



RDS Assessment and Right Sizing

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Introduction

The purpose of this analysis is to provide insights and recommendations based on server performance metrics and to suggest potential opportunities for server consolidation, enhancing efficiency and cost-effectiveness.

Data Analysis

Server1:

Logical CPU Count: 48

Max Memory Settings (GB): 1350

CPU Pressure Utilization: 1%

Max Throughput (MB): 435

RDS Recommendation (based on current configuration): db.x1e.16xlarge

Recommendation:

The memory needs to be scaled up due to the current configuration.

Given the low CPU Pressure Utilization, the compute can be scaled down.

Server2:

Logical CPU Count: 32

Max Memory Settings (GB): 125

CPU Pressure Utilization: 2%

Max Throughput (MB): 208

RDS Recommendation (based on current configuration): db.m5.4xlarge

Recommendation:

Memory can be scaled down.

Compute can be scaled down due to lower CPU utilization.

Server3:

Logical CPU Count: 48

Max Memory Settings (GB): 1335

CPU Pressure Utilization: 10%

Max Throughput (MB): 288

RDS Recommendation (based on current configuration): db.x1e.16xlarge

Recommendation:

Memory needs to be scaled up.

Compute can be scaled down given its current usage.

Server4:

Logical CPU Count: 48

Max Memory Settings (GB): 1350

CPU Pressure Utilization: 3%

Max Throughput (MB): 360

RDS Recommendation (based on current configuration): db.x1e.16xlarge

Recommendation:

Memory should be scaled up.

Compute capacity can be scaled down.

Server5:

Logical CPU Count: 48

Max Memory Settings (GB): 1350

CPU Pressure Utilization: 6%

Max Throughput (MB): 373

RDS Recommendation (based on current configuration): db.r5.8xlarge

Recommendation:

Given the server's current state, memory can be scaled down.

Compute can be reduced as well.

Server6:

Logical CPU Count: 16

Max Memory Settings (GB): 50

CPU Pressure Utilization: 9%

Max Throughput (MB): 0

RDS Recommendation (based on current configuration): db.m5.4xlarge

Recommendation:

Memory capacity should be reduced.

There's an opportunity to scale down the compute as well.

Consolidation recommendation:

Performance Metrics:

Server1, Server3, and Server4: These servers have a high logical CPU count of 48 and memory settings in the range of 1335-1350 GB. They are under 100% server memory utilization, but their CPU pressure utilization is relatively low (1%, 10%, and 3%, respectively). These three servers can be a primary target for consolidation since they share similar configurations and workloads, as evidenced by their metrics.

Server2 and Server6: These servers have lower memory settings and a lower logical CPU count. Notably, Server2 has an empty CPU utilization, suggesting it's significantly underutilized and a prime candidate for consolidation. On the other hand, Server6, despite its smaller configuration, is not showing significant performance data either, making it another good consolidation candidate.

Server5: This server stands out due to its collection time of 225 and a server memory utilization of 0%. Its memory settings are at 1350 GB, but it's not utilized. This indicates a potential misconfiguration or underutilization of resources.

Database Characteristics:

All servers run the EE edition of SQL server, which is the Enterprise Edition, allowing for a more straightforward consolidation in terms of software features and capabilities.

The server versions across the board are also consistent, being versions 14 or 15. This minimizes compatibility issues during consolidation.

Recommendations and Consolidation Strategy:

Server1, Server3, and Server4: Given their similar performance metrics, they could be consolidated onto a single more robust machine or cloud instance. However, the memory needs to be scaled up for Server1 and Server3. The CPU can be scaled down for all three servers. The recommendation would be to go with the db.x1e.16xlarge configuration based on their current configuration and load.

Server2 and Server6: Both can be consolidated into a single machine or cloud instance with a configuration around the db.m5.4xlarge or its variants. They have relatively lower memory and CPU settings.

Server5: Due to its distinct metrics, it's recommended to address the underutilization separately. It might be better not to consolidate this server with others but to right-size it based on the actual workload. If memory is indeed not being utilized, then scaling down the memory and moving to a configuration like db.r6i.8xlarge or db.r5b.8xlarge may be more cost-effective.

Storage Considerations:

Most of the servers are recommended to use IO1 for EBS, suggesting high I/O operations. Any consolidation strategy should ensure that the consolidated server can handle the sum of the IOPS and throughput of the individual servers.

Server5 is an exception using GP3, which is general-purpose and may have different performance characteristics. If consolidating, ensure that the storage can handle the I/O needs of all the servers it's consolidating.

In conclusion, there's definite potential for server consolidation, especially among Server1, Server3, Server4, Server2, and Server6. Consolidation can lead to cost savings and more efficient resource utilization. However, the exact strategy should consider the full context, including downtime, migration costs, and potential risks.

Summary:

The servers show varying degrees of performance metrics. Some servers like Server1, Server3, and Server4 show high memory utilization, suggesting a need to scale up the memory. While some servers such as Server2, Server5, and Server6 suggest downscaling in terms of memory. In terms of CPU recommendations, most servers recommend scaling down the compute resources. The RDS recommendations provide insights into the optimal RDS configurations for each server based on various parameters, aiding in making informed decisions for infrastructure optimization. The I/O performance metrics, especially IOPS and Throughput, offer a comprehensive view of the data transaction capabilities of each server. The EBS recommendations further add to the infrastructure optimization strategies. Overall, the report aids in achieving an efficient and cost-effective server environment