# twimbit

# Cloud stories

## Winter 2024 edition

Insights into performance of
AWS, MIC, GCP, Oracle Cloud

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Twimbit is a research and advisory firm driven by a singular mission: to empower businesses that are making a difference. We specialise in providing invaluable industry intelligence to executives and teams, acting as a catalyst for innovation and growth.
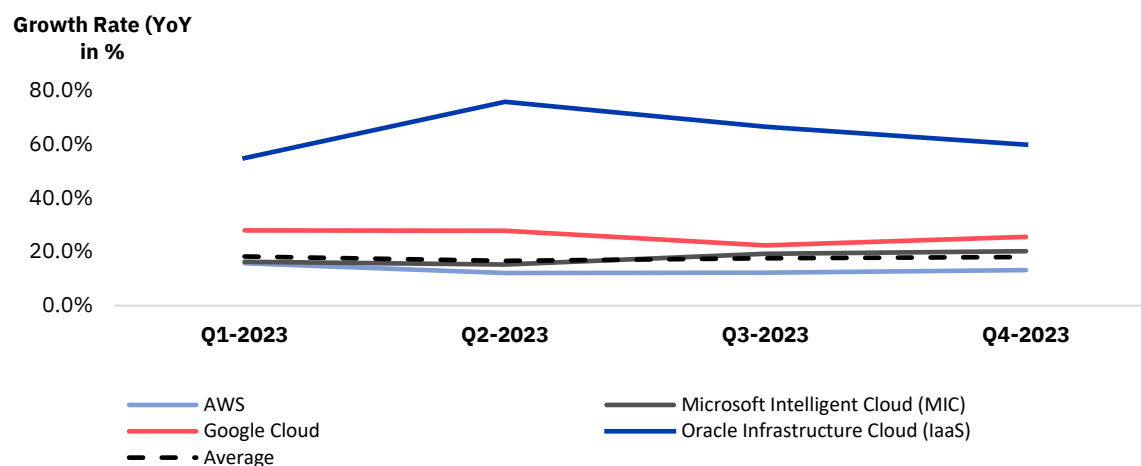
# Key highlights

- The global cloud market witnessed robust growth in FY-2023, with the top four players - AWS, Microsoft, Google, and Oracle - generating a combined USD 220 billion in revenue. This represents a 17.1% YoY increase, surpassing the previous year's growth and highlighting the industry's momentum. Generative AI sits at the heart of this surge, driving interest from both providers and customers alike.

- Cloud revenue now constitutes an average of 18.9% of total revenue for these leading players, up from 18.1% in FY-2022, demonstrating its growing strategic significance within their broader business strategies.

- AI is poised to be a major growth driver as enterprises increasingly leverage its capabilities to optimize their existing cloud operations and unlock new value.

  - 2023 saw a wave of investments and strategic actions by leading cloud vendors in AI, driven by surging demand for computational power to fuel technological advancements.

- AWS achieved a 13.3% YoY growth in cloud revenue in FY-2023, reaching USD 90.8 billion. This growth was primarily fueled by traction in AI-related cloud services, larger client commitments, and accelerated cloud migrations.

- Microsoft's cloud segment, MIC, reached new heights in FY-2023, generating USD 96.2 billion in revenue, up by 17.9% YoY. This growth is fueled by strong demand for its server products and Azure cloud services.

  - MIC continues to be core revenue driver, accounting for 42.3% of total revenue in FY-2023 and experiencing a 2.3 percentage point YoY rise.

  - To further solidify its position, in Dec-2023, Microsoft launched Microsoft Cloud for Sovereignty, expanding its security and compliance capabilities across all Azure regions.

- Google Cloud achieved revenue of USD 33.1 billion in FY-2023, a 25.9% YoY increase. This growth translated to a 1.5 percentage point increase in its share of Google's overall revenue, reaching 10.8%.

  - Moreover, Google Cloud achieved a remarkable feat by turning consistently profitable throughout the year, recording an overall profit of USD 1.7 billion in FY-2023, a stark contrast to the previous year's operating loss of USD 1.9 billion.

- Oracle Cloud Infrastructure (OCI) IaaS segment displayed robust growth, expanding by 64.3% YoY and generating USD 5.7 billion in revenue in FY-2023.

- It had the highest growth rate among its peers, indicating significant momentum in Oracle's cloud business, driven by consistent growth across all quarters.

- Leading cloud providers are optimizing cost structures through cutting-edge next-generation servers and rack-scale architectures. This ensures sustainable long-term growth while catering to the ever-growing demand for cloud services.

  - Moreover, hyperscalers are embracing vertical integration and investing in custom-designed chips (CPUs, smartNICs, accelerators) either independently or in collaboration with partners, to further enhance cost management and infrastructure optimization.

- Fueled by the rapid growth of generative AI, the demand for global data center capacity is bound to increase. Recognizing this opportunity, major players like AWS, Microsoft, Google, and Oracle are strategically expanding their data center footprints and launching new cloud regions across the globe.

- Latin America, the Middle East, and Asia-Pacific are rapidly evolving into critical growth markets, attracting significant investments from all major players. Examples include:

  - Oracle: Focused expansion in Latin America (Mexico, Chile, Colombia).

  - Microsoft: Targeted investments in Europe (Italy, Poland, Spain) and the Middle East (Israel).

  - AWS: Prioritized Asia-Pacific countries (Australia, Singapore, Malaysia, India) with a USD 15.5 billion investment in Japan, building upon prior investments.

  - Google: Entered the Japanese market with a significant investment in the Inzai data center (operational since March 2023)

  - The recent USD 15.5 billion investment in Japan by AWS highlights their aggressive push to dominate the Asia-Pacific market. This move follows a long-standing commitment, with over USD 10 billion invested in the region since 2012. Additionally, Google's entry into Japan with the Inzai data center showcases the intensified competition.

## Exhibit 1: Revenue growth rate (YoY) of Cloud service providers in FY-2023

Growth Rate (YoY
in %



Legend: AWS — Microsoft Intelligent Cloud (MIC) — Google Cloud — Oracle Infrastructure Cloud (IaaS) — Average

## Exhibit 2: Revenue trends and growth of Cloud service providers in FY-2023

| Cloud Provider | Q1-2023 (USD bn) | Q2-2023 (USD bn) | Q3-2023 (USD bn) | Q4-2023 (USD bn) | FY-2023 | % change YoY | Cloud revenue % of total revenue (FY-2023) |
|---|---|---|---|---|---|---|---|
| AWS | 21.4 | 22.1 | 23.1 | 24.2 | 90.8 | 13.3% | 15.8% |
| Microsoft Intelligent Cloud* | 22.1 | 24.0 | 24.3 | 25.9 | 96.2 | 17.9% | 42.3% |
| Google Cloud | 7.5 | 8.0 | 8.4 | 9.2 | 33.1 | 25.9% | 10.8% |
| Oracle Infrastructure Cloud (IaaS)** | 1.2 | 1.4 | 1.5 | 1.6 | 5.7 | 64.3% | 11.0% |

Includes the Cloud Infrastructure segment revenue wherever distinctly reported by the Cloud service provider. Google does not provide distinct breakup of revenue of Google Cloud Platform (GCP) and Google Workspace, and hence the overall Google Cloud revenue has been considered
* Includes Azure and other cloud services, excluding Office 365, LinkedIn, Dynamics 365 etc
**Revenue reporting for Oracle Cloud has been realigned from Q1-2023 onwards and now includes only Oracle Infrastructure Cloud (IaaS) revenue
Source: Company reports, Twimbit analysis

# Cloud Infrastructure providers

## A. Amazon Web Services (AWS)

### Overview

- In 2023, AWS continued to be a key driver of Amazon's growth, generating USD 90.8 billion in revenue (15.8% of Amazon's total revenue) and achieving a 13.3% YoY increase. The growth was fueled by a surge in AI-related cloud services, larger client commitments with longer contract periods, and an increase in cloud migrations.
  - Operating income also grew 7.8% on YoY basis in FY-2023 to USD 24.6 billion, representing 66.8% of the group's total.

- Generative AI remains a strategic focus for AWS, with CEO Andy Jassy emphasizing its potential to revolutionize customer experiences and business processes
  - This commitment is evident in Q4-2023 releases like the Q chatbot for developers and the Trainium2 chip for AI model training. Additionally, partnerships like the Nov-2023 collaboration with NVIDIA on AI training chips further solidify this focus.

- Seeking to enhance efficiency, Amazon announced a year-long extension of server lifespan, potentially boosting Q1-2024 operating income by USD 900 million.
- Industry sources suggest an upcoming restructuring of AWS's 60,000-strong cloud business sales team. This move is aimed at consolidating teams with conflicting sales strategies and improving efficiency.



*"AWS's continued long-term focus on customers and feature delivery, coupled with new genAI capabilities like Bedrock, Q, and Trainium have resonated with customers and are starting to be reflected in our overall results....While cost optimization continued to attenuate, larger new deals also accelerated. Clients are "renewing at larger commitments over longer periods, and migrations are growing."*

***- Andy Jassy, CEO, Amazon***

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## AWS global footprint

- AWS Cloud has 105 Availability Zones across 32 geographic regions worldwide. It also has plans for 12 more Availability Zones and 4 more AWS Regions in Germany, Malaysia, New Zealand, and Thailand.
- AWS Local Zones are available in 16 US metropolitan areas and 17 outside US. It also plans to expand Local Zones to 18 new locations in 16 countries, including Australia, Austria, Belgium, Brazil, Canada, Colombia, Czech Republic, Germany, Greece, India, Kenya, Netherlands, Norway, Portugal, South Africa, and Vietnam.

**Exhibit 3: AWS Cloud global capabilities**



| **33** Launched Regions | **105** Availability Zones (AZs) | **600+** Points of Presence | **470+** Edge Locations |
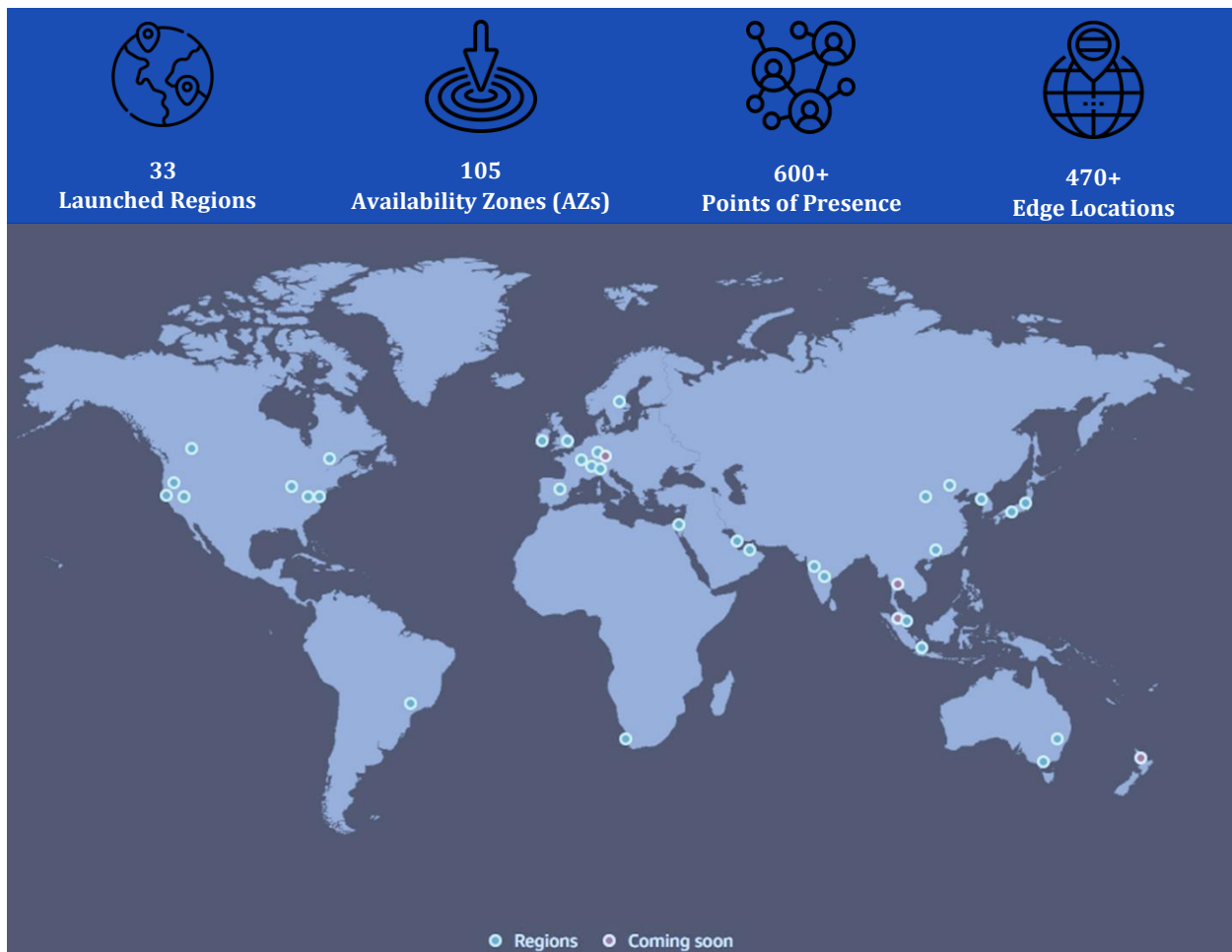
Source: Company website, Twimbit analysis

**Exhibit 4: AWS Cloud - Key launches and announcements**

AWS continues to expand its cloud presence globally with significant capability enhancements across Germany, Malaysia and Canada during Q4-2023.

| Period | Status | Location | Type | Details |
|---|---|---|---|---|
| Dec-2023 | Launched | Calgary (Canada) | AWS Cloud Region | • Launched AWS Canada West (Calgary) Region, marking its second infrastructure region in Canada and further announced an investment of USD 17.9 billion (CA$ 24.8 billion) until 2037. |
| Nov-2023 | Announced | Malaysia | AWS Cloud Region | • AWS announced to establish a Malaysia cloud region in 2024, aiming to provide enterprises with in-country data storage capabilities and reduce latency in cloud applications |
| Oct-2023 | Announced | Germany | AWS Cloud Region | • AWS announced to launch AWS European Sovereign Cloud, an autonomous cloud designed for the European region in Germany.<br>  – This initiative to address evolving data residency and resilience requirements within the European Union (EU). |

Source: Company sources, Industry reporting, Twimbit analysis

**Key product initiatives**

| Period | Description |
|---|---|
| Nov-2023 | • Launched AWS Cost Optimization Hub to facilitate the enterprises in reducing their cloud expenses, by easily identifying, filtering, aggregating and quantifying savings for AWS cost optimization recommendations. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key partnerships

| Period | Partner Name | Description |
|---|---|---|
| Dec-2023 | BAIN & COMPANY | • The company introduced a new offering -Cloud Value Acceleration, with AWS to facilitate the clients maximize business value from cloud adoption. |
| | IBM | • IBM partnered with AWS to launch a new cloud database, Amazon Relational Database Service (Amazon RDS) for Db2, to empower customers data management for AI workloads in hybrid environments. |
| Nov-2023 | Informatica | • Informatica teamed up with AWS to streamline cloud data management services, by introducing a new suite of cloud data management services. |
| | teradata. | • Teradata partnered with AWS to launch Teradata AI Unlimited platform on the AWS Cloud. This platform empowers data scientists, data engineers, and developers to explore new applications for AI using data. |
| | DXC TECHNOLOGY | • DXC Technology expanded its partnership with AWS to further expedite cloud adoption and digital transformation for nearly 1,000 customers globally. |
| Oct-2023 | NOVENTIQ | • AWS and Noventiq formed a partnership to drive cloud migration and digital transformation initiatives, with an initial focus on the markets in India, Europe, and the Middle East. |

Source: Company sources, Industry reporting, Twimbit analysis

**Key contract wins**

| Period | Client Name | Description |
|---|---|---|
| Dec-2023 | Globe | • Globe Telecom has entered into a strategic partnership with Amazon Web Services (AWS) to migrate its business operations onto the AWS cloud platform, to enable it achieve enhanced cost efficiency. |
| | axiata | • Axiata selected AWS as its primary cloud provider, aligning with its goal to expedite digital transformation initiatives across its operating companies.<br>– As part of the agreement, Axiata plans to migrate a substantial array of its mission-critical applications, including 650+ services across customer service, enterprise resource planning, and human resources, by the end of 2024. |
| Nov-2023 | AXIOM SPACE | • Axiom Space announced plans to leverage AWS cloud capabilities to provide terrestrial IT infrastructure for its engineers, ground operations, and business development teams. This move is aimed at supporting the development of its next-generation commercial space station, Axiom Station. |
| | L&T Technology Services | • L&T Technology Services utilized the AWS Cloud to facilitate global automotive manufacturers in transitioning towards Software Defined Vehicles (SDVs) using generative artificial intelligence (AI). |

Source: Company sources, Industry reporting, Twimbit analysis

## B. Microsoft Intelligent Cloud (MIC)

### Overview

- Microsoft's cloud segment (MIC) achieved record revenue of USD 96.2 billion in FY-2023, growing 17.9% YoY. This growth was fueled by strong demand for its consumption-based offerings, including server products, Azure, and other cloud services.
    - However, annual MIC cloud revenue growth has been declining since 2020, reaching 17.9% in FY-2023 compared to 21.7% the previous year.

- Regardless of the slowdown, MIC remains the cornerstone of Microsoft's revenue, accounting for a significant 42.3% share in FY-2023 and experiencing its own 2.3 percentage point YoY growth.
    - Server product and cloud services revenue grew 19.4% YoY, driven by continued adoption of Azure and other cloud services.
    - Server product revenue itself remains robust, fueled by demand for Windows Server and SQL Server in multi-cloud environments.
    - Azure and other cloud services witnessed significant growth, fueled by consumption-based offerings and integrated AI services.

- The commercialization of its AI-powered coding assistant - Microsoft Copilot in Sep-2023, is expected to further drive Azure adoption in the coming years.

- Azure's success reflects broader cloud optimization trends and the rising demand for AI services, which Microsoft strategically integrates across its solutions. This is evident by the growing number of Azure AI customers, reaching 53,000 by Dec-2023,with over a third added in the past year.



*"We've moved from talking about AI to applying AI at scale," said Satya Nadella, chairman and chief executive officer of Microsoft. "By infusing AI across every layer of our tech stack, we're winning new customers and helping drive new benefits and productivity gains across every sector."*

***- Satya Nadella, Chairman and CEO, Microsoft***

## Microsoft Cloud global footprint

- MIC has presence across 61 regions and its Azure infrastructure comprises of 300+ physical datacentres.

### Exhibit 5: Microsoft Cloud global capabilities
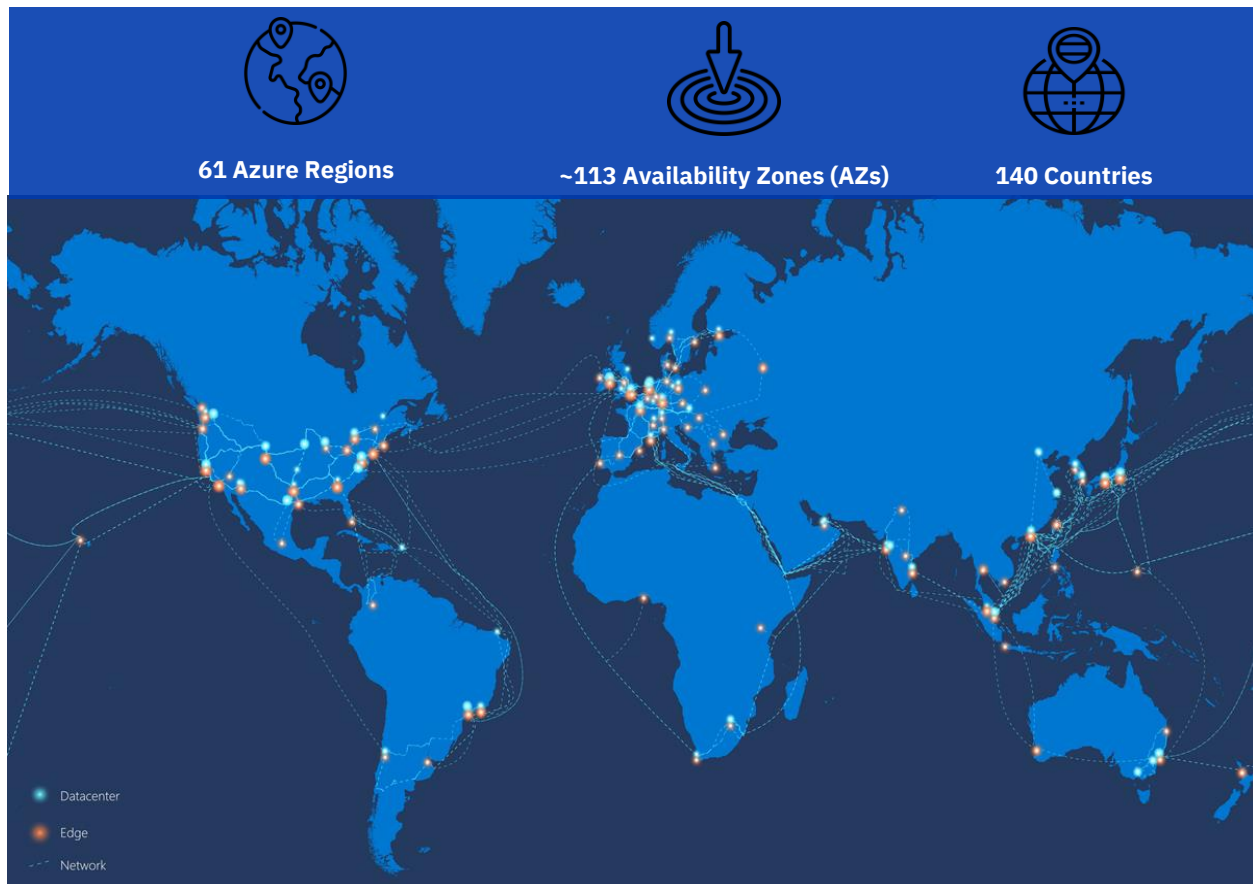


Source: Company website, Twimbit analysis

**Exhibit 6: Microsoft Cloud - Key launches and announcements**

- During Q4 of 2023, Microsoft announced plans to expand its cloud presence in the European and Middle East regions, with plans to enhance its cloud capabilities further.

| Period | Status | Location | Type | Details |
|--------|--------|----------|------|---------|
| Nov-2023 | Announced | Quebec (Canada) | Cloud and AI | • Microsoft committed USD 500 million to a two-year expansion of its hyperscale cloud and AI infrastructure in Quebec, aiming to increase its Canadian cloud footprint by a staggering 750%. |
| Nov-2023 | Launched | Israel | Cloud Region | • Microsoft launched Israel cloud region, to expand its global reach and cater to the growing regional demand for cloud solutions. |
| Nov-2023 | Announced | Australia | Cloud and AI | • Microsoft announced to invest AUD 5 billion over two years to bolster its Australian hyperscale cloud and AI infrastructure. This expansion will see the company's local data centre footprint grow from 20 to 29 sites across key cities like Canberra, Melbourne, and Sydney. |
| Oct-2023 | Announced | Aragon (Spain) | Data Centre | • Microsoft announced to construct a dedicated data centre campus in Aragon, Spain, to further enhance its cloud service offerings for the European customers. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key product initiatives

| Period | Description |
|---|---|
| Dec-2023 | • Microsoft expanded its security and compliance capabilities by launching Microsoft Cloud for Sovereignty across all Azure regions. This empowers government and public sector organizations to meet stricter data protection and local storage requirements while leveraging the full potential of the cloud |
| | • In anticipation of heightened demand from German clients, Microsoft announced to increase the capacity of its Azure cloud solution in Germany, aiming to double its capabilities by the start of 2024. |
| Nov-2023 | • Microsoft unveiled two new hardware innovations: the Azure Maia AI Accelerator (Athena), optimized for AI and generative AI tasks, and the Azure Cobalt CPU, an Arm-based processor for general-purpose workloads on the Microsoft Cloud. These advancements cater to the growing demand for high-performance, specialized computing resources. |
| | • Microsoft introduced Azure Boost, a hardware upgrade designed to turbocharge virtual machine performance on the Azure platform. This enables users to run their workloads efficiently with fewer resources, optimizing costs and performance. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key partnerships

| Period | Partner Name | Description |
|---|---|---|
| Dec-2023 | MANGATA | • Microsoft forged a strategic partnership with Mangata Networks to develop an AI-powered edge cloud product connected via satellite. This innovative collaboration expands Azure's reach and functionality by delivering global, high-speed, low-latency satellite connectivity and cutting-edge edge compute solutions. |
| | Forcepoint | • Microsoft strengthened its Azure capabilities by joining forces with Forcepoint's G2CI business. This partnership integrates Forcepoint's cross-domain technology into Azure's cloud offerings, enhancing |

| | | |
|---|---|---|
| | | security and data governance for government and critical infrastructure customers. |
| Nov-2023 | **KKCOMPANY** | • KKCompany Technologies joined Microsoft's Highway to 100 Unicorns initiative, aiming to advance AI-powered cloud streaming solutions in Southeast Asia. This partnership fosters innovation and supports the growth of promising startups in the region. |
| | **NetApp** | • Microsoft and NetApp deepened their existing partnership to offer Azure users enhanced cloud solutions. This includes upgrades to services like Azure NetApp Files (ANF), NetApp BlueXP, Cloud Volumes ONTAP, and CloudOps solutions from Spot by NetApp. |
| | Informatica | • Informatica established a Microsoft Azure pod in Canada, providing Canadian customers with seamless access to its leading Intelligent Data Management Platform (IDMC). This empowers organizations to manage complex data, comply with data residency requirements, and navigate cloud modernization projects effectively. |
| | ORACLE | • Microsoft and Oracle Cloud signed a multi-year agreement to collaborate on AI capabilities. This partnership leverages Oracle Cloud Infrastructure (OCI) AI infrastructure alongside Microsoft Azure AI infrastructure, empowering customers with cutting-edge AI solutions. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key contract wins

| Period | Client Name | Description |
|---|---|---|
| Dec-2023 | ooredoo | • Ooredoo, in a strategic move to consolidate its ERP solutions and enhance customer experience, successfully migrated its RISE with SAP cloud ERP landscape from Amsterdam to a Microsoft data centre in Qatar. This shift empowers the company's ten operating companies and integrates AI capabilities for future growth. |
| Nov-2023 | inspiro | • Inspiro joined forces with Microsoft to develop innovative solutions through cloud technologies like Azure, Power BI, Windows Virtual Desktop, and Microsoft Teams. Having migrated 40% of its applications already, Inspiro plans further cloud adoption on Azure in 2024, solidifying its digital transformation journey. |
| | ICT Authority REPUBLIC OF KENYA | • Kenya ICT Authority (ICTA) partnered with Microsoft to leverage cloud solutions for enhancing its public service delivery. This collaboration aims to improve government efficiency and citizen experience through digital transformation. |
| Oct-2023 | ARABSAT | • Arabsat partnered with Microsoft Arabia to accelerate its cloud adoption and digital transformation efforts. This collaboration focuses on optimizing Arabsat's digital infrastructure and empowering employees with modern technical solutions. |

Source: Company sources, Industry reporting, Twimbit analysis

## C. Google Cloud

**Overview**

- Google Cloud segment revenue reached USD 33.1 billion in FY-2023, growing 25.9% YoY.
    - This growth was primarily driven by Google Cloud Platform (GCP) and Google Workspace, with infrastructure and platform services leading the way within GCP.
    - Q4-2023 revenue growth slowed to 25.7% YoY, compared to 32.0% in Q4-2022, driven by Gen-AI and product initiatives.
- Cloud revenue contribution to overall revenue increased to 10.8% in FY-2023, up from 9.3% in FY-2022.
- Google Cloud reported its highest cloud revenue and profitability in FY-2023, with an operating income of USD 1.7 billion (compared to a loss of USD 1.9 billion in FY-2022).
- However, the Google Cloud revenue growth rate (on YoY basis) has been slowing down over the past few quarters, and the YoY revenue growth rate was the lowest in the last two reported quarters of FY-2024.
    - High revenue growth rate offset increase the in-compensation expenses largely driven by headcount growth was key factor driving operating income growth.
    - Additionally, reduction in costs driven by the change in the estimated useful lives of its servers and certain network equipment also benefitted the operating income growth.

> *"We are pleased with the ongoing strength in Search and the growing contribution from YouTube and Cloud. Each of these is already benefiting from our AI investments and innovation. As we enter the Gemini era, the best is yet to come."*
>
> **-Sundar Pichai, CEO, Google**

**Google Cloud global footprint**

- It currently operates in 39 regions with 118 Zones across 200+ countries.
- Plans to operate in new regions including Mexico, Malaysia, Thailand, New Zealand, Greece, Norway, South Africa, Austria and Sweden.

**Exhibit 7: Google Cloud global capabilities**



| 39 Regions | 118 Zones | 187 Network Edge Locations | 200+ Countries and Territories |
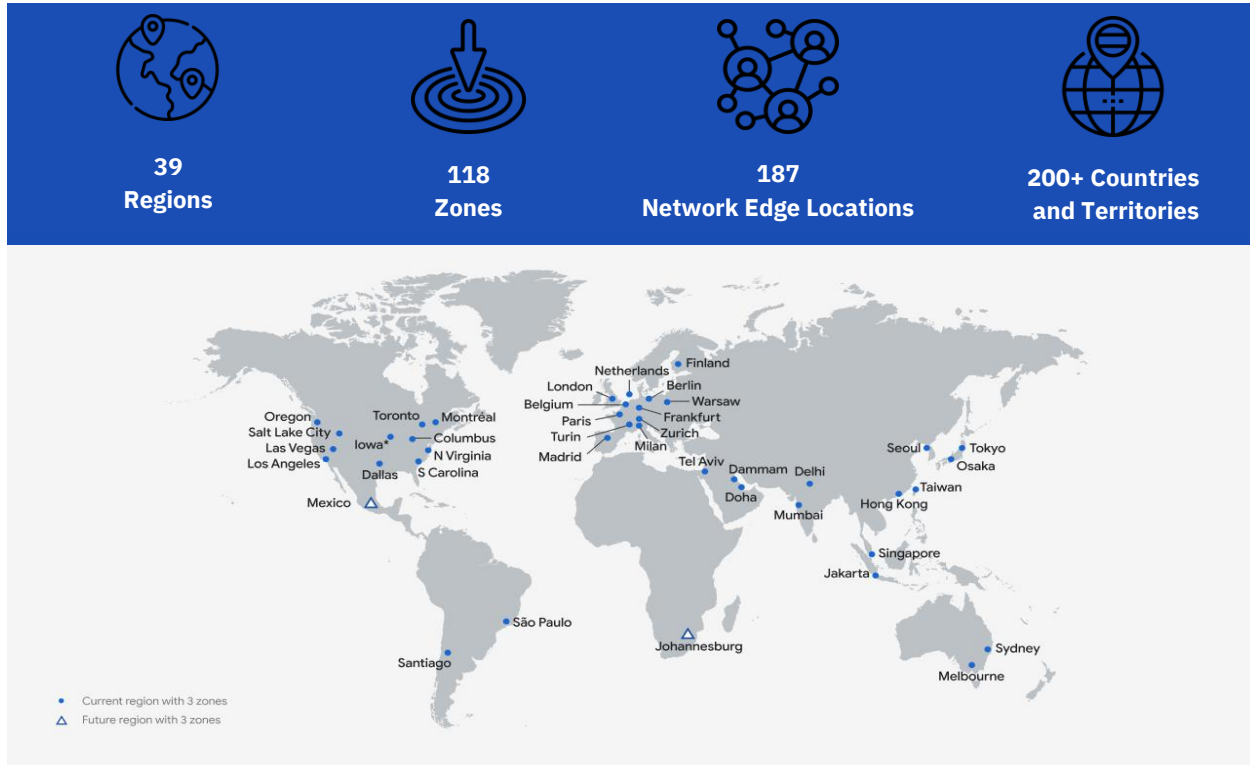
Source: Company website, Twimbit analysis

**Exhibit 8: Google Cloud - Key launches and announcements**

During Q4-2023, Google expanded its presence in the Middle East region, by opening a new cloud region in Saudi Arabia.

| Period | Status | Location | Type | Details |
|---|---|---|---|---|
| Dec-2023 | Launched | Dammam (Saudi Arabia) | Cloud Region | • Google Cloud launched a new Damman Cloud region in Saudi Arabia, thereby further expanding its presence in the region |

Source: Company sources, Industry reporting, Twimbit analysis

## Key partnerships

| Period | Partner Name | Description |
|---|---|---|
| Dec-2023 | CGI | • Google Cloud collaborated with CGI to implement the United Nations Industrial Development Organization (UNIDO) Sustainability Planet Platform, aligning with UNIDO's distinct mission to advance, energize, and expedite inclusive and sustainable industrial development. |
| | Hitachi Vantara | • Hitachi Vantara joined forces with Google Cloud to introduce a novel hybrid solution named Hitachi Unified Compute Platform (UCP) for GKE Enterprise. This solution harnesses the cloud infrastructure of Hitachi UCP and Google Distributed Cloud Virtual (GDCV), streamlining the deployment and management of workloads across on-premises data centres, cloud environments, or edge locations. |
| | accenture | • Google Cloud entered into a strategic partnership with Accenture to assist companies in integrating artificial intelligence to enhance operations, establish new business lines, and improve customer experiences. |
| | HashiCorp | • Google Cloud expanded its collaboration with HashiCorp (HCP) to develop and deliver functional generative AI, enhancing automation and expediting the cloud transformation initiatives of their shared clientele. |
| | INGENIOUS.BUILD | • INGENIOUS.BUILD partnered with Google Cloud to expedite digital transformation in Saudi Arabia by leveraging INGENIOUS' expertise alongside Google Cloud's advanced technological capabilities. |
| Nov-2023 | CSIT Centre for Strategic Infocomm Technologies | • The Centre for Strategic Infocomm Technologies, based in Singapore, entered into a partnership with Google Cloud to conduct a trial of a sovereign cloud solution. This collaboration aims to expedite AI initiatives in addressing defense and security requirements. |
| | LIQUID INTELLIGENT TECHNOLOGIES | • Teaming up with Liquid C2, Google Cloud aims to enhance Liquid C2's cloud and cybersecurity offerings |

| | | |
|---|---|---|
| | | in the African region. This partnership allows enterprises, public entities, and SMEs to leverage Google Cloud capabilities, thereby improving their data analytics, security postures, and gaining access to cutting-edge AI-driven tools. |
| | HABOOB | • Google Cloud collaborated with cybersecurity service provider Haboob to introduce Chronicle CyberShield to the Kingdom of Saudi Arabia. This initiative strengthens cybersecurity services for public sector organizations. |
| | DATADOG | • Datadog expanded its existing partnership with Google Cloud, enabling Google Cloud customers to proactively monitor and secure their cloud-native and hybrid applications within Datadog's unified platform. |
| | kyndryl | • Kyndryl partnered with Google Cloud to launch Google Cloud services tailored for its financial sector clients. This collaboration enables secure storage and protection of data. |
| | box | • Box joined forces with Google Cloud to harness their capabilities, aiming to transform enterprise work through the utilization of generative AI. |
| Oct-2023 | Crayon | • Crayon expanded its partnership with Google Cloud to further enhance its expertise in Google Cloud generative AI. This expansion includes the establishment of Crayon's Centers of Excellence in Europe, Asia Pacific, and the Middle East and Africa region. |
| | pwc | • PwC Canada collaborated with Google Cloud to provide cost-optimized and innovative solutions, assisting clients in safeguarding against cybersecurity attacks. |
| | CORESITE An American Tower Company | • CoreSite introduced new Open Cloud Exchange (OCX) capabilities, allowing customers to establish virtual connections to Google Cloud and between CoreSite data centres, including 20G and 50G services. |
| | CLOUD4C A CtrlS Company | • Strengthening its capabilities, Cloud4C collaborated with Google Cloud as its Specialized Partner for Infrastructure Services in the APAC region. |

Source: Company sources, Industry reporting, Twimbit analysis

**Key contract wins**

| Period | Client Name | Description |
|--------|-------------|-------------|
| Dec-2023 | nc | • NCSOFT entered into a partnership with Google to enhance its in-house large language model (LLM) set by leveraging Google Cloud's AI infrastructure. The development of VARCO LLM involved the utilization of Google Cloud Tensor Processor Units (TPUs), enabling NCSOFT to optimize the performance and cost of large-scale AI training workloads over the past year. |
| | ncs// | • NCS collaborated with Google Cloud to provide AI-driven cloud capabilities to its customers in the APAC region, utilizing the features of the Google Cloud Platform (GCP). |
| Nov-2023 | CIRCLES | • Singapore-based technology firm Circles announced its utilization of Google Cloud's DevOps Research and Assessment (DORA) metrics for deploying its Circles X telco-as-a-service solution in Indonesia. |
| | L&T Technology Services | • L&T Technology partnered with Google Cloud to harness the generative AI (gen AI) technology and tools for the development of its LTTS Developer Experience Platform, known as DevX. |
| | FÜRTINET | • Fortinet expanded its SASE Points-of-Presence (POPs) to new locations by leveraging Google Cloud's global network edge locations that are strategically positioned closest to their regional presence. |
| Oct-2023 | SMART COMMUNICATIONS | • Smart Communications joined forces with Google Cloud to leverage Telecom Subscriber Insights, Google Cloud's AI-powered solution, in order to personalize digital services offerings for its subscribers. |
| | polsat | • Polsat Plus Group of Poland disclosed its plans to leverage Google Cloud solutions for accelerating the group's technological development and digital transformation initiatives. |

Source: Company sources, Industry reporting, Twimbit analysis

## D. Oracle Cloud

### Overview

- Oracle Cloud Infrastructure (IaaS) segment displayed stellar growth, expanding by ~64.3% on YoY basis and reaching USD 5.7 billion revenue in FY-2023.
  - The strong growth rate was owing to the continued growth in the OCI- IaaS segment revenue in all the quarters of FY-2023.
  - Revenue increased by 60% in Q4-2023 (YoY basis) to reach USD 1.6 billion, as compared to 53.1% revenue growth (YoY basis) in Q4-2022.
  - Revenue increased by an average 64.3% YoY for all the quarters in FY-2023.
- Oracle's Infrastructure Cloud (IaaS) segment saw its contribution to overall revenue jump from 7.5% in FY-2022 to 11% in FY-2023, reflecting its impressive growth trajectory.
  - This surge was driven by consistent quarterly growth throughout FY-2023, culminating in a peak contribution of 12.4% in Q4-2023, the highest since Oracle began reporting IaaS as a distinct segment.
  - This was driven by continued growth in the OCI- IaaS segment revenue in all the quarters of FY-2023 and the contribution reached 12.4% in Q4-2023, the highest since Oracle started reporting its IaaS segment distinctly.
- Oracle announced a strategic partnership with Microsoft Azure for 20 co-located data centers, expanding its multi-cloud strategy.
- Oracle's announcement of sovereign data center orders from several countries including Bangladesh, Italy, Japan, Saudi Arabia and New Zealand, highlights the growing importance of data residency in the cloud computing landscape.
- To accelerate revenue growth, Oracle plans to migrate half of Cerner's Millennium customers to OCI by February 2024, leveraging a subscription model.
  - Oracle completed the acquisition of Cerner (health information systems supplier) for USD 28.3 billion in Dec-2021, to strengthen its presence in the healthcare segment.

> *"Demand for our Cloud Infrastructure and Generative AI services is increasing at an astronomical rate....... Our cloud businesses are now at nearly a $20 billion-dollar annual revenue run rate, and cloud services demand continues to grow at unprecedented levels. Business is good and getting better."*
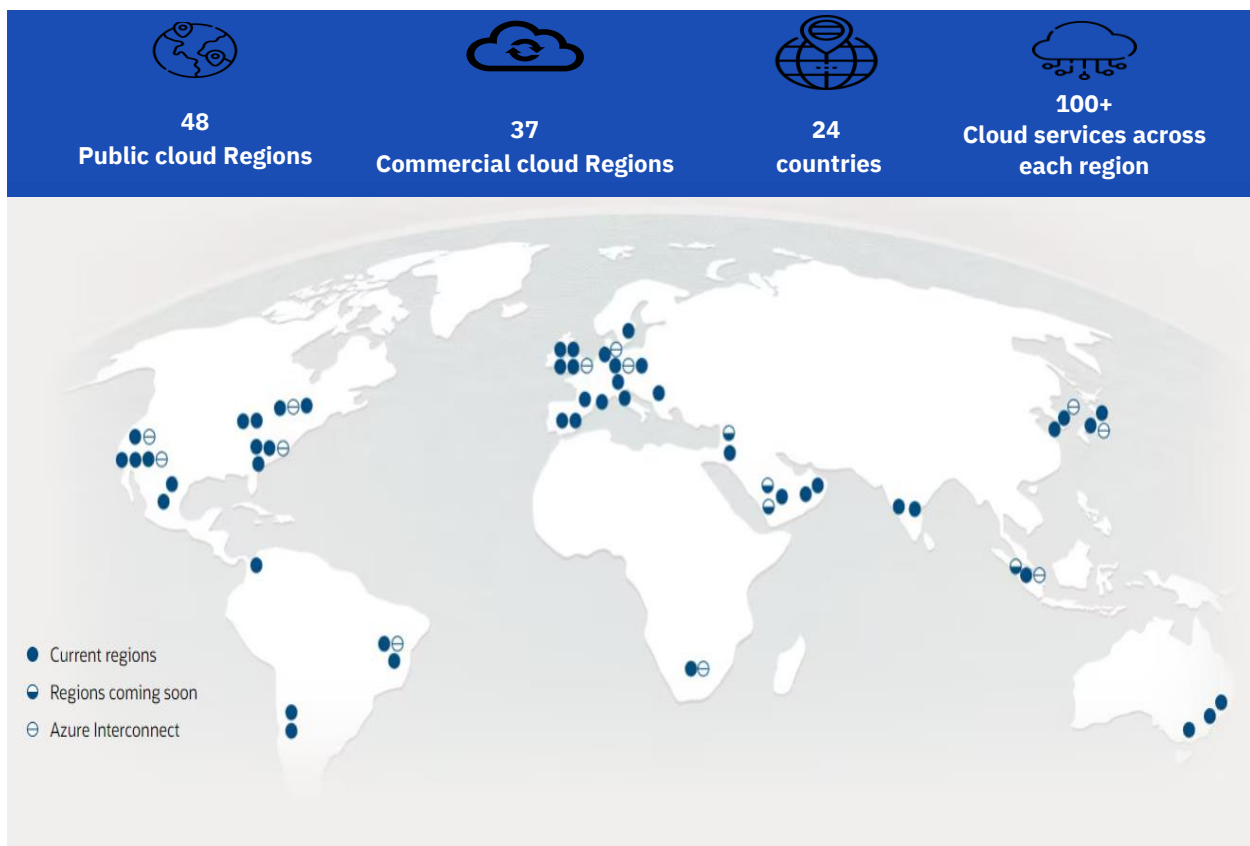> **- Safra Catz, CEO, Oracle**

**Oracle Cloud global footprint**

- Oracle offers 100+ cloud services across 48 Public cloud regions across 24 countries, including 6 cloud regions in LATAM.
  - Offers dedicated EU Sovereign Cloud regions and distinct government clouds for the US, UK, and Australia to address regional data residency regulations. Also, isolated cloud regions cater to US national security requirements.
  - In LATAM, Oracle has six cloud regions, with presence in Brazil, Mexico and Chile. Launch of the first cloud region in Colombia further strengthened its presence in the region.

**Exhibit 9: Oracle Cloud global capabilities**



| 48 | 37 | 24 | 100+ |
|---|---|---|---|
| Public cloud Regions | Commercial cloud Regions | countries | Cloud services across each region |

- Current regions
- Regions coming soon
- ⊖ Azure Interconnect

Source: Company website, Twimbit analysis

**Exhibit 10: Oracle Cloud - Key launches and announcements**

- During Q4-2023, Oracle continued to strengthen its cloud presence particularly in the Latin American region and became the first hyperscaler to have two regions in the country.
- It also plans to build 100 new cloud data centres and expand the size and services of its existing 66 centres.

| Period | Status | Location | Type | Details |
|---|---|---|---|---|
| Dec-2023 | Launched | Chile | Cloud Region | • Opened its second Oracle Cloud Region in Chile, to strengthen business continuity while addressing data residency and sovereignty requirements of organizations across all industries in Chile.<br>− Oracle plans to open its second data centre in Chile in the Valparaíso region, which is expected to be operational in early 2024. |
| Dec-2023 | Launched | Colombia | Cloud Region | • Oracle partnered with Claro to launch the first public cloud region in Colombia, becoming the first major cloud provider to enter the market.<br>− This partnership grants Colombian organizations access to Oracle Cloud Infrastructure (OCI) services, to leverage the platform's capabilities for innovation and growth. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key product initiatives

| Period | Description |
|---|---|
| Dec-2023 | • Announced the availability of its Oracle Database@Azure services in Microsoft Azure East US region, whereby Oracle will operate and manage Oracle Exadata Database Service. |

Source: Company sources, Industry reporting, Twimbit analysis

## Key partnerships

| Period | Partner Name | Description |
|---|---|---|
| Nov-2023 | ✳ Arelion | • Oracle and Arelion forged a strategic partnership to provide seamless access to Oracle Cloud Infrastructure (OCI) in Mexico. Through Arelion's direct OCI FastConnect connection in the new Monterrey cloud region, Oracle customers gain local access to OCI's capabilities, including the powerful Oracle Autonomous Database. |
| | Microsoft | • Signed a multi-year agreement with Microsoft to combine their AI expertise and infrastructure, to leverage Oracle Cloud Infrastructure (OCI) AI Infrastructure alongside Microsoft Azure AI, empowering customers with access to cutting-edge AI solutions for various business needs. |
| Oct-2023 | cohere | • Oracle has partnered with leading AI provider Cohere to integrate Cohere's services into its cloud application portfolio, including Fusion and NetSuite. This collaboration extends beyond integration, as Cohere will also train, build, and deploy large-language models on Oracle Cloud Infrastructure, further expanding the platform's AI capabilities. |

Source: Company sources, Industry reporting, Twimbit analysis

**Key contract wins**

| Period | Client Name | Description |
|---|---|---|
| Nov- 2023 | team IM | • TEAM IM unveiled its ambitious plans for TEAM Cloud, a new initiative leveraging Oracle Alloy, a cloud infrastructure platform empowering Oracle partners to become cloud providers. This move signifies TEAM IM's commitment to innovation and positions them to offer tailored cloud solutions to their customers. |
| Oct- 2023 | MOGO | • Mogo and Oracle have formed a strategic partnership to accelerate Mogo's digital wealth platform's innovation and long-term growth. By leveraging Oracle Cloud Infrastructure (OCI), Mogo gains access to a robust and scalable cloud platform, enabling them to deliver exceptional digital wealth experiences to their customers. |

Source: Company sources, Industry reporting, Twimbit analysis

# Research methodology and assumptions

- The report primarily leverages company websites and publicly disclosed information from major cloud service providers.

- Analyses aggregate performance and future plans of leading providers is used to project potential demand trends, wherever applicable.

- The report covers Q4-2023 for all four providers, analyzing product initiatives, partnerships, and contract wins. Also, aligns Oracle's fiscal year with calendar year by considering Q2-FY2024 as equivalent to Q4-CY2023.

- Oracle Cloud revenue reporting (IaaS + SaaS) has been realigned from Q3-2023 onward and now tracks only Oracle Infrastructure Cloud (IaaS) revenue.

- Previous quarter figures may differ slightly from prior reports due to the focus on Microsoft Intelligent Cloud (MIC) encompassing Azure and related services.

- Specifically for Google, the revenue numbers are for Google Cloud which encompasses various services like Workspace, Google Cloud Platform, data & analytics platforms, infrastructure, and collaboration tools. It's important to note that Google doesn't report GCP revenue separately, but rather as part of the broader Google Cloud segment.
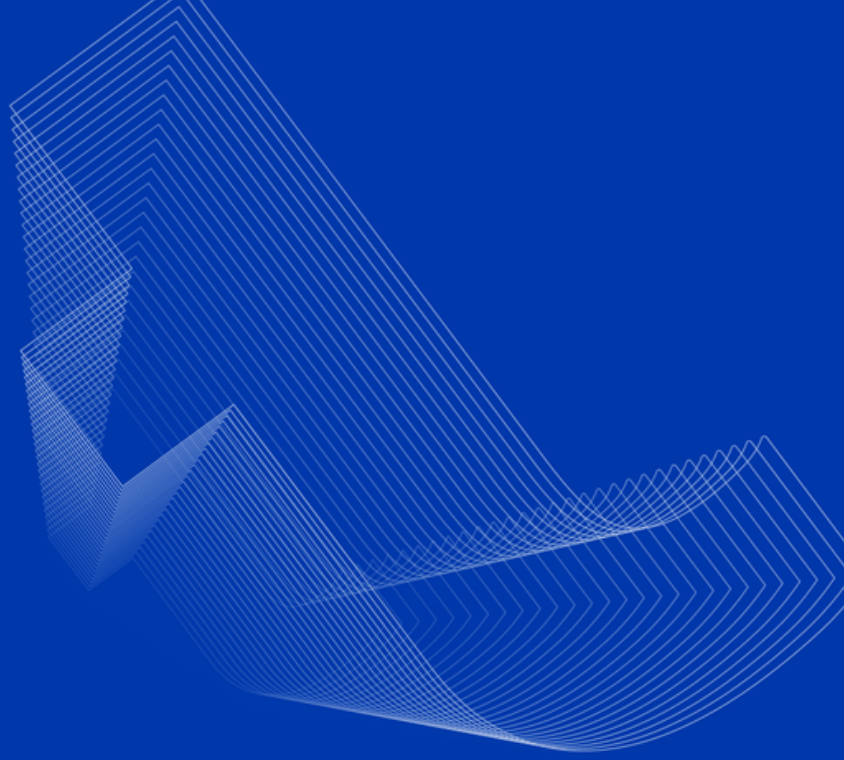
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