total stock - based compensation expense	25%	79%	8%

(2) Amounts include amortization of acquired intangible assets as a percentage of total revenue as follows:

	Years Ended January 31,		
	2019	2018	2017
Cost of revenue – subscription	1%	1%	1%
Sales and marketing	1	—	—
Total amortization of acquired intangible assets	2%	1%	1%

(3) As a percentage of revenue, the non-cash expense recognized for the donation of common stock to the Cloudera Foundation for the year ended January 31, 2017 was 8%.

Years Ended January 31, 2019 and 2018

Revenue

	Years Ended January 31,		Change	
	2019	2018 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Subscription	$ 406,333	$ 302,617	$ 103,716	34%
Services	73,608	69,676	3,932	6%
Total revenue	$ 479,941	$ 372,293	$ 107,648	29%
As a percentage of total revenue:				
Subscription	85%	81%		
Services	15%	19%		
Total revenue	100%	100%		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

The increase in subscription revenue during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily attributable to volume driven increases in subscription sales to new and existing customers. Our Hortonworks merger in January 2019 contributed approximately $15.1 million of total subscription revenue.

During the year ended January 31, 2019 as compared to the year ended January 31, 2018 , the increase in our services revenue was primarily attributable to services revenue associated with Hortonworks, which was approximately $4.4 million.

Cost of Revenue, Gross Profit and Gross Margin

	Years Ended January 31,		Change	
	2019	2018 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Subscription	$ 63,329	$ 70,902	$ (7,573)	(11)%
Services	72,785	87,133	(14,348)	(16)%
Total cost of revenue	$ 136,114	$ 158,035	$ (21,921)	(14)%
Gross profit	$ 343,827	$ 214,258	$ 129,569	60 %
Gross margin:				
Subscription	84%	77 %		
Services	1%	(25)%		
Total gross margin	72%	58 %		
Cost of revenue, as a percentage of total revenue:				
Subscription	13%	19 %		
Services	15%	23 %		
Total cost of revenue	28%	42 %		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

The decrease in cost of revenue for subscription during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily due to a decrease of $14.9 million in stock - based compensation expense resulting from the catch-up of stock-based compensation expense following our IPO during the year ended January 31, 2018 , partially offset by an increase of $4.1 million in employee-related costs including salaries and benefits, bonuses, severance costs and travel costs, which also includes additional employee- related costs from the Hortonworks merger, an increase of $2.6 million in allocated shared costs and an increase of $1.0 million in amortization of intangible assets due to additional amortization of intangible assets resulting from the Hortonworks merger.

The decrease in cost of revenue for services during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily due to a decrease of $20.4 million in stock - based compensation expense resulting from the catch-up of stock-based compensation expense following our IPO during the year ended January 31, 2018 and a decrease of $2.5 million in outside consultant fees, partially offset by an increase of $7.0 million in employee-related costs including salaries and benefits, bonuses, severance costs and travel costs, which also includes additional employee- related costs from the Hortonworks merger, and an increase of $1.4 million in allocated shared costs.

Subscription gross margin increased from 77% to 84% in the year ended January 31, 2019 as compared to the same period a year ago primarily due to lower stock-based compensation expense.

Services gross margin increased from negative 25% to 1% in the year ended January 31, 2019 as compared to the same period a year ago primarily due to lower stock-based compensation expense.

Operating Expenses

	Years Ended January 31,		Change	
	2019	2018 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Research and development	$ 173,814	$ 215,695	$ (41,881)	(19)%
Sales and marketing	253,164	287,196	(34,032)	(12)%
General and administrative	110,613	85,539	25,074	29 %
Total operating expenses	$ 537,591	$ 588,430	$ (50,839)	(9)%
Operating expenses, as a percentage of total revenue:				
Research and development	36%	58%		
Sales and marketing	53%	77%		
General and administrative	23%	23%		
Total operating expenses	112%	158%		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

Research and Development

The decrease in research and development expenses during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily due to a decrease of $58.7 million in stock-based compensation expense resulting from the catch-up of stock-based compensation expense following our IPO during the year ended January 31, 2018 , partially offset by an increase of $10.5 million in employee-related costs including salaries and benefits, bonuses, severance costs and travel costs, which also includes additional employee- related costs from the Hortonworks merger, and an increase of $5.1 million in allocated shared costs.

Sales and Marketing

The decrease in sales and marketing expenses during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily due to a decrease of $62.5 million in stock-based compensation expense resulting from the catch-up of stock-based compensation expense following our IPO during the year ended January 31, 2018 , partially offset by an increase of $18.5 million in employee-related costs including salaries, incentive-based compensation and benefits, severance costs and travel costs, which also includes additional employee- related costs from the Hortonworks merger, an increase of $4.4 million as a result of intangible assets acquired in conjunction from the Hortonworks merger, an increase of $3.4 million in allocated shared costs and an increase of $1.5 million in outside consultant fees.

General and Administrative

The increase in general and administrative expenses during the year ended January 31, 2019 compared to the year ended January 31, 2018 was primarily due to $22.8 million of merger-related costs, an increase of $9.3 million in employee-related costs including salaries and benefits, bonuses, severance costs and travel costs, which also includes additional employee-related costs from the Hortonworks merger, and an increase of $2.3 million in allocated shared costs, partially offset by a decrease of $16.2 million in stock-based compensation expense resulting from the catch-up of stock-based compensation expense following our IPO during the year ended January 31, 2018 .

Interest Income, net

	Years Ended January 31,		Change	
	2019	2018	Amount	%
	(dollars in thousands)			
Interest income, net	$ 9,011	$ 5,150	$ 3,861	75%

Interest income, net increased primarily due to higher average investments in marketable securities.

Other Income (Expense), net

	Years Ended January 31,		Change	
	2019	2018	Amount	%
	(dollars in thousands)			
Other income (expense), net	$ (2,478)	$ 1,429	$ (3,907)	(273) %

Other expense, net during the year ended January 31, 2019 was primarily due to foreign exchange losses as compared to other income, net during the year ended January 31, 2018 due to foreign exchange gains.

Provision for Income Taxes

	Years Ended January 31,		Change	
	2019	2018	Amount	%
	(dollars in thousands)			
Provision for income taxes	$ 5,418	$ 2,079	$ 3,339	161%

Provision for income taxes increased primarily due to increases in foreign income taxes and tax withholding from increases on foreign sales during the year ended January 31, 2019 as compared to the same period a year ago.

Years Ended January 31, 2018 and 2017

Revenue

	Years Ended January 31,		Change	
	2018 (As Adjusted)*	2017 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Subscription	$ 302,617	$ 208,335	$ 94,282	45%
Services	69,676	64,208	5,468	9%
Total revenue	$ 372,293	$ 272,543	$ 99,750	37%
As a percentage of total revenue:				
Subscription	81%	76%		
Services	19%	24%		
Total revenue	100%	100%		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

The increase in subscription revenue during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily attributable to volume driven increases in subscription sales to new and existing customers.

During the year ended January 31, 2018 as compared to the year ended January 31, 2017, our services revenue increased at a lower rate compared to the increase in our subscription revenue primarily due to our existing customers' increasing experience with the technology as well as our efforts to develop relationships with partners and other system integrators, resulting in a shift of the provision of such services to these partners and system integrators.

Cost of Revenue, Gross Profit and Gross Margin

	Years Ended January 31,		Change	
	2018 (As Adjusted)*	2017 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Subscription	$ 70,902	$ 38,704	$ 32,198	83%
Services	87,133	48,284	38,849	80%
Total cost of revenue	$ 158,035	$ 86,988	$ 71,047	82%
Gross profit	$ 214,258	$ 185,555	$ 28,703	15%
Gross margin:				
Subscription	77 %	81%		
Services	(25)%	25%		
Total gross margin	58 %	68%		
Cost of revenue, as a percentage of total revenue:				
Subscription	19 %	14%		
Services	23 %	18%		
Total cost of revenue	42 %	32%		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

The increase in cost of revenue for subscription during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily due to an increase of $23.4 million in stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO, an increase of $6.5 million in salaries and benefits related to growth in employee headcount to support our overall expansion in customers and an increase of $2.2 million in allocated shared costs.

Subscription gross margin declined from 81% to 77% in the year ended January 31, 2018 as compared to the year ended January 31, 2017 due to the recording of stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO. The increase in cost of revenue for services during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily due to an increase of $30.0 million in stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO, an increase of $7.5 million in salaries and benefits related to growth in employee headcount and an increase of $0.9 million in allocated shared costs.

Services gross margin declined from 25% to negative 25% in the year ended January 31, 2018 as compared to the same period the year ended January 31, 2017 due to the recording of stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO.

Operating Expenses

	Years Ended January 31,		Change	
	2018 (As Adjusted)*	2017 (As Adjusted)*	Amount	%
	(dollars in thousands)			
Research and development	$ 215,695	$ 102,309	$ 113,386	111%
Sales and marketing	287,196	185,421	101,775	55%
General and administrative	85,539	55,907	29,632	53%
Total operating expenses	$ 588,430	$ 343,637	$ 244,793	71%
Operating expenses, as a percentage of total revenue:				
Research and development	58%	38%		
Sales and marketing	77%	68%		
General and administrative	23%	20%		
Total operating expenses	158%	126%		

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 to our consolidated financial statements for a summary of adjustments.

Research and Development

The increase in research and development expenses during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily due to an increase of $94.5 million in stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO, an increase of $12.9 million in employee-related costs including salaries, benefits and travel costs associated with the growth in employee headcount and an increase of $6.6 million in allocated shared costs, offset by a decrease of $1.9 million in costs for services from external vendors.

Sales and Marketing

The increase in sales and marketing expenses during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily due to an increase of $84.7 million in stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO, an increase of $14.5 million in employee-related costs including salaries, incentive-based compensation and benefits and travel costs associated with the growth in employee headcount to support our overall sales activities and an increase of $2.8 million in allocated shared costs, offset by a decrease of $0.2 million in advertising costs.

General and Administrative

The increase in general and administrative expenses during the year ended January 31, 2018 compared to the year ended January 31, 2017 was primarily due to an increase of $35.7 million in stock-based compensation expense resulting from the achievement of the liquidity event-related performance condition on the effective date of the IPO, an increase of $8.4 million in employee-related costs including salaries, benefits and travel costs associated with the growth in employee headcount to support our overall expansion, a cash donation of $2.4 million, or 1% of the net proceeds from the IPO, to fund the Cloudera Foundation and an increase of $0.9 million in costs for services from external vendors, offset by a decrease of a $21.6 million non-cash charge related to the donation of 1,175,063 shares of our common stock to the Cloudera Foundation in fiscal 2017.

Interest Income, net

	Years Ended January 31,		Change	
	2018	2017	Amount	%
	(dollars in thousands)			
Interest income, net	$ 5,150	$ 2,431	$ 2,719	112%

Interest income, net increased primarily due to an increase in our cash balance obtained from the net proceeds of the IPO during the year ended January 31, 2018 as compared to the year ended January 31, 2017.

Other Income (Expense), net

	Years Ended January 31,		Change	
	2018	2017	Amount	%
	(dollars in thousands)			
Other income (expense), net	$ 1,429	$ (547)	$ 1,976	not meaningful

Other income (expense), net increased primarily due to an increase of $1.9 million from foreign exchange gains during the year ended January 31, 2018 as compared to the year ended January 31, 2017.

Provision for Income Taxes

	Years Ended January 31,		Change	
	2018	2017	Amount	%
	(dollars in thousands)			
Provision for income taxes	$ 2,079	$ 2,187	$ (108)	(5) %

Provision for income taxes decreased primarily due to an income tax benefit of $0.8 million resulting from an acquisition, offset by increases in foreign income taxes and tax withholding from increases on foreign sales, during the year ended January 31, 2018 as compared to the year ended January 31, 2017.

Seasonality

We have seasonal and end-of-quarter concentration of our sales, which impacts our ability to plan and manage cash flows and margins. Our sales vary by season with the fourth quarter typically being our strongest sales quarter, and the first quarter typically being our largest collections and operating cash flow quarter. In addition, within each quarter, most sales occur in the last month of that quarter.

See “Risk Factors—Our sales cycles can be long, unpredictable and vary seasonally, particularly with respect to large subscriptions, and our sales efforts require considerable time and expense.”

Liquidity and Capital Resources

As of January 31, 2019 , our principal sources of liquidity were cash, cash equivalents and marketable securities totaling $537.2 million which are held for working capital purposes. Our cash equivalents are comprised primarily of money market funds and our marketable securities are comprised of asset - backed securities, corporate notes and obligations, commercial paper, certificates of deposit, U.S. treasury securities and foreign government obligations. To date, our principal sources of liquidity have been payments received from customers for our subscriptions and services, the net proceeds we received through the sale of our common stock in our IPO in May 2017, our follow-on offering in October 2017 and private sales of equity securities. Further, we acquired $49.0 million of cash, cash equivalents and marketable securities as a result of the Hortonworks merger.

We believe our existing liquidity will be sufficient to meet our working capital and capital expenditure needs for at least the next twelve months. Our future capital requirements may vary materially from those currently planned and will depend on many factors, including our net expansion rate, the timing and extent of spending on research and development efforts, the expansion of sales and marketing activities, the continuing market acceptance of our subscriptions and services and ongoing investments to support the growth of our business. We may in the future enter into arrangements to acquire or invest in complementary businesses, services and technologies and intellectual property rights. From time to time, we may explore additional financing sources which could include equity, equity-linked and debt financing arrangements. We cannot assure you that any additional financing will be available on terms favorable to us, or at all. If adequate funds are not available on acceptable terms, or at all, we may not be able to adequately fund our business plans and it could have a negative effect on our operating cash flows and financial condition.

The following table summarizes our cash flows for the periods indicated:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Cash provided by (used in) operating activities	$ 34,273	$ (42,268)	$ (116,561)
Cash provided by (used in) investing activities	61,959	(234,454)	168,586
Cash provided by financing activities	5,626	247,322	1,538
Effect of exchange rate changes	(1,118)	1,067	75
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 100,740	$ (28,333)	$ 53,638

Cash Provided by (Used in) Operating Activities

During the year ended January 31, 2019 , cash provided by operating activities was $34.3 million which was due to a net loss of $192.6 million offset by non - cash adjustments of $164.0 million and an increase from net change in operating assets and liabilities of $62.9 million . Non - cash adjustments primarily consisted of $117.4 million of stock - based compensation, amortization of deferred costs of $30.6 million and $17.4 million of depreciation and amortization. The net change in operating assets and liabilities, after excluding the impacts from operating assets and liabilities acquired in the business combination with Hortonworks, is as follows: a net decrease in accounts receivable of $54.2 million due to the timing of invoicing compared to the receipt of cash from customers, an increase in deferred revenue of $36.6 million due to the timing of amounts billed to customers compared to revenue recognized during the same period, a decrease in prepaid expenses and other assets of $16.5 million , due to a net increase in other contract liabilities of $5.9 million and a net increase in accounts payable and accrued expenses and other liabilities of $9.2 million due to timing of payments to vendors, offset by a net increase in deferred costs of $39.7 million due to the difference in timing of payment of deferred costs and recognition of these costs and a net decrease in accrued compensation of $18.0 million due to the timing of bonus and incentive-based compensation payments.

During the year ended January 31, 2018, cash used in operating activities was $42.3 million which was due to a net loss of $369.7 million partially offset by non-cash adjustments of $325.0 million and an increase from net change in operating assets and liabilities of $2.4 million . Non-cash adjustments primarily consisted of $290.0 million of stock-based compensation, amortization of deferred costs of $23.3 million and $12.1 million of depreciation and amortization. The net change in operating assets and liabilities was due to an increase in deferred revenue of $57.5 million due to the timing of amounts billed to customers compared to revenue recognized during the same period, a net increase in accounts payable and accrued expenses and other liabilities of $7.0 million due to timing of payments to vendors, an increase in accrued compensation of $5.2 million due to the timing of bonus and incentive-based compensation payments, offset by a net increase in deferred costs of $34.6 million due to the difference in timing of payment of costs and recognition of costs, an increase in accounts receivable of $28.8 million due to the timing of invoicing compared to the receipt of cash from customers and an increase in prepaid expenses and other assets of $16.2 million .

During the year ended January 31, 2017, cash used in operating activities was $116.6 million which was due to a net loss of $158.4 million partially offset by non-cash adjustments of $73.5 million and an increase from net change in operating assets and liabilities of $31.6 million . Non-cash adjustments consisted of $21.7 million of stock-based compensation, $21.6 million of expense for the donation of common stock to the Cloudera Foundation, amortization of deferred costs of $17.2 million , $10.1 million of depreciation and amortization and $2.9 million in accretion and amortization of marketable securities. The net change in operating assets and liabilities was due to an increase in accounts receivable of $56.7 million due to the timing of invoicing compared to the receipt of cash from customers, a net increase in deferred costs of $34.9 million due to the difference in timing of payment of costs and recognition of costs, an increase of $3.3 million in prepaid expenses and other assets, partially offset by an increase in deferred revenue of $50.4 million due to the timing of amounts billed to customers compared to revenue recognized during the same period, an increase in accrued compensation of $11.2 million due to the timing of bonus and incentive-based compensation payments.

Cash Provided by (Used in) Investing Activities

During the year ended January 31, 2019 , cash provided by investing activities was $62.0 million which was due to sales and maturities of marketable securities of $492.2 million and cash acquired from the business combination with Hortonworks of $42.6 million , partially offset by purchases of marketable securities of $462.7 million and capital expenditures for the purchase of property and equipment of $10.1 million .

During the year ended January 31, 2018, cash used in investing activities was $234.5 million which was due to purchases of marketable securities of $620.3 million, partially offset by sales and maturities of marketable securities of $400.6 million, capital expenditures for the purchase of property and equipment of $13.0 million and cash used in business combinations, net of cash acquired, of $1.9 million.

During the year ended January 31, 2017, cash provided by investing activities was $168.6 million which was due to sales and maturities of marketable securities of $282.4 million, partially offset by purchases of marketable securities of $103.8 million, cash used in business combinations, net of cash acquired, of $2.7 million and purchases of property and equipment of $7.4 million.

Cash Provided by Financing Activities

During the year ended January 31, 2019 , cash provided by financing activities was $5.6 million which was due to proceeds from the exercise of stock options and withholdings under our 2017 Employee Stock Purchase Plan (ESPP) of $21.8 million , offset by shares withheld related to the net settlement of RSUs of $16.2 million .

During the year ended January 31, 2018, cash provided by financing activities was $247.3 million which was due to the net proceeds from the issuance of common stock in the IPO of $237.4 million, the net proceeds from the follow-on offering of $46.0 million and proceeds from the exercise of stock options and withholdings under our ESPP of $23.7 million, offset by shares withheld related to net settlement of RSUs of $59.8 million.

During the year ended January 31, 2017, cash provided by financing activities was $1.5 million which was due to proceeds from the exercise of stock options of $3.6 million, offset by payment of deferred offering costs of $2.1 million.

Off - Balance Sheet Arrangements

We have not entered into any off - balance sheet arrangements and do not have any holdings in variable interest entities.

Contractual Obligations and Commitments

The following table summarizes our non-cancelable contractual obligations as of January 31, 2019 :

	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	4-6 Years	More than 6 Years
	(in thousands)				
Operating leases (1)	$ 305,860	$ 42,293	$ 78,647	$ 104,044	$ 80,876
Total contractual obligations	$ 305,860	$ 42,293	$ 78,647	$ 104,044	$ 80,876

(1) We lease our facilities under long-term operating leases, which expire at various dates through 2027 . The lease agreements frequently include provisions which require us to pay taxes, insurance, or maintenance costs.

The above table also includes the non-cancelable contractual obligations that we assumed as part of the Hortonworks merger.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States (GAAP). The preparation of these financial statements requires our management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses and related disclosures. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these judgments and estimates under different assumptions or conditions and any such differences may be material. We believe that our significant accounting policies, which are discussed in Note 2 to our consolidated financial statements, and the accounting policies discussed below, involve a greater degree of complexity, involving management's judgments and estimates. Accordingly, these are the policies we believe are critical to understanding our financial condition and historical and future results of operations.

Revenue Recognition

We generate revenue from subscriptions and services. Subscription revenue relates to term (or time-based) subscription agreements for both open source and propriety software including support. Subscription arrangements are typically one to three years in length but may be up to seven years in limited cases. Arrangements with our customers typically do not include general right of returns. Services revenue relates to professional services for the implementation and use of our subscriptions, machine learning expertise and consultation, training and education services and related reimbursable travel costs.

We price our subscription offerings based on the number of servers in a cluster, or nodes, core or edge devices, data under management and/or the scope of support provided. Our consulting services are priced primarily on a time and materials basis, and to a lesser extent, a fixed fee basis, and training services are generally priced based on attendance.

We determine revenue recognition through the following steps, which are described in more detail below:

- Identification of the contract or contracts with a customer
- Identification of the performance obligation(s) in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligation(s) in the contract
- Recognition of revenue when, or as, a performance obligation is satisfied

Our agreements with customers often include multiple subscriptions and/or professional services elements, and these elements are sometimes included in separate contracts. We consider an entire customer arrangement to determine if separate contracts entered into at or near the same time should be considered combined for the purposes of revenue recognition. We work with partners in various capacities whereby we are typically responsible for providing the actual product or service as a principal.

At contract inception, we assess the subscription and services product offerings or bundle of product offerings in our contracts to identify performance obligations that are distinct. A performance obligation is distinct when it is separately identifiable from other items in a bundled package and if a customer can benefit from it on its own or with other resources that are readily available to the customer. To identify our performance obligations, we consider all of the product offerings promised in the contract. We have concluded that our contracts with customers do not contain warranties that give rise to a separate performance obligation.

The transaction price is the total amount of consideration we expect to be entitled to in exchange for the product offerings in a contract. Sales, value-added and other taxes we collect from customers concurrent with revenue-producing activities are excluded from revenue. In the instance where our contracts with customers contain variable consideration, we estimate variable consideration primarily using the expected value method.

Once we have determined the transaction price, the total transaction price is allocated to each performance obligation in a manner depicting the amount of consideration to which we expect to be entitled in exchange for transferring the product(s) or service(s) to the customer (allocation objective). If the allocation objective is met at contractual prices, no allocations are performed. Otherwise, we allocate the transaction price to each performance obligation identified in the contract on a relative stand-alone selling price basis.

In order to determine the stand-alone selling price, we conduct a periodic analysis that requires judgment and considers multiple factors that are reasonably available and maximizes the use of observable inputs that may vary over time depending upon the unique facts and circumstances related to each performance obligation. To have observable inputs, we require that a substantial majority of the stand-alone selling prices for a product offering fall within a pricing range. If a directly observable stand-alone selling price does not exist, we estimate a stand-alone selling price range by reviewing external and internal market factor categories, which may include pricing practices, historical discounting, industry practices, service groups and geographic considerations. There is also no hierarchy for how to estimate or otherwise determine the stand-alone selling price for product offerings that are not sold separately, however, we maximize the use of observable data. We believe that this analysis results in an estimate that approximates the price we would charge for the product offerings if they were sold separately.

The following describes the nature of our primary types of revenue and the revenue recognition policies and significant payment terms as they pertain to the types of transactions we enter into with our customers.

Subscription Revenue

Subscription revenue relates to term (or time-based) subscriptions to our platform, which includes both open source and proprietary software and related support. Subscriptions include internet, email and phone support, bug fixes, and the right to receive unspecified software updates and upgrades released when and if available during the subscription term. Revenue for subscription arrangements is recognized ratably beginning on the later of the date access is made available to the customer or the start of the contractual term of the arrangement. Subscription revenue also includes revenue related to functional intellectual property that is generally recognized on the date access is made available to the customer.

As part of a subscription, we stand ready to help customers resolve technical issues related to the installed platform. The subscriptions are designed to assist throughout a customer's lifecycle from development to proof-of-concept, to quality assurance and testing, to production and development. Subscription is generally offered under renewable, fixed fee contracts where payments are typically due annually in advance and may have a term of one year or multiple years. The contracts generally do not contain refund provisions for fees earned related to services performed. A subscription is viewed as a stand-ready performance obligation comprised of a series of distinct days of service that is satisfied ratably over time as the services are provided. A time-elapsed output method is used to measure progress because our efforts are expended evenly throughout the period given the nature of the promise is a stand-ready service. Unearned subscription revenue is included in deferred revenue and other contract liabilities. On occasion, we may sell engineering services and/or a premium subscription agreement that provides a customer with development input and the opportunity to work more closely with our developers.

Services revenue

Services revenue is derived primarily from customer fees for consulting services engagements and education services. Our professional services are provided primarily on a time and materials basis and, to a lesser extent, a fixed fee basis, and education services are generally priced based on attendance. Time and material contracts are generally invoiced based upon hours incurred on a monthly basis and fixed fee contracts may be invoiced up-front or as milestones are achieved throughout the project. Services revenue is typically recognized over time as the services are rendered. Depending on the nature of the professional services engagement (e.g., time and materials basis, fixed fee basis, etc.), various measures of progress may be used to recognize revenue. These measures of progress include recognizing revenue in an amount equal to and at the time of invoicing, a measure of time incurred relative to remaining hours expected to be delivered, or other similar measures. These measures depict our efforts to satisfy services contracts and therefore reflect the transfer of control for the services to a customer .

Contract Assets

Contract assets consist of the right to consideration in exchange for product offerings that we have transferred to a customer when that right is conditional on something other than the passage of time (e.g., performance prior to invoicing on fixed fee service arrangements with substantive acceptance terms). We record unbilled accounts receivable related to revenue recognized in excess of amounts invoiced as we have an unconditional right to invoice and receive payment in the future related to those fulfilled obligations. When we have unconditional rights to consideration, except for the passage of time, a receivable will be recorded on the consolidated balance sheets. We do not typically include extended payment terms in our contracts with customers.

Contract Liabilities

Contract liabilities represent an obligation to transfer product offerings for which we have received consideration, or for which an amount of consideration is due from the customer (e.g., subscription arrangements where consideration is paid annually in advance). Contract liabilities are comprised of short-term and long-term deferred revenue and other contract liabilities. Deferred revenue consists of amounts invoiced to customers but not yet recognized as revenue. Our contract balances will be reported as net contract assets or liabilities on a contract-by-contract basis at the end of each reporting period.

Contract Costs

Contract costs, consisting primarily of sales commissions and payroll taxes, that are incremental to obtaining a subscription contract with a customer are capitalized and recorded as deferred costs. We expect to recover deferred contract costs over the period of benefit from the underlying contracts. The amortization period for recovery is consistent with the timing of transfer to the customer of services to which the capitalized costs relate. Contract costs that relate to an underlying transaction are expensed commensurate with the recognition of revenue as performance obligations are satisfied. Contract costs that are incurred in excess of those relating to an underlying transaction are not considered commensurate with recognition of revenue as performance obligations are satisfied, and are amortized on a straight-line basis over the expected benefit period of five years. Commissions for services are treated as a separate class with a contract duration of less than a year and are expensed as incurred. Contract costs were $69.0 million and $60.0 million as of January 31, 2019 and 2018 , respectively. For the years ended January 31, 2019 , 2018 , and 2017 , amortization expense for the contract costs were $30.6 million , $23.3 million and $17.2 million , respectively, and there was no impairment loss in relation to the costs capitalized. We do not incur direct fulfillment-related costs of a nature required to be capitalized and amortized.

Business Combinations, Goodwill and Intangible Assets

We allocate the fair value of purchase consideration in a business combination to tangible assets, liabilities assumed, and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is allocated to goodwill. The allocation of the purchase consideration requires management to make significant estimates and assumptions, especially with respect to intangible assets. These estimates can include, but are not limited to, future expected cash flows from acquired customers and acquired technology from a market participant perspective, useful lives and discount rates. Management’s estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable, and, as a result, actual results may differ from estimates. During the measurement period, which is up to one year from the acquisition or merger date, we may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

We assess goodwill for impairment at least annually and whenever events or changes in circumstances indicate that the carrying value of the asset may not be recoverable. We test goodwill using the two - step process. In the first step, we compare the carrying amount of the reporting unit to the fair value based on the fair value of our common stock. If the fair value of the reporting unit exceeds the carrying value, goodwill is not considered impaired and no further testing is required. If the carrying value of the reporting unit exceeds the fair value, goodwill is potentially impaired, and the second step of the impairment test must be performed. In the second step, we would compare the implied fair value of the goodwill to its carrying amount to determine the amount of impairment loss, if any.

Acquired finite - lived intangible assets are amortized over their estimated useful lives. We evaluate the recoverability of our intangible assets for possible impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the intangible assets are expected to generate. If such review indicates that the carrying amount of our intangible assets is not recoverable, the carrying amount of such assets is reduced to fair value. We have not recorded any such impairment charge during the periods presented.

Stock-based Compensation

We recognize stock‑based compensation expense for all stock - based payments. Employee stock - based compensation cost is estimated at the grant date based on the fair value of the equity for financial reporting purposes and is recognized as expense, over the requisite service period.

We calculate the fair value of options and purchase rights granted under the ESPP based on the Black - Scholes option - pricing model. The Black - Scholes model requires the use of various assumptions including expected term and expected stock price volatility. We estimate the expected term for stock options using the simplified method due to the lack of historical exercise activity. The simplified method calculates the expected term as the midpoint between the vesting date and the contractual expiration date of the award. The expected term for the ESPP purchase rights is estimated using the offering period, which is typically six months. We estimate volatility for options and ESPP purchase rights using volatilities of a group of public companies in a similar industry, stage of life cycle, and size. The interest rate is derived from government bonds with a similar term to the option or ESPP purchase right granted. We have not declared nor do we expect to declare dividends. Therefore, there is no dividend impact on the valuation of options or ESPP purchase rights. We use the straight - line method for employee expense attribution for stock options and ESPP purchase rights.

We have granted RSUs to our employees and members of our board of directors under our 2008 Plan) and our 2017 Plan. Prior to our IPO in May 2017, the employee RSUs vested upon the satisfaction of both a service‑based vesting condition and a liquidity event‑related performance vesting condition. RSUs granted subsequent to our IPO vest upon the satisfaction of a service‑based vesting condition only. The service‑based condition for the majority of these awards is generally satisfied pro‑rata over four years.

In fiscal 2017, stock - based compensation expense was recorded based on awards that were ultimately expected to vest, and such expense was reduced for estimated forfeitures. When estimating forfeitures, we considered voluntary termination behaviors as the trend in actual option forfeitures.

We estimate the fair value of options and other equity awards granted to non-employees using the Black - Scholes method. These awards are subject to periodic re - measurement over the period during which services are rendered. Stock - based compensation expense is recognized over the vesting period on a straight - line basis.

JOBS Act Accounting Election

Under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We elected to retain the ability to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. We lost our emerging growth company status during the year ended January 31, 2019 as the market value of our common stock held by non-affiliates was greater than $700 million as of July 31, 2018.

Recent Accounting Pronouncements

See “Recently Adopted Accounting Standards” and “Recently Issued Accounting Standards” in Note 2 to our consolidated financial statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We have operations both within the United States and internationally, and we are exposed to market risks in the ordinary course of our business. Our market risk exposure is primarily a result of fluctuations in interest rates and foreign currency exchange rates. Information relating to quantitative and qualitative disclosures about these markets risks is described below.

Interest Rate Risk

Our primary exposure to market risk relates to interest rate changes. We had cash and cash equivalents and marketable securities totaling $537.2 million and $442.7 million as of January 31, 2019 and 2018 , respectively, which were held for working capital purposes. Our cash equivalents are comprised primarily of money market funds and our marketable securities are comprised of asset - backed securities, corporate notes and obligations, commercial paper, certificates of deposit, U.S. treasury securities and foreign government obligations. Our investments are made for capital preservation purposes. We do not hold or issue financial instruments for trading or speculative purposes. A hypothetical 100 basis point change in interest rates would change the fair value of our investments in marketable securities by $3.8 million and $4.0 million as of January 31, 2019 and 2018 , respectively.

Foreign Currency Risk

Our revenue and expenses are primarily denominated in U.S. dollars. For our non - U.S. operations, the majority of our revenue and expenses are denominated in other currencies such as Euro, British Pound Sterling, Australian Dollar and Chinese Yuan. Fluctuations in foreign currencies impact the amount of total assets, liabilities, revenues, operating expenses and cash flows that we report for our foreign subsidiaries upon the translation of these amounts into U.S. dollars. As the U.S. dollar fluctuates against certain international currencies, the amounts of revenue and deferred revenue that we report in U.S. dollars for foreign subsidiaries that transact in international currencies may also fluctuate relative to what we would have reported using a constant currency rate.

For the year ended January 31, 2019 , approximately 17% of our revenue and approximately 19% of aggregate cost of sales and operating expenses were generated in currencies other than U.S. dollars. For the year ended January 31, 2018 , approximately 12% of our revenue and approximately 13% of aggregate cost of sales and operating expenses were generated in currencies other than U.S. dollars.

For the year ended January 31, 2019 , we recorded a loss on foreign exchange transactions of $2.5 million . For the year ended January 31, 2018 , we recorded a gain on foreign exchange transactions of $1.3 million . To date, we have not had a formal hedging program with respect to foreign currency, but we may in the future if our exposure to foreign currency should become more significant. For the year ended January 31, 2019 , a 10% increase or decrease in current exchange rates could have had a $3.0 million impact on our financial results.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

The following financial statements are filed as part of this Annual Report on Form 10-K:

REPORTS OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of
Cloudera, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Cloudera, Inc. (the Company) as of January 31, 2019 and 2018 , and the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the three years in the period ended January 31, 2019 , and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at January 31, 2019 and 2018 , and the results of its operations and its cash flows for each of the three years in the period ended January 31, 2019 , in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of January 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 29, 2019 expressed an unqualified opinion thereon.

Adoption of New Accounting Standard

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for revenue from contracts with customers, and incremental costs to acquire contracts with customers retrospectively in the year ended January 31, 2019.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2011.
San Jose, California
March 29, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of
Cloudera, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Cloudera, Inc.'s internal control over financial reporting as of January 31, 2019 , based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Cloudera, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of January 31, 2019 , based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Hortonworks, Inc., which is included in the January 31, 2019 consolidated financial statements of Cloudera, Inc. and constituted less than 10% of total assets as of January 31, 2019 , and less than 5% of revenues and net loss for the year then ended. Our audit of internal control over financial reporting of Cloudera, Inc. also did not include an evaluation of the internal control over financial reporting of Hortonworks, Inc.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of January 31, 2019 and 2018 , the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the three years in the period ended January 31, 2019 , and the related notes and our report dated March 29, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Jose, California
March 29, 2019

CLOUDERA, INC.

Consolidated Balance Sheets
(in thousands, except share and par value data)

	As of January 31, 2019	As of January 31, 2018 (As Adjusted)*
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 158,672	$ 43,247
Short-term marketable securities	322,005	327,842
Accounts receivable, net	242,980	130,318
Contract assets	4,824	2,933
Deferred costs	32,100	22,278
Prepaid expenses and other current assets	38,281	31,470
Total current assets	798,862	558,088
Property and equipment, net	27,619	17,600
Marketable securities, noncurrent	56,541	71,580
Intangible assets, net	679,326	5,855
Goodwill	586,456	33,621
Deferred costs, noncurrent	36,913	37,703
Restricted cash	3,367	18,052
Other assets	7,559	9,312
TOTAL ASSETS	$ 2,196,643	$ 751,811
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 8,185	$ 2,722
Accrued compensation	53,590	41,393
Other contract liabilities	17,177	9,284
Other accrued liabilities	24,548	12,971
Deferred revenue, current portion	390,965	210,577
Total current liabilities	494,465	276,947
Deferred revenue, less current portion	116,604	26,823
Other contract liabilities, less current portion	1,296	3,266
Other liabilities	22,209	16,601
TOTAL LIABILITIES	634,574	323,637
Commitments and contingencies (Note 8)		
STOCKHOLDERS' EQUITY:		
Preferred stock, $0.00005 par value; 20,000,000 shares authorized, no shares issued and outstanding at January 31, 2019 and 2018	—	—
Common stock $0.00005 par value; 1,200,000,000 shares authorized at January 31, 2019 and 2018; 268,818,627 and 145,327,001 shares issued and outstanding at January 31, 2019 and 2018, respectively	13	7
Additional paid-in capital	2,711,340	1,385,592
Accumulated other comprehensive loss	(42)	(832)
Accumulated deficit	(1,149,242)	(956,593)
TOTAL STOCKHOLDERS' EQUITY	1,562,069	428,174
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 2,196,643	$ 751,811

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Consolidated Statements of Operations
(in thousands, except per share data)

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Revenue:			
Subscription	$ 406,333	$ 302,617	$ 208,335
Services	73,608	69,676	64,208
Total revenue	479,941	372,293	272,543
Cost of revenue: (1) (2)			
Subscription	63,329	70,902	38,704
Services	72,785	87,133	48,284
Total cost of revenue	136,114	158,035	86,988
Gross profit	343,827	214,258	185,555
Operating expenses: (1) (2) (3)			
Research and development	173,814	215,695	102,309
Sales and marketing	253,164	287,196	185,421
General and administrative	110,613	85,539	55,907
Total operating expenses	537,591	588,430	343,637
Loss from operations	(193,764)	(374,172)	(158,082)
Interest income, net	9,011	5,150	2,431
Other income (expense), net	(2,478)	1,429	(547)
Net loss before provision for income taxes	(187,231)	(367,593)	(156,198)
Provision for income taxes	(5,418)	(2,079)	(2,187)
Net loss	$ (192,649)	$ (369,672)	$ (158,385)
Net loss per share, basic and diluted	$ (1.21)	$ (3.24)	$ (4.35)
Weighted-average shares used in computing net loss per share, basic and diluted	159,816	114,141	36,406

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

(1) Amounts include stock-based compensation expense as follows (in thousands):

	Years Ended January 31,		
	2019	2018	2017
Cost of revenue – subscription	$ 9,959	$ 24,826	$ 1,426
Cost of revenue – services	11,492	31,843	1,803
Research and development	41,430	100,143	5,606
Sales and marketing	27,918	90,420	5,757
General and administrative	26,566	42,774	7,122

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Consolidated Statements of Operations
(in thousands, except per share data)

(2) Amounts include amortization of acquired intangible assets as follows (in thousands):

	Years Ended January 31,		
	2019	2018	2017
Cost of revenue – subscription	$ 3,251	$ 2,230	$ 1,997
Sales and marketing	5,878	1,493	1,723

(3) In January 2017, we donated 1,175,063 shares of common stock to the Cloudera Foundation. We recorded a non-cash charge of $21.6 million for the fair value of the donated shares, which was recognized in general and administrative expense for the year ended January 31, 2017. See Note 11 for further discussion.

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Consolidated Statements of Comprehensive Loss
(in thousands)

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Net loss	$ (192,649)	$ (369,672)	$ (158,385)
Other comprehensive gain (loss), net of tax:			
Foreign currency translation gain	34	349	75
Unrealized gain (loss) on investments	756	(625)	113
Total other comprehensive gain (loss), net of tax	790	(276)	188
Comprehensive loss	$ (191,859)	$ (369,948)	$ (158,197)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)
(in thousands, except share data)

	Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit (As Adjusted)*	Total Stockholders' Equity (Deficit) (As Adjusted)*
	Shares	Amount	Shares	Amount				
As adjusted balance as of January 31, 2016 [(1)]	74,907,415	657,687	35,775,694	$ 1	$ 145,914	$ (744)	$ (428,536)	$ (283,365)
Shares issued under employee stock plans	—	—	1,157,625	1	3,593	—	—	3,594
Vested restricted stock units converted into shares	—	—	48,306	—	—	—	—	—
Stock-based compensation expense	—	—	—	—	21,714	—	—	21,714
Donation of common stock to the Cloudera Foundation	—	—	1,175,063	—	21,574	—	—	21,574
Unrealized gain on investments	—	—	—	—	—	113	—	113
Foreign currency translation adjustment	—	—	—	—	—	75	—	75
Net loss	—	—	—	—	—	—	(158,385)	(158,385)
Balance as of January 31, 2017	74,907,415	657,687	38,156,688	2	192,795	(556)	(586,921)	(394,680)
Shares issued under employee stock plans	—	—	5,281,193	—	21,435	—	—	21,435
Vested restricted stock units converted into shares	—	—	9,974,266	—	—	—	—	—
Conversion of redeemable convertible preferred stock to common stock in connection with initial public offering	(74,907,415)	(657,687)	74,907,415	4	657,683	—	—	657,687
Issuance of common stock in connection with initial public offering, net of offering costs	—	—	17,250,000	1	235,365	—	—	235,366
Issuance of common stock in connection with follow-on public offering, net of offering costs	—	—	3,000,000	—	46,008	—	—	46,008
Stock-based compensation expense	—	—	—	—	290,006	—	—	290,006
Shares issued related to business combination	—	—	358,206	—	2,081	—	—	2,081
Shares withheld related to net settlement of restricted stock units	—	—	(3,600,767)	—	(59,781)	—	—	(59,781)
Unrealized loss on investments	—	—	—	—	—	(625)	—	(625)
Foreign currency translation adjustment	—	—	—	—	—	349	—	349
Net loss	—	—	—	—	—	—	(369,672)	(369,672)
Balance as of January 31, 2018	—	—	145,327,001	7	1,385,592	(832)	(956,593)	428,174
Shares issued under employee stock plans	—	—	3,827,218	—	22,179	—	—	22,179
Vested restricted stock units converted into shares	—	—	9,079,901	—	—	—	—	—
Stock-based compensation expense	—	—		—	117,365	—	—	117,365
Shares issued in a business								

combination	—	—	111,304,700	6	1,202,422	—	—	1,202,428
Shares withheld related to net settlement of restricted stock units	—	—	(720,193)	—	(16,218)	—	—	(16,218)
Unrealized loss on investments	—	—	—	—	—	756	—	756
Foreign currency translation adjustment	—	—	—	—	—	34	—	34
Net loss	—	—	—	—	—	—	(192,649)	(192,649)
Balance as of January 31, 2019	—	$ —	268,818,627	$ 13	$ 2,711,340	$ (42)	$ (1,149,242)	$ 1,562,069

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

(1) The adjusted balance as of January 31, 2016 includes $60.1 million of commutative effect of changes in accounting principal.

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Consolidated Statements of Cash Flows
(in thousands)

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	$ (192,649)	$ (369,672)	$ (158,385)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	17,428	12,102	10,134
Stock-based compensation	117,365	290,006	21,714
Donation of common stock to the Cloudera Foundation	—	—	21,574
Accretion and amortization of marketable securities	(1,406)	512	2,867
Amortization of deferred costs	30,634	23,284	17,177
Gain on disposal of fixed assets	(25)	(111)	—
Release of deferred tax valuation allowance	—	(806)	—
Changes in assets and liabilities:			
Accounts receivable	54,231	(28,780)	(56,730)
Contract assets	(1,891)	(285)	2,199
Prepaid expenses and other assets	16,497	(16,194)	(3,300)
Deferred costs	(39,665)	(34,557)	(34,917)
Accounts payable	3,795	(667)	(281)
Accrued compensation	(17,962)	5,179	11,222
Accrued expenses and other liabilities	5,413	7,664	15
Other contract liabilities	5,922	12,509	(282)
Deferred revenue	36,586	57,548	50,432
Net cash provided by (used in) operating activities	34,273	(42,268)	(116,561)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchases of marketable securities and other investments	(462,737)	(620,329)	(103,776)
Sales of marketable securities and other investments	56,702	79,069	74,655
Maturities of marketable securities and other investments	435,478	321,552	207,792
Cash used in business combinations, net of cash acquired	—	(1,937)	(2,700)
Cash acquired in business combination	42,557	—	—
Capital expenditures	(10,086)	(12,954)	(7,385)
Proceeds from sale of equipment	45	145	—
Net cash provided by (used in) investing activities	61,959	(234,454)	168,586
CASH FLOWS FROM FINANCING ACTIVITIES			
Net proceeds from issuance of common stock in initial public offering	—	237,422	(2,056)
Net proceeds from issuance of common stock in follow-on offering	—	46,008	—
Taxes paid related to net share settlement of restricted stock units	(16,218)	(59,781)	—
Proceeds from employee stock plans	21,844	23,673	3,594
Net cash provided by financing activities	5,626	247,322	1,538
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,118)	1,067	75
Net increase (decrease) in cash, cash equivalents and restricted cash	100,740	(28,333)	53,638
Cash, cash equivalents and restricted cash — Beginning of period	61,299	89,632	35,994
Cash, cash equivalents and restricted cash — End of period	$ 162,039	$ 61,299	$ 89,632
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION			
Cash paid for income taxes	$ 4,775	$ 2,694	$ 1,689

Purchases of property and equipment in accounts payable and other accrued liabilities	$ 208	$ 1,130	$ 44
Fair value of common stock issued as consideration for business combinations	$ 1,154,230	$ 2,081	$ —
Fair value of equity awards assumed	$ 48,197	$ —	$ —
Offering costs in accounts payable and other accrued liabilities	$ —	$ —	$ 747
Conversion of redeemable convertible preferred stock to common stock	$ —	$ 657,687	$ —

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

See accompanying notes to consolidated financial statements.

CLOUDERA, INC.

Notes to Consolidated Financial Statements

1. Organization and Description of Business

Cloudera, Inc. was incorporated in the state of Delaware on June 27, 2008 and is headquartered in Palo Alto, California. We sell subscriptions and services for an integrated suite of data analytics and management products from the Edge to artificial intelligence (AI). Our offerings are based predominantly on open source software, utilizing data stored natively in public cloud object stores as well as in various open source data stores.

Unless the context requires otherwise, the words “we,” “us,” “our,” the “Company” and “Cloudera” refer to Cloudera, Inc. and its subsidiaries taken as a whole.

In January 2019, we completed our merger of Hortonworks, Inc. (Hortonworks), a publicly-held company headquartered in Santa Clara, California, and a provider of enterprise-grade, global data management platforms, services and solutions, for a total consideration of approximately $1.2 billion consisting of common stock and equity awards assumed (Hortonworks merger) (see Note 3). Our consolidated financial statements for the year ended and as of January 31, 2019 includes the impact of the Hortonworks merger.

During the year ended January 31, 2019, we adopted Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606). The consolidated financial data for the years ended January 31, 2019, 2018 and 2017 and as of January 31, 2019 and 2018 reflects the impact of the full retrospective adoption of this standard. See Note 2 for details.

As of January 31, 2019 , we had an accumulated deficit of $ 1.1 billion . We have funded our operations primarily with the net proceeds we received through the sale of our common stock in our initial public offering (IPO), and follow-on public offering, private sales of equity securities and proceeds from the sale of our subscriptions and services. Management believes that currently available resources will be sufficient to fund our cash requirements for at least the next twelve months.

Initial Public Offering

On May 3, 2017, we completed our IPO in which we issued and sold 17,250,000 shares of common stock at a public offering price of $15.00 per share. We received net proceeds of $235.4 million after deducting underwriting discounts and commissions of $18.1 million and other issuance costs of $5.3 million . In conjunction with the IPO, we donated $2.4 million , or 1% , of the net proceeds, to fund the Cloudera Foundation’s activities. Immediately prior to the closing of the IPO, all 74,907,415 shares of our then-outstanding redeemable convertible preferred stock automatically converted into shares of common stock and we reclassified $657.7 million from temporary equity to additional paid in capital on our consolidated balance sheet.

Follow-On Offering

On October 2, 2017, we completed our follow-on offering, in which we issued and sold 3,000,000 shares of common stock and certain stockholders sold 12,446,930 shares of common stock. The price per share to the public was $16.45 . We received net proceeds of $46.0 million after deducting underwriting discounts and commissions of $2.0 million and other issuance costs of $1.4 million . We did not receive any proceeds from the sale of shares by the selling stockholders. We issued and sold shares in the offering in order to fund the tax withholding and remittance obligations in connection with the vesting and settlement of restricted stock units (RSUs).

2. Summary of Significant Accounting Policies

Basis of Consolidation

The consolidated financial statements include the accounts of Cloudera, Inc. and its wholly owned subsidiaries which are located in various countries, including the United States, Australia, China, India, Germany, Ireland, Netherlands, Singapore, Hungary and the United Kingdom. All intercompany balances and transactions have been eliminated upon consolidation. The financial statements are prepared in accordance with accounting principles generally accepted in the United States (GAAP).

Fiscal Year

Our fiscal year ends on January 31. References to fiscal 2019 , for example, refers to the fiscal year ended January 31, 2019 .

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant items subject to such estimates include the useful lives of property and equipment and intangible assets, stock-based compensation expense, bonus attainment, self-insurance costs incurred, the fair value and useful lives of tangible and intangible assets acquired and liabilities assumed resulting from business combinations, the fair value of our common stock prior to our IPO, estimated period of benefit for deferred contract costs, estimates related to our revenue recognition such as, the assessment of elements in a multi-element arrangement and the valuation assigned to each element and contingencies. These estimates and assumptions are based on management's best estimates and judgment. Management regularly evaluates its estimates and assumptions using historical experience and other factors; however, actual results could differ significantly from these estimates.

Segments

We operate as two operating segments – subscription and services. Operating segments are defined as components of an enterprise for which separate financial information is evaluated regularly by the chief operating decision maker, who is our chief executive officer, in deciding how to allocate resources and assess performance.

Foreign Currency Translation

The functional currency of our foreign subsidiaries is generally the local currency. The gains and losses resulting from translating our foreign subsidiaries' financial statements into U.S. dollars have been reported in accumulated other comprehensive loss on the consolidated balance sheet. Assets and liabilities are translated at exchange rates in effect at the balance sheet date. Equity is translated at the historical rates from the original transaction period. Revenue and expenses are translated at average exchange rates in effect during the period. Foreign currency transaction gains and losses are included in other income, net on the statement of operations.

Cash, Cash Equivalents and Restricted Cash

Cash equivalents consist of short-term, highly liquid investments with original maturities of three months or less from the date of purchase. Restricted cash represents cash on deposit with financial institutions in support of letters of credit outstanding in favor of certain landlords for office space.

Cash as reported on the consolidated statements of cash flows includes the aggregate amounts of cash and cash equivalents and the restricted cash as shown on the consolidated balance sheets. Cash as reported on the consolidated statements of cash flows consists of the following (in thousands):

	As of January 31,		
	2019	2018	2017
Cash and cash equivalents	$ 158,672	$ 43,247	$ 74,186
Restricted cash	3,367	18,052	15,446
Cash, cash equivalents and restricted cash	$ 162,039	$ 61,299	$ 89,632

The restricted cash balance as of January 31, 2019 decreased to $3.4 million from $18.1 million as of January 31, 2018 as a result of the removal of restrictions on letter of credit funds.

Marketable Securities

We have investments in various marketable securities which are classified as available for sale. We determine the appropriate classification of marketable securities at the time of purchase and reevaluate such determination at each balance sheet date. The investments are adjusted for amortization of premiums and discounts to maturity and such amortization is included in interest income, net on the statement of operations. Changes in market value considered to be temporary are recorded as unrealized gains or losses in other comprehensive loss. Realized gains and losses and declines in value judged to be other than temporary on available-for-sale securities are included in other income (expense), net on the statement of operations. The cost of securities sold is based on the specific-identification method.

Concentration of Credit Risk and Significant Customers

Financial instruments that subject us to concentrations of credit risk consist primarily of cash and cash equivalents, marketable securities, restricted cash and accounts receivable. Our cash is deposited with high credit quality financial institutions. At times such deposits may be in excess of the Federal Depository Insurance Corporation insured limits. We have not experienced any losses on these deposits.

At January 31, 2019 , no single customer represented more than 10% of accounts receivable, and at January 31, 2018 one customer represented 16% of accounts receivable. For the years ended January 31, 2019 , 2018 and 2017 , no single customer accounted for 10% or more of revenue.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount. We generally do not require collateral and estimate the allowance for doubtful accounts based on the age of outstanding receivables, customer creditworthiness and existing economic conditions. If events or changes in circumstances indicate that specific receivable balances may be impaired, further consideration is given to the collectability of those balances and an allowance is recorded accordingly. Past-due receivable balances are written off when internal collection efforts have been unsuccessful in collecting the amount due. As of January 31, 2019 and 2018 , allowance for doubtful accounts was $0.2 million and $0.3 million , respectively. The movements in the allowance for doubtful accounts were not significant for any of the periods presented.

Property and Equipment, Net

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation and amortization of property and equipment is calculated using a straight-line method over the estimated useful lives of the respective assets. Maintenance and repairs that do not extend the life or improve the asset are expensed when incurred.

The estimated useful lives of our assets are as follows:

Computer software	2 years
Computer equipment	2-3 years
Furniture and office equipment	3 years
Leasehold improvements	Shorter of remaining lease term or estimated useful life

We review property and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. An impairment loss is recognized when the total of estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition is less than its carrying amount. Impairment, if any, would be assessed using discounted cash flows or other appropriate measures of fair value. There was no impairment of property and equipment during the years ended January 31, 2019 , 2018 or 2017 .

Goodwill and Intangible Assets

Goodwill represents the excess of the fair value of purchase consideration in a business combination over the fair value of net tangible and intangible assets acquired. Goodwill amounts are not amortized, but rather tested for impairment at least annually or more often if circumstances indicate that the carrying value may not be recoverable.

Intangible assets are amortized over their useful lives. Each period we evaluate the estimated remaining useful life of our intangible assets and whether events or changes in circumstances warrant a revision to the remaining period of amortization.

We evaluate the recoverability of our long-lived assets, including intangible assets, for possible impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of these assets is measured by comparison of the carrying amount of each asset to the future undiscounted cash flows the asset is expected to generate. If the undiscounted cash flows used in the test for recoverability are less than the carrying amount of these assets, then the carrying amount of such assets is reduced to fair value.

There were no impairments of goodwill or intangible assets during the years ended January 31, 2019 , 2018 or 2017 .

Business Combinations

We use our best estimates and assumptions to assign fair value to tangible and intangible assets acquired and liabilities assumed at the acquisition or merger date. Such estimates are inherently uncertain and subject to refinement. We continue to collect information and reevaluate these estimates and assumptions and record any adjustments to the preliminary estimates to goodwill provided that we are within the measurement period. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

Capitalized Software Costs

Capitalization of software development costs for products to be sold to third parties begins upon the establishment of technological feasibility and ceases when the product is available for general release. There is generally no significant passage of time between achievement of technological feasibility and the availability of our software for general release, and the majority of our software is open-source. Therefore, we have not capitalized any software costs through January 31, 2019 . All software development costs have been charged to research and development expense in the consolidated statements of operations as incurred.

Comprehensive Loss

Comprehensive loss represents the net loss for the period plus the results of certain changes to stockholders' equity (deficit) that are not reflected in the consolidated statements of operations.

Revenue Recognition

We generate revenue from subscriptions and services. Subscription revenue relates to term (or time-based) subscription agreements for both open source and propriety software including support. Subscription arrangements are typically one to three years in length but may be up to seven years in limited cases. Arrangements with our customers typically do not include general right of returns. Services revenue relates to professional services for the implementation and use of our subscriptions, machine learning expertise and consultation, training and education services and related reimbursable travel costs.

We price our subscription offerings based on the number of servers in a cluster, or nodes, core or edge devices, data under management and/or the scope of support provided. Our consulting services are priced primarily on a time and materials basis, and to a lesser extent, a fixed fee basis, and training services are generally priced based on attendance.

We determine revenue recognition through the following steps, which are described in more detail below:

- Identification of the contract or contracts with a customer
- Identification of the performance obligation(s) in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligation(s) in the contract
- Recognition of revenue when, or as, a performance obligation is satisfied

Our agreements with customers often include multiple subscriptions and/or professional services elements, and these elements are sometimes included in separate contracts. We consider an entire customer arrangement to determine if separate contracts entered into at or near the same time should be considered combined for the purposes of revenue recognition. We work with partners in various capacities whereby we are typically responsible for providing the actual product or service as a principal.

At contract inception, we assess the subscription and services product offerings or bundle of product offerings in our contracts to identify performance obligations that are distinct. A performance obligation is distinct when it is separately identifiable from other items in a bundled package and if a customer can benefit from it on its own or with other resources that are readily available to the customer. To identify our performance obligations, we consider all of the product offerings promised in the contract. We have concluded that our contracts with customers do not contain warranties that give rise to a separate performance obligation.

The transaction price is the total amount of consideration we expect to be entitled to in exchange for the product offerings in a contract. Sales, value-added and other taxes we collect from customers concurrent with revenue-producing activities are excluded from revenue. In the instance where our contracts with customers contain variable consideration, we estimate variable consideration primarily using the expected value method.

Once we have determined the transaction price, the total transaction price is allocated to each performance obligation in a manner depicting the amount of consideration to which we expect to be entitled in exchange for transferring the product(s) or service(s) to the customer (allocation objective). If the allocation objective is met at contractual prices, no allocations are performed. Otherwise, we allocate the transaction price to each performance obligation identified in the contract on a relative stand-alone selling price basis.

In order to determine the stand-alone selling price, we conduct a periodic analysis that requires judgment and considers multiple factors that are reasonably available and maximizes the use of observable inputs that may vary over time depending upon the unique facts and circumstances related to each performance obligation. To have observable inputs, we require that a substantial majority of the stand-alone selling prices for a product offering fall within a pricing range. If a directly observable stand-alone selling price does not exist, we estimate a stand-alone selling price range by reviewing external and internal market factor categories, which may include pricing practices, historical discounting, industry practices, service groups and geographic considerations. There is also no hierarchy for how to estimate or otherwise determine the stand-alone selling price for product offerings that are not sold separately, however, we maximize the use of observable data. We believe that this analysis results in an estimate that approximates the price we would charge for the product offerings if they were sold separately.

The following describes the nature of our primary types of revenue and the revenue recognition policies and significant payment terms as they pertain to the types of transactions we enter into with our customers.

Subscription revenue

Subscription revenue relates to term (or time-based) subscriptions to our platform, which includes both open source and proprietary software and related support. Subscriptions include internet, email and phone support, bug fixes, and the right to receive unspecified software updates and upgrades released when and if available during the subscription term. Revenue for subscription arrangements is recognized ratably beginning on the later of the date access is made available to the customer or the start of the contractual term of the arrangement. Subscription revenue also includes revenue related to functional intellectual property that is generally recognized on the date access is made available to the customer.

As part of a subscription, we stand ready to help customers resolve technical issues related to the installed platform. The subscriptions are designed to assist throughout a customer's lifecycle from development to proof-of-concept, to quality assurance and testing, to production and development. Subscription is generally offered under renewable, fixed fee contracts where payments are typically due annually in advance and may have a term of one year or multiple years. The contracts generally do not contain refund provisions for fees earned related to services performed. A subscription is viewed as a stand-ready performance obligation comprised of a series of distinct days of service that is satisfied ratably over time as the services are provided. A time-elapsed output method is used to measure progress because our efforts are expended evenly throughout the period given the nature of the promise is a stand-ready service. Unearned subscription revenue is included in deferred revenue and other contract liabilities. On occasion, we may sell engineering services and/or a premium subscription agreement that provides a customer with development input and the opportunity to work more closely with our developers.

Services revenue

Services revenue is derived primarily from customer fees for consulting services engagements and education services. Our professional services are provided primarily on a time and materials basis and, to a lesser extent, a fixed fee basis, and education services are generally priced based on attendance. Time and material contracts are generally invoiced based upon hours incurred on a monthly basis and fixed fee contracts may be invoiced up-front or as milestones are achieved throughout the project. Services revenue is typically recognized over time as the services are rendered. Depending on the nature of the professional services engagement (e.g., time and materials basis, fixed fee basis, etc.), various measures of progress may be used to recognize revenue. These measures of progress include recognizing revenue in an amount equal to and at the time of invoicing, a measure of time incurred relative to remaining hours expected to be delivered, or other similar measures. These measures depict our efforts to satisfy services contracts and therefore reflect the transfer of control for the services to a customer .

Contract Assets

Contract assets consist of the right to consideration in exchange for product offerings that we have transferred to a customer when that right is conditional on something other than the passage of time (e.g., performance prior to invoicing on fixed fee service arrangements with substantive acceptance terms). We record unbilled accounts receivable related to revenue recognized in excess of amounts invoiced as we have an unconditional right to invoice and receive payment in the future related to those fulfilled obligations. When we have unconditional rights to consideration, except for the passage of time, a receivable will be recorded on the consolidated balance sheets. We do not typically include extended payment terms in our contracts with customers.

Contract Liabilities

Contract liabilities represent an obligation to transfer product offerings for which we have received consideration, or for which an amount of consideration is due from the customer (e.g., subscription arrangements where consideration is paid annually in advance). Contract liabilities are comprised of short-term and long-term deferred revenue and other contract liabilities. Deferred revenue consists of amounts invoiced to customers but not yet recognized as revenue. Our contract balances will be reported as net contract assets or liabilities on a contract-by-contract basis at the end of each reporting period.

Contract Costs

Contract costs, consisting primarily of sales commissions and payroll taxes, that are incremental to obtaining a subscription contract with a customer are capitalized and recorded as deferred costs. We expect to recover deferred contract costs over the period of benefit from the underlying contracts. The amortization period for recovery is consistent with the timing of transfer to the customer of services to which the capitalized costs relate. Contract costs that relate to an underlying transaction are expensed commensurate with the recognition of revenue as performance obligations are satisfied. Contract costs that are incurred in excess of those relating to an underlying transaction are not considered commensurate with recognition of revenue as performance obligations are satisfied, and are amortized on a straight-line basis over the expected benefit period of five years. Commissions for services are treated as a separate class with a contract duration of less than a year and are expensed as incurred. Contract costs were $69.0 million and $60.0 million as of January 31, 2019 and 2018 , respectively. For the years ended January 31, 2019 , 2018 , and 2017 , amortization expense for the contract costs were $30.6 million , $23.3 million and $17.2 million , respectively, and there was no impairment loss in relation to the costs capitalized. We do not incur direct fulfillment-related costs of a nature required to be capitalized and amortized.

Cost of Revenue

Cost of revenue for subscriptions and services is expensed as incurred. Cost of revenue for subscriptions primarily consists of personnel costs such as salaries, bonuses and benefits and stock-based compensation for employees providing technical support for our subscription customers, allocated shared costs (including rent and information technology) and amortization of certain acquired intangible assets. Cost of revenue for services primarily consists of personnel costs for employees and subcontractors associated with service contracts, travel costs and allocated shared costs.

Research and Development

Research and development costs are expensed as incurred and primarily include personnel costs, contractor fees, allocated shared costs, supplies, and depreciation of equipment associated with the development of new features for our subscriptions prior to the establishment of their technological feasibility.

Stock-Based Compensation

We recognize stock-based compensation expense for all stock-based payments. Employee stock-based compensation cost is estimated at the grant date based on the fair value of the equity for financial reporting purposes and is recognized as expense over the requisite service period. Prior to our IPO, the fair value of our common stock for financial reporting purposes was determined considering objective and subjective factors and required judgment to determine the fair value of common stock for financial reporting purposes as of the date of each equity grant or modification.

We calculate the fair value of options and purchase rights granted under the 2017 Employee Stock Purchase Plan (ESPP) based on the Black - Scholes option - pricing model. The Black - Scholes model requires the use of various assumptions including expected term and expected stock price volatility. We estimate the expected term for stock options using the simplified method due to the lack of historical exercise activity. The simplified method calculates the expected term as the midpoint between the vesting date and the contractual expiration date of the award. The expected term for the ESPP purchase rights is estimated using the offering period, which is typically six months. We estimate volatility for options and ESPP purchase rights using volatilities of a group of public companies in a similar industry, stage of life cycle, and size. The interest rate is derived from government bonds with a similar term to the option or ESPP purchase right granted. We have not declared nor do we expect to declare dividends. Therefore, there is no dividend impact on the valuation of options or ESPP purchase rights. We use the straight - line method for employee expense attribution for stock options and ESPP purchase rights.

We have granted RSUs to our employees and members of our board of directors under our 2008 Equity Incentive Plan (2008 Plan) and our 2017 Equity Incentive Plan (2017 Plan). Prior to our IPO in May 2017, the employee RSUs vested upon the satisfaction of both a service-based vesting condition and a liquidity event-related performance condition. RSUs granted subsequent to our IPO vest upon the satisfaction of a service-based vesting condition only. The service-based condition for the majority of these awards is generally satisfied pro-rata over four years . The liquidity event-related performance condition is satisfied upon the occurrence of a qualifying liquidity event, such as the effective date of an IPO, or six months following the effective date of an IPO. During the quarter ended April 30, 2017, the majority of RSUs were modified such that the liquidity event-related performance condition is satisfied upon the effective date of an IPO, rather than six months following an IPO. The modification established a new measurement date for these modified RSUs. The liquidity event-related performance condition is viewed as a performance-based criterion for which the achievement of such liquidity event is not deemed probable for accounting purposes until the event occurs. The liquidity event-related performance condition was achieved for the majority of our RSUs and became probable of being achieved for the remaining RSUs on April 27, 2017, the effective date of our IPO. We recognized stock-based compensation expense using the accelerated attribution method with a cumulative catch-up of stock-based compensation expense in the amount of $181.5 million in fiscal 2018, attributable to service prior to such effective date.

In fiscal 2019 and 2018, stock - based compensation expense was recorded based on awards that were ultimately expected to vest, and such expense was reduced for forfeitures as they occurred. In fiscal 2017, stock - based compensation expense was recorded based on awards that were ultimately expected to vest, and such expense was reduced for estimated forfeitures. When estimating forfeitures, we considered voluntary termination behaviors as the trend in actual option forfeitures.

We estimate the fair value of options and other equity awards granted to non-employees using the Black-Scholes method. These awards are subject to periodic re-measurement over the period during which services are rendered. Stock-based compensation expense is recognized over the vesting period on a straight-line basis.

Income Taxes

We account for income taxes under the liability method, whereby deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. A valuation allowance is established when, in management’s estimate, it is more likely than not that the deferred tax asset will not be realized.

Any liability related to uncertain tax positions is recorded on the financial statements within other liabilities. Penalties and interest expense related to income taxes, including uncertain tax positions, are classified as a component of provision for income taxes, as necessary.

In December 2017, the U.S. federal government enacted the Tax Cuts and Jobs Act (“Tax Act”). The Tax Act includes a number of changes in existing tax law impacting businesses, including a transition tax, related to a one-time deemed repatriation of cumulative undistributed foreign earnings and a permanent reduction in the U.S. federal statutory rate from 35% to 21%, effective on January 1, 2018.

Subsequent to the enactment of the Tax Act, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118), which allowed us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. As a result, we previously provided a provisional estimate of the effect of the Tax Act in our financial statements. In the fourth quarter of fiscal 2019, we completed our analysis to determine the effect of the Tax Act and no material adjustments were recorded as of January 31, 2019.

Net Loss Per Share

We follow the two-class method when computing net loss per common share as we issue shares that meet the definition of participating securities. The two-class method determines net income (loss) per common share for each class of common stock and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common stock and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed. Prior to the automatic conversion into shares of common stock as a result of our IPO, our redeemable convertible preferred stock contractually entitled the holders of such shares to participate in dividends, but did not contractually require the holders of such shares to participate in our losses. Diluted net loss per share is the same as basic net loss per share in all periods, because potentially dilutive common shares are not assumed to have been issued if their effect is anti-dilutive.

Commitments and Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines and penalties and other sources are recorded when it is probable that a liability has been or will be incurred and the amount of the liability can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

JOBS Act Accounting Election

Under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We elected to retain the ability to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. We lost our emerging growth company status during the year ended January 31, 2019 as the market value of our common stock held by non-affiliates was greater than $700 million as of July 31, 2018.

Recently Adopted Accounting Standards

We adopted the following accounting standards in the first quarter of fiscal 2019:

- ASU No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities
- ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments
- ASU 2016-16, Accounting for Income Taxes: Intra-Entity Asset Transfers of Assets Other than Inventory
- ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business
- ASU 2017-09, Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting

The adoption of the above listed accounting standards did not have a material impact on our consolidated financial statements for the year ended January 31, 2019 .

In May 2014, FASB issued ASU No. 2014-09 *, Revenue from Contracts with Customers ("Topic 606")* , which amended the existing FASB Accounting Standards Codification. Topic 606 establishes a principle for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services and also provides guidance on the recognition of costs related to obtaining and fulfilling customer contracts. Topic 606 also includes Subtopic 340-40, *Other Assets and Deferred Costs; Contracts with Customers* , which requires the deferral of incremental costs of obtaining a contract with a customer. Collectively, we refer to Topic 606 and Subtopic 340-40 as the "new standard."

The new standard permits adoption either by using (i) a full retrospective approach for all periods presented or (ii) a modified retrospective approach with the cumulative effect of initially applying the new standard recognized at the date of initial application and providing certain additional disclosures. We adopted the new standard using the full-retrospective method. This method resulted in the new standard being applied retrospectively to each prior period presented within the consolidated financial statements at the adoption date.

Impacts on Financial Statements

The tables below summarize the impacts of the full retrospective adoption of the new standard on our consolidated balance sheet as of January 31, 2018 and consolidated statements of operations and consolidated statements of cash flows for the years ended January 31, 2018 and 2017 . Our financial reporting under the new standard is included in the columns labeled "As Adjusted" in the tables below.

The primary changes from adopting the new standard are as follows:

- Prior to the adoption of the new standard, the Company recognized subscription revenue over the contractual term or life of the subscription contract. Under the new standard, the Company recognizes the vast majority of its subscription revenue over-time as a stand ready obligation to provide support and a portion of subscription revenue at the point in time when functional intellectual property is made available to the customer.
- Prior to the adoption of the new standard, for multiple-element arrangements, if vendor-specific objective evidence (VSOE) of fair value for one or more undelivered elements did not exist, revenue recognition did not commence until delivery of both the subscription and services had commenced, or when VSOE of the undelivered elements had been established. Once revenue recognition commenced, revenue for the arrangement was recognized ratably over the longest service period in the arrangement. Under the new standard, we allocate the multiple-element arrangement transaction price to each performance obligation identified by using the contractually stated price or on a relative stand-alone selling price basis, as applicable. Then each performance obligation is recognized as delivered resulting in revenue recognition in an earlier period and over a shorter time frame for services and revenue recognition beginning in an earlier period for some subscriptions.
- Prior to the adoption of the new standard, costs incurred to obtain a subscription contract were expensed when incurred. Under the new standard, the Company recognizes expense in a different period, as these costs are now capitalized and amortized on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the capitalized costs relate.
- Prior to the adoption of the new standard, revenue related to variable fees was deferred until the fees became fixed or determinable. Under the new standard, the Company estimates variable consideration to which the Company expects to be entitled by applying the expected value method and recognizes the estimated variable consideration sooner.

Select line items from the consolidated balance sheet as of January 31, 2018 reflecting the adoption of the new standard are as follows (in thousands):

	As of January 31, 2018		
	As Previously Reported	Adjustments	As Adjusted
ASSETS			
Accounts receivable, net	$ 130,579	$ (261)	$ 130,318
Contract assets	—	2,933	2,933
Deferred costs	—	22,278	22,278
Deferred costs, noncurrent	—	37,703	37,703
LIABILITIES AND STOCKHOLDERS' EQUITY			
Deferred revenue, current portion	257,141	(46,564)	210,577
Other contract liabilities	—	9,284	9,284
Other accrued liabilities	13,454	(483)	12,971
Deferred revenue, less current portion	34,870	(8,047)	26,823
Other contract liabilities, noncurrent	—	3,266	3,266
Accumulated deficit	(1,061,790)	105,197	(956,593)

Select line items from the consolidated statements of operations for the years ended January 31, 2018 and 2017 reflecting the adoption of the new standard are as follows (in thousands, except per share data):

	Year Ended January 31, 2018		
	As Previously Reported	Adjustments	As Adjusted
Revenue:			
Subscription	$ 301,022	$ 1,595	$ 302,617
Services	66,421	3,255	69,676
Operating expenses:			
Sales and marketing	298,467	(11,271)	287,196
Loss from operations	(390,293)	16,121	(374,172)
Net loss	(385,793)	16,121	(369,672)
Net loss per share of common stock, basic and diluted	$ (3.38)	$ 0.14	$ (3.24)

	Year Ended January 31, 2017		
	As Previously Reported	Adjustments	As Adjusted
Revenue:			
Subscription	$ 200,252	$ 8,083	$ 208,335
Services	60,774	3,434	64,208
Operating expenses:			
Sales and marketing	203,161	(17,740)	185,421
Loss from operations	(187,339)	29,257	(158,082)
Net loss	(187,317)	28,932	(158,385)
Net loss per share of common stock, basic and diluted	(5.15)	0.80	(4.35)

Select line items from the consolidated statements of cash flows for the years ended January 31, 2018 and 2017 reflect the adoption of the new standard are as follows (in thousands):

	Year Ended January 31, 2018		
	As Previously Reported	Adjustments	As Adjusted
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	$ (385,793)	$ 16,121	$ (369,672)
Adjustment to reconcile net loss to net cash used in operating activities:			
Amortization of deferred costs	—	23,284	23,284
Changes in operating assets and liabilities:			
Accounts receivable, net	(28,788)	8	(28,780)
Contract assets	—	(285)	(285)
Deferred costs	—	(34,557)	(34,557)
Accrued expenses and other liabilities	8,105	(441)	7,664
Other contract liabilities	—	12,509	12,509
Deferred revenue	74,187	(16,639)	57,548
Net cash used in operating activities	(42,268)	—	(42,268)

	Year Ended January 31, 2017		
	As Previously Reported	Adjustments	As Adjusted
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	$ (187,317)	$ 28,932	$ (158,385)
Adjustment to reconcile net loss to net cash used in operating activities:			
Amortization of deferred costs	—	17,177	17,177
Changes in operating assets and liabilities:			
Accounts receivable, net	(52,139)	(4,591)	(56,730)
Contract assets	—	2,199	2,199
Deferred costs	—	(34,917)	(34,917)
Accrued expenses and other liabilities	(284)	299	15
Other contract liabilities	—	(282)	(282)
Deferred revenue	59,249	(8,817)	50,432
Net cash used in operating activities	(116,561)	—	(116,561)

Our adoption of the new standard had no impact to net cash used in operating activities within the consolidated statements of cash flows for the years ended January 31, 2018 and 2017 .

See Note 4—"Revenue from Contracts with Customers" in the notes to our consolidated financial statements for additional information on the new standard.

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* , as amended, or ASU 2016-02, which requires lessees to record most leases on their balance sheets. ASU 2016-02 states that a lessee would recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying asset for the lease term. We will adopt this standard effective February 1, 2019 using the modified retrospective transition method with the option to recognize a cumulative-effect adjustment at the date of adoption. Upon adoption, we expect to elect the transition package of practical expedients permitted within the new standard, which among other things, allows the carryforward of the historical lease classification. We continue to evaluate which other, if any, practical expedients will be elected.

We are in the final stages of completing our review of historical lease contracts to quantify the expected impact of adoption on our consolidated financial statements. To illustrate the magnitude of this change, the amount of our off-balance sheet operating leases at January 31, 2019 is disclosed in Note 8, "Commitments and Contingencies." Beginning on February 1, 2019, our operating leases, excluding those with terms less than 12 months, will be discounted and recorded as right-of-use assets and lease liabilities on our consolidated balance sheet. We do not anticipate that the adoption of this standard will have a material impact on our consolidated statements of operations or statements of cash flows.

In June 2016 the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* , or ASU 2016-13. ASU 2016-13 requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. ASU 2016-13 is effective for annual reporting periods beginning after December 15, 2019, including interim periods within that reporting period. We plan to adopt this standard on February 1, 2019. We estimate the quantitative impact of adopting the new standard will not be material on our consolidated financial statements and disclosures.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment,* or ASU 2017-04. ASU 2017-04 simplifies how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. ASU 2017-04 is effective for annual reporting periods beginning after December 15, 2019, including interim periods within that reporting period. We plan to adopt this standard on February 1, 2019. We are currently evaluating the impact that this standard will have on our consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* , or ASU 2018-02. ASU 2018-02 provides companies with an option to reclassify stranded tax effects resulting from the enactment of the Tax Cuts and Jobs Act (TCJA) from accumulated other comprehensive income to retained earnings. ASU 2018-02 is effective for fiscal years beginning after December 15, 2018, including interim reporting periods within those fiscal years, and will be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the tax rate as a result of TCJA is recognized. We plan to adopt this standard on February 1, 2019. We are currently evaluating the impact that this standard will have on our consolidated financial statements.

In June 2018, the FASB issued ASU 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* , or ASU 2018-07. ASU 2018-07 aligns the accounting for share-based payment awards issued to nonemployees with the guidance applicable to grants to employees. Under ASU 2018-07, equity-classified share-based payment awards issued to nonemployees will be measured on the grant date, instead of the current requirement to remeasure the awards through the performance completion date. ASU 2018-07 is effective for fiscal years beginning after December 15, 2018, including interim reporting periods within those fiscal years. We plan to adopt this standard on February 1, 2019. We estimate the quantitative impact of adopting the new standard will not be material on our consolidated financial statements and disclosures.

In August 2018, the FASB issued ASU 2018-15, *Intangibles-Goodwill and Other (Topic 350): Internal-Use Software* , or ASU 2018-05. ASU 2018-05 aligns the requirements for capitalizing implementation costs incurred in a cloud computing arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. ASU 2018-05 is effective for fiscal years beginning after December 15, 2018, including interim reporting periods within those fiscal years. We plan to adopt this standard on February 1, 2019. We are currently evaluating the impact that this standard will have on our consolidated financial statements.

We continue to assess the potential impacts of the new standards, including the areas described above, however, we do not know or cannot reasonably estimate quantitative information, beyond that discussed above, related to the impact of the new standards on the consolidated financial statements at this time.

3. Business Combination

On January 3, 2019, we acquired all outstanding stock of Hortonworks, a provider of enterprise-grade, global data management platforms, services and solutions for approximately $1.2 billion in consideration consisting of common stock and equity awards assumed. We have included the financial results of Hortonworks in our consolidated financial statements from the date of merger. The transaction costs associated with the merger were approximately $22.8 million , which were included in general and administrative expense in our consolidated statement of operations for the year ended January 31, 2019. The merger-date fair value of the consideration transferred for Hortonworks was approximately $1.2 billion , which consisted of the following (in thousands except for share data):

	Fair Value
Common stock (111,304,700 shares)	$ 1,154,230
Fair value of share-based compensation awards assumed	48,197
Total	$ 1,202,427

The $1.2 billion fair value consideration transferred was determined based on $10.37 per share, the merger date closing price of our stock, for all shares of Hortonworks common stock outstanding immediately prior to the merger date. The fair value of the post share conversion of 4.1 million stock options, 0.9 million of performance restricted stock units and 9.0 million restricted stock units assumed was determined using the Black-Scholes option pricing model for stock option awards and observable market price of our common stock for valuation of performance and restricted share units. The share conversion ratio of 1.305 was applied to convert Hortonworks' outstanding equity awards for Hortonworks' common stock into equity awards for shares of our common stock. Further, we assumed a total fair value of the stock-based awards of $63.5 million , which will be recognized as stock-based compensation expense over a weighted-average period of 1.5 years . Additionally, we recognized $13.1 million of additional stock-based compensation expense during the year ended January 31, 2019 due to the acceleration and modification of certain stock awards assumed as part of the Hortonworks merger.

The following table summarizes the fair values of assets acquired and liabilities assumed as of the date of merger (in thousands):

	Fair Value
Cash and cash equivalents	$ 40,886
Short-term marketable securities	8,103
Accounts receivable, net	165,958
Prepaid expenses and other assets	23,512
Property and equipment, net	8,091
Intangible assets	682,600
Accounts payable	(2,888)
Accrued compensation	(31,007)
Other accrued liabilities and long-term liabilities	(12,163)
Deferred revenue	(233,500)
Total net assets acquired and liabilities assumed	$ 649,592

The fair values of assets acquired and liabilities assumed, including current and noncurrent income taxes payable and deferred taxes, are preliminary and may be subject to change as additional information is received and certain tax returns are finalized. We expect to finalize the valuation as soon as practicable, but no later than one year from the merger date.

The $552.8 million excess of purchase consideration over the fair value of total net assets acquired and liabilities assumed was recorded as goodwill. Goodwill of $500.5 million and $52.3 million was allocated to our Subscription and Services segments, respectively, based on the historical financial results of Hortonworks' support subscription and professional services as we believe this aligns to our existing segments post-merger.

The following table sets forth the components of identifiable intangible assets acquired and their estimated useful lives as of the date of merger:

	Fair Value	Estimated Remaining Useful Life
	(in thousands)	(in years)
Unbilled contracts	$ 18,300	2
Customer relationships	661,600	10
Trade names	2,700	1
Total identified intangible assets	$ 682,600	

Unbilled contracts represent the fair value of Hortonworks' customer contracts that have yet to be billed. Customer relationships represent the fair value of the underlying relationships with Hortonworks' customers. Trade names represent Hortonworks' trademarks, which consumers associate with the source and quality of Hortonworks' products and services. The estimated fair values of the intangible assets acquired were determined based on a combination of the income and market approaches to measure the fair value of unbilled contracts, customer relationships, and trade names. The fair value of unbilled contracts and customer relationships was measured based on the income approach, specifically the multi-period excess earnings method. The fair value of the trade names was determined using the relief-from-royalty method. The estimated useful life of the customer relationships intangible is approximately 10 years , which approximates the mean and median of a benchmarking dataset from similar mergers or acquisitions over the last 7 years , focusing on transactions where customer relationships is the primary asset of the transaction. The estimated useful life of unbilled contracts is based on the period over which the support and services are expected to be rendered and trade names is based on the Company's expected timeframe to phase out the Hortonworks trade names.

The goodwill balance of $552.8 million is attributable to the expansion of our product offerings and expected synergies of the combined workforce, products and technologies with Hortonworks. The goodwill balance is not deductible for U.S. income tax purposes.

The amounts of revenue and net loss of Hortonworks included in our results from the transaction date of January 3, 2019 through January 31, 2019 are as follows (in thousands):

	29 Days Ended January 31, 2019
Revenue	$ 19,597
Net loss	(9,226)

The financial information in the table below summarizes combined unaudited pro forma results of operations of Cloudera based on certain estimates and assumptions, including a merger date of February 1, 2017 and purchase accounting adjustments. These estimates and assumptions were made solely for the purposes of developing such unaudited pro forma information and have not been adjusted to provide period over period comparability. Combined unaudited pro forma results of operations are derived by adding the pre-tax historical results of Hortonworks with ours, and adjusting primarily for the amortization of intangibles created in the transaction, the valuation adjustment to deferred revenue, the alignment of accounting policies and nonrecurring transaction costs.

The below unaudited pro forma financial information for the years ended January 31, 2019 and 2018 combines our historical results for the years ended January 31, 2019 and 2018 with the historical results of Hortonworks for the years ended December 31, 2018 and 2017, due to differences in reporting periods and considering the date we acquired Hortonworks, and the effects of the unaudited pro forma adjustments listed above. The unaudited pro forma financial information below does not reflect any synergies or operating cost reductions that may be achieved from the combined operations (in thousands, unaudited):

	Years Ended	
	January 31, 2019	January 31, 2018
Revenue	$ 753,932	$ 600,856
Net loss	(450,001)	(684,357)

4. Revenue from Contracts with Customers

The following table reflects our contract liabilities balances (in thousands):

	As of January 31,	
	2019	2018 (As Adjusted)*
Deferred revenue, current portion	$ 390,965	$ 210,577
Other contract liabilities	17,177	9,284
Deferred revenue, less current portion	116,604	26,823
Other contract liabilities, less current portion	1,296	3,266
Total contract liabilities	$ 526,042	$ 249,950

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

Significant changes in the contract assets and the contract liabilities balances during the period are as follows (in thousands):

	Contract Assets	Contract Liabilities
February 1, 2017	$ 2,645	$ 179,495
Amount transferred to receivables from contract assets	(2,273)	—
Contract assets additions	2,561	—
Performance obligations satisfied during the period that were included in the contract liability balance at the beginning of the period	—	(156,548)
Increases due to invoicing prior to satisfaction of performance obligations	—	227,003
January 31, 2018	2,933	249,950
Amount transferred to receivables from contract assets	(3,832)	—
Contract assets additions	4,066	—
Performance obligations satisfied during the period that were included in the contract liability balance at the beginning of the period	—	(228,167)
Increases due to invoicing prior to satisfaction of performance obligations	—	270,759
Increases from a business combination	1,657	233,500
January 31, 2019	$ 4,824	$ 526,042

Remaining Performance Obligations

The transaction price allocated to remaining performance obligations represents contracted revenue that has been billed but not recognized, and unbilled non-cancelable amounts that will be recognized as revenue in future periods. Transaction price allocated to the remaining performance obligation is influenced by several factors, including seasonality, the timing of renewals and average contract terms.

During the year ended January 31, 2019 , net revenue recognized from our remaining performance obligations satisfied in previous periods was not material and was primarily related to contract modifications.

As of January 31, 2019 , approximately $803.6 million of revenue is expected to be recognized from remaining performance obligations in the amount of approximately $520.1 million over the next 12 months and approximately $283.5 million thereafter.

Other Practical Expedients

We elected to apply a practical expedient related to significant financing components. The practical expedient states that the promised amount of consideration for the effects of a significant financing component is not adjusted if we expect, at contract inception, that the period between when the we transfer a promised product offering to a customer and when the customer pays for that product offering will be one year or less.

5. Cash Equivalents and Marketable Securities

The following are the fair values of our cash equivalents and marketable securities as of January 31, 2019 (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Cash equivalents:				
Money market funds	$ 29,966	$ —	$ —	$ 29,966
Commercial paper	9,157	1	—	9,158
Certificates of deposit	3,999	1	—	4,000
Reverse repurchase agreements	5,000	—	—	5,000
Marketable securities:				
Asset-backed securities	63,626	16	(57)	63,585
Corporate notes and obligations	140,710	136	(111)	140,735
Commercial paper	101,712	9	(1)	101,720
Certificates of deposit	46,551	21	(1)	46,571
U.S. treasury securities	21,949	—	(14)	21,935
Foreign government obligations	4,000	—	—	4,000
Total cash equivalents and marketable securities	$ 426,670	$ 184	$ (184)	$ 426,670

The following are the fair values of our cash equivalents and marketable securities as of January 31, 2018 (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Cash equivalents:				
Money market funds	$ 10,226	$ —	$ —	$ 10,226
Asset-backed securities	1,600	—	—	1,600
Marketable securities:				
U.S. agency obligations	7,803		(39)	7,764
Asset-backed securities	46,529	—	(124)	46,405
Corporate notes and obligations	195,460	3	(517)	194,946
Commercial paper	85,438	—	(16)	85,422
Municipal securities	13,339	—	(18)	13,321
Certificates of deposit	24,705	3	(7)	24,701
U.S. treasury securities	26,903	—	(40)	26,863
Total cash equivalents and marketable securities	$ 412,003	$ 6	$ (761)	$ 411,248

Maturities of our noncurrent marketable securities generally range from one year to three years at both January 31, 2019 and 2018 .

The total unrealized losses less than twelve months and greater than twelve months were not material as of January 31, 2019 .

The total unrealized losses less than twelve months were $0.7 million and greater than twelve months were not material, as of January 31, 2018 .

The unrealized loss for each of these fixed rate marketable securities was not material as of January 31, 2019 and 2018 . We do not believe any of the unrealized losses represent an other-than-temporary impairment based on our evaluation of available evidence as of January 31, 2019 and 2018 . We expect to receive the full principal and interest on all of these marketable securities and have the ability and intent to hold these investments until a recovery of fair value.

Realized gains and realized losses on our cash equivalents and marketable securities are included in other income (expense), net on the consolidated statement of operations and were not material for the years ended January 31, 2019 , 2018 and 2017 .

Reclassification adjustments out of accumulated other comprehensive loss into net loss were not material for the years ended January 31, 2019 and 2018 .

6. Fair Value Measurement

Our financial assets and liabilities consist principally of cash and cash equivalents, marketable securities, restricted cash, accounts receivable, and accounts payable. We measure and record certain financial assets and liabilities at fair value on a recurring basis. The estimated fair value of accounts receivable and accounts payable approximates their carrying value due to their short-term nature. Cash equivalents, marketable securities and restricted cash are recorded at estimated fair value.

All of our cash equivalents and marketable securities are classified within Level 1 or Level 2 because the cash equivalents and marketable securities are valued using quoted market prices or alternative pricing sources and models utilizing observable market inputs.

We follow a three-level valuation hierarchy for disclosure of fair value measurements as follows:

Level 1 Inputs are unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2 Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.

Level 3 Inputs reflect management’s best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

The following table represents our financial assets and liabilities according to the fair value hierarchy, measured at fair value as of January 31, 2019 (in thousands):

	Level 1	Level 2	Total
Cash equivalents:			
Money market funds	$ 29,966	$ —	$ 29,966
Commercial paper	—	9,158	9,158
Reverse repurchase agreements	—	5,000	5,000
Certificates of deposits	—	4,000	4,000
Marketable securities:			
Asset-backed securities	—	63,585	63,585
Corporate notes and obligations	—	140,735	140,735
Commercial paper	—	101,720	101,720
Certificates of deposit	—	46,571	46,571
U.S. treasury securities	14,950	6,985	21,935
Foreign government obligations	—	4,000	4,000
Total financial assets	$ 44,916	$ 381,754	$ 426,670

The following table represents our financial assets and liabilities according to the fair value hierarchy, measured at fair value as of January 31, 2018 (in thousands):

	Level 1	Level 2	Total
Cash equivalents:			
Money market funds	$ 10,226	$ —	$ 10,226
Asset-backed securities	—	1,600	1,600
Marketable securities:			
U.S. agency obligations	—	7,764	7,764
Asset-backed securities	—	46,405	46,405
Corporate notes and obligations	—	194,946	194,946
Commercial paper	—	85,422	85,422
Municipal securities	—	13,321	13,321
Certificates of deposit	—	24,701	24,701
U.S. treasury securities	24,886	1,977	26,863
Restricted cash:			
Money market funds	14,672	—	14,672
Total financial assets	$ 49,784	$ 376,136	$ 425,920

We value our Level 1 assets using quoted prices in active markets for identical instruments. We value our Level 2 assets with the help of a third-party pricing service using quoted market prices for similar instruments, nonbinding market prices that are corroborated by observable market data, or pricing models such as discounted cash flow techniques. We use such pricing data as the primary input, to which we have not made any material adjustments during the periods presented, to make our determination and assessments as to the ultimate valuation of these assets.

We have no Level 3 assets and liabilities. There were no transfers into or out of Level 1and Level 2 assets and liabilities for the years ended January 31, 2019 and 2018 .

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7. Balance Sheet Components

Property and Equipment, Net

The cost and accumulated depreciation and amortization of property and equipment are as follows (in thousands):

	As of January 31,	
	2019	2018
Computer equipment and software	$ 18,259	$ 17,139
Office furniture and equipment	11,907	7,981
Leasehold improvements	24,174	13,469
Construction in progress	142	3,243
Property and equipment, gross	54,482	41,832
Less: accumulated depreciation and amortization	(26,863)	(24,232)
Property and equipment, net	$ 27,619	$ 17,600

Construction in progress primarily consists of leasehold improvements that have not been placed into service.

Depreciation expense was $8.3 million , $8.4 million and $6.4 million for the years ended January 31, 2019 , 2018 and 2017 , respectively.

Intangible Assets

Intangible assets consisted of the following as of January 31, 2019 (dollars in thousands):

	Gross Fair Value	Accumulated Amortization	Net Book Value	Weighted Average Remaining Useful Life (in years)
Developed technology	$ 11,986	$ (9,258)	$ 2,728	1.9
Customer relationships and other acquired intangible assets	671,097	(12,036)	659,061	9.9
Unbilled contracts	18,300	(763)	17,537	1.9
Total	$ 701,383	$ (22,057)	$ 679,326	9.6

Intangible assets consisted of the following as of January 31, 2018 (dollars in thousands):

	Gross Fair Value	Accumulated Amortization	Net Book Value	Weighted Average Remaining Useful Life (in years)
Developed technology	$ 11,986	$ (6,769)	$ 5,217	2.5
Customer relationships and other acquired intangible assets	6,797	(6,159)	638	4.6
Total	$ 18,783	$ (12,928)	$ 5,855	2.8

Amortization expense for intangible assets was $9.1 million , $3.7 million and $3.7 million during the years ended January 31, 2019 , 2018 and 2017 , respectively.

The expected future amortization expense of these intangible assets as of January 31, 2019 is as follows (in thousands):

2020	$ 79,522
2021	75,492
2022	66,624
2023	66,241
2024	66,160
2025 and thereafter	325,287
Total amortization expense	$ 679,326

Goodwill

The following table represents the changes to goodwill (in thousands):

Balance at January 31, 2017	$ 31,516
Additions from acquisitions	2,105
Balance at January 31, 2018	33,621
Hortonworks merger	552,835
Balance at January 31, 2019	$ 586,456

Accrued Compensation

Accrued compensation consists of the following (in thousands):

	As of January 31,	
	2019	2018
Accrued salaries, benefits and commissions	$ 20,563	$ 15,039
Accrued bonuses	14,832	17,875
Accrued compensation-related taxes	11,797	4,670
Employee stock purchase plan withholdings	1,902	2,238
Other	4,496	1,571
Total accrued compensation	$ 53,590	$ 41,393

Other Accrued Liabilities

Other accrued liabilities consist of the following (in thousands):

	As of January 31,	
	2019	2018 (As Adjusted)*
Accrued professional costs	$ 6,500	$ 2,463
Accrued taxes	3,731	2,092
Accrued travel	2,751	1,492
Accrued self-insurance costs	1,185	1,285
Other	10,381	5,639
Total other accrued liabilities	$ 24,548	$ 12,971

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

Other includes amounts owed to third-party vendors that provide marketing, corporate event planning, cloud-computing services and amounts due for the settlement of certain marketable securities.

8. Commitments and Contingencies

Letters of Credit

As of January 31, 2019 and 2018 , we had a total of $20.0 million and $19.7 million , respectively, in letters of credit outstanding in favor of certain landlords for office space. These letters of credit renew annually and expire at various dates through 2027.

Operating Leases

We lease facilities space under non-cancelable operating leases with various expiration dates. Future minimum lease payments and sublease proceeds under non-cancelable operating leases with an initial lease term greater than one year at January 31, 2019 are as follows (in thousands):

Years Ending January 31:	Minimum Lease Payments	Sublease Rental Proceeds	Net Minimum Lease Payments
2020	$ 42,293	$ (16,500)	$ 25,793
2021	41,475	(15,477)	25,998
2022	37,172	(11,298)	25,874
2023	34,249	(4,388)	29,861
2024	35,190	—	35,190
2025 and thereafter	115,481	—	115,481
Total	$ 305,860	$ (47,663)	$ 258,197

Rental expense related to our non-cancelable operating leases was approximately $23.1 million , $16.1 million and $8.4 million for the years ended January 31, 2019 , 2018 and 2017 , respectively.

Deferred rent

We account for operating leases containing predetermined fixed increases of the base rental rate during the lease term on a straight-line basis over the lease term. We recorded the difference between amounts charged to operations and amounts payable under our operating leases as deferred rent in the consolidated balance sheets.

Indemnification

From time to time, we enter into certain types of contracts that contingently require us to indemnify various parties against claims from third parties. These contracts primarily relate to (i) certain real estate leases under which we may be required to indemnify property owners for environmental and other liabilities and other claims arising from our use of the applicable premises, (ii) our bylaws, under which we must indemnify directors and executive officers, and may indemnify other officers and employees, for liabilities arising out of their relationship with us, (iii) contracts under which we must indemnify directors and certain officers for liabilities arising out of their relationship with us, (iv) contracts under which we may be required to indemnify customers or partners against certain claims, including claims from third parties asserting, among other things, infringement of their intellectual property rights, and (v) procurement, consulting, or license agreements under which we may be required to indemnify vendors, consultants or licensors for certain claims, including claims that may be brought against them arising from our acts or omissions with respect to the supplied products, technology or services. From time to time, we may receive indemnification claims under these contracts in the normal course of business. In addition, under these contracts we may have to modify the accused infringing intellectual property and/or refund amounts received.

In the event that one or more of these matters were to result in a claim against us, an adverse outcome, including a judgment or settlement, may cause a material adverse effect on our future business, operating results or financial condition. It is not possible to determine the maximum potential amount under these contracts due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement.

We maintain director and officer insurance, which may cover certain liabilities arising from our obligation to indemnify our directors and certain officers.

To date, we have not incurred any material costs, and have not accrued any liabilities in the consolidated financial statements as a result of these provisions.

Contingencies

In the ordinary course of business, we are or may be involved in a variety of litigation matters, suits, investigations, and proceedings, including actions with respect to intellectual property claims, government investigations, labor and employment claims, breach of contract claims, tax, and other matters. Regardless of the outcome, these litigation matters can have an adverse impact on us because of defense costs, diversion of management resources, harm to reputation, and other factors. In addition, it is possible that an unfavorable resolution of one or more such litigation matters could, in the future, materially and adversely affect our financial position, results of operations, and cash flows in a particular period or subject us to an injunction that could seriously harm our business.

We record a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. With respect to our outstanding legal matters management believes that the amount or estimable range of possible loss will not, either individually or in the aggregate, have a material adverse effect on our business, consolidated financial position, results of operations, or cash flows. However, the outcome of litigation is inherently uncertain. Therefore, if one or more of these legal matters were resolved against us for amounts in excess of management’s expectations, our results of operations and financial condition including in a particular reporting period, could be materially adversely affected.

9. Stock Option Plans

We maintain two share-based compensation plans: the 2017 Plan, and the 2008 Plan and collectively with the 2017 Plan, the Stock Plans. In March 2017, our board of directors adopted our 2017 Plan, which our stockholders approved in March 2017. The 2017 Plan became effective on April 27, 2017, the effective date of our IPO, and serves as the successor to our 2008 Plan. We do not expect to grant any additional awards under the 2008 Plan. Outstanding awards under the 2008 Plan continue to be subject to the terms and conditions of the 2008 Plan.

In March 2017, we increased the number of shares of common stock reserved for grant under the 2008 Plan by 2,000,000 shares.

In March 2017, we adopted the 2017 Plan with a reserve of 30,000,000 shares of our common stock for issuance under our 2017 Plan, plus an additional number of shares of common stock equal to any shares reserved but not issued or subject to outstanding awards under our 2008 Plan on the effective date of our 2017 Plan, plus, on and after the effective date of our 2017 Plan, (i) shares that are subject to outstanding awards under the 2008 Plan which cease to be subject to such awards, (ii) shares issued under the 2008 Plan which are forfeited or repurchased at their original issue price, and (iii) shares subject to awards under the 2008 Plan that are used to pay the exercise price of an option or withheld to satisfy the tax withholding obligations related to any award. The number of shares reserved for issuance under our 2017 Plan will increase automatically on the first day of February of each calendar year during the term of the 2017 Plan by a number of shares of common stock equal to the lesser of (i) 5% of the total outstanding shares our common stock as of the immediately preceding January 31st or (ii) a number of shares determined by our board of directors. On February 1, 2019 , 13,440,931 additional shares were authorized for issuance by the board of directors. As of January 31, 2019, total number of shares available for grant under the 2017 Plan was 21,000,607 shares.

The Stock Plans provides for stock options to be granted at an exercise price not less than 100% of the fair market value at the grant date as determined by our board of directors, unless, with respect to incentive stock options, the optionee is a 10% stockholder, in which case the option price will not be less than 110% of such fair market value. Options granted generally have a maximum term of ten years from the grant date, are exercisable upon vesting unless otherwise designated for early exercise by the board of directors at the time of grant, and generally vest over a four -year period, with 25% vesting after one year and then ratably on a monthly basis for the remaining three years.

As a result of the Hortonworks merger, a total fair value of the stock-based awards assumed was $63.5 million , which will be recognized as stock-based compensation expense over a weighted-average period of 1.5 years Additionally, we recognized $13.1 million of additional stock-based compensation expense during the year ended January 31, 2019 due to the acceleration and modification of certain employee stock awards assumed as part of the Hortonworks merger.

During the year ended January 31, 2019, we incurred approximately $6.2 million of additional stock-based compensation expense related to the modification of stock awards held by certain employees.

The following table summarizes stock option activity, excluding the ESPP, and related information:

	Options Outstanding				
	Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)		Aggregate Intrinsic Value (in thousands)
Balance — January 31, 2018	18,406,920	5.03	5.3	$	252,571
Granted [1]	4,076,157	8.98	—		—
Exercised	(2,818,534)	3.87	—		—
Canceled	(546,847)	12.50	—		—
Balance — January 31, 2019	19,117,696	$ 5.83	4.3	$	154,431
Exercisable— January 31, 2019	18,871,020	$ 5.69	4.3	$	154,226
Vested — January 31, 2019	19,117,696	$ 5.83	4.3	$	154,431

(1) Consists of 4,076,157 stock options assumed in the Hortonworks merger (see Note 3).

The total intrinsic value of options exercised during the years ended January 31, 2019 , 2018 and 2017 was $31.2 million , $64.1 million and $18.3 million , respectively. The intrinsic value is the difference between the current fair market value of the stock for accounting purposes at the time of exercise and the exercise price of the stock option. As we have accumulated net operating losses, no future tax benefit related to option exercises has been recognized.

The weighted-average grant-date value of employee options granted during the years ended January 31, 2019 , 2018 and 2017 was $4.58 , $8.67 and $9.37 per share, respectively.

The fair value of each stock option grant was estimated at the grant date using the Black-Scholes option-pricing model with the following weighted-average assumptions:

Stock Options	Years Ended January 31,		
	2019	2018	2017
Volatility	45.0%	45.3%	47.9%
Risk-free interest rate	2.5%	2.0%	2.0%
Expected term (in years)	5.0 years	6.1 years	6.0 years
Expected dividends	—%	—%	—%

The unamortized stock-based compensation expense for options of $2.0 million at January 31, 2019 will be recognized over the average remaining vesting period of 1.20 years .

We issue RSUs to employees and directors. For new employee grants, the RSUs generally meet the service-based condition over a four -year period, with 25% met after one year and then ratably on a quarterly basis for the remaining three years . For continuing employee grants, the RSUs generally meet the service-based condition pro-rata quarterly over a three or four -year period (without a one -year cliff).

The employee RSUs issued prior to our IPO under the 2008 Plan had two vesting conditions: (1) a service-based condition and (2) a liquidity event-related performance condition which is considered a performance-based condition. On March 8, 2017, our board of directors modified the terms of the majority of our RSUs. Prior to the modification, if the liquidity event-related performance condition was an IPO, employees were required to continue to provide service for six months following the effective date of an IPO. The modification removed the requirement, for the majority of RSUs, that the RSU recipient must continue to provide service for six months following the effective date of an IPO in order to vest in the award, with such shares to be issued on a date to be determined by our board of directors. All other significant terms of the RSUs remained unchanged. The modification established a new measurement date for these modified RSUs.

The liquidity event-related performance condition was achieved for the majority of our RSUs and became probable of being achieved for the remaining RSUs on April 27, 2017, the effective date of our IPO. We recognized stock-based compensation expense using the accelerated attribution method with a cumulative catch-up of stock-based compensation expense in the amount of $181.5 million for the year ended January 31, 2018, attributable to service prior to such effective date.

RSU activity is as follows:

	RSUs Outstanding	
	Number of RSUs	Weighted-Average Grant Date Fair Value Per Share
Balance —January 31, 2018	22,243,334	$ 16.08
Granted (1)	25,439,099	12.08
Canceled	(4,777,881)	15.57
Vested and converted to shares	(7,846,449)	15.97
Balance — January 31, 2019	35,058,103	13.25

(1) Includes 7,704,004 RSUs assumed in the Hortonworks merger (see Note 3).

The unamortized stock-based compensation expense for RSUs was $375.3 million at January 31, 2019 and will be recognized over the average remaining vesting period of 2.3 years.

2017 Employee Stock Purchase Plan

In March 2017, we adopted our 2017 Employee Stock Purchase Plan (ESPP). The ESPP became effective on April 27, 2017, the effective date of our IPO. Our ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the United States Internal Revenue Code of 1986, as amended (Code). Purchases will be accomplished through participation in discrete offering periods. Each offering period consists of a six -month purchase period (commencing each June 21 and December 21).

Under our ESPP, eligible employees will be able to acquire shares of our common stock by accumulating funds through payroll deductions. Our employees generally are eligible to participate in our ESPP if they are employed by us for at least 20 hours per week and more than five months in a calendar year. Employees who are 5% stockholders or would become 5% stockholders as a result of their participation in our ESPP, are ineligible to participate in our ESPP. We may impose additional restrictions on eligibility. Our eligible employees are able to select a rate of payroll deduction between 1% and 15% of their base cash compensation. The purchase price for shares of our common stock purchased under our ESPP is 85% of the lesser of the fair market value of our common stock on (i) the first trading day of the applicable offering period and (ii) the last trading day of each purchase period in the applicable offering period. No participant has the right to purchase shares of our common stock in an amount, when aggregated with purchase rights under all our employee stock purchase plans that are also in effect in the same calendar year(s), that has a fair market value of more than $25,000 , determined as of the first day of the applicable purchase period, for each calendar year in which that right is outstanding. In addition, no participant is permitted to purchase more than 2,500 shares during any one purchase period or such lesser amount determined by our compensation committee or our board of directors. Once an employee is enrolled in our ESPP, participation will be automatic in subsequent offering periods. An employee's participation automatically ends upon termination of employment for any reason.

We initially reserved 3,000,000 shares of our common stock for issuance under our ESPP. The number of shares reserved for issuance under our ESPP will increase automatically on February 1st of each of the first 10 calendar years following the first offering date by the number of shares equal to the lesser of either (i) 1% of the total outstanding shares of our common stock as of the immediately preceding January 31st (rounded to the nearest whole share) or (ii) a number of shares of our common stock determined by our board of directors. As of January 31, 2019, total number of shares available for grant under the 2017 Employee Stock Purchase Plan was 2,715,436 shares.

On February 1, 2019 , 2,688,186 additional shares were authorized for issuance by the board of directors.

As of January 31, 2019 , $1.9 million was withheld on behalf of employees for a future purchase under the ESPP and is included in accrued compensation in our consolidated balance sheet (see Note 7).

The fair value of each ESPP grant was estimated at the grant date using the Black-Scholes option-pricing model with the following weighted-average assumptions:

ESPP	**Years Ended January 31,**	
	2019	**2018**
Volatility	38.8%	32.9%
Risk-free interest rate	2.4%	1.2%
Expected term (in years)	0.5 years	0.6 years
Expected dividends	—%	—%

10. Income taxes

The domestic and foreign components of loss before provision for income taxes consisted of the following (in thousands):

	Years Ended January 31,		
	2019	**2018 (As Adjusted)***	**2017 (As Adjusted)***
Domestic	$ (191,479)	$ (372,466)	$ (158,973)
Foreign	4,248	4,873	2,775
Net loss before provision for income taxes	$ (187,231)	$ (367,593)	$ (156,198)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

The components of provision for income taxes are as follows (in thousands):

	Years Ended January 31,		
	2019	2018	2017
Current:			
Federal	$ —	$ —	$ —
State	(106)	(112)	(140)
Foreign	(5,371)	(3,097)	(2,011)
Total	(5,477)	(3,209)	(2,151)
Deferred:			
Federal	—	917	(108)
State	—	—	—
Foreign	59	213	72
Total	59	1,130	(36)
Total provision for income taxes	$ (5,418)	$ (2,079)	$ (2,187)

A reconciliation of income taxes at the statutory federal income tax rate to the provision for income taxes included in the consolidated statements of operations is as follows (in thousands):

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
U.S. federal statutory income tax	$ 39,318	$ 124,287	$ 53,108
Research tax credits	10,044	7,976	2,235
Stock-based compensation	(3,004)	(5,124)	(4,340)
Change in valuation allowance	(42,450)	2,907	(44,987)
Foreign Taxes	(4,945)	—	—
Legal expenses	(4,000)	—	—
Donation of common stock to the Cloudera Foundation	—	—	(7,335)
Federal tax rate change	—	(132,387)	—
Other	(381)	262	(868)
Provision for income taxes	$ (5,418)	$ (2,079)	$ (2,187)

In December 2017, the U.S. federal government enacted the Tax Cuts and Jobs Act ("Tax Act"). The Tax Act includes a number of changes in existing tax law impacting businesses, including a transition tax, related to a one-time deemed repatriation of cumulative undistributed foreign earnings and a permanent reduction in the U.S. federal statutory rate from 35% to 21%, effective on January 1, 2018.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118), which allowed us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. As a result, we previously provided a provisional estimate of the effect of the Tax Act in our financial statements. In the fourth quarter of fiscal 2019, we completed our analysis to determine the effect of the Tax Act and no material adjustments were recorded as of January 31, 2019.

The deferred tax assets and liabilities were as follows (in thousands):

	As of January 31,	
	2019	2018 (As Adjusted)*
Deferred tax assets:		
Accruals and reserves	$ 13,753	$ 12,657
Deferred revenue	—	13,934
Net operating loss carryforward	430,220	202,286
Research and development credits and other credits	62,869	27,480
Stock-based compensation	30,946	30,747
Gross deferred tax assets	537,788	287,104
Less valuation allowance	(454,278)	(271,396)
Total deferred tax assets, net of valuation allowance	83,510	15,708
Deferred tax liabilities:		
Depreciation and amortization	(61,285)	(510)
Deferred revenue	(5,026)	—
Deferred costs	(16,768)	(14,755)
Gross deferred tax liabilities	(83,079)	(15,265)
Net deferred tax assets	$ 431	$ 443

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

Undistributed earnings of our foreign subsidiaries at January 31, 2019 are considered to be indefinitely reinvested and, accordingly, no provision for federal and state income taxes has been provided thereon. Due to the Transition Tax and Global Intangible Low-Tax Income (“GILTI”) regimes as enacted by the Tax Act, those foreign earnings will not be subject to federal income taxes when actually distributed in the form of a dividend or otherwise. However, we could still be subject to state income taxes and withholding taxes payable to various foreign countries. The amounts of taxes which we could be subject to are not material to the accompanying financial statements.

In January 2018, the FASB released guidance on the accounting for tax on the GILTI provision of the Tax Act. The GILTI provision imposes a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or treating any taxes on GILTI inclusions as a period cost are both acceptable methods subject to an accounting policy election. We have elected to treat any taxes on GILTI inclusions as a period cost.

A valuation allowance is provided when it is more likely than not that the deferred tax assets will not be realized. We have established a valuation allowance to offset deferred tax assets at January 31, 2019 and 2018 due to the uncertainty of realizing future tax benefits from our net operating loss carryforwards and other deferred tax assets. The net change in the total valuation allowance for the years ended January 31, 2019 and 2018 was an increase of approximately $182.9 million and $78.9 million , respectively.

At January 31, 2019 , we have federal, California and other state net operating loss carryforwards of approximately $1.7 billion , $487.8 million and $621.2 million , respectively, expiring beginning fiscal 2028, for federal and California purposes and fiscal 2020 for other states’ purposes.

In fiscal 2018, we adopted ASU No. 2016-09, which simplified the accounting and reporting of share-based payment transactions, including adjustments to how excess tax benefits and payments for tax withholdings should be classified and provides the election to eliminate the estimate for forfeitures. Upon adoption, we recognized the previously unrecognized excess tax benefits using the modified retrospective transition method. The previously unrecognized excess tax effects were recorded as a deferred tax asset, which was fully offset by a valuation allowance.

At January 31, 2019 , we have federal and state research credit carryforwards of approximately $47.7 million and $37.9 million , respectively, expiring beginning in fiscal 2029 for federal purposes. The state credits can be carried forward indefinitely.

Federal and state tax laws may impose substantial restrictions on the utilization of the net operating loss and credit carryforward attributes in the event of an ownership change as defined in Section 382 and Section 383 of the Internal Revenue Code. Accordingly, our ability to utilize these carryforwards may be limited as a result of such ownership changes. Such a limitation could result in the expiration of our net operating loss and credit carryforwards before they are utilized. We have performed an analysis to determine whether an ownership change has occurred since inception. The analysis identified several historical ownership changes, however the limitations did not result in a material restriction on the use of our carryforwards. In the event we experience any subsequent changes in ownership, the availability of our carryforwards in any taxable year could change.

For benefits to be recorded, a tax position must be more likely than not to be sustained upon examination. The amount recognized is measured as the larg est amount of benefit that is greater than 50% likely of being realized upon settlement.

The following table reflects the changes in the gross unrecognized tax benefits (in thousands):

	Years Ended January 31,		
	2019	2018	2017
Balance as of beginning of year	$ 11,700	$ 9,600	$ 6,500
Tax positions taken in current period			
Gross decreases	(1,000)	—	—
Gross increases (1)	7,900	2,100	3,100
Balance as of end of year	$ 18,600	$ 11,700	$ 9,600

(1) Includes $7.4 million from Hortonworks merger.

As of January 31, 2019, the total amount of gross unrecognized tax benefits was $18.6 million , of which $ 1.1 million , if recognized, would favorably impact our effective tax rate.

We recognize interest and penalties related to income tax matters in the provision for income taxes. As of January 31, 2019 , we had no accrued interest and penalties related to uncertain tax positions. We are subject to taxes in the United States and other foreign jurisdictions. In the normal course of business, we are subject to examination by various federal, state and local taxing authorities. We are not currently under audit by the Internal Revenue Service or any other tax authority. All tax years remain open to examination by major taxing jurisdictions in which we file returns.

11. Related Party Transactions

Intel Corporation

We have been engaged in commercial transactions with Intel Corporation, a holder of our common stock, representing approximately 10% and 18% of outstanding shares as of January 31, 2019 and 2018 respectively, with the right to designate a person that our board of directors must nominate for election, or nominate for re-election, to our board of directors, including a multi-year subscription and services agreement, and a collaboration and optimization agreement. The aggregate revenue we recognized from this customer was $14.2 million , $12.0 million and $8.1 million for the years ended January 31, 2019 , 2018 and 2017 , respectively.

Cloudera Foundation

In January 2017, the Cloudera Foundation, an independent non-profit organization, was created to provide our products, skills and people, to help solve important social problems around the world. We donated 1,175,063 shares of our common stock to the Cloudera Foundation during the fourth quarter of fiscal 2017 . We recorded a non-cash charge of $21.6 million for the fair value of the donated shares, which was recorded in general and administrative expense in the accompanying consolidated statements of operations. In conjunction with the IPO, we donated $2.4 million , or 1% of the net proceeds, to fund the Cloudera Foundation's activities. We do not control the Cloudera Foundation's activities, and accordingly, we do not consolidate the financial statements of the Cloudera Foundation.

Other Related Parties

Certain members of our board of directors currently serve on the board of directors or as an executive of certain companies that are our customers. The aggregate revenue we recognized from these customers was $7.0 million , $7.6 million and $5.8 million for the years ended January 31, 2019 , 2018 and 2017 , respectively. There was $2.5 million and $1.5 million in accounts receivable due from these customers as of January 31, 2019 and 2018 , respectively.

12. Segment Information

The results of the reportable segments are derived directly from our management reporting system and are based on our methods of internal reporting which are not necessarily in conformity with GAAP. Management measures the performance of each segment based on several metrics, including contribution margin, as defined below. Management does not use asset information to assess performance and make decisions regarding allocation of resources. Therefore, depreciation and amortization expense are not allocated among segments.

Contribution margin is used, in part, to evaluate the performance of, and allocate resources to, each of the segments. Segment contribution margin includes segment revenue less the related cost of sales excluding certain operating expenses that are not allocated to segments because they are separately managed at the consolidated corporate level. These unallocated costs include stock-based compensation expense, amortization of certain acquired intangible assets, direct sales and marketing costs, research and development costs, corporate general and administrative costs, such as legal and accounting, interest income, interest expense, and other income and expense.

Financial information for each reportable segment was as follows (in thousands):

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Revenue:			
Subscription	$ 406,333	$ 302,617	$ 208,335
Services	73,608	69,676	64,208
Total revenue	$ 479,941	$ 372,293	$ 272,543

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Contribution margin:			
Subscription	$ 356,214	$ 258,771	$ 173,054
Services	12,315	14,386	17,727
Total segment contribution margin	$ 368,529	$ 273,157	$ 190,781

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

The reconciliation of segment financial information to our loss from operations is as follows (in thousands):

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Segment contribution margin	$ 368,529	$ 273,157	$ 190,781
Amortization of acquired intangible assets	(9,129)	(3,723)	(3,720)
Stock-based compensation expense	(117,365)	(290,006)	(21,714)
Donation of common stock to the Cloudera Foundation	—	—	(21,574)
Corporate costs, such as research and development, corporate general and administrative and other	(435,799)	(353,600)	(301,855)
Loss from operations	$ (193,764)	$ (374,172)	$ (158,082)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

Sales outside of the United States represented approximately 34% , 30% and 27% of our total revenue for the years ended January 31, 2019 , 2018 and 2017 , respectively. No individual foreign country represented more than 10% of revenue in any period presented. All revenues from external customers are attributed to individual countries on an end-customer basis, based on domicile of the purchasing entity, if known, or the location of the customer's headquarters if the specific purchasing entity within the customer is unknown.

As of January 31, 2019 and 2018 , assets located outside the United States were 4% of total assets.

13. Net Loss Per Share

The following table sets forth the calculation of basic and diluted net loss per share during the periods presented (in thousands, except per share data) **:**

	Years Ended January 31,		
	2019	2018 (As Adjusted)*	2017 (As Adjusted)*
Numerator:			
Net loss	$ (192,649)	$ (369,672)	$ (158,385)
Denominator:			
Weighted-average shares used in computing net loss, basic and diluted	159,816	114,141	36,406
Net loss per share, basic and diluted	$ (1.21)	$ (3.24)	$ (4.35)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

The following outstanding shares of common stock equivalents were excluded from the computation of the diluted net loss per share for the periods presented because their effect would have been anti-dilutive (in thousands):

	As of January 31,		
	2019	2018	2017
Redeemable convertible preferred stock on an as-if converted basis	—	—	74,907
Stock options to purchase common stock	19,118	18,407	23,240
Restricted stock awards	35,058	22,243	21,374
Shares issuable pursuant to the ESPP	724	522	—
Total	54,900	41,172	119,521

14. Selected Quarterly Financial Data (unaudited)

The following table sets forth selected summarized quarterly financial information for each of the eight quarters in fiscal 2019 and 2018 (in thousands, except per share data):

	April 30 (As Adjusted)*	July 31 (As Adjusted)*	October 31 (As Adjusted)*	January 31	Fiscal Year
Fiscal 2019					
Revenue	$ 103,459	$ 112,979	$ 118,988	$ 144,515	$ 479,941
Gross profit	70,108	80,847	89,012	103,860	343,827
Loss from operations	(51,702)	(29,424)	(25,673)	(86,965)	(193,764)
Net loss	(52,322)	(28,949)	(25,857)	(85,521)	(192,649)
Net loss per share, basic and diluted	$ (0.36)	$ (0.19)	$ (0.17)	$ (0.45)	$ (1.21)
Fiscal 2018 (as adjusted)*					
Revenue	$ 80,625	$ 89,212	$ 96,721	$ 105,735	$ 372,293
Gross profit	20,513	57,242	63,595	72,908	214,258
Loss from operations	(221,377)	(64,106)	(50,604)	(38,085)	(374,172)
Net loss	(221,356)	(62,650)	(49,352)	(36,314)	(369,672)
Net loss per share, basic and diluted	$ (5.75)	$ (0.47)	$ (0.36)	$ (0.25)	$ (3.24)

* As adjusted to reflect the impact of the full retrospective adoption of Topic 606. See Note 2 for a summary of adjustments.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures.

We maintain a set of disclosure controls and procedures designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and is accumulated and communicated to our management including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. In accordance with Rule 13a-15(b) of the Exchange Act, as of the end of the period covered by this Annual Report on Form 10-K, an evaluation was carried out under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures, as of the end of the period covered by this Annual Report on Form 10-K, were effective to provide reasonable assurance.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of January 31, 2019 based on the guidelines established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. Management reviewed the results of its assessment with our Audit Committee.

In accordance with guidance issued by the SEC, companies are permitted to exclude acquisitions from their final assessment of internal control over financial reporting for the fiscal year in which the acquisition occurred while integrating the acquired operations. Management’s evaluation of internal control over financial reporting excluded the internal control activities of Hortonworks, Inc., which is included in the January 31, 2019 consolidated financial statements of Cloudera, Inc. and constituted less than 10% of total assets as of January 31, 2019 , and less than 5% of revenues and net loss for the year then-ended.

The effectiveness of our internal control over financial reporting as of January 31, 2019 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included in Item 8 of this Annual Report on Form 10-K.

Changes in internal control over financial reporting.

We regularly review our system of internal control over financial reporting and make changes to our processes and systems to improve controls and increase efficiency, while ensuring that we maintain an effective internal control environment. Changes may include such activities as implementing new, more efficient systems, consolidating activities, and migrating processes.

We implemented Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) and Accounting Standards Codification 340-40, Other Assets and Deferred Costs; Contracts with Customers (the “new standard”). Internal controls were designed and implemented to ensure we adequately evaluated our contracts and properly assessed and accounted for the impact of the new standard on our financial statements to facilitate adoption on January 31, 2019 as well as accounting for our revenue after the implementation of the new standard. These internal controls include the development of new policies based on the five-step model provided in the new standard, new contract review requirements and information gathering for disclosure.

Other than as described above, there were no changes in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act that occurred during our most recent fiscal year that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent limitation on the effectiveness of internal control.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls or procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth below, the information called for by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended January 31, 2019 and is incorporated herein by reference.

We maintain a Code of Business Conduct and Ethics that incorporates our code of ethics applicable to all employees, including all officers. Our Code of Business Conduct and Ethics is published on the Investor Relations section of our website at www.cloudera.com. We intend to disclose future amendments to certain provisions of our Code of Business Conduct and Ethics, or waivers of such provisions granted to the principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions on this website within four business days following the date of such amendment or waiver.

ITEM 11. EXECUTIVE COMPENSATION

The information called for by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended January 31, 2019 and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information called for by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended January 31, 2019 and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIP AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information called for by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended January 31, 2019 and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information called for by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended January 31, 2019 and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following documents are filed as a part of this Annual Report on Form 10-K:

(a) Financial Statements

The information concerning our financial statements, and Report of Independent Registered Public Accounting Firm required by this Item is incorporated by reference herein to the section of this Annual Report on Form 10-K in Item 8, entitled "Consolidated Financial Statements and Supplementary Data."

(b) Financial Statement Schedules

All schedules have been omitted because the required information is not present or not present in amounts sufficient to require submission of the schedules, or because the information required is included in Item 8, entitled the "Consolidated Financial Statements and Supplementary Data."

(c) Exhibits

		Incorporated by Reference				
Exhibit Number	Exhibit Title	Form	File No.	Exhibit	Filing Date	Filed Herewith
2.01*	Agreement and Plan of Merger and Reorganization,dated as of October 3, 2018, by and among Cloudera, Inc., Surf Merger Corporation and Hortonworks, Inc.	8-K	001-38069	2.1	10/3/2018	
3.01*	Restated Certificate of Incorporation of the Registrant	10-Q	001-38069	3.01	6/9/2017	
3.02*	Restated Bylaws of the Registrant	10-Q	001-38069	3.02	6/9/2017	
4.01*	Form of Registrant's Common Stock Certificate	S-1	333-217071	4.01	3/31/2017	
4.02*	Amended and Restated Investor Rights Agreement, dated as of March 28, 2017, by and among the Registrant and certain investors of the Registrant	S-1	333-217071	4.02	3/31/2017	
4.03*	Voting and Standstill Agreement, dated as of March 28, 2017, by and between the Registrant and Intel Corporation	S-1	333-217071	4.03	3/31/2017	
4.04*	Confidentiality Agreement, dated as of March 21, 2014, by and between the Registrant and Intel Corporation	S-1	333-217071	4.04	3/31/2017	
10.01*	Form of Indemnification Agreement entered into between the Registrant and each of its directors and executive officers	S-1	333-217071	10.01	3/31/2017	
10.02*	2008 Equity Incentive Plan, as amended, and forms of agreement thereunder	S-1	333-217071	10.02	3/31/2017	
10.03*	2017 Equity Incentive Plan, and forms of agreement thereunder	S-1/A	333-217071	10.03	4/10/2017	
10.04*	2017 Employee Stock Purchase Plan	S-1/A	333-217071	10.04	4/10/2017	
10.05*	Offer Letter between Thomas J. Reilly and the Registrant, dated May 22, 2013	S-1	333-217071	10.05	3/31/2017	
10.06*	Employment Agreement between Jim Frankola and the Registrant, dated September 10, 2012	S-1	333-217071	10.06	3/31/2017	
10.07*	Offer Letter between Michael A. Olson and the Registrant, dated October 2008	S-1	333-217071	10.07	3/31/2017	

10.08*†	Lease between 495 Java Drive Associates, L.P. and the Registrant, dated as of April 18, 2013	S-1	333-217071	10.08	3/31/2017	
10.09*†	Lease between 395 Page Mill LLC and the Registrant, dated as of September 6, 2016	S-1	333-217071	10.09	3/31/2017	
10.10*†	Consent to Sublease between 395 Page Mill LLC, Machine Zone, Inc. and the Registrant dated as of September 26, 2016	S-1	333-217071	10.10	3/31/2017	
10.11*	Sublease between Rubrik, Inc. and the Registrant, dated as of February 8, 2017	S-1	333-217071	10.11	3/31/2017	
10.12*	Amended and Restated Collaboration and Optimization Agreement, dated as of March 28, 2017, by and between the Registrant and Intel Corporation	S-1	333-217071	10.12	3/31/2017	
10.13*†	Enterprise Subscription Agreement, dated as of April 25, 2014, by and between the Registrant and Intel Corporation	S-1	333-217071	10.13	3/31/2017	
10.14*	Gazzang, Inc. Amended and Restated 2008 Stock Purchase and Option Plan	S-8	333-217522	4.07	4/28/2017	
10.15*	Cloudera Bonus Plan - Executive Officers and Leadership Team	8-K	001-38069	10.1	3/29/2018	
10.16*	Cloudera Bonus Plan - 2019 Performance Metrics	8-K	001-38069	10.2	3/29/2018	
10.17*†	Amendment 1 to the Enterprise Subscription Agreement, dated as of October 31, 2017, by and between the Registrant and Intel Corporation	10-K	001-38069	10.17	4/4/2018	
10.18*†	Amendment 2 to the Enterprise Subscription Agreement, dated as of November 17, 2017, by and between the Registrant and Intel Corporation	10-K	001-38069	10.18	4/4/2018	
10.19*†	Amendment No. 2 to Collaboration and Optimization Agreement, dated as of February 1, 2018, by and between the Registrant and Intel Corporation	10-K	001-38069	10.19	4/4/2018	
10.20*	Amendment 3 to the Enterprise Subscription Agreement, dated as of March 30, 2018 by and between the Registrant and Intel Corporation	10-K	001-38069	10.20	4/4/2018	
10.21*	Form of the Registrant's Severance and Change in Control Agreement	10-K	001-38069	10.21	4/4/2018	
10.22*	Form of Cloudera Support Agreement	8-K	001-38069	10.1	10/3/2108	
10.23*	Form of Hortonworks Support Agreement	8-K	001-38069	10.2	10/3/2018	
10.24	Offer Letter between Arun Murthy and the Registrant, dated December 31, 2018					X
10.25	Severance and Change in Control Agreement between Arun Murthy and the Registrant, dated December 31, 2018					X
21.01*	List of subsidiaries	S-1	333-217071	21.01	3/31/2017	
23.02	Consent of Independent Registered Public Accounting Firm					X
24.01	Power of Attorney (included on signature pages to Annual Report)					X
31.01	Certification of Thomas J. Reilly, Chief Executive Officer, pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X

31.02	Certification of Jim Frankola, Chief Financial Officer, pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X
32.01#	Certification of Thomas J. Reilly, Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
32.02#	Certification of Jim Frankola, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
101.INS	XBRL Instance Document	X
101.SCH	XBRL Schema Linkbase Document	X
101.CAL	XBRL Calculation Linkbase Document	X
101.DEF	XBRL Definition Linkbase Document	X
101.EXT	XBRL Extension Label Linkbase Document	X
101.PRE	XBRL Presentation Linkbase Document	X

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* Previously filed.

† Confidential treatment has been granted with respect to portions of this exhibit.

\# This certification is deemed not filed for purposes of section 18 of the Exchange Act, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

CLOUDERA, INC.

Date: March 29, 2019	By:	/s/ Thomas J. Reilly
		Thomas J. Reilly Chief Executive Officer and Director *(Principal Executive Officer)*
Date: March 29, 2019	By:	/s/ Jim Frankola
		Jim Frankola Chief Financial Officer *(Principal Financial Officer)*
Date: March 29, 2019	By:	/s/ Scott Reasoner
		Scott Reasoner Chief Accounting Officer *(Principal Accounting Officer)*

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Thomas J. Reilly, Jim Frankola and Scott Reasoner, and each of them, as his or her true and lawful attorneys-in-fact, proxies, and agents, each with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies, and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies, and agents, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Name	Title	Date
/s/ Thomas J. Reilly Thomas J. Reilly	Chief Executive Officer and Director *(Principal Executive Officer)*	March 29, 2019
/s/ Jim Frankola Jim Frankola	Chief Financial Officer *(Principal Financial Officer)*	March 29, 2019
/s/ Scott Reasoner Scott Reasoner	Chief Accounting Officer *(Principal Accounting Officer)*	March 29, 2019
/s/ Robert Bearden Robert Bearden	Director	March 29, 2019
/s/ Martin Cole Martin Cole	Director	March 29, 2019
/s/ Paul Cormier Paul Cormier	Director	March 29, 2019
/s/ Kimberly Hammonds Kimberly Hammonds	Director	March 29, 2019
/s/ Peter Fenton Peter Fenton	Director	March 29, 2019
/s/ Kevin Klausmeyer Kevin Klausmeyer	Director	March 29, 2019
/s/ Rose Schooler Rose Schooler	Director	March 29, 2019
/s/ Michael A. Stankey Michael A. Stankey	Director	March 29, 2019

cloudera® 395 Page Mill Road, Building 3 | Palo Alto, CA 94304

Employment Offer Letter

December 31, 2018

Arun C. Murthy
517A Porpoise Bay Terrace
Sunnyvale CA 94089

Dear Arun:

On behalf of the Board of Directors (the " ***Board*** ") of Cloudera (the " ***Company*** "), I am pleased to offer you the position of Chief Product Officer (" ***CPO*** "). We believe that you will add substantially to the team and contribute greatly to the ultimate success of the Company by providing the same extraordinary leadership and vision that you have demonstrated throughout your career. This offer is conditional upon closing of the merger of the Company and Hortonworks, Inc. (" ***Hortonworks*** ") pursuant to the terms of that certain Agreement and Plan of Merger and Reorganization by and among the Company, Hortonworks and the other parties named therein, on October 3, 2018, as amended from time to time (the " ***Merger*** "). If you accept this offer, your full-time employment will commence on the closing date of the Merger, or such other time as is mutually agreed in writing between you and the Company (the " ***Start Date*** "). The terms of your employment with the Company will be as follows:

1. **Position.** You will serve as the Company's CPO, and report to the Company's Chief Executive Officer. You will render such business and professional services in the performance of your duties, consistent with your position within the Company, as will reasonably be assigned to you by your supervisor or the Board. This is a full-time position with responsibility for the Company's engineering and support. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company. Your employment with the Company will be for no certain duration but will be "at-will" employment. Although your job duties, title, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at-will" nature of your employment may only be changed in a document signed by you and a duly authorized executive of the Company (other than you).

2. **Location.** You will work out of Cloudera's Palo Alto, California location, or such other location as mutually agreed to between you and the Company.

3. **Compensation.**

   (a) ***Base Salary.*** You will receive an annual salary of $380,000, less applicable withholding, which will be paid in accordance with the Company's normal payroll procedures. This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time.

   (b) ***Bonus.*** You will be eligible for an annual target bonus of sixty percent (60%) of your Base Salary (" ***Target Bonus*** " and the portion thereof to which you are actually entitled, the " ***Bonus*** "), less applicable withholding. Your Bonus will be based on the Company's achievement of any applicable performance objectives and/or conditions that are established by the Company in its sole discretion. Payment of your Bonus will be subject to your continued employment through and until the date of payment, which will be no later than March 15 of the calendar year following the year in which such Bonus is earned.

(c) ***Equity Incentives.*** The Hortonworks Board of Directors is expected to make a grant of 220,000 restricted stock units for Hortonworks' common stock to you immediately prior to the closing of the Merger (the " ***Transition RSUs*** "). The Transition RSUs will be subject to the Amended and Restated Hortonworks, Inc. 2014 Stock Option and Incentive Plan and form of award agreement. Subject to, and upon the closing of the Merger, the Transition RSUs will be assumed and converted into restricted stock units for a number of shares of Company's common stock equal to (x) 220,000, *multiplied by* (y) an exchange ratio of 1.305, such that you will hold 287,100 Company RSUs immediately following the closing. The Transition RSUs shall vest in full on December 15, 2019, subject to your continued employment through that date.

In addition, the Company will request that its Board of Directors approve another grant to you of RSUs for the Company's common stock valued at $8,000,000, based on a 10-day closing price average for the period prior to the closing date of the Merger, as determined by the Company's Board of Directors (the " ***Retention RSUs*** "). These Retention RSUs will be subject to the terms and conditions of the Company's 2017 Equity Incentive Plan and form of award agreement. 80% of the Retention RSUs will be subject to service-based vesting, and 1/12 th of the total number of shares underlying that portion of the grant will vest on each of the Company's four pre-selected vesting dates for RSU recipients (March 15; June 15; September 15; and December 15) following December 15, 2019, subject to your continued employment through such dates. The remaining 20% of the Retention RSUs will vest subject to the achievement of performance criteria to be established by the Board and your continued employment through the applicable performance period.

Notwithstanding anything to the contrary in this letter, neither the Transition RSUs nor the Retention RSUs described in this Section 3(c) will be subject to any accelerated vesting under the terms of any Hortonworks termination, severance or change in control agreement, plan, policy or any other arrangement or understanding between you and Hortonworks.

4. **Benefits** . The Company will provide you with the opportunity to participate in the Company's standard health, dental and other benefits plans approved by the Board (which may include vacation or paid time off), subject to any eligibility requirements or other limits generally imposed by such plans or programs.

5. **Termination of Employment.** You will be eligible to receive certain benefits and severance payments under a Severance and Change in Control Agreement between you and the Company (including an Executive Addendum to the Severance and Change in Control Agreement) (together, the " ***Severance Agreement*** "), which will become effective on the earlier of the 12-month anniversary of your Start Date or a Change in Control of the Company (as defined in the Severance Agreement). The Severance Agreement is attached to this offer letter as **Exhibit A** . Except as set forth in Section 3 above, any existing severance and/or acceleration terms you may have with Hortonworks pursuant to that certain Amended and Restated Employment Agreement by and between you and Hortonworks, dated September 28, 2018, those restricted stock unit agreements by and between you and Hortonworks, dated on or about February 6, 2018 and April 7, 2017, or otherwise (collectively, " ***Separation Benefits*** ") will remain in effect until the day immediately prior to the effective date of the Severance Agreement. As of the effective date of the Severance Agreement, all of your Hortonworks Separation Benefits shall terminate and shall be superseded in their entirety by the terms and conditions of the Severance Agreement.

   Notwithstanding any provisions in this letter, the Severance Agreement or any agreement with Hortonworks to the contrary, you hereby expressly acknowledge and agree that any and all rights you may have to invoke "good reason," a "constructive termination" or other similar phrase due to (i) a diminution in your authority, duties or responsibilities or those of your supervisor, as applicable, or (ii) a relocation of your business office, whether such rights arise before or after the closing of the Merger, shall be measured solely by comparison to your position and the position of your supervisor as set forth in Section 1 hereof and the principal location of your business office as set forth in Section 2 hereof, respectively.

6. **Background Checks.** The Company reserves the right to conduct background investigations and/or reference checks on all of its potential employees. Your job offer, therefore, is contingent upon a clearance of such a background investigation and/or reference check, if any. Should your employment terminate due to the failure to pass a background check that does not amount to "Cause" under the Severance Agreement or any Hortonworks severance agreement, this offer letter and the Severance Agreement shall be void and you will not waive your rights under any Hortonworks severance agreement.

7. **Evidence of Employment Eligibility.** For purposes of federal immigration law, you will be required to provide to the Company documentary evidence of your identity and eligibility for employment in the United States. Such documentation must be provided to us within three (3) business days of your date of hire.

8. **Withholdings.** All forms of compensation paid to you as an employee of the Company shall be less all applicable withholdings.

9. **Confidentiality; Compliance with Policies.** As a Company employee, you will be expected to abide by Company rules and regulations. You will be specifically required to sign an acknowledgement that you have read and understand the Company rules of conduct included in the Company handbook. You will be expected to sign and comply with the Employment, Confidential Information and Intellectual Property Assignment Agreement attached as **Exhibit B** (the " ***Confidentiality Agreement*** "), which requires, among other things, the assignment of your rights to intellectual property made during your employment at the Company, and non-disclosure of proprietary information.

10. **Complete Agreement.** This letter (together with the Severance Agreement and Confidentiality Agreement), and your agreements with Hortonworks identified in Section 5 in respect of your Separation Benefits, represent the entire agreement between you and the Company with respect to the material terms and conditions of your employment, and supersedes and replaces any and all prior verbal or written discussions, negotiations and/or agreements between you and the Company or between you and Hortonworks (or any representative thereof) relating to the subject matter hereof.

11. **Counterparts.** This letter may be executed (i) in counterparts, each of which shall be an original, with same effect as if the signatures hereto were on the same instrument; and (ii) by facsimile or pdf. The parties agree that such facsimile or pdf signatures shall be deemed original signatures for all purposes.

To accept the Company's offer, please sign and return this letter (including the attached exhibits) to the Company no later than December 31, 2018. In the event that the Merger is not completed, this offer will automatically terminate and will be of no further force or effect.

AGREED AND ACCEPTED	CLOUDERA, INC.
/s/ Arun C. Murthy	/s/ Tom Reilly
Arun C. Murthy	Tom Reilly
December 31, 2018	CEO

EXHIBIT A

Severance and Change in Control Agreement

EXHIBIT B

Employment, Confidential Information and Intellectual Property Assignment Agreement

EXHIBIT A **CLOUDERA, INC.**

Employment, Confidential Information and Intellectual Property Assignment Agreement

As a condition of my employment with Cloudera, Inc., its subsidiaries, affiliates, successors or assigns (together, the " ***Company*** "), and in consideration of my employment with the Company and my receipt of the compensation now and hereafter paid to me by the Company, I agree to the following terms under this Employment, Confidential Information and Intellectual Property Assignment Agreement (the " ***Intellectual Property Agreement*** "):

1. **Employment** .

(a) I understand and acknowledge that my employment with the Company is for an unspecified duration and constitutes "at-will" employment. I acknowledge that this employment relationship may be terminated at any time, with or without good cause or for any or no cause, at the option either of the Company or myself, with or without notice.

(b) I agree that, during the term of my employment with the Company, I will not engage in any other employment, occupation, consulting or other business activity related to the business in which the Company is now involved or becomes involved during the term of my employment, nor will I engage in any other activities that conflict with my obligations to the Company.

2. **Confidential Information** .

(a) **Company Information** . I agree at all times during the term of my employment (my " ***Relationship with the Company*** ") and thereafter to hold in strictest confidence, and not to use except for the benefit of the Company or to disclose to any person, firm or corporation without written authorization of the Board of Directors of the Company, any Confidential Information of the Company. I understand that " ***Confidential Information*** " means any Company proprietary information, technical data, trade secrets or know-how, including, but not limited to, research, product plans, products, services, customer lists and customers (including, but not limited to, customers of the Company on whom I called or with whom I became acquainted during the term of my Relationship with the Company), markets, works of original authorship, photographs, negatives, digital images, software, computer programs, know-how, ideas, developments, inventions (whether or not patentable), processes, formulas, technology, designs, drawings, engineering, hardware configuration information, forecasts, strategies, marketing, finances or other business information disclosed to me by the Company either directly or indirectly in writing, orally or by drawings or observation or inspection of parts or equipment. I further understand that Confidential Information does not include any of the foregoing items which has become publicly known and made generally available through no wrongful act of mine or of others who were under confidentiality obligations as to the item or items involved.

(b) **Other Employer Information**. I agree that I will not, during my Relationship with the Company, improperly use or disclose any proprietary information or trade secrets of any former or concurrent employer or other person or entity and that I will not bring onto the premises of the Company any unpublished document or proprietary information belonging to any such employer, person or entity unless consented to in writing by such employer, person or entity.

(c) **Third Party Information**. I recognize that the Company has received and in the future will receive from third parties their confidential or proprietary information subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. I agree to hold all such confidential or proprietary information in the strictest confidence and not to disclose it to any person, firm or corporation or to use it except as necessary in carrying out my work for the Company consistent with the Company's agreement with such third party.

3. **Intellectual Property**.

(a) **Assignment of Intellectual Property**. I agree that I will promptly make full written disclosure to the Company, will hold in trust for the sole right and benefit of the Company, and hereby assign to the Company, or its designee, all my right, title, and interest in and to any original works of authorship, inventions, concepts, improvements or trade secrets, whether or not patentable or registrable under copyright or similar laws, which I may solely or jointly conceive or develop or reduce to practice, or cause to be conceived or developed or reduced to practice, during the period of time I am in the service of the Company (collectively referred to as " ***Intellectual Property*** ") and which (i) are developed using the equipment, supplies, facilities or Confidential Information of the Company, (ii) result from or are suggested by work performed by me for the Company, or (iii) relate to the business, or to the actual or demonstrably anticipated research or development of the Company. The Intellectual Property will be the sole and exclusive property of the Company. I further acknowledge that all original works of authorship which are made by me (solely or jointly with others) within the scope of and during the period of my Relationship with the Company and which are protectable by copyright are "works made for hire," as that term is defined in the United States Copyright Act. To the extent any Intellectual Property is not deemed to be work for hire, then I will and hereby do assign all my right, title and interest in such Intellectual Property to the Company, except as provided in Section 3(e).

(b) **Patent and Copyright Registrations**. I agree to assist the Company, or its designee, at the Company's expense, in every proper way to secure the Company's rights in the Intellectual Property and any copyrights, patents or other intellectual property rights relating thereto in any and all countries, including the disclosure to the Company of all pertinent information and data with respect thereto, the execution of all applications, specifications, oaths, assignments and all other instruments which the Company shall deem necessary in order to apply for and obtain such rights and in order to assign and convey to the Company, its successors, assigns, and nominees the sole and exclusive rights, title and interest in and to such Intellectual Property, and any copyrights, patents or other intellectual property rights relating thereto. I further agree that my obligation to execute or cause to be executed, when it is in my power to do so, any such instrument or papers shall continue after the termination of this Intellectual Property Agreement. If the Company is unable because of my mental or physical incapacity or for any other reason to secure my assistance in perfecting the rights transferred in this Intellectual Property Agreement, then I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, to act for and in my behalf and stead to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of letters patent or copyright registrations thereon with the same legal force and effect as if executed by me. The designation and appointment of the Company and its duly authorized officers and agents as my agent and attorney in fact shall be deemed to be coupled with an interest and therefore irrevocable.

(c) **Maintenance of Records** . I agree to keep and maintain adequate and current written records of all Intellectual Property made by me (solely or jointly with others) during the term of my Relationship with the Company. The records will be in the form of notes, sketches, drawings, and works of original authorship, photographs, negatives, digital images or any other format that may be specified by the Company. The records will be available to and remain the sole property of the Company at all times.

(d) **Intellectual Property Retained and Licensed** . I provide below a list of all original works of authorship, inventions, developments, improvements, and trade secrets which were made by me prior to my Relationship with the Company (collectively referred to as " ***Prior Intellectual Property*** "), which belong to me, which relate to the Company's proposed business, products or research and development, and which are not assigned to the Company hereunder; or, if no such list is attached, I represent that there is no such Prior Intellectual Property. If in the course of my Relationship with the Company, I incorporate into Company property any Prior Intellectual Property owned by me or in which I have an interest, the Company is hereby granted and shall have a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license to make, have made, modify, use and sell such Prior Intellectual Property as part of or in connection with such Company property.

Prior Intellectual Property:

Title	Date	Identifying Number or Brief Description

(e) **Exception to Assignments**. I understand that the provisions of this Intellectual Property Agreement requiring assignment of Intellectual Property to the Company are limited to Section 2870 of the California Labor Code, which is attached hereto as **Appendix A**, and do not apply to any intellectual property that (i) I develop entirely on my own time; and (ii) I develop without using Company equipment, supplies, facilities, or trade secret information; and (iii) do not result from any work performed by me for the Company; and (iv) do not relate at the time of conception or reduction to practice to the Company's current or anticipated business, or to its actual or demonstrably anticipated research or development. Any such intellectual property will be owned entirely by me, even if developed by me during the time period in which I am employed by the Company. I will advise the Company promptly in writing of any intellectual property that I believe meet the criteria for exclusion set forth herein and are not otherwise disclosed pursuant to Section 3(d) above.

(f) **Return of Company Documents**. I agree that, at the time of leaving the employ of the Company, I will deliver to the Company (and will not keep in my possession, recreate or deliver to anyone else) any and all works of original authorship, photographs, negatives, digital images, devices, records, data, notes, reports, proposals, lists, correspondence, specifications, drawings blueprints, sketches, materials, equipment, other documents or property, or reproductions of any aforementioned items developed by me pursuant to my Relationship with the Company or otherwise belonging to the Company, its successors or assigns. In the event of the termination of my Relationship with the Company, I agree to sign and deliver the "***Termination Certificate***" attached hereto as **Appendix B**.

4. **Notification of New Employer**. In the event that I leave the employ of the Company, I hereby grant consent to notification by the Company to my new employer or consulting client about my rights and obligations under this Intellectual Property Agreement.

5. **No Solicitation of Employees, Consultants and Customers.** In consideration for my Relationship with the Company and other valuable consideration, receipt of which is hereby acknowledged, I agree that:

(a) During the period of my Relationship with the Company as an employee, officer and/or director and for a period of twelve (12) months thereafter I shall not solicit the employment of any person who shall then be employed by the Company (as an employee or consultant) or who shall have been employed by the Company (as an employee or consultant) within the prior twelve (12) month period, on behalf of myself or any other person, firm, corporation, association or other entity, directly or indirectly.

(b) For a period of twelve (12) months immediately following the termination of my Relationship with the Company for any reason, I shall not (i) either directly or indirectly solicit any existing or prospective customer, client or account of the Company with whom I communicated or with whom I became acquainted during my Relationship with the Company; or (ii) cause or attempt to cause any existing or prospective customer, client or account of the

Company to divert from, terminate, limit or in any manner fail to enter into any actual or potential business relationship with the Company.

6. **Representations**. I represent that my performance of all the terms of this Intellectual Property Agreement will not breach any agreement to keep in confidence proprietary information acquired by me in confidence or in trust prior to my Relationship with the Company. I have not entered into, and I agree I will not enter into, any oral or written agreement in conflict herewith. I agree to execute any proper oath or verify any proper document required to carry out the terms of this Intellectual Property Agreement.

7. **Arbitration and Equitable Relief**.

(a) **Arbitration**. Except as provided in Section (b) below, I agree that any dispute or controversy arising out of or relating to any interpretation, construction, performance or breach of this Intellectual Property Agreement, shall be settled by arbitration to be held in San Francisco, California, in accordance with the rules then in effect of the American Arbitration Association, provided however, the parties will be entitled to full and liberal evidentiary discovery in accordance with the rules governing civil litigation in courts of the same jurisdiction. The arbitrator may grant injunctions or other relief in such dispute or controversy. The decision of the arbitrator shall be final, conclusive and binding on the parties to the arbitration. Judgment may be entered on the arbitrator's decision in any court having jurisdiction. The Company will pay the costs and expenses of such arbitration, and each of us shall separately pay our counsel fees and expenses.

(b) **Equitable Remedies**. Each of the Company and I agree that disputes relating to or arising out of a breach of the covenants contained in this Intellectual Property Agreement would likely require injunctive relief to maintain the status quo of the parties pending the appointment of an arbitrator pursuant to this Intellectual Property Agreement. The parties hereto also agree that it would be impossible or inadequate to measure and calculate the damages from any breach of the covenants contained in this Intellectual Property Agreement prior to resolution of any dispute pursuant to arbitration. Accordingly, pursuant to C.C.P. §1281.8(b), if either party claims that the other party has breached any covenant of this Intellectual Property Agreement, that party will have available, in addition to any other right or remedy, the right to obtain an injunction from a court of competent jurisdiction restraining such breach or threatened breach and/or to specific performance of any such provision of this Intellectual Property Agreement pending resolution of the dispute through arbitration. The parties further agree that no bond or other security shall be required in obtaining such equitable relief and hereby consents to the issuance of such injunction and to the ordering of specific performance. However, upon appointment of an arbitrator, the arbitrator shall review any interim, injunctive relief granted by a court of competent jurisdiction and shall have the discretion, jurisdiction, and authority to continue, expand, or dissolve such relief pending completion of the arbitration of such dispute or controversy. The parties agree that any orders issued by the arbitrator may be enforced by any court of competent jurisdiction if necessary to ensure compliance by the parties.

8. **General Provisions** .

(a) **Governing Law; Consent to Personal Jurisdiction** . This Intellectual Property Agreement will be governed by the laws of the State of California as they apply to contracts entered into and wholly to be performed within such State. I hereby expressly consent to the nonexclusive personal jurisdiction and venue of the state and federal courts located in the federal Northern District of California for any lawsuit filed there by either party arising from or relating to this Intellectual Property Agreement.

(b) **Entire Agreement** . This Intellectual Property Agreement sets forth the entire agreement and understanding between the Company and me relating to the subject matter herein and merges all prior discussions between us. No modification of or amendment to this Intellectual Property Agreement, nor any waiver of any rights under this Intellectual Property Agreement, will be effective unless in writing signed by the party to be charged. Any subsequent change or changes in my duties, salary or compensation will not affect the validity or scope of this Intellectual Property Agreement.

(c) **Severability** . If one or more of the provisions in this Intellectual Property Agreement are deemed void by law, then the remaining provisions will continue in full force and effect.

(d) **Successors and Assigns** . This Intellectual Property Agreement will be binding upon my heirs, executors, administrators and other legal representatives and will be for the benefit of the Company, its successors, and its assigns.

IN WITNESS WHEREOF, the undersigned has executed this Employment, Confidential Information and Intellectual Property Assignment Agreement as of ___,.

Signature: ___Name: ___Address: __

APPENDIX A

California Labor Code Section 2870. **Application of provision that employee shall assign or offer to assign rights in invention to employer.**

(a) Any provision in an employment agreement which provides that an employee shall assign, or offer to assign, any of his or her rights in an invention to his or her employer shall not apply to an invention that the employee developed entirely on his or her own time without using the employer's equipment, supplies, facilities, or trade secret information except for those inventions that either:

(1) Relate at the time of conception or reduction to practice of the invention to the employer's business, or actual or demonstrably anticipated research or development of the employer.

(2) Result from any work performed by the employee for the employer.

(b) To the extent a provision in an employment agreement purports to require an employee to assign an invention otherwise excluded from being required to be assigned under subdivision (a), the provision is against the public policy of this state and is unenforceable.

APPENDIX B

APPENDIX B CLOUDERA, INC.

Termination Acknowledgments

I confirm that I have returned any Cloudera property that is in my possession, including any equipment, records, data, notes, reports, proposals, lists, correspondence, and specifications, and that I do not have any of these items in my possession.

I further confirm that I have complied with all the terms of the Employment, Confidential Information and Intellectual Property Assignment Agreement that I signed when I joined Cloudera, and that I will continue to comply with all the terms of that agreement, including my confidentiality and non-solicit obligations therein.

This Acknowledgement does not limit any continuing obligations I have under the Intellectual Property Agreement.

Date: ______________________

____
(Signature)

SEVERANCE AND CHANGE IN CONTROL AGREEMENT

This Severance and Change in Control Agreement, including the Executive Addendum attached hereto (collectively, the " **Agreement** "), is entered into as of December 31, 2018 by and between Arun C. Murthy (the " **Executive** ") and Cloudera, Inc., a Delaware corporation (the " **Company** ") and is effective on the earlier of (a) the 12-month anniversary of the Executive's Start Date (as set forth in the offer letter by and between the Executive and the Company dated on or about the date hereof) or (b) a Change in Control of the Company (the " **Effective Date** ").

1. TERM OF AGREEMENT.

This Agreement shall terminate on the first to occur of (i) the date the Executive's employment with the Company terminates for a reason other than a Qualifying Termination as described in Section 4(k) or (ii) the date the Company has met all of its obligations under this Agreement following a termination of the Executive's employment with the Company for a reason described in Section 4(k) .

2. SEVERANCE BENEFIT.

(a) **Other than During a Change in Control Period** .

(i) Severance Payments . If the Executive is subject to a Qualifying Termination other than during a Change in Control Period, then, subject to Section 3 below, the Company shall pay the Executive (I) the Severance Multiplier (Other than During a Change in Control Period) as specified and defined in the applicable Executive Addendum multiplied by the Executive's base salary at the annual rate in effect when the Qualifying Termination occurred and (II) an amount equal to the product of (y) the annual bonus target to which the Executive would have been entitled (calculated as if all applicable bonus targets were achieved) for the bonus period in which the Qualifying Termination occurred (" **Final Period** ") and (z) a fraction, the numerator of which is the number of days for which the Executive was employed by the Company during the Final Period and the denominator of which is the total number of calendar days in the Final Period (the " **Prorated Bonus** "). To the extent the foregoing amount is payable under Section 2(b) and/or included as Accrued Compensation and Expenses and/or Accrued Benefits (as described in Section 2(e)), it will not be paid under this Section 2(a) . The Executive will receive his or her severance payment pursuant this Section 2(a)(i) in a cash lump-sum which will be made on or before the sixtieth (60^{th}) day following the Separation, provided that the following have already occurred:

(1) the Company's receipt of the Executive's executed General Release (as described in Section 2(d)); and

(2) the expiration of any rescission period applicable to the Executive's executed General Release.

(ii) Health Care Benefit . If the Executive is subject to a Qualifying Termination other than during a Change in Control Period and satisfies both the conditions set forth in Section 2(a)(i)(1) and Section 2(a)(i)(2) above to receive cash severance payments, and if the Executive elects to continue his or her health insurance coverage under the Consolidated Omnibus Budget Reconciliation Act (" **COBRA** ") following the termination of his or her employment, then the Company shall pay the Executive's monthly premium under

COBRA until the earliest of (1) the COBRA Continuation Period (Other than During a Change in Control Period) as specified and defined in the Executive Addendum; (2) the date when the Executive receives similar coverage with a new employer or (3) the expiration of the Executive's continuation coverage under COBRA.

(iii) Equity. If the Executive is subject to a Qualifying Termination other than during a Change in Control Period and satisfies both the conditions set forth in Section 2(a)(i)(1) and Section 2(a)(i)(2) above, then, subject to Section 3 below, Executive will be permitted to exercise any vested shares subject to Equity Awards (as defined below) that are nonstatutory stock options to purchase shares of Company common stock until the Post-Termination Exercise Date that is specified and defined in the Executive Addendum; *provided* that such post-termination exercise period shall end upon the consummation of a Change in Control, unless such nonstatutory stock options are assumed in the Change in Control; *provided*, *further*, that in no event shall such post-termination exercise period exceed the expiration of the maximum term of the nonstatutory stock options.

(b) **During a Change in Control Period.**

(i) Severance Payments. If the Executive is subject to a Qualifying Termination during a Change in Control Period, then, subject to Section 3 below, the Company shall pay the Executive (I) the Severance Multiplier (During a Change in Control Period) as specified and defined in the applicable Executive Addendum multiplied by the sum of (w) the Executive's base salary at the annual rate in effect when the Qualifying Termination occurred or when the Change in Control occurred, whichever is greater, plus (x) the Executive's annual target bonus for the fiscal year in which the Qualifying Termination occurred or when the Change in Control occurred, whichever is greater (in each case calculated as if all applicable bonus targets were achieved) and (II) the Prorated Bonus. To the extent the foregoing amount is payable under Section 2(a) and/or included as Accrued Compensation and Expenses and/or Accrued Benefits (as described in Section 2(e)), it will not be paid under this Section 2(b). The Executive will receive his or her severance payment pursuant this Section 2(b)(i) in a cash lump-sum which will be made on the sixtieth (60th) day following the Separation, provided that the following have already occurred:

(1) the Company's receipt of the Executive's executed General Release (as described in Section 2(d)); and

(2) the expiration of any rescission period applicable to the Executive's executed General Release.

(ii) Health Care Benefit. If the Executive is subject to a Qualifying Termination and satisfies both the conditions set forth in Subsection 2(b)(i)(1) and Subsection 2(b)(i)(2) above to receive cash severance payments, and if the Executive elects to continue his or her health insurance coverage under COBRA following the termination of his or her employment, then the Company shall pay the Executive's monthly premium under COBRA until the earliest of (1) the COBRA Continuation Period (During a Change in Control Period) as specified and defined in the Executive Addendum; (2) the date when the Executive receives similar coverage with a new employer or (3) the expiration of the Executive's continuation coverage under COBRA.

(iii) Equity. If the Executive is subject to a Qualifying Termination during a Change in Control Period and satisfies both the conditions set forth in Section 2(b)(i)(1) and Section 2(b)(i)(2) above, then, subject to Section 3 below, (a) each of Executive's then outstanding unvested Equity Awards, including awards that would otherwise vest only upon satisfaction of performance criteria, shall accelerate and become vested and exercisable with respect to the Equity Acceleration as specified and defined in the Executive

Addendum and (b) Executive will be permitted to exercise any vested shares subject to Equity Awards that are nonstatutory stock options to purchase shares of Company common stock (after giving effect to the foregoing acceleration of vesting) until the Post-Termination Exercise Date that is specified and defined in the Executive Addendum; *provided* that such post-termination exercise period shall end upon the consummation of a Change in Control, unless such nonstatutory stock options are assumed in the Change in Control; *provided* , *further* , that in no event shall such post-termination exercise period exceed the expiration of the maximum term of the nonstatutory stock options. Subject to Section 2(d) and Section 3 , the accelerated vesting described above shall be effective as of the Qualifying Termination. With respect to awards that would otherwise vest only upon satisfaction of performance criteria, the Equity Acceleration shall apply at target level of such performance criteria.

(c) **Special Cash Payments in Lieu of COBRA Premiums.** Notwithstanding Section 2(a)(ii) or Section 2(b)(ii) above, if the Executive is eligible for, and the Company determines, in its sole discretion, that it cannot pay, the COBRA premiums without a substantial risk of violating applicable law (including Section 2716 of the Public Health Service Act) which will cause significant financial harm to the Company, the Company instead shall pay to the Executive, on the first day of each calendar month, a fully taxable cash payment equal to the applicable COBRA premiums for that month (including premiums for the Executive and the Executive's eligible dependents who have elected and remain enrolled in such COBRA coverage), subject to applicable tax withholdings (such amount, the " **Special Cash Payment** "), for the remainder of the period the Executive remains eligible for the benefit under Section 2(a)(ii) or Section 2(b)(ii) above. The Executive may, but is not obligated to, use such Special Cash Payments toward the cost of COBRA premiums. In the event the Company opts for the Special Cash Payments, then on the sixtieth (60^{th}) day following the Separation, the Company will make the first payment to the Executive under this Section 2(c) , in a lump sum, equal to the aggregate Special Cash Payments that the Company would have paid through such date had the Special Cash Payments commenced on the first day of the first month following the Separation through such sixtieth (60^{th}) day, with the balance of the Special Cash Payments paid monthly thereafter.

(d) **General Release** . Any other provision of this Agreement notwithstanding, Section 2(a) , Section 2(b) , and Section 2(c) above shall not apply unless the Executive (i) has executed a general release (in a form prescribed by the Company and provided to other executives similarly situated) (" **General Release** ") of all known and unknown claims that he or she may then have against the Company or persons affiliated with the Company and such release has become effective and (ii) has agreed not to prosecute any legal action or other proceeding based upon any of such claims. The General Release must be in the form prescribed by the Company, without alterations. The Company will deliver the form to the Executive within thirty (30) days after the Executive's Separation. The Executive must execute and return the General Release within the time period specified in the form. The Executive shall not be required to release any claims arising under (a) any indemnification agreement between the Executive and the Company or (b) any rights to indemnification, advancement of expenses or repayment arising under the Company's Amended and Restated Certificate of Incorporation, the Company's Amended and Restated Bylaws or the indemnification provisions of applicable State statutes, in each case as currently in effect or as subsequently amended.

(e) **Accrued Compensation and Benefits** . In connection with any termination of employment prior to, upon or following a Change in Control (whether or not a Qualifying Termination), the Company shall pay Executive's earned but unpaid base salary and other vested but unpaid cash entitlements for the period through and including the termination of employment, including unused earned vacation pay and unreimbursed documented business expenses incurred by Executive through and including the date of termination (collectively " **Accrued Compensation and Expenses** "), as required by law and the applicable Company plan or policy. In addition, Executive shall be entitled to any other vested benefits earned by Executive for the period through and including the termination date of Executive's employment under any other employee benefit plans and arrangements maintained by the Company, in accordance with the terms of such plans and arrangements, except as modified herein (collectively " **Accrued Benefits** "). Any Accrued Compensation and Expenses to which the Executive is entitled shall be paid to the Executive in cash as soon as administratively practicable after the termination, and, in any event, no later than two and one-half (2-1/2) months after the end of the taxable year of the Executive in which the termination occurs. Any Accrued Benefits to which the Executive is entitled shall be paid to the Executive as provided in the relevant plans and arrangement.

3. COVENANTS.

(a) **Non-Competition** . The Executive agrees that, during his or her employment with the Company, he or she shall not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company.

(b) **Non-Solicitation** . The Executive agrees that, during his or her employment with the Company and for a one (1) year period thereafter, her or she will not directly or indirectly solicit away employees or consultants of the Company for his or her own benefit or for the benefit of any other person or entity, nor will the Executive encourage or assist others to do so.

(c) **Cooperation and Non-Disparagement** . The Executive agrees that, during the six-month period following his or her cessation of employment, he or she shall cooperate with the Company in every reasonable respect and shall use his or her best efforts to assist the Company with the transition of Executive's duties to his or her successor. The Executive further agrees that, during this six-month period, he or she shall not in any way or by any means disparage the Company, the members of the Board or the Company's officers and employees.

(d) This Section 3 shall in no manner limit obligations of the Executive under any other agreement between the Company and the Executive in any manner; provided, however, that to the extent the terms of this Section 3 directly conflict with the terms of any such agreement, the agreement containing the most Company-favorable terms that are enforceable shall govern.

4. DEFINITIONS.

(a) " **Board** " means the Company's Board of Directors.

(b) " **Cause** " means (i) the Executive has been convicted of, or has pleaded guilty or nolo contendere to, any felony or crime involving moral turpitude, (ii) the Executive has engaged in willful misconduct which is injurious to the Company or materially failed or refused to perform the material duties lawfully and reasonably assigned to the Executive or has performed such material duties with gross negligence or has breached any material term or condition of this Agreement, the Executive's Employment, Confidential Information and Intellectual Property Assignment Agreement with the Company or any other material agreement with the Company, in any case after written notice by the Company of such misconduct, performance issue, gross negligence or breach of terms or conditions and an opportunity to cure within thirty (30) days of such written notice thereof from the Company, unless such misconduct, nonperformance, gross negligence or breach is, by its nature, not curable, or (iii) the Executive has committed any act of fraud, theft, embezzlement, misappropriation of funds, breach of fiduciary duty or other willful act of material dishonesty against the Company that results in material harm to the Company. Cause also shall have the meaning as may be set forth in the Executive Addendum.

(c) “ **Code** ” means the Internal Revenue Code of 1986, as amended.

(d) “ **Change in Control** ” means the occurrence of any of the following events: (i) any “person” (as such term is used in Sections 13(d) and 14(d) of the Exchange Act) becomes the “beneficial owner” (as defined in Rule 13d-3 of the Exchange Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company’s then outstanding voting securities; or (ii) the consummation of the sale or disposition by the Company of all or substantially all of the Company’s assets; or (iii) the consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its parent) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity or its parent outstanding immediately after such merger or consolidation; provided that the event also qualifies as a change in control under U.S. Treasury Regulation 1.409A-3(i)(5)(v) or 1.409A-3(i)(5)(vii).

(e) “ **Change in Control Period** ” means the period commencing three (3) months prior to a Change in Control (only if after a Potential Change in Control) and ending twelve (12) months following a Change in Control.

(f) “ **Disability** ” means a physical or mental incapacity or disability as a result of which Executive becomes unable to perform the essential functions of Executive’s job at the Company (if appropriate, with reasonable accommodation) for a continuous period of ninety (90) days or for an aggregate of one-hundred twenty (120) days in any consecutive twelve (12) month period.

(g) “ **Equity Awards** ” means all options to purchase shares of Company common stock as well as any and all other stock-based awards granted to the Executive, including but not limited to stock bonus awards, restricted stock, restricted stock units (“ **RSUs** ”) or stock appreciation rights.

(h) “ **Exchange Act** ” means the Securities Exchange Act of 1934, as amended

(i) “ **Good Reason** ” means a cessation of the Executive’s employment as a result of the Executive’s resignation within twelve (12) months after the occurrence of one or more of the following without the Executive’s consent: (i) a reduction of more than 10% in Executive’s base salary as an employee of the Company, except to the extent that the Company implements an equal percentage reduction applicable to all executive officers and management personnel; (ii) a material reduction in the Executive’s duties, responsibilities or authority at the Company; (iii) a change in the geographic location at which Executive must perform services which results in an increase in the one-way commute of Executive by more than 50 miles; (iv) a successor of the Company as set forth in Section 5(a) hereof does not assume this Agreement; or (v) as specified in the Executive Addendum. A resignation for Good Reason will not be deemed to have occurred unless the Executive gives the Company written notice of the condition within ninety (90) days after the condition comes into existence and the Company fails to remedy the condition within thirty (30) days after receiving the Executive’s written notice.

(j) “ **Potential Change in Control** ” means the date of execution of a definitive agreement whereby the Company will consummate a Change in Control if such transaction is consummated.

(k) “ **Qualifying Termination** ” means a Separation resulting from (i) a termination by the Company of the Executive’s employment for any reason other than Cause, or (ii) a voluntarily resignation by the Executive of his or her employment for Good Reason. Termination by Disability will not constitute a Qualifying Termination.

(l) " **Separation** " means a " *separation from service* ," as defined in the regulations under Section 409A of the Code.

5. SUCCESSORS.

(a) **Company's Successors** . The Company shall require any successor (whether direct or indirect and whether by purchase, lease, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets, by an agreement in substance and form satisfactory to the Executive, to assume this Agreement and to agree expressly to perform this Agreement in the same manner and to the same extent as the Company would be required to perform it in the absence of a succession. For all purposes under this Agreement, the term " **Company** " shall include any successor to the Company's business and/or assets or which becomes bound by this Agreement by operation of law.

(b) **Executive's Successors** . This Agreement and all rights of the Executive hereunder shall inure to the benefit of, and be enforceable by, the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

6. GOLDEN PARACHUTE TAXES.

(a) **Best After-Tax Result** . In the event that any payment or benefit received or to be received by Executive pursuant to this Agreement or otherwise (" **Payments** ") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code and (ii) but for this subsection (a), be subject to the excise tax imposed by Section 4999 of the Code, any successor provisions, or any comparable federal, state, local or foreign excise tax (" **Excise Tax** "), then, subject to the provisions of Section 6(b) hereof, such Payments shall be either (A) provided in full pursuant to the terms of this Agreement or any other applicable agreement, or (B) provided as to such lesser extent which would result in no portion of such Payments being subject to the Excise Tax (" **Reduced Amount** "), whichever of the foregoing amounts, taking into account the applicable federal, state, local and foreign income, employment and other taxes and the Excise Tax (including, without limitation, any interest or penalties on such taxes), results in the receipt by Executive, on an after-tax basis, of the greatest amount of payments and benefits provided for hereunder or otherwise, notwithstanding that all or some portion of such Payments may be subject to the Excise Tax. Unless the Company and Executive otherwise agree in writing, any determination required under this Section shall be made by independent tax counsel designated by the Company and reasonably acceptable to Executive (" **Independent Tax Counsel** "), whose determination shall be conclusive and binding upon Executive and the Company for all purposes. For purposes of making the calculations required under this Section 6(a) , Independent Tax Counsel may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Sections 280G and 4999 of the Code; provided that Independent Tax Counsel shall assume that Executive pays all taxes at the highest marginal rate. The Company and Executive shall furnish to Independent Tax Counsel such information and documents as Independent Tax Counsel may reasonably request in order to make a determination under this Section. The Company shall bear all costs that Independent Tax Counsel may reasonably incur in connection with any calculations contemplated by this Section. In the event that Section 6(a)(ii)(B) above applies, then based on the information provided to Executive and the Company by Independent Tax Counsel, Executive may, in Executive's sole discretion and within 30 days of the date on which Executive is provided with the information prepared by Independent Tax Counsel, determine which and how much of the Payments (including the accelerated vesting of equity compensation awards) to be otherwise received by Executive shall be eliminated or reduced (as long as after such determination the value (as calculated by Independent Tax Counsel in accordance with the provisions of Sections 280G and 4999 of the Code) of the amounts payable or distributable to Executive equals the Reduced Amount). If the Internal Revenue Service (the " **IRS** ") determines that any Payment is subject to the Excise Tax, then Section 6(b) hereof shall apply, and the enforcement of Section 6(b) shall be the exclusive remedy to the Company.

(b) **Adjustments** . If, notwithstanding any reduction described in Section 6(a) hereof (or in the absence of any such reduction), the IRS determines that Executive is liable for the Excise Tax as a result of the receipt of one or more Payments, then Executive shall be obligated to surrender or pay back to the Company, within 120 days after a final IRS determination, an amount of such payments or benefits equal to the " **Repayment Amount** ." The Repayment Amount with respect to such Payments shall be the smallest such amount, if any, as shall be required to be surrendered or paid to the Company so that Executive's net proceeds with respect to such Payments (after taking into account the payment of the Excise Tax imposed on such Payments) shall be maximized. Notwithstanding the foregoing, the Repayment Amount with respect to such Payments shall be zero if a Repayment Amount of more than zero would not eliminate the Excise Tax imposed on such Payments or if a Repayment Amount of more than zero would not maximize the net amount received by Executive from the Payments. If the Excise Tax is not eliminated pursuant to this Section 6(b) , Executive shall pay the Excise Tax.

7. MISCELLANEOUS PROVISIONS.

(a) **Section 409A** . For purposes of Section 409A of the Code, if the Company determines that Executive is a " *specified employee* " under Code Section 409A(a)(2)(B)(i) at the time of a Separation, then (i) the severance benefits under Section 2 , to the extent subject to Code Section 409A, will commence during the seventh month after the Executive's Separation and (ii) will be paid in a lump sum on the earliest practicable date permitted by Section 409A(a)(2) of the Code. Any termination of Executive's employment is intended to constitute a Separation from Service and will be determined consistent with the rules relating to a " *separation from service* " as such term is defined in Treasury Regulation Section 1.409A-1. It is intended that each installment of the payments provided hereunder constitute separate "payments" for purposes of Treasury Regulation Section 1.409A-2(b)(2)(i). It is further intended that payments hereunder satisfy, to the greatest extent possible, the exemption from the application of Section 409A of the Code (and any state law of similar effect) provided under Treasury Regulation Section 1.409A-1(b)(4) (as a " **short-term deferral** "). To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision will be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Except as otherwise expressly provided herein, to the extent any expense reimbursement or the provision of any in-kind benefit under this Policy is determined to be subject to Section 409A of the Code, the amount of any such expenses eligible for reimbursement, or the provision of any in-kind benefit, in one calendar year shall not affect the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses), in no event shall any expenses be reimbursed after the last day of the calendar year following the calendar year in which Executive incurred such expenses, and in no event shall any right to reimbursement or the provision of any in-kind benefit be subject to liquidation or exchange for another benefit.

(b) **Other Severance Arrangements** . Except as otherwise specified herein, this Agreement represents the entire agreement between you and the Company with respect to any and all severance arrangements, vesting acceleration arrangements and post-termination stock option exercise period arrangements, and supersedes and replaces any and all prior verbal or written discussions, negotiations and/or agreements between the Executive and the Company relating to the subject matter hereof, including but not limited to, any and all prior agreements governing any Equity Award, severance and salary continuation arrangements, programs and plans which were previously offered by the Company, or any predecessor of the Company (including by merger or otherwise) to the Executive, and change in control and severance arrangements pursuant to an employment agreement or offer letter, and Executive hereby waives Executive's rights to such other benefits. In no event shall any individual receive cash severance benefits under both this Agreement and any other severance pay or salary continuation program, plan or other arrangement with the Company.

(c) **Dispute Resolution** . To ensure rapid and economical resolution of any and all disputes that might arise in connection with this Agreement, Executive and the Company agree that any and all disputes, claims, and causes of action, in law or equity, arising from or relating to this Agreement or its enforcement, performance, breach, or interpretation, will be resolved solely and exclusively by final, binding, and confidential arbitration, by a single arbitrator, in San Mateo County, and conducted by the American Arbitration Association under its then-existing employment rules and procedures. Nothing in this section, however, is intended to prevent either party from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration. Each party to an arbitration or litigation hereunder shall be responsible for the payment of its own attorneys' fees.

(d) **Notice** . Notices and all other communications contemplated by this Agreement shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by U.S. registered or certified mail, return receipt requested and postage prepaid or deposited with Federal Express Corporation, with shipping charges prepaid. In the case of the Executive, mailed notices shall be addressed to him or her at the home address which he or she most recently communicated to the Company in writing. In the case of the Company, mailed notices shall be addressed to its corporate headquarters, and all notices shall be directed to the attention of its Secretary.

(e) **Amendment; Waiver** . This Agreement may not be amended or waived except by a writing signed by Executive and by a duly authorized representative of the Company other than Executive. No provision of this Agreement shall be modified, waived, superseded or discharged unless the modification, waiver or discharge is agreed to in writing and signed by the Executive and by an authorized officer of the Company (other than the Executive) and, to the extent it supersedes this Agreement, that this Agreement is referred to by date. No waiver by either party of any breach of, or of compliance with, any condition or provision of this Agreement by the other party shall be considered a waiver of any other condition or provision or of the same condition or provision at another time.

(f) **Withholding Taxes** . All payments made under this Agreement shall be subject to reduction to reflect taxes or other charges required to be withheld by law.

(g) **Severability** . The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision hereof, which shall remain in full force and effect.

(h) **No Retention Rights** . Nothing in this Agreement shall confer upon the Executive any right to continue in service for any period of specific duration or interfere with or otherwise restrict in any way the rights of the Company or any subsidiary of the Company or of the Executive, which rights are hereby expressly reserved by each, to terminate his or her service at any time and for any reason, with or without Cause.

(i) **Choice of Law** . The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of California (other than their choice-of-law provisions).

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF , each of the parties has executed this **Severance and Change in Control Agreement** , in the case of the Company by its duly authorized officer, as of the day and year first above written.

	CLOUDERA, INC.
/s/ Arun C. Murthy	/s/ Tom Reilly
Arun C. Murthy	By: Tom Reilly
	Title: Chief Executive Officer

**EXECUTIVE ADDENDUM TO THE
SEVERANCE AND CHANGE IN CONTROL AGREEMENT**

This Executive Addendum incorporates and is governed by the Severance and Change in Control Agreement and is entered into as of December 31, 2018 by and between Arun C. Murthy (the " **Executive** ") and Cloudera, Inc., a Delaware corporation (the " **Company** ") and is effective on the earlier of (a) the 12-month anniversary of the Executive's Start Date (as set forth in the offer letter by and between the Executive and the Company dated on or about the date hereof) (b) a Change in Control of the Company (the " **Effective Date** "). Collectively, these documents are referred to as the " **Agreement** ".

Severance Multiplier (Other than During a Change in Control Period)

As used in Section 2(a)(i) of the Agreement, the " **Severance Multiplier (Other than During a Change in Control Period)** " shall be: 100%

COBRA Continuation Period (Other than During a Change in Control Period)

As used in Section 2(a)(ii) of the Agreement, the " **COBRA Continuation Period (Other than During a Change in Control Period)** " shall mean: 12 months

Severance Multiplier (During a Change in Control Period)

As used in Section 2(b)(i) of the Agreement, the " **Severance Multiplier (During a Change in Control Period)** " shall be: 100%

COBRA Continuation Period (During a Change in Control Period)

As used in Section 2(b)(ii) of the Agreement, the " **COBRA Continuation Period (During a Change in Control Period)** " shall mean: 12 months

Equity Acceleration (During a Change in Control Period)

As used in Section 2(b)(iii) of the Agreement, the " **Equity Acceleration** " shall mean: 100% of the then unvested shares subject to the applicable Equity Awards.

Post-Termination Exercise Date

As used in Section 2(a)(iii) and Section 2(b)(iii) of the Agreement, the " **Post-Termination Exercise Date** " shall be the 12 month anniversary of the effective date of the Executive's Qualifying Termination.

IN WITNESS WHEREOF , each of the parties has executed this Executive Addendum to the **Severance and Change in Control Agreement** , in the case of the Company by its duly authorized officer, as of the day and year first above written.

CLOUDERA, INC.

Arun C. Murthy	By:	Tom Reilly
	Title:	Chief Executive Officer

Exhibit 23.02

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements (Form S-8 Nos. 333-217522, 333-224134, and 333-229169) pertaining to the 2008 Equity Incentive Plan, the Gazzang 2008 Stock Purchase and Option Plan, the 2017 Equity Incentive Plan, the 2017 Employee Stock Purchase Plan, the Hortonworks, Inc. Amended and Restated 2014 Stock Option and Incentive Plan, and the Hortonworks, Inc. 2011 Stock Option and Grant Plan of Cloudera, Inc. of our reports dated March 29, 2019, with respect to the consolidated financial statements of Cloudera, Inc., and the effectiveness of internal control over financial reporting of Cloudera, Inc., included in this Annual Report (Form 10-K) for the year ended January 31, 2019.

/s/ Ernst & Young LLP

San Jose, California
March 29, 2019

Exhibit 31.1

**CERTIFICATION UNDER SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002**

I, Thomas J. Reilly, certify that:

1. I have reviewed this Annual Report on Form 10-K of Cloudera, Inc;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2019

/s/ Thomas J. Reilly
Thomas J. Reilly
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jim Frankola, certify that:

1. I have reviewed this Annual Report on Form 10-K of Cloudera, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2019

/s/ Jim Frankola
Jim Frankola
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Thomas J. Reilly, Chief Executive Officer of Cloudera, Inc. (the “Company”), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. the Annual Report on Form 10-K of the Company for the period ended January 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company for the periods presented therein.

Date: March 29, 2019

/s/ Thomas J. Reilly
Thomas J. Reilly
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Jim Frankola, Chief Financial Officer of Cloudera, Inc. (the "Company"), do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

1. the Annual Report on Form 10-K of the Company for the period ended January 31, 2019 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company for the periods presented therein.

Date: March 29, 2019

/s/ Jim Frankola
Jim Frankola
Chief Financial Officer
(Principal Financial Officer)