# Microsoft Recommended Guidelines & Limits for SharePoint 2013

The tables in this document are from Microsoft's article <u>Software boundaries and limits for</u> <u>SharePoint 2013</u>. The information is only provided for your convenience as a quick reference guide. Please check out the original Microsoft article on the Web for the most current information.

The software boundaries and limits in this article apply to:

- 1. SharePoint Foundation 2013
- 2. SharePoint Server 2013 Standard
- 3. SharePoint Server 2013 Enterprise
- 4. Microsoft Project Server 2013

This article describes software boundaries and limits of SharePoint Server 2013. These include the following:

- Boundaries: Static limits that cannot be exceeded by design
- **Thresholds:** Configurable limits that can be exceeded to accommodate specific requirements
- Supported limits: Configurable limits that have been set by default to a tested value

Limit	Maximum value	Limit type	Notes
Web application	20 per farm	Supported	We recommended limiting the number of web applications as much as possible. Create additional host named site collections where possible instead of adding web applications.
Zone	5 per web application	-	The number of zones defined for a farm is hard- coded to 5. Zones include Default, Intranet, Extranet, Internet, and custom.
Managed path for host- named site collections	20 per farm	Supported	Managed paths for host-named site collections apply at the farm level. Each managed path that is created can be applied in any Web application.
Managed path for path-based site collections	20 per web application		Managed paths are cached on the web server, and CPU resources are used to process incoming requests against the managed path list. Managed paths for path-based site collections apply at the Web application level. You can create a different set

#### Web Application Limits

			of managed paths for each Web application. Exceeding 20 managed paths per web application adds more load to the web server for each request. If you plan to exceed twenty managed paths in a given web application, we recommend that you test for acceptable system performance.
Solution cache size	300 MB per web application	Threshold	The solution cache allows the InfoPath Forms service to hold solutions in cache in order to speed up retrieval of the solutions. If the cache size is exceeded, solutions are retrieved from disk, which may slow down response times. You can configure the size of the solution cache by using the Windows PowerShell cmdlet Set-S.

### Web Server and Application Server Limits

Limit		Limit type	Notes
•••	10 per web server		<ul> <li>The maximum number is determined by hardware capabilities. This limit is dependent largely upon:</li> <li>The amount of memory allocated to the web servers</li> <li>The workload that the farm is serving, that is, the user base and the usage characteristics (a single highly active application pool can utilize 10 GB or more)</li> </ul>

#### **Content Database Limits**

Limit	Maximum value	Limit type	Notes
Number of content databases	500 per farm	Supported	The maximum number of content databases per farm is 500. With 500 content databases per web application, end user operations such as opening the site or site collections are not affected. But administrative operations such as creating a new site collection will

			experience decrease in performance. We recommend that you use Windows PowerShell to manage the web application when a large number of content databases are present, because the management interface might become slow and difficult to navigate.
Content database size (general usage scenarios)	200 GB per content database	Supported	We strongly recommended limiting the size of content databases to 200 GB, except when the circumstances in the following rows in this table apply. If you are using Remote BLOB Storage (RBS), the total volume of remote BLOB storage and metadata in the content database must not exceed this limit.
Content database size (all usage scenarios)	4 TB per content database	Supported	<ul> <li>Content databases of up to 4 TB are supported when the following requirements are met: <ul> <li>Disk sub-system performance of 0.25 IOPs per GB. 2 IOPs per GB is recommended for optimal performance.</li> <li>You must have developed plans for high availability, disaster recovery, future capacity, and performance testing.</li> </ul> </li> <li>You should also carefully consider the following factors: <ul> <li>Requirements for backup and restore may not be met by the native SharePoint Server 2013 backup for content databases larger than 200 GB. It is recommended to evaluate and test SharePoint Server 2013 backup and alternative backup solutions to determine the best solution for your specific environment.</li> <li>It is strongly recommended to have proactive skilled administrator management of the SharePoint Server 2013 and SQL Server installations.</li> </ul></li></ul>

Content	No explicit content		<ul> <li>2013 may necessitate refactoring (or splitting) of data into multiple content databases. Seek advice from a skilled professional architect and perform testing to determine the optimum content database size for your implementation. Examples of complexity may include custom code deployments, use of more than 20 columns in property promotion, or features listed as not to be used in the over 4 TB section below.</li> <li>Refactoring of site collections allows for scale out of a SharePoint Server 2013 implementation across multiple content databases. This permits SharePoint Server 2013 implementations to scale indefinitely. This refactoring will be easier and faster when content databases are less than 200 GB.</li> <li>It is suggested that for ease of backup and restore that individual site collections within a content database be limited to 100 GB. For more information, see <u>Site collection limits</u>.</li> <li><b>Important:</b></li> <li>Content databases of over 4 TB, except for use in document archive scenarios (described in the row below), are not recommended. Upgrading of site collections within these content databases is likely to be very difficult and time consuming. It is strongly recommended that you scale out across multiple content databases.</li> <li>Content databases with no explicit size limit</li> </ul>
inatanase size – II	database limit	Supported	for use in document archive scenarios are

archive			supported when the following requirements
scenario)			are met:
			<ul> <li>You must meet all requirements from the "Content database size (all usage scenarios)" limit earlier in this table, and you should ensure that you have carefully considered all the factors discussed in the Notes field of that limit.</li> <li>SharePoint Server 2013 sites must be based on Document Center or Records Center site templates.</li> <li>Less than 5% of the content in the content database is accessed each month on average, and less than 1% of content is modified or written each month on average.</li> <li>Do not use alerts, workflows, link fix- ups, or item level security on any SharePoint Server 2013 objects in the content database.</li> </ul>
			Note: Document archive content databases can be configured to accept documents from Content Routing workflows.
			For more information about large-scale document repositories, see <u>Estimate</u> <u>performance and capacity requirements for</u> <u>large scale document repositories in</u> <u>SharePoint Server 2010</u> , and the <u>Typical large-</u> <u>scale content management scenarios</u> section of the article <u>Enterprise content storage</u> <u>planning (SharePoint Server 2010)</u> .
Content database items	60 million items including documents and list items	Supported	The largest number of items per content database that has been tested on SharePoint Server 2013 is 60 million items, including documents and list items. If you plan to store more than 60 million items in SharePoint Server 2013, you must deploy multiple content databases.

Site collections per content database	10,000 maximum (2,500 non- Personal site collections and 7,500 Personal Sites, or 10,000 Personal Sites alone)		We strongly recommended limiting the number of site collections in a content database to 5,000. However, up to 10,000 site collections in a database are supported. Note that in a content database with up to 10,000 total site collections, a maximum of 2,500 of these can be non-Personal site collections. It is possible to support 10,000 Personal site collections if they are the only site collections within the content database. These limits relate to speed of upgrade. The larger the number of site collections in a database, the slower the upgrade with respect to both database upgrade and site collection upgrades. The limit on the number of site collections in a database is subordinate to the limit on the size of a content database that has more than one site collection. Therefore, as the number of site collections in a database increases, the average size of the site collections it contains must decrease. Exceeding the 5,000 site collection limit puts you at risk of longer downtimes during upgrades. If you plan to exceed 5,000 site collections, we recommend that you have a clear upgrade strategy to address outage length and operations impact, and obtain additional hardware to speed up the software updates and upgrades that affect databases. To set the warning and maximum levels for the number of sites in a content database, use the Windows PowerShell cmdlet Set- SPContentDatabase with the - WarningSiteCount parameter. For more information, see <u>Set-SPContentDatabase</u> .
Remote BLOB			When SharePoint Server 2013 is configured to
Storage (RBS) storage subsystem on Network Attached Storage (NAS)	Time to first byte of any response from the NAS cannot exceed 20 milliseconds	Boundary	use RBS, and the BLOBs reside on NAS storage, consider the following boundary. From the time that SharePoint Server 2013 requests a BLOB, until it receives the first byte from the NAS, no more than 20 milliseconds can pass.

### Site Collection Limits

Limit	Maximum value	Limit type	Notes
Site collections per farm	750,000 (500,000 Personal Sites and 250,000 other sites per farm)	Supported	The maximum recommended number of site collections per farm is 500,000 Personal Sites plus 250,000 for all other site templates. The Sites can all reside on one web application, or can be distributed across multiple web applications. Note that this limit is affected by other factors that might reduce the effective number of site collections that can be supported by a given content database. Care must be exercised to avoid exceeding supported limits when a container object, such as a content database, contains a large number of other objects. For example, if a farm contains a smaller total number of content databases, each of which contains a large number of site collections, farm performance might be adversely affected long before the supported limit for the number of site collections is reached. For example, Farm A contains a web application that has 200 content databases, a supported configuration. If each of these content databases contains 1,000 site collections, the total number of site collections in the web application will be 200,000, which falls within supported limits. However, if each content database contains 10,000 site collections per web application. Memory usage on the web servers should be monitored, as memory usage is dependent on usage patterns and how many sites are being accessed in given timeframe. Similarly, the crawl targets might also exhibit memory pressure, and if so the application pool should be configured to recycle before available memory on any web server drops to less than 2 GB.

Web site	250,000 per site collection	Supported	The maximum recommended number of sites and subsites is 250,000 sites. You can create a very large total number of web sites by nesting subsites. For example, in a shallow hierarchy with 100 sites, each with 1,000 subsites, you would have a total of 100,000 web sites. Or a deep hierarchy with 100 sites, each with 10 subsite levels would also contain a total of 100,000 web sites. <b>Note</b> : Deleting or creating a site or subsite can significantly affect a site's availability. Access to the site and subsites will be limited while the site is being deleted. Attempting to create many subsites at the same time may also fail.
Site collection size	Maximum size of the content database	Supported	<ul> <li>A site collection can be as large as the content database size limit for the applicable usage scenario. For more information about the different content database size limits for specific usage scenarios, see the <u>Content database limits</u> table in this article. In general, we strongly recommend limiting the size of site collections to 100 GB for the following reasons: <ul> <li>Certain site collection actions, such as site collection backup/restore or the Windows PowerShell cmdlet Move-SPSite, cause large SQL Server operations which can affect performance or fail if other site collections are active in the same database. For more information, see <u>Move-SPSite</u>.</li> <li>SharePoint site collection backup and restore is only supported for a maximum site collections larger than 100 GB are contained in a single content database, backup and restore operations can take a long time and are at risk of failure.</li> </ul> </li> </ul>
Number of device channels per	10	Boundary	The maximum allowed number of device channels per publishing site collection is 10.

publishing site		
collection		

### List and Library Limits

Limit	Maximum value	Limit type	Notes
List row size	8,000 bytes per row	Boundary	Each list or library item can only occupy 8,000 bytes in total in the database. 256 bytes are reserved for built-in columns, which leaves 7,744 bytes for end- user columns. For details on how much space each kind of field consumes, see <u>Column limits</u> .
File size	2 GB	Boundary	The default maximum file size is 250 MB. This is a configurable limit that can be increased up to 2 GB (2,047 MB). However, a large volume of very large files can affect farm performance.
Documents	30,000,000 per library	Supported	You can create very large document libraries by nesting folders, or using standard views and site hierarchy. This value may vary depending on how documents and folders are organized, and by the type and size of documents stored.
Major versions	400,000	Supported	If you exceed this limit, basic file operations—such as file open or save, delete, and viewing the version history— may not succeed.
Minor versions	511	Boundary	The maximum number of minor file versions is 511. This limit cannot be exceeded.
ltems	30,000,000 per list	Supported	You can create very large lists using standard views, site hierarchies, and metadata navigation. This value may vary depending on the number of columns in the list and the usage of the list.
Rows size limit	6 table rows internal to the database used for a list or library item	Supported	Specifies the maximum number of table rows internal to the database that can be used for a list or library item. To accommodate wide lists with many columns, each item may be wrapped over several internal table rows, up to six rows by default. This is configurable by farm administrators through the object model only. The object model method is <u>SPWebApplication.MaxListItemRowStorage</u> .

Bulk operations	100 items per bulk operation	Boundary	The user interface allows a maximum of 100 items to be selected for bulk operations.
List view lookup threshold	8 join operations per query	Threshold	Specifies the maximum number of joins allowed per query, such as those based on lookup, person/group, or workflow status columns. If the query uses more than eight joins, the operation is blocked. This does not apply to single item operations. When using the maximal view via the object model (by not specifying any view fields), SharePoint will return up to the first eight lookups.
List view threshold	5,000	Threshold	Specifies the maximum number of list or library items that a database operation, such as a query, can process at the same time outside the daily time window set by the administrator during which queries are unrestricted.
List view threshold for auditors and administrators	20,000	Threshold	Specifies the maximum number of list or library items that a database operation, such as a query, can process at the same time when they are performed by an auditor or administrator with appropriate permissions. This setting works with Allow Object Model Override.
Subsite	2,000 per site view	Threshold	The interface for enumerating subsites of a given web site does not perform well as the number of subsites surpasses 2,000. Similarly, the All Site Content page and the Tree View Control performance will decrease significantly as the number of subsites grows.
Coauthoring in Word and PowerPoint for .docx, .pptx and .ppsx files	10 concurrent editors per document	Threshold	Recommended maximum number of concurrent editors is 10. The boundary is 99.If there are 99 co- authors who have a single document opened for concurrent editing, each successive user sees a "File in use" error, and can only open a read-only copy. More than 10 co-editors will lead to a gradually degraded user experience with more conflicts, and users might have to go through more iterations to successfully upload their changes to the server.
Security scope	50,000 per list	Threshold	The maximum number of unique security scopes set for a list cannot exceed 50,000.For most farms, we recommend that you consider lowering this limit to 5,000 unique scopes. For large lists, consider using a design that uses as few unique permissions as

	possible. When the number of unique security scopes for a list exceeds the value of the list view threshold (set by default at 5,000 list items), additional SQL Server round trips take place when the list is viewed, which can adversely affect list view performance. A scope is the security boundary for a securable object and any of its children that do not have a separate security boundary defined. A scope contains an Access Control List (ACL), but unlike NTFS ACLs, a scope can include security principals that are specific to SharePoint Server 2013. The members of an ACL for a scope can include Windows users, user accounts other than Windows users (such as forms-based accounts), Active Directory groups, or SharePoint groups.
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#### **Column Limits**

SharePoint Server 2013 data is stored in SQL Server tables. To allow for the maximum number of possible columns in a SharePoint list, SharePoint Server 2013 will create several rows in the database when data will not fit on a single row. This is called row wrapping.

Each time that a row is wrapped in SQL Server, an additional query load is put on the server when that item is queried because a SQL join must be included in the query. To prevent too much load, by default a maximum of six SQL Server rows are allowed for a SharePoint item. This limit leads to a particular limitation on the number of columns of each type that can be included in a SharePoint list. The following table describes the limits for each column type.

The row wrapping parameter can be increased beyond six, but this may result in too much load on the server. Performance testing is recommended before exceeding this limit.

Each column type has a size value listed in bytes. The sum of all columns in a SharePoint list cannot exceed 8,000 bytes. Depending on column usage, users can reach the 8,000 byte limitation before reaching the six-row row wrapping limitation.

Limit	Maximum value		Size per column	Notes
Single line of text	276	Threshold	78 hvtes	SQL Server row wrapping occurs after each 64 columns in a SharePoint list. The default

				row wrapping value of six allows for a maximum of 384 Single line of text columns per SharePoint list (6 * 64 = 384). However, because the limit per SharePoint list item is 8,000 bytes, of which 256 bytes are reserved for built-in SharePoint columns, the actual limit is 276 Single line of text columns.
Multiple Lines of Text	192	Threshold	28 bytes	SQL Server row wrapping occurs after each 32 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 192 Multiple lines of text columns per SharePoint list (6 * 32 = 192).
Choice	276	Threshold	28 bytes	SQL Server row wrapping occurs after each 64 columns in a SharePoint list. The default row wrapping value of 6 allows for a maximum of 384 Choice columns per SharePoint list (6 * 64 = 384); ); however because the limit per SharePoint list item is 8,000 bytes, of which 256 bytes are reserved for built-in SharePoint columns, the actual limit should be 276 Choice columns.
Number	72	Threshold	12 bytes	SQL Server row wrapping occurs after each 12 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 72 Number columns per SharePoint list (6 * 12 = 72).
Currency	72	Threshold	12 bytes	SQL Server row wrapping occurs after each 12 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 72 Currency columns per SharePoint list (6 * 12 = 72).
Date and Time	48	Threshold	12 bytes	SQL Server row wrapping occurs after each eight columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 48 Date and Time columns per SharePoint list (6 * 8 = 48).
Lookup	96	Threshold	4 bytes	SQL Server row wrapping occurs after each 16 columns in a SharePoint list. The default row wrapping value of six allows for a

				maximum of 96 single value Lookup columns per SharePoint list (6 * 16 = 96).
Yes / No	96	Threshold	5 bytes	SQL Server row wrapping occurs after each 16 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 96 Yes / No columns per SharePoint list (6 * 16 = 96).
Person or group	96	Threshold	4 bytes	SQL Server row wrapping occurs after each 16 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 96 Person or Group columns per SharePoint list (6 * 16 = 96).
Hyperlink or picture	138	Threshold	56 bytes	SQL Server row wrapping occurs after each 32 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 192 Hyperlink or Picture columns per SharePoint list (6 * 32 = 192) ); however because the limit per SharePoint list item is 8,000 bytes, of which 256 bytes are reserved for built-in SharePoint columns, the actual limit should be 138 Hyperlink or Picture columns.
Calculated	48	Threshold	28 bytes	SQL Server row wrapping occurs after each eight columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 48 Calculated columns per SharePoint list (6 * 8 = 48).
GUID	6	Threshold		SQL Server row wrapping occurs after each column in a SharePoint list. The default row wrapping value of six allows for a maximum of 6 GUID columns per SharePoint list (6 * 1 = 6).
Int	96	Threshold		SQL Server row wrapping occurs after each 16 columns in a SharePoint list. The default row wrapping value of six allows for a maximum of 96 Int columns per SharePoint list (6 * 16 = 96).
Managed metadata	94	Threshold	40 bytes for the first, 32 bytes for each subsequent	<ul><li>The first Managed Metadata field added to a list is allocated four columns:</li><li>A lookup field for the actual tag</li></ul>

	<ul> <li>A hidden text field for the string value</li> <li>A lookup field for the catch all</li> <li>A lookup field for spillover of the catch all</li> </ul>
	<ul> <li>Each subsequent Managed Metadata field added to a list adds two more columns:</li> <li>A lookup field for the actual tag</li> <li>A hidden text field for the string value</li> </ul>
	The maximum number of columns of Managed Metadata is calculated as (14 + (16 * (n-1))) where n is the row mapping value (default of 6).

# Page Limits

Limit	-	Limit type	Notes	
	25 per wiki or Web Part page	Threshold	This figure is an estimate based on simple Web Parts. The complexity of the Web Parts dictates how many Web Parts can be used on a page before performance is affected.	

# Security Limits

Limit	Maximum value	Limit type	Notes
Number of SharePoint groups a user can belong to	5,000		<ul> <li>This is not a hard limit but it is consistent with Active Directory guidelines. There are several things that affect this number:</li> <li>The size of the user token</li> <li>The groups cache: SharePoint Server 2013 has a table that caches the number of groups a user belongs to as soon as</li> </ul>

			<ul> <li>those groups are used in access control lists (ACLs).</li> <li>The security check time: as the number of groups that a user is a member of increases, the time that is required for the access check increases also.</li> </ul>
Users in a site collection	2 million per site collection	Supported	You can add millions of people to your web site by using Microsoft Windows security groups to manage security instead of using individual users. This limit is based on manageability and ease of navigation in the user interface. When you have many entries (security groups of users) in the site collection (more than one thousand), you should use Windows PowerShell to manage users instead of the UI. This will provide a better management experience.
	5,000 per SharePoint group	Supported	<ul> <li>SharePoint Server 2013 enables you to add users or Active Directory groups to a SharePoint group. Having up to 5,000 users (or Active Directory groups or users) in a SharePoint group provides acceptable performance. The activities most affected by this limit are as follows:</li> <li>Fetching users to validate permissions. This operation takes incrementally longer with growth in number of users in a group.</li> <li>Rendering the membership of the view. This operation will always require time.</li> </ul>
SharePoint groups	10,000 per site collection	Supported	Above 10,000 groups, the time to execute operations is increased significantly. This is especially true of adding a user to an existing group, creating a new group, and rendering group views.
Security principal: size of the Security Scope	5,000 per Access Control List (ACL)	Supported	The size of the scope affects the data that is used for a security check calculation. This calculation occurs every time that the scope changes. There is no hard limit, but the bigger the scope, the longer the calculation takes.

# Search: Topology Limits

Limit	Maximum value	Limit type	Notes
Analytics processing components	6 per Search service application; 1 per server	Supported	
Analytics reporting databases	4 per Search service application	Threshold	You can exceed this limit to accommodate specific requirements. When scaling, add an analytics reporting database when the size of any of the deployed analytics databases reaches 250 GB total size, or 20 M total rows. This way repartitioning is as balanced as possible.
Link databases	4 per Search service application	Supported	The highest tested number of items a link database can contain is 100 million.
Crawl components	1 per server	Supported	There is no individual limit for the number of crawl components per Search service application. Instead the limit for the total number of search components per Search service application limits the number of crawl components.
Index components	60 per Search service application; 4 per server	Supported	To calculate the number of index components you have, multiply the number of index partitions with the number of index replicas.
Index partitions	25 per Search service application	Supported	An index partition holds a subset of the Search service application index. Increasing the number of index partitions results in each partition holding a smaller subset of the index, reducing the RAM and disk space that is needed on the servers hosting the index components.
Index replicas	3 per index partition		Each index partition can have a set of replica. If you increase the number of index replicas, this has a positive effect on the query performance and it provides better fault tolerance. But, if you add too many replicas to your index partition, this can adversely affect indexing. For Internet sites scenarios, which typically have a high query rate but low content volume (less than 4 million items per partition), the supported limit is 6 index replicas per partition.

Content processing components	1 per server		The search topology supports scaling out the number of content processing components. Although a specific physical host or virtual machine does support multiple content processing components, you achieve better usage of the CPU capacity by using one content processing component. The reason is that a built-in mechanism maximizes CPU usage by adjusting the number of feeding sessions according to available CPU cores. Multiple feeding sessions allow the content processing component to process incoming documents in parallel. This mechanism assumes a single content processing component per host. If the number of physical cores on the host equals N, then the content processing component will have N*K feeding sessions. K is a constant coefficient with the initial value 3. A 4-core server will have 12 feeding sessions, which means that the content processing component can process 12 documents in parallel. You can change the value of K by setting the <b>NumberOfCssFeedersPerCPUForRegularCrawl</b> property of the Search Service Application. SharePoint 2013 limits the value of N upward to 12, even if a server has more than 12 physical cores. Therefore a 16-core server will have N*K = 12 * 3 = 36 feeding sessions. In the case that there still is idle CPU time, consider increasing the K coefficient instead of adding an additional content processing component. If you increase the K coefficient, you must make sure that the host has sufficient available memory.
Query processing components	1 per server	Supported	SharePoint 2013 only supports one query processing component per physical machine or virtual machine.
Search components	64 per Search service application	Supported	
Search service applications	20 per farm	Supported	Multiple Search service applications can be deployed on the same farm, because you can assign search components and databases to separate servers. This limit is lower than the limit for the total number of service applications in a farm.

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# Search: Item Size Limits

Limit	Maximum value	Limit type	Notes
Document size crawl component can download	64 MB (3 MB for Excel documents)	Threshold	Search downloads meta data and content from a document until it reaches the maximum document size. The rest of the content is not downloaded. Search always downloads a document's meta data. You can change the limit for the maximum document size, but it does not affect Excel documents. Do this by using Windows PowerShell cmdlets to change the Search service application property <b>MaxDownLoadSize</b> . You can set the limit from 0 to 1 GB. If you increase the limit for the maximum document size, search indexes more content and needs more disk space.
Parsed content size	2 million characters	Boundary	Search stops parsing an item after it has parsed up to 2 million characters of content from it, including the item's attachments. The actual amount of parsed characters can be lower than this limit because search uses maximum 30 seconds on parsing a single item and its attachments. When search stops parsing an item, the item is marked as partially processed. Any unparsed content isn't processed and therefore isn't indexed.
Tokens produced by the word breaker	30,000		Search breaks content into individual words (tokens). Search produces up to 30,000 tokens from a single item, including the item's attachments. The actual amount of tokens can be lower than this limit because search uses maximum 30 seconds on word breaking. Any remaining content isn't processed and therefore isn't indexed.
managad	512 KB per searchable/queryable managed property	Threshold	This is the default maximum size of a managed property that is set to either "searchable" or "queryable". If you increase this limit you enable indexing of more data per managed property. Indexing

			more data per managed property uses more disk space and increases the overall load on the search system. You can configure this limit by using Windows PowerShell cmdlets and the schema object model to set the <b>MP.MaxCharactersInPropertyStoreIndex</b> attribute. You can set the limit from 0 to 2048 KB.
Retrievable managed property size	16 KB per managed property	Threshold	This is the default maximum size of a retrievable managed property. If you increase this limit you enable indexing of more data per managed property. Increasing this limit also enables search to retrieve more data per managed property for search results. Indexing and retrieving more data per managed property increases the overall load on the system and uses more disk space. You can configure this limit per managed property by using Windows PowerShell cmdlets and the schema object model to set the <b>P.MaxCharactersInPropertyStoreForRetrieval</b> attribute. You can set the limit from 0 to 2048 KB.
Sortable and refinable managed property size	16 KB per managed property	Boundary	This is the maximum size of a sortable and refinable managed property.
Token size	Variable	Boundary	<ul> <li>Search can index tokens of any length. But the word breaker that search uses to produce tokens can limit the token length. Word breakers are language-aware components that break content into single words (tokens). You can also create custom word breakers. The token size limit therefore depends on the word breaker. Here's the limit of the word breaker for western languages: <ul> <li>The word breaker only considers the first 1000 characters of a token for splitting, it ignores any remaining characters.</li> <li>The word breaker splits tokens that are longer than 300 characters into two or more tokens where no token has more than 300 character token is split into two 300 character tokens and one 12 character token.</li> </ul> </li> </ul>

### Search: Dictionary Limits

Limit	Maximum value	Limit type	Notes
Number of entries in a thesaurus	1 million	Supported	The thesaurus contains synonyms for query terms. Exceeding this tested limit may result in increased use of memory and an increased query response time.
Number of entries in a custom entity extraction dictionary		Supported	Exceeding this tested limit may result in increased use of memory, slower indexing, and an increased query response time.
Number of entries in a custom search dictionary	5,000 terms per tenant	Boundary	This limits the number of terms allowed for inclusions and exclusions dictionaries for query spelling correction and company extraction. You can store more terms than this limit in the Term Store, but search only uses 5000 terms per tenant.

## Search: Schema Limits

Limit	Maximum value	Limit type	Notes
Crawled	500,000 per Search service application	Supported	The contents and metadata of the items that you crawl are represented as crawled properties. You can map these crawled properties to managed properties. If the number of crawled properties exceeds this supported limit, this reduces indexing speed.
Managed properties	50,000 per Search service application	Supported	Search uses managed propertied in queries. Crawled properties are mapped to managed properties. Exceeding the supported limit for managed properties reduces indexing speed.
property	100 per managed property		Crawled properties can be mapped to managed properties. Exceeding this limit might decrease crawl speed and query performance.

Values per managed property	1000	Boundary	A managed property can have multiple values of the same type. This is the maximum number of values per managed multi-valued managed property per document. If this number is exceeded, the remaining values are discarded.
nronartiac	100,000 per crawled item	Supported	This is the maximum number of metadata properties that the crawl component can determine when crawling an item. These metadata properties can be mapped or used for queries. Approaching this number of crawled properties might result in a low crawl rate.

#### Search: Crawl Limits

Limit	Maximum value	Limit type	Notes
IStart addresses	500 per content source	Supported	
host name	15 characters	rnresnoia	NetBIOS limits the maximum machine host name length to this value.
Crawl databases	15 per Search service application	Supported	

# Search: Query and Result Limits

Limit	Maximum value	Limit type	Notes
Kev/word		Supported	This is the tested and default value for the maximum text length for a query built by using Keyword Query Language, except for Discovery queries. For Discovery queries 16 KB (16,384 characters) is the default maximum value. The default value for the maximum text length can be increased up to the boundary of 20 KB (20,480) for all query types.
Number of rows in a result set	5000 rows		This is the tested and default value for the maximum number of rows in a result set, except for a Discovery queries 10,000

Results removal	No limit		change the value for the maximum number of rows in a result set by using Windows PowerShell cmdlets to change the Search service application property <b>MaxRowLimit</b> . <b>MaxRowLimit</b> defines the maximum value of the query property <b>RowLimit</b> and the Discovery query property <b>RowLimit</b> . <b>RowLimit</b> defines the number of rows each page contains in a result set. You can increase <b>MaxRowLimit</b> up to 10,000 rows, this is a boundary.
Search alert quota	100,000 alerts per Search service application	Supported	End-users can set search alerts for the result set of a query. When the results are changed or updated, search notifies the end-user. This is the tested limit for a Search service application that has a mix of end-user queries (75%) and alert queries (25%). The limit for a Search service application that has only alert queries is 400,000 alerts. These limits are based on a system with five queries per second (QPS).

# Search: Ranking Limits

Limit	Maximum value	Limit type	Notes
Ranking models	1,000 per tenant	BOUDDARV	Approaching this limit can adversely affect the overall system performance.
contexts used	15 unique contexts per rank model	Boundary	This is the maximum number of unique contexts per rank model.
Authoritative pages	1 top level and minimal second and third level pages per Search service application	Supported	Use as few second- and third-level pages as possible while still achieving the desired relevance. The boundary is 200 authoritative pages per relevance level per Search service application. If you add more pages, you may not achieve the desired relevance. Add the key site to the first relevance level. Add more key sites at either second or third relevance levels,

	one at a time. Evaluate relevance after each addition to make sure that that you have
	achieved the desired relevance effect.

### Search: Index Limits

Limit	Maximum value	Limit type	Notes
Unique terms in the index	2^31 (>2 billion terms)	Ronnann	This is the maximum number of unique terms that can exist in the index of a Search service application.
User defined full text indexes		Boundary	This is the maximum number of full text indexes.
	10 million per index partition	Supported	Each index partition contains a subset of the whole search index. If the number of indexed items is high in relation to how much memory the server has, affects the query response time negatively.

### User Profile Service Limits

Limit	Maximum value	Limit type	Notes
User	2,000,000 per service application	Supported	A user profile service application can support up to 2 million user profiles with full social features functionality. This number represents the number of profiles that can be imported into the people profile store from a directory service, and also the number of profiles a user profile service application can support without leading to performance decreases in social features.
tage	500,000,000 per social database	Supported	Up to 500 million total social tags, notes and ratings are supported in a social database without significant decreases in performance. However, database maintenance operations such as backup and restore may show decreased performance at that point.

# **Content Deployment Limits**

Limit	Maximum value	Limit type	Notes
	20 Sup	Supported	For concurrently running jobs on paths that are connected to site collections in the same source content database, there is an increased risk of deadlocks on the database. For jobs that must run concurrently, we recommend that you move the site collections into different source content databases.
Content			Note:
denloyment jobs			Concurrent running jobs on the same path are not possible.
			If you are using SQL Server snapshots for content deployment, each path creates a snapshot. This increases the I/O requirements for the source database.
			For more information, see <u>About deployment paths</u> and jobs.

# **Blog Limits**

Limit	Maximum value	Limit type	Notes
Blog posts	5,000 per site	Supported	The maximum number of blog posts is 5,000 per site.
Comments	1,000 per post	Supported	The maximum number of comments is 1,000 per post.

### **Business Connectivity Services Limits**

Limit		Limit type	Notes
ECI (In- memory)	5,000 per web server (per tenant)	Boundary	Total number of external content type (ECT) definitions loaded in memory at a given point in time on a web server.

External system connections	500 per web server	Boundary	Number of active/open external system connections at a given point in time. The default maximum value is 200; the boundary is 500. This limit is enforced at the web server scope, regardless of the kind of external system (for example, database, .NET assembly, and so on) The default maximum is used to restrict the number of connections. An application can specify a larger limit via execution context; the boundary enforces the maximum even for applications that do not respect the default.
Database items returned per request	2,000 per database connector	Threshold	Number of items per request the database connector can return. The default maximum of 2,000 is used by the database connector to restrict the number of result that can be returned per page. The application can specify a larger limit via execution context; the Absolute Max enforces the maximum even for applications that do not respect the default. The boundary for this limit is 1,000,000.
Response latency	600 seconds	Threshold	Timeout used by the external data connector per request. The default value is 180 seconds, but applications can be configured to specify a larger value up to the maximum of 600 seconds.
Service response size	150,000,000 bytes	Threshold	The upper volume of data per request the external data connector can return. The default value is 3,000,000 bytes, but applications can be configured to specify a larger value up to the maximum of 150,000,000 bytes.
Filter Descriptor (in- store)	200 per ECT method	Boundary	The maximum number of Filter Descriptors per ECT method is 200.
ECT Identifier (in-store)	20 per ECT	Boundary	The maximum number of identifiers per ECT is 20.
Database Item	1,000,000 per request	Threshold	The default maximum number of items per request the database connector can return is 2,000, and the absolute maximum is 1,000,000.The default max is used by the database connector to restrict the number of results that can be returned per page. The application can specify a larger limit via execution context; the absolute max enforces the allowed maximum even for applications that do not respect the default such as indexing.

#### Workflow Limits

Limit	Maximum value	Limit type	Notes
Workflow postpone threshold	15	Threshold	15 is the maximum number of workflows allowed to be executing against a content database at the same time, excluding instances that are running in the timer service. When this threshold is reached, new requests to activate workflows will be queued to be run by the workflow timer service later. As non-timer execution is completed, new requests will count against this threshold. This is limit can be configured by using the Set-SPFarmConfig Windows PowerShell cmdlet. For more information, see <u>Set-SPFarmConfig</u> . <b>Note</b> : This limit does not refer to the total number of workflow instances that can be in progress. Instead, it is the number of instances that are being processed. Increasing this limit increases the throughput of starting and completing workflow tasks but also increases load against the content database and system resources.
Workflow timer batch size	100	Threshold	The number of events that each run of the workflow timer job will collect and deliver to workflows. It is configurable by using Windows PowerShell. To allow for additional events, you can run additional instances of the SharePoint Foundation Workflow Timer Service.
Workflow associations	100 per list	Supported	Exceeding this limit will degrade browser performance due to the large volume of data that is loaded for more than 100 associations and their status columns.
List items or documents that can be bulk created or uploaded to start workflow instances	5,000 items	Supported	Testing has verified that all workflow activation events are processed for an on-item-creation workflow association when up to 5,000 items are created in a single bulk upload. Exceeding this limit could cause workflow initiation to time out.

Published workflow definitions per web site	1,000 per web site	Supported	The maximum supported number of published workflow definitions per web site is 1,000.
Total workflow associations per site	1,799 per site	Boundary	The Service Bus supports a maximum of 1,799 subscriptions per scope. This maximum value includes the sum of both published and unpublished associations.
Maximum workflow definition (xaml) size	5,120 KB	Boundary	Attempts to publish xaml files that exceed the size limit will fail.
Maximum depth of a workflow sub-step in xaml (workflow complexity)	121 levels	Boundary	There is a hard limit of 125 for node depth in xaml. The maximum value of 121 levels accounts for the default activities (stage, sequence, etc.) that SharePoint Designer inserts automatically.
Workflow instance activations per second per web server	6 per second	Threshold	Testing has confirmed that a SharePoint web server can activate a maximum of 6 workflow instances per second. This number is cumulative, and therefore scales with the number of web servers in the farm. For example, 2 web servers can activate 12 workflow instances per second, and 3 web servers can activate 18.
Rest calls from SharePoint workflow per second per web server	60 per second		Testing has confirmed that a SharePoint web server can effectively process up to 60 rest calls per second from SharePoint workflow. If this level of volume will be exceeded, we recommend that an additional load-balanced web server be added to the SharePoint farm. In testing, 120 rest calls per second against a single web server resulted in sustained 90-100% CPU utilization. Adding a second web server reduced CPU utilization to 30-40% on both servers. Adding a third web server enabled processing of 180 calls per second, with 30-40% CPU utilization on all three servers, and so on. The servers used for this test were Hyper-V virtual machines with 16 core processor and 24 GBs RAM each.
Workflow variable value size	256 КВ	Boundary	The maximum amount of data that can be stored in a single workflow variable is 256 KB. Exceeding this limit will cause the workflow instance to terminate.
Maximum list size for workflow	5,000 items per list view	Threshold	This limit is a result of the maximum view size limit. When this limit is exceeded, workflow lookups to non-indexed fields will fail for non-

lookups to non- indexed fields			administrative users. At this threshold, an index must be created for the field, in order for workflows to be able to successfully perform lookups against the field.
for auto-start workflow	10 million items per list	Supported	Testing has confirmed that the performance of auto-start workflow associations is not affected when list size grows to 1 million items. Because response time doesn't change as list size scales, the effective limit is the same as the maximum number of items in a non-workflow list.

# Managed Metadata Term Store (Database) Limits

Limit	Maximum value	Limit type	Notes
Maximum number of levels of nested terms in a term store	7	Supported	Terms in a term set can be represented hierarchically. A term set can have up to seven levels of terms (a parent term, and six levels of nesting below it.)
Maximum number of term sets in a term store	1,000	Supported	You can have up to 1,000 term sets in a term store.
Maximum number of terms in a term set		Supported	30,000 is the maximum number of terms in a term set. <b>Note:</b> Additional labels for the same term, such as synonyms and translations, do not count as separate terms.
Total number of items in a term store	1,000,000	Supported	An item is either a term or a term set. The sum of the number of terms and term sets cannot exceed 1,000,000. Additional labels for the same term, such as synonyms and translations, do not count as separate terms. <b>Note:</b> You cannot have both the maximum number of term sets and the maximum number of terms simultaneously in a term store.
Number of Variation Labels	209 per term store	Supported	The maximum number of Variation Labels per term store is 209.

Number of terms in managed navigation term set	2,000	Sunnoriea	The maximum supported number of terms in a managed navigation term set is 2,000.
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# Visio Services Limits

Limit	Maximum value	Limit type	Notes
File size of Visio web drawings	50 MB	Threshold	<ul> <li>Visio Services has a configuration setting that enables the administrator to change the maximum size of web drawings that Visio processes. Larger file sizes have the following side effects:</li> <li>Increase in the memory footprint of Visio Services.</li> <li>Increase in CPU usage.</li> <li>Reduction in application server requests per second.</li> <li>Increase overall latency.</li> <li>Increase SharePoint farm network load</li> </ul>
Visio web drawing recalculation time-out	120 seconds	Threshold	<ul> <li>Visio Services has a configuration setting that enables the administrator to change the maximum time that it can spend recalculating a drawing after a data refresh. A larger recalculation time-out leads to: <ul> <li>Reduction in CPU and memory availability.</li> <li>Reduction in application requests per second.</li> <li>Increase in average latency across all documents.</li> </ul> </li> <li>A smaller recalculation time-out leads to: <ul> <li>Reduction of the complexity of diagrams that can be displayed.</li> <li>Increase in requests per second.</li> </ul> </li> </ul>

			Decrease in average latency across all documents.
age (data	Minimum cache age: 0 to 24hrs	Threshold	Minimum cache age applies to data connected diagrams. It determines the earliest point at which the current diagram can be removed from cache. Setting Min Cache Age to a very low value will reduce throughput and increase latency, because invalidating the cache too often forces Visio to recalculate often and reduces CPU and memory availability.
Visio Services maximum cache age (non-data connected diagrams)	Maximum cache age: 0 to 24hrs	Threshold	Maximum cache age applies to non-data connected diagrams. This value determines how long to keep the current diagram in memory. Increasing Max Cache Age decreases latency for commonly requested drawings. However, setting Max Cache Age to a very high value increases latency and slows throughput for items that are not cached, because the items already in cache consume and reduce available memory.

### PerformancePoint Services Limits

Limit	Maximum value	Limit type	Notes
	1,000,000 per query on Excel Services data source	Boundary	A PerformancePoint scorecard that calls an Excel Services data source is subject to a limit of no more than 1,000,000 cells per query.
Columns and rows	15 columns by 60,000 rows	Threshold	The maximum number of columns and rows when rendering any PerformancePoint dashboard object that uses a Excel workbook as a data source. The number of rows could change based on the number of columns.
Query on a SharePoint list	15 columns by 5,000 rows	Supported	The maximum number of columns and row when rendering any PerformancePoint dashboard object that uses a SharePoint list as a data source. The number of rows could change based on the number of columns.

ISCH Server	15 columns by 20,000 rows	Supported	The maximum number of columns and row when rendering any PerformancePoint dashboard object that uses a SQL Server table data source. The number of rows could change based on the number of columns.
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#### Word Automation Services Limits

Limit	Maximum value	Limit type	Notes
Input file Size	512 MB	Boundary	Maximum file size that can be processed by Word Automation Services.
Frequency with which to start conversions (minutes)	1 minute (recommended)15 minutes (default)59 minutes (boundary)	Threshold	This setting determines how often the Word Automation Services timer job executes. A lower number leads to the timer job running faster. Our testing shows that it is most useful to run this timer job once per minute.
Number of conversions to start per conversion process	For PDF/XPS output formats: 30 x M For all other output formats: 72 x M Where M is the value of Frequency with which to start conversions (minutes)	Threshold	The number of conversions to start affects the throughput of Word Automation Services. If these values are set higher than the recommended levels then some conversion items may start to fail intermittently and user permissions may expire. User permissions expire 24 hours from the time that a conversion job is started.
Conversion job size	100,000 conversion items	Supported	A conversion job includes one or more conversion items, each of which represents a single conversion to be performed on a single input file in SharePoint. When a conversion job is started (using the ConversionJob. Start method), the conversion job and all conversion items are transmitted over to an application server which then stores the job in the Word Automation Services database. A large number of conversion items will increase both the execution time of the Start method and the number of bytes transmitted to the application server.

Total active conversion processes	N-1, where N is the number of cores on each application server	Threshold	An active conversion process can consume a single processing core. Therefore, customers should not run more conversion processes than they have processing cores in their application servers. The conversion timer job and other SharePoint activities also require occasional use of a processing core. We recommend that you always leave 1 core free for use by the conversion timer job and SharePoint.
Word Automation Services database size	2 million conversion items	Supported	Word Automation Services maintains a persistent queue of conversion items in its database. Each conversion request generates one or more records. Word Automation Services does not delete records from the database automatically, so the database can grow indefinitely without maintenance. Administrators can manually remove conversion job history by using the Windows PowerShell cmdlet Remove- SPWordConversionServiceJobHistory. For more information, see <u>Remove-</u> <u>SPWordConversionServiceJobHistory</u> .

### **Excel Services Limits**

Limit	Maximum value	Limit type	Notes
Maximum workbook size	10 MB	Supported	The maximum size of a workbook that can be opened in Excel Services is 10 megabytes.

### Machine Translation Services Limits

llimit	Maximum value	Limit type	Notes
	524,288 KB per file	Threshold	Files larger than the limit take too long to transfer and process, decreasing the throughput of the service.

Input file size for text files	15,360 KB per file		Files larger than the limit have too much text to translate, decreasing the throughput of the service.
Maximum character count for Microsoft Word Documents			Documents with more characters than the limit have too much text to translate, decreasing the throughput of the service.
Total concurrent translation processes	5		Using more processes than the limit does not increase throughput because there is a limit to how much text can be translated at a time. Using more processes increases the demands on the server resources.
Delay between translations	59 minutes	Threshold	Starting translations at a larger interval than the limit causes the time taken to translate documents to grow too large and can cause the number of queued translations to grow too large.
Number of translations per translation process	1,000 per process		Starting more translations than the limit causes translations to fail due to timing out because they cannot be processed before the timeout period.
Maximum concurrent translation requests	300	Threshold	More than 300 concurrent translation requests could cause translations to time out because requests are queued for longer than the timeout period.
Files per translation job	100,000 files	Supported	Submitting jobs with a number of files that exceeds the limit causes job submittal time and processing time to be too long.
I ranslation Service	1,000,000 files	Supported	Operations to maintain the queue of jobs become slow if the database grows beyond the maximum number of files in the database.

# Office Web Application Service Limits

Limit	Maximum value	Limit type	Notes
Cache size	100 GB	Threshold	Space available to render documents, created as part of a content database. By default, the cache available to render documents is 100 GB. We do not

			recommend that you increase the available cache.
Renders	One per document per second per CPU core per application server (maximum eight cores)	Boundary	This is the measured average number of renders that can be performed of "typical" documents on the application server over a period of time.
OneNote concurrent merge operations	8 per document	Threshold	OneNote merges combine changes from multiple users who are co-authoring a notebook. If too many concurrent merges are already in progress, a conflict page is generated instead, which forces the user to perform the merge manually.

# **Project Server Limits**

Limit		Limit type	Notes
End of project time	Date: 12/31/2149	Boundary	Project plans cannot extend past the date 12/31/2149.
Deliverables per project plan	1,500 deliverables	Boundary	Project plans cannot contain more than 1,500 deliverables.
Number of fields in a view	256	Boundary	A user cannot have more than 256 fields added to a view that they have defined in Project Web App.
Number of clauses in a filter for a view	50	Boundary	A user cannot add a filter to a view that has more than 50 clauses in it.

# SharePoint Apps Limits

limit	Maximum value	Limit type	Notes
Maximum Access/SharePoint App Package size	100 Mb	Boundary	100 MB is the limit for an app package created in the Access client. <b>Note:</b>

			Access compresses the database when it creates the app package, so the app package may include more than 100 MB of data.
Maximum Access app database storage size in SQL Azure	1 Gb	Boundary	Each Access app created on SharePoint Online creates a database on SQL Azure. 1 GB is the limit for the database storage on SQL Azure. In an on-premise installation, the administrator controls the size of the associated SQL database.
Apps displayed in Manage Licenses page	2,000	Boundary	Up to 2,000 apps (purchased from the store) can be displayed on the Manage Licenses page. You can still manage the license of any app by going to the All Site Contents page of the site where the app is installed and clicking on Licenses, or by searching for the app using Marketplace Search.
Number of app licenses per tenant	1,000,000	Supported	The maximum supported number of licenses (purchase of apps from the store) for a single SharePoint deployment, either on-premises or SharePoint Online. Exceeding this limit might cause severe performance degradation.
Number of apps displayed in the Add an App page	240	Boundary	After this limit is reached, only the first 240 apps are displayed, and a message guiding you to search to find your app is displayed.
Number of managers per app license	30	Boundary	Only 30 people can manage a license. License managers can add or remove users or delete a license.
Number of app licenses assigned to a user viewable by that user	2,000		When more than 2,000 licenses are assigned to a user, that user will no longer see any apps in the default Add an App view. Instead, a message guiding you to search the app catalog or the SharePoint Store will appear.
Number of apps in the corporate catalog viewable by a single user	500	Boundary	When more than 500 apps from the corporate catalog are available to a single user, that user will no longer see any apps in the default Add an App view. Instead, a message guiding you to search the app catalog or the SharePoint Store will appear.

# Distributed Cache Service Limits

llimit	Maximum value	Limit type	Notes
Number of followable entities (users, documents, sites and hashtags) per cache host		Supported	The total number of entities that can be followed by a single user on a distributed cache host with 16GB RAM assigned to the distributed cache service is 400,000.
Number of cache hosts in a cluster	16	Boundary	The total number of cache hosts a single distributed cache cluster can support is 16.
Maximum amount of memory dedicated to a cache host	16GB	Boundary	The total amount of memory that can be dedicated to the distributed cache service on any one cache host in a cluster is 16GB.

# **Miscellaneous Limits**

llimit	Maximum value	Limit type	Notes
Number of followable entities (users, documents, sites and hashtags) per cache host		Supported	The total number of entities that can be followed by a single user on a distributed cache host with 16GB RAM assigned to the distributed cache service is 400,000.
Number of cache hosts in a cluster	16	Boundary	The total number of cache hosts a single distributed cache cluster can support is 16.
Maximum amount of memory dedicated to a cache host	16GB		The total amount of memory that can be dedicated to the distributed cache service on any one cache host in a cluster is 16GB.