

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	tr[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].vs.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].e.core.windows.net
> Premium File Share Name	51ad08e9dd3d4b6e8e7a96d0f5b84f0b

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"
```

| 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),

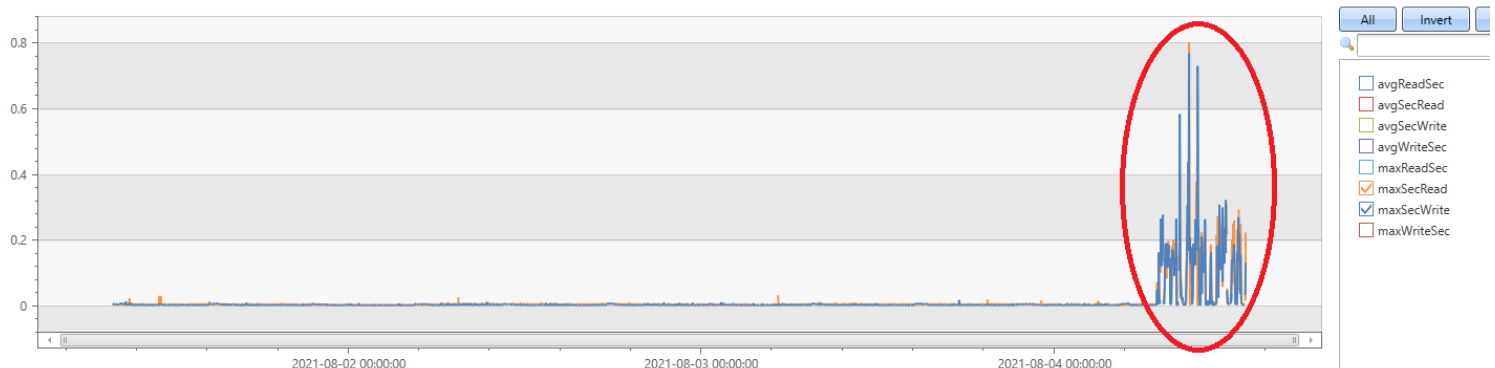
maxSecRead=max(secRead), maxSecWrite=max(secWrite) ,

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]2214
>	Full Premium File Share Storage Account Name	wasd2prod[REDACTED]221451[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](https://xportal.trafficmanager.net/sla/mdm/account/$/dashboards)

The screenshot shows the XPortal web application interface. The URL bar displays: <https://xportal.trafficmanager.net/sla/mdm/account/wasd2prodweu1apfse2214/dashboards?tenant=MS-AMS20PrdStf03A&environment=Production>. The account name is 'wasd2prodweu1apfse2214'. The tenant is 'Optional'. The account details table shows:

Tenant	MS-AMS20PrdStf03A (Shoebox Account: XStoreShoeboxWestEurope)
Subscription	20793dae-6058-4826-97da-67546dbb7c79
Resource Group	Default-Storage-WestEurope (Account Managed by SRP: true)
Account Resource Id	/subscriptions/20793dae-6058-4826-97da-67546dbb7c79/resourceGroups/Default-Storage-WestEurope/providers/Microsoft.Storage/storageAccounts/wasd2prodweu1apfse2214

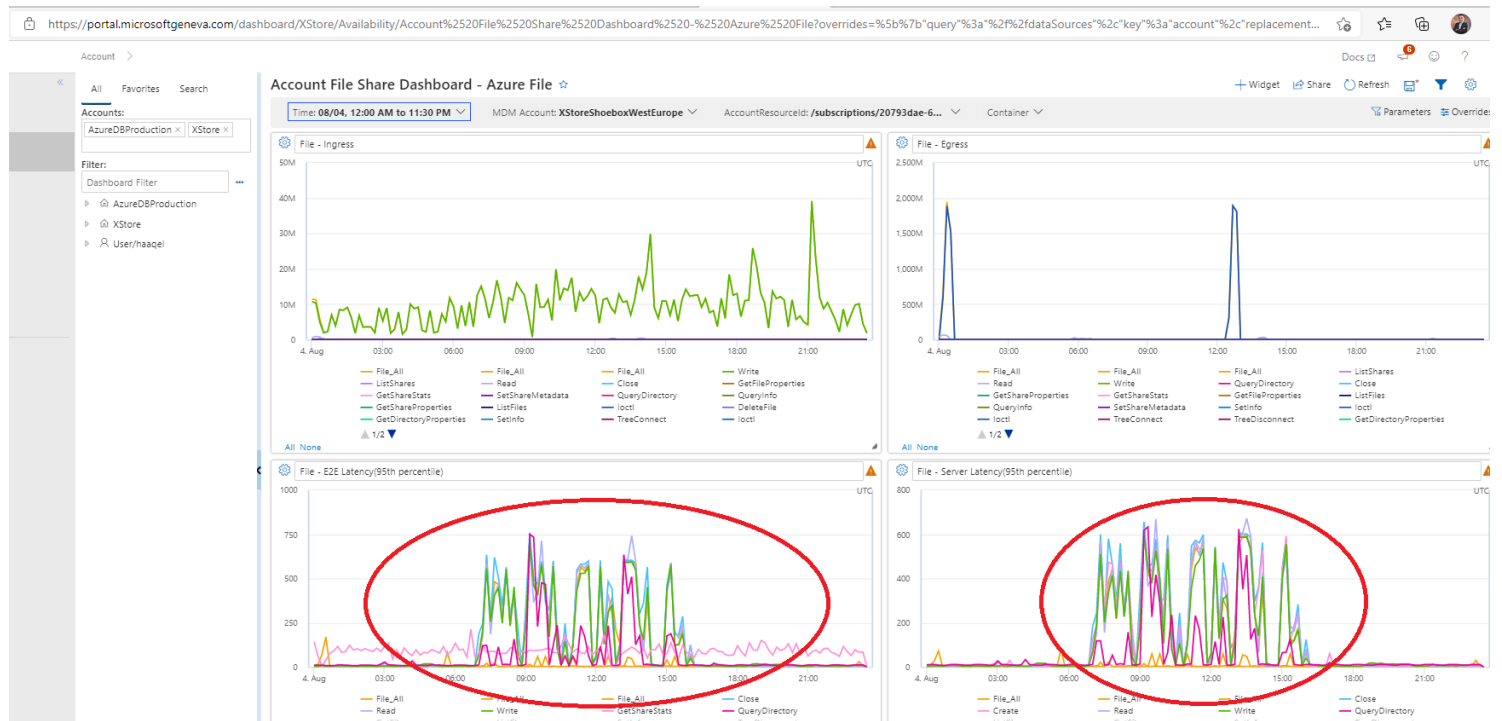
The MDM Dashboards section lists several dashboards, with 'Account Dashboard - Azure Fileshare' highlighted by a red box:

- Account SLA Shoebox Metrics
- Shoebox API Investigation Dashboard
- Account Capacity Shoebox Metrics
- Blob Capacity Shoebox Metrics
- Account Dashboard - Azure File
- Account Dashboard - Azure Fileshare**
- Account RHC Dashboard

The DGreg Links section lists:

- NativeFePerfMetric
- FrontEndSummaryPerfLogs
- FileFrontEndSummaryPerfLogs

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):

The screenshot shows the Microsoft portal interface for configuring a query. The left sidebar contains navigation links: Home, Dashboard, Health, Logs, DGrp, Kusto, Actions, Trace, Manage, Account, and Diagnose. The main area is divided into two panels: 'Server Query' and 'Client Query'.

Server Query Configuration:

- Endpoint:** Diagnostics PROD
- Namespace:** Xstore
- Events to search:**
 - ☒ Select All
 - ☒ FileFrontEndSummaryPerfLogs
 - ☐ AccountCapacityEvent
 - ☐ AccountGroupsInfo
 - ☐ AccountLatency
- Time range:** Now (04/04/2023 00:00 UTC) to 5 hours
- Scoping conditions:** Tenant: MS-AMC20P0D9K0SA
- Filtering conditions:** Account: contains was2prodweu1apfse2214

Client Query:

```

1 //where TotalRetryBackoffCount > 0
2 //where LastTableServerErrorCode == 2198476844
3 //where RequestUri.Contains("\\was2prodweu1apfse2214.file.core.windows.net\\2f5a90c1d0ee413294c562bbac383256\\585\\sbs1.ndf")
4 //!sharesnapshot-2020-02-20T23:18:38.0000000Z"
  
```

Log Results Table:

PreciseTimeStamp	RoleInstance	ActivityId	TimeInPs	ProcessingTimeInPs
00-04-2021 02:50:27	MS-APS20P+ESTF03A:Nephos.File_In_143	6c331832-081a-000f-500f-88ecab000000	6	6
00-04-2021 01:25:23	MS-APS20P+ESTF03A:Nephos.File_In_68	a35cdac2-081a-0044-2ecf-88effe000000	7	7
00-04-2021 04:17:06	MS-APS20P+ESTF03A:Nephos.File_In_197	72791029-f81a-00c5-30e7-804f24000000	6	6
00-04-2021 02:07:32	MS-APS20P+ESTF03A:Nephos.File_In_30	5e00088a-f81a-001e-21d5-888919000000	6	6
00-04-2021 00:42:18	MS-APS20P+ESTF03A:Nephos.File_In_214	a0750d25-201a-0006-75c9-888b28000000	6	6

The bottom section shows a detailed view of the log entry for 'Account: was2prodweu1apfse2214'. It includes fields like ChannelName, Container, EventType, ErrorMessage, and InternalStatus.

or you can use the previous xportal dashboard:

[https://xportal.trafficmanager.net/sla/mdm/account/\\$/dashboards](https://xportal.trafficmanager.net/sla/mdm/account/$/dashboards)

The screenshot shows the xportal dashboard for the account 'was2prodweu1apfse2214'. The dashboard includes sections for Account, Tenant, Subscription, Resource Group, and MDM Dashboards.

Account Details:

- Account: was2prodweu1apfse2214
- Tenant: Optional
- Tenant: MS-AMC20P0D9K0SA
- Subscription: 20793dae-6058-...
- Resource Group: Default-Storage-WestEurope (Account Managed by SRP: true)
- Account Resource Id: /subscriptions/.../resourceGroups/Default-Storage-WestEurope/providers/Microsoft.Storage/storageAccounts/was2prodweu1apfse2214

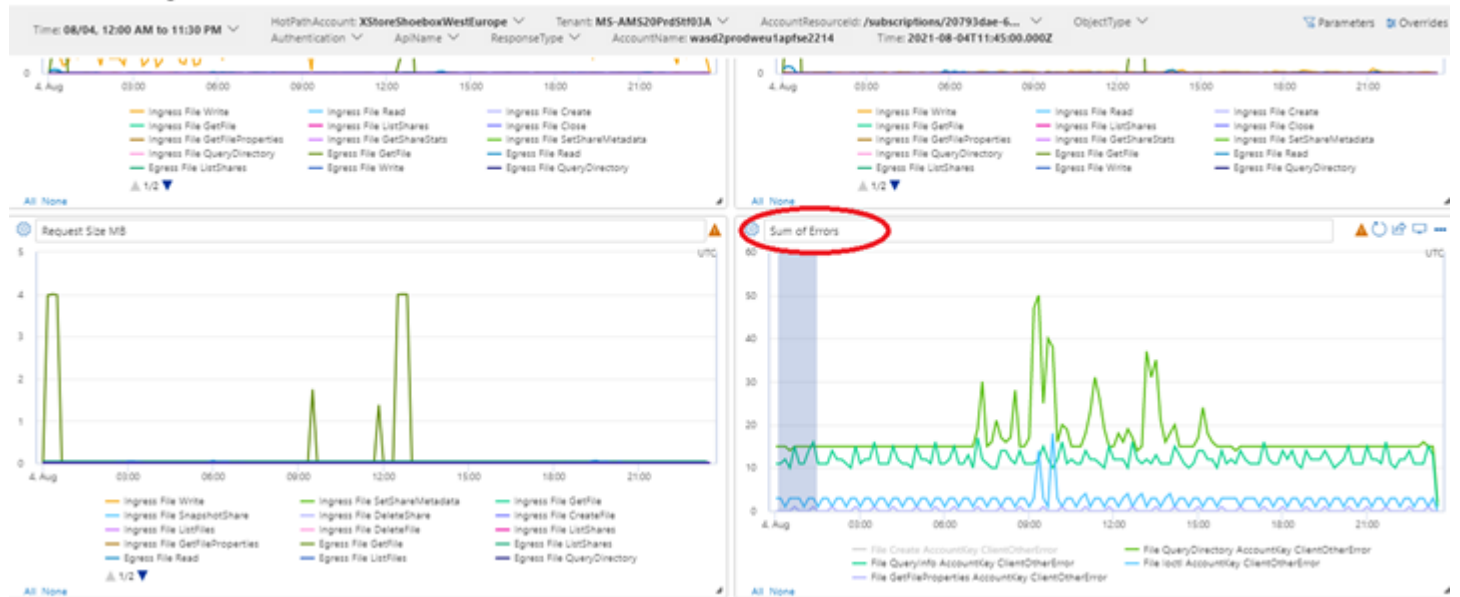
MDM Dashboards:

- Account API Investigation Dashboard (highlighted)
- Account Capacity Dashboard Metrics
- Blob Capacity Dashboard Metrics
- Account Dashboard - Azure File
- Account Dashboard - Azure Fileshare
- Account RHC Dashboard

DGrp Links:

- NativePerfMetric
- FrontEndSummaryPerfLogs
- FileFrontEndSummaryPerfLogs

Shoebox API Investigation Dashboard



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.