

## IDC MarketScape

# IDC MarketScape: Asia/Pacific (Excluding Japan) Public Cloud Infrastructure as a Service 2023 Vendor Assessment

Estelle Quek  
Nag

Simon Piff

Rajiv Ranjan

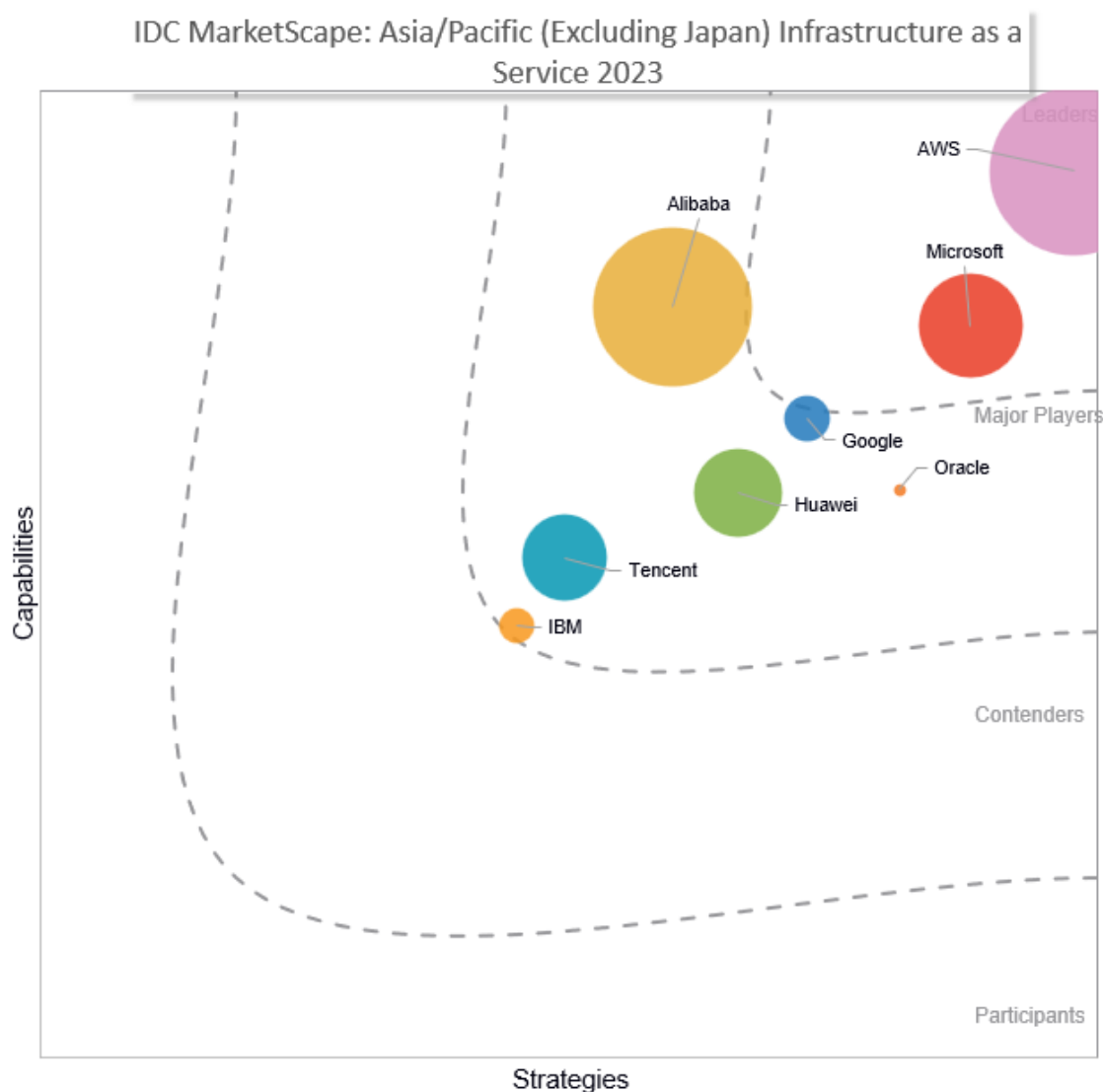
Shouvik

## THIS MARKETSCOPE EXCERPT FEATURES: AWS

## IDC MARKETSCOPE FIGURE

FIGURE 1

### IDC MarketScape for APEJ Public Cloud Infrastructure as a Service 2023



Source: IDC, 2023

## IN THIS EXCERPT

---

The content for this excerpt was taken directly from Asia/Pacific (Excluding Japan) Public Cloud Infrastructure as a Service 2023 Vendor Assessment (Doc #AP49610822). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Advice for Technology Buyers, Featured Vendor Profile, Appendix and Learn More. Also included is Figure 1 and Table 1.

## IDC OPINION

---

As Asia/Pacific (excluding Japan) (APEJ) organizations emerge and recover from the COVID-19 pandemic and increasingly face storms of disruption from energy cost increase, supply chain disruptions, and looming recession, IDC does not expect them to retract their use of public cloud, particularly infrastructure as a service (IaaS). In fact, IDC anticipates that technology buyers' spend on public cloud IaaS will overtake the total spend on traditional infrastructure and private cloud. In APEJ, IaaS will continue to make up the largest portion of the public cloud services market at 49%, platform as a service (PaaS) 17%, while software as a service (SaaS) will contribute 34% by 2026. IaaS continues to accelerate its expansion as APEJ technology buyers advance with cloud adoption to augment and future proof their digital business.

## IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

---

This IDC MarketScape is an evaluation of APEJ public cloud IaaS providers. IDC's Worldwide Semiannual Public Cloud Services Tracker covers more than 30 global and regional cloud service providers (SPs) offering IaaS. This IDC MarketScape focuses on providers that have reached a certain level of revenue in APEJ. IDC uses the following inclusion criteria for cloud SPs included in this IDC MarketScape:

- The service provider offered IaaS compute and storage services in APEJ for at least two years as of the end of 2021.
- The service provider generated over US\$20 million in IaaS business within APEJ in 2021.

The top 10 cloud SPs in this space account for 57% market share in 2021, although the regional view tilts heavily toward Chinese vendors that benefit from policies and attitudes driving domestic revenues. IDC forecasts that the APEJ IaaS market will more than triple from US\$23.6 billion in 2021 to US\$80.7 billion in 2026 at a compound annual growth rate (CAGR) of 28% (see *IDC Asia Pacific [Excluding Japan] Public Cloud Services Forecast 2022–2026* [IDC #AP47755922, August 2022]).

## ADVICE FOR TECHNOLOGY BUYERS

---

IDC's recent report *2022 Cloud Deployment and Adoption Trends in Asia/Pacific (Excluding Japan): Insights from IDC Survey* (IDC #AP49955122, January 2023) outlines that cloud computing is often a first option for many organizations in APEJ. It reveals that 8% of APEJ technology buyers adopt a public cloud only policy for broad implementation of products and applications, and another 19% adopt a public cloud first approach. Meanwhile, a further 25% choose best fit, regardless of whether in the cloud or on premises.

Although this indicates that cloud has taken firm roots in APEJ, there is still substantial legacy IT systems to deal with in many countries and will likely contribute to the continued growth of cloud. When it comes to making choices, many technology buyers take a SaaS, IaaS, or PaaS order approach. Unless a suitable SaaS vendor has a like-for-like offering, much of the legacy, and many

of the new implementations, will be on IaaS. The critical challenges faced when adopting cloud are skills shortage, security concerns, and cloud management, as delineated in *2022 Cloud Deployment and Adoption Trends in Asia/Pacific (Excluding Japan): Insights from IDC Survey* (IDC #AP49955122, January 2023). As mentioned earlier, majority of technology buyers are looking at best fit to host and manage applications. Because of concerns over cybersecurity, many of them want to manage the risks themselves, despite understanding that the related skills required do not exist internally. Lack of cloud skills is also holding back their ability to fully understand the benefits of, and to integrate cloud into, their existing environments. These organizations could lag behind their peers, if they do not ramp up their understanding of both the economics and cybersecurity posture of the cloud to be more comfortable in adoption.

In IDC's opinion, partnering is the logical strategy in APEJ. Since a wholesale "lift and shift" approach is not the best way to leverage the strengths of IaaS, partnering with local and regional cloud and IT SPs is the least challenging path to IaaS adoption. "Going it alone" has proven to be a longer and more expensive way, not always garnering the outcomes that the technology buyers are seeking.

## FEATURED VENDOR PROFILE

---

This section briefly explains IDC's key observations resulting in AWS' position in the IDC MarketScape, and provides a summary of the vendor's strengths and challenges.

### AWS

AWS is positioned in the Leaders category in the 2023 IDC MarketScape for APEJ public cloud IaaS. The cloud behemoth offers more than 200 services, with over 600 instances. On top of a healthy spectrum of bare metal and VM-based instances, its custom AWS Graviton processors, based on ARM architecture with expanded capabilities of 12 instance types across nine regions in APEJ, deliver attractive price-performance ratios compared with x86 instances.

Amazon Simple Storage Service (Amazon S3) object storage service has eight storage classes built for hot data and cool data access. Amazon S3 Intelligent-Tiering automatically moves data between three low-latency access tiers optimized for frequent, infrequent, rare access, archive, and deep archive, without performance impact. AWS Elastic Block Storage (EBS) supports data- and performance-intensive applications, whereas multiple file storage options are enabled by Amazon Elastic File Storage and Amazon FSx. AWS data migration services address hybrid cloud storage, online and offline data transfers that scale multi-petabytes. AWS Outposts, Local Zones, and AWS Wavelength enable edge deployment capabilities.

### Strengths

AWS' mindshare in the APEJ public cloud IaaS market is unparalleled, fueled by its footprint encompassing 10 regions, 31 availability zones, five live local zones, and 77 edge locations. It is renowned for delivering a plethora of new services and innovations at breakneck speed, enabling technology buyers to leverage tech-to-compete. AWS lives up to its "customer obsession" and "frugality" manifesto, being extremely focused on gathering technology buyers' pain points, incorporating them into latest innovations, and continuously lowering its price by 129 times since 2006.

AWS helps technology buyers optimize cost through its more than 600 instances with low capacity and multiple pricing options via a combination of spot, reserve instances, and savings plans and are further enhanced with AWS' Well-Architected Framework reviews. Another means is by continuously evolving its custom AWS Graviton silicon and custom accelerator processors, and providing a mature cloud financial management practice backed by AWS Trusted Advisor, AWS Well-Architected Framework, AWS Compute Optimizer, AWS Cost Explorer, and AWS Budgets.

AWS Graviton3 is a huge leap forward as it is 25% more performant, with two times higher floating-point performance, and two times faster cryptographic workload performance than AWS Graviton2. Technology buyers significantly lower costs by using Graviton3 C7g chips for microservices, analytics, HPC, ML, and gaming compute optimized workloads because it is 60% more efficient. Being the first in cloud that supports DDR5 memory, it has 50% more memory bandwidth than other EC2 instances. One unique feature is that for every EC2 powered by Graviton3, each vCPU is a physical core with zero simultaneous multithreading, resulting in non-contention of resources. Graviton3 chiplet design allows consistent path from core to memory, eliminating anxieties about near or far memory.

The AWS Inferentia optimized custom accelerator is purpose built for everyday developers. AWS claims that Inferentia1 (Inf1) instances offer 70% lower cost per inference compared with GPU EC2 instances and deliver the highest performance, with 25% more throughput. This allows developers to move workloads with differing codes onto Inf1 chips with minimum changes and disruptions. At re:Invent 2022, AWS previewed Inferentia2 (Inf2) chips, which deliver three times higher compute performance, four times more throughput, and up to 10 times lower latency than Inf1. Scalable with high-speed connectivity between accelerators, Inf2 instances are optimized for sophisticated DL models with up to 175 billion parameters, with improved performance and less turnaround time.

AWS Trainium custom accelerator provides the highest performance but the lowest cost for DL training, solving massive compute and network-heavy requirements for training models. According to AWS, Trainium1 (Trn1) server is 3.5 times more powerful than Inf1 server and is 40–50% more cost efficient than the alternative GPU-based instance. Trn1 server avails 840 teraflops of FP32 compute, notably five times higher than the next choice of AWS GPU-based instances, and has higher precision, with 512GB of high bandwidth memory. However, to leverage Trn1 horsepower effectively, it is critical that technology buyers have good networks with 800Gbps Elastic Fabric Adapter (EFA) connectivity. Trn1 distributes the training of ML models that get too large via collective communication operations and improves its critical performance with 2D-ring topology to overcome latency problems. It leverages its local chip-to-chip interconnect with high bandwidth, plus server-to-server interconnect via EFAv2, both independent of one another, with zero interference.

AWS Nitro system avails the broadest and deepest platform choice of every EC2 instance type, thus technology buyers can assemble hardware, software, and a combination of both in varying ways, speedily. Via dedicated AWS Nitro cards, technology buyers who desire bigger, faster compute instances enjoy enhanced performance, high-speed networking, EBS, and higher acceleration. Another major impact is AWS Nitro cards' highest security prerequisites, having been engineered with hardware-based root of trust in which Nitro security chips cryptographically measure and validate the entire system to enhance data privacy and security. IDC observes a massive growth in AWS Nitro Enclave instances adoption for confidential computing because it passes back control of data to technology buyers, and it is as secure as they desire.

AWS' APEJ backbone is augmented with newly launched regions in Jakarta, Hyderabad, and Melbourne. AWS concurrently enhances networking security with cloud-native firewall as a service (FWaaS), identity-aware application, and networking as a service using its backbone for connectivity with AWS Direct Connect SiteLink and AWS Cloud WAN. Network security partners and developer-focused constructs between AWS, datacenters, branch offices, and edge let technology buyers reduce time to market and avail IPv6-ready services. Technology buyers can access data stored on AWS from their on-premises applications via AWS Storage Gateway and across 12 distributed locations with AWS DataSync. They easily perform interactive queries across multiple systems, create unified data sets for business intelligence and ML training, and surface insights from data stored in over 25 external sources leveraging Amazon Athena.

With an extensive ecosystem of 100,000 partners globally, AWS continues to expand with its comprehensive digital and classroom education, training, and certification programs. Notable is

AWS Skills Guild, aimed at helping technology buyers attain fluency in cloud. This reduces skills deficit, which is a major inhibitor of cloud adoption in APEJ. IDC expects AWS will increasingly focus on industry-led partner competencies as it advances with industry-specific solutions.

## Challenges

The recent IDC report *2022 Cloud Deployment and Adoption Trends in Asia/Pacific (Excluding Japan): Insights from IDC Survey* (IDC #AP49955122, January 2023) divulges that 15% of APEJ technology buyers are cloud agnostic because they want to avoid vendor lock-in and to augment resiliency. They desire seamless connectivity between cloud SPs for workload flexibility. It would be beneficial if AWS avails interconnectivity to various cloud SPs because Oracle has already collaborated with Microsoft Azure to offer 12 interconnect regions, globally.

Another key inhibitor to technology buyers' cloud adoption is their inability to keep up with the differences between cloud SPs and staying up to date with the deluge of new products and services, as delineated in the *2022 Cloud Deployment and Adoption Trends in Asia/Pacific (Excluding Japan): Insights from IDC Survey* (IDC #AP49955122, January 2023). In IDC's opinion, while availing a plethora of innovations, AWS needs to intensify efforts to effectively communicate their functions and features to technology buyers to accelerate adoption rate. There are criticisms from AWS installed base regarding costs, particularly on data egress fees. It will serve AWS well if it assists technology buyers to better comprehend its pricing structure so they can weigh their cost benefit impact more effectively.

Presently, the operating system support for AWS Graviton is limited to Linux, disadvantaging applications and workloads using Windows application programming interfaces (APIs). Furthermore, IDC anticipates that to compete head-on with AWS on price performance, other cloud SPs will increasingly avail ARM-based instances albeit not custom making them in-house. To further add complexity, technology buyers migrating workloads from x86 instances to Graviton might face difficulties, and applications written in Rust and C/C++ languages require recompilation to run on ARM-based instances.

## APPENDIX

---

### Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is with customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis or strategies axis indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share of each individual vendor within the specific market segment being assessed.

## IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions, on the IDC MarketScape on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

## Market Definition

The public cloud IaaS market is defined in detail in the sections that follow, which describe the IaaS functional market and public cloud service deployment model.

### *Infrastructure as a Service*

IDC defines public cloud IaaS as the aggregate of compute, raw storage capacity, and the associated networking capability, delivered through a cloud deployment model. Note that client functionality delivered as cloud services is categorized as virtual cloud client computing (including "desktop as a service" offerings, such as those from Amazon, Microsoft, and VMware). This fits within the SaaS system infrastructure software market and is not part of the IaaS market.

### *Cloud Deployment Models*

Cloud deployment models describe how a cloud IT service is built and delivered to consumers of the service. The factors that determine the cloud deployment model are:

- The physical location of the hardware infrastructure systems on which the service is running
- Whether or not the service is dedicated to one organization or shared across multiple independent organizations
- The owner of the hardware infrastructure systems on which the service is running
- At the broadest level, the types of deployment models for cloud services are public and private:
  - Public cloud services are shared among unrelated enterprises and/or consumers, open to a largely unrestricted universe of potential users, and designed for a market, not a single enterprise.
  - Private cloud services are shared within a single enterprise or an extended enterprise, with restrictions on access and level of resource dedication, and defined/controlled by the enterprise beyond the control available in public cloud offerings.

### *Attributes That Define an IT Cloud Service*

IDC defines cloud services through a checklist of key attributes that an offering must manifest to end users of the service (see Table 1). To qualify as a "cloud service," as defined by IDC, an offering must support all six attributes listed in Table 1. These attributes apply to all cloud services — in all public and private cloud service deployment models — although the specifics of how each attribute applies may vary slightly among these deployment models.

**TABLE 1****Six Attributes of IT Cloud Services**

Attribute	Remarks
Shared, standard offering	Built for massive scale, automated deployment
Delivered as an all-inclusive service	Pre-integrated and manages/updates all required resources
Enables scaling	Dynamic, rapid, and fine grained
Elastic pricing capability	Tied to resource consumption or number of users
Self-service	Self-service provisioning and administration options
API/published service interface	Programmable access via open/published API

Source: IDC, 2023

**LEARN MORE****Related Research**

- *Maximizing Value from Cloud Investments for Your Digital Business* (IDC #AP49700122, February 2023)
- *2022 Cloud Deployment and Adoption Trends in Asia/Pacific (Excluding Japan): Insights from IDC Survey* (IDC #AP49955122, January 2023)
- *Asia/Pacific (Excluding Japan) Public Cloud Services Forecast, 2022-2026* (IDC #AP47755922, August 2022)
- *Market Analysis Perspective: IT SPs' Market Landscape and Opportunities in Asia/Pacific (Excluding Japan), 1H22* (IDC #AP49226022, July 2022)
- *IDC's Worldwide Public Cloud Infrastructure as a Service Taxonomy, 2022* (IDC #US49017222, May 2022)
- *SMB Cloud Adoption Characteristics and Market Potential in Asia/Pacific (Excluding Japan) 2022-2025* (IDC #AP47756922, May 2022)
- *SMB Market Landscape and State of Digitalization Asia/Pacific (Excluding Japan)* (IDC #AP47372722, May 2022)

**Synopsis**

This IDC study provides an assessment of Asia/Pacific (excluding Japan) (APEJ) public cloud infrastructure-as-a-service (IaaS) providers through the IDC MarketScape model.

"APEJ technology buyers will continue to invest in cloud technologies to scale their digital business, although they might be compelled to balance these investments with potential cloud budget reduction because of the imminent recession and ongoing uncertainties about a resurgence of the COVID-19 pandemic. In IDC's conversations with CIOs of regional organizations, security, data and analytics, infrastructure and operations, and customer experience are less susceptible to budget cuts," says Estelle Quek, senior research manager, Cloud Buyer Trends and Intentions research.

"According to IDC Worldwide Black Book Live Edition, December 2022, 57% of global enterprise infrastructure spend in 2022 was on IaaS. IDC anticipates that APEJ technology buyers will hasten leveraging IaaS to reduce risks associated with capital-intensive expenditure so as to run their digital business efficiently and profitably, augment resiliency and agility to navigate the storms of disruption, and remain relevant and competitive. Furthermore, technology buyers are pursuing consistent security, performance, and compliance by deploying, operating, and scaling digital infrastructure across core, cloud, and edge locations," adds Quek.

## About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

## IDC Asia/Pacific Headquarters (Singapore)

83 Clemenceau Avenue  
#17-01 UE Square, West Wing  
Singapore 239920  
65.6226.0330  
Twitter: @IDC  
blogs.idc.com  
www.idc.com

---

### Copyright and Trademark Notice

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit [www.idc.com](http://www.idc.com) to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit [www.idc.com/offices](http://www.idc.com/offices). Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or [sales@idc.com](mailto:sales@idc.com) for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or web rights. IDC and IDC MarketScape are trademarks of International Data Group, Inc.

Copyright 2023 IDC. Reproduction is forbidden unless authorized. All rights reserved.

