**-Highlights-**

SQL best practices/standardization:

1. TempDB multiple fixed size data files based on core count, implemented across all production SQL instances to help reduce tempdb related performance issues.
   1. Largest impact = SIMS nightly processing
2. SQL trace flag T1118 implemented across all Production SQL instances to help further reduce/eliminate tempdb related performance
   1. Tells SQL Server to avoid the use of ‘mixed-extents’ and to use full 64k extents.
   2. Reduces overhead in tracking what data is in which extent.
3. Granted the ‘Perform Volume Maintenance’ local security policy to all SQL Server service accounts to greatly reduce the time needed to initialize new data & log files.
   1. Continual adjustment of data & log file growth settings to reduce overhead and potential physical data fragmentation.
4. Created standard Integrity check jobs on all SQL instances which did not have any currently configured.
   1. Guards against data loss caused by data corruption
5. Created standard index maintenance jobs on all SQL instances, which did not have any currently configured and introduced new ‘targeted’ maintenance on systems which required some fine tuning to help with specific processes.
   1. Improved performance on many different apps (both inward and outward facing):
      1. SIMS
      2. RacingSnail
      3. OmniPark
      4. Ticker
      5. Gemini
      6. SCOM
6. Ongoing development of a standardized SQL Server installation procedure for new instances.
   1. Includes best practices for storage layout, instance/db configuration, maintenance jobs, etc
   2. Security hardening
   3. Auditing
   4. Backups
7. Implemented ‘read only routing’ in all HYWD Always On environments to prevent overloading the primary instance in the case of failovers.
   1. In the past, manual intervention was required to flip the DB connection strings for the apps.
8. Reconfigured the SQL Agent job history (on instances that required it) to keep some history for all jobs
   1. Previously the high-volume jobs were pushing out all other job history entries.
   2. Greatly helps in troubleshooting SQL job failures.
9. Migrated Normal from TierPoint to Spokane with minimal downtime
   1. Established that the method for stretching the Always On between data centers and failing over could be viable for our HYWD migration as well.
10. Automated AD information collection to a centralized location for security reports
    1. Was previously a manual cut & paste type process
11. SQL Meta-Data Collection <walk through>

To Do:

1. Begin work on a plan to build a SQL restore box that can handle test restores of any SQL Server in the environment
   1. Was briefly brought up at State Farm audit and passed over
   2. We currently have no idea if our backups are good until someone requests a restore
   3. I would like to automatically test restores so we can be sure that our backups are good
2. Work on scripts/jobs to check Always On instances for any differences and either alert or rectify the discrepancy.
   1. Occasionally jobs/users/etc get added to one node but not another, this can lead to issues if there is a failover
3. New SCOM configuration for SQL monitoring and alerting