

JFrog - How Fast Should Cloud Grow?

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Decision scope: Allocate incremental product, sales, and customer-migration resources

between accelerating JFrog-hosted SaaS and preserving a balanced hybrid/self-managed model

Case convention: This is an author-created management decision exercise, not a record of private deliberations. Use only information public by the cutoff. Do not assume the company must discontinue any deployment option.

The decision

JFrog's software-supply-chain platform was growing, and its hosted cloud business was growing faster by the company's reported cloud metric. The company also continued to offer self-managed software for customers running workloads in public cloud, private cloud, on-premise, or hybrid environments. As leadership planned the next investment cycle, how much more engineering, cloud-operations, sales, and migration-support capacity should go to JFrog-hosted SaaS-and how much should remain available to serve self-managed customers?

The choice was not whether to offer cloud at all. The decision was whether to accelerate adoption and migration beyond the existing pace, preserve a balanced model that invests in both deployment approaches, or make further cloud investment conditional on customer and unit-economics evidence. All three paths keep the current customer options in view; none assumes that self-managed support ends.

Assignment: Advise JFrog's leadership team as of 15 February 2024. Recommend an allocation posture and explain the strongest reason to change it. Identify what customer, product, and financial evidence you would monitor during the next planning cycle. Treat every forecast as a forecast and any unreported migration or unit-economic figure as unknown.

Two ways customers can use the platform

JFrog's 2023 Form 10-K described self-managed deployments in which customers operate the software in public cloud, on-premise, private cloud, or hybrid settings. JFrog-hosted SaaS is managed by JFrog in the public cloud. The 10-K reported SaaS subscriptions as 34% of total FY2023 revenue, compared with 28% in FY2022. The company's 14 February results release separately reported that "cloud revenue" grew 50% for FY2023 and 59% in the fourth quarter; Q4 cloud revenue was \$36.0 million, or 37% of total revenue. These are different disclosures, definitions, and periods. They do not show that 50% or 59% of customers migrated, and the case does not treat release "cloud revenue" as interchangeable with 10-K "SaaS revenue." [S1, Item 7, pp. 54-56; S2, pp. 1-2]

A cloud-acceleration case could point to rapid reported growth, a managed service that reduces customers' operating burden, and the possibility that a common platform may deepen use across software development and security workflows. JFrog's management described driving

cloud growth, broadening its software-supply-chain capabilities, enhancing security, and focusing on enterprise sales as strategic priorities. Those priorities are management framing; the public data do not establish which caused revenue growth. The company reported year-end net dollar retention (NDR) of 119%, but that measure was not broken out by deployment mode and does not establish SaaS-specific retention or migration. [S1, Item 7, pp. 54-55; S2, pp. 1-2]

A balanced hybrid case could point to customer choice, control, and fit with existing infrastructure. Self-managed customers could deploy in several environments, including public cloud; “self-managed” therefore does not mean “on-premise only.” Supporting both modes also uses engineering, cloud operations, sales, and support capacity. Concentrating more resources on SaaS may accelerate a managed product, but it could divert attention from self-managed customer needs or create friction if migrations are poorly matched to customer requirements. [S1, Item 7, pp. 54-56]

Growth and the cost of hosting

JFrog reported FY2023 total revenue of \$349.886 million, compared with \$280.040 million in FY2022. The MD&A table labels this line “total subscription revenue,” but it includes \$19.693 million of separately reported self-managed license revenue in 2023. The company attributed approximately \$64.5 million of the increase in that filed line to existing customers; the filing does not disaggregate that existing-customer contribution by product or revenue line, so it cannot be treated as subscription-only growth or evidence of SaaS migration. [S1, MD&A, pp. 60-61]

The reported GAAP gross margin was 78% in FY2023. JFrog said a shift from self-managed subscriptions to SaaS could reduce gross margin because SaaS had lower gross margin. The company attributed \$9.1 million of year-over-year cost-of-revenue growth to higher third-party hosting costs, primarily driven by increased SaaS subscription revenue. The cost line pools self-managed and SaaS activity; the filing does not disclose a SaaS-specific gross margin, hosting cost per workload, or migration contribution margin. The \$9.1 million attribution is management’s explanation, not an isolated audited SaaS cost figure. [S1, Item 1A, pp. 31-32; MD&A, p. 61]

JFrog generated \$74.155 million of GAAP operating cash flow in FY2023. [S1, audited cash-flow statement, p. 76; MD&A, p. 57] The company reported a GAAP operating loss of \$75.548 million and net loss of \$61.256 million. At year-end it held \$84.765 million in cash and equivalents and \$460.245 million in short-term investments. Management’s \$545.0 million liquidity summary included both; it was not cash alone. Liquidity could support investment, but it does not prove that accelerating SaaS will earn an adequate return. [S1, balance sheet, p. 72; statement of operations, p. 73; MD&A liquidity, p. 64]

For FY2024, management forecast revenue of \$424-428 million, non-GAAP operating income of \$56-58 million, and non-GAAP diluted earnings per share of \$0.58-\$0.60. These are management forecasts, not results. The outlook makes profitable growth an explicit consideration, but does not disclose the contribution expected from SaaS investment. [S2, “Fiscal Year 2024 Outlook,” p. 2]

What the research suggests-and cannot decide

SaaS changes more than where a product runs. Boillat and Legner's exploratory comparison of four cloud enterprise-software offerings and two on-premise counterparts found that a cloud transition changes activities, resources, customer relationships, channels, partners, revenue, and cost structure. Providers take on hosting and operating work; multi-tenant delivery may create provider scale economies while limiting customer-specific customization. Their qualitative cases are useful for framing the operating-model trade-off, not for predicting JFrog's margin or optimal investment. [A1, §§3-7, especially §7.3]

Customer migration may also involve operational and switching concerns. Opara-Martins, Sahandi, and Tian combined practitioner interviews with an exploratory UK survey. The paper reports 114 online responses from 200 invitations and separately mentions 12 paper responses, without clarifying whether those responses enter the reported analysis. Its qualitative discussion raises interoperability, integration, portability, security, and lock-in concerns. The study is self-reported, cross-sectional, and not specific to developer tools; this case uses no survey percentage as a market rate or forecast of JFrog customer behavior. [A2, Methods, lines 123-127; discussion]

A 2017 analytical paper comparing on-premise, SaaS, and hybrid licensing is listed in the research dossier, but its full text was not accessible. Its assumptions and results were therefore excluded from the case's core reasoning. The case does not claim that research establishes hybrid or SaaS as generally superior. [A3, abstract only; excluded from core analysis]

A bounded competitor reference

JFrog named GitLab as a competitor for a subset of its developer-tool offerings. GitLab's FY2023 filing described a broader DevSecOps platform with package and container registries and both SaaS and self-managed deployment options, including single-tenant SaaS. This is a qualitative comparison of product breadth and deployment choice only. The companies' products, revenue bases, and fiscal years differ; GitLab's bundled per-user pricing and reported company-level margins are not comparable prices or SaaS unit economics for JFrog. [S1, Item 1, p. 14; S3, Item 1, pp. 6-9, p. 10]

Decision paths

Accelerate SaaS while maintaining self-managed support. Direct more incremental product, cloud-operations, go-to-market, and migration resources to JFrog-hosted SaaS. This could build on reported cloud growth and deepen the managed offering, but the company has not disclosed SaaS-specific margin, migration cohorts, or incremental returns. Management would need to protect customer fit and monitor hosting and support costs.

Preserve a balanced hybrid model. Continue investing in SaaS while maintaining product, sales, and support capacity for self-managed customers. This protects deployment choice and serves customers with different operating requirements, but could spread engineering and go-to-market focus or slow the hosted business if resources are not prioritized clearly.

Stage the allocation against evidence. Increase or redirect resources in tranches as customer adoption, migration outcomes, SaaS hosting costs, and deployment-specific retention become clearer. This avoids treating current growth as proof of returns, but may delay investment in a market where platform capabilities and customer needs are changing. It requires leading indicators the company did not publicly report by deployment mode.

Questions for discussion

1. Which disclosed measures support accelerating SaaS, and which do not establish that SaaS is more valuable or profitable?
2. How should leadership interpret the 34% SaaS revenue share alongside management's 50% FY cloud-revenue growth claim?
3. What is the strongest case for keeping self-managed deployment as an active strategic option?
4. What customer, cost, and product evidence should determine the next increment of investment?
5. Recommend an allocation posture and state one measurable signal that would cause you to change it.

Source key

- **S1.** JFrog Ltd., FY2023 Form 10-K, filed 15 February 2024. SaaS/self-managed definitions and shares: Item 7, pp. 54-56; results/growth bridge and hosting costs: MD&A, pp. 60-61; audited cash-flow statement: p. 76; MD&A operating cash flow: p. 57; liquidity: p. 64; lower SaaS gross-margin risk: Item 1A, pp. 31-32; balance sheet and statement of operations: pp. 72-73. [SEC filing](#).
- **S2.** JFrog, "JFrog Announces Fourth Quarter and Fiscal 2023 Results," 14 February 2024. Cloud growth and Q4 cloud revenue: pp. 1-2; FY2024 management outlook: p. 2. [Issuer release](#).
- **S3.** GitLab Inc., FY2023 Form 10-K, filed 30 March 2023. Package/container registry and platform description: Item 1, pp. 6-9; self-managed and SaaS deployment options, including Dedicated single-tenant SaaS: Item 1, p. 10. Used only as a qualitative comparator. [SEC filing](#).
- **A1.** Thomas Boillat and Christine Legner, "From On-Premise Software to Cloud Services: The Impact of Cloud Computing on Enterprise Software Vendors' Business Models," *Journal of Theoretical and Applied Electronic Commerce Research* 8(3), 2013, 39-58. Research design §§3.1-3.4; findings §§5-7; limitation §7.3. Full open-access article read. [Article](#).
- **A2.** Justice Opara-Martins, Reza Sahandi, and Feng Tian, "Critical analysis of vendor lock-in and its impact on cloud computing migration: a business perspective," *Journal of Cloud Computing* 5, article 4 (2016). Methods, lines 123-127; exploratory survey and discussion. Full text read; paper-mode sample inclusion and some item denominators are ambiguous. [Article](#).
- **A3.** Shengli Li, Hsing Kenneth Cheng, Yang Duan, and Yu-Chen Yang, "A Study of Enterprise Software Licensing Models," *Journal of Management Information Systems* 34(1), 2017, 177-205. Abstract-level only; full text unavailable and detailed result excluded from core analysis. [Publisher record](#).