Data points that indicate the low memory issue in RDS SQL Server.

**From RDS CloudWatch Matrix:**

FreeableMemory / Total Memory should be > 10%

**DiskQueueDepth** higher than 50 for a long time, meanwhile CPUUtilization can be < 90%, it could be the indicator of insufficient CPU resource if CPUUtility > 90% also.

WriteIOPS, ReadIOPS, WriteThroughput, ReasThrouput are high.

**From RDS Performance inside:**

Under "Tab waits" tab, "PAGEIOLATCH\_EX" and "PAGEIOLATCH\_SH" are on top of the list.

**The following data points must get from query:**

Database **Log file size** keeps on increasing rapidly (especially pay attention when Multi-AZ enabled). Please note that Multi-AZ will cause additional Write IO on primary database.

/\* **PLE should be > 300 seconds** \*/

SELECT

[object\_name],

[counter\_name],

[cntr\_value] AS PLE

FROM sys.dm\_os\_performance\_counters

WHERE [counter\_name] = 'Page life expectancy';

/\* **“page\_fault\_count”** continue to grow indicate low memory \*/

SELECT

physical\_memory\_in\_use\_kb / 1024 AS physical\_memory\_in\_use\_MB,

page\_fault\_count

FROM sys.dm\_os\_process\_memory;

/\* should be > 90%, please note that is data point alone does not accurately present memory pressure \*/

SELECT

CASE

WHEN base.cntr\_value = 0 THEN 0

ELSE (hit.cntr\_value \* 100.0 / base.cntr\_value)

END AS BufferCacheHitRatio

FROM sys.dm\_os\_performance\_counters AS hit

JOIN sys.dm\_os\_performance\_counters AS base

ON hit.object\_name = base.object\_name

AND hit.counter\_name = 'Buffer cache hit ratio'

AND base.counter\_name = 'Buffer cache hit ratio base';

/\* current available memory \*/

SELECT

available\_physical\_memory\_kb / 1024 AS available\_physical\_memory\_MB,

system\_memory\_state\_desc

FROM sys.dm\_os\_sys\_memory;