AKS (kubernetes) latency troubleshooting

Last updated by | Dandan Zhang | Feb 2, 2021 at 11:26 AM PST

If customer has slowness in connections or command execution (executing hundreds of queries per second), the following options need to be verified to be enabled:

AKS Cluster check list:

- Accelerated networking is activated.
- Intelligence performance is activated.
- CPU exhaustion, check no CPU load.
- TCP_NODELAY is activated.
- **DNS Latency**, please visit this TSG Five sec DNS resolution latency please visit this TSG

Added the following DNS configuration to the AKS Pod configuration as a workaround

```
dnsConfig:
     options:
      - name: single-request-reopen
```

Azure AKS has released a Transparent-mode feature on 01-04-2021 to address this issue. This feature requires new clusters. Recommended to test it in QA before moving it to production. https://docs.microsoft.com/en-us/azure/aks/faq#what-is-azure-cni-transparent-mode-vs-bridge-mode https://docs.microsoft.com/en-us/azure/aks/faq#benefits-of-transparent-mode https://github.com/Azure/AKS/releases/tag/2021-01-04

- **How to detect Disk IO Throttling**, visit this [TSG] (https://supportability.visualstudio.com/AzureContainers/_wiki/wikis/Containers Wiki/284070/How-to-Detect-Disk-IO-Throttling)

Database check list:

- Connection pooling: for postgresql pgboucner is recommended.
- Disable SSL : this options is not accepted for some customers due to security reasons, so you can skip it

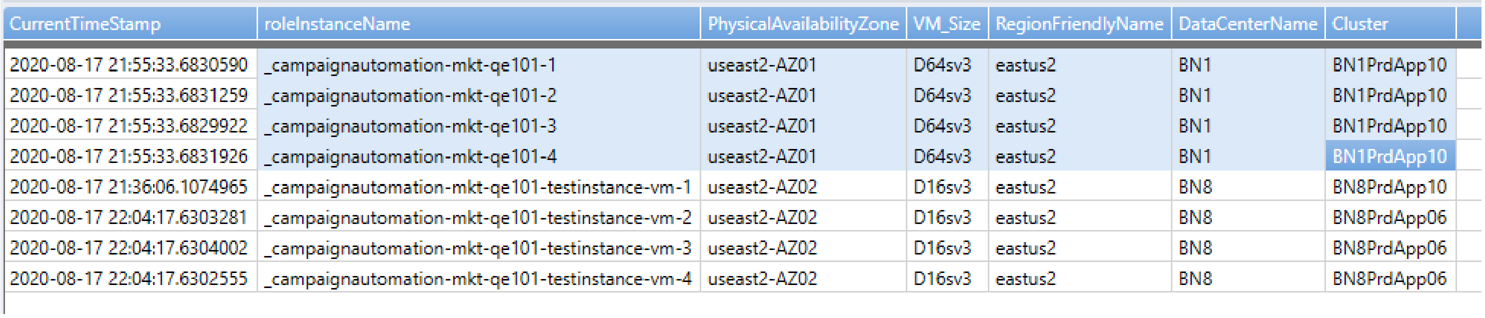
Determine the VM Datacenter

Execute: [Web] [Desktop] [Web (Lens)] [Desktop (SAW)]

https://mabprodwus.kusto.windows.net/MABKustoProd

```
// Current Cluster and node placement of VM the datacenter.
cluster('Azurecm').database('AzureCM').LogContainerSnapshot
| where subscriptionId == "$SubID" and roleInstanceName contains "$vmname" and PreciseTimeStamp > a
| summarize max(PreciseTimeStamp) by containerType,RegionFriendlyName,AvailabilityZone,DataCenterNa
| project  CurrentTimeStamp=max_PreciseTimeStamp,roleInstanceName,PhysicalAvailabilityZone=Availabi
| order by roleInstanceName asc, CurrentTimeStamp desc
```

example for the output:



CurrentTimeStamp	roleInstanceName	PhysicalAvailabilityZone	VM_Size	RegionFriendlyName	DataCenterName	Cluster
2020-08-17 21:55:33.6830590	_campaignautomation-mkt-qe101-1	useast2-AZ01	D64sv3	eastus2	BN1	BN1PrdApp10
2020-08-17 21:55:33.6831259	_campaignautomation-mkt-qe101-2	useast2-AZ01	D64sv3	eastus2	BN1	BN1PrdApp10
2020-08-17 21:55:33.6829922	_campaignautomation-mkt-qe101-3	useast2-AZ01	D64sv3	eastus2	BN1	BN1PrdApp10
2020-08-17 21:55:33.6831926	_campaignautomation-mkt-qe101-4	useast2-AZ01	D64sv3	eastus2	BN1	BN1PrdApp10
2020-08-17 21:36:06.1074965	_campaignautomation-mkt-qe101-testinstance-vm-1	useast2-AZ02	D16sv3	eastus2	BN8	BN8PrdApp10
2020-08-17 22:04:17.6303281	_campaignautomation-mkt-qe101-testinstance-vm-2	useast2-AZ02	D16sv3	eastus2	BN8	BN8PrdApp06
2020-08-17 22:04:17.6304002	_campaignautomation-mkt-qe101-testinstance-vm-3	useast2-AZ02	D16sv3	eastus2	BN8	BN8PrdApp06
2020-08-17 22:04:17.6302555	_campaignautomation-mkt-qe101-testinstance-vm-4	useast2-AZ02	D16sv3	eastus2	BN8	BN8PrdApp06

Use script below to measure latency for both login and commands:

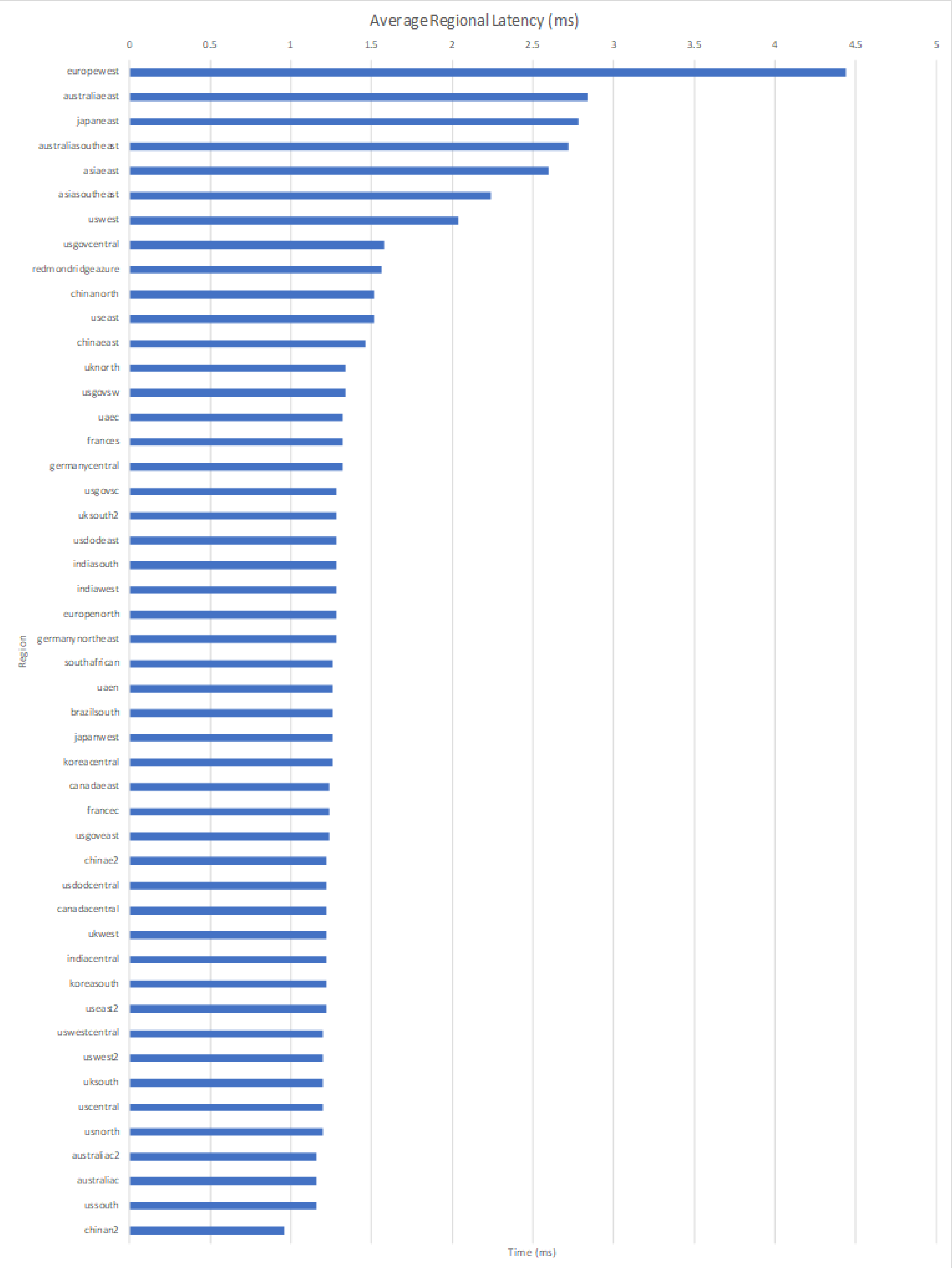
https://github.com/RicardoNiepel/azure-mysql-in-aks-sample

Few notes:

West Europe latency is high, with optimization and using connection pooling, latency will be between 3-4 ms, for other regions, please check latency graph below. if customer wants less than 4ms in West Europe, another region needs to be used. Without connection pooling, less than 400ms cannot be achieved in West Europe.

please do not share it with the customer

P.S: This was updated in Mar 2020, an update may be required after 6 months


Average Regional Latency (ms)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
europewest
australiaeast
japaneast
australiasoutheast
asiaeast
asiasoutheast
uswest
usgovcentral
redmondridgeazure
chinanorth
useast
chinaeast
uknorth
usgovsw
uaec
frances
germanycentral
usgovsc
uksouth2
usdodeast
indiasouth
indiawest
europenorth
germanynortheast
southafrican
uaen
brazilsouth
japanwest
koreacentral
canadaeast
francec
usgoveast
chinae2
usdodcentral
canadacentral
ukwest
indiacentral
koreasouth
useast2
uswestcentral
uswest2
uksouth
uscentral
usnorth
australiac2
australiac
ussouth
chinan2
Region
Time (ms)

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