Storage Latency for Premium Storage (PFS)

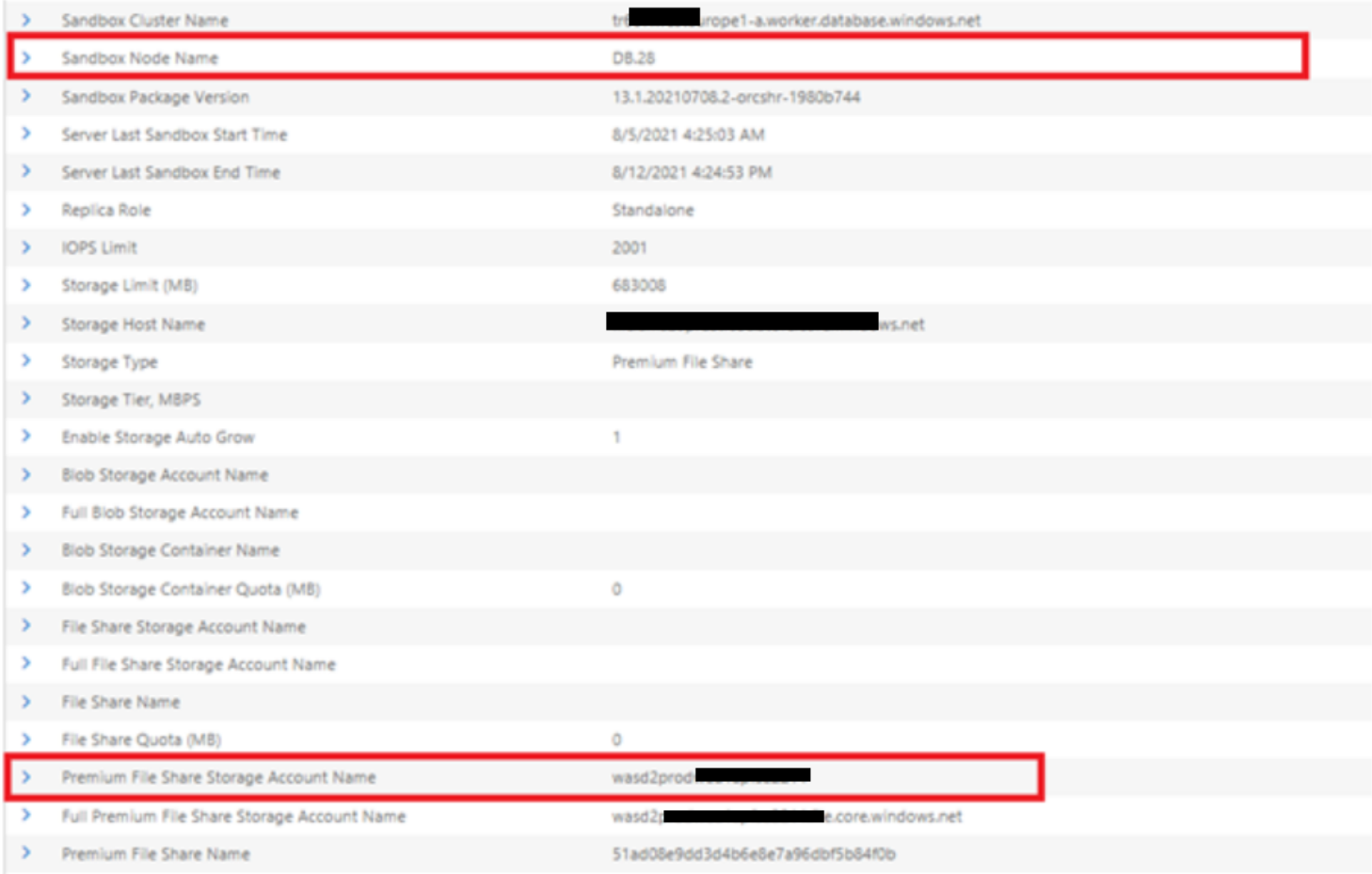
Last updated by | Abhishek Reddy Kumbham | Feb 14, 2022 at 6:55 AM PST

Please don't modify or move as this is part of GT , please contact haaqel@microsoft.com if needed

To check the Storage latency , please follow the below steps:

Check performance counter for SMB :

Before continue,you will need to get the storage account and the DB node for this server , you can get these information from ASC :



Sandbox Cluster Name	[redacted]rope1-a.worker.database.windows.net
Sandbox Node Name	DB.28
Sandbox Package Version	13.1.20210708.2-orcshr-1980b744
Server Last Sandbox Start Time	8/5/2021 4:25:03 AM
Server Last Sandbox End Time	8/12/2021 4:24:53 PM
Replica Role	Standalone
IOPS Limit	2001
Storage Limit (MB)	683008
Storage Host Name	[redacted]ws.net
Storage Type	Premium File Share
Storage Tier, MBPS	
Enable Storage Auto Grow	1
Blob Storage Account Name	
Full Blob Storage Account Name	
Blob Storage Container Name	
Blob Storage Container Quota (MB)	0
File Share Storage Account Name	
Full File Share Storage Account Name	
File Share Name	
File Share Quota (MB)	0
Premium File Share Storage Account Name	wasd2prod[redacted]
Full Premium File Share Storage Account Name	wasd2[redacted].core.windows.net
Premium File Share Name	51ad08e9dd3d4b6e8e7a96dbf5b84f0b

Run the below Kusto query after selecting the proper region, and see if there is any spikes:

let TimeCheckStart=datetime('2021-08-01 08:00:00');

let TimeCheckEnd= datetime('2021-08-05 14:00:00');

MonCounterOneMinute

| where PreciseTimeStamp>= TimeCheckStart and PreciseTimeStamp< TimeCheckEnd

| where CounterName contains "SMB" and CounterName contains"wasd2prodweu1apfse2214" and CounterName !contains "IPC"

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| where CounterName contains "Data Requests/sec"  or CounterName contains "Avg. sec/Write" or CounterName contains "Avg. sec/Read"

| where MachineName== "DB28"| extend secRead=iff(CounterName contains"Avg. sec/Read", CounterValue, 0.0)

| extend secWrite=iff(CounterName contains "Avg. sec/Write", CounterValue, 0.0)

| extend readSec=iff(CounterName contains "Read Requests/sec", CounterValue, 0.0)

| extend writeSec=iff(CounterName contains "Write Requests/sec", CounterValue, 0.0)

|summarize avgSecRead=avg(secRead), avgSecWrite=avg(secWrite),

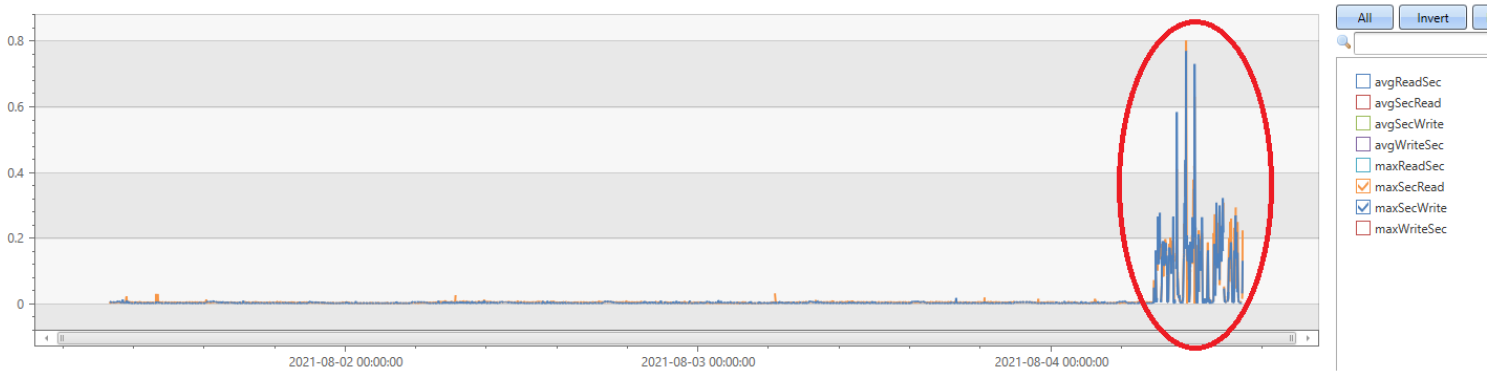
    maxSecRead=max(secRead), maxSecWrite=max(secWrite) ,

    avgReadSec=avg(readSec), avgWriteSec=avg(writeSec),

    maxReadSec=max(readSec), maxWriteSec=max(writeSec)

    by bin(PreciseTimeStamp,1m)

|render timechart
```



Check performance metrics for PFS storage :

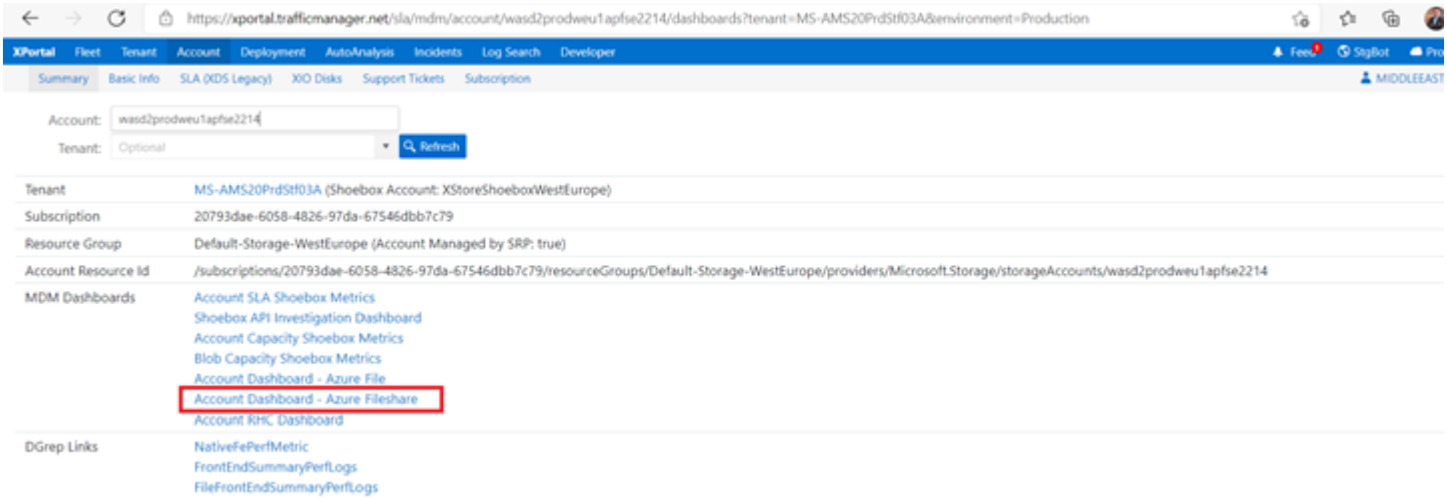
Check the IOPS and storage metrics for latency:

Before starting you will need the storage account name from previous step , which you can get from ASC :

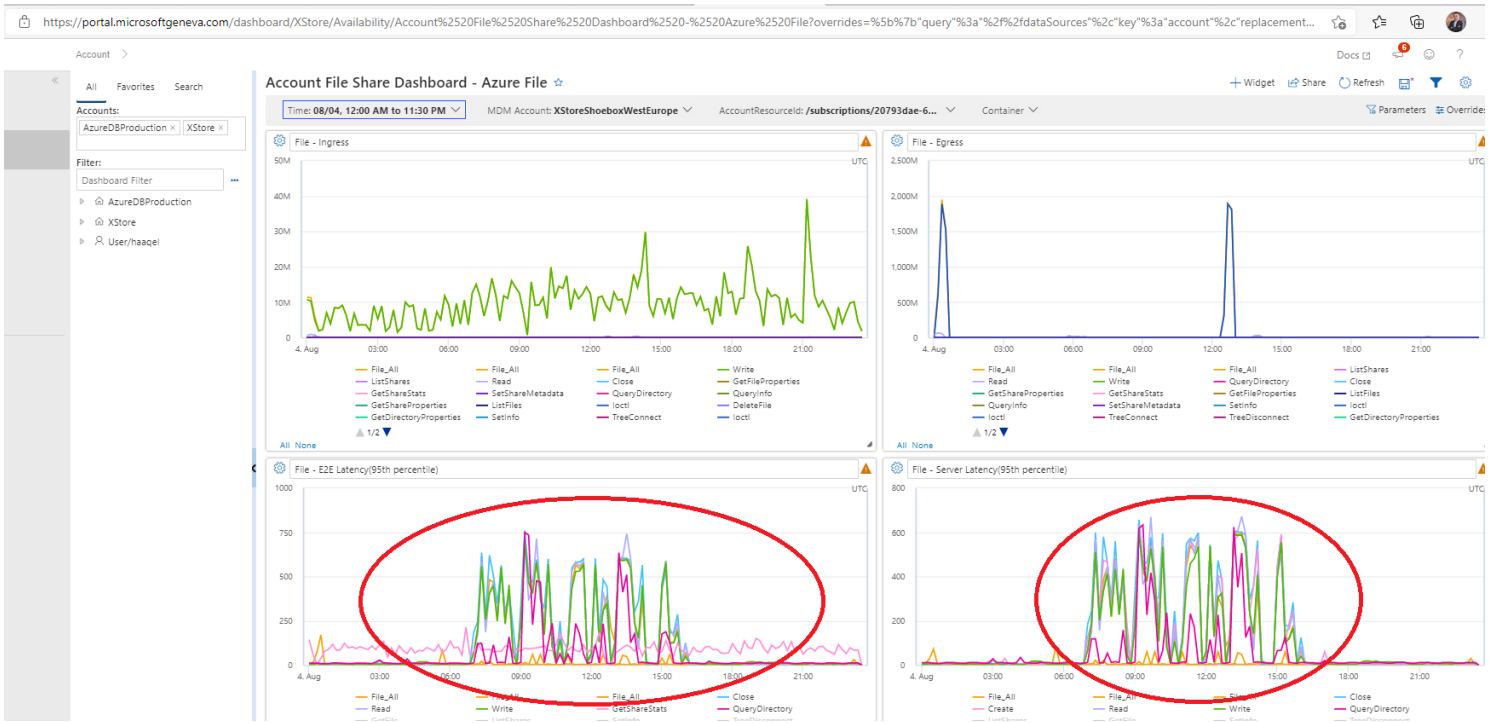
File Share Name	
File Share Quota (MB)	0
Premium File Share Storage Account Name	wasd2[redacted]214
Full Premium File Share Storage Account Name	wasd2pro[redacted].core.windows.net
Premium File Share Name	51ad08e9dd3d4b6e8e7a96dbf5b84f0b
Premium File Share Quota (MB)	683008
Enable Geo Redundant Backup	1
Backup Retention Days	30
Backup Storage Account Name	wasd2prodwe[redacted]1

After you have that information, use the below link to browse the data :

https://xportal.trafficmanager.net/sla/mdm/account/$/dashboards



Click on Account Dashboard – Azure FileShare :



The above example shows a case where a storage latency is there ….

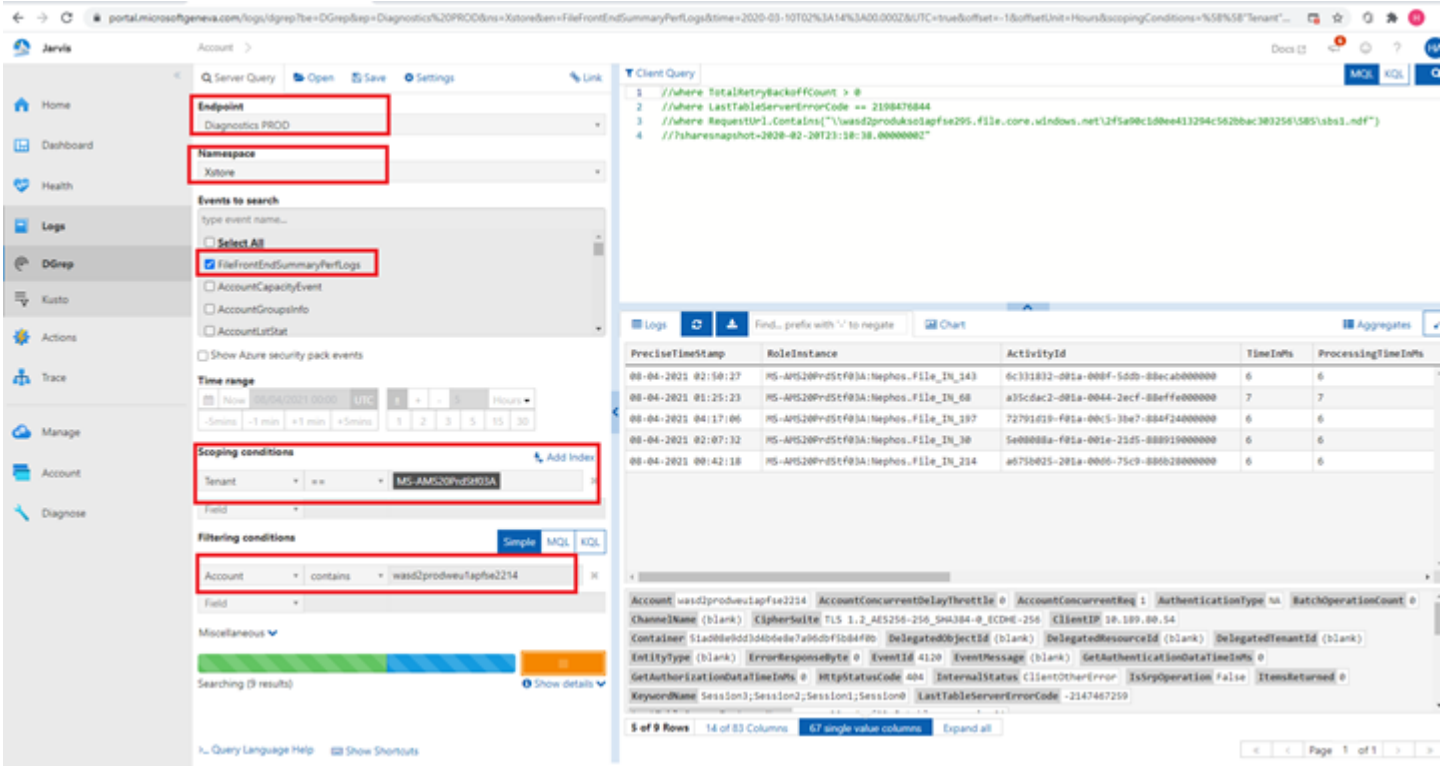
Check the PFS REST IO errors:

Note:

- **IO metrics are randomly sampled and not a complete data set (1 in 1000).**
- **Only Failed IO requests and throttled data is always logged. Please use this to identify and IO operation failure or throttling info only.**

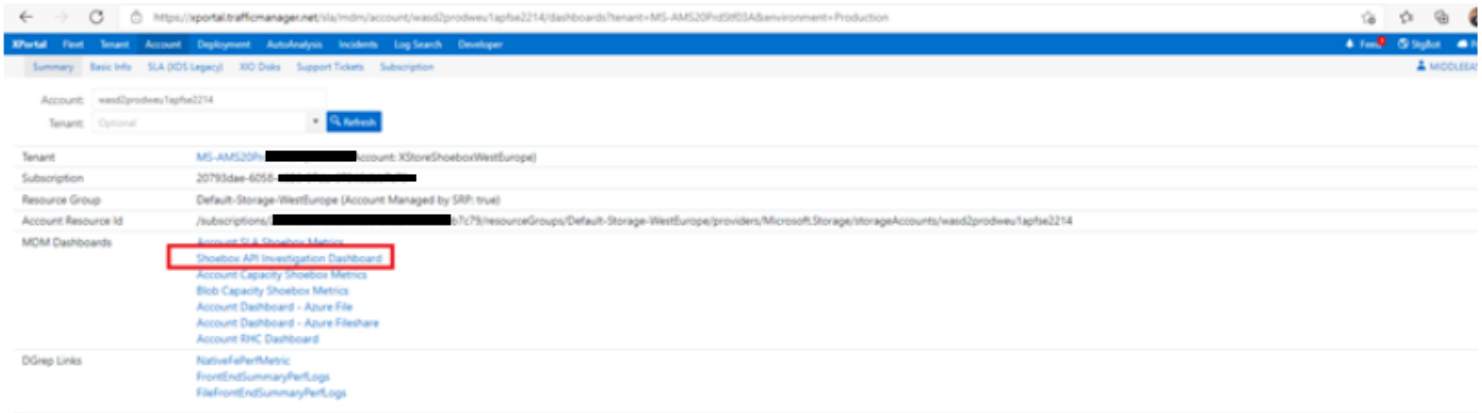
Use this sample template:
https://jarvis-west.dc.ad.msft.net/AE81B76E
Rest perf logs from Jarvis (Diagnostics PROD -> Xstore-> FileFrontEndSummaryPerfLogs)

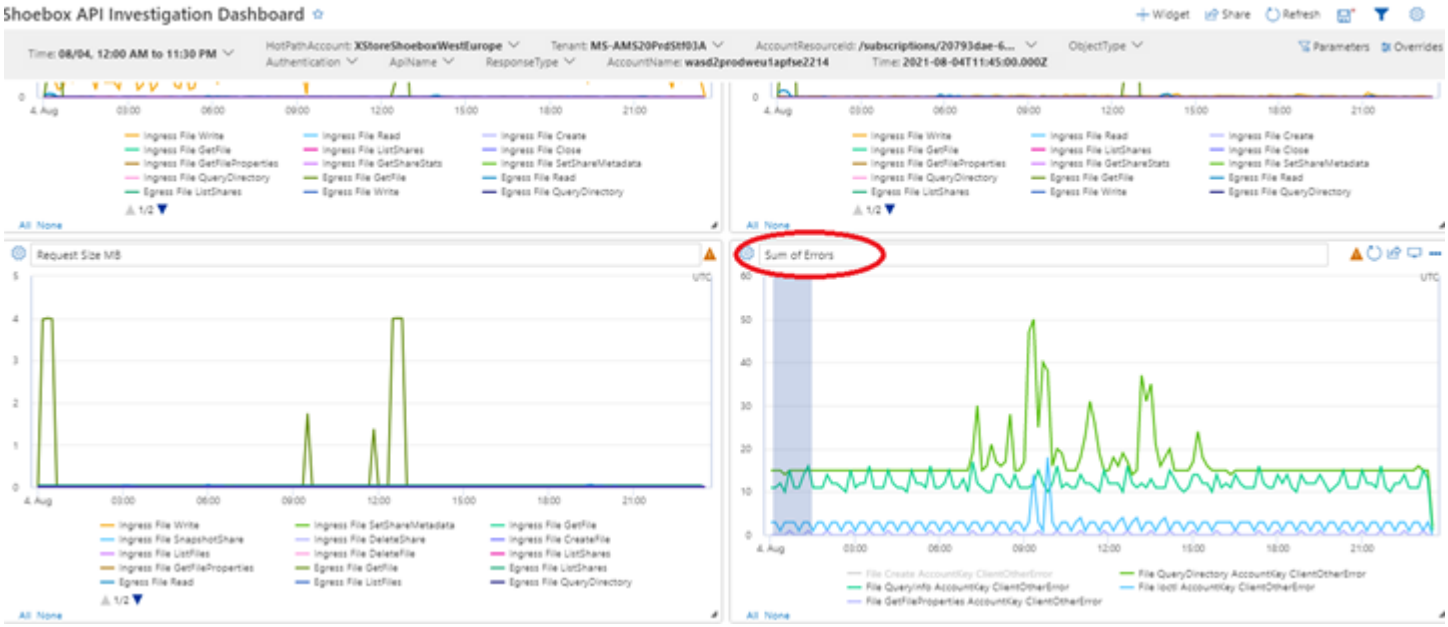
Do add a filter on tenant, account and optionally share (container):



or you can use the previous xportal dashboard:

https://xportal.trafficmanager.net/sla/mdm/account/$/dashboards





if this is a transient issue , please share the below RCA and change the time/servername based on your cases , and if it is ongoing , please file an ICM.

DESCRIPTION:

Higher than expected connection latencies/performance impacting customer application

IMPACT:

Start Time: x/xx/xxxx xx:xx UTC End Time: x/xx/xxxx xx:xx UTC

ROOT CAUSE:

Azure Database for Postgres service uses Azure premium file share storage for storing data. The Azure Files SMB protocol operations are processed by a distributed system with many discrete compute units, such that we achieve high availability, scale and load-balancing. There was a temporary latency observed on the Azure storage cluster at the time of the incident which impacted the DB authentication process during creating connections. Temporary latency spikes are possible due to several reasons, among them a temporary high load on the storage cluster to which the system responds with automatic load balancing. Our monitoring detect this latency and the On call engineers mitigate the issue. We apologize for trouble and we are working to reduce the risk of such events in the future through continuous improvements to our software and hardware.

Next Steps:

We are committed to Improve our load balancing and request retry policies when a scale unit is experiencing higher load than normal.