

JFrog Ltd

Strong 4Q, bullish '24 cloud growth guide of mid-40s; Reit Buy, raise PO to \$54

Reiterate Rating: BUY | PO: 54.00 USD | Price: 37.09 USD

Disruptive Cloud offering to drive mid-40s growth in '24

Reiterate Buy, increase PO to \$54 PO (from \$35). Consistent with our [4Q preview](#), 4Q23 results were strong, with beats on revenue and profitability, as well as 2024 guidance above Street. Strength was seen in SaaS revenue growth, which was +59.3% y/y in 4Q23, and model leverage driving 2024 PF operating margins of 11.1% and free cash flow margin of 20.6%. Commentary suggests that the long-term free cash flow margin target of 28% at the mid is achievable over the next few years, which can be an anchor for longer-term investors. Our thesis that JFrog is an enterprise DevSecOps disruptor is unchanged, and we anticipate the good execution to continue in the future. Update forecast for 4Q23 results and guidance. Increase valuation multiple to 12.7x EV/CY24E revs (from 7.9x) to account for strong execution and accelerating cloud revenue growth.

Twin growth turbines to help propel Cloud growth

Commentary suggests there are two key secular drivers ahead that can drive the attractive mid-40s Cloud growth profile in 2024: 1) the return to normal consumption patterns, and 2) increasing workloads shifting to the cloud from on-prem. As customers faced an uncertain macro environment in late 2022 and 2023, some cloud migrations were held-off, but this trend is reversing. Full-year 2024 guidance assumes that cloud migrations continue to pick up, supporting the sustained 40%+ SaaS revenue outlook.

Positives: NRR stabilized and should expand

1) NRR stabilized at 119%, and positive outlook suggests expansion potential over the next several quarters; 2) operating margin of 16.6% was much higher than our 11.2% prior, driven by operating leverage, and 3) net-adds in the >\$100k and >\$1mn customer cohorts accelerated to 7 and 38, from 6 and 35 last quarter, respectively, which is a positive datapoint supporting the up-market strategy; and 4) RPO grew 26.9% y/y to \$259.8mn, accelerating from 239% last quarter.

Negative: Net-adds lower as focus goes to enterprise

1) Ex-true ups of \$1.5mn, cloud revenue grew 6pts less at 53%, which is still very impressive; 2) overall customer net-adds decreased to 200 this year from 550 last year, and could stay lower than historical averages as the business focuses more on the attractive up market; and 3) penetration among the Fortune 100 down ticked to 83% from 89% last year, which potentially fuels concerns around competition.

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	0.04	0.51	0.64	0.61	0.75
GAAP EPS	(0.86)	(0.56)	(0.20)	(0.23)	(0.22)
EPS Change (YoY)	33.3%	NM	25.5%	-4.7%	23.0%
Consensus EPS (Bloomberg)			0.53	0.66	0.79
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	927.3x	72.7x	58.0x	60.8x	49.5x
EV / EBITDA*	836.5x	86.6x	59.4x	45.4x	35.6x
Free Cash Flow Yield*	0.4%	1.9%	1.9%	2.5%	3.2%

* For full definitions of *IQmethod*SM measures, see page 7.

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Timestamp: 15 February 2024 01:42AM EST

15 February 2024

Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	36.00	54.00
2024E Rev (m)	428.8	428.1
2025E Rev (m)	529.5	520.6
2026E Rev (m)	NA	629.4
2024E EPS	0.40	0.64
2025E EPS	0.50	0.61
2026E EPS	NA	0.75

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Stock Data

Price	37.09 USD
Price Objective	54.00 USD
Date Established	15-Feb-2024
Investment Opinion	C-1-9
52-Week Range	17.11 USD - 40.40 USD
Mkt Val (mn) / Shares Out	3,829 USD / 103.2 (mn)
Free Float	77.6%
Average Daily Value (mn)	39.94 USD
BofA Ticker / Exchange	FROG / NAS
Bloomberg / Reuters	FROG US / FROG.QQ
ROE (2024E)	9.7%
Net Dbt to Eqty (Dec-2023A)	-12.5%
ESGMeter TM	Medium

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to ["BofA ESGMeter Methodology"](#).

NRR = net revenue retention

ARR = annual recurring revenue

iQprofileSM JFrog Ltd

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	0.9%	7.9%	8.8%	7.8%	8.8%
Return on Equity	0.6%	8.5%	9.7%	8.3%	9.5%
Operating Margin	0.5%	11.1%	13.3%	14.3%	15.1%
Free Cash Flow	17	72	74	96	121

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	5.8x	1.3x	1.1x	1.3x	1.3x
Asset Replacement Ratio	0.3x	0.1x	0.6x	0.5x	0.4x
Tax Rate	NM	NM	NM	NM	NM
Net Debt-to-Equity Ratio	-7.3%	-12.5%	-18.8%	-27.0%	-35.3%
Interest Cover	NA	NA	NA	NA	NA

Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	280	350	428	521	629
% Change	35.5%	24.9%	22.3%	21.6%	20.9%
Gross Profit	235	293	355	426	514
% Change	35.3%	24.6%	21.1%	20.0%	20.7%
EBITDA	4	43	62	81	103
% Change	-37.6%	865.8%	45.9%	30.7%	27.5%
Net Interest & Other Income	5	21	20	4	4
Net Income (Adjusted)	4	55	74	74	95
% Change	38.1%	NM	33.1%	1.0%	27.6%

Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	(90)	(61)	(24)	(28)	(28)
Depreciation & Amortization	15	15	7	8	10
Change in Working Capital	17	23	1	20	23
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	80	97	94	99	120
Capital Expenditure	(4)	(2)	(4)	(4)	(4)
Free Cash Flow	17	72	74	96	121
% Change	-27.8%	322.1%	2.6%	29.5%	25.8%
Share / Issue Repurchase	11	18	0	0	0
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	0	0	0	0	0

Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	46	85	159	255	375
Trade Receivables	62	76	102	134	148
Other Current Assets	424	485	505	491	496
Property, Plant & Equipment	8	7	6	3	3
Other Non-Current Assets	331	320	400	425	452
Total Assets	871	973	1,171	1,307	1,474
Short-Term Debt	0	0	0	0	0
Other Current Liabilities	210	262	311	354	401
Long-Term Debt	0	0	0	0	0
Other Non-Current Liabilities	37	31	14	11	9
Total Liabilities	246	293	325	365	410
Total Equity	625	679	847	942	1,064
Total Equity & Liabilities	871	973	1,171	1,307	1,474

* For full definitions of iQmethodSM measures, see page 7.

Company Sector

Server & Enterprise Software

Company Description

JFrog was founded in 2008 by Shlomi Ben Haim, Fred Simon, and Yoav Landman, and is co-headquartered in California and Israel. JFrog provides an end-to-end platform to optimize and manage the continuous release and deployment of software. The key differentiators between JFrog and competing solutions are JFrog's next generation core Artifactory product, focus on innovation and expansion into DevSecOps, and CI/CD. The company has over 7,000 customers including 83% of the Fortune 100.

Investment Rationale

We rate JFrog Buy. We believe JFrog is an enterprise DevSecOps platform vendor that is poised for multiple years of growth and expanding margins given its solid customer economics, a large TAM of \$61bn, strong competitive moat, & impressive installed base. We believe JFrog will be a beneficiary of the broad secular digital transformation theme, that will likely increase demand for software and the enterprise DevSecOps tools that power them which should drive good adoption of JFrog in the future.

Stock Data

Average Daily Volume 1,076,951

Quarterly Earnings Estimates

	2023	2024
Q1	0.06A	0.15E
Q2	0.11A	0.12E
Q3	0.15A	0.16E
Q4	0.19A	0.20E

Key metrics

2Q23 Performance

- Total revenue was \$97.3mn (+27.1% y/y), above our \$93mn (+21.4%).
- Subscription revenue of \$92.1mn (+29.7% y/y) was above our \$87.9mn (+23.9%).
- Cloud revenue of \$36mn (+59.3% y/y) was above our \$31.9mn prior.
- JFrog added 38 net-new customers with annual recurring revenue (ARR) \$100k+ (vs. 35 last quarter), bringing the total to 886.
- Net revenue retention (NRR) was flat q/q at 119%.
- Enterprise Plus revenue grew 50% y/y to approximately \$48mn and accounted for 49% of total revenue.
- Non-GAAP OpM of 16.6% was 540bps above our 12.2% prior.

Guidance

- FY24 total revenue guidance range is \$424mn-428mn (+21.2% y/y-22.3%), as compared to our \$428.8mn (+24.1%) prior.
- PF operating income guidance is \$56-58mn, above our \$44.9mn prior.
- PF EPS guidance is \$0.58-0.70, above our \$0.40 prior.

Exhibit 1: Variance

Total revenue was 4.6% higher than our forecast

	4Q23A		
	BofA Est.	Actual	Variance
Total revenue	92,965	97,260	4.6%
Y/Y change %	21.4%	27.1%	561bps
Guidance	92.5-93.5		
PF Operating income	10,437	16,175	55.0%
PF operating margin	11.2%	16.6%	540bps
Guidance	10-11		
Adjusted EBITDA	11,349	17,077	50.5%
Adjusted EBITDA margin	12.2%	17.6%	535bps
PF EPS	\$0.13	\$0.19	30.6%
Guidance	0.12-0.13		
Free cash flow	12,440	31,975	61.1%
FCF margin	13.4%	32.9%	(1949bps)

Source: Company filings, BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 2: Estimate revisions

We now forecast 22.3% revenue growth in 2024

	1Q24E			FY24E			FY25E			FY26E		
	New Estimate	Old Estimate	Change %	New Estimate	Old Estimate	Change %	New Estimate	Old Estimate	Change %	New Estimate	Old Estimate	Change %
Total revenue	98,547	99,209	(0.7%)	428,054	428,838	(0.2%)	520,644	529,547	(1.7%)	629,355	NA	NA
Y/Y change %	23.5%	24.3%	(83bps)	22.3%	24.1%	(175bps)	21.6%	23.5%	(185bps)	20.9%	NA	NA
Guidance (\$mn)	98-99			424-428								
PF Operating income	13,085	6,882	90.1%	56,897	44,889	26.8%	74,470	59,945	24.2%	95,037	NA	NA
PF operating margin	13.3%	6.9%	634bps	13.3%	10.5%	282bps	14.3%	11.3%	298bps	15.1%	NA	NA
Guidance (\$mn)	12.5-13.5			56-58								
Adjusted EBITDA	14,237	8,045	77.0%	62,046	50,050	24.0%	81,100	66,718	21.6%	103,407	NA	NA
Adjusted EBITDA margin	14.4%	8.1%	634bps	14.5%	11.7%	282bps	15.6%	12.6%	298bps	16.4%	NA	NA



Exhibit 2: Estimate revisions
We now forecast 22.3% revenue growth in 2024

PF EPS	\$0.15	\$0.06	58.8%	\$0.64	\$0.40	37.0%	\$0.61	\$0.50	17.6%	\$0.75	NA	NA
Guidance	0.13-0.15			0.58-0.70								
Free cash flow	15,009	19,766	(31.7%)	74,038	71,026	4.1%	95,909	101,727	(6.1%)	120,693	NA	NA
FCF margin	15.2%	19.9%	(469bps)	17.3%	16.6%	73bps	18.4%	19.2%	(79bps)	19.2%	NA	NA

Source: Company filings, BofA Global Research estimates

BofA GLOBAL RESEARCH



Price objective basis & risk

JFrog Ltd (FROG)

Our \$54 PO is based on 12.7x EV/C24E revenue or an EV/R/G of 0.5x, which compares to its infrastructure peers at 0.7x EV/R/G (8.6x revenue), warranted given a better growth profile vs the peer average (i.e., low-20s vs mid teens).

Downside risks to our PO include: macroeconomic downturn, prolonged COVID headwinds, increase in competition, ability to upsell installed base, ability to convert free users to paid subscriptions, ability to expand into adjacent markets, and ability to sustain high R&D innovation.

Analyst Certification

I, Koji Ikeda, CFA, 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 - Enterprise Software Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY	8x8	EGHT	EGHT US	Michael J. Funk
	Adobe	ADBE	ADBE US	Brad Sills
	Alarm.com	ALRM	ALRM US	Michael J. Funk
	Amplitude, Inc.	AMPL	AMPL US	Koji Ikeda, CFA
	BILL	BILL	BILL US	Brad Sills
	CCC Intelligent Solutions	CCCS	CCCS US	Michael J. Funk
	Dropbox	DBX	DBX US	Michael J. Funk
	Dynatrace	DT	DT US	Koji Ikeda, CFA
	Elastic NV	ESTC	ESTC US	Koji Ikeda, CFA
	GitLab Inc.	GTLB	GTLB US	Koji Ikeda, CFA
	Global-e Online Ltd.	GLBE	GLBE US	Koji Ikeda, CFA
	HubSpot	HUBS	HUBS US	Brad Sills
	Informatica Inc.	INFA	INFA US	Koji Ikeda, CFA
	Intapp Inc.	INTA	INTA US	Koji Ikeda, CFA
	Intuit	INTU	INTU US	Brad Sills
	JFrog Ltd	FROG	FROG US	Koji Ikeda, CFA
	MeridianLink, Inc.	MLNK	MLNK US	Koji Ikeda, CFA
	Microsoft Corporation	MSFT	MSFT US	Brad Sills
	MongoDB Inc	MDB	MDB US	Brad Sills
	nCino, Inc.	NCNO	NCNO US	Adam Bergere
	NICE Ltd.	NICE	NICE US	Michael J. Funk
	NICE IT	NICSYF	NICE IT	Michael J. Funk
	PagerDuty	PD	PD US	Koji Ikeda, CFA
	PowerSchool Holdings, Inc.	PWSC	PWSC US	Koji Ikeda, CFA
	RingCentral	RNG	RNG US	Michael J. Funk
	Salesforce.com	CRM	CRM US	Brad Sills
	ServiceNow	NOW	NOW US	Brad Sills
	UiPath	PATH	PATH US	Brad Sills
	Unity	U	U US	Michael J. Funk
	Weave	WEAV	WEAV US	Michael J. Funk
	Workday Inc.	WDAY	WDAY US	Brad Sills
	Zeta Global	ZETA	ZETA US	Koji Ikeda, CFA
	ZoomInfo	ZI	ZI US	Koji Ikeda, CFA
NEUTRAL	Autodesk	ADSK	ADSK US	Michael J. Funk
	Bentley Systems	BSY	BSY US	Michael J. Funk
	BigCommerce Holdings, Inc.	BIGC	BIGC US	Koji Ikeda, CFA
	Coveo	YCVO	CVO CN	Koji Ikeda, CFA
	Datadog Inc	DDOG	DDOG US	Koji Ikeda, CFA

US - Enterprise Software Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	DocuSign	DOCU	DOCU US	Brad Sills
	Freshworks, Inc.	FRSH	FRSH US	Adam Bergere
	HashiCorp	HCP	HCP US	Brad Sills
	Jamf	JAMF	JAMF US	Koji Ikeda, CFA
	Lightspeed Commerce Inc.	LSPD	LSPD US	Koji Ikeda, CFA
	Lightspeed Commerce Inc.	YLSPD	LSPD CN	Koji Ikeda, CFA
	Oracle Corporation	ORCL	ORCL US	Brad Sills
	Paycom	PAYC	PAYC US	Adam Bergere
	Paylocity	PCTY	PCTY US	Adam Bergere
	Shopify, Inc.	SHOP	SHOP US	Brad Sills
	Snowflake	SNOW	SNOW US	Brad Sills
	Veeva Systems, Inc.	VEEV	VEEV US	Brad Sills
	Zoom Video Communications	ZM	ZM US	Michael J. Funk

UNDERPERFORM

	AvidXchange, Inc.	AVDX	AVDX US	Brad Sills
	Blackbaud, Inc.	BLKB	BLKB US	Koji Ikeda, CFA
	BlackLine, Inc.	BL	BL US	Koji Ikeda, CFA
	C3.ai	AI	AI US	Brad Sills
	Confluent	CFLT	CFLT US	Brad Sills
	CS Disco, Inc.	LAW	LAW US	Koji Ikeda, CFA
	Enfusion, Inc.	ENFN	ENFN US	Koji Ikeda, CFA
	Five9	FIVN	FIVN US	Michael J. Funk
	Guidewire Software, Inc.	GWRE	GWRE US	Michael J. Funk
	Twilio	TWLO	TWLO US	Michael J. Funk
	Vertex, Inc.	VERX	VERX US	Brad Sills

RSTR

	Splunk	SPLK	SPLK US	Brad Sills
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iQmethodSM Measures Definitions**Business Performance**

Return On Capital Employed

Return On Equity
Operating Margin
Earnings Growth
Free Cash Flow

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

Denominator

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

Quality of Earnings

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

Numerator

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

Denominator

Net Income
Depreciation
Pre-Tax Income
Total Equity
Interest Expense

Valuation Toolkit

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

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

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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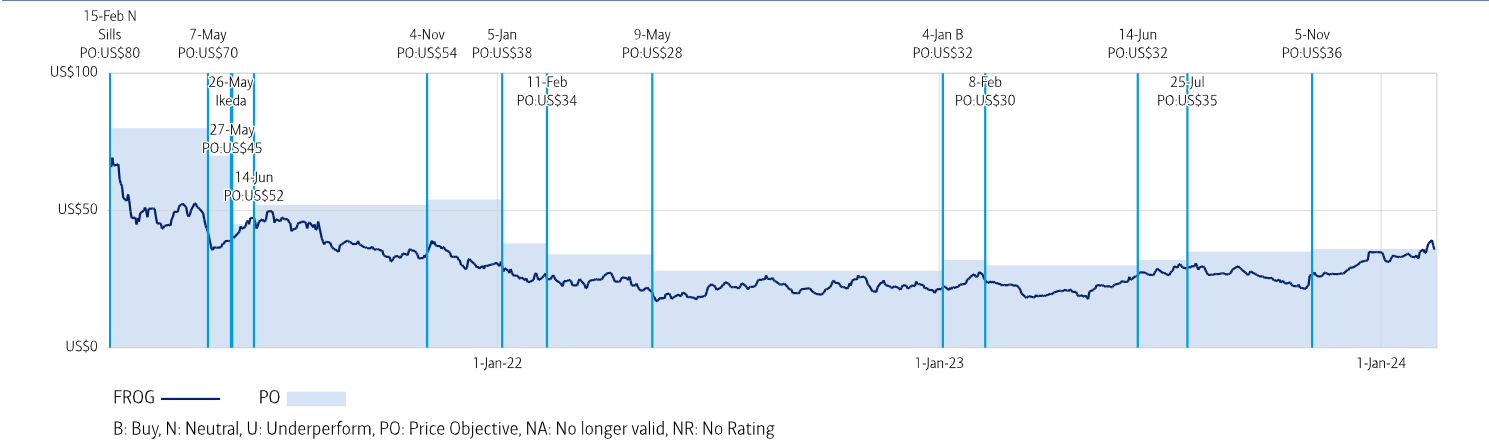
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Disclosures

Important Disclosures

JFrog (FROG) Price Chart



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Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{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.

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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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