










			Each services																			
Comparison Item			Google Cloud Platform (GCE) 	Amazon Web Service (EC2) 	Microsoft Azure (Virtual Machines) 	Remarks																
Performance	SLA		○ 99.99%	○ 99.99%	○ 99.99%	3 companies are almost equal on SLA Azure marks 99.99% under the condition of 2 zone with HA, 99.95% on the single zone with HA, and 99.9% with single zone.																
	VMStart-up time		⊙ 15 Seconds	○ 30 Seconds	△ 30 Seconds ※Depends on the traffic, It takes almost 6 mins for the booting and waiting time.	The following values measure the time from the activation instruction until the port of ssh opens.(from left to right: service name, OS, machine type, zone) <table><tr><th>Name of service</th><th>OS</th><th>Machine type</th><th>Zone</th></tr><tr><td>GCP</td><td>Ubuntu18.04 LTS</td><td>n1-standard-2 (SSD)</td><td>asia-northeast1-b</td></tr><tr><td>AWS</td><td>Ubuntu18.04 LTS</td><td>m5.medium (SSD)</td><td>ap-northeast-1a</td></tr><tr><td>Azure</td><td>Ubuntu18.04 LTS</td><td>D2 V3 Standard (SSD)</td><td>Japan (East)</td></tr></table>	Name of service	OS	Machine type	Zone	GCP	Ubuntu18.04 LTS	n1-standard-2 (SSD)	asia-northeast1-b	AWS	Ubuntu18.04 LTS	m5.medium (SSD)	ap-northeast-1a	Azure	Ubuntu18.04 LTS	D2 V3 Standard (SSD)	Japan (East)
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Spike correspondence		⊙	△ ※Need to apply for prewarning in advance. It is necessary to prepare for corresponding to the estimated amount of request. There are some burstable Instance(such as T2, T3) but CPU credit valance is required. If VM load keeps high, need to be careful with the lack of credit valance.	△ ※It is cope with the burden of CPU load (burst) by selecting the B series VM, but need to keep the CPU credit remain. If the VM load keeps high, the credit valance will not be enough.	GCE is greatly better than others on 'starting time', 'Load balancer' and 'spike correspondence'.																	
networkI/O		⊙ ※Acrossing regions network I/O is very fast.	○ ※It is necessary to connect with VPN respectivaly, via the Internet	○ ※It is necessary to connect with VPN respectivaly, via the Internet	In the case of EC2, the network I/O will change(better server, better I/O) with the type of instance. But in the case of GCE, even if the instance is the lowest, it can still provide more than 2Gbps' NW.																	
Capability	Network	Load balancer	○ Have the function	○ Have the function	○ Have the function	Although each company have the function of Load balancer, but Google's Load balancer have a much higher performance.																
		Autoscale	○ Have the function	○ Have the function	○ Have the function	Although each company have the function of Autoscale, but Google's Autoscale have a much higher performance.																
		Persistence of Fixed IP	○ Can be settet	○ ※The default setting is to be released when restarting the VM, But if use a Elastic IP, fixed IP can be allocated	○ Can be settet	No perticular difference																
		VPN	○ Can be settet	○ Can be settet	○ Can be settet	No perticular difference																
		DNS	○ ※Cloud DNS	○ ※Amazon Route 53	○ ※Azure DNS	No perticular difference																

Google Cloud Platform ▪ AWS ▪ Azure's Comparition-Table (2/3)

			Each services			
Comparition Item			Google Cloud Platform (GCE) 	Amazon Web Service (EC2) 	Microsoft Azure (Virtual Machines) 	Remarks
Capability	Databases	NoSQL	○ ※ Bigtable, Datastore, Firestore	○ ※ DynamoDB, Neptune, Document DB	○ ※ Cosmos DB (old : DocumentDB)	No perticular difference
		RDB	○ ※ Cloud SQL	○ ※ Amazon RDS	○ ※ SQL Database	Cloud SQL supports MySQL, PostgreSQL, and other Oracle or SQLServer which is compensated DB
	Big data	Data analysis	○ Have the function	○ Have the function	○ Have the function	—
		Real time aggregation	⊙ ※Able to aggregate with streaming API	○ ※ Utilization of Amazon QuickSight	○ ※ Utilization of Power BI	
		API	⊙ ※Supports all basic funtions such as SQL execution, data set / table operation and so on.	△ ※Cluster(= Actual processing Computing resources)'s Operation (creation, reference, etc.) is possible. SQL can not be executed.	△	
		Command line tool	○ ※ bq command, PowerShell	△ ※AWS Shell, PowerShell	○ ※Azure CLI, PowerShell	
		SDK for development	○	○	○	
	Regions	Japan Region	⊙ ※Tokyo Region (From 2019.5 Osaka region open)	○ ※Support Tokyo Region; Offer Osaka region for specific customers.	⊙ ※Support East Japan (Tokyo, Saitama), and West Japan (Osaka) region.	A plurality of geographically separated data centers are distinguished by the name of Region, Zone, etc. Each company is the same.
		Number of regions	○ ※20	○ ※20. 21 if the local region (Osaka region) is included.	⊙ ※54 places	Since GCP has a global network, there is no need to have a base near the GCP data center.
	Snapshot		○ Have the function	○ Have the function	○ Have the function	No perticular difference
	OS		○ ※More than 8 types Debian, CentOS, CoreOS, Ubuntu LTS, Container-Optimized OS, RedHat Linux, SUSE Linux, Windows Server	⊙ ※More than 12 types Amazon Linux, Amazon Linux 2, RedHat Linux, SUSE Linux, Ubuntu LTS, Windows Server, Fedora, Debian, CentOS, Gentoo Linux, Oracle Enterprise Linux, FreeBSD	○ ※More than 7 types CentOS, Ubuntu Linux, RedHat Linux, CoreOS, SUSE, Debian, Windows Server	General functions is supported by each company.

		各サービス			Remarks
Comparison Item		Google Cloud Platform (GCE) 	Amazon Web Service (EC2) 	Microsoft Azure (Virtual Machines) 	
Security	Acquisition status of third party certification	○ ※Support for ISO 27001, 270017, 270018 and more other third party certifications. (Ex.) SOC1, SOC2, SOC3, PCI DSS, HIPAA, GDPR ※For more details, refer to URL below https://cloud.google.com/security/compliance/	○ ※Support for ISO 27001, 270017, 270018 and more other third party certifications. (Ex.) SOC1, SOC2, SOC3, PCI DSS, HIPAA, GDPR ※For more details, refer to URL below https://aws.amazon.com/jp/compliance/programs/	○ ※Support for ISO 27001, 270017, 270018 and more other third party certifications. (Ex.) SOC1, SOC2, SOC3, PCI DSS, HIPAA, GDPR ※For other details, refer to URL below http://microsoft.com/ja-jp/TrustCenter/compliance/	All general standards have been cleared, Comparing to regular data center operators, each company can be considered as high standards.
Operation and maintenance	MWsupport	△ ※It's main target is open source. For details, refer to the following URL which is also able to inquiry http://www.cloud-ace.jp/contact/	○ ※Also generally supports for commercial products (such as Oracle and JP1)	○ ※Also generally supports for commercial products (such as Oracle and JP1)	GCP's achievements now in commercial products are insufficient.
	Support plan	○ ※Telephone support, correspondence for each specific case, and available for 24 hours everyday and for 365 days For details, refer to the following https://cloud.google.com/support/?hl=ja	○ ※There's support by telephone, chat, mail and so on. Mail correspondence service is for 24 hours a day and 365 days. For details, refer to the following https://aws.amazon.com/jp/premiumsupport/signup/	○ ※Telephone support available for 24 hours a day and 365 days. For details, refer to the following https://azure.microsoft.com/ja-jp/support/plans/	Each company have plans for telephone and mail supporting. Each company also has support with Japanese.
	Documents has Japanese version	△	○	○	Although GCP is gradually increasing, it still has a impression of that it is smaller.
Costs	Unit of charging	○ ※Charged by second unit (Minimum 1 minute)	○ ※EC2 Linux Charged by second unit. EC2 Windows Charged by hour unit. (Minimum 1 minute)	○ ※Minute unit billing (Truncate(Decimal) method for calculating the cost. ex) When you use 6 mins 59 seconds, only charge the fee of 6 mins.)	—
	Discount rate	○ ※Can be discounted according to usage time of each payment period, up to 30% off.	○ ※According to the payment method and instance reservation, may have a up to 75% discount.(5 years prepayment) Can not be canceled.	○ ※available to select 1 year and 3year discount. Max 72% discount, but cancellation penalty will be charged.	Google did very well on automatically applying discounts monthly. Notice that the EC 2 can be discounted with a prepayment, and the discount is very large.(same level as buying server in 5 years.)
	Cost of operating for one month (Tokyo Region)	\$ 62.34 (n1-standard-2:2vCPU MEM 7.5GB)	\$ 89.28 (m5.large:2vCPU MEM 8GB)	\$ 94.17 (D2 V3 : 2vCPU MEM 8GB)	<ul style="list-style-type: none"> •CPU/Memory: charged by on-demand(usage based charge) •Storage / calling charge not included •OS :Linux (Ubuntu) •discount for continue using / discount for determination of using: before apply
	Price system is very simple easy to understand.	◎ ※Price system is simple. Also offer for reservation options with discount service for determination of using.	△ ※Price system is complicated by prepayment and reservation option	○ ※Price system is simple	The price system of Google is very simple. Disk I/O also need no charge.



Give Google Cloud Platform a try!
And if you have any questions, please contact Cloud Ace !
www.cloud-ace.com