UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended January 29, 2022

or

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

For the transition period from _____ to _____

Commission file number 001-39940

CISCO SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**77-0059951**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

170 West Tasman Drive
San Jose, California 95134
(Address of principal executive office and zip code)

(408) 526-4000
(Registrant's telephone number, including area code)

Not Applicable
(Former name, former address and formal fiscal year, if changed since last report.)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	CSCO	The Nasdaq Stock Market LLC

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	☐	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 ☒

Number of shares of the registrant's common stock outstanding as of February 17, 2022: 4,154,168,000

Cisco Systems, Inc.
Form 10-Q for the Quarter Ended January 29, 2022

INDEX

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited)

CISCO SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
(in millions, except par value)
(Unaudited)

	January 29, 2022	July 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 6,731	$ 9,175
Investments	14,382	15,343
Accounts receivable, net of allowance of $70 at January 29, 2022 and $109 at July 31, 2021	6,003	5,766
Inventories	2,059	1,559
Financing receivables, net	3,997	4,380
Other current assets	3,627	2,889
Total current assets	36,799	39,112
Property and equipment, net	2,140	2,338
Financing receivables, net	4,024	4,884
Goodwill	38,679	38,168
Purchased intangible assets, net	3,079	3,619
Deferred tax assets	4,269	4,360
Other assets	5,272	5,016
TOTAL ASSETS	$ 94,262	$ 97,497
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt	$ 2,502	$ 2,508
Accounts payable	2,101	2,362
Income taxes payable	837	801
Accrued compensation	3,364	3,818
Deferred revenue	12,268	12,148
Other current liabilities	4,843	4,620
Total current liabilities	25,915	26,257
Long-term debt	8,969	9,018
Income taxes payable	7,628	8,538
Deferred revenue	10,045	10,016
Other long-term liabilities	2,209	2,393
Total liabilities	54,766	56,222
Commitments and contingencies (Note 14)		
Equity:		
Cisco stockholders' equity:		
Preferred stock, $0.001 par value: 5 shares authorized; none issued and outstanding	—	—
Common stock and additional paid-in capital, $0.001 par value: 20,000 shares authorized; 4,151 and 4,217 shares issued and outstanding at January 29, 2022 and July 31, 2021, respectively	42,291	42,346
Accumulated deficit	(2,006)	(654)
Accumulated other comprehensive loss	(789)	(417)
Total equity	39,496	41,275
TOTAL LIABILITIES AND EQUITY	$ 94,262	$ 97,497

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per-share amounts)
(Unaudited)

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
REVENUE:				
Product	$ 9,353	$ 8,572	$ 18,882	$ 17,159
Service	3,367	3,388	6,738	6,730
Total revenue	12,720	11,960	25,620	23,889
COST OF SALES:				
Product	3,569	3,044	7,242	6,250
Service	1,102	1,132	2,276	2,274
Total cost of sales	4,671	4,176	9,518	8,524
GROSS MARGIN	8,049	7,784	16,102	15,365
OPERATING EXPENSES:				
Research and development	1,670	1,527	3,384	3,139
Sales and marketing	2,266	2,277	4,527	4,494
General and administrative	544	484	1,095	1,028
Amortization of purchased intangible assets	79	39	163	75
Restructuring and other charges	3	234	8	836
Total operating expenses	4,562	4,561	9,177	9,572
OPERATING INCOME	3,487	3,223	6,925	5,793
Interest income	111	161	232	335
Interest expense	(88)	(113)	(177)	(225)
Other income (loss), net	93	(16)	280	33
Interest and other income (loss), net	116	32	335	143
INCOME BEFORE PROVISION FOR INCOME TAXES	3,603	3,255	7,260	5,936
Provision for income taxes	630	710	1,307	1,217
NET INCOME	$ 2,973	$ 2,545	$ 5,953	$ 4,719
Net income per share:				
Basic	$ 0.71	$ 0.60	$ 1.42	$ 1.12
Diluted	$ 0.71	$ 0.60	$ 1.41	$ 1.11
Shares used in per-share calculation:				
Basic	4,183	4,223	4,201	4,227
Diluted	4,205	4,234	4,222	4,239

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in millions)
(Unaudited)

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Net income	$ 2,973	$ 2,545	$ 5,953	$ 4,719
Available-for-sale investments:				
Change in net unrealized gains and losses, net of tax benefit (expense) of $47 and $75 for the second quarter and first six months of fiscal 2022, respectively, and $0 and $17 for the corresponding periods of fiscal 2021, respectively	(138)	6	(221)	(18)
Net (gains) losses reclassified into earnings, net of tax (benefit) expense of $3 and $5 for the second quarter and first six months of fiscal 2022, respectively, and $2 and $7 for the corresponding periods of fiscal 2021, respectively	(7)	(7)	(11)	(17)
	(145)	(1)	(232)	(35)
Cash flow hedging instruments:				
Change in unrealized gains and losses, net of tax benefit (expense) of $(3) and $(4) for the second quarter and first six months of fiscal 2022, respectively, and $1 for each of the corresponding periods of fiscal 2021	7	(2)	14	(4)
Net (gains) losses reclassified into earnings, net of tax (benefit) expense of $1 for each of the second quarter and first six months of fiscal 2022, respectively, and $0 and $1 for the corresponding periods of fiscal 2021, respectively	(1)	(3)	(2)	(4)
	6	(5)	12	(8)
Net change in cumulative translation adjustment and actuarial gains and losses net of tax benefit (expense) of $0 and $9 for the second quarter and first six months of fiscal 2022, respectively, and $(2) and $(3) for the corresponding periods of fiscal 2021, respectively	(177)	235	(152)	344
Other comprehensive income (loss)	(316)	229	(372)	301
Comprehensive income	$ 2,657	$ 2,774	$ 5,581	$ 5,020

See Notes to Consolidated Financial Statements.

Table of Contents

CISCO SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)
(Unaudited)

	Six Months Ended	
	January 29, 2022	January 23, 2021
Cash flows from operating activities:		
Net income	$ 5,953	$ 4,719
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation, amortization, and other	1,049	887
Share-based compensation expense	930	874
Provision (benefit) for receivables	8	(10)
Deferred income taxes	(138)	(91)
(Gains) losses on divestitures, investments and other, net	(323)	(86)
Change in operating assets and liabilities, net of effects of acquisitions and divestitures:		
Accounts receivable	(308)	1,245
Inventories	(506)	(145)
Financing receivables	1,241	748
Other assets	(780)	(212)
Accounts payable	(250)	(358)
Income taxes, net	(876)	(836)
Accrued compensation	(437)	125
Deferred revenue	202	226
Other liabilities	123	(16)
Net cash provided by operating activities	5,888	7,070
Cash flows from investing activities:		
Purchases of investments	(3,937)	(6,025)
Proceeds from sales of investments	1,402	1,374
Proceeds from maturities of investments	3,185	3,373
Acquisitions, net of cash and cash equivalents acquired and divestitures	(361)	(860)
Purchases of investments in privately held companies	(124)	(95)
Return of investments in privately held companies	104	58
Acquisition of property and equipment	(232)	(358)
Proceeds from sales of property and equipment	5	9
Other	(11)	(4)
Net cash provided by (used in) investing activities	31	(2,528)
Cash flows from financing activities:		
Issuances of common stock	306	306
Repurchases of common stock—repurchase program	(5,105)	(1,569)
Shares repurchased for tax withholdings on vesting of restricted stock units	(411)	(317)
Short-term borrowings, original maturities of 90 days or less, net	959	—
Issuances of debt	1,049	—
Repayments of debt	(2,000)	—
Dividends paid	(3,102)	(3,041)
Other	(65)	70
Net cash used in financing activities	(8,369)	(4,551)
Net decrease in cash, cash equivalents, and restricted cash	(2,450)	(9)
Cash, cash equivalents, and restricted cash, beginning of period	9,942	11,812
Cash, cash equivalents, and restricted cash, end of period	$ 7,492	$ 11,803
Supplemental cash flow information:		
Cash paid for interest	$ 184	$ 220
Cash paid for income taxes, net	$ 2,320	$ 2,142

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(in millions, except per-share amounts)
(Unaudited)

Three Months Ended January 29, 2022	Shares of Common Stock	Common Stock and Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Total Equity
Balance at October 30, 2021	4,217	$ 42,621	$ 553	$ (473)	$ 42,701
Net income			2,973		2,973
Other comprehensive loss				(316)	(316)
Issuance of common stock	22	306			306
Repurchase of common stock	(82)	(836)	(3,988)		(4,824)
Shares repurchased for tax withholdings on vesting of restricted stock units	(6)	(278)			(278)
Cash dividends declared ($0.37 per common share)			(1,541)		(1,541)
Share-based compensation		477			477
Other		1	(3)		(2)
Balance at January 29, 2022	4,151	$ 42,291	$ (2,006)	$ (789)	$ 39,496

Six Months Ended January 29, 2022	Shares of Common Stock	Common Stock and Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Equity
Balance at July 31, 2021	4,217	$ 42,346	$ (654)	$ (417)	$ 41,275
Net income			5,953		5,953
Other comprehensive loss				(372)	(372)
Issuance of common stock	29	306			306
Repurchase of common stock	(87)	(882)	(4,198)		(5,080)
Shares repurchased for tax withholdings on vesting of restricted stock units	(8)	(411)			(411)
Cash dividends declared ($0.74 per common share)			(3,102)		(3,102)
Share-based compensation		930			930
Other		2	(5)		(3)
Balance at January 29, 2022	4,151	$ 42,291	$ (2,006)	$ (789)	$ 39,496

CISCO SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF EQUITY
(in millions, except per-share amounts)
(Unaudited)

Three Months Ended January 23, 2021	Shares of Common Stock	Common Stock and Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Equity
Balance at October 24, 2020	4,222	$ 41,360	$ (2,756)	$ (447)	$ 38,157
Net income			2,545		2,545
Other comprehensive income				229	229
Issuance of common stock	24	305			305
Repurchase of common stock	(19)	(183)	(618)		(801)
Shares repurchased for tax withholdings on vesting of restricted stock units	(6)	(228)			(228)
Cash dividends declared ($0.36 per common share)			(1,522)		(1,522)
Share-based compensation		436			436
Balance at January 23, 2021	4,221	$ 41,690	$ (2,351)	$ (218)	$ 39,121

Six Months Ended January 23, 2021	Shares of Common Stock	Common Stock and Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Equity
Balance at July 25, 2020	4,237	$ 41,202	$ (2,763)	$ (519)	$ 37,920
Net income			4,719		4,719
Other comprehensive income				301	301
Issuance of common stock	31	306			306
Repurchase of common stock	(39)	(375)	(1,226)		(1,601)
Shares repurchased for tax withholdings on vesting of restricted stock units	(8)	(317)			(317)
Cash dividends declared ($0.72 per common share)			(3,043)		(3,043)
Effect of adoption of accounting standard			(38)		(38)
Share-based compensation		874			874
Balance at January 23, 2021	4,221	$ 41,690	$ (2,351)	$ (218)	$ 39,121

CISCO SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Organization and Basis of Presentation

The fiscal year for Cisco Systems, Inc. (the "Company," "Cisco," "we," "us," or "our") is the 52 or 53 weeks ending on the last Saturday in July. Fiscal 2022 is a 52-week fiscal year and fiscal 2021 was a 53-week fiscal year. The Consolidated Financial Statements include our accounts and those of our subsidiaries. All intercompany accounts and transactions have been eliminated. We conduct business globally and are primarily managed on a geographic basis in the following three geographic segments: the Americas; Europe, Middle East, and Africa (EMEA); and Asia Pacific, Japan, and China (APJC).

We have prepared the accompanying financial data as of January 29, 2022 and for the second quarter and first six months of fiscal 2022 and 2021, without audit, pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (SEC). Certain information and footnote disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles in the United States (GAAP) have been condensed or omitted pursuant to such rules and regulations. The July 31, 2021 Consolidated Balance Sheet was derived from audited financial statements, but does not include all disclosures required by accounting principles generally accepted in the United States. However, we believe that the disclosures are adequate to make the information presented not misleading. These Consolidated Financial Statements should be read in conjunction with the Consolidated Financial Statements and the notes thereto included in our Annual Report on Form 10-K for the fiscal year ended July 31, 2021.

The preparation of financial statements and related disclosures in conformity with GAAP requires us to make judgments, assumptions, and estimates that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. The inputs into certain of our judgments, assumptions, and estimates considered the economic implications of the COVID-19 pandemic on our critical and significant accounting estimates. The actual results that we experience may differ materially from our estimates. As the COVID-19 pandemic continues, many of our estimates could require increased judgment and carry a higher degree of variability and volatility. As events continue to evolve our estimates may change materially in future periods.

In the opinion of management, all normal recurring adjustments necessary to state fairly the consolidated balance sheet as of January 29, 2022, the results of operations, the statements of comprehensive income and the statements of equity for the second quarter and first six months of fiscal 2022 and 2021, and the statements of cash flows for the first six months of fiscal 2022 and 2021, as applicable, have been made. The results of operations for the second quarter and first six months of fiscal 2022 are not necessarily indicative of the operating results for the full fiscal year or any future periods.

Our consolidated financial statements include our accounts and entities consolidated under the variable interest and voting models. The noncontrolling interests attributed to these investments, if material, are presented as a separate component from our equity in the equity section of the Consolidated Balance Sheets. The share of earnings attributable to the noncontrolling interests are not presented separately in the Consolidated Statements of Operations as these amounts are not material for any of the fiscal periods presented.

Certain reclassifications have been made to the amounts in prior periods in order to conform to the current period's presentation. We have evaluated subsequent events through the date that the financial statements were issued.

2. Recent Accounting Pronouncements

(a) New Accounting Updates Recently Adopted

Acquired Revenue Contracts with Customers in Business Combination In October 2021, the Financial Accounting Standards Board (FASB) issued an accounting standard update that requires companies to apply Accounting Standards Codification 606 to recognize and measure contract assets and contract liabilities from contracts with customers acquired in a business combination. We early adopted this accounting standard update beginning in the first quarter of fiscal 2022 and it did not have a material impact on our Consolidated Financial Statements. The ongoing impact of this standard will be fact dependent on the transactions within its scope.

(b) Recent Accounting Standards or Updates Not Yet Effective

Reference Rate Reform In March 2020, the FASB issued an accounting standard update and subsequent amendments that provide optional expedients and exceptions to the current guidance on contract modification and hedging relationships to ease the financial reporting burden of the expected market transition from the London InterBank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This accounting standard update was effective upon issuance and may be applied prospectively through December 31, 2022. We are currently evaluating the impact of this accounting standard update on our Consolidated Financial Statements.

3. Revenue

We enter into contracts with customers that can include various combinations of products and services which are generally distinct and accounted for as separate performance obligations. As a result, our contracts may contain multiple performance obligations. We determine whether arrangements are distinct based on whether the customer can benefit from the product or service on its own or together with other resources that are readily available and whether our commitment to transfer the product or service to the customer is separately identifiable from other obligations in the contract. We classify our hardware, perpetual software licenses, and software-as-a-service (SaaS) as distinct performance obligations. Term software licenses represent multiple obligations, which include software licenses and software maintenance. In transactions where we deliver hardware or software, we are typically the principal and we record revenue and costs of goods sold on a gross basis. We refer to our term software licenses, security software licenses, SaaS, and associated service arrangements as subscription offers.

We recognize revenue upon transfer of control of promised goods or services in a contract with a customer in an amount that reflects the consideration we expect to receive in exchange for those products or services. Transfer of control occurs once the customer has the contractual right to use the product, generally upon shipment, electronic delivery (or when the software is available for download by the customer), or once title and risk of loss has transferred to the customer. Transfer of control can also occur over time for software maintenance and services as the customer receives the benefit over the contract term. Our hardware and perpetual software licenses are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses include multiple performance obligations where the term licenses are recognized upfront upon transfer of control, with the associated software maintenance revenue recognized ratably over the contract term as services and software updates are provided. SaaS arrangements do not include the right for the customer to take possession of the software during the term, and therefore have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term as the customer consumes the services. On our product sales, we record consideration from shipping and handling on a gross basis within net product sales. We record our revenue net of any associated sales taxes.

An allowance for future sales returns is established based on historical trends in product return rates. The allowance for future sales returns as of January 29, 2022 and July 31, 2021 was $46 million and $55 million, respectively, and was recorded as a reduction of our accounts receivable and revenue.

Significant Judgments

Revenue is allocated among these performance obligations in a manner that reflects the consideration that we expect to be entitled to for the promised goods or services based on standalone selling prices (SSP). SSP is estimated for each distinct performance obligation and judgment may be required in their determination. The best evidence of SSP is the observable price of a product or service when we sell the goods separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, we determine SSP using information that may include market conditions and other observable inputs.

We assess relevant contractual terms in our customer contracts to determine the transaction price. We apply judgment in identifying contractual terms and determining the transaction price as we may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration includes potential contractual penalties and various rebate, cooperative marketing and other incentive programs that we offer to our distributors, channel partners and customers. When determining the amount of revenue to recognize, we estimate the expected usage of these programs, applying the expected value or most likely estimate and update the estimate at each reporting period as actual utilization becomes available. We also consider the customers' right of return in determining the transaction price, where applicable.

We assess certain software licenses, such as for security software, that contain critical updates or upgrades which customers can download throughout the contract term. Without these updates or upgrades, the functionality of the software would diminish over a relatively short time period. These updates or upgrades provide the customer the full functionality of the purchased security software licenses and are required to maintain the security license's utility as the risks and threats in the environment are rapidly changing. In these circumstances, the revenue from these software arrangements is recognized as a single performance obligation satisfied over the contract term.

(a) Disaggregation of Revenue

We disaggregate our revenue into groups of similar products and services that depict the nature, amount, and timing of revenue and cash flows for our various offerings. The sales cycle, contractual obligations, customer requirements, and go-to-market strategies differ for each of our product categories, resulting in different economic risk profiles for each category. Effective in the first quarter of fiscal 2022, we began reporting our product and service revenue in the following categories: Secure, Agile Networks; Hybrid Work; End-to-End Security; Internet for the Future; Optimized Application Experiences; Other Products; and Services. This change will better align our product categories with our strategic priorities. The following table presents this disaggregation of revenue (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Product revenue:				
Secure, Agile Networks	$ 5,898	$ 5,489	$ 11,866	$ 10,923
Hybrid Work	1,067	1,167	2,176	2,360
End-to-End Security	883	822	1,778	1,684
Internet for the Future	1,322	931	2,697	1,872
Optimized Application Experiences	180	161	361	314
Other Products	2	3	5	6
Total Product	9,353	8,572	18,882	17,159
Services	3,367	3,388	6,738	6,730
Total	$ 12,720	$ 11,960	$ 25,620	$ 23,889

Amounts may not sum due to rounding.

Secure, Agile Networks consists of our core networking technologies of switching, enterprise routing, wireless, and compute products. These technologies consist of both hardware and software offerings, including software licenses and SaaS, that help our customers build networks, automate, orchestrate, integrate, and digitize data. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Hybrid Work consists of our collaboration offerings. These products consist primarily of software offerings, including software licenses and SaaS, as well as hardware. Our perpetual software and hardware in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

End-to-End Security consists of our overall security offerings. These products consist of both hardware and software offerings, including software licenses and SaaS. Updates and upgrades for the term software licenses are critical for our software to perform its intended commercial purpose because of the continuous need for our software to secure our customers' network environments against frequent threats. Therefore, security software licenses are generally represented by a single distinct performance obligation with revenue recognized ratably over the contract term. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Internet for the Future consists of our routed optical networking, public 5G, silicon, and optics offerings. These products consist primarily of both hardware and software offerings, including software licenses and SaaS. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Optimized Application Experiences consists of our full stack observability and cloud-native platform offerings. These products consist primarily of software offerings, including software licenses and SaaS. Our perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

In addition to our product offerings, we provide a broad range of service and support options for our customers, including technical support services and advanced services. Technical support services represent the majority of these offerings which are distinct performance obligations that are satisfied over time with revenue recognized ratably over the contract term. Advanced services are distinct performance obligations that are satisfied over time with revenue recognized as services are delivered.

The sales arrangements as discussed above are typically made pursuant to customer purchase orders based on master purchase or partner agreements. Cash is received based on our standard payment terms which is typically 30 days. We provide financing arrangements to customers for all of our hardware, software and service offerings. Refer to Note 9 for additional information. For these arrangements, cash is typically received over time.

(b) Contract Balances

Accounts Receivable

Accounts receivable, net was $6.0 billion as of January 29, 2022 compared to $5.8 billion as of July 31, 2021, as reported on the Consolidated Balance Sheets.

The allowances for credit loss for our accounts receivable are summarized as follows (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Allowance for credit loss at beginning of period	$ 114	$ 125	$ 109	$ 143
Provisions (benefits)	17	(15)	36	(1)
Recoveries (write-offs), net	(52)	(8)	(66)	(14)
Foreign exchange and other	(9)	—	(9)	(26)
Allowance for credit loss at end of period	$ 70	$ 102	$ 70	$ 102

Contract Assets and Liabilities

Gross contract assets by our internal risk ratings are summarized as follows (in millions):

	January 29, 2022	July 31, 2021
1 to 4	$ 464	$ 521
5 to 6	825	770
7 and Higher	164	166
Total	$ 1,453	$ 1,457

Contract assets consist of unbilled receivables and are recorded when revenue is recognized in advance of scheduled billings to our customers. These amounts are primarily related to software and service arrangements where transfer of control has occurred but we have not yet invoiced. Our contract assets for these unbilled receivables, net of allowances, was $1.4 billion as of both January 29, 2022 and July 31, 2021, and were included in other current assets and other assets.

Contract liabilities consist of deferred revenue. Deferred revenue was $22.3 billion as of January 29, 2022 compared to $22.2 billion as of July 31, 2021. We recognized approximately $3.3 billion and $7.4 billion of revenue during the second quarter and first six months of fiscal 2022, respectively, that was included in the deferred revenue balance at July 31, 2021.

(c) Capitalized Contract Acquisition Costs

We capitalize direct and incremental costs incurred to acquire contracts, primarily sales commissions, for which the associated revenue is expected to be recognized in future periods. We incur these costs in connection with both initial contracts and renewals. These costs are initially deferred and typically amortized over the term of the customer contract which corresponds to the period of benefit. Deferred sales commissions were $999 million and $967 million as of January 29, 2022 and July 31, 2021, respectively, and were included in other current assets and other assets. The amortization expense associated with these costs was $147 million and $317 million for the second quarter and first six months of fiscal 2022, respectively, and $129 million and $252 million for the corresponding periods of fiscal 2021, respectively, and was included in sales and marketing expenses.

4. Acquisitions and Divestitures

We completed two acquisitions during the first six months of fiscal 2022. A summary of the allocation of the total purchase consideration is presented as follows (in millions):

	Purchase Consideration	Net Tangible Assets Acquired (Liabilities Assumed)	Purchased Intangible Assets	Goodwill
Total acquisitions (two in total)	$ 351	$ 8	$ 16	$ 327

The total purchase consideration related to our acquisitions completed during the first six months of fiscal 2022 consisted of cash consideration and vested share-based awards assumed. The total cash and cash equivalents acquired from these acquisitions was approximately $6 million. Total transaction costs related to acquisition and divestiture activities were $38 million and $10 million for the first six months of fiscal 2022 and 2021, respectively. These transaction costs were expensed as incurred in general and administrative expenses ("G&A") in the Consolidated Statements of Operations.

The goodwill generated from acquisitions completed during the first six months of fiscal 2022 is primarily related to expected synergies. The goodwill is generally not deductible for income tax purposes.

The Consolidated Financial Statements include the operating results of each acquisition from the date of acquisition. Pro forma results of operations and the revenue and net income subsequent to the acquisition date for the acquisitions completed during the first six months of fiscal 2022 have not been presented because the effects of the acquisitions, individually and in the aggregate, were not material to our financial results.

5. Goodwill and Purchased Intangible Assets

(a) Goodwill

The following table presents the goodwill allocated to our reportable segments as of January 29, 2022 and during the first six months of fiscal 2022 (in millions):

	Balance at July 31, 2021	Acquisitions & Divestitures	Other	Balance at January 29, 2022
Americas	$ 23,673	$ 219	$ 224	$ 24,116
EMEA	9,094	82	(25)	9,151
APJC	5,401	26	(15)	5,412
Total	$ 38,168	$ 327	$ 184	$ 38,679

"Other" in the table above consists of purchase accounting adjustments as well as foreign currency translation.

(b) Purchased Intangible Assets

The following table presents details of our intangible assets acquired through acquisitions completed during the first six months of fiscal 2022 (in millions, except years):

	FINITE LIVES						INDEFINITE LIVES	
	TECHNOLOGY		CUSTOMER RELATIONSHIPS		OTHER		IPR&D	TOTAL
	Weighted-Average Useful Life (in Years)	Amount	Weighted-Average Useful Life (in Years)	Amount	Weighted-Average Useful Life (in Years)	Amount	Amount	Amount
Total acquisitions (two in total)	2.5	$ 12	2.0	$ 4	—	$ —	$ —	$ 16

The following tables present details of our purchased intangible assets (in millions):

January 29, 2022	Gross	Accumulated Amortization	Net
Purchased intangible assets with finite lives:			
Technology	$ 3,240	$ (1,369)	$ 1,871
Customer relationships	1,359	(633)	726
Other	70	(33)	37
Total purchased intangible assets with finite lives	4,669	(2,035)	2,634
In-process research and development, with indefinite lives	445	—	445
Total	$ 5,114	$ (2,035)	$ 3,079

July 31, 2021	Gross	Accumulated Amortization	Net
Purchased intangible assets with finite lives:			
Technology	$ 3,629	$ (1,437)	$ 2,192
Customer relationships	1,387	(523)	864
Other	71	(13)	58
Total purchased intangible assets with finite lives	5,087	(1,973)	3,114
In-process research and development, with indefinite lives	505	—	505
Total	$ 5,592	$ (1,973)	$ 3,619

Purchased intangible assets include intangible assets acquired through acquisitions as well as through direct purchases or licenses.

The following table presents the amortization of purchased intangible assets, including impairment charges (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Amortization of purchased intangible assets:				
Cost of sales	$ 201	$ 156	$ 403	$ 326
Operating expenses	79	39	163	75
Total	$ 280	$ 195	$ 566	$ 401

The estimated future amortization expense of purchased intangible assets with finite lives as of January 29, 2022 is as follows (in millions):

Fiscal Year	Amount
2022 (remaining six months)	$ 494
2023	$ 903
2024	$ 774
2025	$ 402
2026	$ 60
Thereafter	$ 1

6. Restructuring and Other Charges

We initiated a restructuring plan in fiscal 2021 (the "Fiscal 2021 Plan"), which included a voluntary early retirement program, in order to realign the organization and enable further investment in key priority areas. The total pretax charges were estimated to be approximately $900 million. In connection with the Fiscal 2021 Plan, we have incurred cumulative charges of $894 million and completed this plan in fiscal 2022.

We initiated a restructuring plan in fiscal 2020 (the "Fiscal 2020 Plan") in order to realign the organization and enable further investment in key priority areas. In connection with the Fiscal 2020 Plan, we incurred cumulative charges of $255 million. We completed the Fiscal 2020 Plan in fiscal 2021.

The aggregate pretax charges related to these plans are primarily cash-based and consist of severance and other one-time termination benefits, and other costs.

The following tables summarize the activities related to the restructuring and other charges (in millions):

	FISCAL 2020 AND PRIOR PLANS		FISCAL 2021 PLAN		
	Employee Severance	Other	Employee Severance	Other	Total
Liability as of July 31, 2021	$ —	$ 10	$ 16	$ 8	$ 34
Charges	—	(5)	10	3	8
Cash payments	—	(1)	(16)	—	(17)
Non-cash items	—	—	—	(5)	(5)
Liability as of January 29, 2022	$ —	$ 4	$ 10	$ 6	$ 20

	FISCAL 2020 AND PRIOR PLANS		FISCAL 2021 PLAN		
	Employee Severance	Other	Employee Severance	Other	Total
Liability as of July 25, 2020	$ 58	$ 14	$ —	$ —	$ 72
Charges	—	2	804	30	836
Cash payments	(58)	(3)	(703)	(3)	(767)
Non-cash items	—	—	—	(21)	(21)
Liability as of January 23, 2021	$ —	$ 13	$ 101	$ 6	$ 120

7. Balance Sheet and Other Details

The following tables provide details of selected balance sheet and other items (in millions):

Cash, Cash Equivalents, and Restricted Cash

	January 29, 2022	July 31, 2021
Cash and cash equivalents	$ 6,731	$ 9,175
Restricted cash included in other current assets	11	14
Restricted cash included in other assets	750	753
Total cash, cash equivalents, and restricted cash	$ 7,492	$ 9,942

Our restricted cash balances are funds primarily related to contractual obligations with suppliers.

Inventories

	January 29, 2022	July 31, 2021
Raw materials	$ 1,284	$ 801
Work in process	50	54
Finished goods:		
Deferred cost of sales	80	97
Manufactured finished goods	522	422
Total finished goods	602	519
Service-related spares	116	174
Demonstration systems	7	11
Total	$ 2,059	$ 1,559

Property and Equipment, Net

	January 29, 2022	July 31, 2021
Gross property and equipment:		
Land, buildings, and building and leasehold improvements	$ 4,293	$ 4,304
Computer equipment and related software	852	858
Production, engineering, and other equipment	4,879	5,106
Operating lease assets	245	273
Furniture, fixtures and other	353	377
Total gross property and equipment	10,622	10,918
Less: accumulated depreciation and amortization	(8,482)	(8,580)
Total	$ 2,140	$ 2,338

Remaining Performance Obligations

	January 29, 2022	July 31, 2021
Product	$ 13,532	$ 13,270
Service	16,986	17,623
Total	$ 30,518	$ 30,893
Current	$ 16,310	$ 16,289
Noncurrent	14,208	14,604
Total	$ 30,518	$ 30,893

Remaining Performance Obligations (RPO) are comprised of deferred revenue plus unbilled contract revenue. As of January 29, 2022, the aggregate amount of RPO was comprised of $22.3 billion of deferred revenue and $8.2 billion of unbilled contract revenue. We expect approximately 53% of this amount to be recognized as revenue over the next 12 months. As of July 31, 2021, the aggregate amount of RPO was comprised of $22.2 billion of deferred revenue and $8.7 billion of unbilled contract revenue. Unbilled contract revenue represents noncancelable contracts for which we have not invoiced, have an obligation to perform, and revenue has not yet been recognized in the financial statements.

Deferred Revenue

	January 29, 2022	July 31, 2021
Product	$ 9,767	$ 9,416
Service	12,546	12,748
Total	$ 22,313	$ 22,164
Reported as:		
Current	$ 12,268	$ 12,148
Noncurrent	10,045	10,016
Total	$ 22,313	$ 22,164

8. Leases

(a) Lessee Arrangements

The following table presents our operating lease balances (in millions):

	Balance Sheet Line Item	January 29, 2022	July 31, 2021
Operating lease right-of-use assets	Other assets	$ 1,078	$ 1,095
Operating lease liabilities	Other current liabilities	$ 376	$ 337
Operating lease liabilities	Other long-term liabilities	763	831
Total operating lease liabilities		$ 1,139	$ 1,168

The components of our lease expenses were as follows (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Operating lease expense	$ 98	$ 103	$ 193	$ 201
Short-term lease expense	15	17	32	35
Variable lease expense	41	43	90	89
Total lease expense	$ 154	$ 163	$ 315	$ 325

Supplemental information related to our operating leases is as follows (in millions):

	Six Months Ended	
	January 29, 2022	January 23, 2021
Cash paid for amounts included in the measurement of lease liabilities — operating cash flows	$ 202	$ 201
Right-of-use assets obtained in exchange for operating leases liabilities	$ 178	$ 218

The weighted-average lease term was 4.7 years and 5.2 years as of January 29, 2022 and July 31, 2021, respectively. The weighted-average discount rate was 1.7% as of each of January 29, 2022 and July 31, 2021.

The maturities of our operating leases (undiscounted) as of January 29, 2022 are as follows (in millions):

Fiscal Year	Amount
2022 (remaining six months)	$ 196
2023	323
2024	234
2025	154
2026	85
Thereafter	217
Total lease payments	1,209
Less interest	(70)
Total	$ 1,139

(b) Lessor Arrangements

Our leases primarily represent sales-type leases with terms of four years on average. We provide leasing of our equipment and complementary third-party products primarily through our channel partners and distributors, for which the income arising from these leases is recognized through interest income. Interest income for the second quarter and first six months of fiscal 2022 was $14 million and $29 million, respectively, and $19 million and $40 million for the corresponding periods of fiscal 2021, respectively, and was included in interest income in the Consolidated Statement of Operations. The net investment of our lease receivables is measured at the commencement date as the gross lease receivable, residual value less unearned income and allowance for credit loss. For additional information, see Note 9.

Future minimum lease payments on our lease receivables as of January 29, 2022 are summarized as follows (in millions):

Fiscal Year	Amount
2022 (remaining six months)	$ 327
2023	502
2024	321
2025	144
2026	61
Thereafter	9
Total	1,364
Less: Present value of lease payments	1,300
Unearned income	$ 64

Actual cash collections may differ from the contractual maturities due to early customer buyouts, refinancings, or defaults.

We provide financing of certain equipment through operating leases, and the amounts are included in property and equipment in the Consolidated Balance Sheets. Amounts relating to equipment on operating lease assets held by us and the associated accumulated depreciation are summarized as follows (in millions):

	January 29, 2022	July 31, 2021
Operating lease assets	$ 245	$ 273
Accumulated depreciation	(148)	(165)
Operating lease assets, net	$ 97	$ 108

Our operating lease income for the second quarter and first six months of fiscal 2022 was $29 million and $61 million, respectively, and $40 million and $83 million for the corresponding periods of fiscal 2021, respectively, and was included in product revenue in the Consolidated Statement of Operations.

Minimum future rentals on noncancelable operating leases as of January 29, 2022 are summarized as follows (in millions):

Fiscal Year	Amount
2022 (remaining six months)	$ 24
2023	30
2024	13
2025	2
Total	$ 69

9. Financing Receivables

(a) Financing Receivables

Financing receivables primarily consist of lease receivables, loan receivables, and financed service contracts. Lease receivables represent sales-type leases resulting from the sale of Cisco's and complementary third-party products and are typically collateralized by a security interest in the underlying assets. Lease receivables consist of arrangements with terms of four years on average. Loan receivables represent financing arrangements related to the sale of our hardware, software, and services, which may include additional funding for other costs associated with network installation and integration of our products and services. Loan receivables have terms of three years on average. Financed service contracts include financing receivables related to technical support and advanced services. Revenue related to the technical support services is typically deferred and included in deferred service revenue and is recognized ratably over the period during which the related services are to be performed, which typically ranges from one year to three years.

A summary of our financing receivables is presented as follows (in millions):

January 29, 2022	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Gross	$ 1,364	$ 4,581	$ 2,149	$ 8,094
Residual value	88	—	—	88
Unearned income	(64)	—	—	(64)
Allowance for credit loss	(27)	(67)	(3)	(97)
Total, net	$ 1,361	$ 4,514	$ 2,146	$ 8,021
Reported as:				
Current	$ 651	$ 2,218	$ 1,128	$ 3,997
Noncurrent	710	2,296	1,018	4,024
Total, net	$ 1,361	$ 4,514	$ 2,146	$ 8,021

July 31, 2021	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Gross	$ 1,710	$ 5,203	$ 2,453	$ 9,366
Residual value	103	—	—	103
Unearned income	(78)	—	—	(78)
Allowance for credit loss	(38)	(86)	(3)	(127)
Total, net	$ 1,697	$ 5,117	$ 2,450	$ 9,264
Reported as:				
Current	$ 780	$ 2,372	$ 1,228	$ 4,380
Noncurrent	917	2,745	1,222	4,884
Total, net	$ 1,697	$ 5,117	$ 2,450	$ 9,264

(b) Credit Quality of Financing Receivables

The tables below present our gross financing receivables, excluding residual value, less unearned income, categorized by our internal credit risk rating by period of origination (in millions):

January 29, 2022		Fiscal Year				Six Months Ended	
Internal Credit Risk Rating	Prior	July 28, 2018	July 27, 2019	July 25, 2020	July 31, 2021	January 29, 2022	Total
Lease Receivables:							
1 to 4	$ 6	$ 51	$ 104	$ 171	$ 209	$ 125	$ 666
5 to 6	6	28	105	199	200	57	595
7 and Higher	1	2	6	15	4	11	39
Total Lease Receivables	$ 13	$ 81	$ 215	$ 385	$ 413	$ 193	$ 1,300
Loan Receivables:							
1 to 4	$ 16	$ 85	$ 221	$ 665	$ 1,182	$ 660	$ 2,829
5 to 6	5	34	119	359	662	450	1,629
7 and Higher	2	2	36	36	26	21	123
Total Loan Receivables	$ 23	$ 121	$ 376	$ 1,060	$ 1,870	$ 1,131	$ 4,581
Financed Service Contracts:							
1 to 4	$ 2	$ 16	$ 65	$ 169	$ 740	$ 380	$ 1,372
5 to 6	1	15	76	184	337	149	762
7 and Higher	—	—	3	6	3	3	15
Total Financed Service Contracts	$ 3	$ 31	$ 144	$ 359	$ 1,080	$ 532	$ 2,149
Total	$ 39	$ 233	$ 735	$ 1,804	$ 3,363	$ 1,856	$ 8,030

July 31, 2021		Fiscal Year					
Internal Credit Risk Rating	Prior	July 29, 2017	July 28, 2018	July 27, 2019	July 25, 2020	July 31, 2021	Total
Lease Receivables:							
1 to 4	$ 2	$ 20	$ 100	$ 168	$ 282	$ 227	$ 799
5 to 6	1	17	65	187	285	231	786
7 and Higher	—	2	6	12	23	4	47
Total Lease Receivables	$ 3	$ 39	$ 171	$ 367	$ 590	$ 462	$ 1,632
Loan Receivables:							
1 to 4	$ 4	$ 86	$ 134	$ 577	$ 990	$ 1,552	$ 3,343
5 to 6	—	19	75	202	505	925	1,726
7 and Higher	1	2	4	50	43	34	134
Total Loan Receivables	$ 5	$ 107	$ 213	$ 829	$ 1,538	$ 2,511	$ 5,203
Financed Service Contracts:							
1 to 4	$ —	$ 38	$ 26	$ 106	$ 252	$ 1,053	$ 1,475
5 to 6	—	6	26	105	302	520	959
7 and Higher	—	—	1	6	7	5	19
Total Financed Service Contracts	$ —	$ 44	$ 53	$ 217	$ 561	$ 1,578	$ 2,453
Total	$ 8	$ 190	$ 437	$ 1,413	$ 2,689	$ 4,551	$ 9,288

The following tables present the aging analysis of gross receivables as of January 29, 2022 and July 31, 2021 (in millions):

	DAYS PAST DUE (INCLUDES BILLED AND UNBILLED)								
January 29, 2022	31-60	61-90	91+	Total Past Due	Current	Total	120+ Still Accruing	Nonaccrual Financing Receivables	Impaired Financing Receivables
Lease receivables	$ 26	$ 15	$ 26	$ 67	$ 1,233	$ 1,300	$ 9	$ 19	$ 19
Loan receivables	66	12	42	120	4,461	4,581	8	25	25
Financed service contracts	16	6	10	32	2,117	2,149	4	2	2
Total	$ 108	$ 33	$ 78	$ 219	$ 7,811	$ 8,030	$ 21	$ 46	$ 46

	DAYS PAST DUE (INCLUDES BILLED AND UNBILLED)								
July 31, 2021	31-60	61-90	91+	Total Past Due	Current	Total	120+ Still Accruing	Nonaccrual Financing Receivables	Impaired Financing Receivables
Lease receivables	$ 21	$ 17	$ 29	$ 67	$ 1,565	$ 1,632	$ 1	$ 33	$ 26
Loan receivables	71	17	35	123	5,080	5,203	4	33	33
Financed service contracts	18	13	18	49	2,404	2,453	3	3	3
Total	$ 110	$ 47	$ 82	$ 239	$ 9,049	$ 9,288	$ 8	$ 69	$ 62

Past due financing receivables are those that are 31 days or more past due according to their contractual payment terms. The data in the preceding tables is presented by contract, and the aging classification of each contract is based on the oldest outstanding receivable, and therefore past due amounts also include unbilled and current receivables within the same contract.

(c) Allowance for Credit Loss Rollforward

The allowances for credit loss and the related financing receivables are summarized as follows (in millions):

Three months ended January 29, 2022	CREDIT LOSS ALLOWANCES			
	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Allowance for credit loss as of October 30, 2021	$ 33	$ 74	$ 2	$ 109
Provisions (benefits)	(4)	(7)	1	(10)
Recoveries (write-offs), net	(2)	—	—	(2)
Allowance for credit loss as of January 29, 2022	$ 27	$ 67	$ 3	$ 97

Three Months Ended January 23, 2021	CREDIT LOSS ALLOWANCES			
	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Allowance for credit loss as of October 24, 2020	$ 46	$ 101	$ 7	$ 154
Provisions (benefits)	(4)	(6)	2	(8)
Other	1	1	—	2
Allowance for credit loss as of January 23, 2021	$ 43	$ 96	$ 9	$ 148

Six months ended January 29, 2022	CREDIT LOSS ALLOWANCES			
	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Allowance for credit loss as of July 31, 2021	$ 38	$ 86	$ 3	$ 127
Provisions (benefits)	(9)	(19)	—	(28)
Recoveries (write-offs), net	(2)	—	—	(2)
Allowance for credit loss as of January 29, 2022	$ 27	$ 67	$ 3	$ 97

Six months ended January 23, 2021	CREDIT LOSS ALLOWANCES			
	Lease Receivables	Loan Receivables	Financed Service Contracts	Total
Allowance for credit loss as of July 25, 2020	$ 48	$ 81	$ 9	$ 138
Provisions (benefits)	(7)	(3)	1	(9)
Other	2	18	(1)	19
Allowance for credit loss as of January 23, 2021	$ 43	$ 96	$ 9	$ 148

10. Available-for-Sale Debt and Equity Investments

(a) Summary of Available-for-Sale Debt Investments

The following tables summarize our available-for-sale debt investments (in millions):

January 29, 2022	Amortized Cost	Gross Unrealized Gains	Gross Unrealized and Credit Losses	Fair Value
U.S. government securities	$ 1,702	$ 4	$ (19)	$ 1,687
U.S. government agency securities	142	—	(2)	140
Corporate debt securities	9,008	82	(102)	8,988
U.S. agency mortgage-backed securities	2,569	10	(56)	2,523
Commercial paper	614	—	—	614
Certificates of deposit	209	—	—	209
Total	$ 14,244	$ 96	$ (179)	$ 14,161

July 31, 2021	Amortized Cost	Gross Unrealized Gains	Gross Unrealized and Credit Losses	Fair Value
U.S. government securities	$ 1,773	$ 21	$ —	$ 1,794
U.S. government agency securities	152	—	—	152
Non-U.S. government and agency securities	3	—	—	3
Corporate debt securities	8,727	213	(30)	8,910
U.S. agency mortgage-backed securities	2,838	34	(10)	2,862
Commercial paper	1,190	—	—	1,190
Certificates of deposit	295	—	—	295
Total	$ 14,978	$ 268	$ (40)	$ 15,206

The following table presents the gross realized gains and gross realized losses related to available-for-sale debt investments (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Gross realized gains	$ 13	$ 9	$ 19	$ 24
Gross realized losses	(3)	—	(3)	—
Total	$ 10	$ 9	$ 16	$ 24

The following tables present the breakdown of the available-for-sale debt investments with gross unrealized losses and the duration that those losses had been unrealized at January 29, 2022 and July 31, 2021 (in millions):

	UNREALIZED LOSSES LESS THAN 12 MONTHS		UNREALIZED LOSSES 12 MONTHS OR GREATER		TOTAL	
January 29, 2022	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. government securities	$ 1,124	$ (19)	$ 2	$ —	$ 1,126	$ (19)
U.S. government agency securities	125	(1)	15	(1)	140	(2)
Corporate debt securities	4,230	(69)	182	(8)	4,412	(77)
U.S. agency mortgage-backed securities	1,881	(52)	91	(4)	1,972	(56)
Total	$ 7,360	$ (141)	$ 290	$ (13)	$ 7,650	$ (154)

	UNREALIZED LOSSES LESS THAN 12 MONTHS		UNREALIZED LOSSES 12 MONTHS OR GREATER		TOTAL	
July 31, 2021	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. government securities	$ 468	$ —	$ —	$ —	$ 468	$ —
U.S. government agency securities	26	—	—	—	26	—
Corporate debt securities	1,086	(5)	6	—	1,092	(5)
U.S. agency mortgage-backed securities	1,293	(10)	13	—	1,306	(10)
Commercial paper	37	—	—	—	37	—
Total	$ 2,910	$ (15)	$ 19	$ —	$ 2,929	$ (15)

The following table summarizes the maturities of our available-for-sale debt investments as of January 29, 2022 (in millions):

	Amortized Cost	Fair Value
Within 1 year	$ 3,512	$ 3,496
After 1 year through 5 years	7,999	7,969
After 5 years through 10 years	162	171
After 10 years	2	2
Mortgage-backed securities with no single maturity	2,569	2,523
Total	$ 14,244	$ 14,161

Actual maturities may differ from the contractual maturities because borrowers may have the right to call or prepay certain obligations.

(b) Summary of Equity Investments

We recognized a net unrealized loss of $18 million and $13 million during the second quarter and first six months of fiscal 2022, respectively, on our marketable securities still held as of the reporting date. Our net adjustments to non-marketable equity securities measured using the measurement alternative still held was a net gain of $14 million and $16 million for the second quarter and first six months of fiscal 2022, respectively. We held equity interests in certain private equity funds of $1.1 billion and $0.9 billion as of January 29, 2022 and July 31, 2021, respectively, which are accounted for under the NAV practical expedient.

In the ordinary course of business, we have investments in privately held companies and provide financing to certain customers. These privately held companies and customers are evaluated for consolidation under the variable interest or voting interest entity models. We evaluate on an ongoing basis our investments in these privately held companies and our customer financings, and have determined that as of January 29, 2022, there were no significant variable interest or voting interest entities required to be consolidated in our Consolidated Financial Statements.

The carrying value of our investments in privately held companies was $1.8 billion and $1.5 billion as of January 29, 2022 and July 31, 2021, respectively. Of the total carrying value of our investments in privately held companies as of January 29, 2022, $1.1 billion of such investments are considered to be in variable interest entities which are unconsolidated. As of January 29, 2022, we have total funding commitments of $0.4 billion related to privately held investments, some of which may be based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The carrying value of these investments and the additional funding commitments, collectively, represent our maximum exposure related to privately held investments.

11. Fair Value

Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be either recorded or disclosed at fair value, we consider the principal or most advantageous market in which we would transact, and we also consider assumptions that market participants would use when pricing the asset or liability.

(a) Fair Value Hierarchy

The accounting guidance for fair value measurement requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard establishes a fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

Level 1 applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities.

Level 2 applies to assets or liabilities for which there are inputs other than quoted prices that are observable for the asset or liability, such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which significant inputs are observable or can be derived principally from, or corroborated by, observable market data.

Level 3 applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

(b) Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis were as follows (in millions):

	JANUARY 29, 2022 FAIR VALUE MEASUREMENTS			JULY 31, 2021 FAIR VALUE MEASUREMENTS		
	Level 1	Level 2	Total Balance	Level 1	Level 2	Total Balance
Assets:						
Cash equivalents:						
Money market funds	$ 3,402	$ —	$ 3,402	$ 5,694	$ —	$ 5,694
Commercial paper	—	10	10	—	114	114
U.S. government securities	—	—	—	—	300	300
Available-for-sale debt investments:						
U.S. government securities	—	1,687	1,687	—	1,794	1,794
U.S. government agency securities	—	140	140	—	152	152
Corporate debt securities	—	8,988	8,988	—	8,910	8,910
U.S. agency mortgage-backed securities	—	2,523	2,523	—	2,862	2,862
Non-U.S. government and agency securities	—	—	—	—	3	3
Commercial paper	—	614	614	—	1,190	1,190
Certificates of deposit	—	209	209	—	295	295
Equity investments:						
Marketable equity securities	221	—	221	137	—	137
Other assets:						
Money market funds	750	—	750	750	—	750
Derivative assets	—	77	77	—	126	126
Total	$ 4,373	$ 14,248	$ 18,621	$ 6,581	$ 15,746	$ 22,327
Liabilities:						
Derivative liabilities	$ —	$ 38	$ 38	$ —	$ 20	$ 20
Total	$ —	$ 38	$ 38	$ —	$ 20	$ 20

Level 1 marketable securities are determined by using quoted prices in active markets for identical assets. Level 2 available-for-sale debt investments are priced using quoted market prices for similar instruments or nonbinding market prices that are corroborated by observable market data. We use inputs such as actual trade data, benchmark yields, broker/dealer quotes, and other similar data, which are obtained from quoted market prices, independent pricing vendors, or other sources, to determine the ultimate fair value of these assets and liabilities. We use such pricing data as the primary input to make our assessments and determinations as to the ultimate valuation of our investment portfolio and have not made, during the periods presented, any material adjustments to such inputs. We are ultimately responsible for the financial statements and underlying estimates. Our derivative instruments are primarily classified as Level 2, as they are not actively traded and are valued using pricing models that use observable market inputs. We did not have any transfers between Level 1 and Level 2 fair value measurements during the periods presented.

(c) Assets Measured at Fair Value on a Nonrecurring Basis

Our non-marketable equity securities using the measurement alternative are adjusted to fair value on a non-recurring basis. Adjustments are made when observable transactions for identical or similar investments of the same issuer occur, or due to impairment. These securities are classified as Level 3 in the fair value hierarchy because we estimate the value based on valuation methods using the observable transaction price at the transaction date and other unobservable inputs such as volatility, rights, and obligations of the securities we hold.

(d) Other Fair Value Disclosures

The fair value of our short-term loan receivables and financed service contracts approximates their carrying value due to their short duration. The aggregate carrying value of our long-term loan receivables and financed service contracts as of January 29, 2022 and July 31, 2021 was $3.3 billion and $4.0 billion, respectively. The estimated fair value of our long-term loan receivables and financed service contracts approximates their carrying value. We use significant unobservable inputs in determining discounted cash flows to estimate the fair value of our long-term loan receivables and financed service contracts, and therefore they are categorized as Level 3.

As of January 29, 2022, the estimated fair value of our short-term debt approximates its carrying value due to the short maturities. As of January 29, 2022, the fair value of our senior notes was $11.1 billion with a carrying amount of $9.5 billion. This compares to a fair value of $13.7 billion and a carrying amount of $11.5 billion as of July 31, 2021. The fair value of the senior notes was determined based on observable market prices in a less active market and was categorized as Level 2 in the fair value hierarchy.

12. Borrowings

(a) Short-Term Debt

The following table summarizes our short-term debt (in millions, except percentages):

	January 29, 2022		July 31, 2021	
	Amount	Effective Rate	Amount	Effective Rate
Current portion of long-term debt	$ 502	1.14 %	$ 2,508	1.75 %
Commercial paper	2,000	0.15 %	—	—
Total short-term debt	$ 2,502		$ 2,508	

We have a short-term debt financing program of up to $10.0 billion through the issuance of commercial paper notes. We use the proceeds from the issuance of commercial paper notes for general corporate purposes.

The effective rates for the short- and long-term debt include the interest on the notes, the accretion of the discount, the issuance costs, and, if applicable, adjustments related to hedging.

(b) Long-Term Debt

The following table summarizes our long-term debt (in millions, except percentages):

		January 29, 2022		July 31, 2021	
	Maturity Date	Amount	Effective Rate	Amount	Effective Rate
Senior notes:					
Fixed-rate notes:					
1.85%	September 20, 2021	$ —	—	$ 2,000	1.90%
3.00%	June 15, 2022	500	1.14%	500	1.13%
2.60%	February 28, 2023	500	2.68%	500	2.68%
2.20%	September 20, 2023	750	2.27%	750	2.27%
3.625%	March 4, 2024	1,000	1.00%	1,000	1.00%
3.50%	June 15, 2025	500	1.31%	500	1.29%
2.95%	February 28, 2026	750	3.01%	750	3.01%
2.50%	September 20, 2026	1,500	2.55%	1,500	2.55%
5.90%	February 15, 2039	2,000	6.11%	2,000	6.11%
5.50%	January 15, 2040	2,000	5.67%	2,000	5.67%
Total		9,500		11,500	
Unaccreted discount/issuance costs		(77)		(80)	
Hedge accounting fair value adjustments		48		106	
Total		$ 9,471		$ 11,526	
Reported as:					
Current portion of long-term debt		$ 502		$ 2,508	
Long-term debt		8,969		9,018	
Total		$ 9,471		$ 11,526	

We have entered into interest rate swaps in prior periods with an aggregate notional amount of $2.0 billion designated as fair value hedges of certain of our fixed-rate senior notes. These swaps convert the fixed interest rates of the fixed-rate notes to floating interest rates based on the London InterBank Offered Rate (LIBOR). The gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to the changes in market interest rates. For additional information, see Note 13.

Interest is payable semiannually on each class of the senior fixed-rate notes. Each of the senior fixed-rate notes is redeemable by us at any time, subject to a make-whole premium. The senior notes rank at par with the commercial paper notes that may be issued in the future pursuant to our short-term debt financing program, as discussed above under "(a) Short-Term Debt." As of January 29, 2022, we were in compliance with all debt covenants.

As of January 29, 2022, future principal payments for long-term debt, including the current portion, are summarized as follows (in millions):

Fiscal Year	Amount
2022 (remaining six months)	$ 500
2023	500
2024	1,750
2025	500
2026	750
Thereafter	5,500
Total	$ 9,500

(c) Credit Facility

On May 13, 2021, we entered into a 5-year credit agreement with certain institutional lenders that provides for a $3.0 billion unsecured revolving credit facility that is scheduled to expire on May 13, 2026. The credit agreement is structured as an amendment and restatement of our 364-day credit agreement, which would have terminated on May 14, 2021. As of January 29, 2022, we were in compliance with the required interest coverage ratio and the other covenants, and we had not borrowed any funds under the credit agreement.

Any advances under the 5-year credit agreement will accrue interest at rates that are equal to, based on certain conditions, either (a) with respect to loans in U.S. dollars, (i) LIBOR or (ii) the Base Rate (to be defined as the highest of (x) the Bank of America prime rate, (y) the Federal Funds rate plus 0.50% and (z) a daily rate equal to one-month LIBOR plus 1.0%), (b) with respect to loans in Euros, EURIBOR, (c) with respect to loans in Yen, TIBOR and (d) with respect to loans in Pounds Sterling, SONIA plus a credit spread adjustment, plus a margin that is based on our senior debt credit ratings as published by Standard & Poor's Financial Services, LLC and Moody's Investors Service, Inc., provided that in no event will the interest rate be less than 0.0%. We will pay a quarterly commitment fee during the term of the 5-year credit agreement which may vary depending on our senior debt credit ratings. In addition, the 5-year credit agreement incorporates certain sustainability-linked metrics. Specifically, our applicable interest rate and commitment fee are subject to upward or downward adjustments if we achieve, or fail to achieve, certain specified targets based on two key performance indicator metrics: (i) social impact and (ii) foam reduction. We may also, upon the agreement of either the then-existing lenders or additional lenders not currently parties to the agreement, increase the commitments under the credit facility by up to an additional $2.0 billion and, at our option, extend the maturity of the facility for an additional year up to two times. The credit agreement requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement.

13. Derivative Instruments

(a) Summary of Derivative Instruments

We use derivative instruments primarily to manage exposures to foreign currency exchange rate, interest rate, and equity price risks. Our primary objective in holding derivatives is to reduce the volatility of earnings and cash flows associated with changes in foreign currency exchange rates, interest rates, and equity prices. Our derivatives expose us to credit risk to the extent that the counterparties may be unable to meet the terms of the agreement. We do, however, seek to mitigate such risks by limiting our counterparties to major financial institutions and requiring collateral in certain cases. In addition, the potential risk of loss with any one counterparty resulting from this type of credit risk is monitored. Management does not expect material losses as a result of defaults by counterparties.

The fair values of our derivative instruments and the line items on the Consolidated Balance Sheets to which they were recorded are summarized as follows (in millions):

	DERIVATIVE ASSETS			DERIVATIVE LIABILITIES		
	Balance Sheet Line Item	January 29, 2022	July 31, 2021	Balance Sheet Line Item	January 29, 2022	July 31, 2021
Derivatives designated as hedging instruments:						
Foreign currency derivatives	Other current assets	$ 24	$ 14	Other current liabilities	$ 1	$ 3
Foreign currency derivatives	Other assets	2	1	Other long-term liabilities	—	—
Interest rate derivatives	Other current assets	3	9	Other current liabilities	—	—
Interest rate derivatives	Other assets	46	99	Other long-term liabilities	—	—
Total		75	123		1	3
Derivatives not designated as hedging instruments:						
Foreign currency derivatives	Other current assets	2	3	Other current liabilities	30	16
Foreign currency derivatives	Other assets	—	—	Other long-term liabilities	2	1
Equity derivatives	Other current assets	—	—	Other current liabilities	5	—
Total		2	3		37	17
Total		$ 77	$ 126		$ 38	$ 20

The following amounts were recorded on the Consolidated Balance Sheets related to cumulative basis adjustments for our fair value hedges (in millions):

	CARRYING AMOUNT OF THE HEDGED ASSETS/(LIABILITIES)		CUMULATIVE AMOUNT OF FAIR VALUE HEDGING ADJUSTMENT INCLUDED IN THE CARRYING AMOUNT OF THE HEDGED ASSETS/LIABILITIES	
Balance Sheet Line Item of Hedged Item	January 29, 2022	July 31, 2021	January 29, 2022	July 31, 2021
Short-term debt	$ (502)	$ (508)	$ (3)	$ (9)
Long-term debt	$ (1,543)	$ (1,594)	$ (45)	$ (97)

The effect of derivative instruments designated as fair value hedges, recognized in interest and other income (loss), net is summarized as follows (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Interest rate derivatives:				
Hedged items	$ 32	$ 14	$ 58	$ 33
Derivatives designated as hedging instruments	(32)	(14)	(59)	(34)
Total	$ —	$ —	$ (1)	$ (1)

The effect on the Consolidated Statements of Operations of derivative instruments not designated as hedges is summarized as follows (in millions):

		GAINS (LOSSES) FOR THE THREE MONTHS ENDED		GAINS (LOSSES) FOR THE SIX MONTHS ENDED	
Derivatives Not Designated as Hedging Instruments	Line Item in Statements of Operations	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Foreign currency derivatives	Other income (loss), net	$ (36)	$ 33	$ (56)	$ 47
Total return swaps—deferred compensation	Operating expenses and other	(41)	76	(20)	99
Equity derivatives	Other income (loss), net	(3)	9	1	14
Total		$ (80)	$ 118	$ (75)	$ 160

The notional amounts of our outstanding derivatives are summarized as follows (in millions):

	January 29, 2022	July 31, 2021
Foreign currency derivatives	$ 4,254	$ 4,139
Interest rate derivatives	2,000	2,000
Total return swaps—deferred compensation	728	730
Total	$ 6,982	$ 6,869

(b) Offsetting of Derivative Instruments

We present our derivative instruments at gross fair values in the Consolidated Balance Sheets. However, our master netting and other similar arrangements with the respective counterparties allow for net settlement under certain conditions, which are designed to reduce credit risk by permitting net settlement with the same counterparty. As of January 29, 2022 and July 31, 2021, the potential effects of these rights of set-off associated with the derivative contracts would be a reduction to both derivative assets and derivative liabilities of $27 million and $17 million, respectively.

To further limit credit risk, we also enter into collateral security arrangements related to certain derivative instruments whereby cash is posted as collateral between the counterparties based on the fair market value of the derivative instrument. Under these collateral security arrangements, the net cash collateral received as of January 29, 2022 and July 31, 2021 was $56 million and $109 million, respectively. Including the effects of collateral, this results in a net derivative liability of $16 million and $3 million as of January 29, 2022 and July 31, 2021, respectively.

(c) Foreign Currency Exchange Risk

We conduct business globally in numerous currencies. Therefore, we are exposed to adverse movements in foreign currency exchange rates. To limit the exposure related to foreign currency changes, we enter into foreign currency contracts. We do not enter into such contracts for speculative purposes.

We hedge forecasted foreign currency transactions related to certain revenues, operating expenses and service cost of sales with currency options and forward contracts. These currency options and forward contracts, designated as cash flow hedges, generally have maturities of less than 24 months. The derivative instrument’s gain or loss is initially reported as a component of accumulated other comprehensive income (AOCI) and subsequently reclassified into earnings when the hedged exposure affects earnings. During the periods presented, we did not discontinue any cash flow hedges for which it was probable that a forecasted transaction would not occur.

We enter into foreign exchange forward and option contracts to reduce the short-term effects of foreign currency fluctuations on assets and liabilities such as foreign currency receivables, long-term customer financings and payables. These derivatives are not designated as hedging instruments. Gains and losses on the contracts are included in other income (loss), net, and substantially offset foreign exchange gains and losses from the remeasurement of intercompany balances, other current assets, or liabilities denominated in currencies other than the functional currency of the reporting entity.

We hedge certain net investments in our foreign operations with forward contracts to reduce the effects of foreign currency fluctuations on our net investment in those foreign subsidiaries. These derivative instruments generally have maturities of up to six months.

(d) Interest Rate Risk

We hold interest rate swaps designated as fair value hedges related to fixed-rate senior notes that are due in fiscal 2022 through 2025. Under these interest rate swaps, we receive fixed-rate interest payments and make interest payments based on LIBOR plus a fixed number of basis points. The effect of such swaps is to convert the fixed interest rates of the senior fixed-rate notes to floating interest rates based on LIBOR. The gains and losses related to changes in the fair value of the interest rate swaps are included in interest expense and substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to the changes in market interest rates.

(e) Equity Price Risk

We hold marketable equity securities in our portfolio that are subject to price risk. To diversify our overall portfolio, we also hold equity derivatives that are not designated as accounting hedges. The change in the fair value of each of these investment types are included in other income (loss), net.

We are also exposed to variability in compensation charges related to certain deferred compensation obligations to employees. Although not designated as accounting hedges, we utilize derivatives such as total return swaps to economically hedge this exposure and offset the related compensation expense.

14. Commitments and Contingencies

(a) Purchase Commitments with Contract Manufacturers and Suppliers

We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that allow them to procure inventory based upon criteria as defined by us or establish the parameters defining our requirements. A significant portion of our reported purchase commitments arising from these agreements consists of firm, noncancelable, and unconditional commitments. Certain of these inventory purchase commitments with contract manufacturers and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed.

The following table summarizes our inventory purchase commitments with contract manufacturers and suppliers by period (in millions):

	January 29, 2022	July 31, 2021
Less than 1 year	$ 9,224	$ 6,903
1 to 3 years	1,879	1,806
3 to 5 years	1,159	1,545
Total	$ 12,262	$ 10,254

We record a liability for firm, noncancelable, and unconditional purchase commitments for quantities in excess of our future demand forecasts consistent with the valuation of our excess and obsolete inventory. As of January 29, 2022 and July 31, 2021, the liability for these purchase commitments was $199 million and $151 million, respectively, and was included in other current liabilities. For further discussion around the Supply Constraints Impacts and Risks, see Result of Operations—Product Gross Margin and Liquidity and Capital Resources—Inventory Supply Chain.

(b) Other Commitments

In connection with our acquisitions, we have agreed to pay certain additional amounts contingent upon the achievement of certain agreed-upon technology, development, product, or other milestones or upon the continued employment with Cisco of certain employees of the acquired entities.

The following table summarizes the compensation expense related to acquisitions (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Compensation expense related to acquisitions	$ 75	$ 59	$ 164	$ 116

As of January 29, 2022, we estimated that future cash compensation expense of up to $600 million may be required to be recognized pursuant to the applicable business combination agreements.

We also have certain funding commitments, primarily related to our privately held investments, some of which are based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The funding commitments were $0.4 billion and $0.2 billion as of January 29, 2022 and July 31, 2021, respectively.

(c) Product Warranties

The following table summarizes the activity related to the product warranty liability (in millions):

	Six Months Ended	
	January 29, 2022	January 23, 2021
Balance at beginning of period	$ 336	$ 331
Provisions for warranties issued	218	247
Adjustments for pre-existing warranties	2	4
Settlements	(222)	(249)
Balance at end of period	$ 334	$ 333

We accrue for warranty costs as part of our cost of sales based on associated material product costs, labor costs for technical support staff, and associated overhead. Our products are generally covered by a warranty for periods ranging from 90 days to five years, and for some products we provide a limited lifetime warranty.

(d) Financing and Other Guarantees

In the ordinary course of business, we provide financing guarantees for various third-party financing arrangements extended to channel partners and end-user customers. Payments under these financing guarantee arrangements were not material for the periods presented.

Channel Partner Financing Guarantees We facilitate arrangements for third-party financing extended to channel partners, consisting of revolving short-term financing, with payment terms generally ranging from 60 to 90 days. These financing arrangements facilitate the working capital requirements of the channel partners, and, in some cases, we guarantee a portion of these arrangements. The volume of channel partner financing was $6.8 billion and $6.7 billion for the second quarter of fiscal 2022 and 2021, respectively, and was $13.4 billion and $12.8 billion for the first six months of fiscal 2022 and 2021, respectively. The balance of the channel partner financing subject to guarantees was $1.4 billion and $1.3 billion as of January 29, 2022 and July 31, 2021, respectively.

End-User Financing Guarantees We also provide financing guarantees for third-party financing arrangements extended to end-user customers related to leases and loans, which typically have terms of up to three years. The volume of financing provided by third parties for leases and loans as to which we had provided guarantees was $4 million and $3 million for the second quarter of fiscal 2022 and 2021, respectively, and was $6 million and $8 million for the first six months of fiscal 2022 and 2021, respectively.

Financing Guarantee Summary The aggregate amounts of financing guarantees outstanding at January 29, 2022 and July 31, 2021, representing the total maximum potential future payments under financing arrangements with third parties along with the related deferred revenue, are summarized in the following table (in millions):

	January 29, 2022	July 31, 2021
Maximum potential future payments relating to financing guarantees:		
Channel partner	$ 162	$ 155
End user	4	5
Total	$ 166	$ 160
Deferred revenue associated with financing guarantees:		
Channel partner	$ (5)	$ (16)
End user	(4)	(5)
Total	$ (9)	$ (21)
Total	$ 157	$ 139

(e) Indemnifications

In the normal course of business, we have indemnification obligations to other parties, including customers, lessors, and parties to other transactions with us, with respect to certain matters. We have agreed to indemnify against losses arising from a breach of representations or covenants or out of intellectual property infringement or other claims made against certain parties. These agreements may limit the time or circumstances within which an indemnification claim can be made and the amount of the claim.

It is not possible to determine the maximum potential amount for claims made under the indemnification obligations discussed in this section (e) due to uncertainties in the litigation process, coordination with and contributions by other parties and the defendants in these cases, and the unique facts and circumstances involved in each particular case and agreement. We are unable to reasonably estimate the ultimate outcome of the cases discussed below in this section (e), but we do not believe that any potential indemnity liability would be material, and historically, indemnity payments made by us have not had a material effect on our Consolidated Financial Statements.

We were asked by seven of our customers to indemnify them in connection with patent infringement claims asserted against them by Estech Systems, Inc. (“Estech”) in the Eastern District of Texas (“E.D. Tex.”) court and the Western District of Texas court between April 24, 2020 and August 25, 2020. Estech alleged that the customer defendants infringe three patents generally related to IP telephony by using collaboration technology from us and other providers. Estech was seeking monetary damages from the customer defendants. Estech and the customer defendants resolved Estech’s claims, and we resolved the customer defendants’ indemnity claims for an amount that did not have a material effect on our Consolidated Financial Statements.

In addition, we have entered into indemnification agreements with our officers and directors, and our Amended and Restated Bylaws contain similar indemnification obligations to our agents.

(f) Legal Proceedings

Brazil Brazilian authorities have investigated our Brazilian subsidiary and certain of its former employees, as well as a Brazilian importer of our products, and its affiliates and employees, relating to alleged evasion of import taxes and alleged improper transactions involving the subsidiary and the importer. Brazilian tax authorities have assessed claims against our Brazilian subsidiary based on a theory of joint liability with the Brazilian importer for import taxes, interest, and penalties. In addition to claims asserted by the Brazilian federal tax authorities in prior fiscal years, tax authorities from the Brazilian state of Sao Paulo have asserted similar claims on the same legal basis in prior fiscal years. The asserted claims by Brazilian federal tax authorities are for calendar years 2003 through 2007, and the asserted claims by the tax authorities from the state of Sao Paulo are for calendar years 2005 through 2007. The total asserted claims by Brazilian state and federal tax authorities aggregate to $151 million for the alleged evasion of import and other taxes, $764 million for interest, and $373 million for various penalties, all determined using an exchange rate as of January 29, 2022.

We have completed a thorough review of the matters and believe the asserted claims against our Brazilian subsidiary are without merit, and we are defending the claims vigorously. While we believe there is no legal basis for the alleged liability, due to the complexities and uncertainty surrounding the judicial process in Brazil and the nature of the claims asserting joint liability with the importer, we are unable to determine the likelihood of an unfavorable outcome against our Brazilian subsidiary and are unable to reasonably estimate a range of loss, if any. We do not expect a final judicial determination for several years.

China We have completed our investigation into allegations of a self-enrichment scheme involving now-former employees in China, and shared the results of the investigation with the Securities and Exchange Commission (“SEC”) and the Department of Justice (“DOJ”). Based on the investigation results, both the SEC and the DOJ have informed the Company that they do not plan to take any action against the Company in connection with these allegations.

SRI International On September 4, 2013, SRI International, Inc. (“SRI”) asserted claims against us in the U.S. District Court for the District of Delaware (“D. Del.”), accusing our products and services related to network intrusion detection of infringing two patents. After a trial, SRI obtained a verdict against us, and we appealed to the United States Court of Appeals for the Federal Circuit (“Federal Circuit”) which was ultimately unsuccessful. In resolution of this matter, we have paid SRI judgments, including attorneys’ fees and post-judgment royalties and interest, in the aggregate amount of approximately $60 million. The only remaining potential liability for this matter involves a small portion of post-judgment interest. The amounts that we paid to date and any potential additional interest we may have to pay involve amounts, individually or in the aggregate, that did not or will not, as applicable, have a material effect on our Consolidated Financial Statements.

Centripetal On February 13, 2018, Centripetal Networks, Inc. (“Centripetal”) asserted patent infringement claims against us in the U.S. District Court for the Eastern District of Virginia, alleging that several of our products and services (including our Catalyst switches, ASR and ISR series routers, ASAs with FirePOWER services, and Stealthwatch products) infringe eleven Centripetal U.S. patents. We thereafter petitioned the Patent Trial and Appeal Board (“PTAB”) of the United States Patent and Trademark Office (“PTO”) to review the validity of nine of the asserted patents. The PTAB instituted *inter partes* review proceedings (“IPR Proceedings”) on six asserted patents and certain claims of another asserted patent. The PTAB has issued Final Written Decisions for seven patents in the instituted IPR Proceedings, and all claims of five patents have been found unpatentable and several of the claims of the other two patents have been found unpatentable. Centripetal appealed the PTAB’s findings of unpatentability to the Federal Circuit. The Federal Circuit affirmed the PTAB’s findings of unpatentability as to three of the patents on March 10, 2021, and affirmed the PTAB’s findings of unpatentability as to the remaining four patents on May 11, 2021. On August 9, 2021, Centripetal filed a writ of certiorari seeking review of the Federal Circuit’s affirmance of several of the PTAB’s unpatentability findings, which the U.S. Supreme Court denied on October 4, 2021.

For the five asserted U.S. patents not subject to the IPR Proceedings, the district court conducted a bench trial by videoconference from May 6, 2020 to June 25, 2020. On October 5, 2020, the district court issued a judgment finding validity and willful infringement of four of the asserted patents and non-infringement of the fifth patent. The district court awarded Centripetal $1.9 billion, comprised of $756 million in damages, $1.1 billion in enhanced damages for willful infringement, and pre-judgment interest in the amount of $14 million. The district court declined to issue an injunction but, instead, awarded Centripetal a running royalty against revenue from the products found to infringe for an initial three-year term at a rate of 10%, with a minimum annual royalty of $168 million and a maximum annual royalty of $300 million, and for a second three-year term at a rate of 5%, with a minimum annual royalty of $84 million and a maximum annual royalty of $150 million. We believe that the district court’s findings of validity, infringement, and willful infringement, its award of damages, including enhanced damages, and its award of an ongoing royalty are not supported by either the law or the evidence presented at trial. We have appealed the district court’s judgment as to the four patents found valid and infringed to the Federal Circuit. On October 28, 2020, by agreement of the parties, the district court stayed execution of the judgment until after resolution of any appeal in the matter and waived the requirement of any bond or security; accordingly, no money is currently due under the judgment.

On April 29, 2020 and April 30, 2020, Centripetal submitted complaints in the District Court of Dusseldorf in Germany against Cisco Systems GmbH and Cisco Systems, Inc., asserting three European patents seeking both injunctive relief and damages. Two of the three European patents are counterparts to two U.S. patents Centripetal asserted against us in the U.S. district court proceedings, one of which has been invalidated by the PTAB. On June 22, 2021, Centripetal amended one of its complaints to assert one additional European patent and one additional German Utility Model patent. Centripetal seeks both injunctive relief and damages on these newly added patents.

On December 10, 2021, the District Court of Dusseldorf issued its findings on two of the patents, rejecting Centripetal's patent complaints. Centripetal has appealed. On December 21, 2021, the District Court of Dusseldorf stayed its decision on infringement of the third patent pending a decision by the Federal Patent Court in a related nullity proceeding. The proceedings on Centripetal's amended complaint remain pending.

Due to uncertainty surrounding patent litigation processes in the U.S. and Europe, however, we are unable to reasonably estimate the ultimate outcome of either litigation at this time. If we do not prevail in either litigation, we believe that any damages ultimately assessed would not have a material effect on our Consolidated Financial Statements.

Ramot On June 12, 2019, Ramot at Tel Aviv University Ltd. ("Ramot") asserted patent infringement claims against us in E.D. Tex., seeking damages, including enhanced damages for allegations of willful infringement, and a running royalty on future sales. Ramot alleges that certain Cisco optical transceiver modules and line cards infringe three patents. As of November 27, 2020, the PTO preliminarily found all asserted claims unpatentable in ex parte reexamination proceedings. On January 13, 2021, the court entered an order staying the case pending the conclusion of the ex parte reexamination proceedings ("Reexamination Proceedings"). While we believe that we have strong non-infringement and invalidity arguments, and that Ramot's damages theories are not supported by prevailing law, we are unable to reasonably estimate the ultimate outcome of this litigation at this time due to uncertainties in the litigation processes. If we do not prevail in court, we believe that any damages ultimately assessed would not have a material effect on our Consolidated Financial Statements.

On February 26, 2021, Ramot asserted patent infringement claims against Acacia Communications, Inc. ("Acacia") (which we subsequently acquired) in D. Del, seeking damages, including enhanced damages for allegations of willful infringement, and a running royalty on future sales. Ramot alleges that certain Acacia optical transceiver modules and integrated circuits infringe two of the three patents that Ramot has asserted in its E.D. Tex. case. On September 3, 2021, the court stayed the case pending the ultimate resolution of the Reexamination Proceedings. Due to the early stage of the litigation as well as uncertainties in the litigation processes, we are unable, at this time, to reasonably estimate a potential range of loss, if any, or the ultimate outcome of this litigation.

Viasat On January 21, 2016, Viasat, Inc. ("Viasat") filed suit against Acacia (which we subsequently acquired) in the California Superior Court for San Diego County ("SDSC") seeking unpaid royalties for breach of contract and the implied covenant of good faith and fair dealing, and damages for trade secret misappropriation for certain products ("Viasat 1"). Acacia counterclaimed for patent and trade secret misappropriation, contract, and unfair competition claims. On July 17, 2019, the jury found for Viasat on its contract claims, and awarded Viasat $49 million for unpaid royalties through 2018. The jury further found that Acacia willfully misappropriated Viasat's trade secrets and awarded Viasat $1. On Acacia's counterclaims, the jury found for Acacia on its contract and trade secret claims and awarded Acacia $ 1. Both Acacia and Viasat have pending appeals to the California Court of Appeal. On November 6, 2019, Viasat filed a second suit in SDSC, alleging contract and trade secret claims for Acacia products sold from January 1, 2019 forward ("Viasat 2"). On February 28, 2020, the court stayed Viasat 2 pending the appeal in Viasat 1. On June 9, 2020, Viasat filed a third suit in SDSC ("Viasat 3"). In Viasat 3, Viasat alleges contract and trade secrets claims for sales of additional Acacia products. On August 11, 2020, the court stayed Viasat 3 pending the appeal in Viasat 1.

On July 28, 2017, Acacia filed suit in the Commonwealth of Massachusetts Superior Court - Business Litigation Session against ViaSat alleging claims for defamation, unfair competition, business torts, and declaratory judgment of no trade secret misappropriation. On April 5, 2018, ViaSat counterclaimed with contract, trade secret, and unfair competition claims (collectively, with Viasat 1, Viasat 2 and Viasat 3, the "Viasat Cases"). On December 13, 2018, the Massachusetts court entered an order staying the Massachusetts litigation, which has been extended to June 30, 2022.

While we believe Acacia has strong defenses in each of the Viasat Cases, we are unable to reasonably estimate the ultimate outcome of any of the Viasat Cases at this time due to uncertainties in the litigation processes. If Acacia does not prevail, we believe that any relief ultimately assessed in any of the Viasat Cases would not have a material effect on our Consolidated Financial Statements.

In addition, we are subject to other legal proceedings, claims, and litigation arising in the ordinary course of business, including intellectual property litigation. While the outcome of these matters is currently not determinable, we do not believe that the ultimate costs to resolve these matters will have a material effect on our Consolidated Financial Statements. For additional information regarding intellectual property litigation, see “Part II, Item 1A. Risk Factors—We may be found to infringe on intellectual property rights of others” herein.

15. Stockholders’ Equity

(a) Cash Dividends on Shares of Common Stock

We declared and paid cash dividends of $0.37 and $0.36 per common share, or $1.5 billion, on our outstanding common stock for each of the second quarters of fiscal 2022 and 2021. We declared and paid cash dividends of $0.74 and $0.72 per common share, or $3.1 billion and $3.0 billion, on our outstanding common stock for the first six months of fiscal 2022 and 2021, respectively.

On February 16, 2022, our Board of Directors declared a quarterly dividend of $0.38 per common share to be paid on April 27, 2022 to all stockholders of record as of the close of business on April 6, 2022. Any future dividends will be subject to the approval of our Board of Directors.

(b) Stock Repurchase Program

In September 2001, our Board of Directors authorized a stock repurchase program. On February 16, 2022, our Board of Directors authorized a $15 billion increase to the stock repurchase program. The remaining authorized amount for stock repurchases under this program, including the additional authorization, is approximately $18 billion with no termination date. A summary of the stock repurchase activity for fiscal 2022 and 2021 under the stock repurchase program, reported based on the trade date, is summarized as follows (in millions, except per-share amounts):

Quarter Ended	Shares	Weighted-Average Price per Share	Amount
Fiscal 2022			
January 29, 2022	82	$ 58.36	$ 4,824
October 30, 2021	5	$ 56.49	$ 256
Fiscal 2021			
July 31, 2021	15	$ 53.30	$ 791
May 1, 2021	10	$ 48.71	$ 510
January 23, 2021	19	$ 42.82	$ 801
October 24, 2020	20	$ 40.44	$ 800

There were $25 million in stock repurchases that were pending settlement as of July 31, 2021.

The purchase price for the shares of our stock repurchased is reflected as a reduction to stockholders’ equity. We are required to allocate the purchase price of the repurchased shares as (i) a reduction to retained earnings or an increase to accumulated deficit and (ii) a reduction of common stock and additional paid-in capital.

(c) Preferred Stock

Under the terms of our Amended and Restated Certificate of Incorporation, the Board of Directors is authorized to issue preferred stock of one or more series and, in connection with the creation of such series, to fix by resolution the designation, powers (including voting powers (if any)), preferences and relative, participating, optional or other special rights of such series, and any qualification, limitations or restrictions thereof, of the shares of such series. As of January 29, 2022, we had not issued any shares of preferred stock.

16. Employee Benefit Plans

(a) Employee Stock Incentive Plans

We have one stock incentive plan: the 2005 Stock Incentive Plan (the "2005 Plan"). In addition, we have, in connection with our acquisitions of various companies, assumed the share-based awards granted under stock incentive plans of the acquired companies or issued share-based awards in replacement thereof. Share-based awards are designed to reward employees for their long-term contributions to us and provide incentives for them to remain with us. The number and frequency of share-based awards are based on competitive practices, our operating results, government regulations, and other factors. Our primary stock incentive plan is summarized as follows:

The 2005 Plan provides for the granting of stock options, stock grants, stock units and stock appreciation rights (SARs), the vesting of which may be time-based or upon satisfaction of performance goals, or both, and/or other conditions. Employees (including employee directors and executive officers) and consultants of Cisco and its subsidiaries and affiliates and non-employee directors of Cisco are eligible to participate in the 2005 Plan. As of January 29, 2022, the maximum number of shares issuable under the 2005 Plan over its term was 790 million shares. The 2005 Plan may be terminated by our Board of Directors at any time and for any reason, and is currently set to terminate at the 2030 Annual Meeting unless re-adopted or extended by our stockholders prior to or on such date.

Under the 2005 Plan's share reserve feature, a distinction is made between the number of shares in the reserve attributable to (i) stock options and SARs and (ii) "full value" awards (i.e., stock grants and stock units). Shares issued as stock grants, pursuant to stock units or pursuant to the settlement of dividend equivalents are counted against shares available for issuance under the 2005 Plan on a 1.5-to-1 ratio. For each share awarded as restricted stock or a restricted stock unit award under the 2005 Plan, 1.5 shares was deducted from the available share-based award balance. If awards issued under the 2005 Plan are forfeited or terminated for any reason before being exercised or settled, then the shares underlying such awards, plus the number of additional shares, if any, that counted against shares available for issuance under the 2005 Plan at the time of grant as a result of the application of the share ratio described above, will become available again for issuance under the 2005 Plan. As of January 29, 2022, 216 million shares were authorized for future grant under the 2005 Plan.

(b) Employee Stock Purchase Plan

We have an Employee Stock Purchase Plan under which 721 million shares of our common stock have been reserved for issuance as of January 29, 2022. Eligible employees are offered shares through a 24-month offering period, which consists of four consecutive 6-month purchase periods. Employees may purchase a limited amount of shares of our stock at a discount of up to 15% of the lesser of the fair market value at the beginning of the offering period or the end of each 6-month purchase period. The Employee Stock Purchase Plan is scheduled to terminate on the earlier of (i) January 3, 2030 and (ii) the date on which all shares available for issuance under the Employee Stock Purchase Plan are sold pursuant to exercised purchase rights. Under the Employee Stock Purchase Plan, we issued 8 million shares during the second quarter and first six months of fiscal 2022 and 8 million shares during the second quarter and first six months of fiscal 2021. As of January 29, 2022, 117 million shares were available for issuance under the Employee Stock Purchase Plan.

(c) Summary of Share-Based Compensation Expense

Share-based compensation expense consists primarily of expenses for RSUs, stock purchase rights, and stock options, granted to employees or assumed from acquisitions. The following table summarizes share-based compensation expense (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Cost of sales—product	$ 29	$ 25	$ 54	$ 49
Cost of sales—service	52	43	96	84
Share-based compensation expense in cost of sales	81	68	150	133
Research and development	205	171	386	338
Sales and marketing	142	128	282	262
General and administrative	49	59	111	120
Restructuring and other charges	—	10	1	21
Share-based compensation expense in operating expenses	396	368	780	741
Total share-based compensation expense	$ 477	$ 436	$ 930	$ 874
Income tax benefit for share-based compensation	$ 152	$ 95	$ 256	$ 176

As of January 29, 2022, the total compensation cost related to unvested share-based awards not yet recognized was $4.4 billion which is expected to be recognized over approximately 2.8 years on a weighted-average basis.

(d) Restricted Stock Unit Awards

A summary of the restricted stock and stock unit activity, which includes time-based and performance-based or market-based RSUs, is as follows (in millions, except per-share amounts):

	Restricted Stock/ Stock Units	Weighted-Average Grant Date Fair Value per Share	Aggregate Fair Value
Unvested balance at July 25, 2020	96	$ 42.03	
Granted and assumed	51	41.89	
Vested	(39)	39.63	$ 1,813
Canceled/forfeited/other	(14)	42.13	
Unvested balance at July 31, 2021	94	42.93	
Granted and assumed	33	53.99	
Vested	(21)	41.11	$ 1,183
Canceled/forfeited/other	(7)	44.62	
Unvested balance at January 29, 2022	99	$ 46.83	

17. Comprehensive Income (Loss)

The components of AOCI, net of tax, and the other comprehensive income (loss), for the first six months of fiscal 2022 and 2021 are summarized as follows (in millions):

	Net Unrealized Gains (Losses) on Available-for-Sale Investments	Net Unrealized Gains (Losses) Cash Flow Hedging Instruments	Cumulative Translation Adjustment and Actuarial Gains (Losses)	Accumulated Other Comprehensive Income (Loss)
Balance at July 31, 2021	$ 182	$ (1)	$ (598)	$ (417)
Other comprehensive income (loss) before reclassifications	(296)	18	(162)	(440)
(Gains) losses reclassified out of AOCI	(16)	(3)	1	(18)
Tax benefit (expense)	80	(3)	9	86
Balance at January 29, 2022	$ (50)	$ 11	$ (750)	$ (789)

	Net Unrealized Gains (Losses) on Available-for-Sale Investments	Net Unrealized Gains (Losses) Cash Flow Hedging Instruments	Cumulative Translation Adjustment and Actuarial Gains (Losses)	Accumulated Other Comprehensive Income (Loss)
Balance at July 25, 2020	$ 315	$ (6)	$ (828)	$ (519)
Other comprehensive income (loss) before reclassifications	(35)	(5)	345	305
(Gains) losses reclassified out of AOCI	(24)	(5)	2	(27)
Tax benefit (expense)	24	2	(3)	23
Balance at January 23, 2021	$ 280	$ (14)	$ (484)	$ (218)

18. Income Taxes

The following table provides details of income taxes (in millions, except percentages):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Income before provision for income taxes	$ 3,603	$ 3,255	$ 7,260	$ 5,936
Provision for income taxes	$ 630	$ 710	$ 1,307	$ 1,217
Effective tax rate	17.5 %	21.8 %	18.0 %	20.5 %

As of January 29, 2022, we had $3.1 billion of unrecognized tax benefits, of which $2.3 billion, if recognized, would favorably impact the effective tax rate. We regularly engage in discussions and negotiations with tax authorities regarding tax matters in various jurisdictions. We believe it is reasonably possible that certain federal, foreign, and state tax matters may be concluded in the next 12 months. Specific positions that may be resolved include issues involving transfer pricing and various other matters.

19. Segment Information and Major Customers

(a) Revenue and Gross Margin by Segment

We conduct business globally and are primarily managed on a geographic basis consisting of three segments: the Americas, EMEA, and APJC. Our management makes financial decisions and allocates resources based on the information it receives from our internal management system. Sales are attributed to a segment based on the ordering location of the customer. We do not allocate research and development, sales and marketing, or general and administrative expenses to our segments in this internal management system because management does not include the information in our measurement of the performance of the operating segments. In addition, we do not allocate amortization and impairment of acquisition-related intangible assets, share-based compensation expense, significant litigation settlements and other contingencies, charges related to asset impairments and restructurings, and certain other charges to the gross margin for each segment because management does not include this information in our measurement of the performance of the operating segments.

Summarized financial information by segment for the second quarter and first six months of fiscal 2022 and 2021, based on our internal management system and as utilized by our Chief Operating Decision Maker ("CODM"), is as follows (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Revenue:				
Americas	$ 7,146	$ 6,969	$ 14,706	$ 14,168
EMEA	3,564	3,207	6,867	6,171
APJC	2,010	1,784	4,046	3,551
Total	$ 12,720	$ 11,960	$ 25,620	$ 23,889
Gross margin:				
Americas	$ 4,611	$ 4,705	$ 9,486	$ 9,552
EMEA	2,381	2,145	4,509	4,038
APJC	1,337	1,155	2,654	2,268
Segment total	8,328	8,005	16,649	15,858
Unallocated corporate items	(279)	(221)	(547)	(493)
Total	$ 8,049	$ 7,784	$ 16,102	$ 15,365

Amounts may not sum and percentages may not recalculate due to rounding.

Revenue in the United States was $6.4 billion and $6.2 billion for the second quarter of fiscal 2022 and 2021, respectively, and $13.2 billion and $12.7 billion for the first six months of fiscal 2022 and 2021, respectively.

(b) Revenue for Groups of Similar Products and Services

We design and sell Internet Protocol (IP)-based networking and other products related to the communications and IT industry and provide services associated with these products and their use. Effective in the first quarter of fiscal 2022, we began reporting our product and service revenue in the following categories: Secure, Agile Networks; Hybrid Work; End-to-End Security; Internet for the Future; Optimized Application Experiences; Other Products; and Services. This change will better align our product categories with our strategic priorities.

The following table presents revenue for groups of similar products and services (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Revenue:				
Secure, Agile Networks	$ 5,898	$ 5,489	$ 11,866	$ 10,923
Hybrid Work	1,067	1,167	2,176	2,360
End-to-End Security	883	822	1,778	1,684
Internet for the Future	1,322	931	2,697	1,872
Optimized Application Experiences	180	161	361	314
Other Products	2	3	5	6
Total Product	9,353	8,572	18,882	17,159
Services	3,367	3,388	6,738	6,730
Total	$ 12,720	$ 11,960	$ 25,620	$ 23,889

Amounts may not sum due to rounding.

20. Net Income per Share

The following table presents the calculation of basic and diluted net income per share (in millions, except per-share amounts):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Net income	$ 2,973	$ 2,545	$ 5,953	$ 4,719
Weighted-average shares—basic	4,183	4,223	4,201	4,227
Effect of dilutive potential common shares	22	11	21	12
Weighted-average shares—diluted	4,205	4,234	4,222	4,239
Net income per share—basic	$ 0.71	$ 0.60	$ 1.42	$ 1.12
Net income per share—diluted	$ 0.71	$ 0.60	$ 1.41	$ 1.11
Antidilutive employee share-based awards, excluded	11	49	41	56

Employee equity share options, unvested shares, and similar equity instruments granted and assumed by us are treated as potential common shares outstanding in computing diluted earnings per share. Diluted shares outstanding include the dilutive effect of in-the-money options, unvested restricted stock, and restricted stock units. The dilutive effect of such equity awards is calculated based on the average share price for each fiscal period using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and the amount of compensation cost for future service that has not yet been recognized are collectively assumed to be used to repurchase shares.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Forward-Looking Statements

This Quarterly Report on Form 10-Q, including this Management's Discussion and Analysis of Financial Condition and Results of Operations, contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933, as amended (the "Securities Act") and the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as "expects," "anticipates," "targets," "goals," "projects," "intends," "plans," "believes," "momentum," "seeks," "estimates," "continues," "endeavors," "strives," "may," variations of such words, and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, future responses to and effects of the COVID-19 pandemic, and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including those under "Part II, Item 1A. Risk Factors," and elsewhere herein. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements for any reason.

OVERVIEW

Cisco designs and sells a broad range of technologies that power the Internet. We are integrating our platforms across networking, security, collaboration, applications and the cloud. These platforms are designed to help our customers manage more users, devices and things connecting to their networks. This will enable us to provide customers with a highly secure, intelligent platform for their digital business.

A summary of our results is as follows (in millions, except percentages and per-share amounts):

	Three Months Ended			Six Months Ended		
	January 29, 2022	January 23, 2021	% Variance	January 29, 2022	January 23, 2021	% Variance
Revenue	$ 12,720	$ 11,960	6 %	$ 25,620	$ 23,889	7 %
Gross margin percentage	63.3 %	65.1 %	(1.8) pts	62.8 %	64.3 %	(1.5) pts
Research and development	$ 1,670	$ 1,527	9 %	$ 3,384	$ 3,139	8 %
Sales and marketing	$ 2,266	$ 2,277	— %	$ 4,527	$ 4,494	1 %
General and administrative	$ 544	$ 484	12 %	$ 1,095	$ 1,028	7 %
Total research and development, sales and marketing, general and administrative	$ 4,480	$ 4,288	4 %	$ 9,006	$ 8,661	4 %
Total as a percentage of revenue	35.2 %	35.9 %	(0.7) pts	35.2 %	36.3 %	(1.1) pts
Amortization of purchased intangible assets included in operating expenses	$ 79	$ 39	103 %	$ 163	$ 75	117 %
Restructuring and other charges included in operating expenses	$ 3	$ 234	(99) %	$ 8	$ 836	(99) %
Operating income as a percentage of revenue	27.4 %	26.9 %	0.5 pts	27.0 %	24.2 %	2.8 pts
Interest and other income (loss), net	$ 116	$ 32	263 %	$ 335	$ 143	134 %
Income tax percentage	17.5 %	21.8 %	(4.3) pts	18.0 %	20.5 %	(2.5) pts
Net income	$ 2,973	$ 2,545	17 %	$ 5,953	$ 4,719	26 %
Net income as a percentage of revenue	23.4 %	21.3 %	2.1 pts	23.2 %	19.8 %	3.4 pts
Earnings per share—diluted	$ 0.71	$ 0.60	18 %	$ 1.41	$ 1.11	27 %

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

In the second quarter of fiscal 2022, we delivered solid revenue growth and strong profitability. As customers are defining their hybrid work strategy, we remain focused on executing and increasing our investments in our technologies to assist in that transition. Our business performed well in a highly dynamic, supply constrained and inflationary environment. Total revenue increased by 6% compared with the second quarter of fiscal 2021. Our product revenue reflected growth in Secure, Agile Networks; Internet for the Future; End-to-End Security; and Optimized Application Experiences; partially offset by a decline in Hybrid Work. While our revenue growth was solid, it was negatively impacted by supply constraints seen industry wide. We continue to manage these significant supply constraints due to component shortages and are taking multiple steps in order to mitigate the supply shortages and deliver products to our customers. We expect these supply constraints to continue through the second half of fiscal 2022. We continued to make progress in the transition of our business model delivering increased software and subscriptions. We remain focused on accelerating innovation across our portfolio, and we believe that we have made continued progress on our strategic priorities. We continue to operate in a challenging macroeconomic and highly competitive environment. While the overall environment remains uncertain, we continue to aggressively invest in priority areas with the objective of driving profitable growth over the long term.

Within total revenue, product revenue increased by 9% and service revenue decreased by 1%. In the second quarter of fiscal 2022, total software revenue was $3.8 billion across all product areas and service, an increase of 6%. Within total software revenue, subscription revenue increased 12%. Total gross margin decreased by 1.8 percentage points. Product gross margin decreased by 2.7 percentage points, largely driven by increased costs related to supply constraints. As a percentage of revenue, research and development, sales and marketing, and general and administrative expenses, collectively, decreased by 0.7 percentage points. Operating income as a percentage of revenue increased by 0.5 percentage points. Diluted earnings per share increased 18%, driven by a 17% increase in net income and a decrease in diluted share count of 29 million shares.

In terms of our geographic segments, revenue from the Americas increased $177 million, EMEA revenue increased by $357 million and APJC revenue increased by $226 million. The "BRICM" countries experienced product revenue growth of 7% in the aggregate, driven by an increase in product revenue across each of the BRICM countries except Brazil.

From a customer market standpoint, we experienced product revenue growth in the enterprise, commercial and service provider markets, partially offset by a product revenue decline in the public sector market. We continued to see improvement in business momentum in our customer markets.

From a product category perspective, the product revenue increase of 9% was driven by growth in revenue for Secure, Agile Networks of 7%; Internet for the Future of 42%; End-to-End Security of 7%; and Optimized Application Experiences of 12%; partially offset by a product revenue decline in Hybrid Work of 9%.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Total revenue increased 7%, with product revenue increasing 10% and service revenue was flat. Total gross margin decreased 1.5 percentage points due to increased costs related to supply constraints, and to a lesser extent, pricing erosion and unfavorable impacts from product mix. As a percentage of revenue, research, and development, sales and marketing, and general and administrative expenses collectively decreased by 1.1 percentage points. Operating income as a percentage of revenue increased by 2.8 percentage points. Diluted earnings per share increased 27%, driven by a 26% increase in net income, primarily driven by higher revenue and lower restructuring and other charges.

COVID-19 Pandemic Response Summary

During the COVID-19 pandemic, our priority has been supporting our employees, customers, partners and communities, while positioning Cisco for the future. The pandemic has driven organizations across the globe to digitize their operations and support remote workforces at a faster speed and greater scale than ever before. We remain focused on providing the technology and solutions our customers need to accelerate their digital organizations. The actions we have taken and are taking include:

Employees

- Most of our global workforce is working from home.
- Seamless transition to work from home with a long-standing flexible work policy, and we build the technologies that allow organizations to stay connected, secure and productive.
- For the remainder who must be in the office to perform their roles, we are focused on their health and safety, and are taking all of the necessary precautions.

Customer and Partners

- Provided a variety of free offers and trials for our Webex and security technologies as they dramatically shifted entire workforces to be remote.

Communities

- Committed significant funds to support both global and local pandemic response efforts.
- Provided technology and financial support for non-profits, first responders, and governments.
- Donated personal protective equipment to hospital workers including N95 masks and face shields 3D-printed by Cisco volunteers around the world.

We are moving towards a hybrid work model, giving our employees the flexibility to work offsite or at onsite Cisco locations.

Strategy and Priorities

As our customers add billions of new connections to their enterprises, and as more applications move to a multicloud environment, the network becomes even more critical. Our customers are navigating change at an unprecedented pace and our mission is to shape the future of the Internet by inspiring new possibilities for them by helping transform their infrastructure, expand applications and analytics, address their security needs, and empower their teams. We believe that our customers are looking for outcomes that are data-driven and provide meaningful business value through automation, security, and analytics across private, hybrid, and multicloud environments. Our strategy is to help our customers connect, secure, and automate in order to accelerate their digital agility in a cloud-first world.

For additional discussion of our strategy and priorities, see Item 1. Business in our Annual Report on Form 10-K for the year ended July 31, 2021.

Other Key Financial Measures

The following is a summary of our other key financial measures for the second quarter of fiscal 2022 (in millions):

	January 29, 2022	July 31, 2021
Cash and cash equivalents and investments	$ 21,113	$ 24,518
Remaining performance obligations	$ 30,518	$ 30,893
Inventories	$ 2,059	$ 1,559

	Six Months Ended	
	January 29, 2022	January 23, 2021
Cash provided by operating activities	$ 5,888	$ 7,070
Repurchases of common stock—stock repurchase program	$ 5,080	$ 1,601
Dividends paid	$ 3,102	$ 3,041

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States requires us to make judgments, assumptions, and estimates that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. Note 2 to the Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended July 31, 2021, as updated as applicable in Note 2 to the Consolidated Financial Statements herein, describes the significant accounting policies and methods used in the preparation of the Consolidated Financial Statements. The accounting policies described below are significantly affected by critical accounting estimates. Such accounting policies require significant judgments, assumptions, and estimates used in the preparation of the Consolidated Financial Statements, and actual results could differ materially from the amounts reported based on these policies.

The inputs into certain of our judgments, assumptions, and estimates considered the economic implications of the COVID-19 pandemic on our critical and significant accounting estimates. The COVID-19 pandemic did not have a material impact on our significant judgments, assumptions and estimates that are reflected in our results for the second quarter and first six months of fiscal 2022. These estimates are listed in our Annual Report on Form 10-K for the year ending July 31, 2021, and include: goodwill and identified purchased intangible assets and income taxes, among other items. The actual results that we experience may differ materially from our estimates. As the COVID-19 pandemic continues, many of our estimates could require increased judgment and carry a higher degree of variability and volatility. As events continue to evolve our estimates may change materially in future periods.

Revenue Recognition

We enter into contracts with customers that can include various combinations of products and services which are generally distinct and accounted for as separate performance obligations. As a result, our contracts may contain multiple performance obligations. We determine whether arrangements are distinct based on whether the customer can benefit from the product or service on its own or together with other resources that are readily available and whether our commitment to transfer the product or service to the customer is separately identifiable from other obligations in the contract. We classify our hardware, perpetual software licenses, and SaaS as distinct performance obligations. Term software licenses represent multiple obligations, which include software licenses and software maintenance. In transactions where we deliver hardware or software, we are typically the principal and we record revenue and costs of goods sold on a gross basis.

We recognize revenue upon transfer of control of promised goods or services in a contract with a customer in an amount that reflects the consideration we expect to receive in exchange for those products or services. Transfer of control occurs once the customer has the contractual right to use the product, generally upon shipment, electronic delivery (or when the software is available for download by the customer), or once title and risk of loss has transferred to the customer. Transfer of control can also occur over time for software maintenance and services as the customer receives the benefit over the contract term. Our hardware and perpetual software licenses are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses include multiple performance obligations where the term licenses are recognized upfront upon transfer of control, with the associated software maintenance revenue recognized ratably over the contract term as services and software updates are provided. SaaS arrangements do not include the right for the customer to take possession of the software during the term, and therefore have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term as the customer consumes the services. On our product sales, we record consideration from shipping and handling on a gross basis within net product sales. We record our revenue net of any associated sales taxes.

Revenue is allocated among these performance obligations in a manner that reflects the consideration that we expect to be entitled to for the promised goods or services based on standalone selling prices (SSP). SSP is estimated for each distinct performance obligation and judgment may be required in their determination. The best evidence of SSP is the observable price of a product or service when we sell the goods separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, we determine SSP using information that may include market conditions and other observable inputs.

We assess relevant contractual terms in our customer contracts to determine the transaction price. We apply judgment in identifying contractual terms and determining the transaction price as we may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration includes potential contractual penalties and various rebate, cooperative marketing and other incentive programs that we offer to our distributors, channel partners and customers. When determining the amount of revenue to recognize, we estimate the expected usage of these programs, applying the expected value or most likely estimate and update the estimate at each reporting period as actual utilization becomes available. We also consider the customers' right of return in determining the transaction price, where applicable. If actual credits received by distributors under these programs were to deviate significantly from our estimates, which are based on historical experience, our revenue could be adversely affected.

See Note 3 to the Consolidated Financial Statements for more details.

Inventory Valuation and Liability for Purchase Commitments with Contract Manufacturers and Suppliers

Inventory is written down based on excess and obsolete inventories, determined primarily by future demand forecasts. Inventory write-downs are measured as the difference between the cost of the inventory and market, based upon assumptions about future demand, and are charged to the provision for inventory, which is a component of our cost of sales. At the point of the loss recognition, a new, lower cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis.

We record a liability for firm, noncancelable, and unconditional purchase commitments with contract manufacturers and suppliers for quantities in excess of our future demand forecasts consistent with the valuation of our excess and obsolete inventory.

Our provision for inventory was $45 million and $65 million for the first six months of fiscal 2022 and 2021, respectively. The provision for the liability related to purchase commitments with contract manufacturers and suppliers was $80 million and $44 million for the first six months of fiscal 2022 and 2021, respectively. If there were to be a sudden and significant decrease in demand for our products, if there were a higher incidence of inventory obsolescence because of rapidly changing technology and customer requirements, or if supply constraints were to continue, we could be required to increase our inventory write-downs, and our liability for purchase commitments with contract manufacturers and suppliers, and accordingly our profitability, could be adversely affected. We regularly evaluate our exposure for inventory write-downs and the adequacy of our liability for purchase commitments. We continue to manage through significant supply constraints seen industry wide due to component shortages caused, in part, by the COVID-19 pandemic. For further discussion around the Supply Constraints Impacts and Risks, see Result of Operations—Product Gross Margin and Liquidity and Capital Resources—Inventory Supply Chain.

Loss Contingencies

We are subject to the possibility of various losses arising in the ordinary course of business. We consider the likelihood of the incurrence of a liability, as well as our ability to reasonably estimate the amount of loss, in determining loss contingencies. An estimated loss contingency is accrued when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. We regularly evaluate information available to us to determine whether such accruals should be made or adjusted and whether new accruals are required.

Third parties, including customers, have in the past and may in the future assert claims or initiate litigation related to exclusive patent, copyright, trademark, and other intellectual property rights to technologies and related standards that are relevant to us. These assertions have increased over time as a result of our growth and the general increase in the pace of patent claims assertions, particularly in the United States. If any infringement or other intellectual property claim made against us by any third party is successful, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results, and financial condition could be materially and adversely affected.

Goodwill and Purchased Intangible Asset Impairments

Our methodology for allocating the purchase price relating to purchase acquisitions is determined through established valuation techniques. Goodwill represents a residual value as of the acquisition date, which in most cases results in measuring goodwill as an excess of the purchase consideration transferred plus the fair value of any noncontrolling interest in the acquired company over the fair value of net assets acquired, including contingent consideration. We perform goodwill impairment tests on an annual basis in the fourth fiscal quarter and between annual tests in certain circumstances for each reporting unit. The assessment of fair value for goodwill and purchased intangible assets is based on factors that market participants would use in an orderly transaction in accordance with the new accounting guidance for the fair value measurement of nonfinancial assets.

In response to changes in industry and market conditions, we could be required to strategically realign our resources and consider restructuring, disposing of, or otherwise exiting businesses, which could result in an impairment of goodwill. There was no impairment of goodwill in each of the first six months of fiscal 2022 and 2021.

The fair value of acquired technology and patents, as well as acquired technology under development, is determined at acquisition date primarily using the income approach, which discounts expected future cash flows to present value. The discount rates used in the present value calculations are typically derived from a weighted-average cost of capital analysis and then adjusted to reflect risks inherent in the development lifecycle as appropriate. We consider the pricing model for products related to these acquisitions to be standard within the high-technology communications industry, and the applicable discount rates represent the rates that market participants would use for valuation of such intangible assets.

We make judgments about the recoverability of purchased intangible assets with finite lives whenever events or changes in circumstances indicate that an impairment may exist. Recoverability of purchased intangible assets with finite lives is measured by comparing the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate. We review indefinite-lived intangible assets for impairment annually or whenever events or changes in circumstances indicate that the asset might be impaired. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. Assumptions and estimates about future values and remaining useful lives of our purchased intangible assets are complex and subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy and our internal forecasts.

Our ongoing consideration of all the factors described previously could result in impairment charges in the future, which could adversely affect our net income.

Income Taxes

We are subject to income taxes in the United States and numerous foreign jurisdictions. Our effective tax rates differ from the statutory rate, primarily due to the tax impact of state taxes, foreign operations, R&D tax credits, foreign-derived intangible income deductions, global intangible low-taxed income, tax audit settlements, nondeductible compensation, international realignments, and transfer pricing adjustments. Our effective tax rate was 17.5% and 21.8% in the second quarter of fiscal 2022 and 2021, respectively, and 18.0% and 20.5% in the first six months of fiscal 2022 and 2021, respectively.

Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes. Although we believe our reserves are reasonable, no assurance can be given that the final tax outcome of these matters will not be different from that which is reflected in our historical income tax provisions and accruals. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of reserve provisions and changes to reserves that are considered appropriate, as well as the related net interest and penalties.

Significant judgment is also required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence, including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

Our provision for income taxes is subject to volatility and could be adversely impacted by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes to foreign-derived intangible income deduction, global intangible low-tax income and base erosion and anti-abuse tax laws, regulations, or interpretations thereof; by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attributes prescribed in the accounting guidance for uncertainty in income taxes. The Organisation for Economic Co-operation and Development (OECD), an international association comprised of 38 countries, including the United States, has made changes and is contemplating additional changes to numerous long-standing tax principles. There can be no assurance that these changes and any contemplated changes if finalized, once adopted by countries, will not have an adverse impact on our provision for income taxes. As a result of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries was subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are subject to the continuous examination of our income tax returns by the Internal Revenue Service (IRS) and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse impact on our operating results and financial condition.

RESULTS OF OPERATIONS

Revenue

The following table presents the breakdown of revenue between product and service (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Revenue:								
Product	$ 9,353	$ 8,572	$ 781	9 %	$ 18,882	$ 17,159	$ 1,723	10 %
Percentage of revenue	*73.5 %*	*71.7 %*			*73.7 %*	*71.8 %*		
Service	3,367	3,388	(21)	(1) %	6,738	6,730	8	— %
Percentage of revenue	*26.5 %*	*28.3 %*			*26.3 %*	*28.2 %*		
Total	$ 12,720	$ 11,960	$ 760	6 %	$ 25,620	$ 23,889	$ 1,731	7 %

We manage our business primarily on a geographic basis, organized into three geographic segments. Our revenue, which includes product and service for each segment, is summarized in the following table (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Revenue:								
Americas	$ 7,146	$ 6,969	$ 177	3 %	$ 14,706	$ 14,168	$ 538	4 %
Percentage of revenue	*56.2 %*	*58.3 %*			*57.4 %*	*59.3 %*		
EMEA	3,564	3,207	357	11 %	6,867	6,171	696	11 %
Percentage of revenue	*28.0 %*	*26.8 %*			*26.8 %*	*25.8 %*		
APJC	2,010	1,784	226	13 %	4,046	3,551	495	14 %
Percentage of revenue	*15.8 %*	*14.9 %*			*15.8 %*	*14.9 %*		
Total	$ 12,720	$ 11,960	$ 760	6 %	$ 25,620	$ 23,889	$ 1,731	7 %

Amounts may not sum and percentages may not recalculate due to rounding.

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Total revenue increased by 6%. Product revenue increased by 9% and service revenue decreased by 1%. Our total revenue reflected growth across each of our geographic segments. Product revenue for the emerging countries of BRICM, in the aggregate, experienced product revenue growth of 7%, with growth in each of these countries except Brazil.

In addition to the impact of macroeconomic factors, including the IT spending environment and the level of spending by government entities, revenue by segment in a particular period may be significantly impacted by several factors related to revenue recognition, including the complexity of transactions such as multiple performance obligations; the mix of financing arrangements provided to channel partners and customers; and final acceptance of the product, system, or solution, among other factors. In addition, certain customers tend to make large and sporadic purchases, and the revenue related to these transactions may also be affected by the timing of revenue recognition, which in turn would impact the revenue of the relevant segment.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Total revenue increased by 7%. Product revenue increased by 10% and service revenue was flat. Our total revenue reflected growth across each of our geographic segments. The emerging countries of BRICM, in the aggregate, experienced product revenue growth of 14%, with growth in each of these countries except Russia.

Product Revenue by Segment

The following table presents the breakdown of product revenue by segment (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Product revenue:								
Americas	$ 5,127	$ 4,888	$ 239	5 %	$ 10,649	$ 10,017	$ 632	6 %
Percentage of product revenue	*54.8 %*	*57.1 %*			*56.4 %*	*58.4 %*		
EMEA	2,760	2,438	322	13 %	5,273	4,648	625	13 %
Percentage of product revenue	*29.5 %*	*28.4 %*			*27.9 %*	*27.1 %*		
APJC	1,466	1,246	220	18 %	2,961	2,494	467	19 %
Percentage of product revenue	*15.7 %*	*14.5 %*			*15.7 %*	*14.5 %*		
Total	$ 9,353	$ 8,572	$ 781	9 %	$ 18,882	$ 17,159	$ 1,723	10 %

Amounts may not sum and percentages may not recalculate due to rounding.

Americas

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Product revenue in the Americas segment increased by 5%, with growth in the service provider, enterprise and commercial markets, partially offset by a decline in the public sector market. From a country perspective, product revenue increased in the United States, Canada and Mexico by 6%, 1%, and 9%, respectively, partially offset by a decline in product revenue of 10% in Brazil.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Product revenue in the Americas segment increased by 6%, driven by growth in the service provider, enterprise, and commercial markets, partially offset by a decline in the public sector market. From a country perspective, product revenue increased in the United States, Canada, Mexico and Brazil by 7%, 10%, 10% and 7%, respectively.

EMEA

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Product revenue in the EMEA segment increased by 13%, with growth in all customer markets. Product revenue from emerging countries within EMEA increased by 37% and product revenue for the remainder of the EMEA segment, which primarily consists of countries in Western Europe, increased by 8%. From a country perspective, product revenue increased by 3% in Germany and 33% in the United Kingdom, partially offset by a decline of 12% in France.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Product revenue in the EMEA segment increased by 13%, with growth in all customer markets. Product revenue from emerging countries within EMEA increased by 28% and product revenue for the remainder of the EMEA segment increased by 10%. From a country perspective, product revenue increased by 3% in Germany and 23% in the United Kingdom, partially offset by a decline of 3% in France.

APJC

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Product revenue in the APJC segment increased by 18%, driven by growth in the enterprise, commercial and public sector markets, partially offset by a decline in the service provider market. From a country perspective, product revenue increased in Australia, India and China by 30%, 13% and 12%, respectively, partially offset by a decline of 1% in Japan.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Product revenue in the APJC segment increased by 19%, with growth across each of the customer markets. From a country perspective, product revenue increased in Australia, India and China by 32%, 27% and 16%, respectively, partially offset by a decline of 6% in Japan.

Product Revenue by Category

In addition to the primary view on a geographic basis, we also prepare financial information related to product categories and customer markets for various purposes. Effective in the first quarter of fiscal 2022, we began reporting our product revenue in the following categories: Secure, Agile Networks; Hybrid Work; End-to-End Security; Internet for the Future; Optimized Application Experiences; and Other Products. This change will better align our product categories with our strategic priorities.

The following table presents product revenue by category (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Product revenue:								
Secure, Agile Networks	$ 5,898	$ 5,489	$ 409	7 %	$ 11,866	$ 10,923	$ 943	9 %
Hybrid Work	1,067	1,167	(100)	(9) %	2,176	2,360	(184)	(8) %
End-to-End Security	883	822	61	7 %	1,778	1,684	94	6 %
Internet for the Future	1,322	931	391	42 %	2,697	1,872	825	44 %
Optimized Application Experiences	180	161	19	12 %	361	314	47	15 %
Other Products	2	3	(1)	(28) %	5	6	(1)	(10) %
Total	$ 9,353	$ 8,572	$ 781	9 %	$ 18,882	$ 17,159	$ 1,723	10 %

Amounts may not sum and percentages may not recalculate due to rounding.

Secure, Agile Networks

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The Secure, Agile Networks product category represents our core networking offerings related to switching, enterprise routing, wireless, and compute. Secure, Agile Networks revenue increased by 7%, or $409 million, with growth across the portfolio except enterprise routing. Revenue grew in both campus switching and data center switching. This was primarily driven by strong growth in our Catalyst 9000 series, Nexus 9000 series and Meraki switching offerings. We experienced a decrease in sales of our enterprise routing products primarily driven by declines in our Access offerings partially offset by growth in our SD-WAN offerings. Wireless had strong double-digit growth driven by our WiFi-6 products and Meraki offerings. Revenue from compute grew primarily driven by our servers.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Revenue from the Secure, Agile Networks product category increased 9%, or $943 million, with growth across the portfolio except enterprise routing. Revenue grew in both campus switching and data center switching, primarily driven by growth in our Catalyst 9000 series, Nexus 9000 series and Meraki switching offerings. The decrease in enterprise routing was primarily driven by declines in our Access offerings, partially offset by growth in our Edge and SD-WAN offerings. Wireless had strong double-digit growth driven by our WiFi-6 products and Meraki offerings. Revenue from compute grew primarily driven by our servers.

Hybrid Work

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The Hybrid Work product category includes our collaboration and contact center offerings. Revenue in our Hybrid Work product category decreased by 9%, or $100 million, driven by declines in our Collaboration Devices and Meetings offerings, partially offset by growth in our Communication Platform as a Service (CPaaS) offerings.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Revenue in our Hybrid Work product category decreased by 8%, or $184 million, with declines in our Collaboration Devices, Meetings, Calling and Contact Center offerings, partially offset by growth in our CPaaS offerings.

End-to-End Security

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Revenue in our End-to-End Security product category increased 7%, or $61 million primarily driven by double-digit growth in our zero-trust portfolio driven by continued momentum with our Duo offerings. We also experienced growth in our cloud-based solutions, perpetual and security hardware offerings and Unified Threat Management offerings, partially offset by declines in our Network Security offerings.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Revenue in our End-to-End Security product category increased by 6%, or $94 million, driven by growth in our zero-trust portfolio, Unified Threat Management offerings and cloud-based solutions, partially offset by declines in our Network Security offerings.

Internet for the Future

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The Internet for the Future product category includes our routed optical networking, public 5G, silicon and optics offerings. Revenue in our Internet for the Future product category increased by 42%, or $391 million, driven by the growth in the webscale provider market. This was primarily driven by strong growth in our Cisco 8000 portfolio and ASR 9000 series offerings. We also saw a benefit from our acquisition of Acacia in the third quarter of fiscal 2021.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Revenue in our Internet for the Future product category increased 44%, or $825 million, driven by growth in the webscale provider market. This was primarily driven by growth in our Cisco 8000 portfolio, NCS 5500 and ASR 9000 series offerings. We also saw a benefit from our acquisition of Acacia in the third quarter of fiscal 2021.

Optimized Application Experiences

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The Optimized Application Experiences product category includes our full stack observability and cloud-native platforms offerings. Revenue in our Optimized Application Experiences product category increased 12%, or $19 million, driven by growth in our ThousandEyes and Intersight offerings.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Revenue in our Optimized Application Experiences product category increased by 15%, or $47 million, driven by growth in our ThousandEyes and Intersight offerings.

Service Revenue by Segment

The following table presents the breakdown of service revenue by segment (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Service revenue:								
Americas	$ 2,019	$ 2,081	$ (62)	(3) %	$ 4,057	$ 4,151	$ (94)	(2) %
Percentage of service revenue	*60.0 %*	*61.4 %*			*60.2 %*	*61.7 %*		
EMEA	804	769	35	5 %	1,594	1,523	71	5 %
Percentage of service revenue	*23.9 %*	*22.7 %*			*23.7 %*	*22.6 %*		
APJC	544	538	6	1 %	1,086	1,057	29	3 %
Percentage of service revenue	*16.1 %*	*15.9 %*			*16.1 %*	*15.7 %*		
Total	$ 3,367	$ 3,388	$ (21)	(1) %	$ 6,738	$ 6,730	$ 8	— %

Amounts may not sum and percentages may not recalculate due to rounding.

Service revenue decreased 1% in the second quarter of fiscal 2022 compared with the second quarter of fiscal 2021. This was driven by a decrease in advisory services and software support offerings, partially offset by an increase in solution support offerings. Service revenue was flat in the first six months of fiscal 2022 compared to the first six months of fiscal 2021 driven by revenue growth in our maintenance business and solution support offerings offset by declines in our advisory services and software support offerings. Service revenue increased in the EMEA and APJC segments, partially offset by lower revenue in the Americas segment for the second quarter and first six months of fiscal 2022.

Gross Margin

The following table presents the gross margin for products and services (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	AMOUNT		PERCENTAGE		AMOUNT		PERCENTAGE	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Gross margin:								
Product	$ 5,784	$ 5,528	61.8 %	64.5 %	$ 11,640	$ 10,909	61.6 %	63.6 %
Service	2,265	2,256	67.3 %	66.6 %	4,462	4,456	66.2 %	66.2 %
Total	$ 8,049	$ 7,784	63.3 %	65.1 %	$ 16,102	$ 15,365	62.8 %	64.3 %

Product Gross Margin

The following table summarizes the key factors that contributed to the change in product gross margin percentage for the second quarter and first six months of fiscal 2022, as compared with the corresponding prior year periods:

	Product Gross Margin Percentage	
	Three Months Ended	Six Months Ended
Fiscal 2021	64.5 %	63.6 %
Productivity [(1)]	(1.7)%	(1.3)%
Product pricing	(0.2)%	(0.5)%
Mix of products sold	(0.4)%	(0.2)%
Legal and indemnification charge	— %	0.3 %
Others	(0.4)%	(0.3)%
Fiscal 2022	61.8 %	61.6 %

(1) Productivity includes overall manufacturing-related costs, such as component costs, warranty expense, provision for inventory, freight, logistics, shipment volume, and other items not categorized elsewhere.

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Product gross margin decreased by 2.7 percentage points primarily driven by lower productivity, largely driven by increased costs related to supply constraints from freight, expedites, and component costs. We also saw slight pricing erosion and unfavorable product mix. The unfavorable mix was driven by changes in the proportion of products sold from Internet for the Future, partially offset by favorable product mix in Secure, Agile Networks, as compared to the corresponding period of fiscal 2021.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Product gross margin decreased by 2.0 percentage points primarily driven by lower productivity, largely driven by increased costs related to supply chain constraints from freight, expedites, and component costs, pricing erosion and unfavorable impacts from product mix.

Supply Constraints Impacts and Risks

We continue to manage through significant supply constraints seen industry wide due to component shortages caused, in part, by the COVID-19 pandemic. These shortages have resulted in increased costs (i.e., component and other commodity costs, freight, expedite fees, etc.) which have had a negative impact on our product gross margin and have resulted in extended lead times for us and our customers. We have taken a number of steps in order to mitigate the supply constraint related impacts including: partnering with several of our key suppliers utilizing our volume purchasing ability and extending supply coverage, including, in certain cases, revising supplier arrangements; paying significantly higher component and logistics costs to secure supply; modifying our product designs in order to leverage alternate suppliers, where possible; continually optimizing our inventory build and customer delivery plans; among others. We believe these actions are helping us to optimize our access to critical components and meet customer demand for our products. We have recently seen substantially increased demand for our hardware products. As a result, in order to secure supply to meet customer demand, we have increased our inventory balances and inventory purchase commitments (see Liquidity and Capital Resources—Inventory Supply Chain section), which, in turn, has increased our supply chain exposure. Additionally, in certain situations, we have prepaid or made deposits with suppliers to secure future supply. These actions significantly increase the risk of future material excess and obsolete inventory and related losses if customer demand were to suddenly and significantly decrease in future periods. While we believe we are taking the right strategic and operational actions to address the supply situation, we recognize the increased risks.

Service Gross Margin

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Our service gross margin percentage increased by 0.7 percentage points primarily due to lower delivery costs and favorable mix of service offerings, partially offset by lower sales volume.

Our service gross margin normally experiences some fluctuations due to various factors such as the timing of contract initiations in our renewals, our strategic investments in headcount, and the resources we deploy to support the overall service business. Other factors include the mix of service offerings, as the gross margin from our advanced services is typically lower than the gross margin from technical support services.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Service gross margin was flat primarily due to favorable mix and lower delivery costs offset by higher headcount-related costs.

Gross Margin by Segment

The following table presents the total gross margin for each segment (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	AMOUNT		PERCENTAGE		AMOUNT		PERCENTAGE	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Gross margin:								
Americas	$ 4,611	$ 4,705	64.5 %	67.5 %	$ 9,486	$ 9,552	64.5 %	67.4 %
EMEA	2,381	2,145	66.8 %	66.9 %	4,509	4,038	65.7 %	65.4 %
APJC	1,337	1,155	66.5 %	64.8 %	2,654	2,268	65.6 %	63.9 %
Segment total	8,328	8,005	65.5 %	66.9 %	16,649	15,858	65.0 %	66.4 %
Unallocated corporate items [(1)]	(279)	(221)			(547)	(493)		
Total	$ 8,049	$ 7,784	63.3 %	65.1 %	$ 16,102	$ 15,365	62.8 %	64.3 %

[(1)] The unallocated corporate items include the effects of amortization and impairments of acquisition-related intangible assets, share-based compensation expense, significant litigation settlements and other contingencies, charges related to asset impairments and restructurings, and certain other charges. We do not allocate these items to the gross margin for each segment because management does not include such information in measuring the performance of the operating segments.

Amounts may not sum and percentages may not recalculate due to rounding.

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

We experienced a gross margin percentage decrease in our Americas segment due to negative impacts from productivity, unfavorable impacts from product mix and pricing erosion.

Gross margin in our EMEA segment decreased slightly primarily due to lower productivity partially offset by higher service gross margin in this geographic segment.

The APJC segment gross margin percentage increase was due to favorable impacts from product mix and to a lesser degree, favorable pricing. Higher service gross margin also contributed to the increase in the gross margin in this geographic segment.

The gross margin percentage for a particular segment may fluctuate, and period-to-period changes in such percentages may or may not be indicative of a trend for that segment.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

The Americas segment had a gross margin percentage decrease driven by negative impacts from productivity, pricing erosion and unfavorable product mix.

The gross margin percentage increase in our EMEA segment was primarily due to favorable product mix, partially offset by pricing erosion.

The APJC segment gross margin percentage increase was driven by favorable product mix, productivity improvements and favorable pricing.

Research and Development ("R&D"), Sales and Marketing, and General and Administrative ("G&A") Expenses

R&D, sales and marketing, and G&A expenses are summarized in the following table (in millions, except percentages):

	Three Months Ended				Six Months Ended			
	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent	January 29, 2022	January 23, 2021	Variance in Dollars	Variance in Percent
Research and development	$ 1,670	$ 1,527	$ 143	9 %	$ 3,384	$ 3,139	$ 245	8 %
Percentage of revenue	*13.1 %*	*12.8 %*			*13.2 %*	*13.1 %*		
Sales and marketing	2,266	2,277	(11)	— %	4,527	4,494	33	1 %
Percentage of revenue	*17.8 %*	*19.0 %*			*17.7 %*	*18.8 %*		
General and administrative	544	484	60	12 %	1,095	1,028	67	7 %
Percentage of revenue	*4.3 %*	*4.0 %*			*4.3 %*	*4.3 %*		
Total	$ 4,480	$ 4,288	$ 192	4 %	$ 9,006	$ 8,661	$ 345	4 %
Percentage of revenue	*35.2 %*	*35.9 %*			*35.2 %*	*36.3 %*		

R&D Expenses

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

R&D expenses increased due to higher headcount-related expenses, higher contracted services spending and higher share-based compensation expense, partially offset by lower discretionary spending.

We continue to invest in R&D in order to bring a broad range of products to market in a timely fashion. If we believe that we are unable to enter a particular market in a timely manner with internally developed products, we may purchase or license technology from other businesses, or we may partner with or acquire businesses as an alternative to internal R&D.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

R&D expenses increased primarily due to higher headcount-related expenses, higher contracted services spending, higher share-based compensation expense and higher acquisition-related costs, partially offset by lower discretionary spending.

Sales and Marketing Expenses

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Sales and marketing expenses decreased slightly due to lower headcount-related expenses and lower contracted services spending, partially offset by higher discretionary spending.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Sales and marketing expenses increased primarily due to higher discretionary spending.

G&A Expenses

For each of the second quarter and first six months of fiscal 2022, G&A expenses increased primarily due to higher acquisition and divestiture related costs.

Effect of Foreign Currency

In the second quarter of fiscal 2022, foreign currency fluctuations, net of hedging, decreased the combined R&D, sales and marketing, and G&A expenses by approximately $17 million, or 0.4%, compared with the second quarter of fiscal 2021.

In the first six months of fiscal 2022, foreign currency fluctuations, net of hedging, increased the combined R&D, sales and marketing, and G&A expenses by approximately $1 million, compared with the first six months of fiscal 2021.

Amortization of Purchased Intangible Assets

The following table presents the amortization of purchased intangible assets including impairment charges (in millions):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Amortization of purchased intangible assets:				
Cost of sales	$ 201	$ 156	$ 403	$ 326
Operating expenses	79	39	163	75
Total	$ 280	$ 195	$ 566	$ 401

For each of the second quarter and first six months of fiscal 2022, the increase in amortization of purchased intangible assets was due largely to the amortization of purchased intangibles from our recent acquisitions.

Restructuring and Other Charges

We initiated a restructuring plan in fiscal 2021, which included a voluntary early retirement program, in order to realign the organization and enable further investment in key priority areas. The total pretax charges were estimated to be approximately $900 million. In connection with this restructuring plan, we have incurred cumulative charges of $894 million and completed this plan in fiscal 2022.

Operating Income

The following table presents our operating income and our operating income as a percentage of revenue (in millions, except percentages):

	Three Months Ended		Six Months Ended	
	January 29, 2022	January 23, 2021	January 29, 2022	January 23, 2021
Operating income	$ 3,487	$ 3,223	$ 6,925	$ 5,793
Operating income as a percentage of revenue	27.4 %	26.9 %	27.0 %	24.2 %

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

Operating income increased by 8%, and operating income as a percentage of revenue increased by 0.5 percentage points. These changes resulted primarily from a revenue increase and lower restructuring and other charges partially offset by a gross margin percentage decrease (driven primarily by lower productivity).

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

Operating income increased by 20%, and operating income as a percentage of revenue increased by 2.8 percentage points. These changes resulted primarily from a revenue increase and lower restructuring and other charges partially offset by a gross margin percentage decrease (driven by lower productivity, pricing erosion and unfavorable impacts from product mix).

Interest and Other Income (Loss), Net

Interest Income (Expense), Net   The following table summarizes interest income and interest expense (in millions):

	Three Months Ended			Six Months Ended		
	January 29, 2022	January 23, 2021	Variance in Dollars	January 29, 2022	January 23, 2021	Variance in Dollars
Interest income	$ 111	$ 161	$ (50)	$ 232	$ 335	$ (103)
Interest expense	(88)	(113)	25	(177)	(225)	48
Interest income (expense), net	$ 23	$ 48	$ (25)	$ 55	$ 110	$ (55)

For each of the second quarter and first six months of fiscal 2022, the decrease in interest income was driven by lower interest rates and lower average balances of cash and available-for-sale debt investments. The decrease in interest expense was driven by a lower average debt balance.

Other Income (Loss), Net The components of other income (loss), net, are summarized as follows (in millions):

	Three Months Ended			Six Months Ended		
	January 29, 2022	January 23, 2021	Variance in Dollars	January 29, 2022	January 23, 2021	Variance in Dollars
Gains (losses) on investments, net:						
Available-for-sale debt investments	$ 10	$ 9	$ 1	$ 16	$ 24	$ (8)
Marketable equity investments	(18)	—	(18)	(13)	(1)	(12)
Privately held investments	121	(17)	138	326	25	301
Net gains (losses) on investments	113	(8)	121	329	48	281
Other gains (losses), net	(20)	(8)	(12)	(49)	(15)	(34)
Other income (loss), net	$ 93	$ (16)	$ 109	$ 280	$ 33	$ 247

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The change in net gains (losses) on marketable equity investments was attributable to market value fluctuations and the timing of recognition of gains and losses. The change in net gains (losses) on privately held investments was primarily due to higher net realized gains, higher net unrealized gains and lower impairment charges. The change in other gains (losses), net was primarily driven by impacts from our equity derivatives.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

The change in net gains (losses) on available-for-sale debt investments was primarily attributable to lower realized gains as a result of market conditions, and the timing of sales of these investments. The change in net gains (losses) on marketable equity investments was attributable to market value fluctuations and the timing of recognition of gains and losses. The change in net gains (losses) on privately held investments was primarily due to higher net unrealized gains and higher net realized gains. The change in other gains (losses), net was primarily driven by higher donation expense and impacts from our equity derivatives.

Provision for Income Taxes

Three Months Ended January 29, 2022 Compared with Three Months Ended January 23, 2021

The provision for income taxes resulted in an effective tax rate of 17.5% for the second quarter of fiscal 2022 compared with 21.8% for the second quarter of fiscal 2021. The decrease in the effective tax rate was primarily due to an increase in the tax benefit from share-based compensation windfall and a decrease in audit settlement expense in the second quarter of fiscal 2022 as compared to the second quarter of fiscal 2021.

Our effective tax rate will increase or decrease based upon the tax effect of the difference between the share-based compensation expenses and the benefits taken on our tax returns. We recognize excess tax benefits on a discrete basis and therefore anticipate the effective tax rate to vary from quarter to quarter depending on our share price in each period.

Six Months Ended January 29, 2022 Compared with Six Months Ended January 23, 2021

The provision for income taxes resulted in an effective tax rate of 18.0% for the first six months of fiscal 2022 compared with 20.5% for the first six months of fiscal 2021. The decrease in the effective tax rate was primarily due to an increase in the tax benefit from share-based compensation windfall and a decrease in audit settlement expense in fiscal 2022 as compared to fiscal 2021.

LIQUIDITY AND CAPITAL RESOURCES

The following sections discuss the effects of changes in our balance sheet, our capital allocation strategy including stock repurchase program and dividends, our contractual obligations, and certain other commitments and activities on our liquidity and capital resources.

Balance Sheet and Cash Flows

Cash and Cash Equivalents and Investments The following table summarizes our cash and cash equivalents and investments (in millions):

	January 29, 2022	July 31, 2021	Increase (Decrease)
Cash and cash equivalents	$ 6,731	$ 9,175	$ (2,444)
Available-for-sale debt investments	14,161	15,206	(1,045)
Marketable equity securities	221	137	84
Total	$ 21,113	$ 24,518	$ (3,405)

The net decrease in cash and cash equivalents and investments in the first six months of fiscal 2022 was driven by cash returned to stockholders in the form of repurchases of common stock of $5.1 billion, cash dividends of $3.1 billion, a net decrease in debt of $2.0 billion, net cash paid for acquisitions and divestitures of $0.4 billion and capital expenditures of $0.2 billion. These uses of cash were partially offset by cash provided by operating activities of $5.9 billion and issuance of commercial paper of $2.0 billion.

We maintain an investment portfolio of various holdings, types, and maturities. We classify our investments as short-term investments based on their nature and their availability for use in current operations. We believe the overall credit quality of our portfolio is strong, with our cash equivalents and our available-for-sale debt investment portfolio consisting primarily of high quality investment-grade securities. We believe that our strong cash and cash equivalents and investments position allows us to use our cash resources for strategic investments to gain access to new technologies, for acquisitions, for customer financing activities, for working capital needs, and for the repurchase of shares of common stock and payment of dividends as discussed below.

Securities Lending We periodically engage in securities lending activities with certain of our available-for-sale debt investments. These transactions are accounted for as a secured lending of the securities, and the securities are typically loaned only on an overnight basis. We require collateral equal to at least 102% of the fair market value of the loaned security and that the collateral be in the form of cash or liquid, high-quality assets. We engage in these secured lending transactions only with highly creditworthy counterparties, and the associated portfolio custodian has agreed to indemnify us against collateral losses. We did not experience any losses in connection with the secured lending of securities during the periods presented.

Free Cash Flow and Capital Allocation As part of our capital allocation strategy, we intend to return a minimum of 50% of our free cash flow annually to our stockholders through cash dividends and repurchases of common stock.

We define free cash flow as net cash provided by operating activities less cash used to acquire property and equipment. The following table reconciles our net cash provided by operating activities to free cash flow (in millions):

	Six Months Ended	
	January 29, 2022	January 23, 2021
Net cash provided by operating activities	$ 5,888	$ 7,070
Acquisition of property and equipment	(232)	(358)
Free cash flow	$ 5,656	$ 6,712

We expect that cash provided by operating activities may fluctuate in future periods as a result of a number of factors, including fluctuations in our operating results, the rate at which products are shipped during the quarter (which we refer to as shipment linearity), the timing and collection of accounts receivable and financing receivables, inventory and supply chain management, deferred revenue, and the timing and amount of tax and other payments. For additional discussion, see "Part II, Item 1A. Risk Factors" in this report.

We consider free cash flow to be a liquidity measure that provides useful information to management and investors because of our intent to return a stated percentage of free cash flow to stockholders in the form of dividends and stock repurchases. We further regard free cash flow as a useful measure because it reflects cash that can be used to, among other things, invest in our business, make strategic acquisitions, repurchase common stock, and pay dividends on our common stock, after deducting capital investments. A limitation of the utility of free cash flow as a measure of financial performance and liquidity is that the free cash flow does not represent the total increase or decrease in our cash balance for the period. In addition, we have other required uses of cash, including repaying the principal of our outstanding indebtedness. Free cash flow is not a measure calculated in accordance with U.S. generally accepted accounting principles and should not be regarded in isolation or as an alternative for net cash provided by operating activities or any other measure calculated in accordance with such principles, and other companies may calculate free cash flow in a different manner than we do.

The following table summarizes the dividends paid and stock repurchases (in millions, except per-share amounts):

	DIVIDENDS		STOCK REPURCHASE PROGRAM			
Quarter Ended	Per Share	Amount	Shares	Weighted-Average Price per Share	Amount	TOTAL
Fiscal 2022						
January 29, 2022	$ 0.37	$ 1,541	82	$ 58.36	$ 4,824	$ 6,365
October 30, 2021	$ 0.37	$ 1,561	5	$ 56.49	$ 256	$ 1,817
Fiscal 2021						
July 31, 2021	$ 0.37	$ 1,562	15	$ 53.30	$ 791	$ 2,353
May 1, 2021	$ 0.37	$ 1,560	10	$ 48.71	$ 510	$ 2,070
January 23, 2021	$ 0.36	$ 1,521	19	$ 42.82	$ 801	$ 2,322
October 24, 2020	$ 0.36	$ 1,520	20	$ 40.44	$ 800	$ 2,320

On February 16, 2022, our Board of Directors declared a quarterly dividend of $0.38 per common share to be paid on April 27, 2022 to all stockholders of record as of the close of business on April 6, 2022. Any future dividends are subject to the approval of our Board of Directors.

On February 16, 2022, our Board of Directors authorized a $15 billion increase to the stock repurchase program. The remaining authorized amount for stock repurchases under this program, including the additional authorization, is approximately $18 billion, with no termination date.

Accounts Receivable, Net The following table summarizes our accounts receivable, net (in millions):

	January 29, 2022	July 31, 2021	Increase (Decrease)
Accounts receivable, net	$ 6,003	$ 5,766	$ 237

Our accounts receivable net, as of January 29, 2022 increased by approximately 4%, as compared with the end of fiscal 2021, primarily due to timing and amount of product and service billings in the second quarter of fiscal 2022 compared with the fourth quarter of fiscal 2021.

Inventory Supply Chain The following table summarizes our inventories and inventory purchase commitments with contract manufacturers and suppliers (in millions):

	January 29, 2022	July 31, 2021	July 25, 2020	Variance vs. July 31, 2021	Variance vs. July 25, 2020
Inventories	$ 2,059	$ 1,559	$ 1,282	$ 500	$ 777
Inventory purchase commitments	$ 12,262	$ 10,254	$ 4,406	$ 2,008	$ 7,856
Inventory deposits and prepayments	$ 775	$ 162	$ 117	$ 613	$ 658

The following table summarizes our inventory purchase commitments with contract manufacturers and suppliers by period (in millions):

	January 29, 2022	July 31, 2021	July 25, 2020	Variance vs. July 31, 2021	Variance vs. July 25, 2020
Less than 1 year	$ 9,224	$ 6,903	$ 3,994	$ 2,321	$ 5,230
1 to 3 years	1,879	1,806	412	73	1,467
3 to 5 years	1,159	1,545	—	(386)	1,159
Total	$ 12,262	$ 10,254	$ 4,406	$ 2,008	$ 7,856

Inventories and inventory purchase commitments increased as compared to the prior fiscal periods as we increased our balances in order to address significant supply constraints seen industry wide. Inventory as of January 29, 2022 increased by 32% and 61% from our inventory balances at the end of fiscal 2021 and fiscal 2020, respectively. Inventory purchase commitments with contract manufacturers and suppliers increased by 20% and 178% from our balances at the end of fiscal 2021 and fiscal 2020, respectively. These increases compared with the end of fiscal 2021 and fiscal 2020 were primarily due to arrangements to secure supply and pricing for certain product components and commitments with contract manufacturers to meet customer demand and to address extended lead times, as a result of the supply constraints. The increase in inventory deposits and prepayments from the end of fiscal 2021 and fiscal 2020 were primarily due to advance payments with suppliers to secure future supply. We have partnered with several of our key suppliers utilizing our volume purchasing and extending supply coverage, including revising supplier arrangements. Our inventory deposits and prepayments are to secure future supply with our contract manufacturers and suppliers. As discussed, our risks of future material excess and obsolete inventory and related losses are further outlined in the Result of Operations—Product Gross Margin section.

We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that allow them to procure inventory based upon criteria as defined by us or that establish the parameters defining our requirements and our commitment to securing manufacturing capacity.

Our inventory purchase commitments are for short-term product manufacturing requirements as well as for commitments to suppliers to secure manufacturing capacity. Certain of our inventory purchase commitments with contract manufacturers and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. A significant portion of our reported purchase commitments arising from these agreements are firm, noncancelable, and unconditional commitments. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed.

Inventory and supply chain management remain areas of focus as we balance the need to maintain supply chain flexibility to help ensure competitive lead times with the risk of inventory obsolescence because of supply constraints, rapidly changing technology and customer requirements. We believe the amount of our inventory and inventory purchase commitments is appropriate for our current and expected customer demand and revenue levels.

Financing Receivables and Guarantees The following table summarizes our financing receivables (in millions):

	January 29, 2022	July 31, 2021	Increase (Decrease)
Lease receivables, net	$ 1,361	$ 1,697	$ (336)
Loan receivables, net	4,514	5,117	(603)
Financed service contracts, net	2,146	2,450	(304)
Total, net	$ 8,021	$ 9,264	$ (1,243)

Financing Receivables Our financing arrangements include leases, loans, and financed service contracts. Lease receivables include sales-type leases. Arrangements related to leases are generally collateralized by a security interest in the underlying assets. Our loan receivables include customer financing for purchases of our hardware, software and services and also may include additional funds for other costs associated with network installation and integration of our products and services. We also provide financing to certain qualified customers for long-term service contracts, which primarily relate to technical support services. The majority of the revenue from these financed service contracts is deferred and is recognized ratably over the period during which the services are performed. Financing receivables decreased by 13%, as compared with the end of fiscal 2021.

Financing Guarantees In the normal course of business, third parties may provide financing arrangements to our customers and channel partners under financing programs. The financing arrangements to customers provided by third parties are related to leases and loans and typically have terms of up to three years. In some cases, we provide guarantees to third parties for these lease and loan arrangements. The financing arrangements to channel partners consist of revolving short-term financing provided by third parties, with payment terms generally ranging from 60 to 90 days. In certain instances, these financing arrangements result in a transfer of our receivables to the third party. The receivables are derecognized upon transfer, as these transfers qualify as true sales, and we receive payments for the receivables from the third party based on our standard payment terms.

The volume of channel partner financing was $13.4 billion and $12.8 billion for the first six months of fiscal 2022 and 2021, respectively. These financing arrangements facilitate the working capital requirements of the channel partners, and in some cases, we guarantee a portion of these arrangements. The balance of the channel partner financing subject to guarantees was $1.4 billion and $1.3 billion as of January 29, 2022 and July 31, 2021, respectively. We could be called upon to make payments under these guarantees in the event of nonpayment by the channel partners or end-user customers. Historically, our payments under these arrangements have been immaterial. Where we provide a guarantee, we defer the revenue associated with the channel partner and end-user financing arrangement in accordance with revenue recognition policies, or we record a liability for the fair value of the guarantees. In either case, the deferred revenue is recognized as revenue when the guarantee is removed. As of January 29, 2022, the total maximum potential future payments related to these guarantees was approximately $166 million, of which approximately $9 million was recorded as deferred revenue.

Borrowings

Senior Notes The following table summarizes the principal amount of our senior notes (in millions):

	Maturity Date	January 29, 2022	July 31, 2021
Senior notes:			
Fixed-rate notes:			
1.85%	September 20, 2021	$ —	$ 2,000
3.00%	June 15, 2022	500	500
2.60%	February 28, 2023	500	500
2.20%	September 20, 2023	750	750
3.625%	March 4, 2024	1,000	1,000
3.50%	June 15, 2025	500	500
2.95%	February 28, 2026	750	750
2.50%	September 20, 2026	1,500	1,500
5.90%	February 15, 2039	2,000	2,000
5.50%	January 15, 2040	2,000	2,000
Total		$ 9,500	$ 11,500

Interest is payable semiannually on each class of the senior fixed-rate notes, each of which is redeemable by us at any time, subject to a make-whole premium. We were in compliance with all debt covenants as of January 29, 2022.

Commercial Paper We have a short-term debt financing program in which up to $10.0 billion is available through the issuance of commercial paper notes. We use the proceeds from the issuance of commercial paper notes for general corporate purposes. We had $2.0 billion in commercial paper notes outstanding as of January 29, 2022 and no commercial paper notes outstanding as of July 31, 2021.

Credit Facility On May 13, 2021, we entered into a 5-year credit agreement with certain institutional lenders that provides for a $3.0 billion unsecured revolving credit facility that is scheduled to expire on May 13, 2026. The credit agreement is structured as an amendment and restatement of our 364-day credit agreement, which would have terminated on May 14, 2021. As of January 29, 2022, we were in compliance with the required interest coverage ratio and the other covenants, and we had not borrowed any funds under the credit agreement.

Any advances under the 5-year credit agreement will accrue interest at rates that are equal to, based on certain conditions, either (a) with respect to loans in U.S. dollars, (i) LIBOR or (ii) the Base Rate (to be defined as the highest of (x) the Bank of America prime rate, (y) the Federal Funds rate plus 0.50% and (z) a daily rate equal to one-month LIBOR plus 1.0%), (b) with respect to loans in Euros, EURIBOR, (c) with respect to loans in Yen, TIBOR and (d) with respect to loans in Pounds Sterling, SONIA plus a credit spread adjustment, plus a margin that is based on our senior debt credit ratings as published by Standard & Poor's Financial Services, LLC and Moody's Investors Service, Inc., provided that in no event will the interest rate be less than 0.0%. We will pay a quarterly commitment fee during the term of the 5-year credit agreement which may vary depending on our senior debt credit ratings. In addition, the 5-year credit agreement incorporates certain sustainability-linked metrics. Specifically, our applicable interest rate and commitment fee are subject to upward or downward adjustments if we achieve, or fail to achieve, certain specified targets based on two key performance indicator metrics: (i) social impact and (ii) foam reduction. We may also, upon the agreement of either the then-existing lenders or additional lenders not currently parties to the agreement, increase the commitments under the credit facility by up to an additional $2.0 billion and, at our option, extend the maturity of the facility for an additional year up to two times. The credit agreement requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement.

Remaining Performance Obligations The following table presents the breakdown of remaining performance obligations (in millions):

	January 29, 2022	July 31, 2021	Increase (Decrease)
Product	$ 13,532	$ 13,270	$ 262
Service	16,986	17,623	(637)
Total	$ 30,518	$ 30,893	$ (375)
Current	$ 16,310	$ 16,289	$ 21
Noncurrent	14,208	14,604	(396)
Total	$ 30,518	$ 30,893	$ (375)

Total remaining performance obligations as of January 29, 2022 decreased 1% compared to the end of fiscal 2021. Remaining performance obligations for product increased 2% compared to the end of fiscal 2021. Remaining performance obligations for service decreased 4%. We expect approximately 53% of total remaining performance obligations to be recognized as revenue over the next 12 months.

Deferred Revenue The following table presents the breakdown of deferred revenue (in millions):

	January 29, 2022	July 31, 2021	Increase (Decrease)
Product	$ 9,767	$ 9,416	$ 351
Service	12,546	12,748	(202)
Total	$ 22,313	$ 22,164	$ 149
Reported as:			
Current	$ 12,268	$ 12,148	$ 120
Noncurrent	10,045	10,016	29
Total	$ 22,313	$ 22,164	$ 149

Deferred product revenue increased primarily due to increased deferrals related to our recurring software offerings. The decrease in deferred service revenue was driven by the impact of ongoing amortization of deferred service revenue.

Contractual Obligations

Transition Tax Payable

The income tax payable outstanding as of January 29, 2022 for the U.S. transition tax on accumulated earnings for foreign subsidiaries is $6.2 billion. Approximately $0.7 billion is payable in less than one year; $3.2 billion is payable between 1 to 3 years; and $2.3 billion is payable between 3 to 5 years.

For our Contractual Obligations see our Annual Report on Form 10-K for the year ended July 31, 2021.

Other Commitments

In connection with our acquisitions, we have agreed to pay certain additional amounts contingent upon the achievement of certain agreed-upon technology, development, product, or other milestones or the continued employment with us of certain employees of the acquired entities. See Note 14 to the Consolidated Financial Statements.

We also have certain funding commitments primarily related to our privately held investments, some of which may be based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The funding commitments were $0.4 billion and $0.2 billion as of January 29, 2022 and July 31, 2021, respectively.

In the ordinary course of business, we have privately held investments and provide financing to certain customers. Certain of these investments are considered to be variable interest entities. We evaluate on an ongoing basis our privately held investments and customer financings, and we have determined that as of January 29, 2022 there were no material unconsolidated variable interest entities.

On an ongoing basis, we reassess our privately held investments and customer financings to determine if they are variable interest entities and if we would be regarded as the primary beneficiary pursuant to the applicable accounting guidance. As a result of this ongoing assessment, we may be required to make additional disclosures or consolidate these entities. Because we may not control these entities, we may not have the ability to influence these events.

We provide financing guarantees, which are generally for various third-party financing arrangements extended to our channel partners and end-user customers. We could be called upon to make payments under these guarantees in the event of nonpayment by the channel partners or end-user customers. See the previous discussion of these financing guarantees under "Financing Receivables and Guarantees."

Liquidity and Capital Resource Requirements

While the COVID-19 pandemic has not materially impacted our liquidity and capital resources to date, it has led to increased disruption and volatility in capital markets and credit markets. The pandemic and resulting economic uncertainty could adversely affect our liquidity and capital resources in the future. Based on past performance and current expectations, we believe our cash and cash equivalents, investments, cash generated from operations, and ability to access capital markets and committed credit lines will satisfy, through at least the next 12 months, our liquidity requirements, both in total and domestically, including the following: working capital needs (including inventory and other supply related payments), capital expenditures, investment requirements, stock repurchases, cash dividends, contractual obligations, commitments, principal and interest payments on debt, pending acquisitions, future customer financings, and other liquidity requirements associated with our operations. We expect increased payments related to inventory and other supply related payments through at least the next 12 months. There are no other transactions, arrangements, or relationships with unconsolidated entities or other persons that are reasonably likely to materially affect the liquidity and the availability of, as well as our requirements for, capital resources.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Our financial position is exposed to a variety of risks, including interest rate risk, equity price risk, and foreign currency exchange risk.

Interest Rate Risk

Available-for-Sale Debt Investments We maintain an investment portfolio of various holdings, types, and maturities. Our primary objective for holding available-for-sale debt investments is to achieve an appropriate investment return consistent with preserving principal and managing risk. At any time, a sharp rise in market interest rates could have a material adverse impact on the fair value of our available-for-sale debt investment portfolio. Conversely, declines in interest rates as has also happened recently, including the impact from lower credit spreads, could have a material adverse impact on interest income for our investment portfolio. We may utilize derivative instruments designated as hedging instruments to achieve our investment objectives. We had no outstanding hedging instruments for our available-for-sale debt investments as of January 29, 2022. Our available-for-sale debt investments are held for purposes other than trading. Our available-for-sale debt investments are not leveraged as of January 29, 2022. We monitor our interest rate and credit risks, including our credit exposures to specific rating categories and to individual issuers. We believe the overall credit quality of our portfolio is strong.

Financing Receivables As of January 29, 2022, our financing receivables had a carrying value of $8.0 billion, compared with $9.3 billion as of July 31, 2021. As of January 29, 2022, a hypothetical 50 basis points (“BPS”) increase or decrease in market interest rates would change the fair value of our financing receivables by a decrease or increase of approximately $0.1 billion, respectively.

Debt As of January 29, 2022, we had $9.5 billion in principal amount of senior fixed-rate notes outstanding. The carrying amount of the senior notes was $9.5 billion, and the related fair value based on market prices was $11.1 billion. As of January 29, 2022, a hypothetical 50 BPS increase or decrease in market interest rates would change the fair value of the fixed-rate debt, excluding the $2.0 billion of hedged debt, by a decrease or increase of approximately $0.4 billion, respectively. However, this hypothetical change in interest rates would not impact the interest expense on the fixed-rate debt that is not hedged.

Equity Price Risk

Marketable Equity Investments The fair value of our marketable equity investments is subject to market price volatility. We hold equity securities for strategic purposes or to diversify our overall investment portfolio. These equity securities are held for purposes other than trading. The total fair value of our marketable equity securities was $221 million and $137 million as of January 29, 2022 and July 31, 2021, respectively.

Privately Held Investments These investments are recorded in other assets in our Consolidated Balance Sheets. The total carrying amount of our investments in privately held investments was $1.8 billion and $1.5 billion as of January 29, 2022 and July 31, 2021, respectively. Some of these companies in which we invested are in the startup or development stages. These investments are inherently risky because the markets for the technologies or products these companies are developing are typically in the early stages and may never materialize. We could lose our entire investment in these companies. Our evaluation of privately held investments is based on the fundamentals of the businesses invested in, including, among other factors, the nature of their technologies and potential for financial return.

Foreign Currency Exchange Risk

Our foreign exchange forward contracts outstanding as of the respective period-ends are summarized in U.S. dollar equivalents as follows (in millions):

	January 29, 2022		July 31, 2021	
	Notional Amount	Fair Value	Notional Amount	Fair Value
Forward contracts:				
Purchased	$ 2,615	$ (30)	$ 2,441	$ (14)
Sold	$ 1,639	$ 25	$ 1,698	$ 12

We conduct business globally in numerous currencies. The direct effect of foreign currency fluctuations on revenue has not been material because our revenue is primarily denominated in U.S. dollars. However, if the U.S. dollar strengthens relative to other currencies, such strengthening could have an indirect effect on our revenue to the extent it raises the cost of our products to non-U.S. customers and thereby reduces demand. A weaker U.S. dollar could have the opposite effect. However, the precise indirect effect of currency fluctuations is difficult to measure or predict because our revenue is influenced by many factors in addition to the impact of such currency fluctuations.

Approximately 70% of our operating expenses are U.S.-dollar denominated. In the first six months of fiscal 2022, foreign currency fluctuations, net of hedging, increased our combined R&D, sales and marketing, and G&A expenses by approximately $1 million, compared with the first six months of fiscal 2021. To reduce variability in operating expenses and service cost of sales caused by non-U.S.-dollar denominated operating expenses and costs, we may hedge certain forecasted foreign currency transactions with currency options and forward contracts. These hedging programs are not designed to provide foreign currency protection over long time horizons. In designing a specific hedging approach, we consider several factors, including offsetting exposures, significance of exposures, costs associated with entering into a particular hedge instrument, and potential effectiveness of the hedge. The gains and losses on foreign exchange contracts mitigate the effect of currency movements on our operating expenses and service cost of sales.

We also enter into foreign exchange forward and option contracts to reduce the short-term effects of foreign currency fluctuations on receivables and payables that are denominated in currencies other than the functional currencies of the entities. The market risks associated with these foreign currency receivables and payables relate primarily to variances from our forecasted foreign currency transactions and balances. We do not enter into foreign exchange forward or option contracts for speculative purposes.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures. Based on our management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, (the "Exchange Act")) are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in internal control over financial reporting. There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during our second quarter of fiscal 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

For a description of our pending legal proceedings, see Note 14, "Commitments and Contingencies—(f) Legal Proceedings" in the Notes to Consolidated Financial Statements.

Item 1A. Risk Factors

Set forth below and elsewhere in this report and in other documents we file with the SEC are descriptions of the risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this report. The descriptions below include any material changes to and supersede the description of the risk factors affecting our business previously disclosed in “Part I, Item 1A. Risk Factors” of our Annual Report on Form 10-K for the fiscal year ended July 31, 2021.

Risks Related to our Business and Industry

Our business, results of operations and financial condition have been adversely affected and could in the future be materially adversely affected by the COVID-19 pandemic.

The COVID-19 pandemic and the resulting containment measures have caused economic and financial disruptions globally, including in most of the regions in which we sell our products and services and conduct our business operations. Beginning in the second half of fiscal 2020, the COVID-19 pandemic impacted our financial results and business operations. We continue to manage through significant supply constraints seen industry wide due to component shortages which have resulted in extended lead times and higher supply chain costs, which we expect to continue through the second half of fiscal 2022. The magnitude and duration of the disruption, its continuing impact on us, and resulting decline in global business activity is uncertain. These disruptions include the unprecedented actions taken to try to contain the pandemic such as travel bans and restrictions, business closures, and social distancing measures, such as quarantines and shelter-in-place orders.

The COVID-19 pandemic and the responsive measures taken in many countries have adversely affected and could in the future materially adversely affect our business, results of operations and financial condition. Shelter-in-place orders and other measures, including work-from-home and other policies implemented to protect workers, has and could in the future impact our supply chain. Such disruptions may continue, or worsen, in the future. In addition, current and future restrictions or disruptions of transportation, such as reduced availability of air transport, port closures, and increased border controls or closures, can also impact our ability to meet customer demand and could materially adversely affect us. Our customers have also experienced, and may continue to experience, disruptions in their operations, which can result in delayed, reduced, or canceled orders, and increased collection risks, and which may adversely affect our results of operations. The COVID-19 pandemic may also result in long-term changes in customer needs for our products and services in various sectors, along with IT-related capital spending reductions, or shifts in spending focus, that could materially adversely affect us if we are unable to adjust our product and service offerings to match customer needs.

The recent shift to a remote working environment also creates challenges. For example, governmental lockdowns, restrictions or new regulations has and could in the future impact the ability of our employees and vendors to work with the same speed and productivity in certain areas, even as other areas do not see negative impact. The extent and/or duration of ongoing workforce restrictions and limitations could impact our ability to enhance, develop and support existing products and services, and hold product sales and marketing events to the extent we were able to previously. In addition, malefactors are seeking to use the COVID-19 pandemic to launch new cyber-attacks. The COVID-19 pandemic has also led to increased disruption and volatility in capital markets and credit markets. The pandemic and resulting economic uncertainty could adversely affect our liquidity and capital resources in the future. The inputs into certain of our judgments, assumptions, and estimates considered the economic implications of the COVID-19 pandemic on our critical and significant accounting estimates. The actual results that we experience may differ materially from our estimates. As the COVID-19 pandemic continues to develop, many of our estimates could require increased judgment and carry a higher degree of variability and volatility. As events continue to evolve our estimates may change materially in future periods.

We are continuing to monitor the pandemic and take appropriate actions in accordance with the recommendations and requirements of relevant authorities. The extent of the impact of the COVID-19 pandemic on our operational and financial performance is currently uncertain and will depend on many factors outside our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic, the development and availability of effective treatments and vaccines, the imposition of protective public safety measures, and the impact of the pandemic on the global economy. Potential negative impacts of these external factors include, but are not limited to, material adverse effects on demand for our products and services; our supply chain and sales and distribution channels; collectability of customer accounts; our ability to execute strategic plans; impairments; and our profitability and cost structure. To the extent the COVID-19 pandemic adversely affects our business, results of operations and financial condition, it may also have the effect of exacerbating the other risks discussed in this “Risk Factors” section.

Our operating results may fluctuate in future periods, which may adversely affect our stock price.

Our operating results have been in the past, and will continue to be, subject to quarterly and annual fluctuations as a result of numerous factors, some of which may contribute to more pronounced fluctuations in an uncertain global economic environment. These factors include:

- Fluctuations in demand for our products and services, especially with respect to service providers and Internet businesses, in part due to changes in the global economic environment
- Changes in sales and implementation cycles for our products and reduced visibility into our customers' spending plans and associated revenue
- Our ability to maintain appropriate inventory levels and purchase commitments
- Price and product competition in the communications and networking industries, which can change rapidly due to technological innovation and different business models from various geographic regions
- The overall movement toward industry consolidation among both our competitors and our customers
- The introduction and market acceptance of new technologies and products, and our success in new and evolving markets, and in emerging technologies, as well as the adoption of new standards
- The transformation of our business to deliver more software and subscription offerings where revenue is recognized over time
- Variations in sales channels, product costs, mix of products sold, or mix of direct sales and indirect sales
- The timing, size, and mix of orders from customers
- Manufacturing and customer lead times
- Fluctuations in our gross margins, and the factors that contribute to such fluctuations
- The ability of our customers, channel partners, contract manufacturers and suppliers to obtain financing or to fund capital expenditures, especially during a period of global credit market disruption or in the event of customer, channel partner, contract manufacturer or supplier financial problems
- Actual events, circumstances, outcomes, and amounts differing from judgments, assumptions, and estimates used in determining the values of certain assets (including the amounts of related valuation allowances), liabilities, and other items reflected in our Consolidated Financial Statements
- How well we execute on our strategy and operating plans and the impact of changes in our business model that could result in significant restructuring charges
- Our ability to achieve targeted cost reductions
- Benefits anticipated from our investments
- Changes in tax laws or accounting rules, or interpretations thereof

As a consequence, operating results for a particular future period are difficult to predict, and, therefore, prior results are not necessarily indicative of results to be expected in future periods. Any of the foregoing factors, or any other factors discussed elsewhere herein, could have a material adverse effect on our business, results of operations, and financial condition that could adversely affect our stock price.

Our operating results may be adversely affected by unfavorable economic and market conditions and the uncertain geopolitical environment.

Challenging economic conditions, including inflation, pandemic, or other changes, worldwide have from time to time contributed, and may continue to contribute, to slowdowns in the communications and networking industries at large, as well as in specific segments and markets in which we operate, resulting in: reduced demand for our products as a result of continued constraints on IT-related capital spending by our customers, particularly service providers, and other customer markets as well; increased price competition for our products, not only from our competitors but also as a consequence of customers disposing of unutilized products; risk of excess and obsolete inventories; risk of supply constraints; risk of excess facilities and manufacturing capacity; and higher overhead costs as a percentage of revenue and higher interest expense.

The global macroeconomic environment continues to be challenging and inconsistent, and is being significantly impacted by the COVID-19 pandemic. During fiscal 2020 and the first quarter of fiscal 2021, we continued to see a broad-based weakening in the global macroeconomic environment which impacted our commercial and enterprise markets. We also experienced continuing weakness in emerging countries, and we expect ongoing uncertainty in this market. Additionally, instability in the global credit markets, the impact of uncertainty regarding global central bank monetary policy, the instability in the geopolitical environment in many parts of the world, the current economic challenges in China, including global economic ramifications of Chinese economic difficulties, and other disruptions may continue to put pressure on global economic conditions. If global economic and market conditions, or economic conditions in key markets, remain uncertain or deteriorate further, we may experience material impacts on our business, operating results, and financial condition.

Our operating results in one or more segments may also be affected by uncertain or changing economic conditions particularly germane to that segment or to particular customer markets within that segment. In addition, reports of certain intelligence gathering methods of the U.S. government could affect customers' perception of the products of IT companies which design and manufacture products in the United States. Trust and confidence in us as an IT supplier are critical to the development and growth of our markets. Impairment of that trust, or foreign regulatory actions taken in response to reports of certain intelligence gathering methods of the U.S. government, could affect the demand for our products from customers outside of the United States and could have an adverse effect on our operating results.

Our revenue for a particular period is difficult to predict, and a shortfall in revenue may harm our operating results.

As a result of a variety of factors discussed in this report, our revenue for a particular quarter is difficult to predict, especially in light of a challenging and inconsistent global macroeconomic environment, the significant impacts of the COVID-19 pandemic, and related market uncertainty. Our revenue may grow at a slower rate than in past periods or decline as it did in the first quarter of fiscal 2021 and fiscal 2020, and in certain prior periods on a year-over-year basis. Our ability to meet financial expectations could also be adversely affected if the nonlinear sales pattern seen in some of our past quarters recurs in future periods. We have experienced periods of time during which shipments have exceeded net bookings or manufacturing issues have delayed shipments, leading to nonlinearity in shipping patterns. In addition to making it difficult to predict revenue for a particular period, nonlinearity in shipping can increase costs, because irregular shipment patterns result in periods of underutilized capacity and periods in which overtime expenses may be incurred, as well as in potential additional inventory management-related costs. In addition, to the extent that manufacturing issues and any related component shortages result in delayed shipments in the future, and particularly in periods in which our contract manufacturers are operating at higher levels of capacity, it is possible that revenue for a quarter could be adversely affected if such matters occur and are not remediated within the same quarter.

The timing of large orders can also have a significant effect on our business and operating results from quarter to quarter. From time to time, we receive large orders that have a significant effect on our operating results in the period in which the order is recognized as revenue. The timing of such orders is difficult to predict, and the timing of revenue recognition from such orders may affect period to period changes in revenue. As a result, our operating results could vary materially from quarter to quarter based on the receipt of such orders and their ultimate recognition as revenue. Longer than normal manufacturing lead times in the past have caused, and in the future could cause, some customers to place the same or a similar order multiple times within our various sales channels and to cancel the duplicative orders upon shipment or receipt of the product, or to also place orders with other vendors with shorter manufacturing lead times. Such multiple ordering (along with other factors) or risk of order cancellation may cause difficulty in predicting our revenue. Further, our efforts to improve manufacturing lead-time performance may result in more variability and less predictability in our revenue and operating results. In addition, when facing component supply-related challenges we have increased our efforts in procuring components in order to meet customer expectations, which in turn contribute to an increase in inventory and purchase commitments. In recent periods, we increased our inventory and purchase commitments in light of the significant supply constraints seen industry wide due to component shortages, caused in part by the COVID-19 pandemic. These increases in our inventory and purchase commitments to shorten lead times could also lead to material excess and obsolete inventory charges in future periods if the demand for our products is less than our expectations. We plan our operating expense levels based primarily on forecasted revenue levels. These expenses and the impact of long-term commitments are relatively fixed in the short term. A shortfall in revenue could lead to operating results being below expectations because we may not be able to quickly reduce these fixed expenses in response to short-term business changes. Any of the above factors could have a material adverse impact on our operations and financial results. For additional information and a further discussion of current impacts and risks related to our significant supply constraints, inventory commitments and our purchase commitments with contract manufacturers and suppliers, see Results of Operations—Product Gross Margin—Supply Constraints Impacts and Risks, Liquidity and Capital Resources—Inventory Supply Chain and Note 14 to the Consolidated Financial Statements.

Supply chain issues, including financial problems of contract manufacturers or component suppliers, or a shortage of adequate component supply or manufacturing capacity that increase our costs or cause a delay in our ability to fulfill orders, could have an adverse impact on our business and operating results, and our failure to estimate customer demand properly may result in excess or obsolete component supply, which could adversely affect our gross margins.

The fact that we do not own or operate the bulk of our manufacturing facilities and that we are reliant on our extended supply chain could have an adverse impact on the supply of our products and on our business and operating results. Financial problems of either contract manufacturers or component suppliers, reservation of manufacturing capacity at our contract manufacturers by other companies, and industry consolidation occurring within one or more component supplier markets, such as the semiconductor market, in each case, could either limit supply or increase costs.

A reduction or interruption in supply, including disruptions on our global supply chain as a result of the COVID-19 pandemic or a significant natural disaster (including as a result of climate change); a significant increase in the price of one or more components; a failure to adequately authorize procurement of inventory by our contract manufacturers; a failure to appropriately cancel, reschedule, or adjust our requirements based on our business needs; or a decrease in demand for our products could materially adversely affect our business, operating results, and financial condition and could materially damage customer relationships. Furthermore, as a result of binding price or purchase commitments with suppliers, we may be obligated to purchase components at prices that are higher than those available in the current market. In the event that we become committed to purchase components at prices in excess of the current market price when the components are actually used, our gross margins could decrease. In addition, vendors may be under pressure to allocate product to certain customers for business, regulatory or political reasons, and/or demand changes in agreed pricing as a condition of supply. Although we have generally secured additional supply or taken other mitigation actions when significant disruptions have occurred, if similar situations occur in the future, they could have a material adverse effect on our business, results of operations, and financial condition.

Our growth and ability to meet customer demands depend in part on our ability to obtain timely deliveries of parts from our suppliers and contract manufacturers. We have experienced component shortages in the past, including shortages caused by manufacturing process issues, that have affected our operations, including longer than normal lead times. There is currently a market shortage of semiconductor and other component supply which has affected, and could further affect, lead times, the cost of that supply, and our ability to meet customer demand for our products if we cannot secure sufficient supply in a timely manner. We continue to manage through significant supply constraints seen industry wide due to component shortages (including significant constraints with semiconductors which prevents us from completing manufacturing of certain of our products), which we expect to continue through the second half of fiscal 2022. Additionally, we may in the future experience a shortage of certain component parts as a result of our own manufacturing issues, manufacturing issues at our suppliers or contract manufacturers, capacity problems experienced by our suppliers or contract manufacturers including capacity or cost problems resulting from industry consolidation, or strong demand for those parts. Growth in the economy is likely to create greater pressures on us and our suppliers to accurately project overall component demand and component demands within specific product categories and to establish optimal component levels and manufacturing capacity, especially for labor-intensive components, components for which we purchase a substantial portion of the supply, or the re-ramping of manufacturing capacity for highly complex products. During periods of shortages or delays the price of components may increase, or the components may not be available at all, and we may also encounter shortages if we do not accurately anticipate our needs. We may not be able to secure enough components at reasonable prices or of acceptable quality to build new products in a timely manner in the quantities or configurations needed. Accordingly, our revenue and gross margins could suffer until other sources can be developed.

Our operating results would also be adversely affected if, anticipating greater demand than actually develops, we commit to the purchase of more components than we need, which is more likely to occur in a period of demand uncertainties such as we are currently experiencing. There can be no assurance that we will not encounter these problems in the future. Although in many cases we use standard parts and components for our products, certain components are presently available only from a single source or limited sources, and a global economic downturn and related market uncertainty could negatively impact the availability of components from one or more of these sources, especially during times such as we have recently seen when there are supplier constraints based on labor and other actions taken during economic downturns. We may not be able to diversify sources in a timely manner, which could harm our ability to deliver products to customers and seriously impact present and future sales.

We believe that we may be faced with the following challenges in the future: new markets in which we participate may grow quickly, which may make it difficult to quickly obtain significant component capacity; as we acquire companies and new technologies, we may be dependent on unfamiliar supply chains or relatively small supply partners; and we face competition for certain components that are supply-constrained, from existing competitors, and companies in other markets.

Manufacturing capacity and component supply constraints could continue to be significant issues for us. We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to improve manufacturing lead-time performance and to help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that either allow them to procure inventory based upon criteria as defined by us or that establish the parameters defining our requirements. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed. When facing component supply-related challenges we have increased our efforts in procuring components in order to meet customer expectations, which in turn contributes to an increase in inventory and purchase commitments. In recent periods, we increased our inventory and purchase commitments in light of the significant supply constraints seen industry wide due to component shortages, caused in part by the COVID-19 pandemic. These increases in our inventory and purchase commitments to shorten lead times could also lead to material excess and obsolete inventory charges in future periods if the demand for our products is less than our expectations. If we fail to anticipate customer demand properly, an oversupply of parts could result in excess or obsolete components that could adversely affect our gross margins. For additional information and a further discussion of current impacts and risks related to our significant supply constraints, inventory commitments and our purchase commitments with contract manufacturers and suppliers, see Results of Operations—Product Gross Margin—Supply Constraints Impacts and Risks, Liquidity and Capital Resources—Inventory Supply Chain and Note 14 to the Consolidated Financial Statements.

We expect gross margin to vary over time, and our level of product gross margin may not be sustainable.

Our level of product gross margins declined in the first and second quarters of fiscal 2022, and have declined in certain prior periods on a year-over-year basis, and could decline in future periods due to adverse impacts from various factors, including:

- Changes in customer, geographic, or product mix, including mix of configurations within each product group
- Introduction of new products, including products with price-performance advantages, and new business models including the transformation of our business to deliver more software and subscription offerings
- Our ability to reduce production costs
- Entry into new markets or growth in lower margin markets, including markets with different pricing and cost structures, through acquisitions or internal development
- Sales discounts
- Increases in material, labor or other manufacturing-related costs (i.e. component costs, broker fees, expedited freight and overtime) or higher supply chain logistics costs, any of which could be significant, especially during periods of supply constraints for certain costs, such as those currently impacting the market for components, including semiconductors and memory
- Excess inventory, inventory holding charges, and obsolescence charges
- Changes in shipment volume
- The timing of revenue recognition and revenue deferrals
- Increased cost (including those caused by tariffs or economic conditions, including inflation), loss of cost savings or dilution of savings due to changes in component pricing or charges incurred due to inventory holding periods if parts ordering does not correctly anticipate product demand or if the financial health of either contract manufacturers or suppliers deteriorates
- Lower than expected benefits from value engineering
- Increased price competition, including competitors from Asia, especially from China
- Changes in distribution channels
- Increased warranty or royalty costs
- Increased amortization of purchased intangible assets, especially from acquisitions
- How well we execute on our strategy and operating plans

Changes in service gross margin may result from various factors such as changes in the mix between technical support services and advanced services, as well as the timing of technical support service contract initiations and renewals and the addition of personnel and other resources to support higher levels of service business in future periods.

Sales to the service provider market are especially volatile, and weakness in orders from this industry may harm our operating results and financial condition.

Sales to the service provider market have been characterized by large and sporadic purchases, especially relating to our router sales and sales of certain other Secure, Agile Networks and Hybrid Work products, in addition to longer sales cycles. Service provider product orders decreased in certain prior periods, and at various times in the past, including in recent quarters, we have experienced significant weakness in product orders from service providers. Product orders from the service provider market could continue to decline and, as has been the case in the past, such weakness could persist over extended periods of time given fluctuating market conditions. Sales activity in this industry depends upon the stage of completion of expanding network infrastructures; the availability of funding; and the extent to which service providers are affected by regulatory, economic, and business conditions in the country of operations. Weakness in orders from this industry, including as a result of any slowdown in capital expenditures by service providers (which may be more prevalent during a global economic downturn, or periods of economic, political or regulatory uncertainty), could have a material adverse effect on our business, operating results, and financial condition. Such slowdowns may continue or recur in future periods. Orders from this industry could decline for many reasons other than the competitiveness of our products and services within their respective markets. For example, in the past, many of our service provider customers have been materially and adversely affected by slowdowns in the general economy, by overcapacity, by changes in the service provider market, by regulatory developments, and by constraints on capital availability, resulting in business failures and substantial reductions in spending and expansion plans. These conditions have materially harmed our business and operating results in the past, and could affect our business and operating results in any future period. Finally, service provider customers typically have longer implementation cycles; require a broader range of services, including design services; demand that vendors take on a larger share of risks; often require acceptance provisions, which can lead to a delay in revenue recognition; and expect financing from vendors. All these factors can add further risk to business conducted with service providers.

Disruption of or changes in our distribution model could harm our sales and margins.

If we fail to manage distribution of our products and services properly, or if our distributors' financial condition or operations weaken, our revenue and gross margins could be adversely affected. A substantial portion of our products and services is sold through our channel partners, and the remainder is sold through direct sales. Our channel partners include systems integrators, service providers, other resellers, and distributors. Systems integrators and service providers typically sell directly to end users and often provide system installation, technical support, professional services, and other support services in addition to network equipment sales. Systems integrators also typically integrate our products into an overall solution, and a number of service providers are also systems integrators. Distributors stock inventory and typically sell to systems integrators, service providers, and other resellers. We refer to sales through distributors as our two-tier system of sales to the end customer. If sales through indirect channels increase, this may lead to greater difficulty in forecasting the mix of our products and, to a degree, the timing of orders from our customers.

Historically, we have seen fluctuations in our gross margins based on changes in the balance of our distribution channels. There can be no assurance that changes in the balance of our distribution model in future periods would not have an adverse effect on our gross margins and profitability. Some factors could result in disruption of or changes in our distribution model, which could harm our sales and margins, including the following: competition with some of our channel partners, including through our direct sales, which may lead these channel partners to use other suppliers that do not directly sell their own products or otherwise compete with them; some of our channel partners may demand that we absorb a greater share of the risks that their customers may ask them to bear; some of our channel partners may have insufficient financial resources and may not be able to withstand changes and challenges in business conditions; and revenue from indirect sales could suffer if our distributors' financial condition or operations weaken. In addition, we depend on our channel partners globally to comply with applicable regulatory requirements. To the extent that they fail to do so, that could have a material adverse effect on our business, operating results, and financial condition. Further, sales of our products outside of agreed territories can result in disruption to our distribution channels.

The markets in which we compete are intensely competitive, which could adversely affect our achievement of revenue growth.

The markets in which we compete are characterized by rapid change, converging technologies, and a migration to networking and communications solutions that offer relative advantages. These market factors represent a competitive threat to us. We compete with numerous vendors in each product category. The overall number of our competitors providing niche product solutions may increase. Also, the identity and composition of competitors may change as we increase our activity in newer product areas, and in key priority and growth areas. For example, as products related to network programmability, such as software defined networking (SDN) products, become more prevalent, we expect to face increased competition from companies that develop networking products based on commoditized hardware, referred to as "white box" hardware, to the extent customers decide to purchase those product offerings instead of ours. In addition, the growth in demand for technology delivered as a service enables new competitors to enter the market. As we continue to expand globally, we may see new competition in different geographic regions. In particular, we have experienced price-focused competition from competitors in Asia, especially from China, and we anticipate this will continue. Our competitors (in each case relative to only some of our products or services) include: Amazon Web Services LLC; Arista Networks, Inc.; Broadcom Inc.; CommScope Holding Company, Inc.; Check Point Software Technologies Ltd.; CrowdStrike Holdings, Inc.; Dell Technologies Inc.; Dynatrace Inc.; F5 Networks, Inc.; Fortinet, Inc.; Hewlett-Packard Enterprise Company; Huawei Technologies Co., Ltd.; Juniper Networks, Inc.; Lenovo Group Limited; LogMeIn, Inc.; Mandiant, Inc.; Microsoft Corporation; New Relic, Inc.; Nokia Corporation; Nutanix, Inc.; Palo Alto Networks, Inc.; RingCentral, Inc.; Ubiquiti Inc.; VMware, Inc.; Zoom Video Communications, Inc.; and Zscaler, Inc.; among others.

Some of our competitors compete across many of our product lines, while others are primarily focused in a specific product area. Barriers to entry are relatively low, and new ventures to create products that do or could compete with our products are regularly formed. In addition, some of our competitors may have greater resources, including technical and engineering resources, than we do. As we expand into new markets, we will face competition not only from our existing competitors but also from other competitors, including existing companies with strong technological, marketing, and sales positions in those markets. We also sometimes face competition from resellers and distributors of our products. Companies with which we have strategic alliances in some areas may be competitors in other areas, and this trend may increase. For example, the enterprise data center is undergoing a fundamental transformation arising from the convergence of technologies, including computing, networking, storage, and software, that previously were segregated. Due to several factors, including the availability of highly scalable and general purpose microprocessors, ASICs offering advanced services, standards based protocols, cloud computing and virtualization, the convergence of technologies within the enterprise data center is spanning multiple, previously independent, technology segments. Also, some of our current and potential competitors for enterprise data center business have made acquisitions, or announced new strategic alliances, designed to position them to provide end-to-end technology solutions for the enterprise data center. As a result of all of these developments, we face greater competition in the development and sale of enterprise data center technologies, including competition from entities that are among our long-term strategic alliance partners. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us.

The principal competitive factors in the markets in which we presently compete and may compete in the future include the ability to sell successful business outcomes; the ability to provide a broad range of networking and communications products and services; product performance; price; the ability to introduce new products, including providing continuous new customer value and products with price-performance advantages; the ability to reduce production costs; the ability to provide value-added features such as security, reliability, and investment protection; conformance to standards; market presence; the ability to provide financing; and disruptive technology shifts and new business models.

We also face competition from customers to which we license or supply technology and suppliers from which we transfer technology. The inherent nature of networking requires interoperability. As such, we must cooperate and at the same time compete with many companies. Any inability to effectively manage these complicated relationships with customers, suppliers, and strategic alliance partners could have a material adverse effect on our business, operating results, and financial condition and accordingly affect our chances of success.

If we do not successfully manage our strategic alliances, we may not realize the expected benefits from such alliances, and we may experience increased competition or delays in product development.

We have several strategic alliances with large and complex organizations and other companies with which we work to offer complementary products and services and, in the past, have established a joint venture to market services associated with our Cisco Unified Computing System products. These arrangements are generally limited to specific projects, the goal of which is generally to facilitate product compatibility and adoption of industry standards. There can be no assurance we will realize the expected benefits from these strategic alliances or from the joint venture. If successful, these relationships may be mutually beneficial and result in industry growth. However, alliances carry an element of risk because, in most cases, we must compete in some business areas with a company with which we have a strategic alliance and, at the same time, cooperate with that company in other business areas. Also, if these companies fail to perform or if these relationships fail to materialize as expected, we could suffer delays in product development or other operational difficulties. Joint ventures can be difficult to manage, given the potentially different interests of joint venture partners.

Inventory management relating to our sales to our two-tier distribution channel is complex, and excess inventory may harm our gross margins.

We must manage inventory relating to sales to our distributors effectively, because inventory held by them could affect our results of operations. Our distributors may increase orders during periods of product shortages, cancel orders if their inventory is too high, or delay orders in anticipation of new products. They also may adjust their orders in response to the supply of our products and the products of our competitors that are available to them, and in response to seasonal fluctuations in end-user demand. Our distributors are generally given business terms that allow them to return a portion of inventory, receive credits for changes in selling price, and participate in various cooperative marketing programs. Inventory management remains an area of focus as we balance the need to maintain strategic inventory levels to ensure competitive lead times against the risk of inventory obsolescence because of rapidly changing technology and customer requirements. When facing component supply-related challenges, we have increased our efforts in procuring components in order to meet customer expectations. If we ultimately determine that we have excess inventory, we may have to reduce our prices and write down inventory, which in turn could result in lower gross margins.

We depend upon the development of new products and services, and enhancements to existing products and services, and if we fail to predict and respond to emerging technological trends and customers' changing needs, our operating results and market share may suffer.

The markets for our products and services are characterized by rapidly changing technology, evolving industry standards, new product and service introductions, and evolving methods of building and operating networks. Our operating results depend on our ability to develop and introduce new products and services into existing and emerging markets and to reduce the production costs of existing products. If customers do not purchase and/or renew our offerings our business could be harmed. The COVID-19 pandemic may also result in long-term changes in customer needs for our products and services in various sectors, along with IT-related capital spending reductions, or shifts in spending focus, that could materially adversely affect us if we are unable to adjust our product and service offerings to match customer needs.

The process of developing new technology, including more programmable, flexible and virtual networks, and technology related to other market transitions— such as security, digital transformation and IoT, and cloud— is complex and uncertain, and if we fail to accurately predict customers' changing needs and emerging technological trends our business could be harmed. We must commit significant resources, including the investments we have been making in our strategic priorities to developing new products and services before knowing whether our investments will result in products and services the market will accept. In particular, if our model of the evolution of networking does not emerge as we believe it will, or if the industry does not evolve as we believe it will, or if our strategy for addressing this evolution is not successful, many of our strategic initiatives and investments may be of no or limited value. For example, if we do not introduce products related to network programmability, such as software-defined-networking products, in a timely fashion, or if product offerings in this market that ultimately succeed are based on technology, or an approach to technology, that differs from ours, such as, for example, networking products based on "white box" hardware, our business could be harmed. Similarly, our business could be harmed if we fail to develop, or fail to develop in a timely fashion, offerings to address other transitions, or if the offerings addressing these other transitions that ultimately succeed are based on technology, or an approach to technology, different from ours. In addition, our business could be adversely affected in periods surrounding our new product introductions if customers delay purchasing decisions to qualify or otherwise evaluate the new product offerings. We have also been transforming our business to move from selling individual products and services to selling products and services integrated into architectures and solutions, and we are seeking to meet the evolving needs of customers which include offering our products and solutions in the manner in which customers wish to consume them. As a part of this transformation, we continue to make changes to how we are organized and how we build and deliver our technology, including changes in our business models with customers. If our strategy for addressing our customer needs, or the architectures and solutions we develop do not meet those needs, or the changes we are making in how we are organized and how we build and deliver or technology is incorrect or ineffective, our business could be harmed.

Furthermore, we may not execute successfully on our vision or strategy because of challenges with regard to product planning and timing, technical hurdles that we fail to overcome in a timely fashion, or a lack of appropriate resources. This could result in competitors, some of which may also be our strategic alliance partners, providing those solutions before we do and loss of market share, revenue, and earnings. In addition, the growth in demand for technology delivered as a service enables new competitors to enter the market. The success of new products and services depends on several factors, including proper new product and service definition, component costs, timely completion and introduction of these products and services, differentiation of new products and services from those of our competitors, and market acceptance of these products and services. There can be no assurance that we will successfully identify new product and services opportunities, develop and bring new products and services to market in a timely manner, or achieve market acceptance of our products and services or that products, services and technologies developed by others will not render our products, services or technologies obsolete or noncompetitive. The products and technologies in our other product categories and key priority and growth areas may not prove to have the market success we anticipate, and we may not successfully identify and invest in other emerging or new products and services.

Changes in industry structure and market conditions could lead to charges related to discontinuances of certain of our products or businesses, asset impairments and workforce reductions or restructurings.

In response to changes in industry and market conditions, we may be required to strategically realign our resources and to consider restructuring, disposing of, or otherwise exiting businesses. Any resource realignment, or decision to limit investment in or dispose of or otherwise exit businesses, may result in the recording of special charges, such as inventory and technology-related write-offs, workforce reduction or restructuring costs, charges relating to consolidation of excess facilities, or claims from third parties who were resellers or users of discontinued products. Our estimates with respect to the useful life or ultimate recoverability of our carrying basis of assets, including purchased intangible assets, could change as a result of such assessments and decisions. Although in certain instances our supply agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed, our loss contingencies may include liabilities for contracts that we cannot cancel with contract manufacturers and suppliers. Further, our estimates relating to the liabilities for excess facilities are affected by changes in real estate market conditions. Additionally, we are required to perform goodwill impairment tests on an annual basis and between annual tests in certain circumstances, and future goodwill impairment tests may result in a charge to earnings. We initiated a restructuring plan in the first quarter of fiscal 2021, which included a voluntary early retirement program, and which has been completed in fiscal 2022. Our business may not be more efficient or effective than prior to implementation of the plan. Our restructuring activities, including any related charges and the impact of the related headcount restructurings, could have a material adverse effect on our business, operating results, and financial condition.

Over the long term we intend to invest in engineering, sales, service and marketing activities, and in key priority and growth areas, and these investments may achieve delayed, or lower than expected, benefits which could harm our operating results.

While we intend to focus on managing our costs and expenses, over the long term, we also intend to invest in personnel and other resources related to our engineering, sales, service and marketing functions as we realign and dedicate resources on key priority and growth areas, such as Security and Applications, and we also intend to focus on maintaining leadership in Infrastructure Platforms and in Services. We are likely to recognize the costs associated with these investments earlier than some of the anticipated benefits, and the return on these investments may be lower, or may develop more slowly, than we expect. If we do not achieve the benefits anticipated from these investments (including if our selection of areas for investment does not play out as we expect), or if the achievement of these benefits is delayed, our operating results may be adversely affected.

We have made and expect to continue to make acquisitions that could disrupt our operations and harm our operating results.

Our growth depends upon market growth, our ability to enhance our existing products, and our ability to introduce new products on a timely basis. We intend to continue to address the need to develop new products and enhance existing products through acquisitions of other companies, product lines, technologies, and personnel. Acquisitions involve numerous risks, including the following:

- Difficulties in integrating the operations, systems, technologies, products, and personnel of the acquired companies, particularly companies with large and widespread operations and/or complex products
- Diversion of management's attention from normal daily operations of the business and the challenges of managing larger and more widespread operations resulting from acquisitions
- Potential difficulties in completing projects associated with in-process research and development intangibles
- Difficulties in entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions
- Initial dependence on unfamiliar supply chains or relatively small supply partners
- Insufficient revenue to offset increased expenses associated with acquisitions
- The potential loss of key employees, customers, distributors, vendors and other business partners of the companies we acquire following and continuing after announcement of acquisition plans

Acquisitions may also cause us to:

- Issue common stock that would dilute our current stockholders' percentage ownership
- Use a substantial portion of our cash resources, or incur debt
- Significantly increase our interest expense, leverage and debt service requirements if we incur additional debt to pay for an acquisition
- Assume liabilities
- Record goodwill and intangible assets that are subject to impairment testing on a regular basis and potential periodic impairment charges
- Incur amortization expenses related to certain intangible assets
- Incur tax expenses related to the effect of acquisitions on our legal structure
- Incur large write-offs and restructuring and other related expenses
- Become subject to intellectual property or other litigation

Mergers and acquisitions of high-technology companies are inherently risky and subject to many factors outside of our control, and no assurance can be given that our previous or future acquisitions will be successful and will not materially adversely affect our business, operating results, or financial condition. Failure to manage and successfully integrate acquisitions could materially harm our business and operating results. Prior acquisitions have resulted in a wide range of outcomes, from successful introduction of new products and technologies to a failure to do so. Even when an acquired company has already developed and marketed products, there can be no assurance that product enhancements will be made in a timely fashion or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to such products. In addition, our effective tax rate for future periods is uncertain and could be impacted by mergers and acquisitions. Risks related to new product development also apply to acquisitions.

Entrance into new or developing markets exposes us to additional competition and will likely increase demands on our service and support operations.

As we focus on new market opportunities and key priority and growth areas, we will increasingly compete with large telecommunications equipment suppliers as well as startup companies. Several of our competitors may have greater resources, including technical and engineering resources, than we do. Additionally, as customers in these markets complete infrastructure deployments, they may require greater levels of service, support, and financing than we have provided in the past, especially in emerging countries. Demand for these types of service, support, or financing contracts may increase in the future. There can be no assurance that we can provide products, service, support, and financing to effectively compete for these market opportunities. Further, entry into other markets has subjected and will subject us to additional risks, particularly to those markets, including the effects of general market conditions and reduced consumer confidence. For example, as we add direct selling capabilities globally to meet changing customer demands, we will face increased legal and regulatory requirements.

Industry consolidation may lead to increased competition and may harm our operating results.

There is a continuing trend toward industry consolidation in our markets. We expect this trend to continue as companies attempt to strengthen or hold their market positions in an evolving industry and as companies are acquired or are unable to continue operations. For example, some of our current and potential competitors for enterprise data center business have made acquisitions, or announced new strategic alliances, designed to position them with the ability to provide end-to-end technology solutions for the enterprise data center. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us. We believe that industry consolidation may result in stronger competitors that are better able to compete as sole-source vendors for customers. This could lead to more variability in our operating results and could have a material adverse effect on our business, operating results, and financial condition. Furthermore, particularly in the service provider market, rapid consolidation will lead to fewer customers, with the effect that loss of a major customer could have a material impact on results not anticipated in a customer marketplace composed of more numerous participants.

Product quality problems could lead to reduced revenue, gross margins, and net income.

We produce highly complex products that incorporate leading-edge technology, including both hardware and software. Software typically contains bugs that can unexpectedly interfere with expected operations. There can be no assurance that our pre-shipment testing programs will be adequate to detect all defects, either ones in individual products or ones that could affect numerous shipments, which might interfere with customer satisfaction, reduce sales opportunities, or affect gross margins. From time to time, we have had to replace certain components and provide remediation in response to the discovery of defects or bugs in products that we had shipped. There can be no assurance that such remediation, depending on the product involved, would not have a material impact. An inability to cure a product defect could result in the failure of a product line, temporary or permanent withdrawal from a product or market, damage to our reputation, inventory costs, or product reengineering expenses, any of which could have a material impact on our revenue, margins, and net income.

Due to the global nature of our operations, political or economic changes or other factors in a specific country or region could harm our operating results and financial condition.

We conduct significant sales and customer support operations in countries around the world. As such, our growth depends in part on our increasing sales into emerging countries. We also depend on non-U.S. operations of our contract manufacturers, component suppliers and distribution partners. Our business in emerging countries in the aggregate experienced a decline in orders in certain prior periods. We continue to assess the sustainability of any improvements in our business in these countries and there can be no assurance that our investments in these countries will be successful. Our future results could be materially adversely affected by a variety of political, economic or other factors relating to our operations inside and outside the United States, any or all of which could have a material adverse effect on our operating results and financial condition, including the following: impacts from global central bank monetary policy; issues related to the political relationship between the United States and other countries that can affect regulatory matters, affect the willingness of customers in those countries to purchase products from companies headquartered in the United States or affect our ability to procure components if a government body were to deny us access to those components; government-related disruptions or shutdowns; the challenging and inconsistent global macroeconomic environment; foreign currency exchange rates; political or social unrest; economic instability or weakness or natural disasters in a specific country or region, including economic challenges in China and global economic ramifications of Chinese economic difficulties; environmental protection regulations (including new laws and regulations related to climate change), trade protection measures such as tariffs, and other legal and regulatory requirements, some of which may affect our ability to import our products to, export our products from, or sell our products in various countries or affect our ability to procure components; political considerations that affect service provider and government spending patterns; health or similar issues, including pandemics or epidemics such as the COVID-19 pandemic which could continue to affect customer purchasing decisions; difficulties in staffing and managing international operations; and adverse tax consequences, including imposition of withholding or other taxes on our global operations.

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

Most of our sales are on an open credit basis, with typical payment terms of 30 days in the United States, and, because of local customs or conditions, longer in some markets outside the United States. Beyond our open credit arrangements, we have also experienced demands for customer financing and facilitation of leasing arrangements. Our loan financing arrangements may include not only financing the acquisition of our products and services but also providing additional funds for other costs associated with network installation and integration of our products and services. Our exposure to the credit risks relating to our financing activities may increase if our customers are adversely affected by a global economic downturn or periods of economic uncertainty. There can be no assurance that programs we have in place to monitor and mitigate credit risks will be effective. In the past, there have been significant bankruptcies among customers both on open credit and with loan or lease financing arrangements, particularly among Internet businesses and service providers, causing us to incur economic or financial losses. There can be no assurance that additional losses will not be incurred. Although these losses have not been material to date, future losses, if incurred, could harm our business and have a material adverse effect on our operating results and financial condition. Additionally, to the degree that turmoil in the credit markets makes it more difficult for some customers to obtain financing, those customers' ability to pay could be adversely impacted, which in turn could have a material adverse impact on our business, operating results, and financial condition.

We are exposed to fluctuations in the market values of our portfolio investments and in interest rates; impairment of our investments could harm our earnings.

We maintain an investment portfolio of various holdings, types, and maturities. Our portfolio includes available-for-sale debt investments and equity investments, the values of which are subject to market price volatility. If such investments suffer market price declines, as we experienced with some of our investments in the past, we may recognize in earnings the decline in the fair value of our investments below their cost basis. Our privately held investments are subject to risk of loss of investment capital. These investments are inherently risky because the markets for the technologies or products they have under development are typically in the early stages and may never materialize. We could lose our entire investment in these companies. For information regarding the market risks associated with the fair value of portfolio investments and interest rates, refer to the section titled "Quantitative and Qualitative Disclosures About Market Risk."

We are exposed to fluctuations in currency exchange rates that could negatively impact our financial results and cash flows.

Because a significant portion of our business is conducted outside the United States, we face exposure to adverse movements in foreign currency exchange rates, including emerging market currencies which can have extreme currency volatility. An increase in the value of the dollar could increase the real cost to our customers of our products in those markets outside the United States where we sell in dollars and a weakened dollar could increase the cost of local operating expenses and procurement of raw materials to the extent that we must purchase components in foreign currencies. These exposures may change over time as business practices evolve, and they could have a material adverse impact on our financial results and cash flows.

Failure to retain and recruit key personnel would harm our ability to meet key objectives.

Our success has always depended in large part on our ability to attract and retain highly skilled technical, managerial, sales, and marketing personnel. Competition for these personnel is intense, especially in the Silicon Valley area of Northern California. Stock incentive plans are designed to reward employees for their long-term contributions and provide incentives for them to remain with us. Volatility or lack of positive performance in our stock price or equity incentive awards, or changes to our overall compensation program, including our stock incentive program, resulting from the management of share dilution and share-based compensation expense or otherwise, may also adversely affect our ability to retain key employees. As a result of one or more of these factors, we may increase our hiring in geographic areas outside the United States, which could subject us to additional geopolitical and exchange rate risk. The loss of services of any of our key personnel; the inability to retain and attract qualified personnel in the future; or delays in hiring required personnel, particularly engineering and sales personnel, could make it difficult to meet key objectives, such as timely and effective product introductions. In addition, companies in our industry whose employees accept positions with competitors frequently claim that competitors have engaged in improper hiring practices. We have received these claims in the past and may receive additional claims to this effect in the future.

Adverse resolution of litigation or governmental investigations may harm our operating results or financial condition.

We are a party to lawsuits in the normal course of our business. Litigation can be expensive, lengthy, and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable resolution of lawsuits or governmental investigations could have a material adverse effect on our business, operating results, or financial condition. For additional information regarding certain of the matters in which we are involved, see Note 14 to the Consolidated Financial Statements, subsection (f) "Legal Proceedings."

Our operating results may be adversely affected and damage to our reputation may occur due to production and sale of counterfeit versions of our products.

As is the case with leading products around the world, our products are subject to efforts by third parties to produce counterfeit versions of our products. While we work diligently with law enforcement authorities in various countries to block the manufacture of counterfeit goods and to interdict their sale, and to detect counterfeit products in customer networks, and have succeeded in prosecuting counterfeiters and their distributors, resulting in fines, imprisonment and restitution to us, there can be no guarantee that such efforts will succeed. While counterfeiters often aim their sales at customers who might not have otherwise purchased our products due to lack of verifiability of origin and service, such counterfeit sales, to the extent they replace otherwise legitimate sales, could adversely affect our operating results.

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

Our provision for income taxes is subject to volatility and could be adversely affected by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes to foreign-derived intangible income, global intangible low-tax income and base erosion and anti-abuse tax laws, regulations, or interpretations thereof; by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attribute prescribed in the accounting guidance for uncertainty in income taxes. The Organisation for Economic Co-operation and Development (OECD), an international association comprised of 38 countries, including the United States, has made changes and is contemplating additional changes to numerous long-standing tax principles. There can be no assurance that these changes and any contemplated changes if finalized, once adopted by countries, will not have an adverse impact on our provision for income taxes. Further, as a result of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries was subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition.

Our business and operations are especially subject to the risks of earthquakes, floods, and other natural catastrophic events (including as a result of global climate change).

Our corporate headquarters, including certain of our research and development operations are located in the Silicon Valley area of Northern California, a region known for seismic activity. Additionally, a certain number of our facilities are located near rivers that have experienced flooding in the past. Also certain of our customers, suppliers and logistics centers are located in regions that have been or may be affected by earthquake, tsunami and flooding or other weather-related activity which in the past has disrupted, and in the future could disrupt, the flow of components and delivery of products. In addition, global climate change may result in significant natural disasters occurring more frequently or with greater intensity, such as drought, wildfires, storms, sea-level rise, and flooding. We have not to date experienced a material event related to these matters; however, the occurrence of any such event in the future could have a material adverse impact on our business, operating results, and financial condition.

Terrorism and other events may harm our business, operating results and financial condition.

The continued threat of terrorism and heightened security and military action in response to this threat, or any future acts of terrorism, may cause further disruptions to the economies of the United States and other countries and create further uncertainties or otherwise materially harm our business, operating results, and financial condition. Likewise, events such as loss of infrastructure and utilities services such as energy, transportation, or telecommunications could have similar negative impacts. To the extent that such disruptions or uncertainties result in delays or cancellations of customer orders or the manufacture or shipment of our products, our business, operating results, and financial condition could be materially and adversely affected.

There can be no assurance that our operating results and financial condition will not be adversely affected by our incurrence of debt.

As of the end of the second quarter of fiscal 2022, we have senior unsecured notes outstanding in an aggregate principal amount of $9.5 billion that mature at specific dates from calendar year 2022 through 2040. We have also established a commercial paper program under which we may issue short-term, unsecured commercial paper notes on a private placement basis up to a maximum aggregate amount outstanding at any time of $10.0 billion, and we had $2.0 billion in commercial paper notes outstanding under this program as of January 29, 2022. There can be no assurance that our incurrence of this debt or any future debt will be a better means of providing liquidity to us than would our use of our existing cash resources. Further, we cannot be assured that our maintenance of this indebtedness or incurrence of future indebtedness will not adversely affect our operating results or financial condition. In addition, changes by any rating agency to our credit rating can negatively impact the value and liquidity of both our debt and equity securities, as well as the terms upon which we may borrow under our commercial paper program or future debt issuances.

Risks Related to Intellectual Property

Our proprietary rights may prove difficult to enforce.

We generally rely on patents, copyrights, trademarks, and trade secret laws to establish and maintain proprietary rights in our technology and products. Although we have been issued numerous patents and other patent applications are currently pending, there can be no assurance that any of these patents or other proprietary rights will not be challenged, invalidated, or circumvented or that our rights will, in fact, provide competitive advantages to us. Furthermore, many key aspects of networking technology are governed by industrywide standards, which are usable by all market entrants. In addition, there can be no assurance that patents will be issued from pending applications or that claims allowed on any patents will be sufficiently broad to protect our technology. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. The outcome of any actions taken in these foreign countries may be different than if such actions were determined under the laws of the United States. Although we are not dependent on any individual patents or group of patents for particular segments of the business for which we compete, if we are unable to protect our proprietary rights to the totality of the features (including aspects of products protected other than by patent rights) in a market, we may find ourselves at a competitive disadvantage to others who need not incur the substantial expense, time, and effort required to create innovative products that have enabled us to be successful.

We may be found to infringe on intellectual property rights of others.

Third parties, including customers, have in the past and may in the future assert claims or initiate litigation related to exclusive patent, copyright, trademark, and other intellectual property rights to technologies and related standards that are relevant to us. These assertions have increased over time as a result of our growth and the general increase in the pace of patent claims assertions, particularly in the United States. Because of the existence of a large number of patents in the networking field, the secrecy of some pending patents, and the rapid rate of issuance of new patents, it is not economically practical or even possible to determine in advance whether a product or any of its components infringes or will infringe on the patent rights of others. The asserted claims and/or initiated litigation can include claims against us or our manufacturers, suppliers, or customers, alleging infringement of their proprietary rights with respect to our existing or future products or components of those products. Regardless of the merit of these claims, they can be time-consuming, result in costly litigation and diversion of technical and management personnel, or require us to develop a non-infringing technology or enter into license agreements. Where claims are made by customers, resistance even to unmeritorious claims could damage customer relationships. There can be no assurance that licenses will be available on acceptable terms and conditions, if at all, or that our indemnification by our suppliers will be adequate to cover our costs if a claim were brought directly against us or our customers. Furthermore, because of the potential for high court awards that are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims settled for significant amounts. If any infringement or other intellectual property claim made against us by any third party is successful, if we are required to indemnify a customer with respect to a claim against the customer, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results, and financial condition could be materially and adversely affected. For additional information regarding our indemnification obligations, see Note 14(e) to the Consolidated Financial Statements contained in this report. Our exposure to risks associated with the use of intellectual property may be increased as a result of acquisitions, as we have a lower level of visibility into the development process with respect to such technology or the care taken to safeguard against infringement risks. Further, in the past, third parties have made infringement and similar claims after we have acquired technology that had not been asserted prior to our acquisition.

We rely on the availability of third-party licenses.

Many of our products are designed to include software or other intellectual property licensed from third parties. It may be necessary in the future to seek or renew licenses relating to various aspects of these products. There can be no assurance that the necessary licenses would be available on acceptable terms, if at all. The inability to obtain certain licenses or other rights or to obtain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could have a material adverse effect on our business, operating results, and financial condition. Moreover, the inclusion in our products of software or other intellectual property licensed from third parties on a nonexclusive basis could limit our ability to protect our proprietary rights in our products.

Risks Related to Cybersecurity and Regulations

Cyber-attacks, data breaches or malware may disrupt our operations, harm our operating results and financial condition, and damage our reputation or otherwise materially harm our business; and cyber-attacks or data breaches on our customers' or third-party providers' networks, or in cloud-based services provided to, by, or enabled by us, could result in claims of liability against us, damage our reputation or otherwise materially harm our business.

We experience cyber-attacks and other attempts to gain unauthorized access to our systems on a regular basis, and we anticipate continuing to be subject to such attempts. Despite our implementation of security measures, (i) our products and services, and (ii) the servers, data centers, and cloud-based solutions on which our and third-party data is stored (including servers, data centers and cloud-based solutions operated by third parties on which we rely), are vulnerable to cyber-attacks, data breaches, malware, and disruptions from unauthorized access, tampering or other theft or misuse, including by employees, malicious actors or inadvertent error. Such events have and could in the future compromise or disrupt access to or the operation of our products, services, and networks or those of our customers or third-party providers we rely on, or result in the information stored on our systems or those of our customers being improperly accessed, processed, disclosed, lost or stolen. For example, in December 2021, multiple vulnerabilities were reported for the widely used Java logging library, Apache Log4j. We reviewed the use of this library within our products and services, in our enterprise IT environment, and its use by our third-party providers, and have taken steps to mitigate these vulnerabilities, including by providing security updates for affected products to our customers. We have not to date experienced a material event related to a cybersecurity matter; however, the occurrence of any such event in the future could subject us to liability to our customers, suppliers, business partners and others, give rise to legal and/or regulatory action, could damage our reputation or otherwise materially harm our business, and could have a material adverse effect on our business, operating results, and financial condition. Efforts to limit the ability of malicious actors to disrupt the operations of the Internet or undermine our own security efforts may be costly to implement and may not be successful. Breaches of security in our customers' or third-party providers' networks, or in cloud-based services provided to, by, or enabled by us, regardless of whether the breach is attributable to a vulnerability in our products or services, could result in claims of liability against us, damage our reputation or otherwise materially harm our business.

Vulnerabilities and critical security defects, prioritization decisions regarding remedying vulnerabilities or security defects, failure of third-party providers to remedy vulnerabilities or security defects, or customers not timely deploying security updates or deciding not to upgrade products, services or solutions could result in claims of liability against us, damage our reputation, or otherwise materially harm our business.

The products and services we sell to customers, and our cloud-based solutions, inevitably contain vulnerabilities or critical security defects which have not been remedied and cannot be disclosed without compromising security. We also make prioritization decisions in determining which vulnerabilities or security defects to fix and the timing of these fixes. Customers may also need to test security updates before they can be deployed which can delay implementation. In addition, we rely on third-party providers of software and cloud-based services on which our and third-party data is stored, and we cannot control the timing at which third-party providers remedy vulnerabilities, which could leave us vulnerable. When customers do not timely deploy security updates, or decide not to upgrade to the latest versions of our products, services or cloud-based solutions containing the security update, they may be left vulnerable. Vulnerabilities and critical security defects, prioritization errors in remedying vulnerabilities or security defects, failure of third-party providers to remedy vulnerabilities or security defects, or customers not timely deploying security updates or deciding not to upgrade products, services or solutions could result in claims of liability against us, damage our reputation or otherwise materially harm our business.

Our business, operating results and financial condition could be materially harmed by regulatory uncertainty applicable to our products and services.

Changes in regulatory requirements applicable to the industries in which we operate, in the United States and in other countries, could materially affect the sales of our products and services. In particular, changes in telecommunications regulations could impact our service provider customers' purchase of our products and offers, and they could also impact sales of our own regulated offers. In addition, evolving legal requirements restricting or controlling the collection, processing, or cross-border transmission of data, including regulation of cloud-based services, could materially affect our customers' ability to use, and our ability to sell, our products and offers. Additional areas of uncertainty that could impact sales of our products and offers include laws and regulations related to encryption technology, environmental sustainability (including climate change), export control, product certification, and national security controls applicable to our supply chain. For example, new laws and regulations in response to climate change could result in increased energy efficiency for our products and increased compliance and energy costs. Changes in regulatory requirements in any of these areas could have a material adverse effect on our business, operating results, and financial condition.

Risks Related to Ownership of Our Stock

Our stock price may be volatile.

Historically, our common stock has experienced substantial price volatility, particularly as a result of variations between our actual financial results and the published expectations of analysts and as a result of announcements by our competitors and us. Furthermore, speculation in the press or investment community about our strategic position, financial condition, results of operations, business, security of our products, or significant transactions can cause changes in our stock price. In addition, the stock market has experienced extreme price and volume fluctuations that have affected the market price of many technology companies, in particular, and that have often been unrelated to the operating performance of these companies. These factors, as well as general economic and political conditions and the announcement of proposed and completed acquisitions or other significant transactions, or any difficulties associated with such transactions, by us or our current or potential competitors, may materially adversely affect the market price of our common stock in the future. Additionally, volatility, lack of positive performance in our stock price or changes to our overall compensation program, including our stock incentive program, may adversely affect our ability to retain key employees, virtually all of whom are compensated, in part, based on the performance of our stock price.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a) None.

(b) None.

(c) Issuer Purchases of Equity Securities (in millions, except per-share amounts):

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
October 31, 2021 to November 27, 2021	18	$ 55.01	18	$ 6,680
November 28, 2021 to December 25, 2021	44	$ 58.12	44	$ 4,110
December 26, 2021 to January 29, 2022	20	$ 61.90	20	$ 2,860
Total	82	$ 58.36	82	

On September 13, 2001, we announced that our Board of Directors had authorized a stock repurchase program. On February 16, 2022, our Board of Directors authorized a $15 billion increase to the stock repurchase program. The remaining authorized amount for stock repurchases under this program, including the additional authorization, is approximately $18 billion with no termination date.

For the majority of restricted stock units granted, the number of shares issued on the date the restricted stock units vest is net of shares withheld to meet applicable tax withholding requirements. Although these withheld shares are not issued or considered common stock repurchases under our stock repurchase program, and therefore are not included in the preceding table, they are treated as common stock repurchases in our financial statements as they reduce the number of shares that would have been issued upon vesting.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Required Disclosure Pursuant to Section 13(r) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")

Under Section 13(r) of the Exchange Act, we are required to disclose in our periodic reports if we or any of our affiliates knowingly conducted a transaction or dealing with entities or individuals designated pursuant to certain Executive Orders. On March 2, 2021, the U.S. government designated the Russian Federal Security Service (the "FSB") as a blocked party subject to such reporting requirements; however, on the same day, the U.S. Department of the Treasury's Office of Foreign Assets Control updated General License No. 1B (the "OFAC General License"), which now also generally authorizes U.S. companies to engage in certain transactions and dealings with the FSB necessary and ordinarily incident to requesting or obtaining licenses, permits, certifications or notifications issued or registered by the FSB for the importation, distribution or use of information technology products in Russia.

During the quarter ended January 29, 2022, a subsidiary of Cisco filed notifications with, or applied for import licenses and permits from, the FSB as required pursuant to Russian encryption product import controls for the purpose of enabling Cisco or our subsidiaries to import and distribute certain products in Russia. Neither Cisco nor our subsidiaries generated any gross revenues or net profits directly from such approval activity and neither Cisco nor our subsidiaries sell to the FSB. Cisco expects that we or our subsidiaries will continue to file notifications with and apply for import licenses and permits from the FSB as required for importation and distribution of our products in Russia, if and as permitted by applicable law, including the OFAC General License.

Item 6. Exhibits

The following documents are filed as exhibits to this report:

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
31.1	Rule 13a-14(a)/15d-14(a) Certification of Principal Executive Officer					X
31.2	Rule 13a-14(a)/15d-14(a) Certification of Principal Financial Officer					X
32.1	Section 1350 Certification of Principal Executive Officer					X
32.2	Section 1350 Certification of Principal Financial Officer					X
101.INS	Inline XBRL Instance - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					X

* Indicates a management contract or compensatory plan or arrangement.

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

		Cisco Systems, Inc.
Date: February 22, 2022	By	/S/ R. Scott Herren
		R. Scott Herren Executive Vice President and Chief Financial Officer (Principal Financial Officer and duly authorized signatory)