

Juniper Networks

Juniper Security deep dive; Solid products, yet limited scope

Maintain Rating: UNDERPERFORM | PO: 29.00 USD | Price: 26.29 USD

Detailed look at Juniper's Security business

Juniper's Security business accounted for roughly 12% of total revenue in 2022 and 1H23, down from ~14% in the prior two years. The segment has seen inconsistent growth in the last few years, going from a -4% YoY decline in 2020 to +8% growth in 2021, reverting back to -4% in 2022, and up +9% YTD23. Management attributes some of the volatility to the transition to software impacting upfront revenue recognition, which could continue to pressure growth over the next few quarters. Per Gartner's definition, Juniper's technology is rated above average, yet we expect the low growth to sustain and believe Juniper is addressing a limited market opportunity, focused mostly on appliances and high-throughput applications. This report dives deep into the segment's products, growth expectations, and underlying trends.

Low market share across portfolio, driven by weak trends

The majority of Juniper's Security revenues, or ~74% of Security revenues, are generated by three products: Firewalls, Secure Routers, and SD-WAN. The remaining 26% of revenues declined 20% and 28% YoY in the last two years, suggesting the core of the activities are around these three legacy solutions. In addition to leaning more towards the legacy side, Juniper holds small share in its respective markets. Firewalls, or the company's SRX portfolio, accounts for 43% of Security revenue, with Juniper holding about 2.6% market share. SD-WAN has proven to be a growth area, through Juniper's acquisition of 128 Technology, yet the company only holds 2.3% share. Lastly, secure routers account for 14% of Juniper's security revenues, with more substantial market share at 19%, yet we expect this segment to weaken, mainly due to the shift to integrated security appliances, such as NGFW and UTM.

Go-to-market strategy remains challenged

Juniper does not tend to sell security standalone and focuses instead on providing fundamental security capabilities for an end-to-end network. Juniper's strategy is in leveraging its network expertise to provide low latency and high-throughput capabilities. However, the combination of narrow scope, limited channels, higher pricing, and low market share are the main drivers for Juniper's weak growth rates. As such, our bottom-up model calls for 5% and 4% YoY growth for 2023 and 2024, respectively.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	1.75	1.95	2.26	2.43	2.58
GAAP EPS	0.77	1.43	1.20	1.72	1.85
EPS Change (YoY)	12.2%	11.4%	15.9%	7.5%	6.2%
Consensus EPS (Bloomberg)			2.22	2.36	2.57
DPS	0.79	0.82	0.83	0.81	0.81
EPS Ex-Options Expense	1.75	1.95	2.26	2.43	2.58
Valuation (Dec)					
P/E	15.0x	13.5x	11.6x	10.8x	10.2x
GAAP P/E	34.1x	18.4x	21.9x	15.3x	14.2x
Dividend Yield	3.0%	3.1%	3.2%	3.1%	3.1%
EV / EBITDA*	14.1x	13.3x	12.0x	11.4x	11.0x
Free Cash Flow Yield*	4.7%	-0.1%	7.0%	7.1%	7.1%

* For full definitions of *IQmethod*SM measures, see page 17.

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Equity

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Stock Data

Price	26.29 USD
Price Objective	29.00 USD
Date Established	12-Jan-2023
Investment Opinion	B-3-7
52-Week Range	25.37 USD - 34.53 USD
Mkt Val (mn) / Shares Out	12,514 USD / 476.0 (mn)
Average Daily Value (mn)	81.84 USD
BofA Ticker / Exchange	JNPR / NYS
Bloomberg / Reuters	JNPR US / JNPR.N
ROE (2023E)	16.2%
Net Dbt to Eqty (Dec-2022A)	16.1%
ESGMeter™	High

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See Glossary of acronyms on page 15

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iQprofileSM Juniper Networks

iQmethodSM – Bus Performance*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Return on Capital Employed	6.6%	8.8%	8.9%	9.7%	9.5%
Return on Equity	13.0%	14.6%	16.2%	15.8%	14.8%
Operating Margin	15.9%	15.7%	16.9%	17.9%	18.4%
Free Cash Flow	590	(8)	877	890	887

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash Realization Ratio	1.2x	0.2x	1.4x	1.4x	1.3x
Asset Replacement Ratio	0.4x	0.5x	0.8x	0.7x	0.7x
Tax Rate	35.6%	24.5%	30.6%	24.9%	24.7%
Net Debt-to-Equity Ratio	17.7%	16.1%	4.1%	-8.8%	-20.0%
Interest Cover	21.5x	21.2x	26.2x	28.4x	29.8x

Income Statement Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Sales	4,735	5,301	5,594	5,567	5,694
% Change	6.5%	11.9%	5.5%	-0.5%	2.3%
Gross Profit	2,829	3,043	3,260	3,259	3,360
% Change	7.5%	7.6%	7.1%	0%	3.1%
EBITDA	988	1,052	1,161	1,224	1,275
% Change	9.3%	6.5%	10.3%	5.5%	4.1%
Net Interest & Other Income	(35)	(39)	(36)	(35)	(35)
Net Income (Adjusted)	576	643	738	780	821
% Change	10.9%	11.5%	14.8%	5.7%	5.3%

Free Cash Flow Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Net Income from Cont Operations (GAAP)	253	471	392	553	587
Depreciation & Amortization	237	218	214	226	226
Change in Working Capital	(199)	(575)	73	24	(22)
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	399	(16)	363	252	260
Capital Expenditure	(100)	(105)	(165)	(164)	(164)
Free Cash Flow	590	-8	877	890	887
% Change	15.3%	NM	NM	1.5%	-0.4%

Balance Sheet Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash & Equivalents	923	880	1,413	2,063	2,786
Trade Receivables	994	1,227	907	897	903
Other Current Assets	1,040	1,510	1,763	1,783	1,803
Property, Plant & Equipment	703	667	656	594	532
Other Non-Current Assets	5,227	5,043	4,935	4,935	4,935
Total Assets	8,887	9,327	9,675	10,272	10,959
Short-Term Debt	0	0	0	0	0
Other Current Liabilities	1,877	2,079	2,237	2,266	2,304
Long-Term Debt	1,687	1,601	1,603	1,603	1,603
Other Non-Current Liabilities	1,007	1,171	1,178	1,182	1,149
Total Liabilities	4,570	4,852	5,018	5,051	5,055
Total Equity	4,317	4,475	4,657	5,221	5,904
Total Equity & Liabilities	8,887	9,327	9,675	10,272	10,959

* For full definitions of iQmethodSM measures, see page 17.

Company Sector

Data Networking

Company Description

Juniper (JNPR) is a provider of high-performance network infrastructure to service providers and enterprises. Key products include IP-based routers for service provider core and edge networks, security solutions, and high-end enterprise routing equipment. Juniper's products supports converged data, voice, video, and wireless applications across extended network

Investment Rationale

We rate Juniper at Underperform. In the next few quarters, order growth will decelerate and likely reach flat-to-negative when comping previous high order growth. In addition, we believe that revenue growth will not accelerate enough to offset the order deceleration given continued supply constraints and macro conditions. We see several catalysts for revenue acceleration in 2023 and beyond, however, in the near term, we believe the stock will react negatively to the above trends.

Stock Data

Average Daily Volume 3,112,987

Quarterly Earnings Estimates

	2022	2023
Q1	0.31A	0.48A
Q2	0.42A	0.58A
Q3	0.58A	0.54E
Q4	0.65A	0.67E

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Deep Dive on Juniper's Security Segment

Juniper's foray into security started with its acquisition of NetScreen in 2004, yet the company de-emphasized its security platform in the early years, mainly due to a weak enterprise go-to-market platform, and spun off its Pulse business in 2014. In the last few years, the company re-built and strengthened its security brand, focusing mostly on its network expertise. Growth has been volatile, ranging from -4% YoY growth in 2020 to +8% in 2021, reverting to -4% in 2022, and up +9% in 1H23. Management attributes some of the weakness to the deliberate shift from appliance sales to a ratable software subscription model, with revenues recognized upfront. We note that the transition could continue over the next few quarters, yet we expect the segment to return to growth in 2H23, with the focus being on the convergence of networking and security.

Juniper does not tend to sell security standalone and therefore does not look to compete with cybersecurity players, such as Palo Alto Networks or Fortinet. Historically, the Security business was largely narrowed to Service Provider customers and to some extent Cloud customers. As such, the products are on a large scale and are focused on the networking aspects of security, such as Firewall and SD-WAN. Network security at service providers involves considerations of how security features fit within network traffic engineering, and these customers therefore tend to blend security features with advanced networking functionality.

Juniper's opportunity in selling an integrated architecture is the ability to drive lower total cost of operation (TCO) through less technical debt and overhead. Management has made prior remarks on seeing lumpiness in its high-end security business, while seeing strength in mid-range firewall and software/cloud offerings.

Security accounted for approximately 12% of Juniper's revenue in 2022 and 1H23, down from roughly 14% in the prior two years, however Juniper only holds small market share in its respective end-markets. In the firewall and SD-WAN market, Juniper held 2.6% and 2.3% share, respectively, in 2022. In the secure router market, Juniper holds 19% share, while Cisco's share stands at 79.6%.

From a product perspective, secure routers account for approx. 14% of Juniper's security revenue and grew 6% YTD23 and -2% YoY in 2022. Firewalls, or the company's SRX portfolio, is the largest security segment, accounting for 43% of security revenues, growing 10% in 1H23 and 3% in 2022. Lastly, SD-WAN accounts for 17% of revenue and grew roughly 33% in 1H23 and 35% in 2022, representing a more robust growth opportunity within security. On overall security growth expectations, our bottom-up model calls for 5% growth in 2023 and 4% growth in 2024, composed of an average 5% growth in Firewalls, 13% growth in SD-WAN, and a 21% decline in Secure routers.

Juniper's go-to-market strategy is limited with narrow channels, higher pricing, and low market share. According to Gartner, Juniper's cybersecurity practice does not come up in many customer conversations, and cybersecurity peers do not consider them as a direct competitor. On one hand, Juniper's technology and technical capabilities are sound and are rated above average by Gartner's definition, with Juniper focusing on bringing security capabilities for end-to-end networks. On the other hand, actual customer validation and credibility/perception of Juniper security remains limited. Given the company's focus on service providers (SPs) and higher-end, higher-cost solutions, we believe that any share gains across its portfolio will remain relatively muted.

The following table lists most of the cybersecurity solution vendors in our coverage universe and ranks the companies by their expected c2024 revenue level. As the table demonstrates, most companies in our universe outgrow Juniper.

Exhibit 1: Cybersecurity Vendor Revenue Growth

Sorted by expected c2024 revenue levels, Juniper Security is expected to grow at a 4.6% 2022-2024 CAGR, below that of most cybersecurity peers

Calendar Year (in \$mn)	2019	2020	2021	2022	2023E	2024E	2022-2024 CAGR
Palo Alto Networks	\$3,121.4	\$3,782.7	\$4,857.5	\$6,155.7	\$7,486.6	\$8,912.9	20.3%
YoY Chg (%)	20.4%	21.2%	28.4%	26.7%	21.6%	19.1%	
Fortinet	\$2,163.0	\$2,594.4	\$3,342.2	\$4,417.4	\$5,403.4	\$6,362.5	20.0%
YoY Chg (%)	19.9%	19.9%	28.8%	32.2%	22.3%	17.7%	
Cisco (Security)	\$3,032.0	\$3,276.0	\$3,477.0	\$3,836.0	\$3,931.1	\$4,104.4	3.4%
YoY Chg (%)	nmf	8.0%	6.1%	10.3%	2.5%	4.4%	
CrowdStrike	\$481.4	\$874.4	\$1,451.6	\$2,241.2	\$3,039.1	\$3,908.7	32.1%
YoY Chg (%)	92.7%	81.6%	66.0%	54.4%	35.6%	28.6%	
Okta	\$586.1	\$835.4	\$1,300.2	\$1,858.0	\$2,212.9	\$2,577.7	17.8%
YoY Chg (%)	46.8%	42.5%	55.6%	42.9%	19.1%	16.5%	
Check Point	\$1,994.8	\$2,064.9	\$2,166.8	\$2,329.9	\$2,414.7	\$2,517.3	3.9%
YoY Chg (%)	4.1%	3.5%	4.9%	7.5%	3.6%	4.2%	
Zscaler	\$360.1	\$536.0	\$859.6	\$1,348.0	\$1,844.3	\$2,304.4	30.7%
YoY Chg (%)	48.2%	48.9%	60.4%	56.8%	36.8%	25.0%	
CyberArk	\$433.9	\$464.4	\$502.9	\$591.7	\$731.5	\$908.1	23.9%
YoY Chg (%)	26.4%	7.0%	8.3%	17.7%	23.6%	24.2%	
SentinelOne	\$46.5	\$93.1	\$204.8	\$422.2	\$605.4	\$798.1	37.5%
YoY Chg (%)	107.4%	100.2%	120.1%	106.1%	43.4%	31.8%	
SecureWorks	\$552.8	\$561.0	\$535.2	\$463.5	\$361.6	\$366.3	-11.1%
YoY Chg (%)	6.6%	1.5%	-4.6%	-13.4%	-22.0%	1.3%	
Juniper (Security)	\$638.2	\$610.8	\$656.8	\$628.6	\$660.8	\$688.0	4.6%
YoY Chg (%)	nmf	-4.3%	7.5%	-4.3%	5.1%	4.1%	

Source: Company report, Bloomberg, BofA Global Research estimates

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In the following sections, we provide a detailed bottom-up revenue build, a TAM analysis and a segment forecast using industry market projections and market share assumptions. We also explore each sub-segment and review key industry trends and growth drivers.

Exhibit 2: Snapshot of Industry Growth Rates

Total firewall, SD-WAN, and secure routers are expected to grow at a respective 3.2%, 10.1%, and -12.1% CAGR from 2022 to 2027

Calendar Year (in \$mn)	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2022-2027 CAGR
Next Generation Firewall (NGFW)	\$6,126.7	\$6,356.7	\$7,109.9	\$8,078.6	\$8,817.7	\$9,038.1	\$9,327.1	\$9,661.9	\$9,733.2	3.8%
YoY Chg	8.8%	3.8%	11.8%	13.6%	9.1%	2.5%	3.2%	3.6%	0.7%	
Unified Threat Management (UTM)	\$1,838.3	\$1,750.0	\$1,824.1	\$1,999.6	\$2,158.3	\$2,187.7	\$2,232.7	\$2,287.2	\$2,278.5	2.6%
YoY Chg	14.8%	-4.8%	4.2%	9.6%	7.9%	1.4%	2.1%	2.4%	-0.4%	
Traditional Firewall	\$493.2	\$452.2	\$419.7	\$473.5	\$473.8	\$441.9	\$411.5	\$380.7	\$338.1	-6.5%
YoY Chg	3.9%	-8.3%	-7.2%	12.8%	0.0%	-6.7%	-6.9%	-7.5%	-11.2%	
Total Firewall	\$8,458.1	\$8,558.9	\$9,353.7	\$10,551.7	\$11,449.7	\$11,667.7	\$11,971.3	\$12,329.8	\$12,349.8	3.2%
YoY Chg	9.7%	1.2%	9.3%	12.8%	8.5%	1.9%	2.6%	3.0%	0.2%	
SD-WAN	\$2,518.9	\$2,977.6	\$3,724.2	\$4,656.1	\$5,149.1	\$5,913.8	\$6,565.5	\$7,098.6	\$7,521.7	10.1%
YoY Chg	79.6%	18.2%	25.1%	25.0%	10.6%	14.9%	11.0%	8.1%	6.0%	
Secure Routers	\$823.3	\$644.9	\$553.6	\$470.8	\$371.8	\$297.0	\$281.2	\$263.9	\$247.7	-12.1%
YoY Chg	1.9%	-21.7%	-14.2%	-15.0%	-21.0%	-20.1%	-5.3%	-6.1%	-6.1%	

Source: Omdia, IDC, BofA Global Research estimates

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Bottom-Up Security Revenue Build

Our bottom-up revenue build covers ~74% of Juniper's reported Security revenue in 2022. The majority of the remaining 26% is generated by Support and Services, with a small contribution from SSE (Secure Edge) and other solutions like Advanced Threat Protection, SecIntel, and Security Director. Collectively, the 74% in our bottom-up model grew 8% YoY in 2022, while the remaining 26% declined 28%.

We also highlight that the company's security business is distributed across the various product segments: high-end SRX targets data center security for SP, Cloud and Enterprise and is recognized in the Cloud-Ready Data Center segment, while Branch SRX and SD-WAN are recorded within the AI-Driven Enterprise segment. Mist is a separate

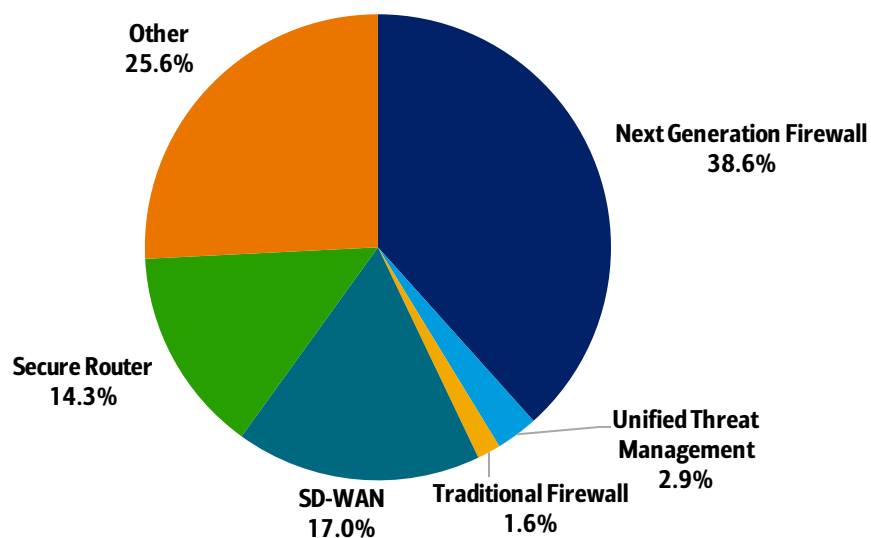


solution from the company's security portfolio, yet there is an inherent tie-in with some solutions being managed by the Mist cloud-based tools.

Our model includes a five-year Security forecast, using market growth projections and Juniper market share assumptions.

Exhibit 3: 2022 Security Revenue Breakdown

Firewall, including NGFW, UTM, and Traditional Firewall, accounted for 43.1% of Security Revenue in 2022



Source: Omdia, IDC

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Exhibit 4: Bottom-Up Security Revenue Build and Forecast

We estimate Juniper's Security segment to grow at a 4.9% CAGR from 2022 to 2027

Calendar Year (in \$mn)	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2022-2027 CAGR
Next Generation Firewall (NGFW)	\$234.6	\$204.8	\$235.1	\$242.4	\$264.5	\$271.2	\$279.8	\$289.9	\$292.0	3.8%
YoY Chg (%)	-2.8%	-12.7%	14.8%	3.1%	9.1%	2.5%	3.2%	3.6%	0.7%	
% of Security Revenue	36.8%	33.5%	35.8%	38.6%	40.0%	39.4%	38.4%	37.7%	36.5%	
Market Share (%)	3.8%	3.2%	3.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Unified Threat Management (UTM)	\$20.5	\$16.1	\$17.8	\$18.4	\$19.9	\$20.1	\$20.5	\$21.0	\$21.0	2.6%
YoY Chg (%)	-6.7%	-21.3%	10.8%	3.1%	7.9%	1.4%	2.1%	2.4%	-0.4%	
% of Security Revenue	3.2%	2.6%	2.7%	2.9%	3.0%	2.9%	2.8%	2.7%	2.6%	
Market Share (%)	1.1%	0.9%	1.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	
Traditional Firewall	\$10.5	\$9.2	\$10.0	\$10.3	\$10.3	\$9.6	\$9.0	\$8.3	\$7.4	-6.5%
YoY Chg (%)	-4.0%	-12.6%	8.6%	3.1%	0.0%	-6.7%	-6.9%	-7.5%	-11.2%	
% of Security Revenue	1.6%	1.5%	1.5%	1.6%	1.6%	1.4%	1.2%	1.1%	0.9%	
Market Share (%)	2.1%	2.0%	2.4%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	
Total Firewall	\$265.6	\$230.1	\$262.9	\$271.1	\$294.7	\$300.9	\$309.3	\$319.2	\$320.3	3.4%
YoY Chg (%)	-3.1%	-13.4%	14.3%	3.1%	8.7%	2.1%	2.8%	3.2%	0.4%	
% of Security Revenue	41.6%	37.7%	40.0%	43.1%	44.6%	43.7%	42.5%	41.6%	40.1%	
Market Share (%)	3.1%	2.7%	2.8%	2.6%	3.3%	3.3%	3.3%	3.3%	3.3%	
SD-WAN	\$25.2	\$29.6	\$79.2	\$107.1	\$118.4	\$136.0	\$151.0	\$163.3	\$173.0	10.1%
YoY Chg (%)	nmf	17.5%	167.6%	35.2%	10.6%	14.9%	11.0%	8.1%	6.0%	
% of Security Revenue	3.9%	4.8%	12.1%	17.0%	17.9%	19.8%	20.7%	21.3%	21.6%	
Market Share (%)	1.0%	1.0%	2.1%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	
Secure Router	\$73.8	\$73.0	\$91.1	\$89.7	\$70.8	\$56.6	\$53.5	\$50.3	\$47.2	-12.1%
YoY Chg (%)	18.1%	-1.0%	24.8%	-1.6%	-21.0%	-20.1%	-5.3%	-6.1%	-6.1%	
% of Security Revenue	11.6%	12.0%	13.9%	14.3%	10.7%	8.2%	7.4%	6.5%	5.9%	
Market Share (%)	9.0%	11.3%	16.5%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	
Other	\$273.7	\$278.1	\$223.5	\$160.8	\$176.8	\$194.5	\$214.0	\$235.4	\$258.9	10.0%
YoY Chg (%)	nmf	1.6%	-19.6%	-28.1%	10.0%	10.0%	10.0%	10.0%	10.0%	
% of Security Revenue	42.9%	45.5%	34.0%	25.6%	26.8%	28.3%	29.4%	30.6%	32.4%	
Security Revenue	\$638.2	\$610.8	\$656.8	\$628.6	\$660.8	\$688.0	\$727.9	\$768.1	\$799.4	4.9%
YoY Chg	nmf	-4.3%	7.5%	-4.3%	5.1%	4.1%	5.8%	5.5%	4.1%	
% of Total Juniper Revenue	14.4%	13.7%	13.9%	11.9%						

Source: Omdia, IDC, Company report, BofA Global Research estimates

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Firewall: slow, steady growth across NGFW and UTM

The primary function of traditional firewalls is to be the gatekeeper of the network through stateful packet inspection (dynamic packet filtering) which inspects individual data packets and monitors the state of a connection to defend against spoofing and malicious traffic activity. At their basic form, firewalls compare the request from a sender to connect to a receiver through a certain port number (relating to a specific application) and matches the request to a list of allowed connections. Unified Threat Management (UTM) solutions combine firewalls with additional features, such as network antivirus, web filtering, and mail security, into a comprehensive all-in appliance. Historically, UTM was more attractive for smaller organizations looking to consolidate appliances into a single box to save on costs and ease of management. Lastly, Next Generation Firewalls (NGFW) add deep packet inspection (content-based filtering) for application-aware packet filtering vs. filtering traffic solely based on addresses, ports, and protocols in a traditional firewall solution. We note that while there are still distinctions between UTM and NGFW solutions, the lines are blurring, given the added functionality to firewall platforms.

Juniper's firewall product line, the SRX series, includes hardware appliances, virtual appliances (vSRX) with native SD-WAN support, and a containerized firewall (cSRX). Additionally, FWaaS (Firewall-as-a-Service) is provided with Juniper's Secure Edge SSE product. Juniper was labeled as a Challenger in Gartner's 2022 Magic Quadrant for Network Firewalls with strong ability to execute, yet a lack of completeness of vision, per Gartner. The company's strength in firewall includes a single console to manage all its security products through its Security Director and Security Director Cloud solutions. Additionally, Juniper offers its Advanced Threat Prevention and SecIntel offerings that allows for shared threat intelligence between its networking and firewall product lines.

The company offers high-throughput firewalls, however, Juniper firewalls are primarily targeted at telcos, alongside its networking products, limiting market penetration. Juniper has been slow to identify and introduce products for key emerging use cases, such as ZTNA, cloud security, etc. and lacks a strong stand-alone security portfolio, relative to competitors that are expanding their security offerings aggressively. Lastly, Gartner notes that clients find its prices high, with SD-WAN and DLP features at added cost. Given the high-end nature of Juniper's SRX portfolio and the associated high costs, we believe the company will remain a niche player focusing on high end customers who require low latency and high-throughput capabilities.

Exhibit 5: Magic Quadrant for Network Firewalls, 2022

Gartner labels Juniper as a Challenger in this Magic Quadrant



Source: Gartner

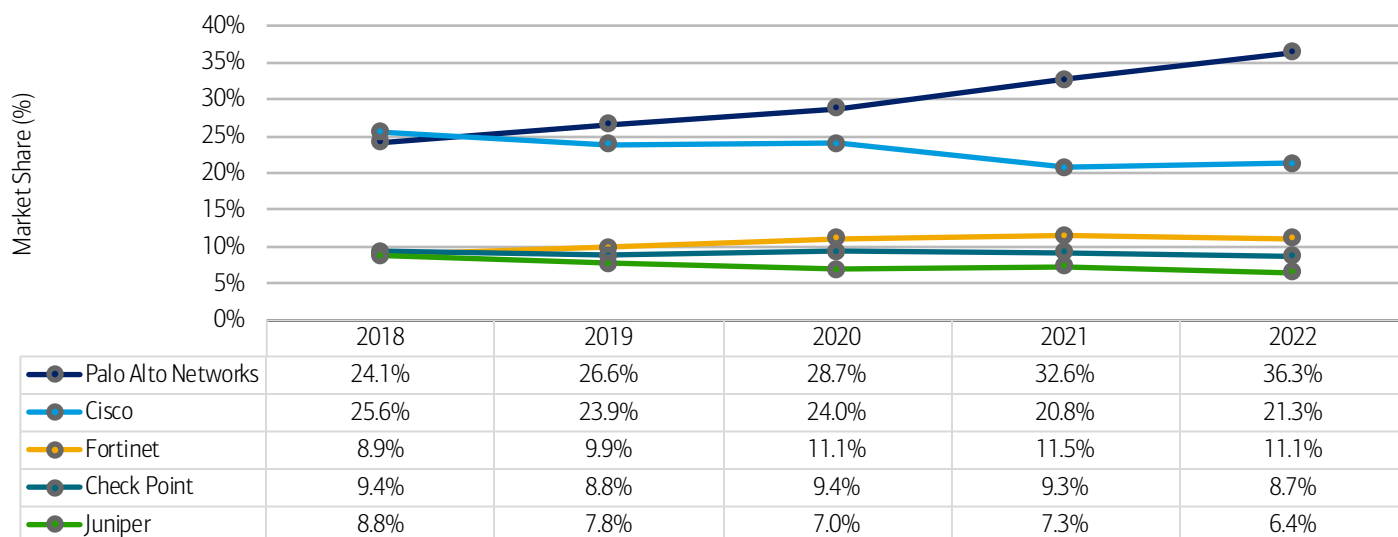
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Firewalls account for about 43% of Juniper's security revenue, with its total market share remaining consistent around 3%. Juniper's total firewall revenue was \$271.1mn in 2022, up 3.1% YoY vs. 14.3% growth in 2021. This is versus declines of -3.1% YoY and -13.4% in 2019 and 2020. We expect Juniper's total firewall revenue to grow at a 3.4% 2022-2027 CAGR, driven by growth in NGFW and UTM. In addition, we expect that Juniper's market share will continue to remain relatively consistent around the 3% range.

Within higher-end carrier-grade and data center firewalls (defined at a \$30,000 or higher price point), Juniper has the fifth-largest market share at 6.4%, below Palo Alto Networks, Cisco, Fortinet, and Check Point. These firewalls are typically deployed in enterprise and service provider data centers and wired and wireless carrier transport and backhaul networks, with the growth in network traffic driving upgrades in network security infrastructure. Juniper only participates in the Data Center and Carrier segment, while other vendors compete in additional segments such as campus, small-office home-office (SOHO), small to medium enterprise (SME), and more.

Exhibit 6: Market Share for Data Center and Carrier Firewalls

Juniper held 6.4% of the data center and carrier firewall market in 2022



Source: Omdia

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Between 2019 and 2022, Juniper lost marginal share in the NGFW market going from 3.8% in 2019 to 3.0% in 2022. Palo Alto Networks and Fortinet continue to remain market leaders and grow their share through competitive displacements, product innovation and refresh cycles. Within the UTM market, Juniper has maintained roughly 1% share from 2019 to 2022, way below Fortinet and Cisco at 27.3% and 25.1% share, respectively. Lastly, Juniper has largely maintained share in the traditional firewall market, up from 2.1% in 2019 to 2.4% in 2021, but back down to 2.2% in 2022.

The total firewall market was \$10.6bn in 2022, up 13% YoY, mostly composed of hardware-centric solutions. We expect it to grow at about a 3.2% CAGR from 2022 through 2027, with growth in software/cloud solutions offset by secular decline in on-prem firewalls. The traditional segment (4% of the total market in 2022) is expected to decrease at a -6.5% CAGR from 2022-2027, while NGFW (77% of total) and UTM (19% of total) are expected to increase at a 3.8% and 2.6% CAGR, respectively.

Exhibit 7: Snapshot of the Total Firewall Market (\$mn)

Juniper held 2.6% of the total firewall market in 2022

	2019	2020	2021	2022
Next Generation Firewall (NGFW)	\$6,126.7	\$6,356.7	\$7,109.9	\$8,078.6
% of Total	72.4%	74.3%	76.0%	76.6%
YoY Chg (%)	8.8%	3.8%	11.8%	13.6%
Market Share (%)				
Palo Alto Networks	26.3%	29.3%	33.6%	37.4%
Fortinet	15.7%	18.1%	18.5%	17.8%
Cisco	18.8%	16.5%	13.4%	13.9%
Check Point	16.6%	15.7%	14.4%	13.6%
SonicWALL	5.3%	5.7%	6.3%	6.0%
Juniper	3.8%	3.2%	3.3%	3.0%
WatchGuard	2.3%	2.1%	1.9%	1.7%
Other	11.1%	9.3%	8.7%	6.7%
Unified Threat Management (UTM)	\$1,838.3	\$1,750.0	\$1,824.1	\$1,999.6
% of Total	21.7%	20.4%	19.5%	19.0%
YoY Chg (%)	14.8%	-4.8%	4.2%	9.6%
Market Share (%)				
Fortinet	21.0%	24.8%	27.5%	27.3%
Cisco	25.1%	25.4%	23.1%	25.1%
SonicWALL	4.3%	4.9%	5.8%	6.0%
WatchGuard	6.0%	6.0%	5.4%	5.1%
Check Point	3.3%	3.3%	3.4%	3.3%



Exhibit 7: Snapshot of the Total Firewall Market (\$mn)

Juniper held 2.6% of the total firewall market in 2022

	2019	2020	2021	2022
Juniper	1.1%	0.9%	1.0%	0.9%
Other	39.1%	34.7%	33.8%	32.3%
Traditional Firewall	\$493.2	\$452.2	\$419.7	\$473.5
% of Total	5.8%	5.3%	4.5%	4.5%
YoY Chg (%)	3.9%	-8.3%	-7.2%	12.8%
Market Share (%)				
Fortinet	17.1%	21.7%	23.3%	23.7%
Check Point	18.6%	20.1%	21.0%	19.9%
Cisco	10.2%	7.3%	5.6%	5.9%
Juniper	2.1%	2.0%	2.4%	2.2%
WatchGuard	1.8%	1.9%	1.9%	1.8%
Other	50.0%	46.9%	45.7%	46.5%
Total Firewall	\$8,458.1	\$8,558.9	\$9,353.7	\$10,551.7
YoY Chg (%)	9.7%	1.2%	9.3%	12.8%
Market Share (%)				
Palo Alto Networks	19.1%	21.8%	25.5%	28.6%
Fortinet	17.0%	19.6%	20.5%	19.9%
Cisco	19.7%	17.9%	14.9%	15.6%
Check Point	13.8%	13.4%	12.6%	11.9%
SonicWALL	4.8%	5.2%	5.9%	5.7%
Juniper	3.1%	2.7%	2.8%	2.6%
WatchGuard	3.1%	2.9%	2.6%	2.3%
Other	19.4%	16.5%	15.3%	13.3%

Source: Omdia

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SD-WAN: solid growth offsetting security sluggishness

The SD-WAN market kickstarted in 2017, and growth of the market continues to remain strong, with the market up ~25% in 2021 and 2022. In December 2020, Juniper acquired 128 Technology, a company carrying about 2% share and focusing on tunnel-free routing and SD-WAN infrastructure. Growth has been strong, up 17.5% YoY in 2020, 167.6% YoY in 2021, which was mostly related to the 128 Technology acquisition, and 35.2% in 2022. We believe that Juniper can continue to grow this segment at a 10.1% CAGR between 2022 to 2027, driven by secular trends, such as cloud migration, network visibility, security, and more.

SD-WAN solutions create encrypted tunnels over public internet infrastructure, replacing the need to lease expensive private lines to connect two points in the network. There are multiple approaches to addressing the SD-WAN market. Cisco primarily includes it as a feature on its routers, while Fortinet, for example, has added the same functionality to its firewalls. Some vendors are more networking-focused, such as Cisco, while others are more application-centric and provide greater application-level controls, like Palo Alto Networks. There is also clear synergy with cloud-delivered security dubbed SASE (Secure Access Service Edge), where companies deliver an added value of security beyond the service of connectivity. Gartner forecasts that by 2026, more than 50% of new SD-WAN purchases will be part of a single vendor SASE offering, up from 10% in 2022.

Exhibit 8: Magic Quadrant for SD-WAN, 2023

Gartner labels Juniper as a Visionary in this Magic Quadrant



Juniper's SD-WAN offering is driven by Mist AI, which includes Session Smart Routers, WAN Assurance and Marvis Virtual Network Assistant. It also offers its SRX firewall solutions for specific use cases. Gartner estimates that Juniper has approximately 3,000 SD-WAN enterprise customers and IDC estimates that it held roughly 2.3% of the market in 2022. Juniper was labeled as a Visionary in Gartner's 2022 Magic Quadrant for SD-WAN with a solid product roadmap that aligns with emerging customer requirements (such as single-vendor SASE) and applicable to most enterprise use cases. However, Gartner notes that Juniper isn't as widely available as other vendors, based on narrow channels, higher pricing, and limited market share. The company also has limited integrations with third-party SSE vendors, adding complexity for dual-vendor SASE use cases.

Juniper integrated 128 Technology into its cloud-based Mist management platform to build out an AI-driven SD-WAN product as part of a broader portfolio of networking and security offerings. Juniper is also integrating the 128 Technology portfolio with its SRX and vSRX firewall and releasing a series of hardware appliances as an integrated hardware and software offering for SD-WAN infrastructure. Juniper's SD-WAN also includes native NGFW, content security, and Intrusion Detection and Prevention System (IDS/IPS) capabilities. The solution also offers integrations with Juniper Security Director Cloud, the company's SaaS-based real-time threat awareness portal.

Exhibit 10: Snapshot of the SD-WAN Market (\$mn)

Juniper held 2.3% of the SD-WAN market in 2022

	2019	2020	2021	2022
SD-WAN	\$2,518.9	\$2,977.6	\$3,724.2	\$4,656.1
YoY Chg (%)	79.6%	18.2%	25.1%	25.0%
Market Share (%)				
Cisco	39.3%	37.9%	37.2%	40.1%
Versa	5.8%	8.6%	11.7%	10.4%
Fortinet	6.8%	8.2%	9.5%	9.2%
VMware	8.8%	9.5%	8.3%	7.7%
HPE/Aruba	7.9%	8.0%	7.0%	7.6%
Palo Alto	4.5%	5.0%	5.1%	4.8%
Huawei	4.0%	4.3%	4.7%	5.8%
Nokia	4.1%	3.7%	3.0%	2.3%
Juniper	1.0%	1.0%	2.1%	2.3%
Other	17.8%	13.9%	11.4%	9.9%

Source: IDC

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We note that acquisitions play a key role in the market with Cisco acquiring Viptela in 2017, VMware bought VeloCloud in 2017, Oracle acquired Talari in 2018, HPE acquired Silver Peak in 2020, and Palo Alto Networks acquired CloudGenix in 2020.

Secure Routers: a market in secular decline

Secure routers accounted for 14%-15% of Juniper's security revenues in 1H23 and 2022. These are routers that ship with a stateful firewall license and have support for IPSec (Internet Protocol Security). Many customers had combined routers with firewalls, with the trend being so significant that it convinced Cisco to offer a bundled solution, dubbed Integrated Service Router (ISR). We note that Omdia categorizes SRX under firewall while it categorizes the security share of Advanced and Premium licensing on MX series routers, particularly smaller business edge models, under secure router. For security, the company's Session Smart Routing technology is a zero-trust secure routing architecture with stateful, session-aware routing capabilities.

Cisco is the clear leading vendor of the Secure Router market, with 80% market share in 2022, while Juniper holds about 19% share. Juniper has gained market share from Cisco over the last few years, up from 9% share in 2019.

The secure router market has been under a secular decline in the past several years, overtaken by integrated security appliances (NGFW and UTM), and a shift to software-defined wide area networking (SD-WAN) and its incorporation into firewall platforms. Omdia expects the secure router market to decline significantly from \$470.8mn in 2022 to \$247.7mn in 2027, representing a -12.1% CAGR. We expect that as the decline trends continue and the focus on integrated security appliances increases, secure routers will play a less pivotal role within Juniper's portfolio.

Exhibit 11: Snapshot of the Secure Routers Market (\$mn)

Juniper held 19% of the secure routers market in 2022

	2019	2020	2021	2022
Secure Routers	\$823.3	\$644.9	\$553.6	\$470.8
YoY Chg (%)	1.9%	-21.7%	-14.2%	-15.0%
Market Share (%)				
Cisco	89.9%	87.5%	82.4%	79.6%
Juniper	9.0%	11.3%	16.5%	19.0%
Other	1.2%	1.2%	1.2%	1.3%

Source: Omdia

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SSE: promising opportunity, yet early days

Security Service Edge (SSE) is the convergence of network security services, delivered from a purpose-built cloud platform. It consists of three core services: secure web gateway (SWG), cloud access security broker (CASB), and Zero Trust Network Access (ZTNA).

A secure web gateway (SWG) is a security solution that prevents unsecured internet traffic from entering an organization's internal network. Enterprises use SWGs to protect employees and users from accessing or being infected by malicious websites and web traffic, internet-borne viruses, malware, and other cyberthreats. It also helps ensure regulatory compliance. Zero Trust Network Access (ZTNA) is a security service that verifies users and grants access to specific applications based on identity and context policies. ZTNA removes implicit trust to restrict network movement and reduce attack surfaces. Lastly, cloud access security broker (CASB) is an on-premises or cloud-based security policy enforcement point that is placed between cloud service consumers and cloud service providers (like salesforce.com) to combine and interject enterprise security policies as cloud-based resources are accessed. Organizations deploy CASB to address cloud service risks and enforce security policies for services obtained from third party cloud providers, or cloud services that are beyond the enterprise perimeter and out of their direct control.

SSE, therefore, provides these three security solutions as a service, replacing the need to deploy appliances in branch locations or employee homes. As an increasing portion of network consumption is taking place outside of an organization's boundaries and in remote locations, either through SaaS services, branches, or simply due to work-from-home, there is significant interest in consuming Security as a Service, instead of deploying appliances in every location. This market has seen significant growth in the last few years, up 52.3% YoY to \$1,018mn in 2021. Some customers are content with their existing network security architectures and deploy appliances, or upgrade existing solutions, based on throughput capacity and additional security capabilities, while other customers are looking to replace their legacy infrastructure with a service, which is attractive for remote employees or small branches. For large campus or data center deployments, it is still more cost effective to deploy traditional appliances.

Exhibit 12: Snapshot of the Total ZTNA and SSE Market (\$mn)

Palo Alto Networks held 15.8% of the total market in CY21, with Zscaler and Cisco following at 14% and 6.4%, respectively

	2020	2021
ZTNA and SSE	\$668.5	\$1,017.9
YoY Chg	nmf	52.3%
Market Share (%)		
Palo Alto Networks	12.8%	15.8%
Zscaler	11.6%	14.0%
Cisco	6.4%	6.4%
Check Point	5.7%	5.7%
Akamai	5.3%	5.2%
Fortinet	5.1%	4.4%
Netskope	3.4%	3.2%
AppGate	3.4%	3.0%
Other	46.4%	42.3%

Source: IDC

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SSE is an integrated, cloud-delivered service that combines several network security technologies to address access policy enforcement and threat detection. Some vendors bundle all security functions, including ZTNA, into one service, while others take a platform approach by allowing customers to adopt one service at a time. By 2025, Gartner predicts that 70% of organizations that implement ZTNA will choose a SSE

provider rather than a stand-alone offering, up from 20% in 2021. In addition, 80% of organizations will purchase a consolidated SSE solution by 2025, rather than procure stand-alone services, vs. 15% in 2021. The market is becoming more competitive, led by more tenured network security companies, such as Palo Alto Networks, as well as some specialized vendors standing out like Zscaler. A handful of competitors are shaping the market with the top five vendors accounting for over 40% of 2021 revenue. We expect that as the market shakes out, these vendors will continue to gain share.

Juniper's SSE solution, dubbed Secure Edge, provides full-stack SSE capabilities, including FWaaS, SWG, CASB, DLP, and ZTNA, to protect web, SaaS, and on-prem applications. Juniper's Secure Edge is relatively new to market, only being introduced in 1Q22, thus is not included in relevant SSE market share data. Given early days, the solution remains unvalidated and customer interest remains low. According to Gartner, Juniper's SSE technology is rated above average, but the company has not yet fully marketed the solution or energized the sales motion for the channel.

Managed by Security Director Cloud, Secure Edge also provides consistent, secure access and network visibility while leveraging existing investments as organizations transition to a cloud-based architecture. Security Director Cloud is the company's portal to managing on-premises, cloud-based, and cloud-delivered security, and the platform has over 200 customers. When combined with Juniper's SD-WAN solution, Secure Edge allows for the convergence of network and security through a SASE architecture.

Glossary

- DLP = Data Loss Prevention
- FWaaS = Firewall as a Service
- NGFW = Next Generation Firewall
- SaaS = Software as a Service
- SASE = Secure Access Service Edge
- SD-WAN = Software-Defined Wide Area Networking
- SP = Service Provider
- SSE = Security Service Edge
- UTM = Unified Threat Management
- ZTNA = Zero Trust Network Access

Price objective basis & risk

Juniper Networks (JNPR)

Our \$29 PO is based on roughly 11.5x our FY2024 EPS estimate, which is in-line with peers (avg. 11-15x) growing revenues in the mid-single digits and EPS in the high-single digits. Solid underlying demand for Cloud and Data Centers should help drive revenue growth acceleration in 2023 and onwards. However, we flag the near-term risk of order growth deceleration as well as supply constraints and macro conditions limiting revenue growth acceleration.

Downside risks to our price objective: 1) a slowdown in demand for high-end networking equipment due to a weak economic environment, 2) commoditization of networking hardware in the data center creating price pressure, 3) difficulty in penetrating new markets with new products, 4) competition in next-generation markets like SDN and NFV from larger competitor Cisco and start up companies, 5) a need to execute on new product cycles to support growth.

Upside risks to our price objective: 1) better than expected execution with new products that could translate into higher than anticipated growth rates, 2) any improvement in Cloud and Service Provider spending environments.

Analyst Certification

I, Tal Liani, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Telecom and Data Networking Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Akamai	AKAM	AKAM US	Madeline Brooks
	Amdocs	DOX	DOX US	Tal Liani
	Arista Networks	ANET	ANET US	Tal Liani
	Check Point Software Technologies	CHKP	CHKP US	Tal Liani
	Ciena	CIEN	CIEN US	Tal Liani
	CommScope	COMM	COMM US	Tal Liani
	CrowdStrike Holdings Inc.	CRWD	CRWD US	Tal Liani
	CyberArk	CYBR	CYBR US	Tal Liani
	Fastly	FSLY	FSLY US	Madeline Brooks
	Fortinet	FTNT	FTNT US	Tal Liani
	InterDigital, Inc.	IDCC	IDCC US	Tal Liani
	Motorola Solutions	MSI	MSI US	Tomer Zilberman
	Palo Alto Networks	PANW	PANW US	Tal Liani
	Qualcomm	QCOM	QCOM US	Tal Liani
	Zscaler	ZS	ZS US	Tal Liani
NEUTRAL				
	Cellebrite	CLBT	CLBT US	Tal Liani
	Cisco Systems	CSCO	CSCO US	Tal Liani
	F5 Inc	FFIV	FFIV US	Tal Liani
	SentinelOne, Inc.	S	S US	Tal Liani
UNDERPERFORM				
	Cloudflare	NET	NET US	Madeline Brooks
	Juniper Networks	JNPR	JNPR US	Tal Liani
	Okta Inc	OKTA	OKTA US	Madeline Brooks
	SecureWorks	SCWX	SCWX US	Tal Liani

IQmethodSM Measures Definitions

Business Performance

Return On Capital Employed

Return On Equity
Operating Margin
Earnings Growth
Free Cash Flow

Quality of Earnings

Cash Realization Ratio
Asset Replacement Ratio
Tax Rate
Net Debt-To-Equity Ratio
Interest Cover

Valuation Toolkit

Price / Earnings Ratio
Price / Book Value
Dividend Yield
Free Cash Flow Yield
Enterprise Value / Sales

EV / EBITDA

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income
Operating Profit
Expected 5 Year CAGR From Latest Actual
Cash Flow From Operations – Total Capex

Numerator

Cash Flow From Operations
Capex
Tax Charge
Net Debt = Total Debt – Cash & Equivalents
EBIT

Numerator

Current Share Price
Current Share Price
Annualised Declared Cash Dividend
Cash Flow From Operations – Total Capex
EV = Current Share Price × Current Shares + Minority Equity + Net Debt + Other LT Liabilities
Enterprise Value

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization
Shareholders' Equity
Sales
N/A
N/A

Denominator

Net Income
Depreciation
Pre-Tax Income
Total Equity
Interest Expense

Denominator

Diluted Earnings Per Share (Basis As Specified)
Shareholders' Equity / Current Basic Shares
Current Share Price
Market Cap = Current Share Price × Current Basic Shares
Sales

Basic EBIT + Depreciation + Amortization

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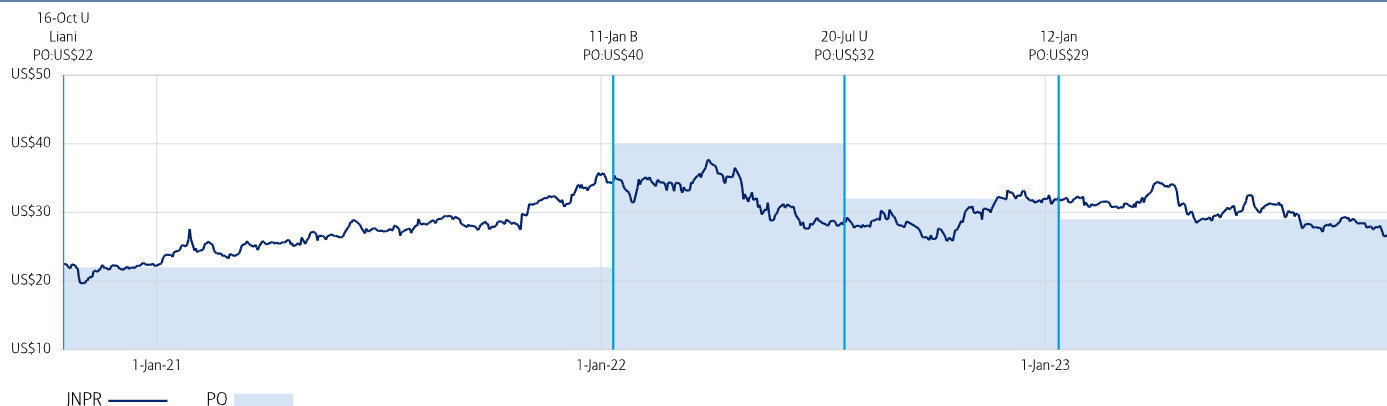
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Disclosures

Important Disclosures

Juniper Networks (JNPR) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Telecommunications Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	53	49.07%	Buy	38	71.70%
Hold	30	27.78%	Hold	20	66.67%
Sell	25	23.15%	Sell	13	52.00%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1869	53.48%	Buy	1046	55.97%
Hold	828	23.69%	Hold	461	55.68%
Sell	798	22.83%	Sell	370	46.37%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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