

# SRx - Test Documentation

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Core Tests	Description	Comments
Test-AllowPartialResults	Check if AllowPartialResults is enabled for the SSA	Partial results can increase search availability, especially in farms with a large number of search partitions. However, partial results can also mask back-end problems and frustrate users if search results come back without the specific items they are looking for.
Test-AzureADSync	Verify Azure AD Sync	Only applies to Cloud SSA. If directory synchronization is disabled or running infrequently, newly created accounts may not be able to access SharePoint Online. It may also cause existing users to have the wrong level of access due to delays in replicating group membership information.
Test-AzureADUserPasswordSync	Password synchronization allows users to manage a single password for their on-premise and SharePoint Online account. Additionally, with ADFS, users only have to provide their credentials once when accessing resources, regardless of whether they reside on-premise or online.	Only applies to Cloud SSA. This rule is not applicable when AAD password synchronization is not enabled. If password synchronization is disabled or not running frequently enough, it may disrupt the same sign-on or single sign-on experience for some users.
Test-FarmAdminSyncTimerJob	Tests that the 'Application Server Administration Service Timer Job' (aka: 'job-application-server-admin-service') has recently run on each of the Search servers in the farm	On all servers with the SP Server Search Service Instance started, this administrative Timer Job runs once a minute to initiate: <ul style="list-style-type: none"> <li>Service Instance synchronization, which may involve starting the physical process and provisioning any resources</li> <li>Synchronizing configuration with the Search Admin DB including: <ul style="list-style-type: none"> <li>Propagating schema updates throughout Search system</li> <li>Persisting Content Source settings to registry of Crawlers</li> <li>Synchronizing the Search Topology including activation or deactivation of components from the host</li> <li>Persisting Constellation configuration to the Admin DB</li> <li>Trigger checks for initiating a Master Merge of the Index</li> <li>Ensures the Legacy Admin is running on the Primary Admin</li> </ul> </li> </ul>
Test-FarmCoreServiceProxies	Verifies all service proxies search depends on are functional.	If certain service applications and their associated proxies are missing in a farm, it may limit search functionality.
Test-FarmDefaultSSAProxy	Tests that the SSA Proxy for this SSA is defined as the default in all Proxy Groups	Web Applications consume search via the SSA Proxy. By default, the out of the box search web parts can only consume the default SSA in a Proxy Group.
Test-FarmSSAName	SSA count	While multiple SSAs are supported, it is recommended to have only one SSA per farm.
Test-FarmServiceInstances	Tests that the Search related SharePoint Service Instances are 'Online' where applicable	Started on all Search servers: <ul style="list-style-type: none"> <li>Search Host Controller Service</li> <li>SharePoint Server Search</li> <li>SSP Job Control Service</li> <li>Microsoft SharePoint Foundation Administration</li> <li>Microsoft SharePoint Foundation Timer</li> </ul> Started on applicable servers: <ul style="list-style-type: none"> <li>Search Administration Web Service (w/ Admin comps)</li> <li>Search Query and Site Settings Service (w/ QPCs)</li> </ul>
Test-FarmULSLogging	Test ULS logging level.	Setting and leaving logging levels and Verbose or VerboseEx increases the size of log files dramatically.
Test-MsolServicePrincipalCred	Tests for valid MSOL service principal certificate	Only applies to Cloud SSA. Hybrid workloads will not work if the SharePoint service principal certificate is missing or expired.
Test-MsolUsers	MSOL licensing report	Only applies to Cloud SSA. Unlicensed users will not be able to use SharePoint Online.
Test-OSPingSearchServer	Test connectivity to all Search servers	
Test-OSPingSQLServer	Test connectivity to all Search SQL servers	Handles SQL Aliases
Test-OSPowerPlan	Validates all search servers are using the 'High Performance' power plan.	Server default is 'Balanced' power plan. This powers down cores, drives, etc., during low usage periods. Search needs all resources available at all times to ensure latency is not introduced into the system.
Test-OSProcessRunning	Confirm all Search component related processes are running on all Search servers	Verifies that a corresponding process exists for each component (mssearch.exe for crawl components and nodrunner.exe for each of the Juno components)
Test-OSServiceRunning	Confirm all Search services are running on all Search servers	On each Search server, checks the status for "SharePoint Server Search", "SharePoint Search Host Controller", "SharePoint Administration", and the "SharePoint Timer Service".
Test-OSVolumeProperties	Test volume properties settings for compression,	Disk performance (IOPS) can be negatively affected by disk volume level

	block size, and volume indexing.	compression or if indexing is enabled. Search indexers have best read/write throughput at 64k block sizes.
Test-SRxLogSize	Monitor and clean up SRx's own logs.	
Test-SSAAdminCompSync	Validate search admin components are in sync with configuration.	There should only be a single primary admin component, and it should match the SSA configuration.
Test-SSAComponentState	Confirm all Search components in the topology are active	
Test-SSACrawlNotStuckInStarting	Confirms Crawls are not "stuck" in Starting state	Flags an error if more than 10 minutes passes since the 'Request' time of a that applicable Crawl
Test-SSADatabaseSizingLimits	Confirms all Search databases are within recommended sizing limits	Validates both the average and total number of items in each Crawl and Link Store DBs as well as physical sizing requirements
Test-SSAEndPointAdminWeb	Confirm search crawl admin endpoint can be reached	If the crawler admin service has no published endpoints, it may not be possible to manage content sources and crawls.
Test-SSAEndPointSQSS	Confirm Search Query and Site Settings endpoints can be reached	In SharePoint 2013, the Search Query and Site Settings (SQ&SS) service is the entry point for search queries from the Web Front Ends. If SQ&SS endpoints are unreachable it may lead to failed queries.
Test-SSAHasContentSources	Confirms SSA has at least one Content Source	If the legacy Admin (e.g. \$xSSA.AdminComponent) is not currently provisioned (or is unhealthy), this test may report zero content sources
Test-SSAHasMultiAdminComps	Confirm Search admin component is configured for fault tolerance	
Test-SSAIndexDiskReports	Reports extensive disk information for Search	Reports failures if unable to attain volume info or disk sizing details. Confirms there is enough free disk space for each replica to complete a Master Merge based on an *estimated size for that merge to complete <ul style="list-style-type: none"> <li>The amount of space needed to complete a Master Merge is estimated by multiplying the Checkpoint size by 2.5x</li> </ul>
Test-SSAIndexDocumentCount	Reports total searchable items in the index	Reports index partitions document counts. Confirms a replica holds less than 10/20 million items (warns when approaching this threshold and errors if exceeding)
Test-SSAIndexReplicaCount	Confirm Search indexing components are configured for fault tolerance	
Test-SSAIsOnline	Confirms SSA is online	
Test-SSAMemorySize	Evaluates whether or not search servers meet the guidance for search components memory sizes	
Test-SSANoServerIdMismatch	Confirms Search topology matches farm components	If there is a mismatch in Server ID between the search topology and the farm, the Search admin component may generate errors and fail to maintain the search configuration on the server in question.
Test-SSANoTopoChangeOccurring	Verifies a Search topology activation is not in progress.	A healthy search topology should not be in the 'Activating' or 'Deactivating' state except for during scheduled maintenance windows.
Test-SSANotPaused	Confirms SSA is not paused	Reports pause reason if paused
Test-SSASchemaProperties	Validates the number of Managed and Crawled Properties are below boundary guidelines.	Automated processes can unknowingly trigger auto-creation of properties. A large search schema can introduce significant overhead in content processing and topology maintenance in SharePoint 2013. These issues have been mitigated in SharePoint 2016. SharePoint Search supports up to 500,000 crawled properties and 50,000 managed properties.
Test-SSASharedWithEveryone	Logs content shared with 'Everyone'.	When content is shared with the Everyone object, anyone being able to access the web application will be able to view the content, even anonymous users. Microsoft recommends that content owners review the content to verify that this level of sharing was intended.

Premier Tests	Description	Comments
Test-ContentSourceSchedules	Identifies content sources with a full crawl scheduled.	Scheduling a Full Crawl is not recommended without justification.
Test-ContentSourceStatusCount	Collects content source status for reporting	
Test-SSAContentSourceThresholds	Tests Content Sources for various configurable thresholds	Receive notifications when crawl properties don't meet specified thresholds. For example, crawl duration, number of security updates, number of deletes, processing speed (dps), etc....
Test-CrawlFreshnessData	Reports a Crawl freshness summary	
Test-CrawlVisualizationData	Collects and processes crawl history data for visualizing crawl activity.	Data collection for informational purposes.
Test-FarmSitesNoCrawl	Counts the number of Webs with NoCrawl set to True, excluding Enterprise Search Webs, which are NoCrawl by default.	This is for informational purposes.
Test-IndexNewestItem	Reports time since last item was crawled.	

Test-MMVisualizationData	Collects and processes master merge history data for visualizing merge activity.	Data collection for informational purposes.
Test-SearchPathHandles	Test verifies no non-system and non-search processes are accessing files in search paths.	Processes (e.g. Anti-Virus, backup utilities, etc.) which read lock search indexing files negatively affect performance and significantly increase the chance of index corruption.
Test-SRxConfiguration	Reports SRx install path.	This is for informational purposes.
Test-SSAQPSTheoretical	Calculates theoretical QPS peak limits given search topology and resources (e.g. cores).	
Test-SSAQueryLatency	Tests QPS and query latency averages over a 15 minute window. Generates an alert if QPS or query latency exceeds set thresholds.	
Test-SSARelevancy	Records weekly snapshots of top 20 queries and the top 20 results for each query. Generates an alert if notable variance between the reports is detect.	Variance in top 20 queries indicates that user behavior has changed. Variance in top 20 search results indicates that relevancy has changed.

Example Tests	Description	Comments
Test-CallToExternalScript	Example script which calls to an external PowerShell script.	Proof-of-concept test that provides a wrapper to any external script.