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# The Ultimate Guide to Search in SharePoint 2013

## Whitepaper

October 2012

# Table of Contents

Introduction	1
Preliminary User Background - SurfRay Contribution	2
Basic Changes Overview – SharePoint 2013 in Comparison to SharePoint 2010	2
Deprecated Features 2010/2013	4
Improvements and New Features	6
Limitations to SharePoint 2013	11
Conclusion	12

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# Introduction

Microsoft's SharePoint 2013 beta was unveiled July 16th 2012 by Microsoft CEO Steve Ballmer.

To celebrate, SurfRay is delighted to provide a full overview of SharePoint 2013 which introduces a collection of updated and new technologies, features, and services that enrich those previously offered with SharePoint 2010, while simplifying and improving the user experience.

On the search front, the most interesting feature is the revamped search engine. It has been completely rewritten and now includes many of the popular features that were previously found in the now defunct FAST product.

The most significant changes to search in SharePoint 2013 include more granular configuration and reporting of crawling, indexing, and querying. These changes makes search in SharePoint 2013 faster, more flexible, and scalable. There have undoubtedly been enhancements to SharePoint 2013's front and the Search Center. Whether this will meet the needs of users however remains to be seen. This white paper will set out to summarize all new capabilities and assess where short comings exist and how these can be minimized with customization of SharePoint 2013.

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# Preliminary User Background - SurfRay Contribution

As with search in SharePoint 2010, no expert knowledge is required to use search effectively in SharePoint 2013, although upgraded or transformed processes may necessitate skills supervision and implementation for best practice application. As a prominent member of Microsoft's Partner Network, SurfRay's Ontolica has offered best-practice solutions for users of SharePoint 2010 who seek enhanced interface and functional search agility.

Users may require some time to familiarize themselves with changes between SharePoint 2010 and SharePoint 2013. Doing so should not be time-consuming and promises to be rewarded by enhanced search performance. As with SharePoint 2010, SurfRay is a thought leader for new users of search in SharePoint 2013 because of its understanding of Preview's updated search capabilities, exemplified by the provision of useful, relevant, and timely information about SharePoint 2013. In this respect, a visit to the SurfRay Video Center (<http://www.surfray.com/video-center/webcast/introduction-to-sharepoint-2013-search>) should prove enlightening.

## Basic Changes Overview – SharePoint 2013 in Comparison to SharePoint 2010

Many of the changes from SharePoint 2010 found in SharePoint 2013 are out of the box, but may be altered in response to its practical application. These reflect the search capabilities and limitations of SharePoint 2013. Many features prevalent in SharePoint 2010 have been deprecated in SharePoint 2013. Among these features are:

- The visual upgrade available in SharePoint Server 2010 has been replaced in SharePoint 2013 Preview by the deferred site collection upgrade.
- The Document Workspace site template found in SharePoint 2010 is unavailable in SharePoint 2013.

- The Personalization Site template has also been discontinued in SharePoint 2013.
- Unghosting and customizing CSS files remains the same but will not be available in future SharePoint upgrades (after SharePoint 2013).

New features in SharePoint 2013 compared to SharePoint 2010 include:

- FAST search technology has been discontinued; some of the FAST Search features have been maintained and integrated with SharePoint 2013.
- Updated search result display options:
  - Faceted navigation used with term sets for search refinement;
  - Custom refiners/entity extraction simplified by moving their management into the Term Store.
- Query configuration:
  - Query spelling correction customized and managed in the Term Store.
- Crawl and content configuration:
  - Improved managed schema (called 'metadata' in SharePoint 2010) service application allows taxonomy to be crawled.
- Search architecture and topology:
  - Many components previously found in SharePoint 2010 and FAST Search technology have been given new (but similar) designations in SharePoint 2013.

### The Search Center

SharePoint 2013's Search Center has seen some significant upgrades in terms of visual appeal. Despite these aesthetic upgrades, there has been little improvement in terms of delivering enhanced end-user findability and search relevance.

While this provides a basic overview of the changes between SharePoint 2010 and SharePoint 2013, it is important that we explore these in more depth to understand their true impact on user experience.

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# Deprecated Features 2010 vs 2013

## Document Workspace site template.

Formerly a key component of SharePoint 2010, the Document Workspace site template has been removed in SharePoint 2013, simplifying the list of templates available when a new site collection is created. Sites previously created through the Document Workspace site template will remain operational in SharePoint 2013 Preview.

It is advised that important documents created in Document Workspace be migrated to the new Team Site template provided by SharePoint 2013. Document Workspace material will not be supported in the next major release of SharePoint.

## Meeting Workspace site templates

The five following Meeting Workspace site templates available in 2010 have been discontinued in SharePoint 2013

- Basic Meeting Workspace,
- Blank Meeting Workspace,
- Decision Meeting Workspace,
- Social Meeting Workspace,
- Multipage Meeting.

They have been replaced by features such as Lync, One Note, and Collaboration which support live conferences, smaller meetings, note-taking, storage of notes and similar conference-generated commentary, and collaborative effort.

While the existing document collaboration tools, such as Meeting Workspace site templates, are still available within SharePoint 2013, it is recommended that any important data and content is migrated to new templates. The next major release of SharePoint will not support these templates, so in order to retain this data it must be migrated.

## SharePoint Server Analytics

SharePoint Server Analytics, which was available in SharePoint 2010, has been discontinued within SharePoint 2013 and updated as part of Search Service.

This development has a renewed infrastructure that includes SharePoint Online; it provides enhanced performance and scalability, and evaluates search index content and user actions.

Despite these changes, many of the functions of SharePoint 2010 - for instance, logging all SharePoint-site clicks or counting all document hits for every document – have been maintained within SharePoint 2013. They are however, separate from SharePoint 2010, unattached to the earlier system's analytic databases; SharePoint 2010's Web Analytics must be shut down before transferring database content to SharePoint 2013 Preview.

SharePoint 2010 analytics databases are not used in SharePoint 2013, although they have not been removed. SharePoint 2013's item-by-item recommendation feature generates reports of search events, ranking them by frequency of use. Input to SharePoint 2013 analytics processing emanates from the Lync Database, which clarifies connections between documents.

Features such as the Personalization site template, the Group Work site template, the Visio Process Repository site template, and the Imaging Web service have been removed as a result of low user adoption within SharePoint 2010. Unghosting and customizing CSS files remain in SharePoint 2013 Preview, but will be discontinued in subsequent versions of SharePoint. A design limitation in SharePoint 2013 restrains the use of Excel Services for editing Workbooks with external data connection.

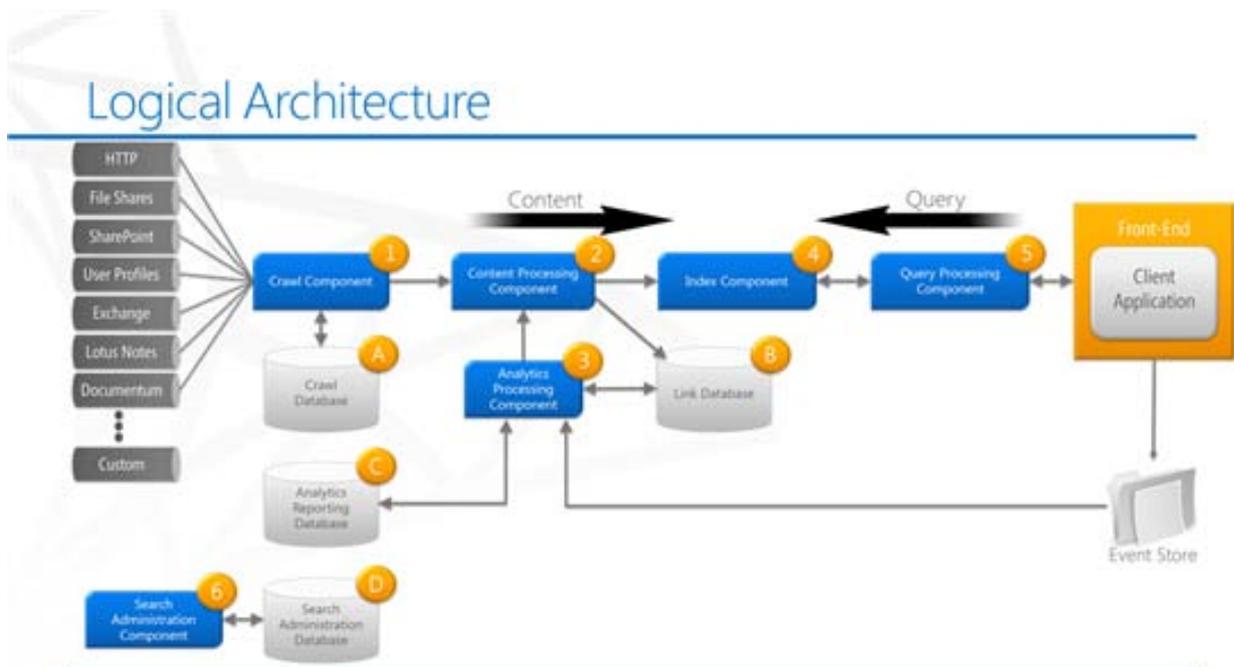
# Improvements and New Features

## Enhanced search technology

For many, the upgrade to search will be the most important change to SharePoint 2013. Many of the core search components that were available within FAST search technology have now been integrated within SharePoint 2013. This eliminates the requirement of a separate FAST search installation and management. Separate dedicated servers are no longer needed, offering enhanced search performance flexibility and speed compared to SharePoint 2010.

The enhancements to the back end allow users to further customize their instance of SharePoint 2013. This allows search efficiency to be improved by leveraging the search driven applications that are available to users.

Core components of the previous Indexing pipeline (SharePoint Search 2010) were enhanced by leveraging the FAST search pipeline. SharePoint 2013 continues to utilize the functionality that was previously available in FAST search resulting in the logical architecture as shown in \*Figure I.



\* FIGURE I – SHAREPOINT SEARCH PIPELINE IN SHAREPOINT 2013

As Figure I indicates, the new search service architecture for SharePoint 2013 is itemized into the following components:

- Crawl,
- Analytics,
- Index,
- Query,
- Search Administration.

These search components, previously available within FAST technology (see figure II to understand consolidation of components) are situated on the SharePoint 2013 application via the search service application.

The result is higher scalability that generates continuous crawling, site administration that can manage result sources, schema management, entry extraction, building/administering custom ranking models, as well as query suggestions and rules, and all manner of search refinements, from the simplest to the most sophisticated.

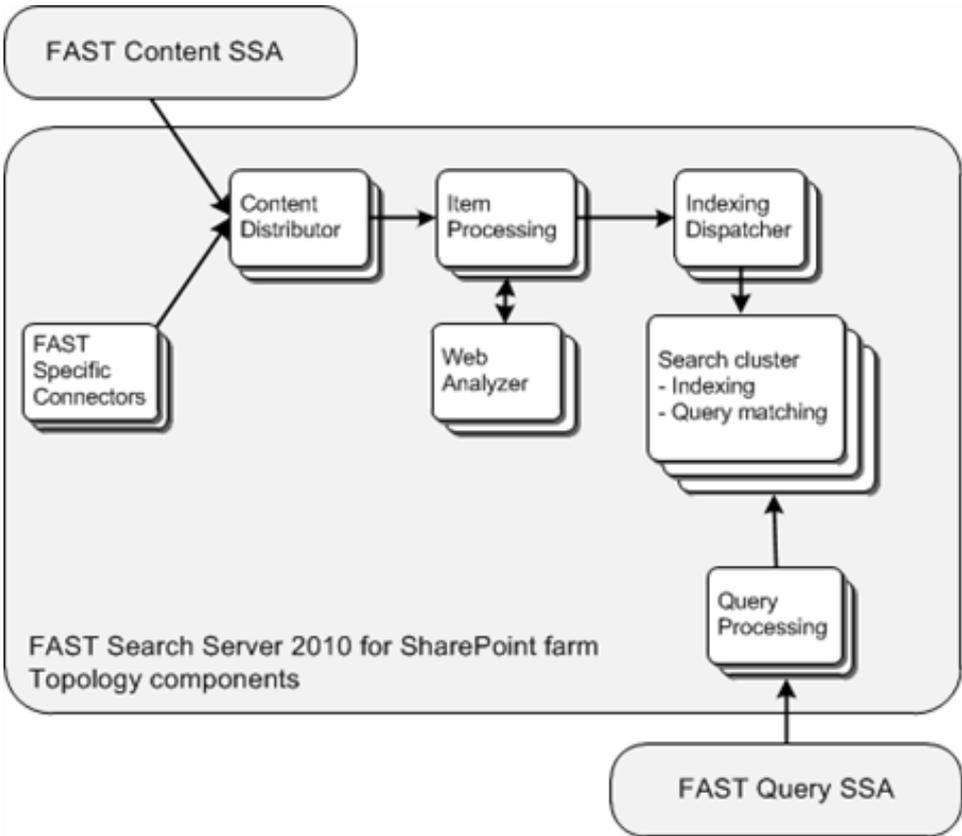


FIGURE II - FAST CONTENT

## User Interface

The user interface has been almost completely rewritten. SharePoint 2010's CoreResultsWebPart has been discontinued and replaced by the new ResultScriptWebPart in SharePoint 2013, which offers enhanced functionality for retrieving and displaying search results. The large visual preview of the slide deck is designed for better selection of topics and specific documents, allowing the user to scroll through an entire document after it has been chosen.

Other upgrades of note include improved Edit, Send, and View Library features, as well as Follow, a social interaction application. Much of the imprecision of SharePoint 2010 has been minimized - enhanced claims authentication provides better assurance that document previews correctly reflect the search specifications.

Upgraded visual refiners generate options for passing between documents as well as for conversations, interaction with co-workers and other users, reports and videos, while permitting searches with a variety of time and date modifications.

## Crawler Side Improvements

The Crawl database manages crawl operations while storing its history. In SharePoint 2013 the Crawler configuration resembles that of SharePoint 2010, but actually is very different. Using BCS, Crawl searches online for web pages, hosts or blogs from among resource like SharePoint (including People Profiles), HTTP, databases, other user profiles, the Business Data Connectivity (BDC) framework, and file shares.

Crawling is dependent upon what is stipulated in crawl databases, with improved performance function of Crawl components added to SharePoint 2013, which can also enhance capacity. Alterations to Crawl configuration exceed the applications of the SharePoint 2010 Search Service, and can be enacted during site collection in SharePoint 2013.

Unlike SharePoint 2010, users in SharePoint 2013 are allowed access to the crawl log, upon permission. SharePoint 2013 also allows document-related schema capture (metadata), in contrast to SharePoint 2010's limitation of document-ingestion only.

In SharePoint 2013 it is possible to extend the pipeline by calling a web service. This is a great improvement compared to SharePoint 2010 where pipeline extensions were limited to FAST.

## Indexing

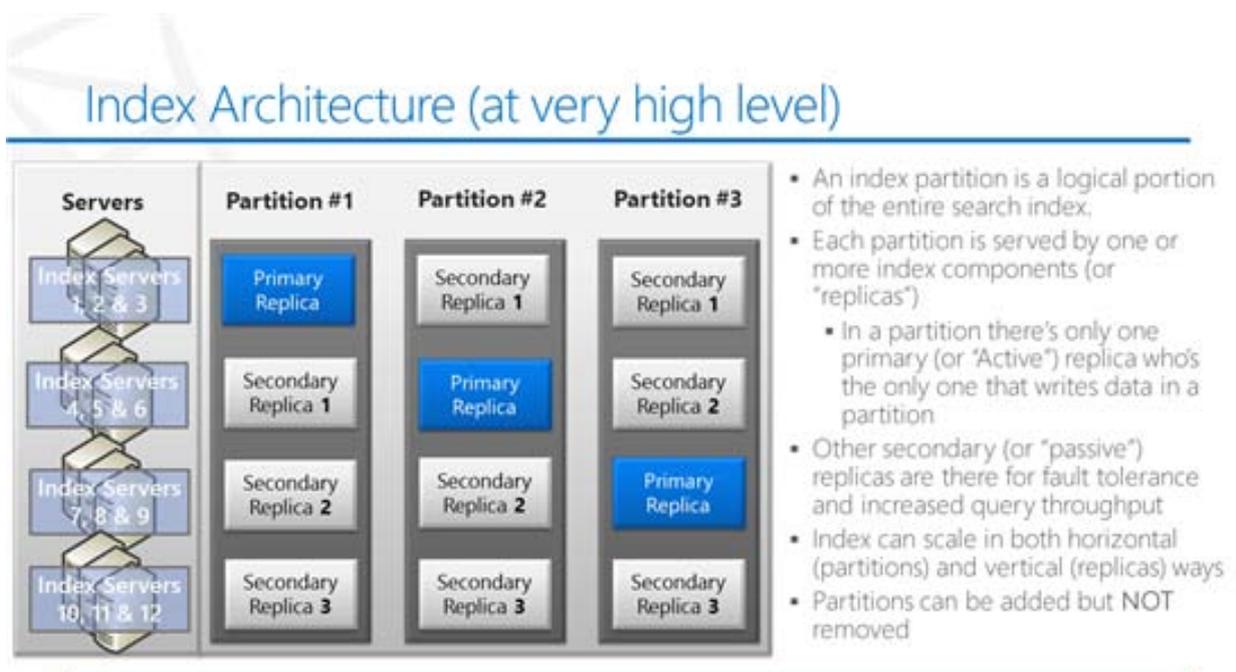
The index component accepts and administers both content processing and query processing information. Content data is stored in index files while generating result-sets for queries.

Like many other features of SharePoint 2013, the Index Component and related architecture resembles FAST, with the ability to separate indexes into scaled columns and rows for query loads and data volumes alike. This is an improvement over SharePoint 2010.

As separated, index partitions can be:

- Stored individually on disk in a file-set;
- Further divided into discrete sections containing a unique index component.

As Figure III demonstrates, the index architecture's search architecture and topology resembles FAST, and assumes a format similar to SharePoint Search 2010, without replicating the previous configuration item by item.



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FIGURE III: INDEX ARCHITECTURE

\*\* Graphic material, Brian Pendergrass, 7/16/12 ([http://blogs.msdn.com/b/sharepoint\\_strategy/archive/2012/07/16/sharepoint-2013-is-here.aspx](http://blogs.msdn.com/b/sharepoint_strategy/archive/2012/07/16/sharepoint-2013-is-here.aspx))

Row/Column architecture from FS4SP is also closely aligned with SharePoint 2013's Index Architecture. In all cases, partitions are represented by columns and replicas by rows. In SharePoint 2013, partition columns help separate the index among servers, while replica rows produce desired server-group redundancy.

## Deferred site collection upgrade

The deferred site collection upgrade in SharePoint 2013 replaces SharePoint 2010's visual upgrade. For the user, overhaul of visual search refiners generates display templates that feature revised and improved interaction with refiners and a new floating preview pane. Limited previews are available for Microsoft Office documents, but this functionality requires a separate Office Web Apps server.

Deferred site collection upgrade permits use of SharePoint 2010's UI with fewer operational hassles, while retaining master page, JScript, SPF, and CSS applications of SharePoint 2010.

However, SPSite is the source of user interface in SharePoint 2013 rather than the previous SPWeb. Also, site previews require producing a temporary site-copy and upgrading it as necessary, instead of SharePoint 2010's reliance of preview in the current collection event.

This upgrade improves the efficiency of performance. In addition, the user interface version of visual upgrade API feature has been improved by remapping new site collection compatibility-level properties so the dependent code does not have to be changed.

## Query side improvements

SharePoint 2013's query processing component analyzes and administers search queries and their results. Query search improvements have been designed to tailor searches to user needs. They include:

- Customized spelling correction handled with term store functionality in SharePoint 2013;
- Updated processing capacities that enhance search precision and data recall according to the information's relevancy to the specific query topic(s);

- Addition of analytics competencies have improved the quality of query suggestions, frequently based on search experience, matching them more precisely to users' unique query requirements;
- SharePoint 2013's new query rules engine adds to the specificity of user searches by matching query conditions to directives that further customize query applications.

The addition of these features to SharePoint 2013 represent improvements to the query processing available in SharePoint 2010. The outcome for users is exceptional linguistic processing; the newer search types and enhanced capacities for query syntax monitoring generate more comprehensive result type customization.

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# Limitations to SharePoint 2013

Although overall functionality and user experience of SharePoint 2013 in comparison to SharePoint 2010 has been simplified and improved, limitations have emerged that have not yet been overcome. These limitations also exist within features that have been upgraded between SharePoint 2010 and SharePoint 2013 so it can be argued that efficiency has been compromised in certain processes.

The user Interface is very different in SharePoint 2013 when compared to SharePoint 2010. Although overall performance has been improved, the changes are sufficiently extensive that the user has much new material to work through to fully comprehend the differences. While much of the front-end functionality has been improved from an aesthetical perspective, these have had little impact when considering search productivity and configurability. It remains largely as a one-size fits all search solution that does not significantly enhance findability and user-experience.

It is likely that the end-user will continue to be frustrated by the lack of visual pointers offered by Preview for example. Users require the ability to quickly assess whether a document returned by a search query is relevant. By providing this improved preview functionality user experience is enhanced, user adoption increased and ultimately a positive return on investment is achieved.

It is also expected that administrative operations like the creation of new site collection will have diminished performance. Proactive skilled administrator management is recommended where customization/configuration complexities require data refactoring into multiple content databases.

While there has been a significant investment in the back-end, particularly from a search perspective, there are still a number of front end limitations with out of the box functionality within SharePoint 2013. These limitations included:

- Lack of sufficient Alerts, RSS Feeds, and Saved Searches.
- Excess infrastructure for document previews.
- Lack of a configurable web crawler.
- Limited preview support for many file types, most prominently PDFs.

It is recommended that these limitations be investigated and addressed in the next major version of SharePoint.

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# Conclusion

As the limitations mentioned above indicate, SharePoint 2013 is far from perfect, but nevertheless represents a significant improvement over SharePoint 2010 with respect to most major performance issues. Many of the benefits of FAST search functionality have been integrated with the base SharePoint 2013 providing an enhanced search platform. Application improvements for query (result type customization, syntax, experiential search), and crawling (scalability, indexing) combined with better developed refiner properties and function have allowed significant strides to be made when comparing SharePoint 2013 and SharePoint 2010 from an operational perspective.

In addition, the overall advantage of competent use by non-expert users is maintained despite improvements to SharePoint 2013. SharePoint 2013 offers more simplified user experiences in comparison to SharePoint 2010 without sacrificing performance. That said, there are still significant limitations when considering how search results are displayed to end users. While the Search Center's overall interface has been improved, core functionality that drives findability, search relevance, and enhanced user experience is still lacking.

While there has been a marked improvement with SharePoint 2013 across the board, it is clear that to truly unlock the value of SharePoint 2013 and enhance search within the platform - customization via third party applications is still required.

Ontolica remains at the forefront for those who are seeking an enhanced SharePoint Search experience for their users. While the advances in the back-end technology provided by SharePoint 2013 will allow search productivity to be enhanced, to truly maximize the search functionality with SharePoint 2013 we suggest adding Ontolica Enterprise Search and Ontolica Search Preview. Ontolica enables organizations to offer an enterprise wide solution that provides more relevant results, faster search navigation, and deep scalability within SharePoint 2013.

Ontolica will truly provide users with greater confidence in search, resulting in improved business operations and, ultimately, more time spent on doing the things that matter to your organization.

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