

PROGRESS SOFTWARE CORP /MA  
Form 10-K  
January 28, 2019  
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 November 30, 2018

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: 0-19417

PROGRESS SOFTWARE CORPORATION  
(Exact name of registrant as specified in its charter)

DELAWARE 04-2746201  
(State or other jurisdiction of (I.R.S. Employer  
incorporation or organization) Identification No.)

14 Oak Park  
Bedford, Massachusetts 01730  
(Address of Principal Executive Offices)

Telephone Number: (781) 280-4000

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

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock \$.01 par value	The NASDAQ Global Select Market

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

Indicate by 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 Exchange 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

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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 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.

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

Large accelerated filer  Accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company) Smaller reporting company   
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

As of May 31, 2018 (the last business day of the registrant's most recently completed second fiscal quarter), the aggregate market value of voting stock held by non-affiliates of the registrant was approximately \$1,707,000,000.

As of January 17, 2019, there were 45,153,755 common shares outstanding.

#### Documents Incorporated By Reference

Certain information required in Items 10, 11, 12, 13 and 14 of Part III of this Annual Report on Form 10-K is incorporated by reference to our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A (our "definitive Proxy Statement").

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### CAUTIONARY STATEMENTS

This Form 10-K, and other information provided by us or statements made by our directors, officers or employees from time to time, may contain statements that constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and other securities laws. Whenever we use words such as “believe,” “may,” “could,” “would,” “might,” “should,” “expect,” “intend,” “plan,” “estimate,” “target,” “anticipate” and negatives and derivatives of these or similar expressions, or when we make statements concerning future financial results, product offerings or other events that have not yet occurred, we are making forward-looking statements. These forward-looking statements are based upon our present intent, beliefs or expectations, but forward-looking statements are not guaranteed to occur and may not occur. Actual future results may differ materially from those contained in or implied by our forward-looking statements as a result of various factors. Such factors are more fully described in Item 1A of this Form 10-K under the heading “Risk Factors.” Although we have sought to identify the most significant risks to our business, we cannot predict whether, or to what extent, any of such risks may be realized. We also cannot assure you that we have identified all possible issues which we might face. We undertake no obligation to update any forward-looking statements that we make.

### PART I

#### Item 1. Business

##### Overview

Progress Software Corporation ("Progress," the "Company," "we," "us," or "our") offers the leading platform for developing and deploying strategic business applications. We enable customers and partners to deliver modern, high-impact digital experiences with a fraction of the effort, time and cost. Progress offers powerful tools for easily building adaptive user experiences across any type of device or touchpoint, award-winning machine learning that enables cognitive capabilities to be a part of any application, the flexibility of a serverless cloud to deploy modern apps, business rules, web content management, plus leading data connectivity technology. Over 1,700 independent software vendors ("ISVs"), 100,000 enterprise customers, and 2 million developers rely on Progress to power their applications.

Our products are generally sold as perpetual licenses, but certain products also use term licensing models and our cloud-based offerings use a subscription based model. More than half of our worldwide license revenue is realized through relationships with indirect channel partners, principally application partners and original equipment manufacturers ("OEMs"). These ISVs develop and market applications using our technology and resell our products in conjunction with sales of their own products that incorporate our technology.

We operate in North America and Latin America (the "Americas"); Europe, the Middle East and Africa ("EMEA"); and the Asia Pacific region, through local subsidiaries as well as independent distributors.

##### Fiscal Year 2018 Highlights

The key tenets of our strategic plan and operating model are as follows:

**Align Resources to Drive Profitability.** Our organizational philosophy and operating principles focus primarily on customer and partner retention and success for our core products and a streamlined operating approach in order to more efficiently drive revenue.

Protect and Strengthen Our Core Business. A key element of our strategy is centered on providing the platform and tools enterprises need to build “cognitive applications,” which we believe are the future of application development. We offer this platform to both new customers and partners as well as our existing partner and customer ecosystems. Our platform for cognitive applications enables developers to build the most modern applications quickly and easily, and includes:

- our leading UI development tools, which enable organizations to easily build engaging user interfaces for any device or front end;
- our NativeScript offering, which allows developers to use JavaScript to build native applications across multiple mobile platforms;
- our modern high productivity application development platform, Progress Kinvey, that is cloud-native, is secure, high-performing, and highly-scalable while supporting all modern user interfaces;
- automated and intuitive machine learning capabilities for accelerating the creation and delivery of cognitive applications;

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- our data connectivity and integration capabilities;
- our business logic and rules capabilities; and
- web content management for delivering personalized and engaging digital experiences

This strategy builds on our inherent DNA and our vast experience in application development that we've acquired over the past 35 years.

**Holistic Capital Allocation Approach.** Pursuant to our capital allocation strategy, we have targeted to return approximately 75-80% of our annual cash flows from operations to stockholders in the form of share repurchases and through dividends. We have also adopted a disciplined approach to future mergers and acquisitions. By adopting strict financial criteria for future acquisitions, these acquisitions will enable us to drive significant stockholder returns by providing scale and increased cash flows.

In fiscal 2018, we remained solidly on course with the execution of our strategic plan. Our budget and operating plan for 2018 reflected our focus on managing our business as efficiently as possible. Through our sustained focus on running lean operationally, we succeeded in reducing our expenses by almost \$40 million over the past two years. Further, our strategy is producing tangible benefits for stockholders. The strength of our overall business enabled us to return over \$145 million of capital to stockholders in fiscal 2018 in the form of share repurchases and dividends as described below.

### Share Repurchase Authorization

In September 2017, our Board of Directors increased our total share repurchase authorization to \$250.0 million. In fiscal year 2018, we repurchased and retired 2.9 million shares of our common stock for \$120.0 million. As of November 30, 2018, there was \$100.0 million remaining under this current authorization. We intend to repurchase \$100 million in shares of our common stock in fiscal year 2019. However, the timing and amount of any shares repurchased will be determined by management based on its evaluation of market conditions and other factors, and we may choose to suspend, expand or discontinue the repurchase program at any time.

### Dividend Declaration

On September 21, 2018, our Board of Directors approved an 11% increase to our quarterly cash dividend from \$0.14 to \$0.155 per share of common stock. We began paying quarterly cash dividends of \$0.125 per share of common stock to Progress stockholders in December 2016 and increased the quarterly cash dividend to \$0.14 per share in September 2017. We have declared aggregate per share quarterly cash dividends totaling \$0.575, \$0.515 and \$0.125 for the years ended November 30, 2018, November 30, 2017 and November 30, 2016, respectively. We have paid aggregate cash dividends totaling \$25.8 million, and \$24.1 million for the years ended November 30, 2018 and November 30, 2017, respectively. We expect to continue paying quarterly cash dividends in subsequent quarters consistent with our capital allocation strategy. However, we may terminate or modify this program at any time.

### Tax Reform

During the first quarter of fiscal year 2018, the Tax Cuts and Jobs Act (the "Act") was enacted in the United States. The Act reduces the U.S. federal corporate tax rate from 35% to 21% effective January 1, 2018, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, and creates new taxes on certain foreign sourced earnings. Certain international provisions of the Act, including the provisions for global intangible low-taxed income and foreign-derived intangible income, will not become effective until fiscal year 2019. Refer to Note 14 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional information.

## Our Business Segments

### OpenEdge Business Segment

The OpenEdge business segment drives growth within OpenEdge's large, diverse partner base by providing the technology enhancements and marketing support these partners need to sell more of their existing solutions to their customers. The OpenEdge business segment is also focused on providing partners and direct end users with a clear path to develop and integrate cloud-based applications in the future. Our professional services organization helps partners and customers leverage their core assets and develop strategies that protect current investments, while addressing changing business requirements.



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The solutions within the OpenEdge business segment include:

### Progress OpenEdge

Progress OpenEdge is development software for building dynamic multi-language applications for secure deployment across any platform, any device, and any cloud. OpenEdge provides a unified environment comprising development tools, application servers, application management tools, an embedded relational database management system, and the capability to connect and integrate with other applications and data sources independently or with other Progress products.

### Progress Corticon

Progress Corticon is a market-leading Business Rules Management System that enables applications with decision automation, decision change process and decision-related insight capabilities. Corticon helps both business and IT users to quickly create or reuse business rules as well as create, improve, collaborate on, and maintain decision logic.

### Progress Kinvey

Progress Kinvey is a modern platform for rapidly building complex enterprise applications and scalable consumer applications experiences. From mission-critical consumer and business experiences for global insurance, manufacturing and media companies, to HIPAA-compliant and life-critical apps for healthcare, health implant manufacturers and pharma.

### NativeScript

NativeScript is an open-source application development platform that enables developers to use JavaScript to build cross-platform, native iOS and Android applications.

### DataRPM

DataRPM offers an award-winning cognitive predictive maintenance solution for industrial IoT ("IIoT"). The patented platform automates predictive modeling, leveraging proprietary Meta Learning capabilities to increase quality, accuracy and timeliness of equipment failure predictions, leading to hundreds of millions of dollars in savings. The technology enables customers to predict and prevent asset failures, and increase yield and efficiencies to generate outcomes for IIoT.

### Data Connectivity and Integration Business Segment

The Data Connectivity and Integration ("DCI") business segment is focused on the growth of our data assets, including the data integration components of our cloud offerings. Data is at the core of every application, and with the exponential growth in the number and volume of data sources, this business segment addresses the increasingly complex challenges that organizations have in accessing and integrating that data.

The solutions within the DCI business segment include:

### Progress DataDirect Connect

Progress DataDirect Connect software provides data connectivity using industry-standard interfaces to connect applications running on various platforms to any major database, for both corporate IT organizations and software

vendors. With software components embedded in the products of over 350 software companies and in the applications of thousands of large enterprises, the DataDirect Connect product set is a global leader in the data connectivity market. The primary products, in addition to other drivers we have developed, are ODBC drivers, JDBC drivers and ADO.NET providers. They provide the capability to connect and integrate with other applications and data sources independently or with our cloud-based offerings.

#### Progress DataDirect Hybrid Data Pipeline

Progress DataDirect Hybrid Data Pipeline is a data access service that provides simple, secure access to organizations' cloud and on-premises data sources for hybrid cloud applications, such as CRM, data management platforms or hosted analytics. It enables developers to integrate applications and data quickly, no matter whether that data lives-on-site, in the cloud or both.

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### Application Development and Deployment Business Segment

The Application Development and Deployment ("AD&D") business segment is focused on serving the evolving needs of our substantial developer community, and on generating net new customers for our application development assets. This business segment has the focus and agility of a start-up, able to react quickly to changes in this rapidly-evolving market in order to meet the demands of developers who are seeking to increase their productivity and move toward the cloud.

The solutions within the AD&D business segment include:

#### DevTools

DevTools is a cross-platform, user experience design, quality assurance, debugging and reporting suite for next generation web, mobile, desktop and HTML5 applications that enables developers to focus on business logic and not infrastructure. Included in DevTools are Fiddler and Kendo UI.

#### Sitefinity

Sitefinity is a next-generation web content management and customer analytics platform for managing and optimizing digital experiences. Sitefinity combines superior end user experience with a high level of customization capabilities for developers.

#### Test Studio

Test Studio is an application lifecycle management suite for testing web, mobile and desktop applications that covers the process from idea to deployment.

#### Product Development

Most of our products have been developed by our internal product development staff or the internal staffs of acquired companies. We believe that the features and performance of our products are competitive with those of other available development and deployment tools and that none of the current versions of our products are approaching obsolescence. However, we believe that significant investments in new product development and continuing enhancements of our current products will be required for us to maintain our competitive position.

As of November 30, 2018, we have four development offices in North America, two primary development offices in India and one primary development office in EMEA. We spent \$79.7 million, \$77.0 million, and \$88.6 million in fiscal years 2018, 2017 and 2016, respectively, on product development, including capitalized software development costs.

#### Customers

We market our products globally through several channels: directly to end users and indirectly to application partners (or ISVs), OEMs, and system integrators. Sales of our solutions and products through our direct sales force have historically been to business managers or IT managers in corporations and governmental agencies. We also target developers who create business applications, from individuals to teams, within enterprises of all sizes.

We also market our products through indirect channels, primarily application partners and OEMs who embed our products as part of an integrated solution. We use international distributors in certain locations where we do not have a

direct presence or where it is more economically feasible for us to do so. More than half of our license revenues are derived from indirect channels.

#### Application Partners

Our application partners cover a broad range of markets, offer an extensive library of business applications and are a source of recurring revenue. We have kept entry costs, consisting primarily of the initial purchase of development licenses, low to encourage a wide variety of application partners to build applications. If an application partner succeeds in marketing its applications, we obtain recurring revenue as the application partner licenses our deployment products to allow its application to be installed and used by customers. In recent years, a significantly increasing amount of our revenue from application partners has been generated from subscriptions to application partners who have chosen to enable their business applications under a software-as-a-service ("SaaS") platform.

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### Original Equipment Manufacturers

We enter into arrangements with OEMs in which the OEM embeds our products into its solutions, typically either software or technology devices. OEMs typically license the right to embed our products into their solutions and distribute those solutions for initial terms ranging from one to three years. Historically, most of our OEMs have renewed their agreements upon the expiration of the initial term. However, there is no assurance that they will continue to renew in the future. If any of our largest OEM customers were not to renew their agreements in the future, this could materially impact our DCI segment.

No single customer or partner has accounted for more than 10% of our total revenue in any of our last three fiscal years.

### Sales and Marketing

We sell our products and solutions through our direct sales force and indirect channel partners. We have sold our products and solutions to enterprises in over 180 countries. Our sales and field marketing groups are organized primarily by region. We operate by region in the Americas, EMEA and Asia Pacific. We believe this structure allows us to maintain direct contact with our customers and support their diverse market requirements. Our international operations provide focused local sales, support and marketing efforts and are able to respond directly to changes in local conditions.

In addition to our direct sales efforts, we distribute our products through systems integrators, resellers, distributors, and OEM partners in the United States and internationally. Systems integrators typically have expertise in vertical or functional markets. In some cases, they resell our products, bundling them with their broader service offerings. In other cases, they refer sales opportunities for our products to our direct sales force. Distributors sublicense our products and provide service and support within their territories. OEMs embed portions of our technology in their product offerings.

Sales personnel are responsible for developing new direct end user accounts, recruiting new indirect channel partners and new independent distributors, managing existing channel partner relationships and servicing existing customers. We actively seek to avoid conflict between the sales efforts of our application partners and our own direct sales efforts. We use our inside sales team to enhance our direct sales efforts and to generate new business and follow-on business from existing customers.

Our marketing personnel conduct a variety of marketing engagement programs designed to create demand for our products, enhance the market readiness of our products, raise the general awareness of our company and our products and solutions, generate leads for the sales organization and promote our various products. These programs include press relations, analyst relations, investor relations, digital/web marketing, marketing communications, participation in trade shows and industry conferences, and production of sales and marketing literature. We also hold and participate in global events, as well as regional user events in various locations throughout the world.

Our sales and marketing efforts with respect to certain of our products, including DevTools, differ from our traditional sales and marketing efforts because the target markets are different. For these products, we have designed our marketing and sales model to be efficient for high volumes of lower-price transactions. Our marketing efforts focus on driving traffic to our websites and on generating high quality sales leads, in many cases, consisting of developer end users who download a free evaluation of our software. Our sales efforts then focus on converting these leads into paying customers through a high volume, short duration, sales process. Of particular importance to our target market, we enable our customers to buy our products in a manner convenient to them, whether by purchase order, online with a credit card or through our channel partners.

## Customer Support

Our customer support staff provides telephone and Web-based support to end users, application developers and OEMs. Customers may purchase maintenance services entitling them to software updates, technical support and technical bulletins. Maintenance is generally not required with our products and is purchased at the customer's option. We provide support to customers primarily through our main regional customer support centers in Bedford and Waltham, Massachusetts; Morrisville, North Carolina; Rotterdam, The Netherlands; Hyderabad, India; Melbourne, Australia; and Sofia, Bulgaria. Local technical support for specific products is provided in certain other countries as well.

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### Professional Services

Our global professional services organization delivers business solutions for customers through a combination of products, consulting and education. Our consulting organization offers project management, implementation services, custom development, programming and other services. Our consulting organization also provides services to Web-enable existing applications or to take advantage of the capabilities of new product releases. Our education organization offers numerous training options, from traditional instructor-led courses to advanced learning modules available via the web or on CDs.

Our services offerings include: application modernization; data management, managed database services; performance enhancements and tuning; and analytics/business intelligence.

### Competition

The computer software industry is intensely competitive. We experience significant competition from a variety of sources with respect to all of our products. Factors affecting competition in the markets we serve include product performance in complex applications, breadth of application solutions, vendor experience, ease of integration, price, training and support.

We compete in various markets with a number of entities, such as salesforce.com, Inc., Amazon.com, Inc., Software AG, RedHat, Inc., Pivotal Software, Inc., Microsoft Corporation, Oracle Corporation and other smaller firms. Many of these vendors offer platform-as-a-service, application development, data integration and other tools in conjunction with their CRM, web services, operating systems and relational database management systems. We believe that IBM Corporation, Microsoft Corporation and Oracle Corporation currently dominate the relational database market. We do not believe that there is a dominant vendor in the other infrastructure software markets, including application development. Some of our competitors have greater financial, marketing or technical resources than we have and/or may have experience in, or be able to adapt more quickly to new or emerging technologies and changes in customer requirements or to devote greater resources to the development, promotion and sale of their products than we can. Increased competition could make it more difficult for us to maintain our revenue and market presence.

### Copyrights, Trademarks, Patents and Licenses

We rely on a combination of contractual provisions and copyright, patent, trademark and trade secret laws to protect our proprietary rights in our products. We generally distribute our products under software license agreements that grant customers a perpetual nonexclusive license to use our products and contain terms and conditions prohibiting the unauthorized reproduction or transfer of our products. We also distribute our products through various channel partners, including application partners, OEMs and system integrators. We also license our products under term or subscription arrangements. In addition, we attempt to protect our trade secrets and other proprietary information through agreements with employees, consultants and channel partners. Although we intend to protect our rights vigorously, there is no assurance that these measures will be successful.

We seek to protect the source code of our products as trade secrets and as unpublished copyrighted works. We hold numerous patents covering portions of our products. We also have several patent applications for some of our other product technologies. Where possible, we seek to obtain protection of our product names and service offerings through trademark registration and other similar procedures throughout the world.

We believe that due to the rapid pace of innovation within our industry, factors such as the technological and creative skills of our personnel are as important in establishing and maintaining a leadership position within the industry as are the various legal protections of our technology. In addition, we believe that the nature of our customers, the

importance of our products to them and their need for continuing product support may reduce the risk of unauthorized reproduction, although no assurances can be made in this regard.

#### Business Segment and Geographical Information

We operate and report as three distinct business segments: OpenEdge, Data Connectivity and Integration, and Application Development and Deployment. For additional information on our business segments as well as our geographical financial information, see Note 16 to our Consolidated Financial Statements in Item 8 of this Form 10-K.



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Employees

As of November 30, 2018, we had 1,412 employees worldwide, including 408 in sales and marketing, 208 in customer support and services, 613 in product development and 183 in administration.

None of our U.S. employees are subject to a collective bargaining agreement. Employees in certain foreign jurisdictions are represented by local workers' councils and/or collective bargaining agreements as may be customary or required in those jurisdictions. We have experienced no work stoppages and believe our relations with employees are good.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge on our website at [www.progress.com](http://www.progress.com) as soon as reasonably practicable after such reports are electronically filed with, or furnished to, the SEC. The information posted on our website is not incorporated into this Annual Report.

Our Code of Conduct is also available on our website. Additional information about this code and amendments and waivers thereto can be found below in Part III, Item 10 of this Form 10-K.

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Item 1A. Risk Factors

We operate in a rapidly changing environment that involves certain risks and uncertainties, some of which are beyond our control. The risks described below are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial condition and/or operating results.

Our revenue and quarterly results may fluctuate, which could adversely affect our stock price. We have experienced, and may in the future experience, significant fluctuations in our quarterly operating results that may be caused by many factors. These factors include:

- changes in demand for our products;
- introduction, enhancement or announcement of products by us or our competitors;
- market acceptance of our new products;
- the growth rates of certain market segments in which we compete;
- size and timing of significant orders;
- a high percentage of our revenue is generated in the third month of each fiscal quarter and any failure to receive, complete or process orders at the end of any quarter could cause us to fall short of our revenue targets;
- budgeting cycles of customers;
- mix of distribution channels;
- mix of products and services sold;
- mix of international and North American revenues;
- fluctuations in currency exchange rates;
- changes in the level of operating expenses;
- changes in management;
- restructuring programs;
- changes in our sales force;
- completion or announcement of acquisitions by us or our competitors;
- customer order deferrals in anticipation of new products announced by us or our competitors; and
- general economic conditions in regions in which we conduct business.

Revenue forecasting is uncertain, and the failure to meet our forecasts could result in a decline in our stock price. Our revenues, particularly new software license revenues, are difficult to forecast. We use a pipeline system to forecast revenues and trends in our business. Our pipeline estimates may prove to be unreliable either in a particular quarter or over a longer period of time, in part because the conversion rate of the pipeline into contracts can be difficult to estimate and requires management judgment. A variation in the conversion rate could cause us to plan or budget incorrectly and materially adversely impact our business or our planned results of operations. Furthermore, most of our expenses are relatively fixed, including costs of personnel and facilities. Thus, an unexpected reduction in our revenue, or failure to achieve the anticipated rate of growth, would have a material adverse effect on our profitability. If our operating results do not meet our publicly stated guidance or the expectations of investors, our stock price may decline.

We recognize a substantial portion of our revenue from sales made through third parties, including our application partners, distributors/resellers, and OEMs, and adverse developments in the businesses of these third parties or in our relationships with them could harm our revenues and results of operations. Our future results depend in large part upon our continued successful distribution of our products through our application partner, distributor/reseller, and OEM channels. The activities of these third parties are not within our direct control. Our failure to manage our relationships with these third parties effectively could impair the success of our sales, marketing and support

activities. A reduction in the sales efforts, technical capabilities or financial viability of these parties, a misalignment of interest between us and them, or a termination of our relationship with a major application partner, distributor/reseller, or OEM could have a negative effect on our sales and financial results. Any adverse effect on any of our application partners', distributors'/resellers', or OEMs' businesses related to competition, pricing and other factors could also have a material adverse effect on our business, financial condition and operating results.

Changes in accounting principles and guidance, or their interpretation or implementation, may materially adversely affect our reported results of operations or financial position. We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP") These principles are subject to interpretation by the SEC and various bodies formed to create and interpret appropriate accounting principles and guidance. A change in these principles or guidance, or in their interpretations, may have a significant effect on our reported results, as well as our processes and related controls.

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For example, in May 2014, the Financial Accounting Standards Board (the “FASB”) issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) (“ASU 2014-09”). ASU 2014-09 outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes prior revenue recognition guidance, including industry-specific guidance. This new standard is both technical and complex. The Company adopted this ASU effective December 1, 2018 and will adjust prior period consolidated financial statements to reflect full retrospective adoption, beginning with our Quarterly Report on Form 10-Q for the first quarter of 2019. Management has substantially completed assessing the impact the adoption of this standard will have on the Company’s consolidated financial statements, which will have a material impact on our consolidated financial statements, including the way we account for arrangements involving our term licenses and perpetual licenses with maintenance and/or support. In connection with the adoption of ASU 2014-09, we are implementing new processes, systems and internal controls. Such changes and any difficulties implementing such changes could materially adversely affect our reported financial results, our ability to comply with regulatory reporting requirements, and the effectiveness of our internal controls over financial reporting. For a discussion of the potential impact that the implementation of ASU 2014-09 is expected to have on our consolidated financial statements and related disclosures, see the “Recent Accounting Pronouncements” section in this Form 10-K.

A failure of our information technology systems, including the implementation of our new financial systems platform, could have a material adverse effect on our business. A failure or prolonged interruption in our information technology systems, or any difficulty encountered in upgrading our systems or implementing new systems, that compromises our ability to meet our customers’ needs, or impairs our ability to record, process and report accurate information could have a material adverse effect on our financial condition.

We are in the process of implementing a new financial systems platform which will assist with the collection, storage, management and interpretation of data from our business activities to support future growth and to integrate significant processes. Our financial systems platform is critical to our ability to accurately maintain books and records, record transactions, provide important information to our management and prepare our consolidated financial statements. Financial systems platform implementations are complex and time-consuming and involve significant expenditures on system software and implementation activities, as well as changes in business processes.

As part of the implementation of our new financial systems platform, certain changes to our processes and procedures have and will continue to occur. These changes will result in changes to our internal control over financial reporting. This new platform is designed to strengthen our internal financial controls by automating certain manual processes and standardizing business processes and reporting across our organization. However, any disruptions, delays or deficiencies in the design and implementation of a new financial systems platform could adversely affect our ability to operate our business. Additionally, if the new platform does not operate as intended, the effectiveness of our internal control over financial reporting could be adversely affected or our ability to assess it adequately could be further impacted.

Weakness in the U.S. and international economies may result in fewer sales of our products and may otherwise harm our business. We are subject to risks arising from adverse changes in global economic conditions, especially those in the U.S., Europe and Latin America. If global economic conditions weaken, credit markets tighten and/or financial markets become unstable, customers may delay, reduce or forego technology purchases, both directly and through our application partners and OEMs. This could result in reductions in sales of our products, longer sales cycles, slower adoption of new technologies and increased price competition. Further, deteriorating economic conditions could adversely affect our customers and their ability to pay amounts owed to us. Any of these events would likely harm our business, results of operations, financial condition or cash flows.

Our international operations expose us to additional risks, and changes in global economic and political conditions could adversely affect our international operations, our revenue and our net income. Approximately 45% of our total revenue is generated from sales outside North America. Political and/or financial instability, oil price shocks and armed conflict in various regions of the world can lead to economic uncertainty and may adversely impact our business. For example, the announcement of the Referendum of the United Kingdom's (the "U.K.") Membership of the European Union ("E.U.") (referred to as "Brexit"), advising for the exit of the U.K. from the E.U., resulted in significant volatility in global stock markets and currency exchange rate fluctuations. If customers' buying patterns, decision-making processes, timing of expected deliveries and timing of new projects unfavorably change due to economic or political conditions, there would be a material adverse effect on our business, financial condition and operating results.

Other potential risks inherent in our international business include:

• longer payment cycles;

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credit risk and higher levels of payment fraud;  
greater difficulties in accounts receivable collection;  
varying regulatory and legal requirements;  
compliance with international and local trade, labor and export control laws;  
compliance with U.S. laws such as the Foreign Corrupt Practices Act, and local laws prohibiting bribery and corrupt payments to government officials;  
restrictions on the transfer of funds;  
difficulties in developing, staffing, and simultaneously managing a large number of varying foreign operations as a result of distance, legal impediments and language and cultural differences;  
reduced or minimal protection of intellectual property rights in some countries;  
laws and business practices that favor local competitors or prohibit foreign ownership of certain businesses;  
changes in U.S. or foreign trade policies or practices that increase costs or restrict the distribution of products;  
seasonal reductions in business activity during the summer months in Europe and certain other parts of the world;  
economic instability in emerging markets; and  
potentially adverse tax consequences.

Any one or more of these factors could have a material adverse effect on our international operations, and, consequently, on our business, financial condition and operating results.

Fluctuations in foreign currency exchange rates could have an adverse impact on our financial condition and results of operations. Changes in the value of foreign currencies relative to the U.S. dollar could adversely affect our results of operations and financial position. For example, during periods in which the value of the U.S. dollar strengthens in comparison to certain foreign currencies, particularly in Europe, Brazil and Australia, our reported international revenue is reduced because foreign currencies translate into fewer U.S. dollars. As approximately one-third of our revenue is denominated in foreign currencies, our revenue results have been impacted, and we expect will continue to be impacted, by fluctuations in foreign currency exchange rates.

We seek to reduce our exposure to fluctuations in exchange rates by entering into foreign exchange forward contracts to hedge certain actual and forecasted transactions of selected currencies (mainly in Europe, Brazil, India and Australia). Our currency hedging transactions may not be effective in reducing any adverse impact of fluctuations in foreign currency exchange rates. Further, the imposition of exchange or price controls or other restrictions on the conversion of foreign currencies could have a material adverse effect on our business.

Technology and customer requirements evolve rapidly in our industry, and if we do not continue to develop new products and enhance our existing products in response to these changes, our business could be harmed. Ongoing enhancements to our product sets will be required to enable us to maintain our competitive position and the competitive position of our application partners, distributors/resellers, and OEMs. We may not be successful in developing and marketing enhancements to our products on a timely basis, and any enhancements we develop may not adequately address the changing needs of the marketplace. Overlaying the risks associated with our existing products and enhancements are ongoing technological developments and rapid changes in customer and partner requirements. Our future success will depend upon our ability to develop and introduce in a timely manner new products that take advantage of technological advances and respond to new customer and partner requirements. We may not be successful in developing new products incorporating new technology on a timely basis, and any new products we develop may not adequately address the changing needs of the marketplace or may not be accepted by the market. Failure to develop new products and product enhancements that meet market needs in a timely manner could have a material adverse effect on our business, financial condition and operating results.

We are substantially dependent on our Progress OpenEdge products. We derive a significant portion of our revenue from software license and maintenance revenue attributable to our Progress OpenEdge product set. Accordingly, our

future results depend on continued market acceptance of OpenEdge. If new technologies emerge that are superior to, or are more responsive to customer requirements than, OpenEdge such that we are unable to maintain OpenEdge's competitive position within its marketplace, our business, financial condition and operating results may be materially adversely affected.

We have made significant investments in furtherance of our cognitive applications strategy and these investments may not generate the revenues we expect, which could adversely affect our business and financial results. Our cognitive applications strategy is focused on providing the platform and tools enterprises need to build next generation applications that drive their businesses, known as "cognitive applications." Beginning in 2017, we have made significant investments in furtherance of our cognitive applications strategy, including two acquisitions.

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We cannot guarantee that our cognitive applications strategy is the right one or that we will be effective in executing this strategy. Our strategy may not succeed for a number of reasons, including, but not limited to: general economic risks, execution risks with acquisitions, competitiveness in and the dynamic nature of the markets in which we operate, execution risks around product development, market acceptance of new products and services and risks associated with the adoption of, and demand for, our model in general. If one or more of the foregoing risks were to materialize, our business, results of operations and ability to achieve sustained profitability could be adversely affected.

The increased emphasis on a cloud strategy may give rise to risks that could harm our business. We are devoting significant resources to the development of cloud-based technologies and service offerings where we have a limited operating history. Our cloud strategy requires continued investment in product development and cloud operations as well as a change in the way we price and deliver our products. Many of our competitors may have advantages over us due to their larger presence, larger developer network, deeper experience in the cloud-based computing market, and greater sales and marketing resources. It is uncertain whether these strategies will prove successful or whether we will be able to develop the infrastructure and business models more quickly than our competitors. Our cloud strategy may give rise to a number of risks, including the following:

- if new or current customers desire only perpetual licenses, we may not be successful in selling subscriptions; although we intend to continue to support our perpetual license business, the increased emphasis on a cloud strategy may raise concerns among our installed customer base;
- we may be unsuccessful in achieving our target pricing;
- our revenues might decline over the short or long term as a result of this strategy;
- our relationships with existing partners that resell perpetual licenses may be damaged;
- increased risk of security breaches; and
- we may incur costs at a higher than forecasted rate as we enhance and expand our cloud operations.

We may make additional acquisitions or investments in new businesses, products or technologies that involve additional risks, which could disrupt our business or harm our financial condition, results of operations or cash flows. We may make acquisitions of businesses or investments in companies that offer complementary products, services and technologies. Any acquisitions that we do complete involve a number of risks, including the risks of assimilating the operations and personnel of acquired companies, realizing the value of the acquired assets relative to the price paid, distraction of management from our ongoing businesses and potential product disruptions associated with the sale of the acquired company's products. In addition, an acquisition may not further our business strategy as we expected, may not result in revenue growth to the degree we expected or at all or may not achieve expected synergies, any of which could adversely affect our business or operating results and potentially cause impairment to assets that we recorded as a part of an acquisition including intangible assets and goodwill. These factors could have a material adverse effect on our business, financial condition, operating results and cash flows. The consideration we pay for any future acquisitions could include our stock. As a result, future acquisitions could cause dilution to existing stockholders and to earnings per share.

The segments of the software industry in which we participate are intensely competitive, and our inability to compete effectively could harm our business. We experience significant competition from a variety of sources with respect to the marketing and distribution of our products. Many of our competitors have greater financial, marketing or technical resources than we do and may be able to adapt more quickly to new or emerging technologies and changes in customer requirements or to devote greater resources to the promotion and sale of their products than we can. Increased competition could make it more difficult for us to maintain our market presence or lead to downward pricing pressure.



In addition, the marketplace for new products is intensely competitive and characterized by low barriers to entry. For example, an increase in market acceptance of open source software may cause downward pricing pressures. As a result, new competitors possessing technological, marketing or other competitive advantages may emerge and rapidly acquire market share. In addition, current and potential competitors may make strategic acquisitions or establish cooperative relationships among themselves or with third parties, thereby increasing their ability to deliver products that better address the needs of our prospective customers. Current and potential competitors may also be more successful than we are in having their products or technologies widely accepted. We may be unable to compete successfully against current and future competitors, and our failure to do so could have a material adverse effect on our business, prospects, financial condition and operating results.

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We rely on the experience and expertise of our skilled employees, and must continue to attract and retain qualified technical, marketing and managerial personnel in order to succeed. Our future success will depend in a large part upon our ability to attract and retain highly skilled technical, managerial, sales and marketing personnel. There is significant competition for such personnel in the software industry. We may not continue to be successful in attracting and retaining the personnel we require to develop new and enhanced products and to continue to grow and operate profitably.

Our periodic workforce restructurings can be disruptive. We have in the past restructured or made other adjustments to our workforce in response to management changes, product changes, performance issues, changes in strategy, acquisitions and other internal and external considerations. In the past, these restructurings have resulted in increased restructuring costs and have temporarily reduced productivity. These effects could recur in connection with any future restructurings or we may not achieve or sustain the expected growth or cost savings benefits of any such restructurings, or do so within the expected timeframe. As a result, our revenues and other results of operations could be negatively affected.

The loss of technology licensed from third parties could adversely affect our ability to deliver our products. We utilize certain technology that we license from third parties, including software that is integrated with internally developed software and used in our products to perform key functions. This technology, or functionally similar technology, may not continue to be available on commercially reasonable terms in the future, or at all. The loss of any significant third-party technology license could cause delays in our ability to deliver our products or services until equivalent technology is developed internally or equivalent third-party technology, if available, is identified, licensed and integrated.

Our business practices with respect to the collection, use and management of personal information could give rise to operational interruption, liabilities or reputational harm as a result of governmental regulation, legal requirements or industry standards relating to consumer privacy and data protection. As regulatory focus on privacy issues continues to increase and worldwide laws and regulations concerning the handling of personal information expand and become more complex, potential risks related to data collection and use within our business will intensify. For example, the E.U. and the United States ("U.S.") formally entered into a new framework in July 2016 that provides a mechanism for companies to transfer data from E.U. member states to the U.S. This new framework, called the Privacy Shield, is intended to address shortcomings identified by the Court of Justice of the E.U. in the previous E.U.-U.S. Safe Harbor Framework, which the Court of Justice invalidated in October 2015. The Privacy Shield and other data transfer mechanisms are likely to be reviewed by the European courts, which may lead to uncertainty about the legal basis for data transfers to the U.S. or interruption of such transfers. In the event any court blocks transfers to or from a particular jurisdiction on the basis that no transfer mechanisms are legally adequate, this could give rise to operational interruption in the performance of services for customers and internal processing of employee information, regulatory liabilities or reputational harm. In addition, U.S. and foreign governments have enacted or are considering enacting legislation or regulations, or may in the near future interpret existing legislation or regulations, in a manner that could significantly impact our ability and the ability of our customers and data partners to collect, augment, analyze, use, transfer and share personal and other information that is integral to certain services we provide.

Regulators globally are also imposing greater monetary fines for privacy violations. For example, in 2016, the E.U. adopted a new law governing data practices and privacy called the General Data Protection Regulation (GDPR), which became effective in May 2018. The law establishes new requirements regarding the handling of personal data. Non-compliance with the GDPR may result in monetary penalties of up to 4% of worldwide revenue. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as healthcare data or other personal information, could greatly increase our cost of providing our products and services or even prevent us from offering certain services in jurisdictions that we operate.

Additionally, public perception and standards related to the privacy of personal information can shift rapidly, in ways that may affect our reputation or influence regulators to enact regulations and laws that may limit our ability to provide certain products. Any failure, or perceived failure, by us to comply with U.S. federal, state, or foreign laws and regulations, including laws and regulations regulating privacy, data security, or consumer protection, or other policies, public perception, standards, self-regulatory requirements or legal obligations, could result in lost or restricted business, proceedings, actions or fines brought against us or levied by governmental entities or others, or could adversely affect our business and harm our reputation.

If our products contain software defects or security flaws, it could harm our revenues and expose us to litigation. Our products, despite extensive testing and quality control, may contain defects or security flaws, especially when we first introduce them or when new versions are released. We may need to issue corrective releases of our software products to fix any defects or errors. The detection and correction of any security flaws can be time consuming and costly. Errors in our software products could affect the ability of our products to work with other hardware or software products, delay the development or release of new products or new versions of products, adversely affect market acceptance of our products and expose us to potential

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litigation. If we experience errors or delays in releasing new products or new versions of products, such errors or delays could have a material adverse effect on our revenue.

We could incur substantial cost in protecting our proprietary software technology or if we fail to protect our technology, which would harm our business. We rely principally on a combination of contract provisions and copyright, trademark, patent and trade secret laws to protect our proprietary technology. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our products or to obtain and use information that we regard as proprietary. Policing unauthorized use of our products is difficult. Litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. This litigation could result in substantial costs and diversion of resources, whether or not we ultimately prevail on the merits. The steps we take to protect our proprietary rights may be inadequate to prevent misappropriation of our technology; moreover, others could independently develop similar technology.

We could be subject to claims that we infringe intellectual property rights of others, which could harm our business, financial condition, results of operations or cash flows. Third parties could assert infringement claims in the future with respect to our products and technology, and such claims might be successful. Litigation relating to any such claims could result in substantial costs and diversion of resources, whether or not we ultimately prevail on the merits. Any such litigation could also result in our being prohibited from selling one or more of our products, unanticipated royalty payments, reluctance by potential customers to purchase our products, or liability to our customers and could have a material adverse effect on our business, financial condition, operating results and cash flows.

If our security measures are breached, our products and services may be perceived as not being secure, customers may curtail or stop using our products and services, and we may incur significant legal and financial exposure. Our products and services involve the storage and transmission of our customers' proprietary information and may be vulnerable to unauthorized access, computer viruses, cyber-attacks, distributed denial of service attacks and other disruptive problems. Due to the actions of outside parties, employee error, malfeasance, or otherwise, an unauthorized party may obtain access to our data or our customers' data, which could result in its theft, destruction or misappropriation. Security risks in recent years have increased significantly given the increased sophistication and activities of hackers, organized crime, including state-sponsored organizations and nation-states, and other outside parties. Cyber threats are continuously evolving, increasing the difficulty of defending against them. While we have implemented security procedures and controls to address these threats, our security measures could be compromised or could fail. Any security breach or unauthorized access could result in significant legal and financial exposure, increased costs to defend litigation, indemnity and other contractual obligations, government fines and penalties, damage to our reputation and our brand, and a loss of confidence in the security of our products and services that could potentially have an adverse effect on our business and results of operations. Breaches of our network could disrupt our internal systems and business applications, including services provided to our customers. Additionally, data breaches could compromise technical and proprietary information, harming our competitive position. We may need to spend significant capital or allocate significant resources to ensure effective ongoing protection against the threat of security breaches or to address security related concerns. If an actual or perceived breach of our security occurs, the market perception of the effectiveness of our security measures could be harmed and we could lose customers. In addition, our insurance coverage may not be adequate to cover all costs related to cybersecurity incidents and the disruptions resulting from such events.

We may have exposure to additional tax liabilities. As a multinational corporation, we are subject to income taxes in the U.S. and various foreign jurisdictions. Significant judgment is required in determining our global provision for income taxes and other tax liabilities. In the ordinary course of a global business, there are many intercompany transactions and calculations where the ultimate tax determination is uncertain. Our income tax returns are routinely subject to audits by tax authorities. Although we regularly assess the likelihood of adverse outcomes resulting from

these examinations to determine our tax estimates, a final determination of tax audits that is inconsistent with such assessments or tax disputes could have an adverse effect on our financial condition, results of operations and cash flows.

We are also subject to non-income taxes, such as payroll, sales, use, value-added, net worth, property and goods and services taxes in the U.S. and various foreign jurisdictions. We are regularly under audit by tax authorities with respect to these non-income taxes and may have exposure to additional non-income tax liabilities, which could have an adverse effect on our results of operations, financial condition and cash flows.

In addition, our future effective tax rates could be favorably or unfavorably affected by changes in tax rates, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws or their interpretation. Such changes could have a material adverse impact on our financial results.

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We are required to comply with certain financial and operating covenants under our credit facility and to make scheduled debt payments as they become due; any failure to comply with those covenants or to make scheduled payments could cause amounts borrowed under the facility to become immediately due and payable or prevent us from borrowing under the facility. In November 2017, we entered into an amended and restated credit agreement, which consists of a \$123.8 million term loan and a \$150.0 million revolving loan (which may be increased by an additional \$125.0 million if the existing or additional lenders are willing to make such increased commitments). This facility matures in November 2022, at which time any amounts outstanding will be due and payable in full. We may wish to borrow additional amounts under the facility in the future to support our operations, including for strategic acquisitions and share repurchases.

We are required to comply with specified financial and operating covenants and to make scheduled repayments of our term loan, which may limit our ability to operate our business as we otherwise might operate it. Our failure to comply with any of these covenants or to meet any payment obligations under the facility could result in an event of default which, if not cured or waived, would result in any amounts outstanding, including any accrued interest and unpaid fees, becoming immediately due and payable. We might not have sufficient working capital or liquidity to satisfy any repayment obligations in the event of an acceleration of those obligations. In addition, if we are not in compliance with the financial and operating covenants at the time we wish to borrow funds, we will be unable to borrow funds.

Our annual operating cash flows may not be sufficient to enable us to meet our targeted capital allocation policy, which could decrease our investors expected return on investment in Progress stock. In September 2017, we announced a new capital allocation strategy in which we are targeting to return approximately 75-80% of annual cash flows from operations to stockholders through share repurchases and through dividends. Meeting these targets requires us to generate consistent cash flow and have available capital in an amount sufficient to enable us to continue investing in our business. We may not meet these targets if we do not generate the operating cash flows we expect, if we use our available cash to satisfy other priorities, if we have insufficient funds available to make such repurchases and/or dividends or if we are unable to borrow funds under our credit facility.

Our common stock price may continue to be volatile, which could result in losses for investors. The market price of our common stock, like that of other technology companies, is volatile and is subject to wide fluctuations in response to quarterly variations in operating results, announcements of technological innovations or new products by us or our competitors, changes in financial estimates by securities analysts or other events or factors. Our stock price may also be affected by broader market trends unrelated to our performance. As a result, purchasers of our common stock may be unable at any given time to sell their shares at or above the price they paid for them.

### Item 1B. Unresolved Staff Comments

As of the date of this report, we do not have any open comments from the SEC related to our financial statements or periodic filings with the SEC.

### Item 2. Properties

We own our principal administrative, sales, support, marketing, product development and distribution facilities, which are located in three buildings totaling approximately 258,000 square feet in Bedford, Massachusetts. As of November 30, 2018, we reclassified two of these buildings from property and equipment to assets held for sale. For further discussion, refer to Note 5 to our Consolidated Financial Statements in Item 8 of this Form 10-K.

We also maintain offices in leased facilities in various other locations in North America and outside North America, including Australia, Bulgaria, Germany, India, Netherlands, and the U.K. The terms of our leases generally range from one to seven years. We believe that our facilities are adequate for our current needs and that suitable additional

space will be available as needed.

### Item 3. Legal Proceedings

We are subject to various legal proceedings and claims, either asserted or unasserted, which arise in the ordinary course of business. While the outcome of these claims cannot be predicted with certainty, management does not believe that the outcome of any of these legal matters will have a material effect on our consolidated financial position, results of operations or cash flows.

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## 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

The following table sets forth, for the periods indicated, the range of high and low sale prices for our common stock. Our common stock trades on the NASDAQ Global Select Market under the symbol "PRGS".

	Fiscal Year Ended			
	November 30, 2018		November 30, 2017	
	High	Low	High	Low
First quarter	\$53.60	\$40.20	\$32.47	\$27.16
Second quarter	47.21	35.63	30.70	27.46
Third quarter	41.25	34.72	33.89	28.63
Fourth quarter	43.07	30.23	42.97	33.23

On September 21, 2018, our Board of Directors approved an 11% increase to our quarterly cash dividend from \$0.14 to \$0.155 per share of common stock. We began paying quarterly cash dividends of \$0.125 per share of common stock to Progress stockholders in December 2016 and increased the quarterly cash dividend to \$0.14 per share in September 2017. On January 8, 2019, our Board of Directors declared a quarterly dividend of \$0.155 per share of common stock that will be paid on March 15, 2019 to stockholders of record as of the close of business on March 1, 2019.

As of December 31, 2018, our common stock was held by approximately 158 stockholders of record.

In September 2017, our Board of Directors increased our total share repurchase authorization to \$250.0 million. In fiscal years 2018 and 2017, we repurchased and retired 2.9 million shares of our common stock for \$120.0 million and 2.2 million shares of our common stock for \$73.9 million, respectively. As of November 30, 2018, there was \$100.0 million remaining under this current authorization.

## Stock Repurchases

Information related to the repurchases of our common stock by month in the fourth quarter of fiscal year 2018 is as follows (in thousands, except per share and share data):

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs (1)
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September 2018	240,998	\$ 41.47	240,998	\$ 100,000
October 2018	—	—	—	100,000
November 2018	—	—	—	100,000
Total	240,998	\$ 41.47	240,998	\$ 100,000

In September 2017, our Board of Directors increased our total share repurchase authorization to \$250.0 million. As of November 30, 2018, there was \$100.0 million remaining under this authorization, which expires at the end of fiscal year 2019.

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Stock Performance Graph and Cumulative Total Return

The graph below compares the cumulative total stockholder return on our common stock with the cumulative total return on the NASDAQ Composite Index and the NASDAQ Computer Index for each of the last five fiscal years ended November 30, 2018, assuming an investment of \$100 at the beginning of such period and the reinvestment of any dividends.

Comparison of 5 Year Cumulative Total Return<sup>(1)</sup>  
 Among Progress Software Corporation, the NASDAQ Composite Index and the  
 NASDAQ Computer Index

<sup>(1)</sup> \$100 invested on November 30, 2013 in stock or index, including reinvestment of dividends.

November 30,	2013	2014	2015	2016	2017	2018
Progress Software Corporation	\$100.00	\$99.50	\$91.60	\$112.91	\$157.85	\$134.25
NASDAQ Composite	100.00	116.86	126.29	131.60	169.93	181.21
NASDAQ Computer	100.00	126.19	136.47	146.37	207.00	216.75

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## Item 6. Selected Financial Data

The following table sets forth selected financial data for the last five fiscal years (in thousands, except per share data):

Year Ended November 30,	2018	2017	2016	2015	2014
Revenue	\$397,165	\$397,572	\$405,341	\$377,554	\$332,533
Income (loss) from operations	85,998	70,614	(29,709 )	14,754	80,740
Net income (loss)	63,491	37,417	(55,726 )	(8,801 )	49,458
Basic earnings (loss) per share from continuing operations	1.39	0.78	(1.13 )	(0.17 )	0.97
Diluted earnings (loss) per share from continuing operations	1.38	0.77	(1.13 )	(0.17 )	0.96
Cash dividends declared per common share	0.575	0.515	0.125	—	—
Cash, cash equivalents and short-term investments	139,513	183,609	249,754	241,279	283,268
Total assets	640,609	718,718	754,827	877,123	702,756
Long-term debt, net, including current portion	116,089	121,909	135,000	144,375	—
Shareholders' equity	310,082	376,084	406,629	522,464	543,245

Fiscal year 2016 amounts have been impacted by a \$92.0 million impairment charge related to the goodwill of the Application Development and Deployment reporting unit. Refer to Note 6 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details.

## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

## Forward-Looking Statements

Certain statements below about anticipated results and our products and markets are forward-looking statements that are based on our current plans and assumptions. Important information about the bases for these plans and assumptions and factors that may cause our actual results to differ materially from these statements is contained below and in Item 1A. "Risk Factors" of this Annual Report on Form 10-K.

## Use of Constant Currency

Revenue from our international operations has historically represented a substantial portion of our total revenue. As a result, our revenue results have been impacted, and we expect will continue to be impacted, by fluctuations in foreign currency exchange rates. For example, if the local currencies of our foreign subsidiaries strengthen, our consolidated results stated in U.S. dollars are positively impacted.

As exchange rates are an important factor in understanding period to period comparisons, we believe the presentation of revenue growth rates on a constant currency basis enhances the understanding of our revenue results and evaluation of our performance in comparison to prior periods. The constant currency information presented is calculated by translating current period results using prior period weighted average foreign currency exchange rates. These results should be considered in addition to, not as a substitute for, results reported in accordance with GAAP.

## Overview

Progress Software Corporation ("Progress," the "Company," "we," "us," or "our") offers the leading platform for developing and deploying strategic business applications. We enable customers and partners to deliver modern, high-impact digital experiences with a fraction of the effort, time and cost. Progress offers powerful tools for easily building adaptive user experiences across any type of device or touchpoint, award-winning machine learning that enables cognitive capabilities to be a part of any application, the flexibility of a serverless cloud to deploy modern

apps, business rules, web content management, plus leading data connectivity technology. Over 1,700 ISVs, 100,000 enterprise customers, and 2 million developers rely on Progress to power their applications. We operate as three distinct segments: OpenEdge, Data Connectivity and Integration, and Application Development and Deployment.

The key tenets of our strategic plan and operating model are as follows:

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**Align Resources to Drive Profitability.** Our organizational philosophy and operating principles focus primarily on customer and partner retention and success for our core products and a streamlined operating approach in order to more efficiently drive revenue.

**Protect and Strengthen Our Core Business.** A key element of our strategy is centered on providing the platform and tools enterprises need to build “cognitive applications,” which we believe are the future of application development. We offer this platform to both new customers and partners as well as our existing partner and customer ecosystems. Our platform for cognitive applications enables developers to build the most modern applications quickly and easily, and includes:

- our leading UI development tools, which enable organizations to easily build engaging user interfaces for any device or front end;
- our NativeScript offering, which allows developers to use JavaScript to build native applications across multiple mobile platforms;
- our modern high productivity application development platform, Progress Kinvey, that is cloud-native, is secure, high-performing, and highly-scalable while supporting all modern user interfaces;
- automated and intuitive machine learning capabilities for accelerating the creation and delivery of cognitive applications;
- our data connectivity and integration capabilities;
- our business logic and rules capabilities; and
- web content management for delivering personalized and engaging digital experiences

This strategy builds on our inherent DNA and our vast experience in application development that we’ve acquired over the past 35 years.

**Holistic Capital Allocation Approach.** Pursuant to our capital allocation strategy, we have targeted to return approximately 75-80% of our annual cash flows from operations to stockholders in the form of share repurchases and through dividends. We have also adopted a disciplined approach to future mergers and acquisitions. By adopting strict financial criteria for future acquisitions, these acquisitions will enable us to drive significant stockholder returns by providing scale and increased cash flows.

On March 1, 2017, we acquired DataRPM for an aggregate sum of \$30.0 million. DataRPM is a leader in cognitive predictive maintenance for the industrial IoT (“IIoT”) market. This acquisition is a key part of the Company’s strategy to provide the best platform to build and deliver cognitive applications.

On June 1, 2017, we acquired Kinvey for an aggregate sum of \$49.2 million. Kinvey allows developers to set up, use, and operate a cloud backend for any native, hybrid, web, or IoT app built using any development tools. This acquisition, in combination with our existing technologies, enables us to offer the premier, high productivity platform for building and delivering cognitive applications.

We expect to continue to evaluate possible acquisitions and other strategic transactions designed to expand our business. As a result, our expected uses of cash could change, our cash position could be reduced and we may incur additional debt obligations to the extent we complete additional acquisitions. However, we believe that existing cash balances, together with funds generated from operations and amounts available under our credit facility, will be sufficient to finance our operations and meet our foreseeable cash requirements, including quarterly cash dividends and stock repurchases to Progress stockholders, through at least the next twelve months.

We derive a significant portion of our revenue from international operations, which are primarily conducted in foreign currencies. As a result, changes in the value of these foreign currencies relative to the U.S. dollar have significantly impacted our results of operations and may impact our future results of operations. For example, in fiscal year 2016, the value of the U.S. dollar strengthened in comparison to certain foreign currencies, including in Europe, Brazil and Australia. Since approximately one-third of our revenue is denominated in foreign currency, our revenue results during those periods were negatively impacted. The impact of foreign exchange did not result in a material impact on revenue during fiscal years 2018 or 2017. We expect that future fluctuations in foreign currency exchange rates will impact our results.

In September 2017, we announced a new capital allocation strategy pursuant to which we are targeting to return approximately 75-80% of our annual cash flows from operations to stockholders in the form of share repurchases and through dividends. To that end, our Board of Directors increased our total share repurchase authorization to \$250.0 million. In fiscal year 2018, we repurchased and retired 2.9 million shares of our common stock for \$120.0 million. As of November 30, 2018, there was

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\$100.0 million remaining under this current authorization. We intend to repurchase \$100 million in shares of our common stock in fiscal year 2019. However, the timing and amount of any shares repurchased will be determined by management based on its evaluation of market conditions and other factors, and we may choose to suspend, expand or discontinue the repurchase program at any time.

On September 21, 2018, our Board of Directors approved an 11% increase to our quarterly cash dividend from \$0.14 to \$0.155 per share of common stock. We began paying quarterly cash dividends of \$0.125 per share of common stock to Progress stockholders in December 2016 and increased the quarterly cash dividend to \$0.14 per share in September 2017. We expect to continue paying quarterly cash dividends in subsequent quarters consistent with our capital allocation strategy. However, we may terminate or modify this program at any time. On January 8, 2019, our Board of Directors declared a quarterly dividend of \$0.155 per share of common stock that will be paid on March 15, 2019 to stockholders of record as of the close of business on March 1, 2019.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was signed into law. The Act will impact the Company's operating results, cash flows, and financial condition beginning in the fiscal year ended November 30, 2018 and the Company has evaluated the extent of the impact. The Act includes a number of provisions, including the reduction of the U.S. corporate tax rate from 35% to 21%, effective January 1, 2018. The Act also includes provisions that may partially offset the benefit of such rate reduction, including the repeal of the deduction for domestic production activities.

As a result of the Act, we realized a one-time tax benefit of \$1.7 million for the remeasurement of deferred tax assets and liabilities. The Act also provided for a one-time deemed mandatory repatriation of post-1986 undistributed foreign subsidiary earnings and profits through December 31, 2017. However, the Company will not incur one-time transition tax due to the Company's foreign subsidiaries being in a net accumulated deficit position. Other international provisions of the Act, including the provisions for global intangible low-taxed income and foreign-derived intangible income, will not become effective for the Company until fiscal 2019.

## Results of Operations

## Fiscal Year 2018 Compared to Fiscal Year 2017

## Revenue

(In thousands)	Fiscal Year Ended		Percentage
	November 30, 2018	November 30, 2017	Change
Revenue	\$ 397,165	\$ 397,572	-% (1 )%

As Reported Constant Currency

Total revenue decreased slightly in fiscal year 2018 as compared to fiscal year 2017 primarily due to a decline in license and professional services revenue, partially offset by an increase in maintenance revenue and a favorable impact from foreign currency exchange rates as further described below. Changes in prices from fiscal year 2017 to 2018 did not have a significant impact on our revenue.

## License Revenue

(In thousands)	Fiscal Year Ended		Percentage
	November 30, 2018	November 30, 2017	Change
License Revenue	\$ 397,165	\$ 397,572	-% (1 )%

As Reported Constant

	November 30,	November 30,	Currency
	2018	2017	
License	\$122,137	\$ 124,406	(2. )% (2. )%
As a percentage of total revenue	31 %	31 %	

Software license revenue decreased in fiscal year 2018 as compared to fiscal year 2017 due to a decrease in software license revenue in our Data Connectivity and Integration and Application Development and Deployment segments.



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## Maintenance and Services Revenue

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2018	November 30, 2017	As Reported	Constant Currency
Maintenance	\$244,822	\$ 241,398	1 %	1 %
As a percentage of total revenue	62 %	61 %		
Professional services	\$30,206	\$ 31,768	(5) %	(5) %
As a percentage of total revenue	7 %	8 %		
Total maintenance and services revenue	\$275,028	\$ 273,166	1 %	— %
As a percentage of total revenue	69 %	69 %		

Maintenance revenue increased in fiscal year 2018 as compared fiscal year 2017 due to a favorable impact from currency exchange rates and an increase in maintenance revenue in our Application Development and Deployment segment, partially offset by a decline in our Data Connectivity and Integration segment. Professional services revenue decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to lower professional services revenue from our OpenEdge and Application Development and Deployment segments.

## Revenue by Region

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2018	November 30, 2017	As Reported	Constant Currency
North America	\$219,922	\$ 223,942	(2) %	(2) %
As a percentage of total revenue	55 %	56 %		
EMEA	\$137,972	\$ 130,359	6 %	2 %
As a percentage of total revenue	35 %	33 %		
Latin America	\$17,637	\$ 21,158	(17) %	(10) %
As a percentage of total revenue	4 %	5 %		
Asia Pacific	\$21,634	\$ 22,113	(2) %	(1) %
As a percentage of total revenue	6 %	6 %		

Total revenue generated in North America decreased \$4.0 million, and total revenue generated outside North America increased \$3.6 million, in fiscal year 2018 as compared to fiscal year 2017. The decrease in North America was primarily due to a decrease in license revenue in our Data Connectivity and Integration and Application Development and Deployment segments and professional services revenue in our OpenEdge segment. This decrease was partially offset by an increase in maintenance revenue in our OpenEdge segment. The increase in revenue generated in EMEA in fiscal year 2018 as compared to fiscal year 2017 was primarily due to a favorable impact from currency exchange rates as well as an increase in OpenEdge professional services revenue and Application Development and Deployment maintenance revenue. Revenue generated in Latin America decreased in fiscal year 2018 as compared to fiscal year 2017 due to a negative impact of exchange rate fluctuations. The revenue generated in Asia Pacific decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to lower professional services revenue in our Application Development and Deployment segment.

Total revenue generated in markets outside North America represented 45% of total revenue in fiscal year 2018 compared to 44% of total revenue in the same period last year. If exchange rates had remained constant in fiscal year 2018 as compared to the exchange rates in effect in fiscal year 2017, total revenue generated in markets outside North

America would have been 44% of total revenue.

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## Revenue by Segment

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
OpenEdge segment	\$278,258	\$ 276,172	1 %
Data Connectivity and Integration segment	39,030	40,955	(5 )%
Application Development and Deployment segment	79,877	80,445	(1 )%
Total revenue	\$397,165	\$ 397,572	— %

Revenue in the OpenEdge segment increased in fiscal year 2018 as compared to fiscal year 2017, largely due to the favorable impact of exchange rate fluctuations, partially offset by a decrease in professional services revenue. Data Connectivity and Integration segment revenue decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to the timing of certain renewals by original equipment manufacturers ("OEMs"). Application Development and Deployment segment revenue decreased in fiscal year 2018 as compared to fiscal year 2017, primarily due to lower license and professional services revenue, partially offset by an increase in maintenance revenue.

## Cost of Software Licenses

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Cost of software licenses	\$4,769	\$ 5,752	(17 )%
As a percentage of software license revenue	4 %	5 %	
As a percentage of total revenue	1 %	1 %	

Cost of software licenses consists primarily of costs of royalties, electronic software distribution, duplication, and packaging. Cost of software licenses as a percentage of software license revenue varies from period to period depending upon the relative product mix. The decrease in cost of software licenses in fiscal year 2018 was a result of lower payments of royalties to third parties as compared to fiscal year 2017.

## Cost of Maintenance and Services

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Cost of maintenance and services	\$39,470	\$ 43,299	(9 )%
As a percentage of maintenance and services revenue	14 %	16 %	
As a percentage of total revenue	10 %	11 %	

Cost of maintenance and services consists primarily of costs of providing customer support, consulting, and education. Cost of maintenance and services decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to lower compensation-related costs resulting from a decrease in headcount, partially offset by higher third-party professional services expense.

## Amortization of Acquired Intangibles

Fiscal Year Ended

(In thousands)	November 30, 2018		November 30, 2017		Percentage Change
Amortization of acquired intangibles	\$22,734		\$ 20,108		13 %
As a percentage of total revenue	6	%	5	%	

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Amortization of acquired intangibles included in costs of revenue primarily represents the amortization of the value assigned to technology-related intangible assets obtained in business combinations. Amortization of acquired intangibles increased in fiscal year 2018 as compared to fiscal year 2017. The increase was primarily due to the addition of intangible assets associated with the technologies obtained in connection with the acquisitions of DataRPM in the second quarter of fiscal year 2017 and Kinvey in the third quarter of fiscal year 2017, partially offset by the completion of amortization of certain intangible assets acquired in prior years.

## Gross Profit

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Gross profit	\$330,192	\$328,413	1 %
As a percentage of total revenue	83	% 83	%

Our gross profit increased in fiscal year 2018 as compared to fiscal year 2017 primarily due to an increase in maintenance revenue and the decrease in cost of maintenance and services and cost of software licenses as described above, offset slightly by the increase of amortization of acquired intangibles and the decrease in software license and professional services revenue.

## Sales and Marketing

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Sales and marketing	\$93,036	\$96,345	(3 )%
As a percentage of total revenue	23	% 24	%

Sales and marketing expenses decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to lower compensation-related and professional service expenses as a result of the headcount reduction actions which occurred in the first quarter of fiscal year 2017. The decrease was partially offset by higher marketing programs costs related to the go-to-market efforts for Kinvey and DataRPM.

## Product Development

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Product development	\$79,739	\$76,988	4 %
As a percentage of total revenue	20	% 19	%

Product development expenses increased in fiscal year 2018 as compared to fiscal year 2017 primarily due to higher stock-based compensation expenses, partially offset by lower compensation-related costs. During the first quarter of fiscal year 2017, there were significant forfeitures due to our restructuring action, which significantly reduced stock-based compensation expense in fiscal year 2017 as compared to fiscal year 2018.

## General and Administrative

Fiscal Year Ended

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(In thousands)	November 30, 2018	November 30, 2017	Percentage Change
General and administrative	\$49,050	\$ 45,739	7 %
As a percentage of total revenue	12 %	12 %	

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General and administrative expenses include the costs of our finance, human resources, legal, information systems and administrative departments. General and administrative expenses increased in fiscal year 2018 as compared to fiscal year 2017 primarily due to increased stock-based compensation expense, as well as higher professional services expense, partially offset by lower compensation-related expenses. During the first quarter of fiscal year 2017, there were significant forfeitures due to our restructuring action, which significantly reduced stock-based compensation expense in fiscal year 2017 as compared to fiscal year 2018.

## Amortization of Acquired Intangibles

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Amortization of acquired intangibles	\$ 13,241	\$ 13,039	2 %
As a percentage of total revenue	3	% 3	%

Amortization of acquired intangibles included in operating expenses primarily represents the amortization of value assigned to intangible assets obtained in business combinations other than assets identified as purchased technology. Amortization of acquired intangibles increased in fiscal year 2018 as compared to fiscal year 2017 due to the addition of intangible assets obtained in connection with the acquisitions of DataRPM and Kinvey, which occurred in the second and third quarters of fiscal year 2017, respectively.

## Loss on Assets Held for Sale

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Loss on assets held for sale	\$ 5,147	\$ —	*
As a percentage of total revenue	1	% —	%

In the fourth quarter of fiscal year 2018, we reclassified certain corporate land and building assets previously reported as property and equipment to assets held for sale on our consolidated balance sheets as we are actively marketing them and expect to sell them within one year. As a result, we recognized an impairment charge of \$5.1 million, which represents the difference between the fair value less cost to sell and the carrying value of the assets. The impairment charge was recorded to loss on assets held for sale within operating expenses on our fiscal year 2018 consolidated statement of operations. See Note 5 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details.

## Fees Related to Shareholder Activist

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Fees related to shareholder activist	\$ 1,472	\$ 2,020	(27 )%
As a percentage of total revenue	—	% 1	%

In September 2017, Praesidium Investment Management, then one of our largest stockholders, publicly announced its disagreement with our strategy in a Schedule 13D filed with the SEC and stated that it was seeking changes in the composition of our Board of Directors. In fiscal years 2017 and 2018, we incurred professional and other fees relating to Praesidium's actions.





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## Restructuring Expenses

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Restructuring expenses	\$2,251	\$ 22,210	(90 )%
As a percentage of total revenue	1	% 6	%

Restructuring expenses recorded in fiscal year 2018 relate to the restructuring activities that occurred in fiscal year 2017. See Note 13 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details, including types of expenses incurred and the timing of future expenses and cash payments. See also the Liquidity and Capital Resources section of this Item 2, Management's Discussion and Analysis of Financial Condition and Results of Operations.

## Acquisition-Related Expenses

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Acquisition-related expenses	\$258	\$ 1,458	(82 )%
As a percentage of total revenue	—	% —	%

Acquisition-related costs are expensed as incurred and include those costs incurred as a result of a business combination. These costs consist of professional services fees, including third-party legal and valuation-related fees, as well as retention fees, and earn-out payments treated as compensation expense. Acquisition-related expenses in fiscal year 2018 were minimal. Acquisition-related expenses in fiscal year 2017 resulted primarily from expense related to the acquisitions of DataRPM and Kinvey, which occurred in the second and third quarters of fiscal year 2017, respectively.

## Income from Operations

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Income from operations	\$85,998	\$ 70,614	22 %
As a percentage of total revenue	22	% 18	%

Income from operations increased in fiscal year 2018 as compared to fiscal year 2017. As described above, the increase was primarily driven by lower restructuring expenses, sales and marketing expenses, and acquisition expenses as well as higher gross margin. This increase was partially offset by the loss on assets held for sale recorded in fiscal year 2018, higher general and administrative expenses and higher product development expenses as described above.

## Income from Operations by Segment

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change

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OpenEdge segment	\$210,438	\$ 203,675	3	%
Data Connectivity and Integration segment	31,396	31,626	(1)	)%
Application Development and Deployment segment	52,790	53,800	(2)	)%
Other unallocated expenses	(208,626 )	(218,487 )	5	%
Total income from operations	\$85,998	\$ 70,614	22	%

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Note that the following expenses are not allocated to our segments as we manage and report our business in these functional areas on a consolidated basis only: certain product development and corporate sales and marketing expenses, customer support, administration, amortization of acquired intangibles, loss on assets held for sale, stock-based compensation, fees related to shareholder activist, restructuring, and acquisition-related expenses.

## Other (Expense) Income

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Interest expense	\$(5,149)	\$(4,631)	11 %
Interest income and other, net	1,220	921	32 %
Foreign currency loss, net	(3,089)	(1,317)	135 %
Total other expense, net	\$(7,018)	\$(5,027)	(40) %
As a percentage of total revenue	(2) %	(1) %	

Other (expense) income, net decreased in fiscal year 2018 as compared to fiscal year 2017 primarily due to an increase in foreign currency losses and higher interest expense. The increase in foreign currency losses is a result of an increase in the cost of forward points relating to our hedging activities, as well as movements in exchange rates and changes in our intercompany receivables and payables denominated in currencies other than local currencies during fiscal year 2018.

## Provision for Income Taxes

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Provision for income taxes	\$15,489	\$28,170	(45) %
As a percentage of total revenue	4 %	7 %	

Our effective income tax rate was 20% in fiscal year 2018 and 43% in fiscal year 2017. The primary reason for the decrease in the effective rate was due to enactment of tax reform in the United States that lowered our federal tax rate in fiscal year 2018 to a blended rate of 22.2% as compared to 35.0% in fiscal year 2017. In addition, during fiscal year 2018 we recorded a \$1.7 million income tax benefit for the re-measurement of our U.S. deferred tax balances.

## Net Income

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	Percentage Change
Net income	\$63,491	\$37,417	70 %
As a percentage of total revenue	16 %	9 %	

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## Fiscal 2017 Compared to Fiscal 2016

## Revenue

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2017	November 30, 2016	As Reported	Constant Currency
Revenue	\$ 397,572	\$ 405,341	(2)%	(2)%

Total revenue decreased \$7.8 million, or 2%, in fiscal year 2017 as compared to fiscal year 2016. Revenue would have decreased by the same percentage if exchange rates had been constant in fiscal year 2017 as compared to exchange rates in fiscal year 2016. Changes in prices from fiscal year 2016 to 2017 did not have a significant impact on our revenue.

## License Revenue

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2017	November 30, 2016	As Reported	Constant Currency
License	\$ 124,406	\$ 134,863	(8)%	(8)%
As a percentage of total revenue	31%	33%		

Software license revenue decreased \$10.5 million, or 8%, in fiscal year 2017 as compared to fiscal year 2016. Software license revenue would have decreased by the same percentage if exchange rates had been constant in fiscal year 2017 as compared to exchange rates in effect in fiscal year 2016. The decrease in license revenue is primarily due to decreases in license revenue in North America from products included in our Data Connectivity and Integration segment, due to the timing of certain OEM renewal agreements.

## Maintenance and Services Revenue

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2017	November 30, 2016	As Reported	Constant Currency
Maintenance	\$ 241,398	\$ 238,377	1%	1%
As a percentage of total revenue	61%	59%		
Professional services	\$ 31,768	\$ 32,101	(1)%	(1)%
As a percentage of total revenue	8%	8%		
Total maintenance and services revenue	\$ 273,166	\$ 270,478	1%	1%
As a percentage of total revenue	69%	67%		

Maintenance and services revenue increased \$2.7 million in fiscal year 2017 as compared to fiscal year 2016. Maintenance revenue increased 1% and professional services revenue decreased 1% compared to the prior year. The increase in maintenance revenue is primarily due to higher maintenance revenue from our DevTools and Sitefinity products included in our Application Development and Deployment segment. The decrease in services revenue is primarily due to lower revenue from our OpenEdge segment partially offset by higher professional services revenue generated by our Application Development and Deployment segment.



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## Revenue by Region

(In thousands)	Fiscal Year Ended		Percentage Change	
	November 30, 2017	November 30, 2016	As Reported	Constant Currency
North America	\$223,942	\$229,203	(2)%	(2)%
As a percentage of total revenue	56%	57%		
EMEA	\$130,359	\$130,818	—%	1%
As a percentage of total revenue	33%	32%		
Latin America	\$21,158	\$21,156	—%	(6)%
As a percentage of total revenue	5%	5%		
Asia Pacific	\$22,113	\$24,164	(8)%	(10)%
As a percentage of total revenue	6%	6%		

Total revenue generated in North America decreased \$5.3 million, and total revenue generated outside North America decreased \$2.5 million, in fiscal year 2017 as compared to fiscal year 2016. The decrease in North America was primarily due to license revenue decreases in our Data Connectivity and Integration segment. The decrease in Asia Pacific is primarily due to maintenance revenue decreases in our OpenEdge segment related to a single, large customer not renewing maintenance, and also related to a large deal in our Data Connectivity and Integration segment with a customer in Japan that occurred in the second quarter of fiscal year 2016.

Total revenue generated in markets outside North America represented 44% of total revenue in fiscal year 2017 compared to 43% of total revenue in fiscal year 2016. If exchange rates had remained constant in fiscal year 2017 as compared to the exchange rates in effect in fiscal year 2016, total revenue generated in markets outside North America would have remained at 44% of total revenue.

## Revenue by Segment

(In thousands)	Fiscal Year Ended		Percentage Change
	November 30, 2017	November 30, 2016	
OpenEdge segment	\$276,172	\$276,267	—%
Data Connectivity and Integration segment	40,955	48,009	(15)%
Application Development and Deployment segment	80,445	81,065	(1)%
Total revenue	\$397,572	\$405,341	(2)%

Revenue in the OpenEdge segment remained flat in fiscal year 2017 as compared to fiscal year 2016, primarily due to higher license sales and software-as-a-service revenue offset by decreases in maintenance and services revenue. Revenue in the OpenEdge segment would have remained flat if exchange rates had been constant in fiscal year 2017 as compared to exchange rates in fiscal year 2016. Data Connectivity and Integration revenue decreased \$7.1 million, or 15%, in fiscal year 2017 as compared to fiscal year 2016, primarily due to the timing of certain OEM renewals. Application Development and Deployment revenue decreased \$0.6 million, or 1%, year over year primarily as a result of a decrease in license revenue, offset by higher maintenance revenue from our DevTools and Sitefinity products.

## Cost of Software Licenses

(In thousands)	Fiscal Year Ended		Percentage
	November 30, 2017	November 30, 2016	

	November 30, 2017	November 30, 2016	Change
Cost of software licenses	\$5,752	\$ 5,456	5 %
As a percentage of software license revenue	5 %	4 %	%
As a percentage of total revenue	1 %	1 %	%

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Cost of software licenses consists primarily of costs of royalties, electronic software distribution costs, duplication and packaging. Cost of software licenses increased \$0.3 million, or 5%, in fiscal year 2017 as compared to fiscal year 2016, and increased as a percentage of software license revenue from 4% to 5%. Cost of software licenses as a percentage of software license revenue varies from period to period depending upon the relative product mix.

## Cost of Maintenance and Services

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Cost of maintenance and services	\$43,299	\$ 44,760	(3 )%
As a percentage of maintenance and services revenue	16	% 17	%
As a percentage of total revenue	11	% 11	%

Cost of maintenance and services consists primarily of costs of providing customer support, consulting and education. Cost of maintenance and services decreased \$1.5 million, or 3%, in fiscal year 2017 as compared to fiscal year 2016, and decreased as a percentage of maintenance and services revenue from 17% to 16%. The decrease in cost of maintenance and services is primarily due to lower compensation-related costs resulting from a decrease in headcount.

## Amortization of Acquired Intangibles

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Amortization of acquired intangibles	\$20,108	\$ 15,496	30 %
As a percentage of total revenue	5	% 4	%

Amortization of acquired intangibles included in costs of revenue primarily represents the amortization of the value assigned to technology-related intangible assets obtained in business combinations. Amortization of acquired intangibles increased \$4.6 million, or 30%, in fiscal year 2017 as compared to fiscal year 2016. The increase was primarily due to the addition of intangible assets associated with the technology obtained in connection with the acquisitions of DataRPM in the second quarter of fiscal year 2017 and Kinvey in the third quarter of fiscal year 2017, partially offset by the impairment of intangible assets associated with the technology obtained in connection with the acquisition of Modulus as well as the completion of amortization of certain intangible assets acquired in prior years.

## Gross Profit

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Gross profit	\$328,413	\$ 339,629	(3 )%
As a percentage of total revenue	83	% 84	%

Our gross profit decreased \$11.2 million, or 3%, in fiscal year 2017 as compared to fiscal year 2016, and our gross profit as a percentage of total revenue decreased from 84% to 83% compared to fiscal year 2016. The dollar decrease is primarily due to the decreases of license revenue and increases of amortization of acquired intangibles as described above.





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## Sales and Marketing

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Sales and marketing	\$96,345	\$ 121,501	(21 )%
As a percentage of total revenue	24 %	30 %	%

Sales and marketing expenses decreased \$25.2 million, or 21%, in fiscal year 2017 as compared to fiscal year 2016, and decreased as a percentage of total revenue from 30% to 24%. The decrease in sales expenses was primarily due to lower compensation-related and travel costs as a result of the headcount reduction actions which occurred in the first quarter of fiscal year 2017, as well as a decrease in spending on marketing programs.

## Product Development

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Product development costs	\$76,988	\$ 88,587	(13 )%
As a percentage of total revenue	19 %	22 %	%

Product development expenses decreased \$11.6 million, or 13%, in fiscal year 2017 as compared to fiscal year 2016, and decreased as a percentage of revenue from 22% to 19%. The decrease in product development expense is primarily due to lower compensation-related costs as a result of the headcount reduction actions which occurred in the first quarter of fiscal year 2017.

## General and Administrative

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
General and administrative	\$45,739	\$ 46,532	(2 )%
As a percentage of total revenue	12 %	11 %	%

General and administrative expenses include the costs of our finance, human resources, legal, information systems and administrative departments. General and administrative expenses decreased \$0.8 million, or 2%, in fiscal year 2017 as compared to fiscal year 2016, and increased as a percentage of revenue from 11% to 12%. The dollar decrease was primarily due to lower compensation-related costs as a result of the headcount reduction actions which occurred in the first quarter of fiscal year 2017.

## Impairment of Goodwill

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Impairment of goodwill	\$—	\$ 92,000	(100 )%
As a percentage of total revenue	—%	23 %	%

During fiscal year 2017, we tested goodwill for impairment for each of our reporting units as of October 31, 2017. Our reporting units each had fair values which significantly exceeded their carrying values as of the annual impairment date. As a result, we did not recognize any goodwill impairment charges during fiscal year 2017.

During fiscal year 2016, we tested goodwill for impairment for each of our reporting units as of October 31, 2016. Our OpenEdge and Data Connectivity and Integration reporting units had fair values which significantly exceeded their carrying

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values as of the annual impairment date. Our Application Development and Deployment reporting unit did not pass the first step of the impairment test. As a result, we recorded a \$92.0 million goodwill impairment charge related to the Application Development and Deployment reporting unit (see Note 6 to our Consolidated Financial Statements in Item 8 of this Form 10-K for further information on the impairment charge).

## Amortization of Acquired Intangibles

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Amortization of acquired intangibles	\$13,039	\$12,735	2 %
As a percentage of total revenue	3	% 3	%

Amortization of acquired intangibles included in operating expenses primarily represents the amortization of value assigned to intangible assets obtained in business combinations other than assets identified as purchased technology. Amortization of acquired intangibles increased slightly in fiscal year 2017 due to the addition of intangible assets obtained in connection with the acquisitions of DataRPM and Kinvey, which occurred in the second and third quarters of fiscal year 2017, respectively.

## Impairment of Intangible Assets

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Impairment of intangible assets	\$—	\$5,051	(100)%
As a percentage of total revenue	—%	1 %	%

During fiscal year 2017, we did not impair the value of any intangible assets.

During fiscal year 2016, we evaluated the ongoing value of the intangible assets associated with the technology obtained in connection with the acquisition of Modulus. As a result of our decision to abandon the related assets due to a change in our expected ability to use the technology internally, we determined that the intangible assets were fully impaired. As a result, we incurred an impairment charge of \$5.1 million during fiscal year 2016. See Note 6 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details.

## Fees Related to Shareholder Activist

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Fees related to shareholder activist	\$2,020	\$—	100 %
As a percentage of total revenue	1	% —	%

In September 2017, Praesidium Investment Management, then one of our largest stockholders, publicly announced its disagreement with our strategy in a Schedule 13D filed with the SEC and stated that it was seeking changes in the composition of our Board of Directors. In fiscal year 2017, we incurred professional and other fees relating to Praesidium's actions.

## Restructuring Expenses

(In thousands)	Fiscal Year Ended		Percentage Change
	November 30, 2017	November 30, 2016	
Restructuring expenses	\$22,210	\$ 1,692	1,213 %
As a percentage of total revenue	6 %	— %	

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We incurred restructuring expenses of \$22.2 million in fiscal year 2017 as compared to \$1.7 million in fiscal year 2016. Restructuring expenses recorded in fiscal year 2017 relate to the restructuring activities occurring in the first fiscal quarter of 2017. See Note 13 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details, including types of expenses incurred and the timing of future expenses and cash payments. See also the Liquidity and Capital Resources section of this Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

## Acquisition-Related Expenses

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Acquisition-related expenses	\$1,458	\$ 1,240	18 %
As a percentage of total revenue	— %	— %	%

Acquisition-related costs are expensed as incurred and include those costs incurred as a result of a business combination. These costs consist of professional services fees, including third-party legal and valuation-related fees, as well as retention fees, and earn-out payments treated as compensation expense. Acquisition-related expenses in fiscal year 2017 relate to the acquisitions of DataRPM and Kinvey, which occurred in the second and third quarters of fiscal year 2017, respectively. Acquisition-related expenses in fiscal year 2016 relate primarily to retention bonuses associated with our Telerik acquisition. See Note 7 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional details.

## Income (loss) from Operations

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Income (loss) from operations	\$70,614	\$(29,709 )	(338 )%
As a percentage of total revenue	18 %	(7 )%	%

Income from operations increased \$100.3 million, or 338%, in fiscal year 2017 as compared to fiscal year 2016. As discussed above, the increase was primarily driven by the impairment of goodwill during fiscal year 2016 as well as the headcount reduction actions that began in the first quarter of fiscal year 2017. The increase was partially offset by the restructuring expenses recorded in fiscal year 2017 as well as the decreases of license revenue and increases of amortization of acquired intangibles as described above.

## Income (Loss) from Operations by Segment

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
OpenEdge segment	\$203,675	\$ 203,329	— %
Data Connectivity and Integration segment	31,626	35,249	(10 )%
Application Development and Deployment segment	53,800	40,885	32 %
Other unallocated expenses	(218,487 )	(309,172 )	29 %
Total income (loss) from operations	\$70,614	\$(29,709 )	(338 )%

Note that the following expenses are not allocated to our segments as we manage and report our business in these functional areas on a consolidated basis only: certain product development and corporate sales and marketing expenses, customer support, administration, amortization and impairment of acquired intangibles, impairment of goodwill, stock-based compensation, fees related to shareholder activist, restructuring, and acquisition-related expenses.

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## Other (Expense) Income

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Interest expense	\$ (4,631)	\$ (4,178)	11 %
Interest income and other, net	921	839	10 %
Foreign currency loss	(1,317)	(2,232)	(41) %
Total other (expense) income, net	\$ (5,027)	\$ (5,571)	10 %
As a percentage of total revenue	(1) %	(1) %	

Total other expense, net decreased \$0.5 million in fiscal year 2017 as compared to fiscal year 2016 primarily due to a foreign currency loss of \$1.3 million in fiscal year 2017 compared to a foreign currency loss of \$2.2 million in fiscal year 2016. The change in foreign currency gains/losses is a result of movements in exchange rates and the impact during fiscal year 2017 on our intercompany receivables and payables denominated in currencies other than local currencies.

## Provision for Income Taxes

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Provision for income taxes	\$28,170	\$20,446	38 %
As a percentage of total revenue	7 %	5 %	

Our effective income tax rate was 43% in fiscal year 2017 and (58)% in fiscal year 2016. In fiscal year 2016, our rate was impacted unfavorably as a result of the goodwill impairment expense that is not tax deductible, partially offset by a \$2.7 million release of a valuation allowance on state research and development tax credits recorded in the fourth quarter of fiscal year 2016 and the out-of-period benefit described below. During the preparation of our consolidated financial statements for the three months ended May 31, 2016, we identified an error in our prior year income tax provision whereby income tax expense was overstated for the year ended November 30, 2015 by \$2.7 million related to our tax treatment of an intercompany gain. We determined that the error is not material to the prior year financial statements. We also concluded that recording an out-of-period correction would not be material and corrected this error by recording an out-of-period \$2.7 million tax benefit in our interim financial statements for the period ended May 31, 2016.

## Net Income (Loss)

(In thousands)	Fiscal Year Ended		
	November 30, 2017	November 30, 2016	Percentage Change
Net income (loss)	\$37,417	\$ (55,726)	167 %
As a percentage of total revenue	9 %	(14) %	

## Liquidity and Capital Resources

## Cash, Cash Equivalents and Short-Term Investments

(In thousands)



	November 30, 2018	November 30, 2017
Cash and cash equivalents	\$ 105,126	\$ 133,464
Short-term investments	34,387	50,145
Total cash, cash equivalents and short-term investments	\$ 139,513	\$ 183,609

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The decrease in cash, cash equivalents and short-term investments of \$44.1 million from the end of fiscal year 2017 was due to repurchases of common stock of \$120.0 million, dividend payments of \$25.8 million, the effect of exchange rates on cash of \$10.5 million, equity grant withholding payments of \$4.0 million, payments of capital expenditures of \$7.3 million, and payments of debt obligations in the amount of \$6.2 million. These cash outflows were partially offset by cash inflows from operations of \$121.4 million and \$9.2 million in cash received from the issuance of common stock. Except as described below, there are no limitations on our ability to access our cash, cash equivalents and short-term investments.

Cash, cash equivalents and short-term investments held by our foreign subsidiaries was \$35.6 million and \$36.5 million at November 30, 2018 and 2017, respectively. Foreign cash includes unremitted foreign earnings, which are invested indefinitely outside of the U.S. As such, it is not available to fund our domestic operations. If we were to repatriate these earnings, we may be subject to income tax withholding in certain tax jurisdictions and a portion of the repatriated earnings may be subject to U.S. income tax. However, we do not anticipate that this would have a material adverse impact on our liquidity.

### Share Repurchases

In September 2017, our Board of Directors increased our total share repurchase authorization to \$250.0 million. In fiscal years 2018 and 2017, we repurchased and retired 2.9 million shares of our common stock for \$120.0 million and 2.2 million shares of our common stock for \$73.9 million, respectively, under this current authorization. In fiscal year 2016, we repurchased and retired 3.1 million shares of our common stock for \$79.2 million. As of November 30, 2018, there was \$100.0 million remaining under the current authorization. We intend to repurchase \$100 million in shares of our common stock in fiscal year 2019. However, the timing and amount of any shares repurchased will be determined by management based on its evaluation of market conditions and other factors, and we may choose to suspend, expand or discontinue the repurchase program at any time.

### Dividends

On September 21, 2018, our Board of Directors approved an 11% increase to our quarterly cash dividend from \$0.14 to \$0.155 per share of common stock. We began paying quarterly cash dividends of \$0.125 per share of common stock to Progress stockholders in December 2016 and increased the quarterly cash dividend to \$0.14 per share in September 2017. We have declared aggregate per share quarterly cash dividends totaling \$0.575, \$0.515 and \$0.125 for the years ended November 30, 2018, November 30, 2017 and November 30, 2016, respectively. We have paid aggregate cash dividends totaling \$25.8 million, and \$24.1 million for the years ended November 30, 2018 and November 30, 2017, respectively. We expect to continue paying quarterly cash dividends in subsequent quarters consistent with our capital allocation strategy. However, we may terminate or modify this program at any time.

### Restructuring Activities

During the fourth quarter of fiscal year 2016, our management approved, committed to and initiated plans to make strategic changes to our organization as a result of the appointment of our new Chief Executive Officer during the period. In connection with the new organizational structure, we eliminated the positions of Chief Product Officer and Chief Revenue Officer. As part of this fourth quarter restructuring, for the fiscal years ended November 30, 2018 and 2017, we did not incur any expenses and do not expect to incur additional material costs with respect to this restructuring. For the fiscal year ended November 30, 2016, we incurred expenses of \$1.5 million. The expenses are recorded as restructuring expenses on the consolidated statements of operations.

During the first quarter of fiscal year 2017, we announced certain operational restructuring initiatives intended to significantly reduce annual costs. As part of this action, management committed to a new strategic plan highlighted by

a new product strategy and a streamlined operating approach. To execute these operational restructuring initiatives, we reduced our global workforce by over 20%. These workforce reductions occurred in substantially all functional units and across all geographies in which we then operated. During the fourth quarter of fiscal year 2017, we incurred additional costs with respect to this restructuring, including reduction in redundant positions primarily within the product development and sales functions. We also consolidated offices in various locations. As part of this fiscal year 2017 restructuring, for the fiscal years ended November 30, 2018 and 2017, we incurred expenses of \$2.3 million and \$22.1 million, respectively, which are recorded as restructuring expenses on the consolidated statements of operations. We do not expect to incur additional material costs with respect to this restructuring.

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## Credit Facility

Our credit agreement provides for a \$123.8 million secured term loan and a \$150.0 million secured revolving credit facility. The revolving credit facility may be made available in U.S. Dollars and certain other currencies and may be increased by up to an additional \$125.0 million if the existing or additional lenders are willing to make such increased commitments. The revolving credit facility has sublimits for swing line loans up to \$25.0 million and for the issuance of standby letters of credit in a face amount up to \$25.0 million. We expect to use the revolving credit facility for general corporate purposes, including acquisitions of other businesses, and may also use it for working capital.

The credit facility matures on November 20, 2022, when all amounts outstanding will be due and payable in full. The revolving credit facility does not require amortization of principal. The outstanding balance of the term loan as of November 30, 2018 was \$117.6 million, with \$6.2 million due in the next 12 months. The term loan requires repayment of principal at the end of each fiscal quarter, beginning with the fiscal quarter ended February 28, 2018. The principal repayment amounts are in accordance with the following schedule: (i) eight payments of \$1.5 million each, (ii) four payments of \$2.3 million each, (iii) four payments of \$3.1 million each, (iv) three payments of \$3.9 million each, and (v) the last payment is of the remaining principal amount. Any amounts outstanding under the term loan thereafter would be due on the maturity date. The term loan may be prepaid before maturity in whole or in part at our option without penalty or premium. As of November 30, 2018, the carrying value of the term loan approximates the fair value, based on Level 2 inputs (observable market prices in less than active markets), as the interest rate is variable over the selected interest period and is similar to current rates at which we can borrow funds. The average interest rate of the credit facility during the fiscal year ended November 30, 2018 was 3.43% and the interest rate as of November 30, 2018 was 3.81%.

Revolving loans may be borrowed, repaid, and reborrowed until November 20, 2022, at which time all amounts outstanding must be repaid. As of November 30, 2018, there were no amounts outstanding under the revolving line and \$1.3 million of letters of credit.

The credit facility contains customary affirmative and negative covenants, including covenants that limit or restrict our ability to, among other things, grant liens, make investments, make acquisitions, incur indebtedness, merge or consolidate, dispose of assets, pay dividends or make distributions, repurchase stock, change the nature of the business, enter into certain transactions with affiliates and enter into burdensome agreements, in each case subject to customary exceptions for a credit facility of this size and type. We are also required to maintain compliance with a consolidated fixed charge coverage ratio, a consolidated total leverage ratio and a consolidated senior secured leverage ratio. We are in compliance with these financial covenants as of November 30, 2018.

## Cash Flows from Operating Activities

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Net income (loss)	\$63,491	\$ 37,417	\$ (55,726 )
Non-cash reconciling items included in net income (loss)	72,905	57,081	159,675
Changes in operating assets and liabilities	(15,044 )	11,188	(1,104 )
Net cash flows from operating activities	\$ 121,352	\$ 105,686	\$ 102,845

The increase in cash generated from operations in fiscal year 2018 as compared to fiscal year 2017 was primarily due to higher operating income, partially offset by a year over year difference in changes in operating assets and liabilities. The most significant non-cash reconciling item included in net income in fiscal year 2018 was a \$5.1 million loss on assets held for sale (see Note 5 to the Consolidated Financial Statements in Item 8 of this Form 10-K for further

information on the impairment charge).

The significant changes in operating assets and liabilities in fiscal year 2018 as compared to fiscal year 2017 were primarily due to a decrease in personnel related expenditures. Also, our total deferred revenue as of November 30, 2018 increased by \$6.0 million from the end of fiscal year 2017 resulting from an increase in deferred license and maintenance revenue in our OpenEdge segment and Telerik multi-year maintenance renewals. In addition, our gross accounts receivable as of November 30, 2018 decreased by \$2.7 million from the end of fiscal year 2017. Days sales outstanding ("DSO") in accounts receivable was 47 days at the end of fiscal year 2018 and fiscal year 2017.

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The increase in cash generated from operations in fiscal year 2017 compared to fiscal year 2016 was primarily due to the year-over-year difference in changes in non-cash reconciling items included in net income (loss) and higher operating income. The most significant non-cash reconciling items included in net income (loss) in fiscal year 2016 include a \$92.0 million impairment charge related to the goodwill of the Application Development and Deployment reporting unit and a \$5.1 million impairment charge related to intangible assets obtained in connection with the acquisition of Modulus (see Note 6 to the Consolidated Financial Statements in Item 8 of this Form 10-K for further information on the impairment charges). We did not record any impairment charges in fiscal year 2017.

## Cash Flows from Investing Activities

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Net investment activity	\$14,843	\$ (8,821 )	\$ (15,216 )
Purchases of property and equipment	(7,250 )	(3,377 )	(5,786 )
Proceeds from sale of property, plant and equipment, net	—	1,557	—
Payments for acquisitions, net of cash acquired	—	(77,150 )	—
Net cash flows (used in) from investing activities	\$7,593	\$ (87,791 )	\$ (21,002 )

Net cash outflows and inflows of our net investment activity are generally a result of the timing of our purchases and maturities of securities, which are classified as cash equivalents or short-term securities, as well as the timing of acquisitions and divestitures. Most significantly, we did not complete any acquisitions during fiscal year 2018, whereas we acquired DataRPM and Kinvey for a net cash amount of \$77.2 million in fiscal year 2017. In addition, we purchased \$7.3 million of property and equipment in fiscal year 2018, as compared to \$3.4 million in fiscal year 2017.

Cash used in investing increased in fiscal year 2017 as compared to fiscal year 2016. The increase was primarily a result of the timing of acquisitions and divestitures. In fiscal year 2017, we acquired DataRPM and Kinvey for a net cash amount of \$77.2 million, whereas we did not complete any acquisitions during fiscal year 2016. In addition, we spent \$3.4 million on property and equipment and capitalized software costs in fiscal year 2017 as compared to \$5.8 million in fiscal year 2016.

## Cash Flows from Financing Activities

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Proceeds from stock-based compensation plans	\$9,205	\$ 10,025	\$ 9,918
Repurchases of common stock	(120,000 )	(73,936 )	(79,188 )
Dividend payment to shareholders	(25,789 )	(24,127 )	—
Proceeds from the issuance of debt, net of payments of principal and debt issuance costs	(6,188 )	(12,424 )	(9,375 )
Other financing activities	(3,999 )	(2,852 )	(3,548 )
Net cash flows from financing activities	\$(146,771 )	\$(103,314 )	\$(82,193 )

During fiscal year 2018, we received \$9.2 million from the exercise of stock options and the issuance of shares under our employee stock purchase plan as compared to \$10.0 million in fiscal year 2017 and \$9.9 million in fiscal year 2016. In addition, we made dividend payments of \$25.8 million to our stockholders in fiscal year 2018, as compared to payments of \$24.1 million in fiscal year 2017. Most significantly, we repurchased \$120.0 million of our common stock under our share repurchase plan, compared to \$73.9 million in fiscal year 2017 and \$79.2 million in fiscal year

2016. We also made principal payments on our debt of \$6.2 million during fiscal year 2018, as compared to \$12.4 million in fiscal year 2017 and \$9.4 million in fiscal year 2016.

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## Indemnification Obligations

We include standard intellectual property indemnification provisions in our licensing agreements in the ordinary course of business. Pursuant to our product license agreements, we will indemnify, hold harmless, and agree to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally business partners or customers, in connection with certain patent, copyright or other intellectual property infringement claims by third parties with respect to our products. Other agreements with our customers provide indemnification for claims relating to property damage or personal injury resulting from the performance of services by us or our subcontractors. Historically, our costs to defend lawsuits or settle claims relating to such indemnity agreements have been insignificant. Accordingly, the estimated fair value of these indemnification provisions is immaterial.

## Liquidity Outlook

We believe that existing cash balances, together with funds generated from operations and amounts available under our credit facility, will be sufficient to finance our operations and meet our foreseeable cash requirements through at least the next twelve months. We do not contemplate a need for any foreign repatriation of the earnings which are deemed invested indefinitely outside of the U.S. Our foreseeable cash needs include our planned capital expenditures, debt repayments, quarterly cash dividends, share repurchases, acquisitions, lease commitments, restructuring obligations and other long-term obligations.

## Revenue Backlog

(In thousands)	November 30, 2018	November 30, 2017
Deferred revenue, primarily related to unexpired maintenance and support contracts	\$ 148,321	\$ 142,288
Multi-year licensing arrangements <sup>(1)</sup>	1,127	17,150
Total revenue backlog	\$ 149,448	\$ 159,438

Our backlog of orders not included on the balance sheet is not subject to our normal accounting controls for information that is either reported in or derived from our basic financial statements. Note that approximately \$0.5 (1) million and \$14.8 million of the multi-year licensing arrangements as of November 30, 2018 and November 30, 2017, respectively, relate to OEM arrangements in our Data Connectivity and Integration business segment, while the remaining amount relates to arrangements in our OpenEdge business segment.

We typically fulfill most of our software license orders within 30 days of acceptance of a purchase order. Assuming all other revenue recognition criteria have been met, we recognize software license revenue upon shipment of the product, or if delivered electronically, when the customer has the right to access the software. Because there are many elements governing when revenue is recognized, including when orders are shipped, credit approval obtained, completion of internal control processes over revenue recognition and other factors, management has some control in determining the period in which certain revenue is recognized. In addition, there is no industry standard for the definition of backlog and there may be an element of estimation in determining the amount. As such, direct comparisons with other companies may be difficult or potentially misleading.

## Off-Balance Sheet Arrangements



We have no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K.

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## Contractual Obligations

The following table details our contractual obligations as of November 30, 2018 (in thousands):

	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long-term debt:					
Principal payments	\$ 117,563	\$ 6,188	\$ 21,656	\$ 89,719	\$ —
Interest payments <sup>(1)</sup>	15,591	4,466	7,957	3,168	—
Operating leases	24,584	6,256	8,536	5,455	4,337
Purchase obligations <sup>(2)</sup>	3,367	1,247	1,931	189	—
Unrecognized tax benefits <sup>(3)</sup>	—	—	—	—	—
Total	\$ 161,105	\$ 18,157	\$ 40,080	\$ 98,531	\$ 4,337

Interest on the long-term debt is due and payable monthly and is estimated using the effective interest rate as of (1) November 30, 2018 as the interest rate is variable. See Note 8 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional information.

(2) Represents the fixed or minimum amounts due under purchase obligations for support service agreements.

Our other noncurrent liabilities on the consolidated balance sheet include unrecognized tax benefits and related interest and penalties. As of November 30, 2018, we had unrecognized tax benefits of \$3.6 million and an additional \$0.4 million for interest and penalties classified as noncurrent liabilities. At this time, we are unable to (3) make a reasonably reliable estimate of the timing of payments in individual years in connection with these tax liabilities; therefore, such amounts are not included in the above contractual obligation table. See Note 14 to our Consolidated Financial Statements in Item 8 of this Form 10-K for additional information.

## Critical Accounting Policies

Management's discussion and analysis of financial condition and results of operations are based upon our consolidated financial statements which have been prepared in accordance with GAAP. We make estimates and assumptions in the preparation of our consolidated financial statements that affect the reported amounts of assets and liabilities, revenue and expenses and related disclosures of contingent assets and liabilities. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances. However, actual results may differ from these estimates.

We have identified the following critical accounting policies that require the use of significant judgments and estimates in the preparation of our consolidated financial statements. This listing is not a comprehensive list of all of our accounting policies. For further information regarding the application of these and other accounting policies, see Note 1 to our Consolidated Financial Statements in Item 8 of this Form 10-K.

## Revenue Recognition

We derive our revenue primarily from software licenses and maintenance and services. Our license arrangements generally contain multiple elements, including software maintenance services, consulting services, and customer education services. We do not recognize revenue until the following four basic criteria are met: (i) persuasive evidence of an arrangement exists, (ii) our product has been shipped or, if delivered electronically, the customer has the right to access the software, (iii) the fee is fixed or determinable, and (iv) collection of the fee is probable.

Evidence of an arrangement generally consists of a contract or purchase order signed by the customer. In regard to delivery, we generally ship our software electronically and do not license our software with conditions of acceptance. If an arrangement does contain conditions of acceptance, we defer recognition of the revenue until the acceptance criteria are met or the period of acceptance has passed. Services are considered delivered as the work is performed or, in the case of maintenance, over the contractual service period. We assess whether a fee is fixed or determinable at the outset of the arrangement and consider the payment terms of the transaction, including transactions that extend beyond our customary payment terms. We do not license our software with a right of return. In assessing whether the collection of the fee is probable, we consider customer credit-worthiness, a customer's historical payment experience, economic conditions in the customer's industry and geographic location and general economic conditions. If we do not consider collection of a fee to be probable, we defer the revenue until the fees are collected, provided all other conditions for revenue recognition have been met.

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In determining when to recognize revenue from a customer arrangement, we are often required to exercise judgment regarding the application of our accounting policies to a particular arrangement. The primary judgments used in evaluating revenue recognized in each period involve: determining whether collection is probable, assessing whether the fee is fixed or determinable, and determining the fair value of the maintenance and services elements included in multiple-element software arrangements. Such judgments can materially impact the amount of revenue that we record in a given period. While we follow specific and detailed rules and guidelines related to revenue recognition, we make and use significant management judgments and estimates in connection with the revenue recognized in any reporting period, particularly in the areas described above. If management made different estimates or judgments, material differences in the timing of the recognition of revenue could occur.

In regard to software license revenues, perpetual and term license fees are recognized as revenue when the software is delivered, no significant obligations or contingencies related to the software exist, other than maintenance, and all other revenue recognition criteria are met. We generally recognize revenue for products distributed through application partners and distributors on a sell-in basis.

Revenue from maintenance is recognized ratably over the service period. Maintenance revenue is deferred until the associated license is delivered to the customer and all other criteria for revenue recognition have been met. Revenue from other services, which are primarily consulting and customer education services, is generally recognized as the services are delivered to the customer, provided all other criteria for revenue recognition have been met.

We also offer products via a software-as-a-service ("SaaS") model, which is a subscription based model. Subscription revenue derived from these agreements is generally recognized on a straight-line basis over the subscription term, provided persuasive evidence of an arrangement exists, access to our software has been granted to the customer, the fee for the subscription is fixed or determinable, and collection of the subscription fee is probable.

We generally sell our software licenses with maintenance services and, in some cases, also with consulting services. For these multiple element arrangements, we allocate revenue to the delivered elements of the arrangement using the residual method, whereby revenue is allocated to the undelivered elements based on vendor specific objective evidence ("VSOE") of fair value of the undelivered elements with the remaining arrangement fee allocated to the delivered elements and recognized as revenue assuming all other revenue recognition criteria are met. For the undelivered elements, we determine VSOE of fair value to be the price charged when the undelivered element is sold separately. We determine VSOE for maintenance sold in connection with a software license based on the amount that will be separately charged for the maintenance renewal period. Substantially all license arrangements indicate the renewal rate for which customers may, at their option, renew their maintenance agreement. We determine VSOE for consulting services by reference to the amount charged for similar engagements when a software license sale is not involved. We review services sold separately on a periodic basis and update, when appropriate, our VSOE of fair value for such maintenance and services to ensure that it reflects our recent pricing experience. If VSOE of fair value for the undelivered elements cannot be established, we defer all revenue from the arrangement until the earlier of the point at which such sufficient VSOE does exist or all elements of the arrangement have been delivered, or if the only undelivered element is maintenance, then we recognize the entire fee ratably over the maintenance period. If payment of the software license fees is dependent upon the performance of consulting services or the consulting services are essential to the functionality of the licensed software, then we recognize both the software license and consulting fees using the completed contract method.

Sales taxes collected from customers and remitted to government authorities are excluded from revenue.

Deferred revenue generally results from contractual billings for which revenue has not been recognized and consists of the unearned portion of license, maintenance, and services fees. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is included in long-term liabilities in the consolidated

balance sheets.

#### Goodwill and Intangible Asset Impairment

We had goodwill and net intangible assets of \$373.9 million at November 30, 2018. We evaluate goodwill and other intangible assets with indefinite useful lives, if any, for impairment annually or on an interim basis when events and circumstances arise that indicate impairment may have occurred. We perform our annual goodwill impairment as of October 31st of each fiscal year. We believe this date aligns the timing of the annual goodwill impairment testing with our planning and budgeting process, which is a key component of the tests, and alleviates administrative burden during our year-end reporting period.

In performing our annual assessment, we first perform a qualitative test to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value and if necessary, perform a quantitative test. To conduct the

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quantitative impairment test of goodwill, we compare the fair value of a reporting unit to its carrying value. If the reporting unit's carrying value exceeds its fair value, we record an impairment loss to the extent that the carrying value of goodwill exceeds its implied fair value. We estimate the fair values of our reporting units using discounted cash flow models or other valuation models, such as comparative transactions and market multiples. We must make assumptions about future cash flows, future operating plans, discount rates, comparable companies, market multiples, purchase price premiums and other factors in those models. Different assumptions and judgment determinations could yield different conclusions that would result in an impairment charge to income in the period that such change or determination was made.

When we evaluate potential impairments outside of our annual measurement date, judgment is required in determining whether an event has occurred that may impair the value of goodwill or intangible assets. Factors that could indicate that an impairment may exist include significant underperformance relative to plan or long-term projections, significant changes in business strategy, significant negative industry or economic trends or a significant decline in our stock price for a sustained period of time.

The determination of reporting units also requires management judgment. We consider whether a reporting unit exists within a reportable segment based on the availability of discrete financial information that is regularly reviewed by segment management. Our three reporting units were OpenEdge, Data Connectivity and Integration, and Application Development and Deployment as of November 30, 2018.

During fiscal year 2018, we tested goodwill for impairment for each of our reporting units as of October 31, 2018. Our reporting units each had fair values which significantly exceeded their carrying values as of the annual impairment date. We did not recognize any goodwill impairment charges during fiscal years 2018 or 2017.

During fiscal year 2016, we tested goodwill for impairment for each of our reporting units as of October 31, 2016. Our OpenEdge and Data Connectivity and Integration reporting units had fair values which significantly exceeded their carrying values as of the annual impairment date. Our Application Development and Deployment reporting unit (which includes Telerik) did not pass the first step of the impairment test. As a result, we recorded a \$92.0 million goodwill impairment charge related to the Application Development and Deployment reporting unit (see Note 6 to our Consolidated Financial Statements in Item 8 of this Form 10-K for further information on the impairment charge).

## Income Tax Accounting

We have a net deferred tax liability of \$1.9 million at November 30, 2018. We record valuation allowances to reduce deferred tax assets to the amount that is more likely than not to be realized. We consider scheduled reversals of temporary differences, projected future taxable income, tax planning strategies and other matters in assessing the need for and the amount of a valuation allowance. If we were to change our assumptions or otherwise determine that we were unable to realize all or part of our net deferred tax asset in the future, an adjustment to the deferred tax asset would be charged to income in the period that such change or determination was made.

Management judgment is also required in evaluating whether a tax position taken or expected to be taken in a tax return, based on the weight of available evidence, indicates that it is more likely than not that, on an evaluation of the technical merits, the tax position will be sustained on audit, including resolution of any related appeals or litigation processes. Management judgment is also required in measuring the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. If management made different estimates or judgments, material differences in the amount accrued for uncertain tax positions would occur.

## Stock-Based Compensation

We recognize stock-based compensation based on the fair value of stock-based awards, less the present value of expected dividends, measured at the date of grant. Stock-based compensation is recognized over the requisite service period, which is generally the vesting period of the award, and is adjusted each period for actual forfeitures.

We estimate the fair value of each stock-based award on the measurement date using either the current market price, the Black-Scholes option valuation model, or the Monte Carlo Simulation valuation model. The Black-Scholes and Monte Carlo Simulation valuation models incorporate assumptions as to the expected stock price volatility, the expected term of the option, a risk-free interest rate and a dividend yield. The expected volatility is based on the historical volatility of our stock price. The expected term is derived from historical data on employee exercises and post-vesting employment termination behavior. The risk-free interest rate is based on the yield of zero-coupon U.S. Treasury securities for the period that is commensurate with the

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expected option term at the time of grant. The expected dividend yield is based on our historical behavior and future expectations of dividend declarations.

### Restructuring Charges

We periodically record restructuring charges resulting from restructuring our operations (including consolidations and/or relocations of operations), changes to our strategic plan, or managerial responses to declines in demand, increasing costs, or other market factors. The determination of restructuring charges requires management judgment and may include costs related to employee benefits, such as costs of severance and termination benefits, and estimates of costs for future lease commitments on excess facilities, net of estimated future sublease income. In determining the amount of the facilities charge, we are required to estimate such factors as future vacancy rates, the time required to sublet properties and sublease rates. These estimates are reviewed quarterly based on known real estate market conditions and the credit-worthiness of subtenants, and may result in revisions to established facility reserves.

### Business Combinations

We allocate the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values. The estimates used to value the net assets acquired are based in part on historical experience and information obtained from the management of the acquired company. We generally value the identifiable intangible assets acquired using a discounted cash flow model. The significant estimates used in valuing certain of the intangible assets include, but are not limited to: future expected cash flows of the asset, discount rates to determine the present value of the future cash flows, attrition rates of customers, and expected technology life cycles. We also estimate the useful lives of the intangible assets based on the expected period over which we anticipate generating economic benefit from the asset.

Our estimates of fair value are based on assumptions believed to be reasonable at that time. If management made different estimates or judgments, material differences in the fair values of the net assets acquired may result.

### Recent Accounting Pronouncements

Refer to Note 1 to our Consolidated Financial Statements in Item 8 of this Form 10-K.

### Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to a variety of risks, including changes in interest rates affecting the return on our investments and foreign currency fluctuations. We have established policies and procedures to manage our exposure to fluctuations in interest rates and foreign currency exchange rates.

Exposure to market rate risk for changes in interest rates relates to our investment portfolio. We have not used derivative financial instruments in our investment portfolio. We place our investments with high-quality issuers and have policies limiting, among other things, the amount of credit exposure to any one issuer. We seek to limit default risk by purchasing only investment-grade securities. Our investments have an average remaining maturity of less than two years or interest-rate resets of less than 60 days and are primarily fixed-rate instruments. In addition, we have classified our debt securities as available-for-sale. The available-for-sale classification reduces the consolidated statements of operations exposure to interest rate risk if such investments are held until their maturity date because changes in fair value due to market changes in interest rates are recorded on the consolidated balance sheet in accumulated other comprehensive income. Based on a hypothetical 10% adverse movement in interest rates, the potential losses in future earnings, fair value of risk-sensitive instruments and cash flows are immaterial.



We generally use forward contracts that are not designated as hedging instruments to hedge economically the impact of the variability in exchange rates on intercompany accounts receivable and loans receivable denominated in certain foreign currencies. We generally do not hedge the net assets of our international subsidiaries. All forward contracts are recorded at fair value in other current assets, other assets, other accrued liabilities, or other noncurrent liabilities on the consolidated balance sheets at the end of each reporting period and expire between 30 days and 366 days from the date the contract was entered. In fiscal year 2018, realized and unrealized losses of \$6.9 million from our forward contracts were recognized in foreign currency loss, net on the consolidated statements of operations. These losses were substantially offset by realized and unrealized gains and losses on the offsetting positions.

Foreign currency translation exposure from a 10% movement of currency exchange rates would have a material impact on our reported revenue and net income. Based on a hypothetical 10% adverse movement in all foreign currency exchange rates, our

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revenue would be adversely affected by approximately 3%, or \$13 million, and our net income would be adversely affected by approximately 5%, or \$3 million (excluding any offsetting positive impact from our ongoing hedging programs), although the actual effects may differ materially from the hypothetical analysis.

The table below details outstanding foreign currency forward contracts at November 30, 2018 and 2017 where the notional amount is determined using contract exchange rates (in thousands):

	November 30, 2018		November 30, 2017	
	Notional Value	Fair Value	Notional Value	Fair Value
Forward contracts to sell U.S. dollars	\$105,830	\$ (170 )	\$119,192	\$ (27 )
Forward contracts to purchase U.S. dollars	240	—	462	—
Total	\$106,070	\$ (170 )	\$119,654	\$ (27 )

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Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Progress Software Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Progress Software Corporation and subsidiaries (the "Company") as of November 30, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows for each of the three years in the period ended November 30, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of November 30, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended November 30, 2018, in conformity with accounting principles generally accepted in the United States of America.

We have also 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 November 30, 2018, based on the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated January 28, 2019 expressed an unqualified opinion on the Company's internal control over financial reporting.

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/ Deloitte & Touche LLP

Boston, Massachusetts

January 28, 2019

We have served as the Company's auditor since 1990.

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## PROGRESS SOFTWARE CORPORATION

## Consolidated Balance Sheets

(In thousands, except share data)	November 30, 2018	November 30, 2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 105,126	\$ 133,464
Short-term investments	34,387	50,145
Total cash, cash equivalents and short-term investments	139,513	183,609
Accounts receivable (less allowances of \$710 in 2018 and \$676 in 2017)	58,450	61,210
Other current assets	25,080	18,588
Assets held for sale	5,776	—
Total current assets	228,819	263,407
Property and equipment, net	30,714	42,261
Intangible assets, net	58,919	94,894
Goodwill	314,992	315,041
Deferred tax assets	1,922	1,123
Other assets	5,243	1,992
Total assets	\$ 640,609	\$ 718,718
Liabilities and shareholders' equity		
Current liabilities:		
Current portion of long-term debt, net	\$ 5,819	\$ 5,819
Accounts payable	10,593	9,000
Accrued compensation and related taxes	25,500	32,373
Dividends payable to shareholders	6,998	6,619
Income taxes payable	1,228	1,173
Other accrued liabilities	12,686	20,496
Short-term deferred revenue	133,194	132,538
Total current liabilities	196,018	208,018
Long-term debt, net	110,270	116,090
Long-term deferred revenue	15,127	9,750
Deferred tax liabilities	3,797	2,809
Other noncurrent liabilities	5,315	5,967
Commitments and contingencies (Note 9)		
Shareholders' equity:		
Preferred stock, \$0.01 par value; authorized, 10,000,000 shares; issued, none	—	—
Common stock, \$0.01 par value, and additional paid-in capital; authorized, 200,000,000 shares; issued and outstanding, 45,114,935 shares in 2018 and 47,281,035 shares in 2017	451	473
Additional paid-in capital	266,602	249,363
Retained earnings	71,242	145,247
Accumulated other comprehensive loss	(28,213)	(18,999)
Total shareholders' equity	310,082	376,084
Total liabilities and shareholders' equity	\$ 640,609	\$ 718,718

See notes to consolidated financial statements.



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## PROGRESS SOFTWARE CORPORATION

## Consolidated Statements of Operations

(In thousands, except per share data)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Revenue:			
Software licenses	\$ 122,137	\$ 124,406	\$ 134,863
Maintenance and services	275,028	273,166	270,478
Total revenue	397,165	397,572	405,341
Costs of revenue:			
Cost of software licenses	4,769	5,752	5,456
Cost of maintenance and services	39,470	43,299	44,760
Amortization of acquired intangibles	22,734	20,108	15,496
Total costs of revenue	66,973	69,159	65,712
Gross profit	330,192	328,413	339,629
Operating expenses:			
Sales and marketing	93,036	96,345	121,501
Product development	79,739	76,988	88,587
General and administrative	49,050	45,739	46,532
Impairment of goodwill and intangible assets	—	—	97,051
Loss on assets held for sale	5,147	—	—
Amortization of acquired intangibles	13,241	13,039	12,735
Fees related to shareholder activist	1,472	2,020	—
Restructuring expense	2,251	22,210	1,692
Acquisition-related expenses	258	1,458	1,240
Total operating expenses	244,194	257,799	369,338
Income (loss) from operations	85,998	70,614	(29,709 )
Other (expense) income:			
Interest expense	(5,149 )	(4,631 )	(4,178 )
Interest income and other, net	1,220	921	839
Foreign currency loss, net	(3,089 )	(1,317 )	(2,232 )
Total other expense, net	(7,018 )	(5,027 )	(5,571 )
Income (loss) before income taxes	78,980	65,587	(35,280 )
Provision for income taxes	15,489	28,170	20,446
Net income (loss)	\$ 63,491	\$ 37,417	\$ (55,726 )
Earnings (loss) per share:			
Basic	\$ 1.39	\$ 0.78	\$ (1.13 )
Diluted	\$ 1.38	\$ 0.77	\$ (1.13 )
Weighted average shares outstanding:			
Basic	45,561	48,129	49,481
Diluted	46,135	48,516	49,481
Cash dividends declared per common share	\$ 0.575	\$ 0.515	\$ 0.125

See notes to consolidated financial statements.



Table of ContentsPROGRESS SOFTWARE CORPORATION  
Consolidated Statements of Comprehensive Income (Loss)

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Net income (loss)	\$63,491	\$ 37,417	\$ (55,726 )
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(9,240 )	9,655	(3,843 )
Unrealized gain (loss) on investments, net of tax provision (benefit) of \$57 in 2018, (\$60) in 2017, and (\$53) in 2016	26	(93 )	(90 )
Total other comprehensive (loss) income, net of tax	(9,214 )	9,562	(3,933 )
Comprehensive income (loss)	\$54,277	\$ 46,979	\$ (59,659 )

See notes to consolidated financial statements.



Table of ContentsPROGRESS SOFTWARE CORPORATION  
Consolidated Statements of Shareholders' Equity

(in thousands)	Common Stock Number of Shares	Amount	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
Balance, December 1, 2015	50,580	\$ 506	\$227,424	\$319,162	\$ (24,628 )	\$ 522,464
Issuance of stock under employee stock purchase plan	266	3	5,325	—	—	5,328
Exercise of stock options	260	2	4,696	—	—	4,698
Vesting of restricted stock units and release of deferred stock units	700	7	—	—	—	7
Withholding tax payments related to net issuance of restricted stock units	(156 )	(2 )	(3,982 )	—	—	(3,984 )
Tax benefit arising from employee stock purchase plan, stock options and restricted share activity	—	—	489	—	—	489
Stock-based compensation	—	—	22,541	—	—	22,541
Dividends declared	—	—	—	(6,067 )	—	(6,067 )
Treasury stock repurchases and retirements	(3,113 )	(31 )	(17,482 )	(61,675 )	—	(79,188 )
Net loss	—	—	—	(55,726 )	—	(55,726 )
Other comprehensive loss	—	—	—	—	(3,933 )	(3,933 )
Balance, November 30, 2016	48,537	\$ 485	\$239,011	\$195,694	\$ (28,561 )	\$ 406,629
Issuance of stock under employee stock purchase plan	220	2	4,898	—	—	4,900
Exercise of stock options	203	2	5,106	—	—	5,108
Vesting of restricted stock units and release of deferred stock units	660	7	—	—	—	7
Withholding tax payments related to net issuance of restricted stock units	(118 )	(1 )	(3,755 )	—	—	(3,756 )
Tax benefit arising from employee stock purchase plan, stock options and restricted share activity	—	—	679	—	—	679
Stock-based compensation	—	—	14,153	—	—	14,153
Dividends declared	—	—	—	(24,679 )	—	(24,679 )
Treasury stock repurchases and retirements	(2,221 )	(22 )	(10,729 )	(63,185 )	—	(73,936 )
Net income	—	—	—	37,417	—	37,417
Other comprehensive income	—	—	—	—	9,562	9,562
Balance, November 30, 2017	47,281	\$ 473	\$249,363	\$145,247	\$ (18,999 )	\$ 376,084

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Issuance of stock under employee stock purchase plan	225	2	5,456	—	—	5,458
Exercise of stock options	189	2	3,856	—	—	3,858
Vesting of restricted stock units and release of deferred stock units	407	4	—	—	—	4
Withholding tax payments related to net issuance of restricted stock units	(108	) (1	) (3,998	) —	—	(3,999 )
Stock-based compensation	—	—	20,569	—	—	20,569
Adjustment due to adoption of ASU 2016-09 (Note 1)	—	—	641	(641	) —	—
Dividends declared	—	—	—	(26,169	) —	(26,169 )
Treasury stock repurchases and retirements	(2,879	) (29	) (9,285	) (110,686)	—	(120,000 )
Net income	—	—	—	63,491	—	63,491
Other comprehensive loss	—	—	—	—	(9,214	) (9,214 )
Balance, November 30, 2018	45,115	\$451	\$266,602	\$71,242	\$(28,213)	\$310,082

See notes to consolidated financial statements.

Table of ContentsPROGRESS SOFTWARE CORPORATION  
Consolidated Statements of Cash Flows

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Cash flows from operating activities:			
Net income (loss)	\$63,491	\$ 37,417	\$ (55,726 )
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization of property and equipment	6,941	7,526	8,506
Amortization of acquired intangibles and other	37,561	35,370	30,815
Stock-based compensation	20,569	14,153	22,541
Loss on disposal of property and equipment	390	416	370
Loss on assets held for sale	5,147	—	—
Impairment of goodwill and intangible assets	—	—	97,051
Deferred income taxes	2,035	474	1,307
Excess tax benefit from stock plans	—	(904 )	(436 )
Allowances for bad debt and sales credits	262	46	(479 )
Changes in operating assets and liabilities:			
Accounts receivable	2,072	6,442	647
Other assets	(10,332 )	2,813	(3,925 )
Accounts payable and accrued liabilities	(11,842 )	673	(3,094 )
Income taxes payable	(2,890 )	892	109
Deferred revenue	7,948	368	5,159
Net cash flows from operating activities	121,352	105,686	102,845
Cash flows from (used in) investing activities:			
Purchases of investments	(8,258 )	(40,380 )	(41,691 )
Sales and maturities of investments	23,101	31,559	26,475
Purchases of property and equipment	(7,250 )	(3,377 )	(5,786 )
Payments for acquisitions, net of cash acquired	—	(77,150 )	—
Proceeds from sale of property, plant and equipment, net	—	1,557	—
Net cash flows from (used in) investing activities	7,593	(87,791 )	(21,002 )
Cash flows used in financing activities:			
Proceeds from stock-based compensation plans	9,205	10,025	9,918
Payments for taxes related to net share settlements of equity awards	(3,999 )	(3,756 )	(3,984 )
Repurchases of common stock	(120,000 )	(73,936 )	(79,188 )
Dividend payments to shareholders	(25,789 )	(24,127 )	—
Excess tax benefit from stock plans	—	904	436
Payment of principal on long-term debt	(6,188 )	(11,250 )	(9,375 )
Payment of issuance costs for long-term debt	—	(1,174 )	—
Net cash flows used in financing activities	(146,771 )	(103,314 )	(82,193 )
Effect of exchange rate changes on cash	(10,512 )	11,847	(4,993 )
Net decrease in cash and cash equivalents	(28,338 )	(73,572 )	(5,343 )
Cash and cash equivalents, beginning of year	133,464	207,036	212,379
Cash and cash equivalents, end of year	\$ 105,126	\$ 133,464	\$ 207,036

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Supplemental disclosure:

Cash paid for income taxes, net of refunds of \$909 in 2018, \$3,997 in 2017, and \$1,379 in 2016	\$25,451	\$25,992	\$22,031
Cash paid for interest	\$4,220	\$3,597	\$3,157
Non-cash investing and financing activities:			
Total fair value of restricted stock awards, restricted stock units and deferred stock units on date vested	\$16,431	\$20,089	\$17,213
Dividends declared	\$6,998	\$6,619	\$6,067

See notes to consolidated financial statements.

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### PROGRESS SOFTWARE CORPORATION

#### Notes to Consolidated Financial Statements

#### Note 1: Nature of Business and Summary of Significant Accounting Policies

##### The Company

Progress Software Corporation ("Progress," the "Company," "we," "us," or "our") offers the leading platform for developing and deploying strategic business applications. We enable customers and partners to deliver modern, high-impact digital experiences with a fraction of the effort, time and cost. Progress offers powerful tools for easily building adaptive user experiences across any type of device or touchpoint, award-winning machine learning that enables cognitive capabilities to be a part of any application, the flexibility of a serverless cloud to deploy modern apps, business rules, web content management, plus leading data connectivity technology. Over 1,700 independent software vendors ("ISVs"), 100,000 enterprise customers, and 2 million developers rely on Progress to power their applications.

Our products are generally sold as perpetual licenses, but certain products also use term licensing models and our cloud-based offerings use a subscription based model. More than half of our worldwide license revenue is realized through relationships with indirect channel partners, principally application partners and original equipment manufacturers ("OEMs"). Application partners are ISVs that develop and market applications using our technology and resell our products in conjunction with sales of their own products that incorporate our technology. OEMs are companies that embed our products into their own software products or devices.

We operate in North America and Latin America; Europe, the Middle East and Africa ("EMEA"); and the Asia Pacific region, through local subsidiaries as well as independent distributors.

##### Accounting Principles

We prepare our consolidated financial statements and accompanying notes in conformity with accounting principles generally accepted in the United States of America ("GAAP").

##### Basis of Consolidation

The consolidated financial statements include our accounts and those of our subsidiaries (all of which are wholly-owned). We eliminate all intercompany balances and transactions.

##### Use of Estimates

The preparation of consolidated financial statements requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On an on-going basis, management evaluates its estimates and records changes in estimates in the period in which they become known. These estimates are based on historical data and experience, as well as various other assumptions that management believes to be reasonable under the circumstances. The most significant estimates relate to the timing and amounts of revenue recognition, the realization of tax assets and estimates of tax liabilities, fair values of investments in marketable securities, assets held for sale, intangible assets and goodwill valuations, the recognition and disclosure of contingent liabilities, the collectability of accounts receivable, and assumptions used to determine the fair value of stock-based compensation. Actual results could differ from those estimates.

##### Foreign Currency Translation

The functional currency of most of our foreign subsidiaries is the local currency in which the subsidiary operates. For foreign operations where the local currency is considered to be the functional currency, we translate assets and liabilities into U.S. dollars at the exchange rate on the balance sheet date. We translate income and expense items at average rates of exchange prevailing during each period. We accumulate translation adjustments in accumulated other comprehensive loss, a component of shareholders' equity.

For foreign operations where the U.S. dollar is considered to be the functional currency, we remeasure monetary assets and liabilities into U.S. dollars at the exchange rate on the balance sheet date and non-monetary assets and liabilities are remeasured into U.S. dollars at historical exchange rates. We translate income and expense items at average rates of exchange prevailing during each period. We recognize remeasurement adjustments currently as a component of foreign currency loss, net in the statements of operations.

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Transaction gains or losses that arise from exchange rate fluctuations on transactions denominated in a currency other than the functional currency are included in foreign currency loss, net in the statements of operations as incurred.

## Cash Equivalents and Investments

Cash equivalents include short-term, highly liquid investments purchased with remaining maturities of three months or less. As of November 30, 2018, all of our cash equivalents were invested in money market funds.

We classify investments, state and municipal bond obligations, U.S. treasury and government agency bonds, and corporate bonds and notes, as investments available-for-sale, which are stated at fair value. We include aggregate unrealized holding gains and losses, net of taxes, on available-for-sale securities as a component of accumulated other comprehensive loss in shareholders' equity. We include realized gains and losses in interest income and other, net on the consolidated statements of operations.

We monitor our investment portfolio for impairment on a periodic basis. In the event that the carrying value of an investment exceeds its fair value and the decline in value is determined to be other than temporary, an impairment charge is recorded and a new cost basis for the investment is established. In determining whether an other-than-temporary impairment exists, we consider the nature of the investment, the length of time and the extent to which the fair value has been less than cost, and our intent and ability to continue holding the security for a period sufficient for an expected recovery in fair value.

## Allowances for Doubtful Accounts and Sales Credit Memos

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of customers to make required payments. We establish this allowance using estimates that we make based on factors such as the composition of the accounts receivable aging, historical bad debts, changes in payment patterns, changes to customer creditworthiness and current economic trends.

We also record an allowance for estimates of potential sales credit memos. This allowance is determined based on an analysis of historical credit memos issued and current economic trends, and is recorded as a reduction of revenue.

A summary of activity in the allowance for doubtful accounts is as follows (in thousands):

	November 30, 2018	November 30, 2017	November 30, 2016
Beginning balance	\$ 498	\$741	\$ 1,421
Charge (credit) to costs and expenses	216	204	(256 )
Write-offs and other	(232 )	(437 )	(370 )
Translation adjustments	4	(10 )	(54 )
Ending balance	\$ 486	\$498	\$ 741

A summary of activity in the allowance for sales credit memos is as follows (in thousands):

	November 30, 2018	November 30, 2017	November 30, 2016
Beginning balance	\$ 178	\$402	\$ 772

Charge (credit) to revenue	46	(158 )	(223 )	)
Write-offs and other	—	(69 )	(144 )	)
Translation adjustments	—	3	(3 )	)
Ending balance	\$ 224	\$ 178	\$ 402	)



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### Concentrations of Credit Risk

Our financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents, investments, derivative instruments and trade receivables. We have cash investment policies which, among other things, limit investments to investment-grade securities. We hold our cash and cash equivalents, investments and derivative instrument contracts with high quality financial institutions and we monitor the credit ratings of those institutions. We perform ongoing credit evaluations of our customers, and the risk with respect to trade receivables is further mitigated by the diversity, both by geography and by industry, of the customer base. No single customer represented more than 10% of consolidated accounts receivable or revenue in fiscal years 2018, 2017 or 2016.

### Fair Value of Financial Instruments

The carrying amount of our cash and cash equivalents, accounts receivable, accounts payable and long-term debt approximates fair value due to the short-term nature or market interest rates of these items. We base the fair value of short-term investments on quoted market prices or other relevant information generated by market transactions involving identical or comparable assets. We measure and record derivative financial instruments at fair value. See Note 4 for further discussion of financial instruments that are carried at fair value on a recurring and nonrecurring basis.

### Derivative Instruments

We record all derivatives on the consolidated balance sheets at fair value. We use derivative instruments to manage exposures to fluctuations in the value of foreign currencies, which exist as part of our ongoing business operations. Certain assets and forecasted transactions are exposed to foreign currency risk. Our objective for holding derivatives is to eliminate or reduce the impact of these exposures. We periodically monitor our foreign currency exposures to enhance the overall economic effectiveness of our foreign currency hedge positions. Principal currencies hedged include the euro, British pound, Brazilian real, Indian rupee, and Australian dollar. We do not enter into derivative instruments for speculative purposes, nor do we hold or issue any derivative instruments for trading purposes.

We enter into certain derivative instruments that do not qualify for hedge accounting and are not designated as hedges. Although these derivatives do not qualify for hedge accounting, we believe that such instruments are closely correlated with the underlying exposure, thus managing the associated risk. The gains or losses from changes in the fair value of such derivative instruments that are not accounted for as hedges are recognized in earnings in foreign currency loss, net in the consolidated statements of operations.

### Property and Equipment

We record property and equipment at cost. We record property and equipment purchased in business combinations at fair value, which is then treated as the cost. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the related assets. Leasehold improvements are amortized on a straight-line basis over the shorter of the lease term or the useful lives of the assets. Useful lives by major asset class are as follows: computer equipment and software, 3 to 7 years; buildings and improvements, 5 to 39 years; and furniture and fixtures, 5 to 7 years. Repairs and maintenance costs are expensed as incurred.

### Product Development and Internal Use Software

Expenditures for product development, other than internal use software costs, are expensed as incurred. Product development expenses primarily consist of personnel and related expenses for our product development staff, the cost of various third-party contractor fees, and allocated overhead expenses.

Software development costs associated with internal use software are incurred in three stages of development: the preliminary project stage, the application development stage, and the post-implementation stage. Costs incurred during the preliminary project and post-implementation stages are expensed as incurred. Certain internal and external qualifying costs incurred during the application development stage are capitalized as property and equipment. Internal use software is amortized on a straight-line basis over its estimated useful life of three years, beginning when the software is ready for its intended use.

During the fiscal years ended November 30, 2018, 2017, and 2016, there were no internal use software development costs capitalized. Amortization expense related to internal use software totaled \$0.2 million, \$0.6 million, and \$1.0 million during the fiscal years ended November 30, 2018, 2017, and 2016, respectively.

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### Goodwill, Intangible Assets and Long-Lived Assets

Goodwill is the amount by which the cost of acquired net assets in a business combination exceeded the fair value of net identifiable assets on the date of purchase. We evaluate goodwill and other intangible assets with indefinite useful lives, if any, for impairment annually or on an interim basis when events and circumstances arise that indicate impairment may have occurred.

In performing our annual assessment, we first perform a qualitative test and if necessary, perform a quantitative test. To conduct the quantitative impairment test of goodwill, we compare the fair value of a reporting unit to its carrying value. If the reporting unit's carrying value exceeds its fair value, we record an impairment loss to the extent that the carrying value of goodwill exceeds its implied fair value. We estimate the fair values of our reporting units using discounted cash flow models or other valuation models, such as comparative transactions and market multiples. We did not recognize any goodwill impairment charges during fiscal years 2018 or 2017. During fiscal year 2016, we recorded a \$92.0 million goodwill impairment charge related to the Application Development and Deployment reporting unit (Note 6).

Intangible assets are comprised of purchased technology, customer-related assets, and trademarks and trade names acquired through business combinations (Note 7). All of our intangible assets are amortized using the straight-line method over their estimated useful life.

We periodically review long-lived assets (primarily property and equipment) and intangible assets with finite lives for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable or that the useful lives of those assets are no longer appropriate. We base each impairment test on a comparison of the undiscounted cash flows to the carrying value of the asset or asset group. If impairment is indicated, we write down the asset to its estimated fair value based on a discounted cash flow analysis. During fiscal year 2016, we recorded a \$5.1 million asset impairment charge, which was applicable to the intangible assets obtained in connection with our acquisition of Modulus during fiscal year 2014 (Note 6).

We classify long-lived assets to be sold as held for sale in the period in which: (i) we have approved and committed to a plan to sell the asset, (ii) the asset is available for immediate sale in its present condition, (iii) an active program to locate a buyer and other actions required to sell the asset have been initiated, (iv) the sale of the asset is probable, (v) the asset is being actively marketed for sale at a price that is reasonable in relation to its current fair value, and (vi) it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn. Assets held for sale are initially measured at the lower of the carrying value or the fair value less cost to sell. Losses resulting from this measurement are recognized in the period in which the held for sale criteria are met while gains are not recognized until the date of sale. Once designated as held for sale, we stop recording depreciation expense on the asset. We assess the fair value less cost to sell of long-lived assets held for sale at each reporting period until it no longer meets this classification. In the fourth quarter of fiscal year 2018, we reclassified certain corporate land and building assets previously reported as property and equipment to assets held for sale on our consolidated balance sheet as we began an active program to sell and expect to sell these assets within one year. As the fair value less cost to sell was less than the carrying value of these assets, we recognized an impairment charge of \$5.1 million. The fair value of the assets held for sale was measured using third-party valuation models, which included a discounted cash flow analysis (Note 4).

### Comprehensive (Loss) Income

The components of comprehensive loss include, in addition to net income (loss), unrealized gains and losses on investments and foreign currency translation adjustments.



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Accumulated other comprehensive loss by components, net of tax (in thousands):

	Foreign Currency Translation Adjustment	Unrealized (Losses) Gains on Investments	Total
Balance, December 1, 2016	\$ (28,425 )	\$ (136 )	\$(28,561)
Other comprehensive income (loss) before reclassifications	9,655	(93 )	9,562
Net other comprehensive income (loss)	9,655	(93 )	9,562
Balance, December 1, 2017	\$ (18,770 )	\$ (229 )	\$(18,999)
Other comprehensive (loss) income before reclassifications	(9,240 )	26	(9,214 )
Net other comprehensive (loss) income	(9,240 )	26	(9,214 )
Balance, November 30, 2018	\$ (28,010 )	\$ (203 )	\$(28,213)

The tax effect on accumulated unrealized losses on investments was minimal as of November 30, 2018, November 30, 2017, and November 30, 2016.

## Revenue Recognition

We derive our revenue primarily from software licenses and maintenance and services. Our license arrangements generally contain multiple elements, including software maintenance services, consulting services, and customer education services. We do not recognize revenue until the following four basic criteria are met: (i) persuasive evidence of an arrangement exists, (ii) our product has been shipped or, if delivered electronically, the customer has the right to access the software, (iii) the fee is fixed or determinable, and (iv) collection of the fee is probable.

Evidence of an arrangement generally consists of a contract or purchase order signed by the customer. In regard to delivery, we generally ship our software electronically and do not license our software with conditions of acceptance. If an arrangement does contain conditions of acceptance, we defer recognition of the revenue until the acceptance criteria are met or the period of acceptance has passed. Services are considered delivered as the work is performed or, in the case of maintenance, over the contractual service period. We assess whether a fee is fixed or determinable at the outset of the arrangement and consider the payment terms of the transaction, including transactions that extend beyond our customary payment terms. We do not license our software with a right of return. In assessing whether the collection of the fee is probable, we consider customer credit-worthiness, a customer's historical payment experience, economic conditions in the customer's industry and geographic location and general economic conditions. If we do not consider collection of a fee to be probable, we defer the revenue until the fees are collected, provided all other conditions for revenue recognition have been met.

In determining when to recognize revenue from a customer arrangement, we are often required to exercise judgment regarding the application of our accounting policies to a particular arrangement. The primary judgments used in evaluating revenue recognized in each period involve: determining whether collection is probable, assessing whether the fee is fixed or determinable, and determining the fair value of the maintenance and services elements included in multiple-element software arrangements. Such judgments can materially impact the amount of revenue that we record in a given period. While we follow specific and detailed rules and guidelines related to revenue recognition, we make and use significant management judgments and estimates in connection with the revenue recognized in any reporting period, particularly in the areas described above. If management made different estimates or judgments, material differences in the timing of the recognition of revenue could occur.

In regard to software license revenues, perpetual and term license fees are recognized as revenue when the software is delivered, no significant obligations or contingencies related to the software exist, other than maintenance, and all

other revenue recognition criteria are met. We generally recognize revenue for products distributed through application partners and distributors on a sell-in basis.

Revenue from maintenance is recognized ratably over the service period. Maintenance revenue is deferred until the associated license is delivered to the customer and all other criteria for revenue recognition have been met. Revenue from other services, which are primarily consulting and customer education services, is generally recognized as the services are delivered to the customer, provided all other criteria for revenue recognition have been met.

We also offer products via a software-as-a-service ("SaaS") model, which is a subscription based model. Subscription revenue derived from these agreements is generally recognized on a straight-line basis over the subscription term, provided persuasive

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evidence of an arrangement exists, access to our software has been granted to the customer, the fee for the subscription is fixed or determinable, and collection of the subscription fee is probable.

We generally sell our software licenses with maintenance services and, in some cases, also with consulting services. For these multiple element arrangements, we allocate revenue to the delivered elements of the arrangement using the residual method, whereby revenue is allocated to the undelivered elements based on vendor specific objective evidence ("VSOE") of fair value of the undelivered elements with the remaining arrangement fee allocated to the delivered elements and recognized as revenue assuming all other revenue recognition criteria are met. For the undelivered elements, we determine VSOE of fair value to be the price charged when the undelivered element is sold separately. We determine VSOE for maintenance sold in connection with a software license based on the amount that will be separately charged for the maintenance renewal period. Substantially all license arrangements indicate the renewal rate for which customers may, at their option, renew their maintenance agreement. We determine VSOE for consulting services by reference to the amount charged for similar engagements when a software license sale is not involved. We review services sold separately on a periodic basis and update, when appropriate, our VSOE of fair value for such maintenance and services to ensure that it reflects our recent pricing experience. If VSOE of fair value for the undelivered elements cannot be established, we defer all revenue from the arrangement until the earlier of the point at which such sufficient VSOE does exist or all elements of the arrangement have been delivered, or if the only undelivered element is maintenance, then we recognize the entire fee ratably over the maintenance period. If payment of the software license fees is dependent upon the performance of consulting services or the consulting services are essential to the functionality of the licensed software, then we recognize both the software license and consulting fees using the completed contract method.

Sales taxes collected from customers and remitted to government authorities are excluded from revenue.

Deferred revenue generally results from contractual billings for which revenue has not been recognized and consists of the unearned portion of license, maintenance, and services fees. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is included in long-term liabilities in the consolidated balance sheets.

### Advertising Costs

Advertising costs are expensed as incurred and were \$1.4 million, \$1.5 million, and \$2.9 million in fiscal years 2018, 2017, and 2016, respectively.

### Warranty Costs

We make periodic provisions for expected warranty costs. Historically, warranty costs have been insignificant.

### Stock-Based Compensation

Stock-based compensation expense reflects the fair value of stock-based awards, less the present value of expected dividends, measured at the grant date and recognized over the relevant service period. We estimate the fair value of each stock-based award on the measurement date using either the current market price of the stock, the Black-Scholes option valuation model, or the Monte Carlo Simulation valuation model. The Black-Scholes and Monte Carlo Simulation valuation models incorporate assumptions as to stock price volatility, the expected life of options or awards, a risk-free interest rate and dividend yield. We recognize stock-based compensation expense related to options and restricted stock units on a straight-line basis over the service period of the award, which is generally 4 or 5 years for options and 3 years for restricted stock units. We recognize stock-based compensation expense related to performance stock units and our employee stock purchase plan using an accelerated attribution method.

Fees Related to Shareholder Activist

In September 2017, Praesidium Investment Management, then one of our largest stockholders, publicly announced its disagreement with our strategy in a Schedule 13D filed with the Securities and Exchange Commission (the “SEC”) and stated that it was seeking changes in the composition of our Board of Directors. In fiscal years 2017 and 2018, we incurred professional and other fees relating to Praesidium’s actions.



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### Acquisition-Related Costs

Acquisition-related costs are expensed as incurred and include those costs incurred as a result of a business combination. These costs consist of professional services fees, including third-party legal and valuation-related fees, as well as retention fees and earn-out payments treated as compensation expense. We incurred \$0.3 million, \$1.5 million, and \$1.2 million of acquisition-related costs, which are included in acquisition-related expenses in our consolidated statement of operations, for the fiscal years ended November 30, 2018, November 30, 2017, and November 30, 2016, respectively.

### Restructuring Charges

Our restructuring charges are comprised primarily of costs related to property abandonment, including future lease commitments, net of any sublease income, and associated leasehold improvements; and employee termination costs related to headcount reductions. We recognize and measure restructuring liabilities initially at fair value when the liability is incurred. We incurred \$2.3 million, \$22.2 million, and \$1.7 million of restructuring related costs, which are included in restructuring expenses in our consolidated statement of operations, for the fiscal years ended November 30, 2018, November 30, 2017, and November 30, 2016, respectively.

### Income Taxes

We provide for deferred income taxes resulting from temporary differences between financial and taxable income. We record valuation allowances to reduce deferred tax assets to the amount that is more likely than not to be realized.

We recognize and measure uncertain tax positions taken or expected to be taken in a tax return utilizing a two-step approach. We first determine if the weight of available evidence indicates that it is more likely than not that the tax position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step is that we measure the tax benefit as the largest amount that is more likely than not to be realized upon ultimate settlement. We recognize interest and penalties related to uncertain tax positions in our provision for income taxes on our consolidated statements of operations.

### Recent Accounting Pronouncements

#### Recently Adopted Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update No. 2016-09, Compensation - Stock Compensation (Topic 718), Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"). ASU 2016-09 is intended to simplify various aspects of the accounting for employee share-based payment transactions, including accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. The guidance in ASU 2016-09 is required for annual reporting periods beginning after December 15, 2016, with early adoption permitted. The standard requires, on a prospective basis, the recognition of all excess tax benefits and tax deficiencies as income tax benefit or expense in the statement of operations and the tax effect of exercised or vested awards should be treated as discrete items in the reporting period in which they occur. The excess tax benefits and tax deficiencies should not be considered in an entity's calculation of its annual estimated effective tax rate and, as excess tax benefits are no longer recognized in additional paid-in capital, the assumed proceeds from applying the treasury stock method to calculate diluted earnings per share should exclude such excess tax benefits. Further, on either a prospective or retrospective basis, excess tax benefits should be classified as operating activities in the statement of cash flows. The standard also provides entities the option to make an entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur, which is to be applied in accordance with a modified retrospective transition. Additionally, the standard updates the threshold to qualify for equity classification for minimum statutory tax withholding requirements by permitting an entity to withhold up to the maximum statutory rates in the applicable

jurisdictions, applied on a modified retrospective basis. Finally, the standard requires that cash paid by an employer to a taxing authority when directly withholding shares for tax withholding purposes be classified as a financing activity in the statement of cash flows, applied retrospectively.

We adopted this standard at the beginning of the first quarter of fiscal year 2018 and elected to classify excess tax benefits as operating activities on a prospective basis in the consolidated statement of cash flows. As such, the prior period consolidated statement of cash flows was not adjusted. Further, during the fiscal year ended November 30, 2018, we recognized excess tax benefits of \$0.9 million related to the exercise of stock options and vesting of restricted stock awards. We also elected to account for forfeitures as they occur and recorded a cumulative-effect adjustment of \$0.6 million to retained earnings during the period of adoption. The adoption of ASU 2016-09 did not have a material impact on our consolidated financial position, results of operations, and cash flows.

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Recently Issued Accounting Pronouncements Not Yet Adopted

In August 2018, the FASB issued Accounting Standards Update No. 2018-15, Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40), Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract ("ASU 2018-15"). ASU 2018-15 amends current guidance to align the accounting for costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing costs associated with developing or obtaining internal-use software. Capitalized implementation costs must be expensed over the term of the hosting arrangement and presented in the same line item in the statement of income as the fees associated with the hosting element (service) of the arrangement. The guidance in ASU 2018-15 is effective for annual reporting periods beginning after December 15, 2019, with early adoption permitted. We are currently accounting for costs incurred in a cloud computing arrangement in accordance with the guidance provided in ASU 2018-15.

In August 2017, the FASB issued Accounting Standards Update No. 2017-12, Derivatives and Hedging (Topic 815), Targeted Improvements to Accounting for Hedging Activities ("ASU 2017-12"). ASU 2017-12 intends to better align an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. The amendments expand and refine hedge accounting for both nonfinancial and financial risk components and align the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. The guidance in ASU 2017-12 is required for annual reporting periods beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the effect that implementation of this update will have upon adoption on our consolidated financial position and results of operations.

In January 2017, the FASB issued Accounting Standards Update No. 2017-04, Intangibles - Goodwill and Other (Topic 350), Simplifying the Test for Goodwill Impairment ("ASU 2017-04"). ASU 2017-04 amends Topic 350 to simplify the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. This update requires the performance of an annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An impairment charge should be recognized for the amount by which the carrying amount exceeds the reporting unit's fair value. However, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The guidance in ASU 2017-04 is required for annual reporting periods beginning after December 15, 2019, with early adoption permitted. We are currently considering whether to adopt this update prior to the required adoption date.

In October 2016, the FASB issued Accounting Standards Update No. 2016-16, Income Taxes (Topic 740), Intra-Entity Transfers of Assets Other Than Inventory ("ASU 2016-16"), which requires entities to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. Under current GAAP, the recognition of current and deferred income taxes for an intra-entity transfer are prohibited until the asset has been sold to an outside party. The amendments in ASU 2016-16 are effective for annual reporting periods beginning after December 15, 2017, with early adoption permitted. We estimate that the impact upon adoption on our consolidated balance sheet will be a reclassification of approximately \$3.3 million from non-current prepaid taxes, which is included in other assets on our consolidated balance sheet, to retained earnings as of December 1, 2018.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, Leases (Topic 842) ("ASU 2016-02"), which requires lessees to record most leases on their balance sheets, recognizing 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. The guidance in ASU 2016-02 is required for annual reporting periods beginning after December 15, 2018, with early adoption permitted. We currently expect that most of our operating lease commitments will be subject to the update and recognized as operating lease liabilities and right-of-use assets upon adoption. However, we are currently evaluating the effect that implementation of this update will have upon adoption on our consolidated financial position and

results of operations.

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In May 2014, the FASB issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) ("ASU 2014-09"). ASU 2014-09 outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The guidance provided in ASC Topic 606 ("ASC 606") requires entities to use a five-step model to recognize revenue by allocating the consideration from contracts to performance obligations on a relative standalone selling price basis. Revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. The standard also requires new disclosures regarding the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. ASC 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. This new guidance was initially effective for annual reporting periods (including interim reporting periods within those periods) beginning after December 15, 2016 and early adoption was not permitted. However, in July 2015, the FASB voted to defer the effective date of this ASU by one year for reporting periods beginning after December 15, 2017, with early adoption permitted as of the original effective date. As a result, the effective date for the Company is December 1, 2018.

Entities have the option of using either a full retrospective or a modified approach to adopt the guidance. The Company adopted this ASU in accordance with the full retrospective approach, effective December 1, 2018. Fiscal year 2019 quarterly results, and comparative prior periods, will be prepared in accordance with ASC 606. The first Annual Report on Form 10-K issued in accordance with ASC 606 will be for the period ended November 30, 2019.

Based on preliminary results, we expect that the revenue recognition related to accounting for the following transactions will be most impacted:

Revenue from term licenses with extended payment terms over the term of the agreement within our Data Connectivity and Integration segment - Under the applicable revenue recognition guidance for fiscal years 2018 and prior, these transactions were recognized when the amounts were billed to the customer. In accordance with ASC 606, revenue from term license performance obligations will be recognized upon delivery and revenue from maintenance performance obligations is expected to be recognized over the contract term. After the adoption of ASC 606, to the extent the Company enters into future term licenses with extended payment terms or has open contracts as of the adoption date, revenue from term licenses with extended payment terms will be recognized prior to the customer being billed and the Company will recognize an unbilled receivable on the balance sheet. Accordingly, the recognition of license revenue will be accelerated under ASC 606 as the Company currently does not recognize revenue until the amounts have been billed to the customer.

Revenue from transactions with multiple elements within our Application Development and Deployment segment (i.e., sales of perpetual licenses with maintenance and/or support) - Under the applicable revenue recognition guidance for fiscal years 2018 and prior, these transactions were recognized ratably over the associated maintenance period as the Company did not have vendor specific objective evidence ("VSOE") for maintenance or support. Under ASC 606, the requirement to have VSOE for undelivered elements that existed under prior guidance is eliminated. Accordingly, the Company will recognize a portion of the sales price as revenue upon delivery of the license instead of recognizing the entire sales price ratably over the maintenance period.

We have substantially completed our assessment of the retrospective application of ASC 606 to our historical financial statements. On a preliminary basis we believe that the retrospective impact of ASC 606 will be a decrease of revenue of approximately \$18 million in fiscal year 2018 and \$8 million in fiscal year 2017. In addition, on a preliminary basis, we expect that fiscal year 2018 net income and diluted earnings per share will decrease by approximately \$14 million and \$0.30 per share, respectively, and fiscal year 2017 net income and diluted earnings per share will decrease by approximately \$8 million and \$0.17 per share, respectively. We will finalize our retrospective

presentation of our historical financial statements under ASC 606 in connection with our 10-Q filings during fiscal year 2019 and our 10-K for the fiscal year ending November 30, 2019.

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## Note 2: Cash, Cash Equivalents and Investments

A summary of our cash, cash equivalents and available-for-sale investments at November 30, 2018 is as follows (in thousands):

	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash	\$ 101,316	\$ —	—\$ —	\$ 101,316
Money market funds	3,810	—	—	3,810
State and municipal bond obligations	19,542	—	(119 )	19,423
U.S. treasury bonds	6,726	—	(21 )	6,705
Corporate bonds	8,329	—	(70 )	8,259
Total	\$ 139,723	\$ —	—\$ (210 )	\$ 139,513

A summary of our cash, cash equivalents and available-for-sale investments at November 30, 2017 is as follows (in thousands):

	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
Cash	\$ 130,547	\$ —	—\$ —	\$ 130,547
Money market funds	2,917	—	—	2,917
State and municipal bond obligations	40,458	—	(231 )	40,227
U.S. treasury bonds	3,517	—	(26 )	3,491
Corporate bonds	6,463	—	(36 )	6,427
Total	\$ 183,902	\$ —	—\$ (293 )	\$ 183,609

Such amounts are classified on our consolidated balance sheets as follows (in thousands):

	November 30, 2018		November 30, 2017	
	Cash and Equivalents	Short-Term Investments	Cash and Equivalents	Short-Term Investments
Cash	\$ 101,316	\$ —	\$ 130,547	\$ —
Money market funds	3,810	—	2,917	—
State and municipal bond obligations	—	19,423	—	40,227
U.S. treasury bonds	—	6,705	—	3,491
Corporate bonds	—	8,259	—	6,427
Total	\$ 105,126	\$ 34,387	\$ 133,464	\$ 50,145

The fair value of debt securities by contractual maturity is as follows (in thousands):

	November 30, 2018	November 30, 2017
Due in one year or less	\$ 25,051	\$ 22,333
Due after one year <sup>(1)</sup>	9,336	27,812
Total	\$ 34,387	\$ 50,145

(1) Includes state and municipal bond obligations and corporate bonds, which are securities representing investments available for current operations and are classified as current on the consolidated balance sheets.

We did not hold any investments with continuous unrealized losses as of November 30, 2018 or November 30, 2017.



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## Note 3: Derivative Instruments

We generally use forward contracts that are not designated as hedging instruments to hedge economically the impact of the variability in exchange rates on intercompany accounts receivable and loans receivable denominated in certain foreign currencies. We generally do not hedge the net assets of our international subsidiaries.

All forward contracts are recorded at fair value on the consolidated balance sheets at the end of each reporting period and expire between 30 days and 366 days from the date the contract was entered. At November 30, 2018, \$0.3 million and \$0.1 million was recorded in other noncurrent liabilities and other current assets on the consolidated balance sheet, respectively. At November 30, 2017, \$0.2 million and \$0.2 million was recorded in other accrued liabilities and other assets on the consolidated balance sheet, respectively. In fiscal year 2018, realized and unrealized losses of \$6.9 million from our forward contracts were recognized in foreign currency loss, net on the consolidated statement of operations. In fiscal years 2017 and 2016, realized and unrealized gains of \$9.4 million and realized and unrealized losses of \$4.0 million, respectively, from our forward contracts were recognized in foreign currency loss, net on the consolidated statements of operations. These losses and gains were substantially offset by realized and unrealized gains and losses on the offsetting positions.

The table below details outstanding foreign currency forward contracts where the notional amount is determined using contract exchange rates (in thousands):

	November 30, 2018		November 30, 2017	
	Notional Value	Fair Value	Notional Value	Fair Value
Forward contracts to sell U.S. dollars	\$105,830	\$ (170 )	\$119,192	\$ (27 )
Forward contracts to purchase U.S. dollars	240	—	462	—
Total	\$106,070	\$ (170 )	\$119,654	\$ (27 )

## Note 4: Fair Value Measurements

## Recurring Fair Value Measurements

The following table details the fair value measurements within the fair value hierarchy of our financial assets and liabilities at November 30, 2018 (in thousands):

	Total Fair Value	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
<b>Assets</b>				
Money market funds	\$ 3,810	\$3,810	\$—	\$ —
State and municipal bond obligations	19,423	—	19,423	—
U.S. treasury bonds	6,705	—	6,705	—
Corporate bonds	8,259	—	8,259	—
<b>Liabilities</b>				
Foreign exchange derivatives	\$ (170 )	\$—	\$ (170)	\$ —

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The following table details the fair value measurements within the fair value hierarchy of our financial assets and liabilities at November 30, 2017 (in thousands):

	Total Fair Value	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
<b>Assets</b>				
Money market funds	\$ 2,917	\$2,917	\$—	\$ —
State and municipal bond obligations	40,227	—	40,227	—
U.S. treasury bonds	3,491	—	3,491	—
Corporate bonds	6,427	—	6,427	—
<b>Liabilities</b>				
Foreign exchange derivatives	\$ (27 )	\$—	\$ (27 )	\$ —

When developing fair value estimates, we maximize the use of observable inputs and minimize the use of unobservable inputs. When available, we use quoted market prices to measure fair value. The valuation technique used to measure fair value for our Level 1 and Level 2 assets is a market approach, using prices and other relevant information generated by market transactions involving identical or comparable assets. If market prices are not available, the fair value measurement is based on models that use primarily market based parameters including yield curves, volatilities, credit ratings and currency rates. In certain cases where market rate assumptions are not available, we are required to make judgments about assumptions market participants would use to estimate the fair value of a financial instrument.

**Nonrecurring Fair Value Measurements**

During fiscal year 2018, certain assets were measured at fair value on a nonrecurring basis using significant unobservable inputs (Level 3). We did not have any nonrecurring fair value measurements as of November 30, 2017.

During the fourth quarter of fiscal year 2018, we reclassified certain corporate land and building assets previously reported as property and equipment, net to assets held for sale on our consolidated balance sheet. As a result, we recognized an impairment charge of \$5.1 million based on the fair value measurement of the assets, which represents the difference between the fair value less cost to sell and the carrying value of the assets. The impairment charge was recorded to loss on assets held for sale within operating expenses on our fiscal year 2018 consolidated statement of operations. The fair value measurements of the assets held for sale were measured using third-party valuation models and were determined using an income-based valuation methodology, which includes discounted expected cash flows. As the discounted cash flows represent unobservable inputs, the fair value was classified as a Level 3 measurement within the fair value hierarchy. The expected cash flows include proceeds from the sale, offset by the costs incurred to sell the assets.

The following table presents nonrecurring fair value measurements as of November 30, 2018 (in thousands):

	Total Fair Value	Total Losses
Assets held for sale	\$ 5,776	\$ 5,147

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## Note 5: Property and Equipment

Property and equipment consists of the following (in thousands):

	November 30, 2018	November 30, 2017
Computer equipment and software	\$ 47,266	\$ 50,588
Land, buildings and leasehold improvements	34,676	50,229
Furniture and fixtures	6,104	7,211
Capitalized software development costs	276	2,955
Property and equipment, gross	88,322	110,983
Less accumulated depreciation and amortization	(57,608 )	(68,722 )
Property and equipment, net	\$ 30,714	\$ 42,261

Depreciation and amortization expense related to property and equipment was \$6.9 million, \$7.5 million, and \$8.5 million for the years ended November 30, 2018, 2017, and 2016, respectively.

In the fourth quarter of fiscal year 2018, we reclassified certain corporate land and building assets previously reported as property and equipment to assets held for sale on our consolidated balance sheet as we expect to sell them within one year. Refer to Note 4 for further discussion.

## Note 6: Intangible Assets and Goodwill

## Intangible Assets

Intangible assets are comprised of the following significant classes (in thousands):

	November 30, 2018			November 30, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Purchased technology	\$154,301	\$(110,959 )	\$43,342	\$154,301	\$(88,224 )	\$66,077
Customer-related	67,802	(56,589 )	11,213	67,802	(46,230 )	21,572
Trademarks and trade names	17,740	(13,376 )	4,364	17,740	(10,495 )	7,245
Total	\$239,843	\$(180,924 )	\$58,919	\$239,843	\$(144,949 )	\$94,894

We amortize intangible assets assuming no expected residual value. Amortization expense related to these intangible assets was \$36.0 million, \$33.1 million and \$28.2 million in fiscal years 2018, 2017 and 2016, respectively.

During the third quarter of fiscal year 2016, we evaluated the ongoing value of the intangible assets associated with the technology obtained in connection with the acquisition of Modulus. As a result of our decision to abandon the related assets due to a change in our expected ability to use the technology internally, we determined that the intangible assets were fully impaired. As a result, we incurred an impairment charge of \$5.1 million in the third quarter of fiscal year 2016.

Future amortization expense for intangible assets as of November 30, 2018 is as follows (in thousands):

2019 \$34,932  
2020 10,152

2021 10,033  
2022 3,802  
Total \$58,919

65

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## Goodwill

Changes in the carrying amount of goodwill for fiscal years 2018 and 2017 are as follows (in thousands):

	November 30, 2018	November 30, 2017
Balance, beginning of year	\$ 315,041	\$ 278,067
Additions	—	36,934
Translation adjustments	(49	) 40
Balance, end of year	\$ 314,992	\$ 315,041

The additions to goodwill during fiscal year 2017 are related to the acquisitions of DataRPM in March 2017 and Kinvey in June 2017 (Note 7).

Changes in the carrying amount of goodwill by reportable segment for fiscal year 2018 are as follows (in thousands):

	November 30, 2017	Translation adjustments	November 30, 2018
OpenEdge	\$ 249,036	\$ (49 )	\$ 248,987
Data Connectivity and Integration	19,040	—	19,040
Application Development and Deployment	46,965	—	46,965
Total goodwill	\$ 315,041	\$ (49 )	\$ 314,992

## Impairment of Goodwill

We assess the impairment of goodwill on an annual basis and whenever events or changes in circumstances indicate that the carrying value of the asset may not be recoverable.

During fiscal year 2018, we tested goodwill for impairment for each of our reporting units as of October 31, 2018. Our reporting units each had fair values which significantly exceeded their carrying values as of the annual impairment date. We did not recognize any goodwill impairment charges during fiscal years 2018 or 2017.

During fiscal year 2016, we recognized a \$92 million goodwill impairment loss related to our Application Development and Deployment reporting unit. To determine the fair value of our Application Development and Deployment reporting unit as part of the two-step test for goodwill impairment as of October 31, 2016, we concluded that a combination of the income approach and the market approach was most appropriate. The fair value of this reporting unit was negatively impacted by reduced future growth expectations resulting from a comprehensive review of our strategy and operations by our Chief Executive Officer, our Board of Directors, and the executive management team. Based on this analysis, the implied fair value of goodwill was substantially lower than the carrying value of goodwill for the reporting unit, resulting in the \$92 million goodwill impairment loss. This impairment loss was recorded to impairment of goodwill within operating expenses in our fiscal year 2016 consolidated statement of operations.

The evaluation of goodwill for impairment requires significant judgment. While we believe that the assumptions used in our impairment test are reasonable, the analysis is sensitive to adverse changes used in the assumptions of the valuations. In particular, changes in the projected cash flows, the discount rate, the terminal year growth rate and market multiple assumptions could produce significantly different results for the impairment analyses. In the event of future changes in business conditions, we will be required to reassess and update our forecasts and estimates used in future impairment analyses. If the results of these analyses are lower than current estimates, a material impairment charge may result at that time.



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## Note 7: Business Combinations

## Kinvey Acquisition

On June 1, 2017, we acquired by merger 100% of the outstanding securities of Kinvey for an aggregate sum of \$49.2 million, which includes approximately \$0.3 million held-back from the founder of Kinvey as an incentive to remain with the Company for at least two years following the acquisition. The \$0.3 million held-back was recorded to expense over the service period, which ended prior to the expiration of the two years. Kinvey allows developers to set up, use, and operate a serverless cloud backend for any native, hybrid, web, or IoT app built using any development tools. This acquisition, in combination with our existing frontend technologies, cognitive capabilities from DataRPM, our strong business logic and rules capabilities, and our strong data connectivity technologies, enables us to offer a premier high productivity platform for building and delivering cognitive business applications. The acquisition was accounted for as a business combination, and accordingly, the results of operations of Kinvey are included in our operating results as part of the OpenEdge business segment from the date of acquisition. We paid the purchase price in cash from available funds.

The total consideration, less the \$0.3 million held-back discussed above, which is considered to be a compensation arrangement, was allocated to Kinvey's tangible assets, identifiable intangible assets and assumed liabilities based on their estimated fair values. The excess of the total consideration, less the amount held-back from the founder, over the tangible assets, identifiable intangible assets and assumed liabilities was recorded as goodwill. The allocation of the purchase price was completed in the fourth quarter of fiscal year 2017 upon the finalization of our valuation of identifiable intangible assets and deferred taxes.

The allocation of the purchase price is as follows (in thousands):

	Total	Life
Net working capital	\$(963	)
Property, plant and equipment	26	
Purchased technology	22,100	5 Years
Trade name	1,800	5 Years
Customer relationships	100	5 Years
Net deferred tax assets	1,465	
Goodwill	24,351	
Net assets acquired	\$48,879	

The fair value of the intangible assets was estimated using the income approach in which the after-tax cash flows are discounted to present value. The cash flows are based on estimates used to price the acquisition, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model as well as the weighted average cost of capital.

Deferred taxes include deferred tax liabilities resulting from the tax effects of fair value adjustments related to identifiable intangible assets, which are more than offset by the value of deferred tax assets acquired from Kinvey. Tangible assets acquired and assumed liabilities were recorded at fair value.

We recorded the excess of the purchase price over the identified tangible and intangible assets as goodwill. We believe that the investment value of the future enhancement of our product and solution offerings created as a result of this acquisition has principally contributed to a purchase price that resulted in the recognition of \$24.4 million of goodwill, which is not deductible for tax purposes.

Acquisition-related transaction costs (e.g., legal, due diligence, valuation, and other professional fees) are not included as a component of consideration paid, but are required to be expensed as incurred. During the fiscal years ended November 30, 2018 and 2017, we incurred approximately \$0.3 million and \$1.1 million, respectively, of acquisition-related costs, which are included in acquisition-related expenses in our consolidated statement of operations.

We have not disclosed the amount of revenues and earnings of Kinvey since acquisition, nor pro forma financial information, as those amounts are not significant to our consolidated financial statements.



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## DataRPM Acquisition

On March 1, 2017, we acquired by merger 100% of the outstanding securities of DataRPM for an aggregate sum of \$30.0 million. Approximately \$1.7 million of the purchase price was paid to DataRPM's founders in the form of restricted stock units, subject to a two-year vesting schedule and continued employment. DataRPM is a leader in cognitive predictive maintenance for the industrial IoT ("IIoT") market. The acquisition is a key part of the Company's strategy to provide the best platform to build and deliver cognitive applications. The acquisition was accounted for as a business combination, and accordingly, the results of operations of DataRPM are included in our operating results as part of the OpenEdge business segment from the date of acquisition. We paid the purchase price in cash from available funds.

The total consideration, less the fair value of the granted restricted stock units discussed above, which are considered compensation arrangements, was allocated to DataRPM's tangible assets, identifiable intangible assets and assumed liabilities based on their estimated fair values. The excess of the total consideration, less the fair value of the restricted stock units, over the tangible assets, identifiable intangible assets and assumed liabilities was recorded as goodwill. The allocation of the purchase price was completed in the fourth quarter of fiscal year 2017 upon the finalization of our valuation of identifiable intangible assets and deferred taxes.

The allocation of the purchase price is as follows (in thousands):

	Total	Life
Net working capital	\$(174 )	
Property, plant and equipment	68	
Purchased technology	19,900	5 Years
Trade name	800	5 Years
Customer relationships	100	5 Years
Deferred taxes	(5,006 )	
Goodwill	12,583	
Net assets acquired	\$28,271	

The fair value of the intangible assets was estimated using the income approach in which the after-tax cash flows are discounted to present value. The cash flows are based on estimates used to price the acquisition, and the discount rates applied were benchmarked with reference to the implied rate of return from the transaction model as well as the weighted average cost of capital.

Deferred taxes include deferred tax liabilities resulting from the tax effects of fair value adjustments related to identifiable intangible assets, partially offset by the fair value of deferred tax assets acquired from DataRPM. Tangible assets acquired and assumed liabilities were recorded at fair value.

We recorded the excess of the purchase price over the identified tangible and intangible assets as goodwill. We believe that the investment value of the future enhancement of our product and solution offerings created as a result of this acquisition has principally contributed to a purchase price that resulted in the recognition of \$12.6 million of goodwill, which is not deductible for tax purposes.

As discussed above, approximately \$1.7 million of the total consideration was paid to DataRPM's founders in restricted stock units, subject to a vesting schedule and continued employment. We concluded that the restricted stock units are compensation arrangements and we are recognizing stock-based compensation expense in accordance with the vesting schedule over the service period of the awards, which is 2 years. During the fiscal years ended November 30, 2018 and 2017, we incurred stock-based compensation expense related to these restricted stock units of

\$0.1 million and \$0.4 million, respectively. The expense was lower in fiscal 2018 due to the forfeiture of the restricted stock units held by one of the founders as a result of his termination of employment. These amounts are included in operating expenses in our consolidated statement of operations.

Acquisition-related transaction costs (e.g., legal, due diligence, valuation, and other professional fees) are not included as a component of consideration transferred, but are required to be expensed as incurred. During the fiscal year ended November 30, 2018, we did not incur any acquisition-related costs. During the fiscal year ended November 30, 2017, we incurred approximately \$0.4 million of acquisition-related costs, which are included in acquisition-related expenses in our consolidated statement of operations.

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We have not disclosed the amount of revenues and earnings of DataRPM since acquisition, nor pro forma financial information, as those amounts are not significant to our consolidated financial statements.

## Note 8: Term Loan and Line of Credit

Our credit agreement provides for a \$123.8 million secured term loan and a \$150.0 million secured revolving credit facility. The revolving credit facility may be made available in U.S. Dollars and certain other currencies and may be increased by up to an additional \$125.0 million if the existing or additional lenders are willing to make such increased commitments. The revolving credit facility has sublimits for swing line loans up to \$25.0 million and for the issuance of standby letters of credit in a face amount up to \$25.0 million. We expect to use the revolving credit facility for general corporate purposes, including acquisitions of other businesses, and may also use it for working capital.

The credit facility matures on November 20, 2022, when all amounts outstanding will be due and payable in full. The revolving credit facility does not require amortization of principal. The outstanding balance of the term loan as of November 30, 2018 was \$117.6 million, with \$6.2 million due in the next 12 months. The term loan requires repayment of principal at the end of each fiscal quarter, beginning with the fiscal quarter ended February 28, 2018. The principal repayment amounts are in accordance with the following schedule: (i) eight payments of \$1.5 million each, (ii) four payments of \$2.3 million each, (iii) four payments of \$3.1 million each, (iv) three payments of \$3.9 million each, and (v) the last payment is of the remaining principal amount. Any amounts outstanding under the term loan thereafter would be due on the maturity date. The term loan may be prepaid before maturity in whole or in part at our option without penalty or premium. As of November 30, 2018, the carrying value of the term loan approximates the fair value, based on Level 2 inputs (observable market prices in less than active markets), as the interest rate is variable over the selected interest period and is similar to current rates at which we can borrow funds. The average interest rate of the credit facility during the fiscal year ended November 30, 2018 was 3.43% and the interest rate as of November 30, 2018 was 3.81%.

Costs incurred to obtain our long-term debt of \$1.8 million are recorded as debt issuance costs as a direct deduction from the carrying value of the debt liability on our consolidated balance sheets as of November 30, 2018. These costs are being amortized over the term of the debt agreement using the effective interest rate method. Amortization expense related to the debt issuance costs of \$0.4 million for the fiscal years ended November 30, 2018, 2017, and 2016, respectively, is recorded in interest expense on our consolidated statements of operations.

Revolving loans may be borrowed, repaid, and reborrowed until November 20, 2022, at which time all amounts outstanding must be repaid. As of November 30, 2018, there were no amounts outstanding under the revolving line and \$1.3 million of letters of credit.

As of November 30, 2018, aggregate principal payments of long-term debt for the next five years are (in thousands):

2019	\$6,188
2020	9,281
2021	12,375
2022	89,719
Total	\$117,563

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Note 9: Commitments and Contingencies

Leasing Arrangements

We lease certain facilities and equipment under non-cancelable operating lease arrangements. Future minimum rental payments under these leases are as follows at November 30, 2018 (in thousands):

2019	\$6,256
2020	5,163
2021	3,373
2022	2,709
2023	2,746
Thereafter	4,337
Total	\$24,584

Our operating lease arrangements are subject to customary renewal and base rental fee escalation clauses. Total rent expense, net of sublease income which is insignificant, under operating lease arrangements was approximately \$6.8 million, \$6.9 million and \$8.0 million in fiscal years 2018, 2017 and 2016, respectively.

Guarantees and Indemnification Obligations

We include standard intellectual property indemnification provisions in our licensing agreements in the ordinary course of business. Pursuant to our product license agreements, we will indemnify, hold harmless, and agree to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally business partners or customers, in connection with certain patent, copyright or other intellectual property infringement claims by third parties with respect to our products. Other agreements with our customers provide indemnification for claims relating to property damage or personal injury resulting from the performance of services by us or our subcontractors. Historically, our costs to defend lawsuits or settle claims relating to such indemnity agreements have been insignificant. Accordingly, the estimated fair value of these indemnification provisions is immaterial.

Legal Proceedings

We are subject to various legal proceedings and claims, either asserted or unasserted, which arise in the ordinary course of business. While the outcome of these claims cannot be predicted with certainty, management does not believe that the outcome of any of these other legal matters will have a material effect on our financial position, results of operations or cash flows.

Note 10: Shareholders' Equity

Preferred Stock

Our Board of Directors is authorized to establish one or more series of preferred stock and to fix and determine the number and conditions of preferred shares, including dividend rates, redemption and/or conversion provisions, if any, preferences and voting rights. As of November 30, 2018, there was no preferred stock issued or outstanding.

Common Stock

We have 200,000,000 shares of authorized common stock, \$0.01 par value per share, of which 45,114,935 were issued and outstanding at November 30, 2018.

There were 136,388 deferred stock units ("DSUs") outstanding at November 30, 2018. Each DSU represents one share of our common stock and all DSU grants have been made to non-employee members of our Board of Directors. DSUs do not have voting rights and can only be converted into common stock when the recipient ceases to be a member of the Board of Directors or a change in control of the Company occurs. During the fiscal year ended November 30, 2018, we released 13,995 DSUs as a result of one individual leaving our Board of Directors.

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### Common Stock Repurchases

In September 2017, our Board of Directors increased our total share repurchase authorization to \$250.0 million. In fiscal years 2018 and 2017, we repurchased and retired 2.9 million shares of our common stock for \$120.0 million and 2.2 million shares of our common stock for \$73.9 million, respectively, under this current authorization. In fiscal year 2016, we repurchased and retired 3.1 million shares of our common stock for \$79.2 million. As of November 30, 2018, there was \$100.0 million remaining under the current authorization.

### Dividends

On September 27, 2016, our Board of Directors approved the initiation of a quarterly cash dividend of \$0.125 per share of common stock to Progress stockholders. We began paying quarterly cash dividends of \$0.125 per share of common stock to Progress stockholders in December 2016 and increased the quarterly cash dividend to \$0.14 per share in September 2017. On September 21, 2018, our Board of Directors approved an 11% increase to our quarterly cash dividend from \$0.14 to \$0.155 per share of common stock. We have declared aggregate per share quarterly cash dividends totaling \$0.575, \$0.515 and \$0.125 for the years ended November 30, 2018, November 30, 2017 and November 30, 2016, respectively. We have paid aggregate cash dividends totaling \$25.8 million, and \$24.1 million for the years ended November 30, 2018 and November 30, 2017, respectively.

### Note 11: Stock-Based Compensation

We currently have one stockholder-approved stock plan from which we can issue stock-based awards, which was approved by our stockholders in fiscal year 2008 ("2008 Plan"). The 2008 Plan replaced the 1992 Incentive and Nonqualified Stock Option Plan, the 1994 Stock Incentive Plan and the 1997 Stock Incentive Plan (collectively, the "Previous Plans"). The Previous Plans solely exist to satisfy outstanding options previously granted under those plans. The 2008 Plan permits the granting of stock awards to officers, members of the Board of Directors, employees and consultants. Awards under the 2008 Plan may include nonqualified stock options, incentive stock options, grants of conditioned or restricted stock, unrestricted grants of stock, grants of stock contingent upon the attainment of performance goals, deferred stock units and stock appreciation rights. A total of 54,510,000 shares are issuable under these plans, of which 2,537,256 shares were available for grant as of November 30, 2018.

We have adopted two stock plans for which the approval of stockholders was not required: the 2002 Nonqualified Stock Plan ("2002 Plan") and the 2004 Inducement Stock Plan ("2004 Plan"). The 2002 Plan permits the granting of stock awards to non-executive officer employees and consultants. Executive officers and members of the Board of Directors are not eligible for awards under the 2002 Plan. Awards under the 2002 Plan may include nonqualified stock options, grants of conditioned or restricted stock, unrestricted grants of stock, grants of stock contingent upon the attainment of performance goals and stock appreciation rights. A total of 9,750,000 shares are issuable under the 2002 Plan, of which 650,169 shares were available for grant as of November 30, 2018.

The 2004 Plan is reserved for persons to whom we may issue securities as an inducement to become employed by us pursuant to the rules and regulations of the NASDAQ Stock Market. Awards under the 2004 Plan may include nonqualified stock options, grants of conditioned or restricted stock, unrestricted grants of stock, grants of stock contingent upon the attainment of performance goals and stock appreciation rights. A total of 1,500,000 shares are issuable under the 2004 Plan, of which 583,021 shares were available for grant as of November 30, 2018.

Under all of our plans, the options granted generally begin to vest within one year of the grant.



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A summary of stock option activity under all the plans is as follows:

	Shares	Weighted Average Exercise Price	Weighted Average Contractual Term (in years)	Remaining	Aggregate Intrinsic Value <sup>(1)</sup> (in thousands)
Options outstanding, December 1, 2017	1,002	\$ 28.29			
Granted	482	49.56			
Exercised	(189 )	23.40			
Canceled	(188 )	34.38			
Options outstanding, November 30, 2018	1,107	\$ 37.82	5.61		\$ 3,610
Exercisable, November 30, 2018	269	\$ 33.80	5.33		\$ 1,206
Vested or expected to vest, November 30, 2018	1,107	\$ 37.82	5.61		\$ 3,610

(1) The aggregate intrinsic value was calculated based on the difference between the closing price of our stock on November 30, 2018 of \$35.16 and the exercise prices for all options outstanding.

A summary of restricted stock units activity is as follows (in thousands, except per share data):

	Number of Shares	Weighted Average Fair Value
Restricted stock units outstanding, December 1, 2017	1,136	\$ 28.15
Granted	362	49.06
Issued	(393 )	30.00
Canceled	(193 )	28.61
Restricted stock units outstanding, November 30, 2018	912	\$ 35.46

Each restricted stock unit represents one share of common stock. The restricted stock units generally vest semi-annually over a three-year period. Performance-based restricted stock units are subject to performance criteria aligned with our business plan and are earned only to the extent the performance criteria are achieved, with any awards earned being subject to subsequent time-based vesting similar to that discussed above.

The fair value of outright stock awards, restricted stock units and DSUs is equal to the closing price of our common stock on the date of grant, less the present value of expected dividends, as the recipient is not entitled to dividends during the requisite service period.

In addition, during fiscal years 2016 and 2017, we granted performance-based restricted stock units that include a three-year market condition under a Long-Term Incentive Plan ("LTIP") where the performance measurement period is three years. Vesting of the LTIP awards is based on our level of attainment of specified total stockholder return ("TSR") targets relative to the percentage appreciation of a specified index of companies for the respective three-year periods and is also subject to the continued employment of the grantees. In order to estimate the fair value of such awards, we used a Monte Carlo Simulation valuation model. The performance measurement period related to the LTIP awards granted during fiscal year 2016 ended as of November 30, 2018. As the level of attainment of the specified TSR target was not met, none of the LTIP awards under this grant vested.



During the first quarter of fiscal year 2018, we granted performance-based restricted stock units that include two performance metrics under the LTIP where the performance measurement period is three years. Vesting of the 2018 LTIP awards is as follows: (i) 50% is based on the three-year market condition as described above (TSR), and (ii) 50% is based on achievement of a three-year cumulative performance condition (operating income). In order to estimate the fair value of such awards, we used a Monte Carlo Simulation valuation model for the market condition portion of the award, and used the closing price of our common stock on the date of grant, less the present value of expected dividends, for the portion related to the performance condition.

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The 1991 Employee Stock Purchase Plan ("ESPP") permits eligible employees to purchase up to an aggregate of 9,450,000 shares of our common stock through accumulated payroll deductions. The ESPP has a 27-month offering period comprised of nine three-month purchase periods. The purchase price of the stock is equal to 85% of the lesser of the market value of such shares at the beginning of a 27-month offering period or the end of each three-month segment within such offering period. If the market price at any of the nine purchase periods is less than the market price on the first date of the 27-month offering period, subsequent to the purchase, the offering period is canceled and the employee is entered into a new 27-month offering period with the then current market price as the new base price. We issued 225,000 shares, 220,000 shares and 266,000 shares with weighted average purchase prices of \$24.27, \$22.27 and \$20.01 per share, respectively, in fiscal years 2018, 2017 and 2016, respectively. At November 30, 2018, approximately 590,000 shares were available and reserved for issuance under the ESPP.

We estimated the fair value of stock options and ESPP awards granted in fiscal years 2018, 2017 and 2016 on the measurement dates using the Black-Scholes option valuation model, and LTIP awards using the Monte Carlo Simulation valuation model, with the following weighted average assumptions:

	Fiscal Year Ended				
	November 30, 2018	November 30, 2017	November 30, 2016	November 30, 2015	November 30, 2014
Stock options:					
Expected volatility	22.8%	25.0%	—	—	—
Risk-free interest rate	2.3%	1.9%	—	—	—
Expected life (in years)	4.8	4.8	0	—	—
Expected dividend yield	1.1%	1.7%	—	—	—
Employee stock purchase plan:					
Expected volatility	23.8%	22.9%	25.3%	—	—
Risk-free interest rate	2.3%	1.2%	0.6%	—	—
Expected life (in years)	1.7	1.5	1.6	—	—
Expected dividend yield	1.5%	1.6%	—	—	—
Long-term incentive plan:					
Expected volatility	27.4%	27.5%	27.1%	—	—
Risk-free interest rate	2.1%	1.4%	1.0%	—	—
Expected life (in years)	2.9	2.7	2.7	—	—
Expected dividend yield	1.7%	1.8%	—	—	—

For each stock option award, the expected life in years is based on historical exercise patterns and post-vesting termination behavior. Expected volatility is based on historical volatility of our stock, and the risk-free interest rate is based on the U.S. Treasury yield curve for the period that is commensurate with the expected life at the time of grant. The expected annual dividend yield is based on the weighted-average of the dividend yield assumptions used for options granted during the applicable period.

For each ESPP award, the expected life in years is based on the period of time between the beginning of the offering period and the date of purchase, plus an additional holding period of three months. Expected volatility is based on historical volatility of our stock, and the risk-free interest rate is based on the U.S. Treasury yield curve in effect at each purchase period. The expected annual dividend yield is based on the weighted-average of the dividend yield assumptions used for options granted during the applicable period.

Based on the above assumptions, the weighted average estimated fair value of stock options granted in fiscal years 2018, 2017, and 2016 was \$10.30, \$5.95 and \$0 per share, respectively. We amortize the estimated fair value of stock options to expense over the vesting period using the straight-line method. The weighted average estimated fair value

for shares issued under our ESPP in fiscal years 2018, 2017 and 2016 was \$10.24, \$8.32 and \$7.43 per share, respectively. We amortize the estimated fair value of shares issued under the ESPP to expense over the vesting period using a graded vesting model.

Total unrecognized stock-based compensation expense, net of expected forfeitures, related to unvested stock options and unvested restricted stock awards amounted to \$28.6 million at November 30, 2018. These costs are expected to be recognized over a weighted average period of 2.1 years.

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The following additional activity occurred under our plans (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Total intrinsic value of stock options on date exercised	\$3,692	\$ 1,622	\$ 2,017
Total fair value of deferred stock units on date vested	1,690	57	—
Total fair value of restricted stock units on date vested	14,741	20,032	17,213

The following table provides the classification of stock-based compensation as reflected in our consolidated statements of operations (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Cost of maintenance and services	\$616	\$ 1,016	\$ 899
Sales and marketing	2,959	2,214	4,093
Product development	8,242	4,576	9,965
General and administrative	8,752	6,347	7,584
Total stock-based compensation	\$20,569	\$ 14,153	\$ 22,541
Income tax benefit included in the provision for income taxes from continuing operations	\$4,345	\$ 4,057	\$ 5,208

### Separation Arrangements

During fiscal year 2017, we entered into separation agreements with three executives, which entitled them to accelerated vesting of certain stock-based awards. Due to the separation and accelerated vesting, we recognized additional stock-based compensation expense of \$1.5 million, of which \$0.8 million was recorded as sales and marketing expense and \$0.7 million was recorded as general and administrative expense, in the consolidated statement of operations.

During fiscal year 2016, we entered into separation agreements with two executives, which entitled them to accelerated vesting of certain stock-based awards. Due to the separation and accelerated vesting, we recognized additional stock-based compensation expense of \$0.3 million, of which \$0.2 million was recorded as sales and marketing expense and \$0.1 million was recorded as product development expense, in the consolidated statement of operations.

### Note 12: Retirement Plan

We maintain a retirement plan covering all U.S. employees under Section 401(k) of the Internal Revenue Code. Company contributions to the plan are at the discretion of the Board of Directors and totaled approximately \$3.1 million, \$2.1 million and \$2.5 million for fiscal years 2018, 2017 and 2016, respectively.

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## Note 13: Restructuring

The following table provides a summary of activity for all of the restructuring actions, which are detailed further below (in thousands):

	Excess Facilities and Other Costs	Employee Severance and Related Benefits	Total
Balance, December 1, 2015	\$ 412	\$ 2,949	\$3,361
Costs incurred	319	1,373	1,692
Cash disbursements	(633 )	(2,906 )	(3,539 )
Translation adjustments and other	9	27	36
Balance, November 30, 2016	\$ 107	\$ 1,443	\$1,550
Costs incurred	2,655	19,555	22,210
Cash disbursements	(1,456 )	(17,778 )	(19,234)
Asset impairment	(762 )	—	(762 )
Translation adjustments and other	26	336	362
Balance, November 30, 2017	\$ 570	\$ 3,556	\$4,126
Costs incurred	1,011	1,240	2,251
Cash disbursements	(1,309 )	(4,802 )	(6,111 )
Translation adjustments and other	35	10	45
Balance, November 30, 2018	\$ 307	\$ 4	\$311

## 2017 Restructuring

During the first quarter of fiscal year 2017, we undertook certain operational restructuring initiatives intended to significantly reduce annual costs. As part of this action, management committed to a new strategic plan highlighted by a new product strategy and a streamlined operating approach. To execute these operational restructuring initiatives, we reduced our global workforce by over 20%. These workforce reductions occurred in substantially all functional units and across all geographies in which we operate. During the fourth quarter of fiscal year 2017, we incurred additional costs with respect to this restructuring, including reduction in redundant positions primarily within the product development and sales functions. We also consolidated offices in various locations during fiscal years 2017 and 2018. We expect to incur additional expenses related to facility closures as part of this restructuring action through fiscal year 2019, but we do not expect these additional costs to be material.

Restructuring expenses are related to employee costs, including severance, health benefits and outplacement services (but excluding stock-based compensation), facilities costs, which include fees to terminate lease agreements and costs for unused space, net of sublease assumptions, and other costs, which include asset impairment charges.

As part of this fiscal year 2017 restructuring, for the fiscal years ended November 30, 2018 and 2017, we incurred expenses of \$2.3 million and \$22.1 million, respectively, which are recorded as restructuring expenses in the consolidated statements of operations.

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A summary of activity for this restructuring action is as follows (in thousands):

	Excess Facilities and Other Costs	Employee Severance and Related Benefits	Total
Balance, December 1, 2016	\$ —	\$ —	\$—
Costs incurred	2,570	19,555	22,125
Cash disbursements	(1,294 )	(16,335 )	(17,629)
Asset impairment	(762 )	—	(762 )
Translation adjustments and other	26	336	362
Balance, November 30, 2017	\$ 540	\$ 3,556	\$4,096
Costs incurred	1,011	1,240	2,251
Cash disbursements	(1,279 )	(4,802 )	(6,081 )
Translation adjustments and other	35	10	45
Balance, November 30, 2018	\$ 307	\$ 4	\$311

Cash disbursements for expenses incurred to date under this restructuring are expected to be made through fiscal year 2019. Accordingly, the balance of the restructuring reserve of \$0.3 million is included in other accrued liabilities on the consolidated balance sheet at November 30, 2018.

## 2016 Restructuring

During the fourth quarter of fiscal year 2016, our management approved, committed to and initiated plans to make strategic changes to our organization as a result of the appointment of our new Chief Executive Officer during the period. In connection with the new organizational structure, we eliminated the positions of Chief Product Officer and Chief Revenue Officer.

Restructuring expenses are related to employee costs, including severance, health benefits and outplacement services (but excluding stock-based compensation).

As part of this fourth quarter restructuring, for the fiscal years ended November 30, 2018 and 2017, we did not incur any expenses and do not expect to incur additional material costs with respect to this restructuring. For the fiscal year ended November 30, 2016, we incurred expenses of \$1.5 million. The expenses are recorded as restructuring expenses in the consolidated statements of operations.

A summary of activity for this restructuring action is as follows (in thousands):

	Excess Facilities and Other Costs	Employee Severance and Related Benefits	Total
Balance, December 1, 2015	\$ —	\$ —	\$—
Costs incurred	—	1,482	1,482
Cash disbursements	—	(67 )	(67 )
Balance, November 30, 2016	\$ —	\$ 1,415	\$1,415
Cash disbursements	—	(1,415 )	(1,415 )
Balance, November 30, 2017	\$ —	\$ —	\$—

## 2012 - 2015 Restructurings

During fiscal years 2012 through 2015, our management approved, committed to and initiated plans to make strategic changes to our organization to provide greater focus and agility in the delivery of next generation application development, deployment and integration solutions. During each of these fiscal years, we took restructuring actions that involved the elimination of personnel and/or the closure of facilities.

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Restructuring expenses are related to employee costs, including severance, health benefits and outplacement services (but excluding stock-based compensation), and facilities costs, which include fees to terminate lease agreements and costs for unused space, net of sublease assumptions, and other costs, which include asset impairment charges.

As part of these restructuring actions, for the fiscal year ended November 30, 2018, we did not incur any expenses. For the fiscal years ended November 30, 2017 and 2016, we incurred expenses of \$0.1 million and \$0.2 million, respectively. These expenses are recorded as restructuring expenses on the consolidated statements of operations. We do not expect to incur additional material costs with respect to these restructuring actions.

A summary of these restructuring actions is as follows (in thousands):

	Excess Facilities and Other Costs	Employee Severance and Related Benefits	Total
Balance, December 1, 2015	\$ 412	\$ 2,949	\$3,361
Costs incurred	319	(109 )	210
Cash disbursements	(633 )	(2,839 )	(3,472 )
Translation adjustments and other	9	27	36
Balance, November 30, 2016	\$ 107	\$ 28	\$135
Costs incurred	85	—	85
Cash disbursements	(162 )	(28 )	(190 )
Balance, November 30, 2017	\$ 30	\$ —	\$30
Cash disbursements	(30 )	—	(30 )
Balance, November 30, 2018	\$ —	\$ —	\$—

## Note 14: Income Taxes

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

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
U.S.	\$75,667	\$ 77,442	\$ 78,477
Foreign	3,313	(11,855 )	(113,757 )
Total	\$78,980	\$ 65,587	\$ (35,280 )

The provision for income taxes is comprised of the following (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Current:			
Federal	\$8,979	\$ 23,739	\$ 12,934
State	1,387	2,461	3,178
Foreign	3,088	1,496	3,027
Total current	13,454	27,696	19,139
Deferred:			
Federal	2,738	1,548	6,203
State	515	61	(1,963 )



Foreign	(1,218 )	(1,135 )	(2,933 )
Total deferred	2,035	474	1,307
Total	\$15,489	\$ 28,170	\$ 20,446

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A reconciliation of the income taxes incurred at the U.S. Federal statutory rate compared to the effective tax rate is as follows (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Tax at U.S. Federal statutory rate	\$ 17,549	\$ 22,955	\$ (12,348 )
Foreign rate differences	1,042	4,575	7,689
Effects of foreign operations included in U.S. Federal provision	550	(186 )	(1,244 )
State income taxes, net	1,746	1,702	2,977
Research credits	(302 )	(251 )	(838 )
Domestic production activities deduction	(1,283 )	(2,670 )	(1,925 )
Tax-exempt interest	(66 )	(101 )	(76 )
Nondeductible stock-based compensation	502	808	740
Meals and entertainment	192	276	234
Compensation subject to 162(m)	227	208	—
Uncertain tax positions and tax settlements	(1,626 )	429	(1,701 )
Remeasurement of net deferred tax liabilities due to the Act	(1,660 )	—	—
Net excess tax benefit or detriment from stock-based compensation plans	(861 )	—	—
Prior period adjustment	—	—	(2,700 )
Release of valuation allowance on state research and development credits	—	—	(2,748 )
Goodwill Impairment	—	—	32,200
Other	(521 )	425	186
Total	\$ 15,489	\$ 28,170	\$ 20,446

During the preparation of our consolidated financial statements for the three months ended May 31, 2016, we identified an error in our prior year income tax provision whereby income tax expense was overstated for the year ended November 30, 2015 by \$2.7 million related to our tax treatment of an intercompany gain. We determined that the error is not material to the prior year financial statements. We also concluded that recording an out-of-period correction would not be material and therefore corrected this error by recording an out-of-period \$2.7 million tax benefit in our interim financial statements for the periods ended May 31, 2016, which is included in our fiscal year 2016 results.

During the first quarter of fiscal year 2018, the Tax Cuts and Jobs Act (the "Act") was enacted in the United States. The Act reduced the U.S. federal corporate tax rate from 35% to 21% effective January 1, 2018, requires companies to pay a one-time transition tax on earnings (if any) of certain foreign subsidiaries that were previously tax deferred, moves to a territorial tax system and creates new taxes on certain foreign sourced earnings. In December 2017, the SEC issued SAB 118, which directs taxpayers to consider the impact of the U.S. legislation as "provisional" when it does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the change in tax law. As of November 30, 2018, the accounting for the change in tax law is complete with respect to provisions of the Act that became effective in fiscal year 2018.

During fiscal year 2018, the Company recognized a \$1.7 million income tax benefit due to the re-measurement of its net U.S. deferred tax liabilities due to the Act.

The Act provides for a one-time deemed repatriation of post-1986 undistributed foreign subsidiary earnings and profits through December 31, 2017. However, the Company will not incur the one-time deemed repatriation tax due to the Company's foreign subsidiaries being in a net accumulated deficit position.

Other international provisions of the Act become effective in fiscal year 2019 for the Company. The global intangible low-taxed income ("GILTI") provisions require the Company to include in its U.S. income tax base foreign subsidiary earnings in excess of an allowable return of the foreign subsidiary's tangible assets. The Company expects that it will be subject to incremental U.S. tax resulting from GILTI inclusions beginning in fiscal year 2019.

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The components of deferred tax assets and liabilities are as follows (in thousands):

	November 30, 2018	November 30, 2017	
Deferred tax assets:			
Accounts receivable	\$ 134	\$ 226	
Other assets	—	225	
Accrued compensation	1,863	5,456	
Accrued liabilities and other	2,106	5,402	
Deferred revenue	1,348	1,160	
Stock-based compensation	3,166	3,436	
Tax credit and loss carryforwards	24,338	31,441	
Gross deferred tax assets	32,955	47,346	
Valuation allowance	(8,790	) (1,537	)
Total deferred tax assets	24,165	45,809	
Deferred tax liabilities:			
Goodwill	(17,966	) (26,484	)
Unrealized FX gains	—	(644	)
Depreciation and amortization	(7,151	) (20,367	)
Prepaid expenses	(923	) —	
Total deferred tax liabilities	(26,040	) (47,495	)
Total	\$ (1,875	) \$ (1,686	)

The valuation allowance primarily applies to net operating loss carryforwards and unutilized tax credits in jurisdictions or under conditions where realization is not more likely than not. The \$7.3 million increase in the valuation allowance during fiscal year 2018 primarily relates to losses in a foreign subsidiary that are more likely than not going to expire prior to utilization. The \$1.7 million and \$5.0 million decreases in the valuation allowance during fiscal years 2017 and 2016, respectively, primarily relate to a foreign subsidiary that utilized net operating loss carryforwards in fiscal year 2017 that had a valuation allowance recorded against them and to the release of the valuation allowance on state research and development tax credits in fiscal year 2016.

At November 30, 2018, we have federal and foreign net operating loss carryforwards of \$146.5 million expiring on various dates through 2034 and \$0.1 million that may be carried forward indefinitely. In addition, we have state net operating loss carryforwards of \$4.8 million expiring on various dates through 2022. At November 30, 2018, we have state tax credit carryforwards of approximately \$2.9 million expiring on various dates through 2033 and \$2.3 million that may be carried forward indefinitely. In addition, we have federal tax credit carryforwards of approximately \$0.9 million expiring on various dates through 2036.

It is our intention to indefinitely reinvest the earnings of our non-U.S. subsidiaries. We have not provided for U.S. income taxes on the undistributed earnings of non-U.S. subsidiaries, which totaled \$92.2 million as of November 30, 2018, as these earnings have been indefinitely reinvested. It is not practicable to determine the amount of the unrecognized deferred tax liability if the undistributed earnings were to be repatriated. These earnings could be subject to non-U.S. withholding taxes and other federal, state and/or foreign taxes if they were remitted to the U.S. Additional regulatory guidance is intended to be issued that will address certain issues arising from the enactment of the Act that will assist the Company in estimating how much additional taxes might be payable if the undistributed earnings were to be repatriated.

As of November 30, 2018, the total amount of unrecognized tax benefits was \$5.8 million, of which \$3.6 million was recorded in other noncurrent liabilities on the consolidated balance sheet and \$2.2 million of deferred tax assets, principally related to U.S and foreign net operating loss carry-forwards, have not been recorded.

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A reconciliation of the balance of our unrecognized tax benefits is as follows (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Balance, beginning of year	\$7,520	\$ 7,046	\$ 4,779
Tax positions related to current year	—	785	1,106
Tax positions related to a prior period	(15 )	(120 )	1,638
Settlements with tax authorities	(39 )	(155 )	(21 )
Lapses due to expiration of the statute of limitations	(1,679 )	(36 )	(456 )
Balance, end of year	\$5,787	\$ 7,520	\$ 7,046

If recognized, all amounts of unrecognized tax benefits would affect the effective tax rate.

We recognize interest and penalties related to uncertain tax positions as a component of our provision for income taxes. In fiscal year 2018 a net benefit of \$0.1 million was recorded to the provision for income taxes related to estimated interest and penalties of \$0.2 million offset by a reduction of \$0.3 million related to statute expirations. In fiscal year 2017 estimated interest and penalties of \$0.2 million were recorded to the provision for income taxes. In fiscal year 2016 there was a minimal amount of estimated interest and penalties recorded in the provision for income taxes. We have accrued \$0.4 million and \$0.5 million of estimated interest and penalties at November 30, 2018 and 2017, respectively. We do not expect any significant changes to the amount of unrecognized tax benefits in the next twelve months.

Our Federal income tax returns have been examined or are closed by statute for all years prior to fiscal year 2015. State income tax authorities in certain jurisdictions are examining state income tax returns and the Company does not expect the results of these examinations to be material to our consolidated balance sheets, cash flows or statements of income. Our state income tax returns have been examined or are closed by statute for all years prior to fiscal year 2013, and we are no longer subject to audit for those periods.

Tax authorities for certain non-U.S. jurisdictions are also examining tax returns and the Company does not expect the results of these examinations to be material to our consolidated balance sheets, cash flows or statements of income. With some exceptions, we are generally no longer subject to tax examinations in non-U.S. jurisdictions for years prior to fiscal year 2013.

#### Note 15: Earnings (Loss) Per Share

We compute basic earnings (loss) per share using the weighted average number of common shares outstanding. We compute diluted earnings (loss) per share using the weighted average number of common shares outstanding plus the effect of outstanding dilutive stock options, restricted stock units and deferred stock units, using the treasury stock method. The following table sets forth the calculation of basic and diluted earnings per share from continuing operations (in thousands, except per share data):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Net income (loss)	\$63,491	\$ 37,417	\$ (55,726 )
Weighted average shares outstanding	45,561	48,129	49,481
Dilutive impact from common stock equivalents	574	387	—
Diluted weighted average shares outstanding	46,135	48,516	49,481

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Basic earnings (loss) per share	\$1.39	\$ 0.78	\$ (1.13	)
Diluted earnings (loss) per share	\$1.38	\$ 0.77	\$ (1.13	)

We excluded stock awards representing approximately 602,000 shares, 494,000 shares, and 2,058,000 shares of common stock from the calculation of diluted earnings per share in the fiscal years ended November 30, 2018, 2017 and 2016, respectively, because these awards were anti-dilutive.

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## Note 16: Business Segments and International Operations

Operating segments are components of an enterprise that engage in business activities for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and assess performance. Our chief operating decision maker is our Chief Executive Officer.

The changes made to our organization during fiscal years 2016 and 2017, as discussed in Note 13, did not change our determination of the three reportable segments as our organizational structure maintains the focus of the three business segments.

We do not manage our assets or capital expenditures by segment or assign other income (expense) and income taxes to segments. We manage and report such items on a consolidated company basis.

The following table provides revenue and contribution margin from our reportable segments and reconciles to the consolidated income from continuing operations before income taxes:

(In thousands)	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Segment revenue:			
OpenEdge	\$278,258	\$ 276,172	\$ 276,267
Data Connectivity and Integration	39,030	40,955	48,009
Application Development and Deployment	79,877	80,445	81,065
Total revenue	397,165	397,572	405,341
Segment costs of revenue and operating expenses:			
OpenEdge	67,820	72,497	72,938
Data Connectivity and Integration	7,634	9,329	12,760
Application Development and Deployment	27,087	26,645	40,180
Total costs of revenue and operating expenses	102,541	108,471	125,878
Segment contribution margin:			
OpenEdge	210,438	203,675	203,329
Data Connectivity and Integration	31,396	31,626	35,249
Application Development and Deployment	52,790	53,800	40,885
Total contribution margin	294,624	289,101	279,463
Other unallocated expenses (1)	208,626	218,487	309,172
Income (loss) from operations	85,998	70,614	(29,709 )
Other expense, net	(7,018 )	(5,027 )	(5,571 )
Income (loss) before income taxes	\$78,980	\$ 65,587	\$ (35,280 )

(1) The following expenses are not allocated to our segments as we manage and report our business in these functional areas on a consolidated basis only: certain product development and corporate sales and marketing expenses, customer support, administration, amortization and impairment of acquired intangibles, loss on assets held for sale, impairment of goodwill, stock-based compensation, fees related to shareholder activist, restructuring, and acquisition-related expenses.



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Our revenues are derived from licensing our products, and from related services, which consist of maintenance, hosting services, and consulting and education. Information relating to revenue from external customers by revenue type is as follows (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
Software licenses	\$ 122,137	\$ 124,406	\$ 134,863
Maintenance	244,822	241,398	238,377
Services	30,206	31,768	32,101
Total	\$397,165	\$ 397,572	\$ 405,341

In the following table, revenue attributed to the United States includes sales to customers in the U.S. and sales to certain multinational organizations. Revenue from Canada, EMEA, Latin America and the Asia Pacific region includes sales to customers in each region plus sales from the U.S. to distributors in these regions. Information relating to revenue from external customers from different geographical areas is as follows (in thousands):

	Fiscal Year Ended		
	November 30, 2018	November 30, 2017	November 30, 2016
United States	\$204,151	\$ 206,450	\$ 212,312
Canada	15,771	17,492	16,891
EMEA	137,972	130,359	130,818
Latin America	17,637	21,158	21,156
Asia Pacific	21,634	22,113	24,164
Total	\$397,165	\$ 397,572	\$ 405,341

No country outside of the U.S. accounted for more than 10% of our consolidated revenue in any year presented. Long-lived assets totaled \$25.8 million, \$39.5 million and \$45.4 million in the U.S. and \$4.9 million, \$2.8 million and \$4.7 million outside of the U.S. at the end of fiscal years 2018, 2017 and 2016, respectively. No individual country outside of the U.S. accounted for more than 10% of our consolidated long-lived assets.

## Note 17: Selected Quarterly Financial Data (unaudited)

(in thousands, except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Fiscal year 2018:				
Revenue	\$94,047	\$96,102	\$95,683	\$111,333
Gross profit	77,144	79,459	78,987	94,602
Income from operations	17,768	21,788	22,183	24,259
Net income	12,912	15,403	16,746	18,430
Basic earnings per share	0.28	0.34	0.37	0.41
Diluted earnings per share	0.27	0.33	0.37	0.41
Fiscal year 2017:				
Revenue	\$90,970	\$93,213	\$97,310	\$116,079
Gross profit	75,212	75,846	79,235	98,120
Income from operations	1,222	20,284	20,299	28,809
Net (loss) income	(525)	10,341	11,172	16,429
Basic (loss) earnings per share	(0.01)	0.21	0.23	0.35

Diluted (loss) earnings per share (0.01 ) 0.21 0.23 0.34

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Note 18: Related Party Transactions

During fiscal year 2017, we acquired 100% of the outstanding securities of MightyMeeting, Inc. ("MightyMeeting"), a mobile collaboration and social publishing platform, for \$1.5 million. Dmitri Tcherevik, our Chief Technology Officer, was the founder and 50% owner of MightyMeeting. The transaction did not have a material impact on our financial condition or results of operations. The transaction has been accounted for as an asset acquisition. In connection with the acquisition, we recorded a deferred tax liability resulting from the difference in book-to-tax basis of the acquired asset. As such, we recorded an intangible asset of \$2.4 million, which includes a deferred tax liability of \$0.9 million that is being amortized over five years beginning in the fourth quarter of fiscal year 2017.

We did not enter into any material related party transactions during fiscal years 2018 and 2016.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) Evaluation of disclosure controls and procedures

Our management maintains disclosure controls and procedures as defined in Rule 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934, as amended (the "Exchange Act") that are designed to provide reasonable assurance that information required to be disclosed in our reports filed or submitted under the Exchange Act is processed, recorded, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), as appropriate, to allow for timely decisions regarding required disclosure.

Our management, including the Chief Executive Officer and Chief Financial Officer, carried out an evaluation of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective to ensure that the information required to be disclosed in the reports filed or submitted by us under the Securities Exchange Act of 1934 was recorded, processed, summarized and reported within the requisite time periods and that such information was accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow for timely decisions regarding required disclosure.

(b) Management's Annual 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 Rule 13a-15(f). Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements. Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements.

Our management assessed the effectiveness of our internal control over financial reporting as of November 30, 2018. Our assessment was based on the framework in the updated Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our assessment we believe that as of November 30, 2018, our internal control over financial reporting is effective based on those criteria.

Deloitte & Touche LLP, our independent registered public accounting firm, which audited our consolidated financial statements, has issued an attestation report on our internal control over financial reporting, which is included in this Item 9A below.

(c) Changes in internal control over financial reporting

Our management, including our Chief Executive Officer and Chief Financial Officer, evaluated our “internal control over financial reporting” as defined in Exchange Act Rule 13a-15(f) to determine whether any changes in our internal control over financial reporting occurred during the fiscal quarter ended November 30, 2018 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, there were no changes in

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our internal control over financial reporting during the fiscal quarter ended November 30, 2018 that have materially affected, or are reasonably likely to materially affect our internal control over financial reporting.

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(d) Report of independent registered public accounting firm

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Progress Software Corporation

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Progress Software Corporation and subsidiaries (the "Company") as of November 30, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of November 30, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended November 30, 2018, of the Company and our report dated January 28, 2019, expressed an unqualified opinion on those financial statements.

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 Annual 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/ Deloitte & Touche LLP

Boston, Massachusetts  
January 28, 2019

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## Item 9B. Other Information

Not applicable.

## PART III

## Item 10. Directors, Executive Officers and Corporate Governance

## Executive and Other Key Officers of the Registrant

The following table sets forth certain information regarding our executive and other key officers.

Name	Age	Position
John Ainsworth	54	Senior Vice President, Products - Core
Stephen Faberman	49	Chief Legal Officer
Yogesh Gupta	58	President and Chief Executive Officer
Paul Jalbert	61	Chief Financial Officer
Loren Jarrett	44	Chief Marketing Officer
Tony Murphy	48	Chief Information Officer and Chief Information Security Officer
Gary Quinn	58	Senior Vice President, Core Field Organization
Faris Sweis	43	Senior Vice President, General Manager - DevTools
Dimitre Taslakov	42	Chief Talent Officer
Dmitri Tcherevik	49	Chief Technology Officer

Mr. Ainsworth became Senior Vice President, Products-Core in January 2017. Mr. Ainsworth is responsible for the product management, product marketing, technical support and engineering functions for Progress OpenEdge, Progress Corticon, Progress DataDirect Connect, Progress DataDirect Hybrid Data Pipeline, and Sitefinity. Prior to joining our company, Mr. Ainsworth was Senior Vice President, Engineering Services at CA Technologies, Inc., a position he assumed in April 2016. Prior to that time, Mr. Ainsworth held various senior positions within CA Technologies, Inc., which he joined through acquisition in 1994.

Mr. Faberman became Chief Legal Officer in December 2015. As Chief Legal Officer, Mr. Faberman is responsible for our legal and compliance, risk management, license compliance and corporate development functions. Prior to becoming Chief Legal Officer, Mr. Faberman was Senior Vice President, General Counsel. Mr. Faberman became General Counsel in December 2012 and a Senior Vice President in January 2014. Prior to that time, from October 2012 to December 2012, Mr. Faberman was Vice President, Acting General Counsel, and from January 2012 to October 2012, Mr. Faberman was Vice President, Deputy General Counsel. Prior roles included Senior Vice President, Corporate Counsel at Heritage Property Investment Trust, Inc. from October 2003 until October 2006 and Partner, Bingham McCutcheon LLP until October 2003.

Mr. Gupta became President and Chief Executive Officer in October 2016. Prior to that time, Mr. Gupta served as an advisor to various venture capital and private equity firms from October 2015 until September 2016. Prior to that time, Mr. Gupta was President and Chief Executive Officer at Kaseya, Inc., from June 2013 until July 2015, at which time, Mr. Gupta became Chairman of the Board of Directors, a position he held until October 2015. From July 2012 until June 2013, Mr. Gupta served as an advisor to various venture capital and private equity firms in several mergers and acquisitions opportunities. Mr. Gupta was previously President and Chief Executive Officer of FatWire Software from July 2007 until February 2012, prior to the acquisition of FatWire Software by Oracle Corporation. Prior roles included Chief Technology Officer at CA Technologies, with whom Mr. Gupta held various senior positions.



Mr. Jalbert became Chief Financial Officer in March 2017. As CFO, Mr. Jalbert is responsible for our finance and accounting, financial planning, treasury, tax and investor relations functions. Prior to becoming CFO, Mr. Jalbert was Vice President, Chief Accounting Officer, a position he assumed upon joining the Company in August 2012. Prior roles included Corporate Controller at publicly traded companies Keane and Genuity, as well as other senior financial positions at Verizon (formerly GTE).

Ms. Jarrett became Chief Marketing Officer in January 2017. As Chief Marketing Officer, Ms. Jarrett is responsible for our marketing strategy, corporate marketing, demand generation, and field marketing functions. Prior to that time, Ms. Jarrett was

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Chief Marketing Officer at Acquia, from 2015 until December 2016. Previously, Ms. Jarrett was Chief Marketing Officer at Kaseya, Inc. from 2013 until 2015, and Vice President, Corporate Charge Card and Loyalty Products at American Express, in 2013. Prior to that time, Ms. Jarrett was Vice President, Product Management and Strategy at Oracle Corporation from 2011 until 2012, and Senior Vice President of Marketing and Product Management at FatWire from 2007 until its acquisition by Oracle in 2011.

Mr. Murphy became Chief Information Officer in June 2017 and Chief Information Security Officer in September 2018. As our Chief Information Officer and Chief Information Security Officer, Mr. Murphy is responsible for the development and implementation of our overall technology strategy for all internal systems and business processes and for monitoring and preventing security related incidents. Prior to joining our company, Mr. Murphy was Vice President of Global IT at Stratus Technologies, from January 2013 until May 2017. Previously, Mr. Murphy was Director of IT and Business Systems at Acme Packet, Inc. from May 2011 until its acquisition by Oracle Corporation in 2013.

Mr. Quinn became Senior Vice President, Core Field Organization in August 2017. Mr. Quinn is responsible for global field operations for Progress OpenEdge, Progress Corticon, Progress DataDirect Connect, Progress DataDirect Hybrid Data Pipeline, and Sitefinity. Prior to joining our company, Mr. Quinn was President and Chief Executive Officer of FalconStor Software, Inc. Mr. Quinn joined FalconStor Software in April 2012 as vice president of sales and marketing for North America, and he was named executive vice president and chief operating officer (COO) in April 2013, interim CEO in June 2013 and CEO in July 2013. Prior roles included Executive Vice President of Global Partners and International Sales at CA Technologies until 2006 and Commissioner of Information Technology (CIO) at Suffolk County Department of Information Technology (DoIT) from 2008 until 2012.

Mr. Sweis became Senior Vice President and General Manager of DevTools in January 2017. As General Manager, Mr. Sweis is responsible for the sales, product management, product marketing, field marketing, technical support and engineering for our DevTools product. Prior to this role, Mr. Sweis was our Chief Transformation Officer, a position he assumed in May 2016. Mr. Sweis also became our Acting Chief Product Development Officer in August 2016. Prior to being named our Chief Transformation Officer, Mr. Sweis was Vice President, Development, a position he assumed upon acquisition of Telerik in December 2014. Prior to that time, Mr. Sweis was Chief Technology Officer at Telerik.

Mr. Taslakov became Chief Talent Officer in December 2014 upon our acquisition of Telerik. As Chief Talent Officer, Mr. Taslakov is responsible for talent and performance management, recruiting, compensation and benefits and facilities functions. Prior to the acquisition of Telerik, Mr. Taslakov was Chief Talent Officer of Telerik, a position he assumed in January 2014. Prior to that time, from November 2012 until December 2013, he was Telerik's Chief Revenue Officer. Prior to November 2012, Mr. Taslakov was Vice President of Business Development at Telerik.

Mr. Tcherevik became Chief Technology Officer in April 2017. As Chief Technology Officer, Mr. Tcherevik is responsible for leading our technology strategy for cognitive applications across our product portfolio as well as our future technology efforts. Prior to joining our company, Mr. Tcherevik was Chief Executive Officer of MightyMeeting, Inc., which he founded in 2010. Prior roles included Chief Technology Officer at FatWire Inc. from 2007 until 2010 and Vice President, Office of the Chief Technology Officer at CA Technologies until 2004.

## Code of Conduct

We have adopted a Code of Conduct that applies to all employees and directors. A copy of the Code of Conduct is publicly available on our website at [www.progress.com](http://www.progress.com). If we make any substantive amendments to the Code of Conduct or grant any waiver, including any implicit waiver, from the Code of Conduct to our executive officers or

directors, we will disclose the nature of such amendment or waiver in a Current Report on Form 8-K.

The remainder of the information required by Item 10 is incorporated by reference to our definitive Proxy Statement.

Item 11. Executive Compensation

The information required by Item 11 is incorporated by reference to our definitive Proxy Statement.

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## Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information related to securities authorized for issuance under equity compensation plans as of November 30, 2018 is as follows (in thousands, except per share data):

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-average Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available For Future Issuance
Equity compensation plans approved by stockholders <sup>(1)</sup>	1,762	(2)\$ 34.58	3,127 (3)
Equity compensation plans not approved by stockholders <sup>(4)</sup>	256	48.56	1,233
Total	2,018	\$ 37.82	4,360

(1) Consists of the 1992 Incentive and Nonqualified Stock Option Plan, 1994 Stock Incentive Plan, 1997 Stock Incentive Plan, 2008 Stock Option and Incentive Plan and 1991 Employee Stock Purchase Plan ("ESPP").

Includes 912,000 restricted stock units under our 2008 Plan. Does not include purchase rights accruing under the (2)ESPP because the purchase price (and therefore the number of shares to be purchased) will not be determined until the end of the purchase period.

(3)Includes 590,000 shares available for future issuance under the ESPP.

(4)Consists of the 2002 Nonqualified Stock Plan and the 2004 Inducement Plan described below.

We have adopted two equity compensation plans, the 2002 Nonqualified Stock Plan (2002 Plan) and the 2004 Inducement Stock Plan (2004 Plan), for which the approval of stockholders was not required. We intend that the 2004 Plan be reserved for persons to whom we may issue securities as an inducement to become employed by us pursuant to the rules and regulations of NASDAQ. Executive officers and members of the Board of Directors are not eligible for awards under the 2002 Plan. An executive officer would be eligible to receive an award under the 2004 Plan only as an inducement to join us. Awards under the 2002 Plan and the 2004 Plan may include nonqualified stock options, grants of conditioned stock, unrestricted grants of stock, grants of stock contingent upon the attainment of performance goals and stock appreciation rights. A total of 11,250,000 shares are issuable under the two plans, of which, 1,233,190 shares are available for future issuance.

The information required by Item 12 with respect to security ownership and our equity compensation plans may be found under the headings captioned "Information About Progress Software Common Stock Ownership" and "Equity Compensation Plan Information" in our definitive Proxy Statement and is incorporated by reference.

## Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by Item 13 is incorporated by reference to our definitive Proxy Statement.

## Item 14. Principal Accounting Fees and Services

The information required by Item 14 is incorporated by reference to our definitive Proxy Statement.

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PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Documents Filed as Part of this Annual Report on Form 10-K

1. Financial Statements (included in Item 8 of this Annual Report on Form 10-K):

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of November 30, 2018 and 2017

Consolidated Statements of Operations for the years ended November 30, 2018, 2017 and 2016

Consolidated Statements of Comprehensive Income (Loss) for the years ended November 30, 2018, 2017 and 2016

Consolidated Statements of Shareholders' Equity for the years ended November 30, 2018, 2017 and 2016

Consolidated Statements of Cash Flows for the years ended November 30, 2018, 2017 and 2016

Notes to Consolidated Financial Statements

2. Financial Statement Schedules

Financial statement schedules are omitted as they are either not required or the information is otherwise included in the consolidated financial statements.

(b) Exhibits

Documents listed below, except for documents followed by parenthetical numbers, are being filed as exhibits. Documents followed by parenthetical numbers are not being filed herewith and, pursuant to Rule 12b-32 of the General Rules and Regulations promulgated by the SEC under the Exchange Act, reference is made to such documents as previously filed as exhibits with the SEC. Our file number under the Exchange Act is 0-19417.

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2.1	<u>Securities Purchase Agreement, dated October 21, 2014, by and among Progress Software Corporation, Telerik AD, the Sellers identified therein, and the Securityholder Representative (1)</u>
2.2	<u>Plan of Domestication (2)</u>
3.1	<u>Certificate of Conversion from Non-Delaware Corporation to Delaware Corporation (3)</u>
3.2	<u>Certificate of Incorporation (4)</u>
3.2.1	<u>Certificate of Correction to Certification of Incorporation (5)</u>
3.3	<u>Amended and Restated By-Laws (6)</u>
4.1	<u>Specimen certificate for the Common Stock (7)</u>
10.1*	<u>1992 Incentive and Nonqualified Stock Option Plan (8)</u>
10.2*	<u>1994 Stock Incentive Plan (9)</u>
10.3*	<u>1997 Stock Incentive Plan, as amended and restated (10)</u>
10.4*	<u>Form of Employee Retention and Motivation Agreement as amended and restated, executed by each of the Executive Officers (other than the Chief Executive Officer) (11)</u>
10.5*	<u>2002 Nonqualified Stock Plan, as amended and restated (12)</u>
10.6*	<u>2004 Inducement Stock Plan, as amended and restated (13)</u>
10.7*	<u>Progress Software Corporation 1991 Employee Stock Purchase Plan, as amended and restated (14)</u>
10.8*	<u>Progress Software Corporation 2008 Stock Option and Incentive Plan, as amended and restated (15)</u>
10.9*	<u>Form of Notice of Grant of Stock Options and Grant Agreement under the Progress Software Corporation 2008 Stock Option and Incentive Plan (16)</u>
10.10*	<u>Progress Software Corporation Corporate Executive Bonus Plan (17)</u>
10.11*	<u>Progress Software Corporation 2018 Fiscal Year Non-Employee Directors Compensation Program (18)</u>
10.12*	<u>Form of Deferred Stock Unit Agreement under the Progress Software Corporation 2008 Stock Option and Incentive Plan (19)</u>
10.13*	<u>Form of Non-Qualified Stock Option Agreement for Non-Employee Directors under the Progress Software Corporation 2008 Stock Option and Incentive Plan (Initial Grant) (20)</u>
10.14*	<u>Form of Non-Qualified Stock Option Agreement for Non-Employee Directors under the Progress Software Corporation 2008 Stock Option and Incentive Plan (Annual Grant) (21)</u>
10.15*	<u>Form of Restricted Stock Unit Agreement under the Progress Software Corporation 2008 Stock Option and Incentive Plan (22)</u>
10.16*	<u>Amended and Restated Credit Agreement, dated as of November 20, 2017, by and among Progress Software Corporation, each of the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Wells Fargo Bank, N.A. and Citizens Bank, N.A., as Syndication Agents, and Bank of America, N.A., Citibank, N.A., Silicon Valley Bank, and Santander Bank, N.A., as Documentation Agents, and JPMorgan Chase Bank, N.A., as Sole Bookrunner and Sole Lead Arranger (23)</u>
10.17*	<u>Employment Agreement, dated October 10, 2016, by and between Progress Software Corporation and Yogesh Gupta (24)</u>
10.18*	<u>Employee Retention and Motivation Agreement, dated as of October 10, 2016, by and between Progress Software Corporation and Yogesh Gupta (25)</u>
10.19*	<u>Employment Agreement, dated March 24, 2017, by and between Progress Software Corporation and Paul Jalbert (26)</u>
21.1	<u>List of Subsidiaries of the Registrant</u>
23.1	<u>Consent of Deloitte &amp; Touche LLP, Independent Registered Public Accounting Firm</u>
31.1	<u>Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Yogesh Gupta</u>
31.2	<u>Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Paul Jalbert</u>
32.1	<u>Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>
101**	The following materials from Progress Software Corporation’s Annual Report on Form 10-K for the year ended November 30, 2018, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets as of November 30, 2018 and 2017, (ii) Consolidated Statements of Income for the years ended November 30, 2018, 2017 and 2016, (iii) Consolidated Statements of Comprehensive Income for the years

ended November 30, 2018, 2017 and 2016, (iv) Consolidated Statements of Shareholders' Equity for the years ended November 30, 2018, 2017 and 2016, and (v) Consolidated Statements of Cash Flows for the years ended November 30, 2018, 2017 and 2016.

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- (1) Incorporated by reference to Exhibit 2.1 of our Current Report on Form 8-K filed on October 27, 2014.
- (2) Incorporated by reference to Exhibit 2.1 of our Current Report on Form 8-K filed on May 14, 2015.
- (3) Incorporated by reference to Exhibit 3.1 of our Current Report on Form 8-K filed on May 14, 2015.
- (4) Incorporated by reference to Exhibit 3.2 of our Current Report on Form 8-K filed on May 14, 2015.
- (5) Incorporated by reference to Exhibit 3.2.1 of our Annual Report on Form 10-K for the year ended November 30, 2015.
- (6) Incorporated by reference to Exhibit 3.4 of our Current Report on Form 8-K filed on May 14, 2015.
- (7) Incorporated by reference to Exhibit 4.1 of our Annual Report on Form 10-K for the year ended November 30, 2011.
- (8) Incorporated by reference to Exhibit 10.1 of our Annual Report on Form 10-K for the year ended November 30, 2009.
- (9) Incorporated by reference to Exhibit 10.2 of our Annual Report on Form 10-K for the year ended November 30, 2009.
- (10) Incorporated by reference to Exhibit 10.3 of our Annual Report on Form 10-K for the year ended November 30, 2012.
- (11) Incorporated by reference to Exhibit 10.4 of our Annual Report on Form 10-K for the year ended November 30, 2013.
- (12) Incorporated by reference to Exhibit 10.5 of our Annual Report on Form 10-K for the year ended November 30, 2015.
- (13) Incorporated by reference to Exhibit 10.6 of our Annual Report on Form 10-K for the year ended November 30, 2015.
- (14) Incorporated by reference to Appendix A to our definitive Proxy Statement filed April 15, 2016.
- (15) Incorporated by reference to Annex A to our definitive Proxy Statement filed May 7, 2013.
- (16) Incorporated by reference to Exhibit 10.9 of our Annual Report on Form 10-K for the year ended November 30, 2013.
- (17) Incorporated by reference to Exhibit 10.10 of our Annual Report on Form 10-K for the year ended November 30, 2012.
- (18) Incorporated by reference to Exhibit 10.1 of our Quarterly Report on Form 10-Q for the quarter ended August 31, 2018.
- (19) Incorporated by reference to Exhibit 10.12 of our Annual Report on Form 10-K for the year ended November 30, 2013.
- (20) Incorporated by reference to Exhibit 10.13 of our Annual Report on Form 10-K for the year ended November 30, 2013.
- (21) Incorporated by reference to Exhibit 10.14 of our Annual Report on Form 10-K for the year ended November 30, 2013.
- (22) Incorporated by reference to Exhibit 10.15 of our Annual Report on Form 10-K for the year ended November 30, 2014.
- (23) Incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 27, 2017.
- (24) Incorporated by reference to Exhibit 10.1 to Form 8-K filed on October 14, 2016.
- (25) Incorporated by reference to Exhibit 10.2 to Form 8-K filed on October 14, 2016.
- (26) Incorporated by reference to Exhibit 10.1 to Form 8-K filed on March 31, 2017.

\* Management contract or compensatory plan or arrangement in which an executive officer or director of Progress Software Corporation participates.

Pursuant to Rule 406T of Regulations S-T, the Interactive Data Files on Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.



(c) Financial Statement Schedules

All schedules are omitted because they are not applicable or the required information is shown on the financial statements or notes hereto.

Item 16. Form 10-K Summary

Not applicable.

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## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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, on the 28th day of January 2019.

PROGRESS SOFTWARE  
CORPORATION

By: /s/ YOGESH K. GUPTA

Yogesh K. Gupta

President and Chief Executive Officer

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.

Signature	Title	Date
/s/ YOGESH K. GUPTA Yogesh K. Gupta	President and Chief Executive Officer (Principal Executive Officer)	January 28, 2019
/s/ PAUL A. JALBERT Paul A. Jalbert	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	January 28, 2019
/s/ JOHN R. EGAN John R. Egan	Non-Executive Chairman	January 25, 2019
/s/ PAUL T. DACIER Paul T. Dacier	Director	January 25, 2019
/s/ RAINER GAWLICK Rainer Gawlick	Director	January 25, 2019
/s/ CHARLES F. KANE Charles F. Kane	Director	January 25, 2019
/s/ SAMSKRITI KING Sanskriti King	Director	January 25, 2019
/s/ DAVID A. KRALL David A. Krall	Director	January 25, 2019
/s/ ANGELA TUCCI Angela Tucci	Director	January 25, 2019