Thomson Reuters Aumentum

Enhanced Simple Search

ESSTool Guide

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ESSTool.ps1

OVERVIEW

The *PowerShell* PS script `ESSTool.ps1` is a simple tool for managing certain operations of *Enhanced Simple Search* (e-SS), which is a feature of the Aumentum product for providing faster searching of broader data sets.

For details enabling e-SS, see the *Aumentum Product Installation Guide*.

For Aumentum operational use of e-SS, consult the application help system.

INPUT SWITCHES AND PARAMETERS

The PS script supports four independent command switches with associated required parameters. Note the leading dash (–) when typing a switch.

`-start-service`
Stops the Sync Service.

Required Parameter

- `-service-path`

  Full-path to where the Sync Service is installed.

- `-instance`

  Instance name of the installed Sync Service.

`-stop-service`
Starts the Sync Service.

Required Parameter

- `-service-path`

  Full-path to where the Sync Service is installed.

- `-instance`

  Instance name of the installed Sync Service.

`-rebuild-all`
Rebuilds the e-SS full search index while pausing the Sync Service. See Approach 2 section below for more details on how to execute this command.

Required Parameters

- `-service-path`

  Full-path to where the Sync Service is installed.

- `-instance`

  Instance name of the installed Sync Service.

`-crawl-progress`
Shows the crawl progress.

This command is useful following the `rebuild-all` command.

No parameter is required.

E-SS DATA SYNCHRONIZATION MANAGEMENT

Continuous data synchronization enables e-SS to respond with accurate results as defined by the user's search criteria.

Specifically, data synchronization continually merges changes from 11 source tables related to Aumentum managed legal party data into a dedicated e-SS table for responding more quickly to search requests.

As a process, data synchronization is managed silently using a background Windows operating system service, called `Sync Service`, which is designed for processing large volumes of data changes. Nevertheless, there may be unique circumstances when the Sync Service is unable to keep up, such as when external data conversion scripts are executed against the Aumentum database, or high-volume Aumentum batch job update hundreds of thousands of records in short periods.

In these extreme cases, which should not be encountered in the normal day-to-day operations of Aumentum, there are two approaches for managing e-SS:

Approach 1: Pausing the `Sync Service`

Pause the `Sync Service` using the ESSTool.ps1 whenever executing high volume changes on one or more of the 11 legal party related source tables as this will allow the execution process to run more quickly.

Implications

1. Use this approach when users must continue to access Aumentum to perform searches even if the results returned may be incomplete given the `Sync Service` is temporarily paused.
2. Even though the `Sync Service` is paused, SQL Server continues to track changes for subsequently updating to the e-SS table once the service is resumed. Thus, it is highly recommended that Aumentum users make minimal or no changes affecting the legal party related data during this time.
3. Upon restarting the `Sync Service`, the accrued tracked changes are applied in increments which, in turn, will trigger SQL Server to crawl the table to updates its full-text index. Thus, until the crawl completes, incomplete search results may be returned by e-SS.
4. It is important to note that the SQL Server Change Tracking policy is set for a retention of 96 hours (4 days). Therefore, the recommendation is NOT to pause the `Sync Service` for more than 72 hours (3 days); otherwise, the service may fail to register in time all of the tracked changes before SQL Server overwrites the oldest pending changes with newer ones.
    a. Where it is necessary to pause the `Sync Service` for more than 72 hours, see approach 2 below.

Steps

1. Stop the `Sync Service`:
    a. `ESSTool.ps1 stop-service -service-path <DIR PATH to Sync Service>`
2. Perform desired update operation(s) against the database.
3. Restart the Sync Service:
    a. `ESSTool.ps1 start-service -service-path <DIR PATH to Sync Service>`

Approach 2: Rebuilding the Search Index

If it is necessary to rebuild the full-text search index, do so when there is minimal activity against database.

Implications

1. Users should NOT access Aumentum when performing a `rebuild-all` operation.
2. Restrict non-essential SQL Server jobs and activities from running during this time.
3. Typically, this operation may take up to 1 hour to complete, after which users will be able to access Aumentum.

4. There will be a period of up to 2 hours where search results may be incomplete after the `rebuild-all` operation completes. Thus, it is recommended to allow for a 3-hour grace period before users start using Aumentum again.
5. Note that full-text indexing will be disabled during the duration of the `rebuild-all` operation to speed up the time for the operation to complete.
6. Note that Change Tracking will be reset. Hence, all recorded changes not yet processed will be truncated.

Steps

1. Stop the Aumentum Web Application and the Legal Party Search service in IIS.
2. Ensure no other processes are running in SQL Server. If this is not possible, ensure processes do NOT make changes to one or more of the 11 legal party related tables.
3. Using services.msc, locate the Windows Service for your instance that has a name that starts with "TAGov LegalParty Sync Coordinator".
    a. View the properties of the service and determine the <DIR PATH> and <INSTANCE NAME>.
    b. <DIR PATH> is the first value in the “Path to executable” value minus the executable file name (TAGov.Process.Sync.LegalPartySearch.Coordinator.exe).
        i. For example: `D:\AumentumWinServices\Process.Sync.LegalPartySearch.Coordinator`
    c. <INSTANCE NAME> is found in parenthesis in the service “Display name” value.
        i. For example: `Aumentum`
4. Open a Windows Powershell command prompt
5. Change Directory to the installed Aumentum Services Legal Party Search Operations folder location.
    a. For example: D:\inetpub\wwwroot\Aumentum-Services\Service.LegalPartySearch\operations
6. Execute the following command to rebuild all:
    a. `.\ESSTool.ps1 -rebuild-all -service-path “<DIR PATH to Sync Service>” -instance “<INSTANCE NAME>”`
        i. `For example: .\esstool.ps1 -rebuild-all -service-path "D:\AumentumWinServices\Process.Sync.LegalPartySearch.Coordinator" -instance "Aumentum"`
7. Start the Aumentum Web Application and the Legal Party Search service in IIS.
8. Optionally, run the following command periodically to check the progress of the search crawl:
    a. `ESSTool.ps1 -crawl-progress`

Monitoring

Use of an *Application Monitoring Tool* (APM) is recommended (e.g., AppDynamics, Foglight) to track the performance metrics and optionally build alerts for e-SS.

- Timeout. A timeout occurs when one hour is exceeded processing e-SS tracked changes. This may indicate pressure on the SQL Server. Therefore, consider approach 1.
- When total tracked changes to be processed exceeds 3.6 million. This implies more than 3 hours are needed to process the tracked changes. Therefore, consider approach 2.

Install Performance Counters

Access the SQL Server as an Administrator and execute script `AddPerfCounters.sql.`

Uninstall Performance Counters

Access the SQL Server as an Administrator and execute script `RemovePerfCounters.sql`.