

**SQL Server Assessment – {{server\_name}}**

**Performed by: {{performer}} Date: {{month}} / {{day}} / {{year}}**

{% for topic in topics %}

1. **{{ topic.name }}**

{{ topic.description}} – {{ topic.recommendation }}{% for subtopic in topic.subtopics %}

* 1. {{ subtopic.name }} – {{ subtopic.description }} – {{ subtopic.recommendation }}{% endfor %}{% endfor %}

1. **Edition** – Standard Edition is installed.
2. **SQL Server Service Accounts** – Running under domain accounts, which is a good practice.
3. Instant File Initialization – Instance file Initialization is not enabled. Recommend enabling Instant file initialization.
4. Global Trace Flags – Trace flags are not enabled on instance hence we recommend enabling below trace flags.

T3226 - This is used to suppress writing successful backup events to error logs.

T1222- This trace flag is used Writes deadlock info into SQL error log.

T2371: The statistics of a table will only be automatically updated if the number of rows changed exceed a threshold.

1. **Instance Configurations** – Backup compression is enabled, cost threshold for parallelism set to 5, max degree of parallelism set to 1, max server memory set to 24576 MB, min server memory set to 0 MB, optimize for ad hoc workloads is enabled, priority boost not enabled, and remote admin connections are enabled.
2. **Memory** 
   1. Memory Dumps - No memory dumps
   2. System Memory – Available physical memory is high. No memory pressures.
   3. Process Memory – Process physical memory low” and “virtual memory low” is FALSE. This indicates the instance is not under internal memory pressure.
   4. Ring Buffer Memory Warnings – Sporadic RESOURCE\_MEMPHYSICAL\_LOW but not significant to indicate server is experiencing memory pressure.
   5. Buffer Usage by Database – **ADSE & 1StaffAnalytics** is utilizing max buffer.
   6. Page Life Expectancy (PLE) – PLE is **33712** seconds, which is good.
   7. Plan Cache Detail – Cache type **Adhoc** is on top. No recommendations
3. **CPU**
   1. CPU Utilization History – Looking at CPU trend, CPU usage is normal.
   2. CPU Utilization by Database – **ADSE** is eating most of the CPU [63%]
   3. Signal Waits – Signal waits are 0.01%; resource waits are 99.99%.
4. **Wait Types** SOS\_WORK\_DISPATCHER are the highest wait types nearly 99.94%

**SOS\_WORK\_DISPATCHER** – wait type represents a sum of the total time for workers that don’t have tasks assigned to them. This appears to be a benign wait that can be filtered out of any queries on wait stats queries. When I first saw this wait type, I was hoping that it was some sort of representation of CPU idle time.

1. **SQL Agent** 
   1. SQL Agent Jobs – Few jobs have owners other than ‘sa’. Needs to be review data sheet.
   2. SQL Agent Alerts –823, 824, 825, 829, 832 alerts are configured. No recommendations.
2. **Security**
   1. Logins with Blank Passwords – Below SQL logins are with blank password.

perminvoices

katief

donmoniques

erikl

latoraw

jacquelineg

cheyanned

kevinh

michael.samuels

leila.bryant

kelseyh

magdalena.rutz

rquarrie

gage.mitchell

alex.majewski

jspruiell

chris.henderson

michaels

allison.gast

scott.smith

* 1. Logins with Password Equal to Name – None
  2. Sysadmin Server Role Members – ADDISON\ADM.RJOHNSON have sysadmin permissions. Recommend to review access.

1. **Database IO**
   1. Database Volume Information – All drives had enough free space.
   2. IO Utilization by Database – Database **ADSE** most IO approx. -75%.
   3. Database Latency – Average IO stall for **tempdb** is higher. Please review the data collection sheet for more details.
   4. Volume Latency - Overall latency for T drive is higher i.e 946.6 ms. Recommend optimizing it
2. **Database Configuration**
   1. Database File Location – Data file on D drive, Log files on E drive. It’s a good practice.
   2. Database File Size & Space – Data file for DB 1StaffAnalytics have less free space. Needs to be renewed and decided.
   3. TempDB – T drive hold tempdb files, this is dedicated drive for tempdb which is a best practice. TempDB hold 4 data files equal in size.
   4. Database Autogrowth – We are good for user database, for system database we need to review as the autogrowth is in percentage.
   5. Database Settings – All DB’s except **1StaffAnalyticsare** in SIMPLE recovery. For all DB’s page verify option is CHECKSUM), and auto\_shrink and auto\_close both are not enabled.
   6. Databases without Log Backup – Database model and TADD are in full recovery model and without log backup. Database TADD is showing offline.
   7. VLF Count –None reported.
   8. Untrusted Foreign Key & Check Constraints – 1 Foreign key (ADSE) and 4 check constraints (ADSE, DYNAMICS) were reported.
   9. Database Corruption – None.
3. **Top Queries**
   1. Top Worker Time Queries – Top 10 worker time queries are attached in sheet, please refer.
   2. Top Logical Read Queries – Top 10 logical time queries are attached in sheet, please refer.
   3. Top Elapsed Time Queries – Top 10 Elapsed time queries are attached in sheet, please refer.
4. **Index Analysis** – Most of this data is intended to be reviewed by DBA for further analysis.
   1. Hypothetical Indexes- None.
   2. Most Costly Unused Indexes – found 366 indexes on ADSE, DYNAMICS. Refer data sheet
   3. Missing Indexes – Found 47 indexes on ADSE, DYNAMICS. Refer data sheet
   4. Missing Index Warnings – None
   5. Statistics Health – Statistics are outdated few stats are older than 100 days. We recommend the configure stats maintenance tasks.
   6. Index Fragmentation – Found 63 Heap type indexes having more than 50% fragmentations.
   7. Active Heaps – Multiple active heaps identified in different DBs. Refer data sheet.
   8. Duplicate Indexes – 19 duplicate indexes found. Recommend removal if truly identical. Refer data sheet.
   9. Overlapping Indexes – 98 overlapping indexes found. Refer data sheet.
5. **Maintenance**
   1. Database Backups – Full backups are scheduled. No recommendations
   2. Database Integrity Checks – Integrity checks for DYNAMICS & ADSE performed in month of March, 21 and have be discarded in maintenance job.
   3. Database Index & Statistic Maintenance – Index maintenance is scheduled through job **Navi\_DatabaseWeeklyMaintenance-ALL\_DATABASES**.