

Cloud infrastructure services

Market overview Q3 2018

Cloud migration still growing strongly

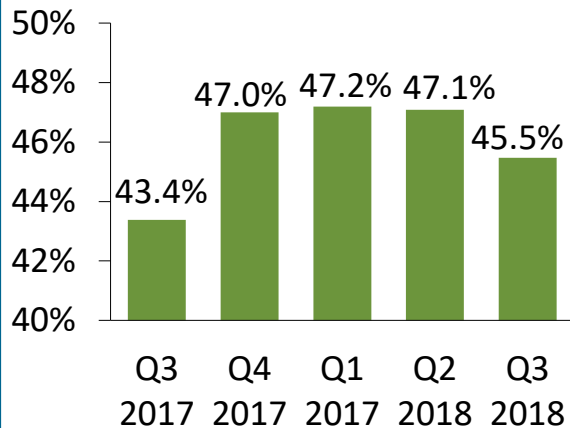


Worldwide cloud infrastructure services market summary

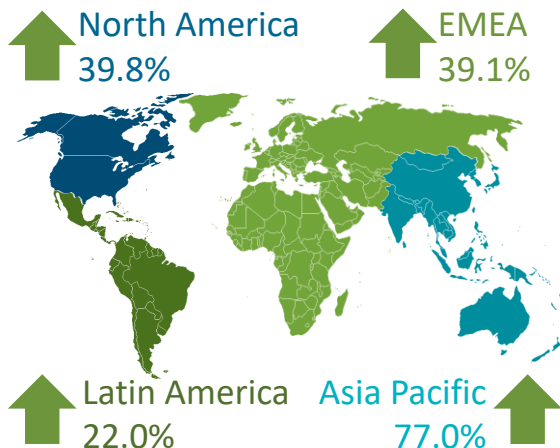
Q3 2018

US\$20.8 billion  45.5%




Growth trend



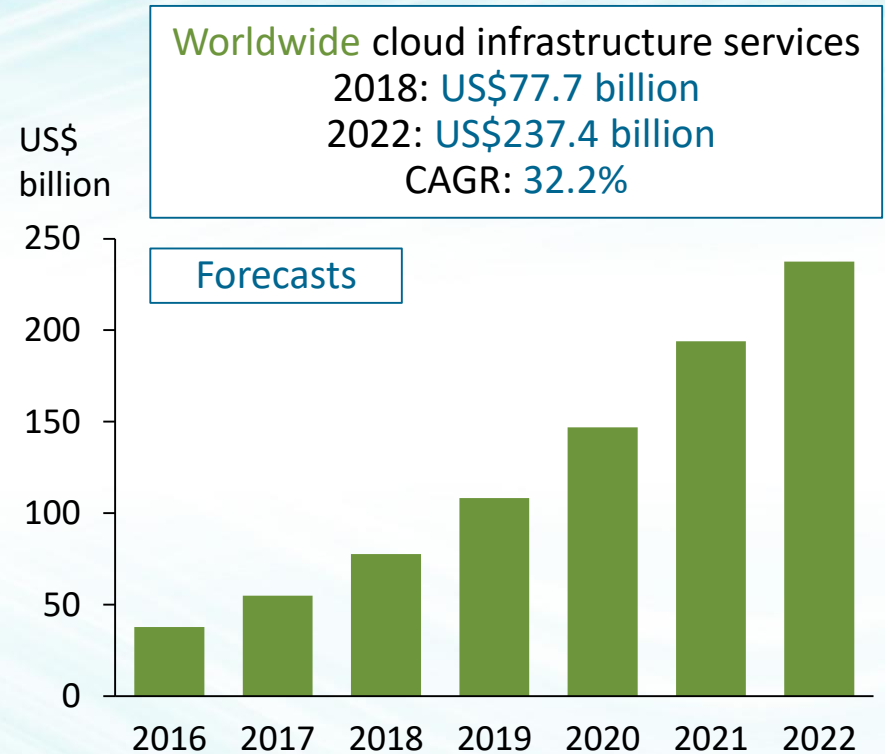
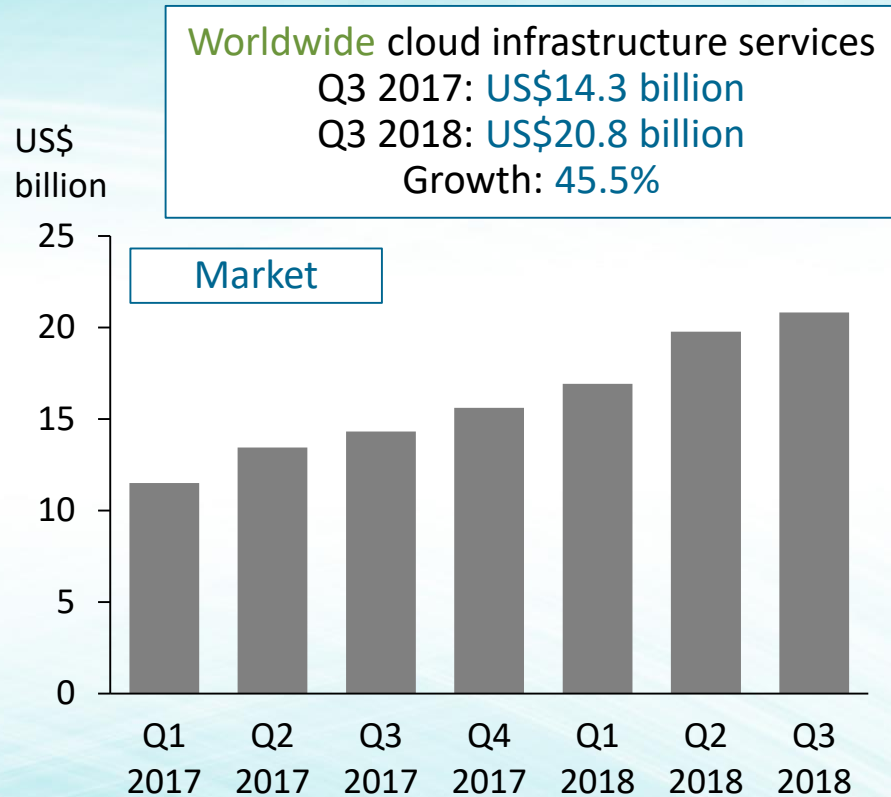
Growth by region



Leading providers

Rank	Q3 2018 share	Growth
#1	 aws	32.0%
#2	 Microsoft Azure	17.0%
#3	 Google Cloud	8.4%

Total value to exceed US\$237 billion by 2022



Source: Canalsys estimates, Cloud Analysis, November 2018

Top three strengthen their dominance

Worldwide cloud infrastructure services – leading providers

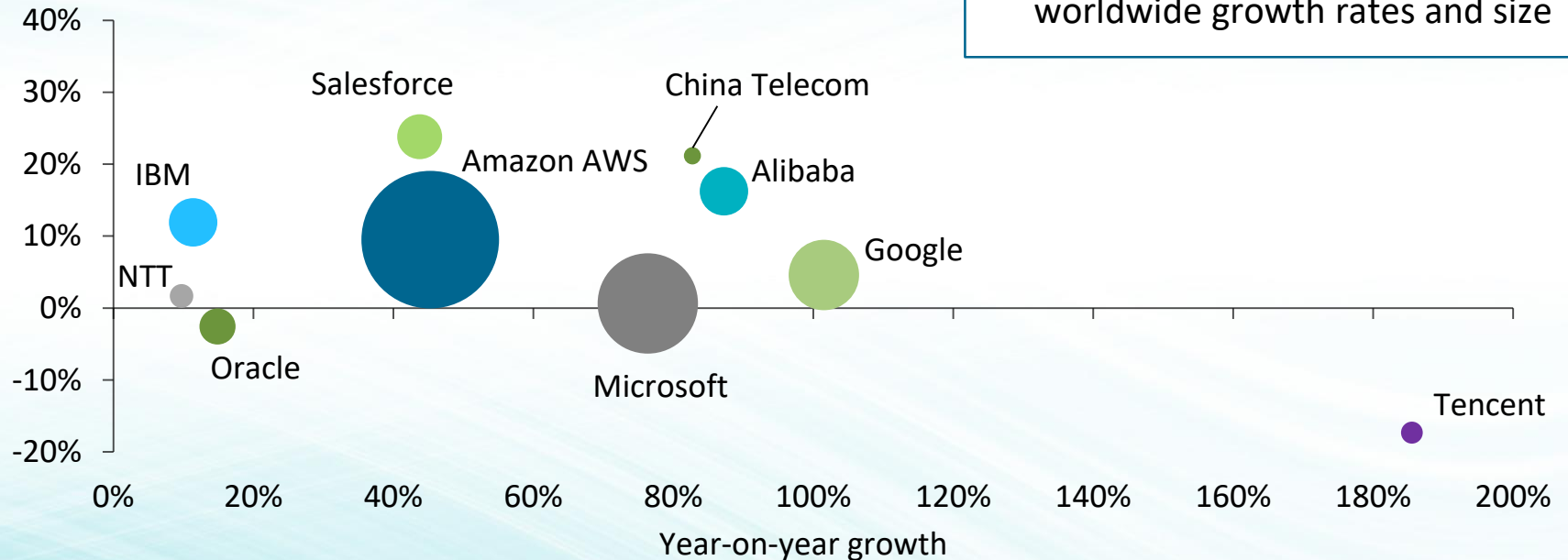
Leading providers	Market share Q3 2017	Market share Q3 2018	Year-on-year revenue growth
Amazon AWS	32.0%	32.0%	45.3%
Microsoft Azure	14.0%	17.0%	76.3%
Google Cloud	6.1%	8.4%	101.5%
Alibaba Cloud	3.1%	4.0%	87.2%
IBM Cloud	5.2%	4.0%	11.4%
Salesforce	3.5%	3.4%	43.8%
Oracle Cloud	2.8%	2.2%	14.9%
NTT Communications	1.2%	0.9%	9.7%
Tencent Cloud	0.4%	0.8%	185.5%
China Telecom	0.4%	0.5%	82.7%
Others	31.3%	26.9%	17.0%
All vendors	100%	100%	45.5%

Six of the top 10 from US, three from China

Worldwide cloud infrastructure services market Q3 2018

Quarter-on-quarter growth

Cloud infrastructure service provider worldwide growth rates and size



Asia Pacific cloud infrastructure services

Asia Pacific summary

Q3 2018

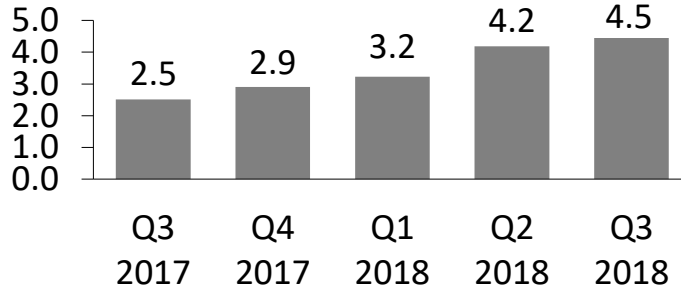
US\$4.5 billion



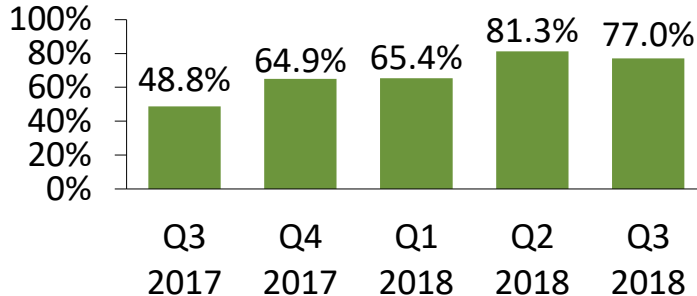
Growth:
77.0%

21.4%
of WW total

Total spend (US\$ billion)



Growth (year on year)



Competitive environment

Leading providers	Market share	
	Q3 2017	Q3 2018
Amazon AWS	27.2%	22.4%
Alibaba Cloud	17.2%	18.1%
Microsoft Azure	12.3%	12.5%
Google Cloud	4.9%	5.6%
NTT	4.0%	4.4%
Tencent Cloud	1.3%	3.7%
IBM Cloud	4.3%	2.6%
China Telecom	1.3%	2.3%
Others	27.5%	28.4%
All vendors	100%	100%

EMEA cloud infrastructure services

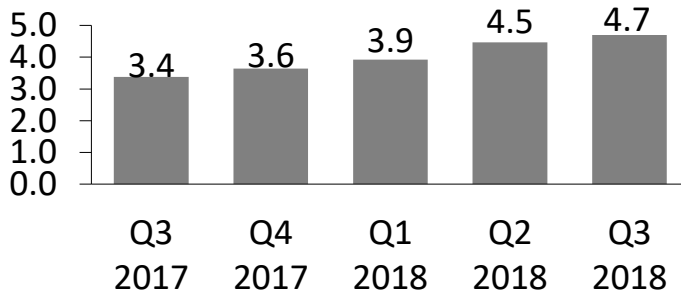
EMEA summary

Q3 2018

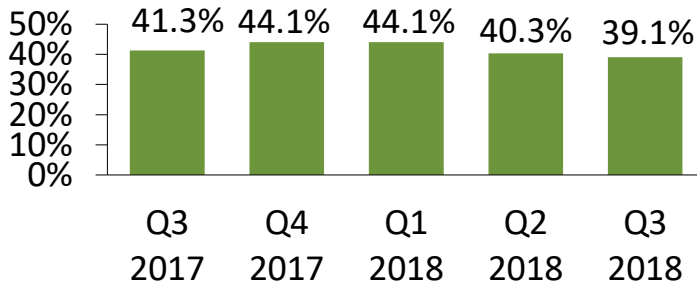
US\$4.7 billion



Total spend (US\$ billion)



Growth (year on year)



Growth:

39.1%

22.6%
of WW total

Competitive environment

Leading providers	Market share	
	Q3 2017	Q3 2018
Amazon AWS	33.6%	35.5%
Microsoft Azure	14.8%	18.9%
Google Cloud	6.4%	9.2%
IBM Cloud	5.4%	4.3%
Oracle Cloud	3.3%	2.7%
Salesforce	2.4%	2.6%
Alibaba Cloud	0.0%	0.2%
Tencent Cloud	N/A	0.1%
Others	34.1%	26.6%
All vendors	100%	100%

Latin America cloud infrastructure services

Latin America summary

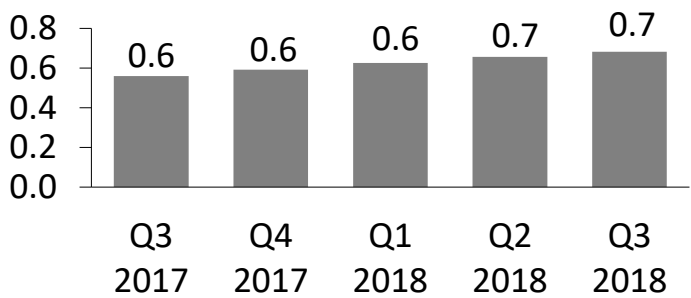
Q3 2018
US\$0.7 billion



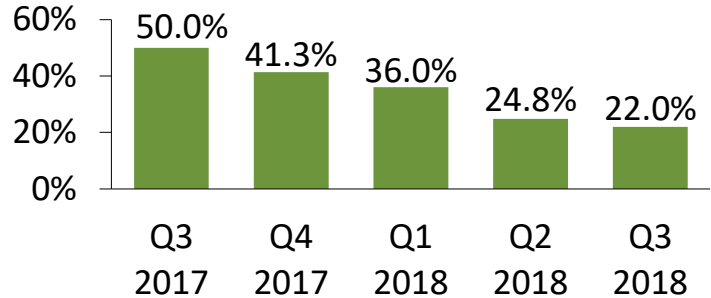
Growth:
22.0%

3.3%
of WW total

Total spend (US\$ billion)



Growth (year on year)



Competitive environment

Leading providers	Market share	
	Q3 2017	Q3 2018
Amazon AWS	31.1%	35.5%
Microsoft Azure	14.7%	26.6%
Google Cloud	6.3%	19.1%
IBM Cloud	5.6%	10.2%
Salesforce	2.0%	4.5%
Oracle Cloud	1.8%	1.6%
Others	38.5%	2.5%
All vendors	100%	100%

Source: Canals estimates, Cloud Analysis, November 2018



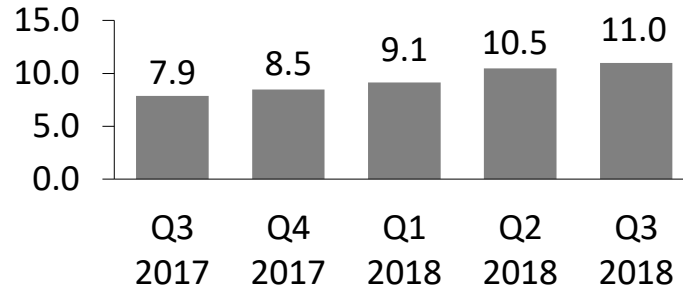
North America cloud infrastructure services

North America summary

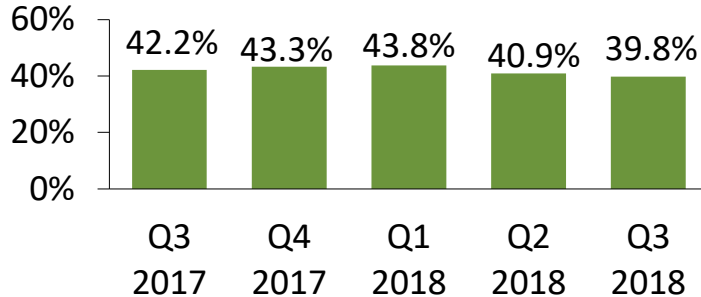
Q3 2018
US\$11.0 billion



Total spend (US\$ billion)



Growth (year on year)



Growth:
39.8%

52.8%
of WW total

Competitive environment

Leading providers	Market share	
	Q3 2017	Q3 2018
Amazon AWS	32.9%	34.1%
Microsoft Azure	14.1%	17.8%
Google Cloud	6.3%	9.0%
Salesforce	4.5%	4.6%
IBM Cloud	5.3%	4.3%
Oracle Cloud	2.8%	2.3%
Alibaba Cloud	0.1%	0.1%
Others	34.0%	27.8%
All vendors	100%	100%

AWS gains momentum from enterprise segment

Worldwide summary

Q3 2018

US\$6.7 billion

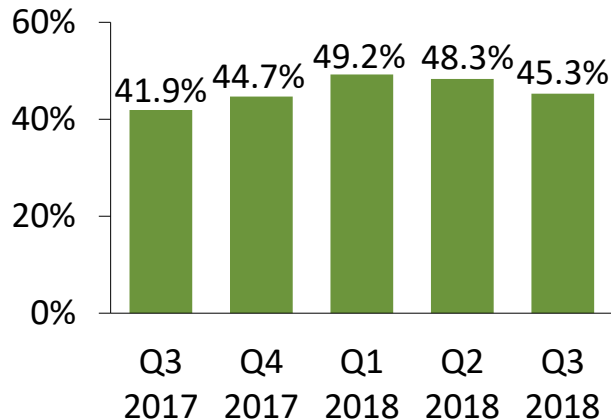


Growth:
45.3%

Share:
32.0%

Rank:
1

Growth (year on year)



Global infrastructure coverage



- Australia
- China
- India
- Japan
- Singapore
- S Korea
- Hong Kong*



- France
- Germany
- Ireland
- UK
- Bahrain*
- Sweden*
- S Africa*



- Brazil



- Canada
- US East
- US West
- GovCloud West
- GovCloud East*

Initiatives and announcements

- Introduced a new memory optimized instance type in EC2, aimed at large in-memory SAP HANA databases.
- Further strengthened its on-premises capabilities with the availability of its Relational Database Service on VMware platform for hybrid deployments.
- Released Aurora Serverless, which aims to automate the provision and scalability of database servers for customers.
- Announced plans to build its first cloud region in Cape Town, South Africa, consisting of three Availability Zones to support businesses in Africa.

Azure Hybrid Benefits pushes cloud migration

Worldwide summary



Microsoft
Azure

Q3 2018

US\$3.5 billion

Growth:

76.3%

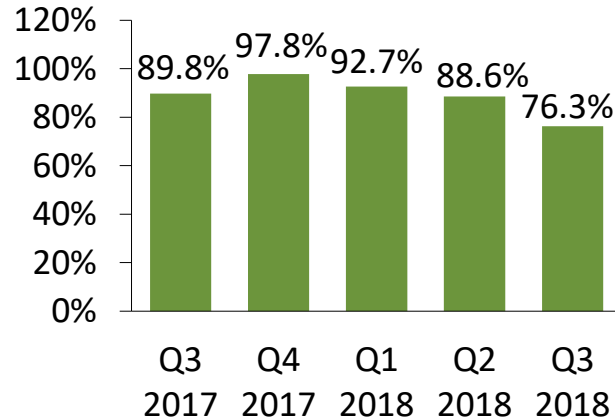
Share:

17.0%

Rank:

2

Growth (year on year)



Global infrastructure coverage



- Australia
- China
- Hong Kong
- India
- Japan
- Singapore
- S Korea



- France
- Germany
- Ireland
- UK
- Netherlands
- Norway*
- Switzerland*
- S Africa*
- UAE*



- Brazil



- Canada
- NC US
- East US
- US DoD
- SC US
- West US
- WC US
- US Gov

Initiatives and announcements

- Expanded its GPU-supported services, with instance types based on Nvidia V100, P100 and P40 to push containers for deep learning and HPC adoption.
- Introduced new AI services, which automate the use of algorithms for model training, to exploit machine learning workloads.
- Announced new AZs in its North Europe and West US regions.
- Added eight new features to Azure Stream Analytics to improve its capabilities for IoT edge, data testing on Visual Studio and SQL database.

Multi-cloud adopters help drive Google

Worldwide summary

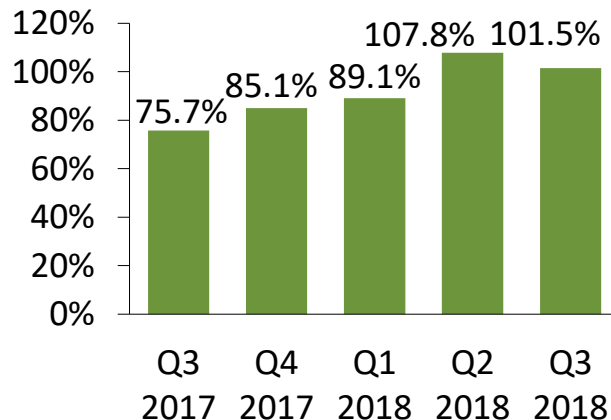
Q3 2018



US\$1.7 billion

Growth:	Share:	Rank:
101.5%	8.4%	3

Growth (year on year)



Global infrastructure coverage



- Australia
- Hong Kong
- India
- Japan
- Singapore
- Taiwan



- Belgium
- Finland
- France
- Germany
- Netherlands
- UK
- Switzerland*



- Brazil



- Canada
- US West
- US East
- US Central

Initiatives and announcements

- Introduced a container-native load-balancing service specific for applications hosted on its Kubernetes Engine for enhanced performance and security.
- Upgraded its cloud storage portfolio, with new dual-regional and multi-regional backup options.
- Added new features to Apigee, its API management suite, to optimize users' API operation and facilitate their access across multiple Google cloud services.
- Extended its Virtual Private Cloud to cover its Cloud SQL database service.

Media and entertainment segment spurs Alibaba

Worldwide summary



Alibaba Cloud

Q3 2018

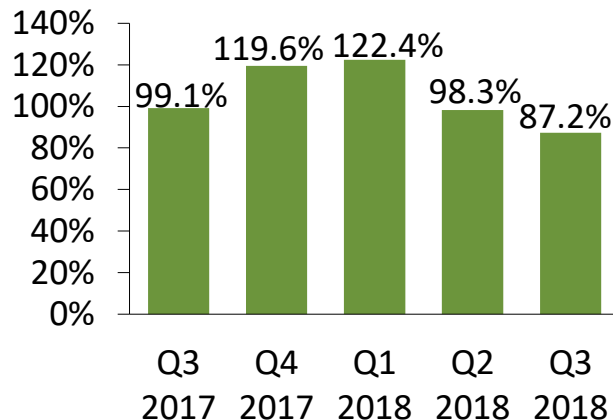
US\$0.8 billion

Growth:
87.2%

Share:
4.0%

Rank:
4

Growth (year on year)



Global infrastructure coverage



- Australia
- China
- Hong Kong
- India
- Indonesia
- Japan
- Malaysia
- Singapore



- Germany
- UK
- UAE



- US East
- US West

Initiatives and announcements

- Expanded globally, with its new cloud region available in the UK, and second Availability Zone established in India.
- Deepened its partnership with SAP to provide S/4 HANA database system based on Alibaba Cloud for Chinese businesses.
- Launched the Link Develop 2.0, a new version of its IoT development platform. This features embedded tools to accelerate edge data migration to cloud, orchestration of devices, database and APIs, and expanded accessibility for JavaScript users.



Cloud infrastructure services

Market overview Q3 2018



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