Flexible Server Provision

Last updated by | Daniel Valero | Mar 11, 2022 at 10:28 AM PST

Provision Factors

Azure regions

PostgreSQL Server is available in regions as listed at https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/overview#azure-regions

Let Postgres PM team know if customer ask about specific regions, as it helps prioritize it.

Availability zones

If you see some regions don't have availability zone yet, most of the larger Azure regions will have availability zones in 2021.

If application is in one zone, and database is in another zone, it may cause latency. Ensure customer co-locate with the application to minimize the latency.

Zone Redundant HA

Zone Redundant HA option will affect pricing and write performance. HA option is not available in Burstable tier as of now.

It may take a while to turn it on for an existing server. If it is more than 1 hour, we may need to further investigation (open ICM in that case). Turn off should be pretty fast.

Version

We support PostgreSQL 11 and 12 version and 13.

https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/concepts-supported-versions

Geo-redundant backup

Geo-redundant backup is in preview in some selected regions https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/overview#azure-regions

Other

Storage auto-grow is not yet available for Flexible Server.

Compute+ Storage

PostgreSQL uses v3 series VM while MySQL uses v4 series VM. We intentionally use the same name as VM.

If customer want to know more details behind the theme, we can share these docs to customers:

- https://docs.microsoft.com/en-us/azure/virtual-machines/dv3-dsv3-series

- https://docs.microsoft.com/en-us/azure/virtual-machines/ev3-esv3-series?toc=/azure/virtual-machines/linux/toc.json&bc=/azure/virtual-machines/linux/breadcrumb/toc.json
- https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/concepts-compute-storage

Scale

You can seamlessly scale the compute tiers after server provision. For example, scale from Burst to General Purpose.

But if you want to scale down to Burstable, Zone Redundant HA needs to be turned off first as Burstable does not support this.

Stop and Restart

We de-allocate the compute the virtual machine for 7 days. During de-allocation, we don't charge the compute but we still charge for the storage. After 7 days, server will be automatically started.
https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/how-to-stop-start-server-portal
https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/how-to-restart-server-portal

In the future, we will support customer to choose if they want to failover to another availability zone when they restart the server

Operation can be found in ASC

Metrics

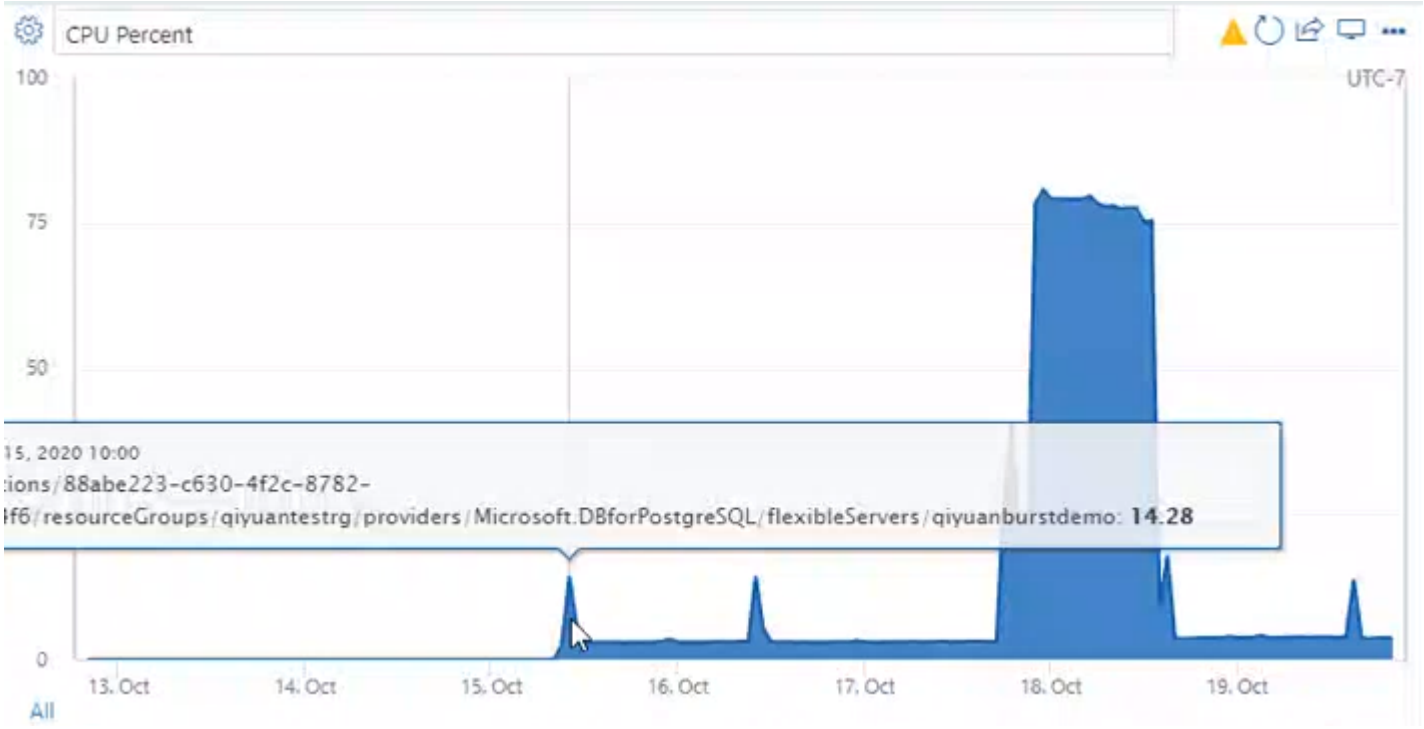
https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/concepts-monitoring

CPU Credits Consumed and CPU credits Remaining --We expose these metrics from VM itself for Burstable tier only.

https://docs.microsoft.com/en-us/azure/virtual-machines/sizes-b-series-burstable?toc=/azure/virtual-machines/linux/toc.json&bc=/azure/virtual-machines/linux/breadcrumb/toc.json

Once they used all CPU credits, CPU will go down to the base line. So if customer who uses Burstable see some performance issue all of sudden, please check if they used all their CPU credits.

If you see following spikes to 13% or so in Burstable tier, it was due to the anti-virus scan and we don't have control of it. It will be obvious especially in the lower tiers.



Server Creation Time

Normally the deployment should take around 10 mins. If it is more than that, we will need investigation.

Portal Provision

https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/quickstart-create-server-portal

ARM template

https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/quickstart-create-server-arm-template?tabs=portal%2Cazure-portal

Note the storageSizeMB needs number for MB while the portal shows in GB.

CLI

https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/quickstart-create-server-cli

Command list: https://docs.microsoft.com/en-us/cli/azure/postgres/flexible-server?view=azure-cli-latest

This can be used to check the existing SKUs: az postgres flexible-server list-skus

One of the new features here is local context which automatically saves the last used resource and uses it in the next commands.

The latest CLI is required.

Direct connect to the server and run simple queries via CLI will come soon.

Tools

Jarvis: Good for reviewing the metrics link

ASC: first stop for troubleshooting

Kusto Get the VM details: LogContainerSnapshot |where roleInstanceName contains "xxx" |distinct virtualMachineUniqueId

Get the operation details: MonOrcsBreadthResourceProvider

get the details to understand the request id: MonOrcasBreadthRp

XTS:

- orcasbreath servers.xts
- orcasbreath cms browser.xts --Check any active workflow
- and several more orcasbreath servers related view

For example, if we want to troubleshoot any ongoing stuck operation, go to orcasbreath servers.xts. Under server details tab, find the owner_operation_id. Then go to orcasbreath cms browser.xts, look for the owner operation id in key column, and see what the exception shows there.

External links

https://docs.microsoft.com/en-us/azure/postgresql/flexible-server/overview

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