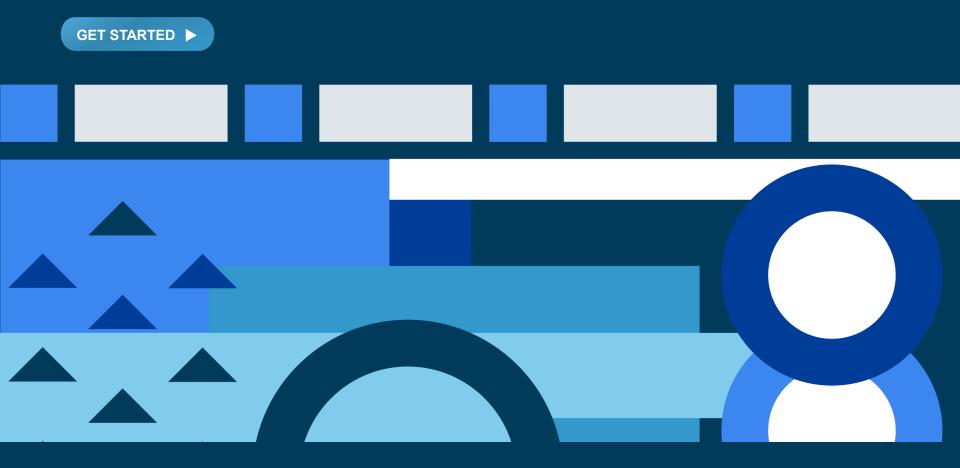


Forrester Opportunity Snapshot: A Custom Study Commissioned by Google | January 2019

Accelerate Your Use Of Cloud And Container Services With Cloud Marketplaces

Enterprise Software Development Teams Are Leveraging Cloud Marketplaces To Discover, Procure, And Provision New Tools



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Accelerate Your Use Of Cloud And Container Services With Cloud Marketplaces

Cloud platforms promise self-service and on-demand access to the most innovative services, tools, and technologies to help developers and technology leaders accelerate the pace of transformation in their companies. Developers value cloud's easy-to-try and easy-to-buy promise. But without a powerful marketplace where both developers and procurement pros can learn about, test and evaluate, discuss and rate, and buy new and emerging services, it can become confusing and complex to identify the best services and manage both usage and spend. This is especially true for emerging technologies like containers and containerized apps, which enterprises are rapidly adopting to improve resiliency, flexibility, and implementation at scale. Cloud marketplaces reduce these challenges and make it easier for developers, IT leaders, and even procurement teams to learn about, find, buy, provision, and manage today's most innovative container platforms and containerized apps.

In November 2018, Google commissioned Forrester Consulting to evaluate the demand among enterprise for leveraging cloud marketplaces to discover, procure, and provision new software development tools. In conducting a survey of 466 application development and delivery decision makers, we found that development teams increasingly prefer using cloud marketplaces over initiating direct vendor relationships because marketplaces deliver the speed, security, visibility, and simplicity that enterprises need to support digital transformation.



Company size

- > 500 to 999: 21%
- > 1,000 to 4,999: 44%
- > 500 to 19,999: 26%
- > 20,000 or more: 8%



Region

- > NA (US, Canada): 33%
- > EMEA (UK, Germany, France): **33%**
- > APAC (Australia, India): 33%



Respondent position

- > C-level: 6%
- > Vice president: 18%
- > Director: 26%
- Manager: 34%
- > Project manager: 10%
- > Full-time practitioner: **5%**



Job role

- 50/50 split between developers and IT.
- > Of the leaders IT leader half:
 - 9% are DevOps
 - 8% are enterprise architecture
 - 33% are technology operations

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providers

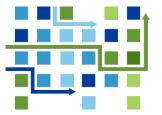
CONCLUSIONS

Fragmented Technology Procurement Impedes Software Innovation Goals

Enterprise development teams are under pressure to deliver new and updated software to support digital transformation. More than three in four application development and delivery (AD&D) decision makers reported that addressing backlog for custom apps (81%) and speeding up cycle release times (76%) are among their top priorities for next year. To achieve this agility, 75% are investing in containerizing more applications, and the same proportion are prioritizing using more cloud-based development environments.

However, 53% of enterprises are struggling to make progress due to challenges with vendor fragmentation, and 43% reported difficulties keeping pace with the release of new tools. Forty-five percent lack a central destination for discovering and procuring new services, which could address these challenges.

75% of enterprises prioritize application containerization as part of their efforts to drive agility and speed application delivery.



"Which of the following challenges are hindering your organization's ability to reach its cloud software development goals?"

Billing, licensing, and vendor management complexities due 53% to too many third-party software Lack of centralized destination 45% for discovering new apps and development tools Difficulty keeping pace with the release of new development 43% tools and software Long and challenging 35% procurement process for new tools and software

Base: 466 application development and delivery decision makers in IT and developer roles at global enterprises Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2018

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Enterprises Need A More Streamlined Way To Try And Buy Containerized Apps

As enterprises progress on their cloud journeys, development and IT leaders are seeking:

- A central destination for discovering, trying, and managing development tools and services. The market for software development tools is constantly changing, and 74% of AD&D leaders feel they need more centralized resources to keep pace. Most development teams also want a place to experiment with new tools and services on a trial basis before deploying them broadly. Further, AD&D leaders seek a marketplace where they can manage the tools and apps their teams use for development.
- Faster deployment of containerized applications. Containers help enterprises speed software delivery and improve scale, resiliency, flexibility, and implementation. As development teams increase their use of containerized apps, 67% are looking to streamline their deployment approaches to capture these benefits.

Cloud marketplaces — online storefronts operated by cloud service providers that offer customers access to applications and services that are built on, integrate with, or complement the cloud provider's offerings — can meet these needs, particularly if they offer quickdeploy containerized applications. Percent Of Respondents Who Agree Or Strongly Agree With Each Statement



My team prefers to experiment with new cloud services and tools on a trial basis before using them more broadly

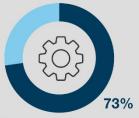


My team needs ways to streamline how we deploy containerized apps and resources in our environments

Base: 466 application development and delivery decision makers in IT and developer roles at global enterprises Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2018



We need more centralized resources to keep up with rapid change in the market for cloud development software



We want a marketplace that offers application management capabilities

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Development Teams Seek More Autonomy Within An Approved Ecosystem

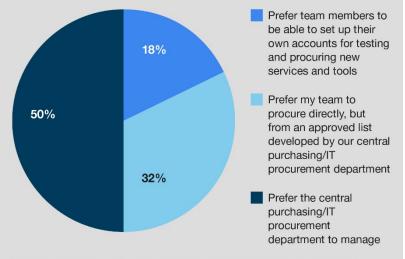
Today, 86% of enterprises have a centralized purchasing group that procures new cloud development tools and services on their company's behalf. Within this model, 26% provide some autonomy to developers directly, allowing them to procure their own tools up to a certain spend amount. Moving forward, development teams want slightly more autonomy: While half are happy to leave procurement responsibilities with the central purchasing team, the other half would prefer to procure tools and services directly. However, most of the latter group (32% overall) want to ensure that their purchases are aligned to an approved list from the central purchasing team that has done the due diligence on the security, compliance, costs, and integration considerations of various development tools and services.

Cloud marketplaces are well positioned to deliver this balance of autonomy and control because they provide procurement teams visibility into usage and allow them to prohibit unapproved apps.

Development teams want slightly more autonomy but are happy to get tools from an approved marketplace.



"How would you/your team prefer to procure new tools and services for cloud software development in the coming year?"



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Demand For Procuring Containerized Apps From Cloud Marketplaces Is Rising

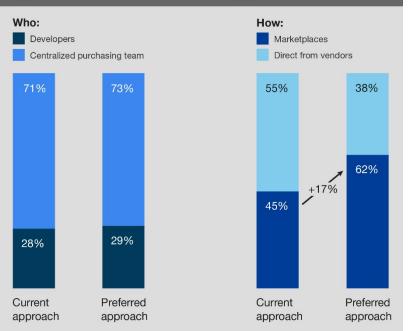
Overall, more than 75% of development and IT leaders are interested in using cloud marketplaces to procure and provision new apps and services across categories. Specifically, there is growing demand for procuring containerized apps from a cloud marketplace. Development and IT leaders are satisfied with *who* handles procurement of containerized apps — the central purchasing team predominantly owns this today, and nearly the same proportion of respondents (71% vs. 73%) consider this their preferred approach. However, AD&D leaders are in favor of shifting *how* these apps are procured, moving away from direct vendor relationships in favor of using cloud marketplaces.

This momentum aligns with the need for a more streamlined approach to deploying containerized applications that we saw earlier in our survey.

62% of AD&D leaders prefer to procure containerized applications from a cloud marketplace instead of directly from vendors.



"How does your team procure containerized applications and solutions today? How would you prefer to procure containerized applications and solutions in the coming year?"



Base: 466 application development and delivery decision makers in IT and developer roles at global enterprises Note: Percentages may not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2018

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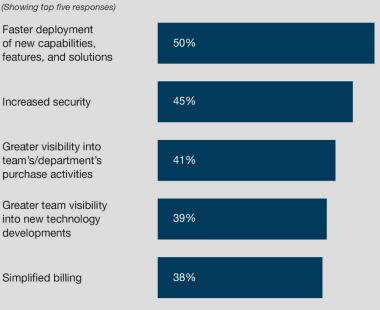
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Cloud Marketplaces Deliver On Enterprise Needs For Speed, Security, and Visibility

Cloud marketplaces are gaining momentum as the preferred destination for discovering, trying, buying, and managing cloud development tools and services. Why? Because they help enterprises address challenges with their current procurement processes while supporting key priorities. Top benefits include:

- **Speed.** Using cloud marketplaces has helped 50% of enterprises deploy new capabilities, features, and solutions more quickly.
- **Security.** If a cloud provider offers a tool or service on its marketplace, development teams can be confident that it has already been vetted for security. Forty-five percent of AD&D leaders reported increased security from using marketplaces.
- **Visibility.** Cloud marketplaces improve visibility both internally and externally. The centralized nature of marketplaces has given 41% of AD&D leaders greater visibility into their teams' purchase activities and has also helped 39% of development teams keep pace with new technology developments.
- **Simplicity.** Procuring software development tools from a marketplace eliminates one of the major hassles of vendor fragmentation: billing. Thirty-eight percent named this as a benefit.

"Which of the following benefits have you seen from using a marketplace to support your cloud software development needs?"



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Enterprises Value Solutions That Support Advanced Analytics And Containerization

Cloud marketplaces must offer a breadth of development tools across a variety of software categories. Database and analytics services, AI and machine learning solutions, and containerized applications are among the most valuable for development and IT leaders. They also note the importance of solutions that integrate with their preferred cloud platforms and container orchestration tools.

We also asked respondents to rate the importance of various cloud marketplace features. The most important/critical requirements include ease of configuring and securing applications, educational resources and how-tos, and the ability to provision tools and services within corporate guidelines.

71% of AD&D leaders consider the availability of containerized applications important or critical in a cloud marketplace.



"How important do you consider the availability of the following tools, capabilities, and services in a cloud marketplace?"

(Showing percent selecting "Very important" or "Critical") Database/analytics services 78% Al and machine learning 74% solutions/applications Solutions that integrate with my specific 71% cloud development platform provider Containerized applications 71% Solutions that are certified to work with 70% specific container orchestration tools Security services 65% IoT services 65% Open source and commercial 62% apps in one central location

Base: 466 application development and delivery decision makers in IT and developer roles at global enterprises Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2018

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Discovery And Learning Resources Can Further Differentiate Cloud Marketplaces

Resources for learning and discovery will become more valuable as enterprises expand their use of cloud marketplaces. Already, 74% of AD&D leaders believe educational resources and how-tos are critical in a marketplace. Cloud marketplaces are also top of mind for keeping pace with new technology developments, alongside recommendations from systems integrators and industry analysts. But while marketplaces deliver on procurement and provisioning ease, discovery and learning are considered weaknesses. Enterprises are struggling to keep up with constant change in the cloud software development market, and cloud marketplaces are uniquely positioned to help by consolidating information about various commercial and open source offerings. Development teams will favor marketplaces that better support the discovery of new tools and services and provide guidance on how to leverage them.

74% of AD&D leaders consider educational resources and howtos important or critical in a cloud marketplace.

Top Rated Strengths Of Cloud Marketplaces



51% Ease of procuring new apps and services



48% Ease of provisioning new apps and services

Base: 466 application development and delivery decision makers in IT and developer roles at global enterprises Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2018 **Top Rated Weaknesses Of Cloud Marketplaces**



36% Resources for understanding new technologies and identifying best practices



38% Ability to compare different vendor offerings in one location

34% Ease of discovering new apps and services

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Conclusions

In pursuit of greater agility, enterprise software development teams see value in leveraging cloud marketplaces to discover, procure, and provision third-party and open source software. Marketplaces that offer ready-to-deploy container apps are of particular interest because many firms are expanding their use of containers, container orchestration, and containerized apps and need solutions that help them build and scale these services and tools quickly. Our study yielded the following conclusions:

- Cloud container services, container orchestration platforms, and containerized apps are powering significant enterprise transformation. Seventy-five percent of those surveyed prioritize containers at the heart of their app modernization efforts.
- Sixty-two percent of AD&D leaders prefer to procure containerized applications from a cloud
 marketplace instead of directly from vendors. Marketplaces make it easier to find, try, and buy a wide
 range of cloud services and give both buyers and procurement teams centralized usage and billing
 monitoring.
- The ideal cloud marketplace offers a wide breadth of services from database and analytics to AI and container platforms. Seventy-one percent of AD&D leaders consider the availability of containerized applications important or critical in a cloud marketplace.

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METHODOLOGY

This Opportunity Snapshot was commissioned by Google. In this study, Forrester conducted an online survey of 466 companies in seven countries to evaluate the demand for procuring software development applications, tools, and services from cloud marketplaces. The custom survey began in November and was completed in December 2018.

Project Director

Karin Fenty Principal Market Impact Consultant