

# [MS-QSSWS]:

## Search Query Shared Services Protocol

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## Revision Summary

| Date       | Revision History | Revision Class | Comments   |
|------------|------------------|----------------|--|
| 7/13/2009  | 0.1              | Major          | Initial Availability   |
| 8/28/2009  | 0.2              | Editorial      | Revised and edited the technical content                                     |
| 11/6/2009  | 0.3              | Editorial      | Revised and edited the technical content                                     |
| 2/19/2010  | 1.0              | Minor          | Updated the technical content  |
| 3/31/2010  | 1.01             | Editorial      | Revised and edited the technical content                                     |
| 4/30/2010  | 1.02             | Editorial      | Revised and edited the technical content                                     |
| 6/7/2010   | 1.03             | Editorial      | Revised and edited the technical content                                     |
| 6/29/2010  | 1.04             | Editorial      | Changed language and formatting in the technical content.                    |
| 7/23/2010  | 1.05             | Minor          | Clarified the meaning of the technical content.                              |
| 9/27/2010  | 1.05             | None           | No changes to the meaning, language, or formatting of the technical content. |
| 11/15/2010 | 1.05             | None           | No changes to the meaning, language, or formatting of the technical content. |
| 12/17/2010 | 1.05             | None           | No changes to the meaning, language, or formatting of the technical content. |
| 3/18/2011  | 1.05             | None           | No changes to the meaning, language, or formatting of the technical content. |
| 6/10/2011  | 1.05             | None           | No changes to the meaning, language, or formatting of the technical content. |
| 1/20/2012  | 2.0              | Major          | Significantly changed the technical content.                                 |
| 4/11/2012  | 2.0              | None           | No changes to the meaning, language, or formatting of the technical content. |
| 7/16/2012  | 2.0              | None           | No changes to the meaning, language, or formatting of the technical content. |
| 9/12/2012  | 2.0              | None           | No changes to the meaning, language, or formatting of the technical content. |
| 10/8/2012  | 2.0.1            | Editorial      | Changed language and formatting in the technical content.                    |
| 2/11/2013  | 2.0.2            | Editorial      | Changed language and formatting in the technical content.                    |
| 7/30/2013  | 3.0              | Major          | Significantly changed the technical content.                                 |
| 11/18/2013 | 3.0              | None           | No changes to the meaning, language, or formatting of the technical content. |
| 2/10/2014  | 3.1              | Minor          | Clarified the meaning of the technical content.                              |
| 4/30/2014  | 3.2              | Minor          | Clarified the meaning of the technical content.                              |
| 7/31/2014  | 3.3              | Minor          | Clarified the meaning of the technical content.                              |
| 10/30/2014 | 3.4              | Minor          | Clarified the meaning of the technical content.                              |

| <b>Date</b> | <b>Revision History</b> | <b>Revision Class</b> | <b>Comments</b>  |
|-------------|-------------------------|-----------------------|--|
| 2/26/2016   | 4.0                     | Major                 | Significantly changed the technical content.                                 |
| 7/15/2016   | 4.0                     | None                  | No changes to the meaning, language, or formatting of the technical content. |

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# 1 Introduction

The Search Query Shared Services Protocol enables the protocol client to retrieve search results and related information from the protocol server and to inform the protocol server about usage information.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

## 1.1 Glossary

This document uses the following terms:

**alert subscription:** A request to receive an Internet message automatically when user-defined criteria are met. Such messages are generated automatically when items such as documents, webpages, list items, sites, or other resources on a server are changed.

**alternate access mapping:** A mapping of URLs to web applications. Incoming alternate access mappings are used to provide multiple URL entry points for the same set of content. Outgoing alternate access mappings are used to ensure that content is rendered in the correct URL context.

**application server:** A computer that provides infrastructure and services for applications that are hosted on a server farm.

**ascending order:** A sort order in which text strings are arranged in alphabetical order, numerical values are arranged from smallest to largest, and dates and times are arranged from oldest to newest.

**best bet:** A URL that a site collection administrator assigns to a keyword as being relevant for that keyword. See also **visual best bet**.

**clickthrough:** The process of navigating from one Internet resource to another.

**compatibility mode:** A mode in which hardware or software in one system or product version supports operations from another system or product version.

**context:** A collection of context properties that describe an execution environment.

**contextual search scope:** A system-defined restriction that can optionally be added to a query to restrict the query results to items that are from a specific site or list.

**cookie:** A small data file that is stored on a user's computer and carries state information between participating protocol servers and protocol clients.

**Coordinated Universal Time (UTC):** A high-precision atomic time standard that approximately tracks Universal Time (UT). It is the basis for legal, civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC. In this role, it is also referred to as Zulu time (Z) and Greenwich Mean Time (GMT). In these specifications, all references to UTC refer to the time at UTC-0 (or GMT).

**descending order:** A sort order in which text strings are arranged in reverse alphabetical order, numerical values are arranged from largest to smallest, and dates and times are arranged from newest to oldest.

**discovery center:** See discovery console.

**duplicate:** A search result that is identified as having identical or near identical content.

**duplicate result removal:** An operation to compare the similarity of items and remove duplicates from search results.

**electronic discovery (eDiscovery):** A type of legal discovery that focuses on electronic (computer) communications and files.

**empty GUID:** A 128-bit, 16-byte identification number that is represented by all zeros.

**empty string:** A string object or variable that is initialized with the value "".

**extracted definition:** The definition that is obtained by an index server during a crawl to determine if any sentences in the item match the pattern for defining a term.

**federated location:** A source that returns search results for a search query. The source can be a local search catalog or an OpenSearch1.0/1.1-compliant search engine, as described in [\[OpenSearch1.1-Draft3\]](#).

**front-end web server:** A server that hosts webpages, performs processing tasks, and accepts requests from protocol clients and sends them to the appropriate back-end server for further processing.

**full-text index catalog:** A collection of full-text index components and other files that are organized in a specific directory structure and contain the data that is needed to perform queries.

**globally unique identifier (GUID):** A term used interchangeably with universally unique identifier (UUID) in Microsoft protocol technical documents (TDs). Interchanging the usage of these terms does not imply or require a specific algorithm or mechanism to generate the value. Specifically, the use of this term does not imply or require that the algorithms described in [\[RFC4122\]](#) or [\[C706\]](#) must be used for generating the **GUID**. See also universally unique identifier (UUID).

**high confidence results:** A subset of search results that are considered to be highly relevant because of a precise match between a high confidence property value and the tokens in the query text.

**host name:** The name of a physical server, as described in [\[RFC952\]](#).

**Hypertext Markup Language (HTML):** An application of the Standard Generalized Markup Language (SGML) that uses tags to mark elements in a document, as described in [\[HTML\]](#).

**index partition:** A part of an inverted index within a search system. In Microsoft Search Server 2010 and Microsoft Office SharePoint Server 2007 for Search, it is defined by a set of document distribution identifiers. In Microsoft FAST Search Server 2010, it is defined by a search index within an index column and can be divided into additional index partitions.

**inflectional form:** A variant of a root token that has been modified according to the linguistic rules of a given language. For example, inflections of the verb "swim" in English include "swim," "swims," "swimming," and "swam."

**JavaScript Object Notation (JSON):** A text-based, data interchange format that is used to transmit structured data, typically in Asynchronous JavaScript + XML (AJAX) web applications, as described in [\[RFC4627\]](#). The JSON format is based on the structure of ECMAScript (Jscript, JavaScript) objects.

**keyword:** One or more words or phrases that site administrators identified as important for a search service application. A keyword provides a way to apply business rules to search results for queries that use the keyword.

**keyword query:** Query text that contains a property restriction and a corresponding property value.

**keyword synonym:** An alternate phrasing of a specific keyword. When users search for a keyword synonym, the search results include the same **best bet** results as for the keyword.

**language code identifier (LCID):** A 32-bit number that identifies the user interface human language dialect or variation that is supported by an application or a client computer.

**list:** A container within a SharePoint site that stores list items. A list has a customizable schema that is composed of one or more fields.

**local search scope:** An administrator-defined restriction (1) that can optionally be added to a query to restrict the query results to items that are from a specific SharePoint site collection, site, or list.

**managed property:** A specific property that is part of a metadata schema. It can be exposed for use in search queries that are executed from the user interface.

**metadata index:** A data structure that is stored on a back-end database server. It stores properties that are associated with each item, and the attributes (1) of those properties.

**noise word:** See stop word.

**object model:** A collection of object-oriented APIs that represent data structures and are designed to promote software interoperability.

**page impression:** An identifier for unique **query text**.

**pluggable security authentication:** The ability to support alternate mechanisms for determining the identity of another entity.

**post-query suggestions:** An alternative search query that is related to the search query that was executed.

**pre-query suggestions:** A search query that is related to the search query that the user is typing.

**query logging:** The process of recording information about user searches, such as search terms and time of access.

**query result:** A result that is returned for a query. It contains the title and URL of the item, and can also contain other managed properties and a hit-highlighted summary.

**query rule:** A setting that consists of a keyword condition and an action performed to provide the most relevant search results.

**query text:** The textual, string portion of a query.

**query throttling:** A mechanism that helps all queries get their fair share of computational resources.

**query transform:** A query processing stage in which query text is examined and possibly modified to optimize query results. Examples of modifications are applying synonym settings or stemming expansion rules to the text.

**ranking model:** In a search query, a set of weights and numerical parameters that are used to compute a ranking score for each item. All items share the same ranking model for a specific set of search results. See also rank.

**refinement bin:** A set of data that is returned with query results and represents a statistical distribution of those results. The data is based on values of the managed property with which a refiner is associated.



**refinement token:** A Base-64 encoded string that represents a single refinement modifier that can be used to refine a search query. The string includes the name of the refiner, refinement name, and refinement value.

**refinement value:** A string that stores a value or numeric range that can be used to refine query results.

**refiner:** A configuration that is used for query refinement and is associated with one managed property.

**request message:** A Traversal Using Relay NAT (TURN) message that is sent from a protocol client to a protocol server.

**response message:** A Traversal Using Relay NAT (TURN) message that is sent from a protocol server to a protocol client in response to a request message. It is sent when the request message is handled successfully by the protocol server.

**result provider:** A component or application that serves a query to a **search provider** and translates the resulting data into a result set.

**result set:** A list of records that results from running a stored procedure or query, or applying a filter. The structure and content of the data in a result set varies according to the implementation.

**result source:** A local or remote search catalog, a remote Exchange search endpoint or an OpenSearch1.0/1.1-compliant search engine that may include a list of attributes that defines a set of search results for a search query.

**search alert:** An Internet message that is sent to subscribers automatically for a specific query. It notifies subscribers when one or more new results exist, or an existing result was modified.

**search application:** A unique group of search settings that is associated, one-to-one, with a shared service provider.

**search index:** A set of data structures that facilitates query evaluation by a search service application. The primary part of a search index is an inverted index of terms.

**search provider:** A component or application that provides data in response to a query. See also **result provider**.

**search query:** A complete set of conditions that are used to generate search results, including query text, sort order, and ranking parameters.

**search query log:** A record of information about user searches, such as search terms and time of access.

**search scope:** A list of attributes that define a collection of items.

**search scope consumer:** A site collection that uses a specific search scope display group.

**search scope rule:** An attribute that specifies which items are included in a search scope.

**search security descriptor:** A custom security descriptor that is in an arbitrary format and is handled by alternate authentication providers in pluggable security authentication (2).

**search service application:** A shared service application that provides indexing and querying capabilities.

**search setting context:** An administrative setting that is used to specify when a search setting for a keyword is applied to a search query, based on the query context.

**security descriptor:** A data structure containing the security information associated with a securable object. A **security descriptor** identifies an object's owner by its **security identifier (SID)**. If access control is configured for the object, its **security descriptor** contains a discretionary access control list (DACL) with **SIDs** for the security principals who are allowed or denied access. Applications use this structure to set and query an object's security status. The **security descriptor** is used to guard access to an object as well as to control which type of auditing takes place when the object is accessed. The **security descriptor** format is specified in [\[MS-DTYP\]](#) section 2.4.6; a string representation of **security descriptors**, called SDDL, is specified in [\[MS-DTYP\]](#) section 2.5.1.

**security identifier (SID):** An identifier for security principals in Windows that is used to identify an account or a group. Conceptually, the **SID** is composed of an account authority portion (typically a domain) and a smaller integer representing an identity relative to the account authority, termed the relative identifier (RID). The **SID** format is specified in [\[MS-DTYP\]](#) section 2.4.2; a string representation of **SIDs** is specified in [\[MS-DTYP\]](#) section 2.4.2 and [\[MS-AZOD\]](#) section 1.1.1.2.

**security trimming:** The process of filtering search results by checking the access control list (ACL) for a resource and displaying only those resources that a user has permission to view.

**shared search scope:** An administrator-defined restriction (1) that can be added to a query to limit query results to a collection of content. This restriction is available to multiple **site collections**.

**site:** A group of related pages and data within a SharePoint site collection. The structure and content of a site is based on a site definition. Also referred to as SharePoint site and web site.

**site collection:** A set of websites (1) that are in the same content database, have the same owner, and share administration settings. A site collection can be identified by a **GUID** or the **URL** of the top-level site for the site collection. Each site collection contains a top-level site, can contain one or more subsites, and can have a shared navigational structure.

**site collection identifier:** A GUID that identifies a site collection. In stored procedures, the identifier is typically "@SiteId" or "@WebSiteId". In databases, the identifier is typically "SiteId/tp\_SiteId".

**site identifier:** A GUID that is used to identify a site in a **site collection**.

**SOAP action:** The HTTP request header field used to indicate the intent of the SOAP request, using a **URI** value. See [\[SOAP1.1\]](#) section 6.1.1 for more information.

**SOAP body:** A container for the payload data being delivered by a SOAP message to its recipient. See [\[SOAP1.2-1/2007\]](#) section 5.3 for more information.

**stemming:** A type of query expansion that factors relationships between words by reducing inflected words to their stem form or expanding stems to their inflected forms. For example, the words "swimming" and "swam" can be associated with the stem "swim."

**task:** An act to be executed by all query servers, and any requisite information for those query servers to execute that act correctly.

**tenant:** A protocol client or protocol server that accesses a partition in a shared service database.

**token:** A word in an item or a search query that translates into a meaningful word or number in written text. A token is the smallest textual unit that can be matched in a search query. Examples include "cat", "AB14", or "42".

**UI culture:** The language that is used to display strings and graphical elements in a user interface.

**Uniform Resource Identifier (URI):** A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [\[RFC3986\]](#).

**Uniform Resource Locator (URL):** A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [\[RFC1738\]](#).

**URL zone:** A specific base **Uniform Resource Locator (URL)** that can be used to access a resource within a web application (1). A web application can have multiple URL zones.

**verbose query monitoring:** The process of tracking and recording information about the time that is spent by a protocol server to process each search query.

**visual best bet:** A URL that specifies the address of an image and is assigned to a keyword by a site collection administrator as being relevant for that keyword. See also **best bet**.

**Web Part:** A reusable component that contains or generates web-based content such as XML, **HTML**, and scripting code. It has a standard property schema and displays that content in a cohesive unit on a webpage. See also Web Parts Page.

**Web Services Description Language (WSDL):** An XML format for describing network services as a set of endpoints that operate on messages that contain either document-oriented or procedure-oriented information. The operations and messages are described abstractly and are bound to a concrete network protocol and message format in order to define an endpoint. Related concrete endpoints are combined into abstract endpoints, which describe a network service. WSDL is extensible, which allows the description of endpoints and their messages regardless of the message formats or network protocols that are used.

**Windows security descriptor:** See **security descriptor**.

**WSDL message:** An abstract, typed definition of the data that is communicated during a **WSDL operation** [\[WSDL\]](#). Also, an element that describes the data being exchanged between web service providers and clients.

**WSDL operation:** A single action or function of a web service. The execution of a WSDL operation typically requires the exchange of messages between the service requestor and the service provider.

**XML namespace:** A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [\[RFC3986\]](#). A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [\[XMLNS-2ED\]](#).

**XML namespace prefix:** An abbreviated form of an **XML namespace**, as described in [\[XML\]](#).

**XML schema:** A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## 1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[MS-DSDIFFGRAM] Microsoft Corporation, "[SharePoint Web Services: DataSet DiffGram Structure](#)".

[MS-FQL2] Microsoft Corporation, "[Fast Query Language Version 2 Protocol](#)".

[MS-SADMWS] Microsoft Corporation, "[Search Site Administration Web Service Protocol](#)".

[MS-SEARCH] Microsoft Corporation, "[Search Protocol](#)".

[MS-SRCHCSOM] Microsoft Corporation, "[Search Client Query Protocol](#)".

[RFC1738] Berners-Lee, T., Masinter, L., and McCahill, M., Eds., "Uniform Resource Locators (URL)", RFC 1738, December 1994, <http://www.ietf.org/rfc/rfc1738.txt>

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.rfc-editor.org/rfc/rfc2119.txt>

[RFC2396] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifiers (URI): Generic Syntax", RFC 2396, August 1998, <http://www.rfc-editor.org/rfc/rfc2396.txt>

[RFC3066] Alvestrand, H., "Tags for the Identification of Languages", BCP 47, RFC 3066, January 2001, <http://www.ietf.org/rfc/rfc3066.txt>

[RFC4627] Crockford, D., "The application/json Media Type for JavaScript Object Notation (JSON)", RFC 4627, July 2006, <http://www.rfc-editor.org/rfc/rfc4627.txt>

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., et al., "Simple Object Access Protocol (SOAP) 1.1", May 2000, <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>

[WSDL] Christensen, E., Curbera, F., Meredith, G., and Weerawarana, S., "Web Services Description Language (WSDL) 1.1", W3C Note, March 2001, <http://www.w3.org/TR/2001/NOTE-wsdl-20010315>

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, <http://www.w3.org/TR/2009/REC-xml-names-20091208/>

[XMLSCHEMA1] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/>

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/>

### 1.2.2 Informative References

[MSDN-DataContractKnownTypes] Microsoft Corporation, "Data Contract Known Types", <http://msdn.microsoft.com/en-us/library/ms730167.aspx>

[MSDN-ResultsView] Microsoft Corporation, "ResultsView Enumeration", <http://msdn.microsoft.com/en-us/library/microsoft.office.server.search.webcontrols.resultsview.aspx>

### 1.3 Overview

This protocol allows a protocol client to issue **search queries** against a protocol server hosting a **search service application**.

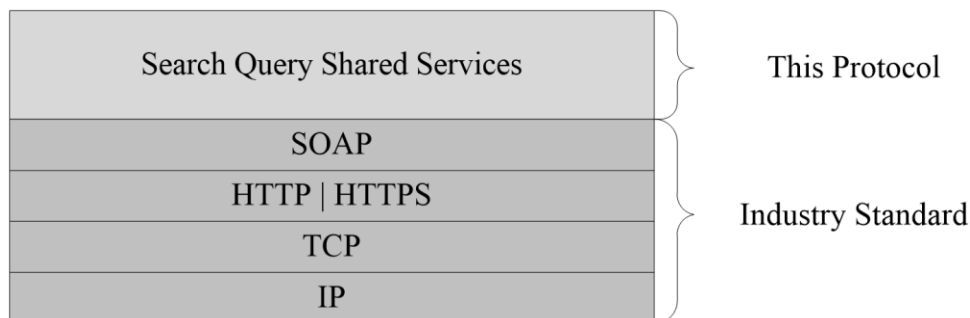
Typical scenarios for using this protocol include:

- A protocol client issues a search query to the protocol server, and the protocol server responds with **query results**.
- A protocol client issues a search query to the protocol server, and the protocol server responds with **pre-query suggestions** or **post-query suggestions**.
- A protocol client submits the search query and the clicked query results to the protocol server for logging.
- A protocol client notifies the protocol server of errors encountered on the protocol client and timing of protocol client processing stages. The protocol server records these errors and time intervals for logging.

### 1.4 Relationship to Other Protocols

This protocol uses the SOAP message protocol for formatting request and response messages, as described in [\[SOAP1.1\]](#), [\[SOAP1.2/1\]](#) and [\[SOAP1.2/2\]](#). It transmits those messages by using HTTP, as described in [\[RFC2616\]](#), or Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS), as described in [\[RFC2818\]](#).

The following diagram shows the underlying messaging and transport stack used by the protocol:



**Figure 1: This protocol in relation to other protocols**

### 1.5 Prerequisites/Preconditions

This protocol operates against a protocol server that exposes one or more endpoint (4) **URIs** that are known by protocol clients. The endpoint (4) URI of the protocol server and the transport that is used by the protocol server are either known by the protocol client or obtained by using the discovery mechanism that is described in [\[MS-SPTWS\]](#).

The protocol client obtains the requisite ApplicationClassId and ApplicationVersion values and the endpoint (4) URI of the protocol server that provides the discovery mechanism, as described in [\[MS-SPTWS\]](#), by means that are independent of either protocol.

This protocol requires the protocol client to have permission to call the methods on the protocol server.

The protocol client implements the token-based security mechanisms that are required by the protocol server and related security protocols, as described in [\[MS-SPSTWS\]](#).

## 1.6 Applicability Statement

This protocol is intended for use by protocol clients and protocol servers that are connected by high-bandwidth, low-latency network connections.

This protocol was designed to query search service applications on an **application server** from a **front-end Web server**. This protocol was designed for returning results sets containing less than or equal to 10,000 rows.

## 1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol can be implemented by using transports that support sending Simple Object Access Protocol (SOAP) messages, as described in section 2.1.
- **Protocol Versions:** This protocol is not versioned.

**Capability Negotiation:** This protocol does not support version negotiation.

## 1.8 Vendor-Extensible Fields

None.

## 1.9 Standards Assignments

None.

## 2 Messages

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The **WSDL** in this specification matches the WSDL that shipped with the product and provides a base description of the schema. The text that introduces the WSDL might specify differences that reflect actual Microsoft product behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **not null**, and **present**.

### 2.1 Transport

Protocol servers **MUST** support Simple Object Access Protocol (SOAP) over Hypertext Transfer Protocol (HTTP), Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS), or TCP.

All protocol messages **MUST** be transported by using HTTP or TCP bindings at the transport level.

Protocol messages **MUST** be formatted as specified in either [\[SOAP1.1\]](#) section 4 or [\[SOAP1.2/1\]](#) section 5. Protocol server faults **MUST** be returned by using HTTP status codes, as specified in [\[RFC2616\]](#) section 10, or SOAP faults, as specified in [\[SOAP1.1\]](#) section 4.4 or [\[SOAP1.2/1\]](#) section 5.4.

If the HTTPS transport is used, a server certificate **MUST** be deployed.

This protocol **MAY** transmit an additional SOAP header, the **ServiceContext** header, as specified in [\[MS-SPSTWS\]](#).

This protocol does not define any means for activating a protocol server or protocol client. The protocol server **MUST** be configured and begin listening in an implementation-specific way. In addition, the protocol client **MUST** know the format and transport that is used by the server, for example, the SOAP format over an HTTP transport.

### 2.2 Common Message Syntax

This section contains common definitions that are used by this protocol. The syntax of the definitions uses **XML schema**, as specified in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and WSDL, as specified in [\[WSDL\]](#).

#### 2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [\[XMLNS\]](#). Although this specification associates a specific **XML namespace prefix** for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

| Prefix | Namespace URI   | Reference                 |
|--------|---|---------------------------|
| q1     | <a href="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration">http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration</a> |                           |
| q2     | <a href="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08">http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08</a>   |                           |
| q3     | <a href="http://schemas.microsoft.com/2003/10/Serialization/Arrays">http://schemas.microsoft.com/2003/10/Serialization/Arrays</a>   |                           |
| ser    | <a href="http://schemas.microsoft.com/2003/10/Serialization/">http://schemas.microsoft.com/2003/10/Serialization/</a>   |                           |
| soap   | <a href="http://schemas.xmlsoap.org/wsd/soap/">http://schemas.xmlsoap.org/wsd/soap/</a>   | <a href="#">[SOAP1.1]</a> |

| Prefi<br>x | Namespace URI   | Reference  |
|------------|---|--|
| tns        | http://tempuri.org/   |  |
| tns1       | http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring |  |
| tns2       | http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query      |  |
| tns3       | http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration       |  |
| tns4       | http://schemas.datacontract.org/2004/07/System.Collections.Generic                |  |
| tns5       | http://tempuri.org/Imports  |  |
| wsaw       | http://www.w3.org/2006/05/addressing/wsd  |  |
| wSDL       | http://schemas.xmlsoap.org/wsd/   | <a href="#">[WSDL]</a>   |
| xs         | http://www.w3.org/2001/XMLSchema  | <a href="#">[XMLSCHEMA1<br/>1]</a><br><a href="#">[XMLSCHEMA2<br/>1]</a> |

## 2.2.2 Messages

This specification does not define any common **WSDL message** definitions.

## 2.2.3 Elements

This specification does not define any common XML schema element definitions.

## 2.2.4 Complex Types

The following table summarizes the set of common XML schema complex type definitions defined by this specification. XML schema complex type definitions that are specific to a particular operation are described with the operation.

| Complex type                                     | Description  |
|--|--|
| <b>AggregatedOMQueryLatencyDataBuffer</b>        | The <b>AggregatedOMQueryLatencyDataBuffer</b> complex type defines a set of properties that are used by the <b>AggregatedOMQueryLatencyDataBuffer</b> object as specified in abstract data model section <a href="#">3.1.1.5</a> |
| <b>AggregatedUIQueryLatencyDataBuffer</b>        | The <b>AggregatedUIQueryLatencyDataBuffer</b> complex type defines a set of properties that are used by the <b>AggregatedUIQueryLatencyDataBuffer</b> object as specified in abstract data model section <a href="#">3.1.1.5</a> |
| <b>AlertInfo</b>                                 | The <b>AlertInfo</b> complex type contains information about a <b>search alert</b> .   |
| <b>ArrayOfAggregatedOMQueryLatencyDataBuffer</b> | The <b>ArrayOfAggregatedOMQueryLatencyDataBuffer</b> complex type contains a list of aggregated search   |



| Complex type  | Description  |
|---|--|
|   | query latencies for processing queries on the protocol server. Each entry in the list provides information about a set of search queries executed within a time period determined by the protocol server.  |
| <b>ArrayOfAggregatedUIQueryLatencyDataBuffer</b>  | The <b>ArrayOfAggregatedUIQueryLatencyDataBuffer</b> complex type contains a list of aggregated latency information for the search results page. Each entry in the list provides information about a set of search queries executed within a time period determined by the protocol server.  |
| <b>ArrayOfanyType</b>   | The <b>ArrayOfanyType</b> complex type represents an array of arbitrary object values.   |
| <b>ArrayOfboolean</b>   | A list of Boolean flags.   |
| <b>ArrayOfint</b>   | The <b>ArrayOfint</b> complex type <a href="#">&lt;1&gt;</a> represents an array of integer values.  |
| <b>ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az</b>                                | The <b>ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az</b> complex type <a href="#">&lt;2&gt;</a> contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.                                |
| <b>ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az</b>                             | The <b>ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az</b> complex type <a href="#">&lt;3&gt;</a> contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.                             |
| <b>ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az</b>                             | The <b>ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az</b> complex type <a href="#">&lt;4&gt;</a> contains a list of aggregated latency information for the search results page. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.  |
| <b>ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1</b> | The <b>ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1</b> complex type <a href="#">&lt;5&gt;</a> contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server. |
| <b>ArrayOfKeyValueOfstringstring</b>  | The <b>ArrayOfKeyValueOfstringstring</b> complex type represents an array of properties in the form of key-value pairs.  |
| <b>ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az</b>                                | The <b>ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az</b>   |

| Complex type  | Description   |
|---|---|
|   | <p><b>yDataBuffer_PFsic3Az</b> complex type&lt;6&gt; contains a list of aggregated latency information. Each entry in the list provides latency information about a single search query.</p>  |
| <p><b>ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az</b></p> | <p>The <b>ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az</b> complex type&lt;7&gt; contains a list of latency information about the search results page when processing individual search queries. Each entry provides information about a single search query.</p>  |
| <p><b>ArrayOfstring</b></p>   | <p>The <b>ArrayOfstring</b> complex type represents an array of arbitrary string values.</p>  |
| <p><b>ArrayOfVerboseOMQueryLatencyDataBuffer</b></p>                          | <p>The <b>ArrayOfVerboseOMQueryLatencyDataBuffer</b> complex type contains a list of latency information about the execution of search queries on the protocol server. Each entry provides information about a single search query.</p>   |
| <p><b>ArrayOfVerboseQueryErrorDataBuffer</b></p>                              | <p>The <b>ArrayOfVerboseQueryErrorDataBuffer</b> complex type contains a list of information for errors occurred during the processing of search queries in the protocol client. Each entry in the list corresponds to an error.</p>  |
| <p><b>ArrayOfVerboseUIQueryLatencyDataBuffer</b></p>                          | <p>The <b>ArrayOfVerboseUIQueryLatencyDataBuffer</b> complex type contains a list of latency information about the search results page when processing individual search queries. Each entry provides information about a single search query.</p>  |
| <p><b>ArrayOfVerboseWebPartQueryLatencyDataBuffer</b></p>                     | <p>The <b>ArrayOfVerboseWebPartQueryLatencyDataBuffer</b> complex type contains the search query latency of the <b>Web Parts</b> in processing search queries within a 60-second time period. Each entry corresponds to the search query latency of a Web Part on the search results page.</p>  |
| <p><b>DataBuffer</b></p>  | <p>The <b>DataBuffer</b> complex type defines a common set of properties that are used by the different types of <b>DataBuffer</b> objects as specified in abstract data model section 3.1.1.5.</p>   |
| <p><b>DateRefinementInterval</b></p>  | <p>The <b>DateRefinementInterval</b> complex type contains information about a <b>refinement bin</b> for a <b>refiner</b> of type DateTime. The protocol server MUST use this as a refinement bin if returning <b>refinement values</b> for a refiner where this is specified.</p>  |
| <p><b>FullTextSqlQueryProperties</b></p>                                      | <p>The <b>FullTextSqlQueryProperties</b> complex type contains information about a full-text Structured Query Language (SQL) search query. The <b>FullTextSqlQueryProperties</b> extends the <b>QueryProperties</b> data type as specified in section <a href="#">2.2.4.11</a>. If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is equal to <b>SearchProvider.FASTSearch</b>, the complex type MUST be ignored by the protocol server.</p> |
| <p><b>HighlightedString</b></p>   | <p>The <b>HighlightedString</b> complex type represents a particular highlighted string within a text.</p>  |

| Complex type  | Description  |
|---|--|
| <b>NumericRefinementInterval</b>  | The <b>NumericRefinementInterval</b> complex type contains information about a refinement bin for a numeric refiner. The protocol server MUST use this as a refinement bin if returning refinement values for a refiner where this is specified.   |
| <b>OMQueryLatencyDataBuffer</b>   | The <b>OMQueryLatencyDataBuffer</b> complex type contains a list of aggregated query latencies that are approximated to a value that is determined by the protocol server.   |
| <b>PagingCookie</b>   | The contents of the <b>PagingCookie</b> complex type are specific to the implementation of the protocol server. For more details on the usage of this complex type, see <b>QueryProperties.PagingCookie</b> as specified in section 2.2.4.11.  |
| <b>QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE</b> | The <b>QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE</b> complex type contains lists of aggregated and per-search query latencies. Each entry in the aggregated list provides latency information about a set of search queries within a time period determined by the protocol server. Each entry in the verbose list provides information about one search query.                                       |
| <b>QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE</b> | The <b>QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE</b> complex type contains lists of aggregated and per-search query latency information for the search results page. Each entry in the aggregated list provides latency information about a set of search queries within a time period determined by the protocol server. Each entry in the verbose list provides information about one search query. |
| <b>QueryErrorDataBuffer</b>   | The <b>QueryErrorDataBuffer</b> complex type contains a list of information for errors occurred during the processing of search queries in the protocol client. Each entry in the list corresponds to an error.  |
| <b>QueryHealthMonitoringSettings</b>  | The <b>QueryHealthMonitoringSettings</b> complex type defines settings that are used to configure query health monitoring data collection into the objects defined in section 3.1.1.5.   |
| <b>QueryPersonalizationData</b>   | The <b>QueryPersonalizationData</b> complex type contains a unique identifier for the current user who is executing a search query.  |
| <b>QueryProperties</b>  | The <b>QueryProperties</b> complex type contains information common to all types of search queries. The <b>QueryProperties</b> data type is extended by the <b>KeywordQueryProperties</b> data type, as specified in section <a href="#">3.1.4.7.3.1</a> , and the <b>FullTextSqlQueryProperties</b> data type, as specified in section <a href="#">2.2.4.7</a> .  |
| <b>UIQueryLatencyDataBuffer</b>   | The <b>UIQueryLatencyDataBuffer</b> complex type contains the search query latency of the search results page for search queries within a time period  |

| Complex type                                | Description   |
|---|---|
|   | determined by the protocol server.  |
| <b>VerboseOMQueryLatencyDataBuffer</b>      | The <b>VerboseOMQueryLatencyDataBuffer</b> complex type contains details of the search query latency for a single search query.                                   |
| <b>VerboseQueryErrorDataBuffer</b>          | The <b>VerboseQueryErrorDataBuffer</b> complex type contains the information of an error occurred during the processing of a search query in the protocol client. |
| <b>VerboseUIQueryLatencyDataBuffer</b>      | The <b>VerboseUIQueryLatencyDataBuffer</b> complex type contains details of search query latency for a single search query.                                       |
| <b>VerboseWebPartQueryLatencyDataBuffer</b> | The <b>VerboseWebPartQueryLatencyDataBuffer</b> complex type contains detail of search query latency of a single Web Part.  |
| <b>WebPartQueryLatencyDataBuffer</b>        | The <b>WebPartQueryLatencyDataBuffer</b> complex type contains the latency of the Web Parts in processing search queries within a 60-second time period           |

#### 2.2.4.1 PagingCookie

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The contents of the **PagingCookie** complex type are specific to the implementation of the protocol server. For more details on the usage of this complex type, see **QueryProperties.PagingCookie** as specified in section [2.2.4.11](#).

```
<xs:complexType name="PagingCookie" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:any minOccurs="0" maxOccurs="unbounded" namespace="##local" processContents="skip"/>
  </xs:sequence>
  <xs:attribute ref="ser:FactoryType"/>
</xs:complexType>
```

**ser:FactoryType:** This specifies a factory class that can deserialize the type. The factory class MUST be part of the known types collection of the DataContractSerializer instance being used. For more information about known types, see [\[MSDN-DataContractKnownTypes\]](#).

#### 2.2.4.2 ArrayOfanyType

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfanyType** complex type represents an array of arbitrary object values.

```
<xs:complexType name="ArrayOfanyType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="anyType" nillable="true"
type="xs:anyType"/>
  </xs:sequence>
</xs:complexType>
```

**anyType:** Specifies an element of any arbitrary object type. The meaning of the element and whether the element's value is limited to a range depend on the context of usage.

### 2.2.4.3 ArrayOfstring

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfstring** complex type represents an array of arbitrary string values.

```
<xs:complexType name="ArrayOfstring" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**string:** A single string value.

### 2.2.4.4 AlertInfo

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **AlertInfo** complex type contains information about a search alert.

```
<xs:complexType name="AlertInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ChangeType" type="tns2:AlertChangeType"/>
    <xs:element minOccurs="0" name="LastUpdateTime" type="xs:dateTime"/>
  </xs:sequence>
</xs:complexType>
```

**ChangeType:** The type of changes for which a search alert MUST be generated. MUST be an **AlertChangeType** data type, as specified in section [2.2.5.1](#).

**LastUpdateTime:** The date and time, in **Coordinated Universal Time (UTC)** format, when the search alert was last generated.

### 2.2.4.5 DataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **DataBuffer** complex type defines a common set of properties that are used by the different types of **DataBuffer** objects as specified in abstract data model section [3.1.1.5](#).

```
<xs:complexType name="DataBuffer" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ApplicationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="EventTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="MachineName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**ApplicationId:** The unique identifier of the search service application.

**EventTime:** The date and time, in UTC format, at which the event occurred.

**MachineName:** The name of the computer on which the event occurred.

### 2.2.4.6 DateRefinementInterval

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **DateRefinementInterval** complex type contains information about a refinement bin for a refiner of type `DateTime`. The protocol server **MUST** use this as a refinement bin if returning refinement values for a refiner where this is specified.

```
<xs:complexType name="DateRefinementInterval" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:RefinementInterval">
      <xs:sequence>
        <xs:element minOccurs="0" name="LowerDate" type="xs:dateTime"/>
        <xs:element minOccurs="0" name="UpperDate" type="xs:dateTime"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**LowerDate:** The lower bound of this refinement bin. Only dates later than or equal to this date can be part of this refinement bin.

**UpperDate:** The upper bound of this refinement bin. Only dates before or equal to this date can be part of this refinement bin.

### 2.2.4.7 FullTextSqlQueryProperties

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **FullTextSqlQueryProperties** complex type contains information about a full-text Structured Query Language (SQL) search query. The **FullTextSqlQueryProperties** extends the **QueryProperties** data type as specified in section [2.2.4.11](#). If **QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is equal to **SearchProvider.FASTSearch**, the complex type **MUST** be ignored by the protocol server.

```
<xs:complexType name="FullTextSqlQueryProperties"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:QueryProperties">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

### 2.2.4.8 HighlightedString

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **HighlightedString** complex type represents a particular highlighted string within a text.

```
<xs:complexType name="HighlightedString" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="HighlightCount" type="xs:int"/>
    <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**HighlightCount:** Specifies the number of occurrence of search terms that were highlighted. The value MUST greater than or equal to zero.

**Value:** The string that was highlighted.

#### 2.2.4.9 NumericRefinementInterval

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **NumericRefinementInterval** complex type contains information about a refinement bin for a numeric refiner. The protocol server MUST use this as a refinement bin if returning refinement values for a refiner where this is specified.

```
<xs:complexType name="NumericRefinementInterval" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:RefinementInterval">
      <xs:sequence>
        <xs:element minOccurs="0" name="LowerNum" type="xs:long"/>
        <xs:element minOccurs="0" name="UpperNum" type="xs:long"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**LowerNum:** The lower bound of this refinement bin. Only numbers larger than or equal to this value MUST be part of this refinement bin.

**UpperNum:** The upper bound of this refinement bin. Only numbers smaller than or equal to this value MUST be part of this refinement bin.

#### 2.2.4.10 QueryPersonalizationData

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **QueryPersonalizationData** complex type contains a unique identifier for the current user who is executing a search query.

```
<xs:complexType name="QueryPersonalizationData" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="UserId" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
```

**UserId:** Specifies a **GUID** that identifies the user profile of the current user.

#### 2.2.4.11 QueryProperties

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **QueryProperties** complex type contains information common to all types of search queries. The **QueryProperties** data type is extended by the **KeywordQueryProperties** data type, as specified in section [3.1.4.7.3.1](#), and the **FullTextSqlQueryProperties** data type, as specified in section [2.2.4.7](#).

```
<xs:complexType name="QueryProperties" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="AlertInfo" nillable="true" type="q2:AlertInfo"/>
  </xs:sequence>
</xs:complexType>
```

```

    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="AuthenticationType" type="tns2:QueryAuthenticationType"/>
    <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="EnableNicknames" type="xs:boolean"/>
    <xs:element minOccurs="0" name="EnablePhonetic" type="xs:boolean"/>
    <xs:element minOccurs="0" name="EnableStemming" type="xs:boolean"/>
    <xs:element minOccurs="0" name="FarmId" type="ser:guid"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="Hint" type="tns2:QueryHint"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="HitHighlightedProperties" nillable="true" type="q3:ArrayOfanyType"/>
    <xs:element minOccurs="0" name="IgnoreAllNoiseQuery" type="xs:boolean"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="KeywordInclusion" type="tns2:KeywordInclusion"/>
    <xs:element minOccurs="0" name="Locale" type="xs:int"/>
    <xs:element minOccurs="0" name="MergeWithDefaultPartition" type="xs:boolean"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="PagingCookie" nillable="true" type="tns2:PagingCookie"/>
    <xs:element minOccurs="0" name="PartitionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="PersonalizationData" nillable="true"
type="q2:QueryPersonalizationData"/>
    <xs:element minOccurs="0" name="QueryText" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="RankingModelId" nillable="true" type="xs:string"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultTypes" type="tns2:ResultType"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultsProvider" type="tns2:SearchProvider"/>
    <xs:element minOccurs="0" name="RowLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="RowsPerPage" type="xs:int"/>
    <xs:element minOccurs="0" name="Sid" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SiteId" type="ser:guid"/>
    <xs:element minOccurs="0" name="StartRow" type="xs:int"/>
    <xs:element minOccurs="0" name="SummaryLength" type="xs:int"/>
    <xs:element minOccurs="0" name="TimeZoneID" type="xs:int"/>
    <xs:element minOccurs="0" name="Timeout" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRowsExactMinimum" type="xs:int"/>
    <xs:element minOccurs="0" name="TrimDuplicates" type="xs:boolean"/>
    <xs:element
xmlns:tns3="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"
minOccurs="0" name="UrlZone" type="tns3:SPUrlZone"/>
    <xs:element minOccurs="0" name="WcfTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="WebId" type="ser:guid"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
    <xs:element minOccurs="0" name="PropertiesContractVersion" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="RemainingDeserializationSkips" type="xs:int"/>
    <xs:element minOccurs="0" name="SerializedPropertyBag" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DirectImsEndpointUri" nillable="true" type="xs:anyURI"/>
  </xs:sequence>
</xs:complexType>

```

**AlertInfo:** Specifies information about a search alert. MUST be an **AlertInfo** data type, as specified in section [2.2.4.4](#). If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**AuthenticationType:** The type of search **security descriptor** that is used for **security trimming**. MUST be a **QueryAuthenticationType**, as specified in section [2.2.5.3](#). If this element is not present or a value is not specified, a default value of **QueryAuthenticationType.NtAuthenticatedQuery**



MUST be used by the protocol server. If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**CorrelationId:** The GUID used to log all the information for a search query in diagnostic logs.

**EnableNicknames:** Specifies whether the exact tokens in the query text are used to find crawled items or whether the nicknames of the tokens are considered as well. A value of "true" indicates that the protocol server MAY consider nicknames; a value of "false" indicates that the protocol server MUST NOT consider nicknames. If this element is not present or a value is not specified, a default value of "false" MUST be used.

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, this element applies to the whole query text.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, this element applies to the **FREETEXT** predicate in the **SharePoint Search SQL syntax**, as specified in [\[MS-SEARCH\]](#) section 2.2.12.3.1.2 and section 2.2.13.3.1.2.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**EnablePhonetic:** Specifies whether the phonetic forms of the given tokens are used to locate crawled items or not. A value of "true" indicates that the protocol server MUST consider phonetic forms; a value of "false" indicates that the protocol server MUST NOT consider the phonetic forms.

If this element is not present or a value is not specified, a default value of "false" MUST be used.

If this element is "true", the protocol server MUST do an inexact match based on heuristics between the phonetic representation of each token against all the values of all the managed properties for which the value of **ManagedPropertyInformation.Pronunciation** is "true", as specified in section [3.1.1.3](#).

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, this element applies to the whole **query text**.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, this element applies to the **FREETEXT** predicate in the **SharePoint Search SQL syntax**, as specified in [\[MS-SEARCH\]](#) section 2.2.12.3.1.2 and section 2.2.13.3.1.2.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**EnableStemming:** Specifies whether **inflectional forms** of the given tokens are used to locate crawled items or not. If this element is "true", the protocol server can use inflectional forms to locate crawled items. If this element is "false", the protocol server MUST NOT use inflectional forms to locate crawled items. For example, if it is set to "true", search queries with the query text "car" return crawled items containing the token "car" or the token "cars", if such items exist.

If this element is not present or a value is not specified, a default value of "false" MUST be used.

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, this element applies to the whole query text.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, this element applies to the **FREETEXT** predicate of the **SharePoint Search SQL syntax**, as specified in [\[MS-SEARCH\]](#) section 2.2.12.3.1.2 and section 2.2.13.3.1.2.

**FarmId:** MUST be a **guid** type, as specified in section [2.2.5.8](#). MUST have value of {BAA1B08F-CBCA-4AF8-95FE-67BA9526F9B6}.

**Hint:** Specifies whether the protocol server uses the **metadata index** or the **full-text index catalog** when processing a search query. MUST be a **QueryHint** type, as specified in section [2.2.5.4](#). If this element is not present or a value is not specified, a default value of "QueryHint.None" MUST be used.

**HitHighlightedProperties:** A list of properties that the protocol server includes in the **HitHighlightedProperties** for each result. MUST be an **ArrayOfanyType** type, as specified in section [2.2.4.2](#). This element MUST be present if the **ResultType** is not "ResultType.None".

For each result, the protocol server MUST include properties in this element only if **PropertyInformation.M\_TypeFullName** is equal to **System.String**, as specified in section [3.1.4.3.3.2](#).

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, for each result, the protocol server MUST include only properties in this element and the properties specified in the **KeywordQueryProperties.selectProperties** element.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, for each search result, the protocol server MUST include only the properties specified in the **SELECT** statement of the **SharePoint Search SQL syntax**, as specified in [MS-SEARCH] section 2.2.12.3 and 2.2.13.3.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**IgnoreAllNoiseQuery:** Specifies how to respond to query text that contains only **noise words**. If this element is not present or a value is not specified, a default value of "true" MUST be used.

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, this element MUST be ignored.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, a value of "true" indicates that the search query where all the full-text predicates that contain only noise words MUST fail and the protocol server MUST return a **FaultException<ExceptionDetail>** message, and assume "true" for all the crawled items. A value of "false" indicates that the full text predicates containing only noise words will be returned.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**KeywordInclusion:** Specifies whether all the tokens in the search query are required. MUST be a **KeywordInclusion** type, as specified in section [2.2.5.2](#). If this element is not present or a value is not specified, a default value of "KeywordInclusion.AllKeywords" MUST be used.

If **QueryProperties** is extended by the **KeywordQueryProperties** complex type, this element applies to the whole query text.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** complex type, this element applies to the text specified in the **FREETEXT** statement of the **SharePoint Search SQL syntax**, as specified in [MS-SEARCH] section 2.2.12.3.1.2 and section 2.2.13.3.1.2.

**Locale:** The language of the query text as a **language code identifier (LCID)**. The protocol server SHOULD use this information to influence its interpretation of the query text. If this element is not present or a value is not specified, the server MUST return a **FaultException<ExceptionDetail>** message.

**MergeWithDefaultPartition:** Specifies whether the protocol server also queries the default **index partition**, which is a special index partition with ID equal to "0C37852B-34D0-418e-91C6-2AC25AF4BE5B". If the element is "true", the protocol server MUST query the default index partition and merge with the result. If the element is "false", the protocol server MUST NOT query the default index partition.

**PagingCookie:** Specifies the client-side state **cookie**. If this element is not present or a value is not specified, a default value of NULL MUST be used. The protocol server SHOULD use this element to round-trip the internal state required for paging of query results. The contents and use of this element are specific to the implementation of the protocol server. If this element is present and is non-empty, the protocol client MUST transfer the contents of this element as-is to the **PagingCookie** element that is sent on subsequent calls to the protocol server for additional query results for the same search query.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**PartitionId:** The GUID of the index partition that is used for this search query. If this element is not present or a value is not specified, a default value of an **empty GUID** MUST be used.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**PersonalizationData:** A unique identifier for the current user on whose behalf the search query is executed. MUST be a **QueryPersonalizationData** type, as specified in section [2.2.4.10](#). The use of this identifier is specific to the implementation of the protocol server.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**QueryText:** The query text of the search query. If this element is not present or a value is not specified, a default value of an **empty string** MUST be used, and the server MUST return a **FaultException<ExceptionDetail>** message.

If **QueryProperties** is extended by the **KeywordQueryProperties** complex type, the number of characters in **QueryText** MUST be less than or equal to 2048, and the value of **QueryText** MUST conform to the **SharePoint Search Keyword Syntax**, as specified in [MS-SEARCH] section 2.2.12.3 and 2.2.13.3.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** complex type, the number of characters in **QueryText** MUST be less than or equal to 4096, and the value of **QueryText** MUST conform to the **SharePoint Search SQL Syntax**, as specified in the **SELECT Statement** in [MS-SEARCH] section 2.2.12.3 and 2.2.13.3.

**RankingModelId:** The GUID of the **ranking model** that SHOULD be used for this search query. If this element is not present or a value is not specified, the protocol server MUST use the default ranking model, according to protocol server configuration.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**ResultTypes:** The type of search results that are returned for the search query. MUST be a **ResultType** data type, as specified in section [2.2.5.5](#). If this element is not present or a value is not specified, a default value of "ResultType.None" MUST be used.

**ResultsProvider:** The **result provider** that is used for this search query. MUST be a **SearchProvider** type, as specified in section [2.2.5.6](#). The valid values for this element depend on the query role of the protocol server, as specified in the following table.

| Query role for the protocol         | Result provider computation  |
|-------------------------------------|--|
| SharePoint Server search query role | The value of the <b>ResultsProvider</b> element that is set by the protocol client MUST be ignored and the protocol server MUST use "SearchProvider.SharepointSearch" as the value for |

| Query role for the protocol | Result provider computation  |
|-----------------------------|--|
|                             | <b>ResultsProvider.</b>  |
| FAST search query role      | The protocol server MUST maintain a user-configurable default value for the result provider, as specified in <b>SearchServiceApplication.DefaultSearchProvider</b> in section <a href="#">3.1.1.2</a> . This value MUST be either "SearchProvider.FASTSearch" or "SearchProvider.SharepointSearch". If the <b>ResultsProvider</b> element is specified, the protocol server MUST use the value specified in the <b>ResultsProvider</b> element. If the value is "SearchProvider.Default", or if the <b>ResultsProvider</b> element is not specified, the protocol server MUST use the configured default value as the value for <b>ResultsProvider</b> . |

**RowLimit:** The number of search results the protocol client wants to receive, starting at the index specified in the **StartRow** element. The **RowLimit** value MUST be greater than or equal to zero.

The protocol server returns search results from the sorted list of all search results, and the count of the returned search results MUST be no more than the value of **RowLimit**.

If **QueryProperties** is extended by the **KeywordQueryProperties** data type, the sort order for the list of search results is specified by the **KeywordQueryProperties.SortList** element.

If **QueryProperties** is extended by the **FullTextSqlQueryProperties** data type, the sort order for the list of search results is specified in the **ORDER BY** clause on the **SELECT Statement** of the **SharePoint Search SQL syntax**, as specified in [MS-SEARCH] section 2.2.12.3 and 2.2.13.3.

If the total number of search results returned for a search query is greater than or equal to the value of the **StartRow** element, but less than the value of the **StartRow** element and the **RowLimit** element combined, the protocol server MUST return as many search results as available.

If this element is not present or a value is not specified, a default value of "50" MUST be used.

**RowsPerPage:** The number of result items the protocol client displays per page. If this element is set to an integer value less than 1, the value of the **RowLimit** element MUST be used as the default value.

**Sid:** The **security identifier (SID)** of the user for whom the protocol client is requesting search results. If this element is non-empty, the protocol server MUST use this value for security trimming.

**SiteId:** The **site collection identifier** of the **site collection** that is used by the protocol server to identify the **context** of the search query. MUST be a **guid** type, as specified in section 2.2.5.8. If this element is not present or a value is not specified, a default value of the empty GUID MUST be used.

**StartRow:** A zero-based index of the first search result in the list of all search results the protocol server returns. The **StartRow** value MUST be greater than or equal to zero.

If this element is not present or a value is not specified, a default value of zero ("0") MUST be used.

**SummaryLength:** The maximum number of characters in the result summary. The protocol server MUST return a **HitHighlightedSummary** property that contains less than or equal to **SummaryLength** number of characters. The **SummaryLength** value MUST be greater than or equal to zero and less than or equal to 10000.

**TimeZoneID:** The local time zone identifier that represents the local time zone of the website that processes the search query. The protocol server MUST return the local time identifier according to the specified time zone.

**Timeout:** The maximum time in milliseconds that the protocol server spends in executing a search query. If this element is not present or a value is not specified, a default value of "10000" MUST be used.

**TotalRowsExactMinimum:** The total number of search results, starting at the index specified in the **StartRow** element, until the protocol server returns the exact count in **ResultTable.TotalRows**, as specified in section [3.1.4.1.3.6](#). If this element is not present or a value is not specified, a default value of "200" MUST be used.

This property is used by a Search Paging control to accurately show the number of pages of results that are available for this search query.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**TrimDuplicates:** Specifies whether **duplicates** are removed by the protocol server before sorting, selecting, and sending the search results. A value of "true" indicates that the protocol server SHOULD perform **duplicate result removal**. A value of "false" indicates that the protocol server MUST NOT attempt to perform duplicate result removal. If this element is not present or a value is not specified, a default value of "true" MUST be used. The algorithm used for duplicate detection is specific to the implementation of the protocol server.

**UriZone:** The zone that is used for **alternate access mapping**, MUST be a **SPUriZone** type as specified in section [2.2.5.7](#). If this element is not present or a value is not specified, the protocol server MUST use **SPUriZone.Default** as the default.

If the **ResultsProvider** element of **QueryProperties** is equal to **SearchProvider.FASTSearch**, the complex type MUST be ignored by the protocol server.

**WcfTimeout:** Maximum time in milliseconds that the protocol server spends in communicating over a communication channel. If a value 0 is specified the protocol server MUST not timeout. If this element is not present or a value is not specified, a default value of "120000" MUST be used.

**WebId:** The **site identifier** of the **site** that is used by the protocol server to identify the context of the search query. MUST be a **guid** type, as specified in section [2.2.5.8](#). If this element is not present or a value is not specified, a default value of "Guid.Empty", which is an instance of the **guid** type with a value of all zeros, MUST be used.

**Properties:** Specifies a property bag of key value pairs. This element MUST be of **ArrayOfKeyValueOfstringanyType** data type as specified in section [2.2.4.18](#), and SHOULD contain the following properties:

- **MaxSnippetLength:** Specifies the maximum length of the **HitHighlightedSummary** generated for search result.
- **DesiredSnippetLength:** Specifies the preferred length of the hit highlighted summary generated for search result.
- **Id:** Specifies the identifier for the query. MUST NOT be NULL.

- **SourceId:** Specifies the unique identifier for result source to use for executing the search query. If no value is specified then the protocol server MUST use the id for the default result source.
- **ShowPeopleNameSuggestions:** Specifies if people names should be included in query suggestions.
- **ResultsUrl:** Specifies the **URL** for the page where the search results are going to be displayed.
- **QueryTag:** Specifies the custom tags to be used to identify the query. Multiple tags MUST be separated with a semicolon.
- **EnableInterleaving:** Specifies if the result sets which are generated by executing query rule actions to add result block should be mixed with the result set for the original query. If true, **ResultTableCollection** (as specified in section [3.1.4.1.3.1](#)) produced as a result of executing the search query MUST contain a **ResultTable** (as specified in section [3.1.4.1.3.6](#)) with **TableType** value "InterleavingInformation", which has the information about how to interleave the result sets for display.
- **Priority:** Reserved. MUST be ignored by protocol server.
- **IntentQueryId:** Reserved. MUST be ignored by protocol server.
- **BypassResultTypes:** Specifies if the search result item type SHOULD be returned for the query results. If "true", the search result item type will not be returned.
- **ProcessBestBets:** Specifies if the search promoted results SHOULD be returned, if available, as a result set. If "true", the search promoted results will be returned, if available, as a result set.
- **ClientType:** Specifies information about the protocol client.
- **GenerateBlockRankLog:** If TRUE, the protocol server SHOULD return block rank log. Otherwise, the protocol server MUST NOT return the block rank log information. A block rank log SHOULD contain the textual information about the block score and the documents that were de-duplicated. The exact format of the block rank log is an implementation detail of the server and MUST NOT be interpreted by the protocol client.
- **BlockDedupeMode:** Specifies whether a duplicate result SHOULD be removed from the result table collection or not. MUST be one of the following values:

| Value | Meaning   |
|-------|---|
| 0     | No deduping.  |
| 1     | Only remove from substrate if the result is already included in a higher ranking block.                     |
| 2     | Remove duplicates from substrate and blocks if already seen in a higher ranking block.                      |
| 3     | Remove entire block if any block document is already seen in a higher ranking block or substrate (default). |

- If BlockDedupeMode is not set, the server MUST behave as if 3 were specified.
- **EnableOrderingHitHighlightedProperty:** Specifies whether values of multi-value properties are ordered by the number of words that match the query. If TRUE, values for each property are

sorted in descending order by the number of hits. If FALSE, values will be returned in the original order.

- **HitHighlightedMultivaluePropertyLimit:** Specifies the maximum number of hit highlighted values of multi-value properties to be returned.
- **ProcessPersonalFavorites:** MUST be TRUE if personal favorites are requested to be returned with search results and FALSE otherwise.
- **UILanguage:** Specifies the LCID for **UI culture**.
- **QueryTemplate:** This is the text that will replace the query text. It can contain query variables which a **query transform** will replace during execution of the query.

**PropertiesContractVersion:** Specifies the version of **QueryProperties** complex type being used by the protocol client. SHOULD be set to 14.0.0.0<8>, 14.5.0.0<9> or 15.0.0.0<10>. If no value is specified then the protocol server MUST set the value to 14.0.0.0. If any other value is specified then the protocol server MUST respond as if 15.0.0.0 was set as the version.

**RemainingDeserializationSkips:** Specifies the recommended serialization steps to skip. The protocol server MAY use this recommendation to determine when to de-serialize the value in **SerializedPropertyBag** to key value pairs stored in **Properties**.

**SerializedPropertyBag:** Specifies a serialized representation of key value pairs in **Properties**, serialized using the DataContractSerializer. The protocol server MAY use this value for any subsequent communication over network to optimize the serialization time for properties.

**DirectImsEndpointUri:**

#### 2.2.4.12 AggregatedOMQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **AggregatedOMQueryLatencyDataBuffer** complex type defines a set of properties that are used by the **AggregatedOMQueryLatencyDataBuffer** object as specified in abstract data model section [3.1.1.5](#)

```
<xs:complexType name="AggregatedOMQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="ApplicationType" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="CustomTags" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="IMSProxyTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="ImsFlow" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="NumQueries" type="xs:int"/>
        <xs:element minOccurs="0" name="QPTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="ResultPageUri" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TenantId" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**ApplicationType:** The client type of the search queries. If **ClientType** (as specified in section [3.1.4.7.3.1](#)) is set and **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 2 set to true, then **ApplicationType** MUST be equal to it, otherwise it will be assigned a value by the protocol server. <11>

**CustomTags:** Tags that are added during processing of queries by the protocol server to help characterize the search queries, in addition to **QueryTags** (as specified in section 3.1.4.7.3.1), delimited by semicolons, if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section 2.2.4.40) has value 5 set to true. <12>

**IMSProxyTimeMs:** The total time in milliseconds reported by the protocol server for intermediate processing of all the search queries in a time period determined by the protocol server. To calculate the total time specified here, the protocol client MUST sum up the time reported by the protocol server in **ResultTableCollection.IMSProxyTime** (see section 3.1.4.1.3.1) for all these search queries. <13>

**ImFlow:** The query and result processing flow used to run the search queries. If **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section 2.2.4.40) has value 4 set to true then this MUST have a value. If **FlowName** (as specified in section 3.1.4.7.3.1) is set, then **ImFlow** MUST be equal to it, otherwise it will be assigned a value by the protocol server. <14>

**NumQueries:** The number of search queries processed within a time period determined by the protocol server on the protocol server from the protocol client.

**QTimeMs:** The total time in milliseconds reported by the protocol server for intermediate processing of all the search queries in a time period determined by the protocol server. To calculate the total time specified here, the protocol client MUST sum up the time reported by the protocol server in **ResultTableCollection.QueryProcessingTime** (see section 3.1.4.1.3.1) for all these search queries.

**ResultPageUrl:** The URI of the result page from which the search queries originate. MUST be equal to **ResultsUrl** (as specified in section 3.1.4.7.3.1) if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section 2.2.4.40) has value 3 set to true. <15>

**TenantId:** The unique identifier of the **tenant** that runs the search queries. This value MUST be set if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section 2.2.4.40) has value 1 set to true. <16>

**TotalQueryTimeMs:** The total time in milliseconds reported by the protocol server for processing of all the search queries in a time period determined by the protocol server. To calculate the total time specified here, the protocol client MUST sum up the time reported by the protocol server in **ResultTableCollection.ElapsedTime** (see section 3.1.4.1.3.1) for all these search queries.

## 2.2.4.13 AggregatedUIQueryLatencyDataBuffer

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **AggregatedUIQueryLatencyDataBuffer** complex type defines a set of properties that are used by the **AggregatedUIQueryLatencyDataBuffer** object as specified in abstract data model section 3.1.1.5

```
<xs:complexType name="AggregatedUIQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="ApplicationType" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="CustomTags" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="ImFlow" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="NumQueries" type="xs:int"/>
        <xs:element minOccurs="0" name="ResultPageUrl" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TenantId" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexType>
```



```
</xs:complexContent>
</xs:complexType>
```

**ApplicationType:** The client type of the search queries. If **ClientType** (as specified in section [3.1.4.7.3.1](#)) is set and **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 2 set to true, then **ApplicationType** MUST be equal to it, otherwise it will be assigned a value by the protocol server. [<17>](#)

**CustomTags:** Tags that are added during processing of queries by the protocol server to help characterize the search queries, in addition to **QueryTags** (as specified in section [3.1.4.7.3.1](#)), delimited by semi-colons, if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 5 set to true. [<18>](#)

**ExclusiveWebpartTimeMs:** The total time in milliseconds for the Web Parts on the search results page to process the search queries.

**ImFlow:** The query and result processing flow used to run the search queries. If **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 4 set to true then this MUST have a value. If **FlowName** (as specified in section [3.1.4.7.3.1](#)) is set, then **ImFlow** MUST be equal to it, otherwise it will be assigned a value by the protocol server. [<19>](#)

**InclusiveWebpartTimeMs:** The total time in milliseconds for all Web Parts on the search results page to process the search queries.

**NumQueries:** The number of search queries processed within a time period determined by the protocol server on the protocol server from the protocol client.

**ResultPageUrl:** The URI of the result page from which the search queries originate. MUST be equal to **ResultsUrl** (as specified in section [3.1.4.7.3.1](#)) if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 3 set to true. [<20>](#)

**TenantId:** The unique identifier of the tenant that runs the search queries. This value MUST be set if **QueryHealthMonitoringSettings.AggregatorFilters** (as specified in section [2.2.4.40](#)) has value 1 set to true. [<21>](#)

**TotalQueryTimeMs:** The total time in milliseconds for the search results page to process the search queries.

#### 2.2.4.14 ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az** complex type [<22>](#) contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.

```
<xs:complexType name="ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfintAggregatedOMQueryLatencyDataBuffer PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" type="xs:int"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedOMQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>

```

**KeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az:** Specifies the aggregated query latencies for a set of search queries.

**KeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Key:** Specifies the integer value to which the associated aggregated search query latency value is approximated.

**KeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Value:** Specifies the aggregated query latencies for a set of search queries, approximated to a value defined by the protocol server. MUST be of type **AggregatedOMQueryLatencyDataBuffer** as specified in section [2.2.4.12](#)

### 2.2.4.15 **ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az**

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az** complex type [<23>](#) contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.

```

<xs:complexType name="ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedOMQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

**KeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az:** Specifies an aggregated value for query latencies of a set of search queries.

**KeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Key:** A value that is uniquely identifies a **KeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Value** within this complex type.

**KeyValueOfstringAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Value:** Specifies an aggregated value for query latencies of a set of search queries. MUST be of type **AggregatedOMQueryLatencyDataBuffer** as specified in section [2.2.4.12](#)

## 2.2.4.16 **ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az**

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az** complex type<24> contains a list of aggregated latency information for the search results page. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.

```
<xs:complexType name="ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedUIQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az:** Specifies an aggregated value for result page query latencies of a set of search queries.

**KeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az.Key:** A value that is uniquely identifies a **KeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az.Value** within this complex type.

**KeyValueOfstringAggregatedUIQueryLatencyDataBuffer\_PFsic3Az.Value:** Specifies an aggregated value for query latencies of a set of search queries. MUST be of type **AggregatedOMQueryLatencyDataBuffer** as specified in section [2.2.4.12](#).

## 2.2.4.17 **ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1**

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1** complex type<25> contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a search of search queries executed within a time period determined by the protocol server.

```
<xs:complexType
name="ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1"
">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" nillable="true"
type="q3:ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

**KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1:** Specifies a list of aggregated values for query latencies of a set of search queries.

**KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1.Key:** A value that uniquely identifies a **KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1.Value** within this complex type.

**KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Azty7Ep6D1.Value:** Specifies a list of aggregated values for query latencies of a set of search queries. MUST be of type **ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az** as specified in section [2.2.4.14](#).

### 2.2.4.18 ArrayOfKeyValueOfstringanyType

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfstringanyType** complex type [<26>](#) defines an array of **KeyValueOfstringanyType** complex type.

```

<xs:complexType name="ArrayOfKeyValueOfstringanyType">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringanyType">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" nillable="true" type="xs:anyType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

**KeyValueOfstringanyType:** Specifies an array of dictionaries of string keys to anyType values. This element MUST be present and MUST NOT be null.

**KeyValueOfstringanyType.Key:** Specifies the string key for addressing the values in the dictionary.

**KeyValueOfstringanyType.Value:** Specifies the anyType value in the dictionary.

The Keys and Values MUST conform to the following:

The number of items in Keys and the number of items in Values MUST be the same.

Each item in Values MUST NOT be null.

Each item in Keys MUST be a unique, not null and not empty string.

Each value in Values MUST have a corresponding key in Keys.

### 2.2.4.19 ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az** complex type [<27>](#) contains a list of aggregated latency information. Each entry in the list provides latency information about a single search query.

```
<xs:complexType name="ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:VerboseOMQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az:** Specifies query latencies for processing a single search query on the protocol server.

**KeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az.Key:** A value that uniquely identifies a **KeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az.Value** within this complex type.

**KeyValueOfstringVerboseOMQueryLatencyDataBuffer\_PFsic3Az.Value:** Specifies details of query latencies for the processing a single search query on the protocol server. MUST be of type **VerboseOMQueryLatencyDataBuffer** as specified in section [2.2.4.28](#).

#### 2.2.4.20 ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az** complex type [<28>](#) contains a list of latency information about the search results page when processing individual search queries. Each entry provides information about a single search query.

```
<xs:complexType name="ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:VerboseUIQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az:** Specifies query latencies for the search results page for a single search query.

**KeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az.Key:** A value that is uniquely identifies a KeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az.Value within this complex type.

**KeyValueOfstringVerboseUIQueryLatencyDataBuffer\_PFsic3Az.Value:** Specifies details of query latencies for the search results page for a single query. MUST be of type VerboseUIQueryLatencyDataBuffer as specified in section [2.2.4.30](#).

#### 2.2.4.21 ArrayOfVerboseQueryErrorDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfVerboseQueryErrorDataBuffer** complex type contains a list of information for errors occurred during the processing of search queries in the protocol client. Each entry in the list corresponds to an error.

```
<xs:complexType name="ArrayOfVerboseQueryErrorDataBuffer"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseQueryErrorDataBuffer"
      nillable="true" type="q2:VerboseQueryErrorDataBuffer"/>
  </xs:sequence>
</xs:complexType>
```

**VerboseQueryErrorDataBuffer:** Specifies the information of an error that occurred during the processing of a search query in the protocol client.

#### 2.2.4.22 ArrayOfVerboseWebPartQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfVerboseWebPartQueryLatencyDataBuffer** complex type contains the search query latency of the Web Parts in processing search queries within a 60-second time period. Each entry corresponds to the search query latency of a Web Part on the search results page.

```
<xs:complexType name="ArrayOfVerboseWebPartQueryLatencyDataBuffer"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
      name="VerboseWebPartQueryLatencyDataBuffer" nillable="true"
      type="q2:VerboseWebPartQueryLatencyDataBuffer"/>
  </xs:sequence>
</xs:complexType>
```

**VerboseWebPartQueryLatencyDataBuffer:** Specifies the search query latency of a single Web Part.

#### 2.2.4.23 OMQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **OMQueryLatencyDataBuffer** complex type contains a list of aggregated query latencies that are approximated to a value that is determined by the protocol server.

```
<xs:complexType name="OMQueryLatencyDataBuffer" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
```

```

    <xs:extension
base="q2:QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBuff
erYrv50AqE">
    <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="bucketedQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3
Azty7Ep6D1"/>
    </xs:sequence>
    </xs:extension>
    </xs:complexContent>
</xs:complexType>

```

**bucketedQueryTimings:** Specifies the aggregated search latency on the protocol server. [<29>](#)

#### 2.2.4.24 QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The

**QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE** complex type contains lists of aggregated and per-search query latencies. Each entry in the aggregated list provides latency information about a set of search queries within a time period determined by the protocol server. Each entry in the verbose list provides information about one search query.

```

<xs:complexType
name="QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferY
rv50AqE" xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:complexContent mixed="false">
        <xs:extension base="q2:DataBuffer">
            <xs:sequence>
                <xs:element minOccurs="0" name="AggregatedQueryTimings" nillable="true"
type="q2:ArrayOfAggregatedOMQueryLatencyDataBuffer"/>
                <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
type="q2:ArrayOfVerboseOMQueryLatencyDataBuffer"/>
                <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_AggregatedQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az"/>
                <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_VerboseQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>

```

**AggregatedQueryTimings:** Specifies the aggregated search latency on the protocol server. [<30>](#)

**VerboseQueryTimings:** Specifies a list of latencies for each single search query on the protocol server. This value MUST be empty if verbose query monitoring is turned off on the protocol server. [<31>](#)

**m\_AggregatedQueryTimings:** Specifies the aggregated search latency on the protocol server. [<32>](#)

**m\_VerboseQueryTimings:** Specifies a list of latencies for each single search query on the protocol server. This value MUST be empty if verbose query monitoring is turned off on the protocol server. [<33>](#)

## 2.2.4.25 QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The

**QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE** complex type contains lists of aggregated and per-search query latency information for the search results page. Each entry in the aggregated list provides latency information about a set of search queries within a time period determined by the protocol server. Each entry in the verbose list provides information about one search query.

```
<xs:complexType
  name="QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="AggregatedQueryTimings" nillable="true"
          type="q2:ArrayOfAggregatedUIQueryLatencyDataBuffer"/>
        <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
          type="q2:ArrayOfVerboseUIQueryLatencyDataBuffer"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="m_AggregatedQueryTimings" nillable="true"
          type="q3:ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_FFsic3Az"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="m_VerboseQueryTimings" nillable="true"
          type="q3:ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_FFsic3Az"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**AggregatedQueryTimings:** Specifies the aggregated search latency for the search results page. [<34>](#)

**VerboseQueryTimings:** Specifies a list of search results page latencies, one for each search query on the protocol server. This value MUST be empty if verbose query monitoring is turned off on the protocol server. [<35>](#)

**m\_AggregatedQueryTimings:** Specifies the aggregated search latency for the search results page. [<36>](#)

**m\_VerboseQueryTimings:** Specifies a list of search results page latencies, one for each search query on the protocol server. This value MUST be empty if verbose query monitoring is turned off on the protocol server. [<37>](#)

## 2.2.4.26 QueryErrorDataBuffer

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **QueryErrorDataBuffer** complex type contains a list of information for errors occurred during the processing of search queries in the protocol client. Each entry in the list corresponds to an error.

```
<xs:complexType name="QueryErrorDataBuffer" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
          type="q2:ArrayOfVerboseQueryErrorDataBuffer"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```



```

    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

**VerboseQueryTimings:** Specifies a list of information for errors occurred during the processing of search queries in the protocol client. This element **MUST** be empty if verbose query monitoring for the search application is turned off.

#### 2.2.4.27 UIQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **UIQueryLatencyDataBuffer** complex type contains the search query latency of the search results page for search queries within a time period determined by the protocol server.

```

<xs:complexType name="UIQueryLatencyDataBuffer" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension
      base="q2:QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBuff
      erYrv50AqE">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

#### 2.2.4.28 VerboseOMQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **VerboseOMQueryLatencyDataBuffer** complex type contains details of the search query latency for a single search query.

```

<xs:complexType name="VerboseOMQueryLatencyDataBuffer"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="IMSProxyTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="NumHitsRequested" type="xs:int"/>
        <xs:element minOccurs="0" name="QPMachine" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="QPTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="QueryTerms" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

**CorrelationId:** Specifies the unique identifier for the search query that the protocol client specified in the **properties.CorrelationId** element in the **Execute** message (see section [3.1.4.1](#)).

**IMSProxyTimeMs:** The time in milliseconds taken by intermediate processing of this search query on the protocol server. This **MUST** be the same value that is returned by the protocol server in the **ResultTableCollection.IMSProxyTime** element (see section [3.1.4.1.3.1](#)) for this search query. [<38>](#)

**NumHitsRequested:** The number of results requested for this search query. This MUST be the same value that is received by the protocol server in the **QueryProperties.RowLimit** element (see section [2.2.4.11](#)) for this search query. <39>

**QPMachine:** The name of the computer that processed the query on the protocol server. This MUST be the same value that is returned by the protocol server in the **ResultTableCollection.QueryMachine** element (see section 3.1.4.1.3.1) for this search query.

**QPTimeMs:** The time in milliseconds taken by intermediate processing of this search query on the protocol server. This MUST be the same value that is returned by the protocol server in the **ResultTableCollection.QueryProcessingTime** element (see section 3.1.4.1.3.1) for this search query.

**QueryTerms:** The query terms of the search query.

**TotalQueryTimeMs:** The time in milliseconds for processing this search query on the protocol server. This MUST be the same value that is returned by the protocol server in the **ResultTableCollection.ElapsedTime** element (see section 3.1.4.1.3.1) for the search query.

### 2.2.4.29 VerboseQueryErrorDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **VerboseQueryErrorDataBuffer** complex type contains the information of an error occurred during the processing of a search query in the protocol client.

```
<xs:complexType name="VerboseQueryErrorDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="Exception" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Operation" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**CorrelationId:** Specifies the unique identifier for the search query that the protocol client specified in properties.CorrelationId element in the Execute message (see section [3.1.4.1](#)).

**Exception:** Specifies the details of the exception if any that occurred on the protocol client while processing the search query. The value of this field is specific to the implementation of the protocol client.

**Operation:** Specifies the details of the operation that caused an exception during the processing of the search query in the protocol client. The value of this field is specific to the implementation of the protocol client.

### 2.2.4.30 VerboseUIQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **VerboseUIQueryLatencyDataBuffer** complex type contains details of search query latency for a single search query.

```

<xs:complexType name="VerboseUIQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="QueryTerms" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

**CorrelationId:** The unique identifier that the protocol client specified for the search query in properties.**CorrelationId** element in the **Execute** message (see section [3.1.4.1](#)).

**ExclusiveWebpartTimeMs:** The time in milliseconds for all search related Web Parts on the search results page to process the search query.

**InclusiveWebpartTimeMs:** The time in milliseconds for all Web Parts on the search results page to process the search query.

**QueryTerms:** The query terms of the search query.

**TotalQueryTimeMs:** The latency in milliseconds for the search results page to process the search query.

**Url:** The URI of the page that issues the search query. The value MUST have the valid URI format, as specified in [\[RFC2396\]](#).

### 2.2.4.31 VerboseWebPartQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **VerboseWebPartQueryLatencyDataBuffer** complex type contains detail of search query latency of a single Web Part.

```

<xs:complexType name="VerboseWebPartQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
        <xs:element minOccurs="0" name="WebPartId" type="ser:guid"/>
        <xs:element minOccurs="0" name="WebPartTitle" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

**CorrelationId:** The unique identifier that the protocol client specified for a search query in properties.**CorrelationId** element in the **Execute** message (see section [3.1.4.1](#)).

**ExclusiveWebpartTimeMs:** The time, in milliseconds, for the Web Part with the specified **WebPartId** to process the search query.

**InclusiveWebpartTimeMs:** The total time in milliseconds for all search Web Parts on the search results page to process the search query.

**WebPartId:** The unique identifier of the Web Part that processed the search query.

**WebPartTitle:** The title of the Web Part that processed the search query.

#### 2.2.4.32 WebPartQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **WebPartQueryLatencyDataBuffer** complex type contains the latency of the Web Parts in processing search queries within a 60-second time period

```
<xs:complexType name="WebPartQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
type="q2:ArrayOfVerboseWebPartQueryLatencyDataBuffer"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

**VerboseQueryTimings:** Specifies details of the search query latency of every single Web Part.

#### 2.2.4.33 ArrayOfAggregatedOMQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfAggregatedOMQueryLatencyDataBuffer** complex type contains a list of aggregated search query latencies for processing queries on the protocol server. Each entry in the list provides information about a set of search queries executed within a time period determined by the protocol server.

```
<xs:complexType name="ArrayOfAggregatedOMQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="AggregatedOMQueryLatencyDataBuffer"
nillable="true" type="q2:AggregatedOMQueryLatencyDataBuffer"/>
  </xs:sequence>
</xs:complexType>
```

**AggregatedOMQueryLatencyDataBuffer:** Specifies an aggregated value for query latencies of a set of search queries. MUST be of type **AggregatedOMQueryLatencyDataBuffer** as specified in section [2.2.4.12](#).

#### 2.2.4.34 ArrayOfAggregatedUIQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfAggregatedUIQueryLatencyDataBuffer** complex type contains a list of aggregated latency information for the search results page. Each entry in the list provides information about a set of search queries executed within a time period determined by the protocol server.

```

<xs:complexType name="ArrayOfAggregatedUIQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="AggregatedUIQueryLatencyDataBuffer"
nillable="true" type="q2:AggregatedUIQueryLatencyDataBuffer"/>
  </xs:sequence>
</xs:complexType>

```

**AggregatedUIQueryLatencyDataBuffer:** Specifies an aggregated value for query latencies of a set of search queries. MUST be of type **AggregatedOMQueryLatencyDataBuffer** as specified in section [2.2.4.13](#).

### 2.2.4.35 ArrayOfboolean

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

A list of Boolean flags.

```

<xs:complexType name="ArrayOfboolean" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="boolean" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>

```

**boolean:** Specifies a value which can be either true or false.

### 2.2.4.36 ArrayOfint

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfint** complex type [40](#) represents an array of integer values.

```

<xs:complexType name="ArrayOfint" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="int" type="xs:int"/>
  </xs:sequence>
</xs:complexType>

```

**int:** An integer value.

### 2.2.4.37 ArrayOfKeyValueOfstringstring

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfstringstring** complex type represents an array of properties in the form of key-value pairs.

```

<xs:complexType name="ArrayOfKeyValueOfstringstring"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringstring">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" nillable="true" type="xs:string"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```
</xs:element>
</xs:sequence>
</xs:complexType>
```

**KeyValueOfstringstring:** A single property.

**KeyValueOfstringstring.Key:** A unique identifier for the property.

**KeyValueOfstringstring.Value:** The value of the property corresponding to the identifier specified in the **KeyValueOfstringstring.Key** element.

#### 2.2.4.38 ArrayOfVerboseOMQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfVerboseOMQueryLatencyDataBuffer** complex type contains a list of latency information about the execution of search queries on the protocol server. Each entry provides information about a single search query.

```
<xs:complexType name="ArrayOfVerboseOMQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseOMQueryLatencyDataBuffer"
nillable="true" type="q2:VerboseOMQueryLatencyDataBuffer"/>
  </xs:sequence>
</xs:complexType>
```

**VerboseOMQueryLatencyDataBuffer:** Specifies query latencies for processing a single search query on the protocol server.

#### 2.2.4.39 ArrayOfVerboseUIQueryLatencyDataBuffer

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfVerboseUIQueryLatencyDataBuffer** complex type contains a list of latency information about the search results page when processing individual search queries. Each entry provides information about a single search query.

```
<xs:complexType name="ArrayOfVerboseUIQueryLatencyDataBuffer"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseUIQueryLatencyDataBuffer"
nillable="true" type="q2:VerboseUIQueryLatencyDataBuffer"/>
  </xs:sequence>
</xs:complexType>
```

**VerboseUIQueryLatencyDataBuffer:** Specifies query latencies for the search results page for a single search query.

#### 2.2.4.40 QueryHealthMonitoringSettings

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring>

The **QueryHealthMonitoringSettings** complex type defines settings that are used to configure query health monitoring data collection into the objects defined in section [3.1.1.5](#).

```

<xs:complexType name="QueryHealthMonitoringSettings"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="AggregatedBufferFlushTimeoutMinutes" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="AggregatorFilters" nillable="true" type="q3:ArrayOfboolean"/>
    <xs:element minOccurs="0" name="BufferFlushThreshold" type="xs:int"/>
    <xs:element minOccurs="0" name="LatencyTrendBucketMs" type="xs:int"/>
    <xs:element minOccurs="0" name="LatencyTrendUseAggregation" type="xs:boolean"/>
    <xs:element minOccurs="0" name="MaxSizeMb" type="xs:int"/>
    <xs:element minOccurs="0" name="RetentionPeriodDays" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="VerboseFilters" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="VerboseLatencyThreshold" type="xs:int"/>
    <xs:element minOccurs="0" name="VerboseQueryMonitoring" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>

```

**AggregatedBufferFlushTimeoutMinutes:** Specifies the time period that query latencies are aggregated in the objects in section 3.1.1.5.

**AggregatorFilters:** Specifies a list of Boolean values that indicate whether to aggregate query latencies based on the associated value of the search query property in the objects defined in section 3.1.1.5. The list MUST include five values, as specified in the following table.

| Value | Meaning  |
|-------|--|
| 1     | Corresponds to the <b>PartitionId</b> of the search query.   |
| 2     | Corresponds to the <b>ClientType</b> property of the search query.   |
| 3     | Corresponds to the <b>ResultsUrl</b> property of the search query.   |
| 4     | Corresponds to the <b>FlowName</b> property of the search query.   |
| 5     | Corresponds to the <b>QueryTag</b> property of the search query and any other tags added by the protocol server. |

The query properties are specified in section [3.1.4.7.3.1](#). The protocol server MUST aggregate query latencies for every query property for which the corresponding flag is set to TRUE.

**BufferFlushThreshold:** Specifies the maximum number of queries to be aggregated in the objects in section 3.1.1.5.

**LatencyTrendBucketMs:** Specifies the approximation value for the aggregated query latencies in the **KeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Value** defined in section [2.2.4.14](#).

**LatencyTrendUseAggregation:** Specifies whether the values in the **KeyValueOfintAggregatedOMQueryLatencyDataBuffer\_PFsic3Az.Value** defined in section 2.2.4.14 are used by the protocol server.

**MaxSizeMb:** Specifies the maximum size in megabytes of the data used to store the query monitoring information specified in section 3.1.1.5 on the protocol server.

**RetentionPeriodDays:** Specifies the maximum number of days over which the query monitoring information specified in section 3.1.1.5 is stored on the protocol server.

**VerboseFilters:** Specifies a list of values for which, when satisfied by the properties of a search query, the protocol server will record query latencies for that query. The list MUST include five values, as specified in the following table.

| Value | Meaning  |
|-------|--|
| 1     | Corresponds to the unique identifier of the <b>Partitionid</b> property for the search query.                    |
| 2     | Corresponds to the <b>ClientType</b> property of the search query.   |
| 3     | Corresponds to the <b>ResultsUrl</b> property of the search query.   |
| 4     | Corresponds to the <b>FlowName</b> property of the search query.   |
| 5     | Corresponds to the <b>QueryTag</b> property of the search query and any other tags added by the protocol server. |

The query properties are specified in section 3.1.4.7.3.1.

**VerboseLatencyThreshold:** Specifies a latency value beyond which, when exceeded by a search query, the protocol server will record query latencies for that query.

**VerboseQueryMonitoring:** Specifies the maximum number of queries to be aggregated in the objects in section 3.1.1.5.

#### 2.2.4.41 SharedSearchBoxSettings

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **SharedSearchBoxSettings** complex type contains information required for the functionalities of a search box.

```
<xs:complexType name="SharedSearchBoxSettings" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Inherit" type="xs:boolean"/>
    <xs:element minOccurs="0" name="ResultsPageAddress" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ShowNavigation" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

**Inherit:** MUST be false.

**ResultsPageAddress:** Specifies the URL of the web page to which the search box redirects to display the results of a search. If this element is not present or a value is not specified, a default value of "null" MUST be used.

**ShowNavigation:** Specifies whether to show navigation links from the search box. A value of "true" indicates showing navigation links; a value of "false" indicates not showing navigation links. If this element is not present or a value is not specified, a default value of "false" MUST be used.

#### 2.2.5 Simple Types

The following table summarizes the set of common XML schema simple type definitions defined by this specification. XML schema simple type definitions that are specific to a particular operation are described with the operation.

| Simple type            | Description  |
|------------------------|--|
| <b>AlertChangeType</b> | The <b>AlertChangeType</b> simple type <a href="#">&lt;41&gt;</a> is used to represent the change types for which a search alert is generated. |
| <b>guid</b>            | The <b>guid</b> simple type represents a GUID.   |



| Simple type                    | Description  |
|--------------------------------|--|
| <b>KeywordInclusion</b>        | The <b>KeywordInclusion</b> simple type is used to represent how the protocol server combines tokens in a search query to form the query text that is used to find indexed items that match the search query.  |
| <b>QueryAuthenticationType</b> | The <b>QueryAuthenticationType</b> simple type is used to represent the type <b>search security descriptor</b> .   |
| <b>QueryHint</b>               | The <b>QueryHint</b> simple type is used to represent how the protocol server processes a search query.  |
| <b>ResultType</b>              | The <b>ResultType</b> simple type specifies an enumeration of the types of search results to return for a search query. Any element of this type MUST contain one or more of the enumeration values specified in this section. This enumeration is also used to annotate the <b>ResultTable</b> (section <a href="#">3.1.4.1.3.6</a> ) data type to indicate the type of search results contained in it. |
| <b>SearchProvider</b>          | The <b>SearchProvider</b> simple type represents the <b>search provider</b> that is used to handle the current request.  |
| <b>SPUrlZone</b>               | The <b>SPUrlZone</b> simple type contains information about the <b>URL zone</b> that MUST be used for alternate access mapping of incoming URL(s) to the right content and vice versa.   |

### 2.2.5.1 AlertChangeType

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **AlertChangeType** simple type [<42>](#) is used to represent the change types for which a search alert is generated.

```
<xs:simpleType name="AlertChangeType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Discovered"/>
    <xs:enumeration value="Modified"/>
    <xs:enumeration value="DiscoveredOrModified"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **AlertChangeType** simple type.

| Value                | Meaning   |
|----------------------|---|
| Discovered           | A search alert MUST be generated if at least 1 new search result matches the search query registered as part of the <b>alert subscription</b> . The new search result MUST be crawled after the last time the alert for the search query was generated. |
| Modified             | A search alert MUST be generated if at least 1 existing search result that matches the search query registered as part of the alert subscription was modified after the last time the alert for the registered search query was generated.              |
| DiscoveredOrModified | A search alerts MUST be generated if either a new result is discovered or an existing result is modified after the last time the alert for the registered search query was generated.   |

### 2.2.5.2 KeywordInclusion

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **KeywordInclusion** simple type is used to represent how the protocol server combines tokens in a search query to form the query text that is used to find indexed items that match the search query.

```
<xs:simpleType name="KeywordInclusion" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="AllKeywords"/>
    <xs:enumeration value="AnyKeyword"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **KeywordInclusion** simple type.

| Value       | Meaning  |
|-------------|--|
| AllKeywords | The protocol server combines the individual tokens by using the Boolean AND operation. The protocol server <b>MUST</b> find all token in the search query in a crawled item for the crawled item to be part of the search results          |
| AnyKeyword  | The protocol server combines the individual tokens by using the Boolean OR operation. The protocol server <b>MUST</b> find at least one token in the search query in a crawled item for the crawled item to be part of the search results. |

### 2.2.5.3 QueryAuthenticationType

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **QueryAuthenticationType** simple type is used to represent the type search security descriptor.

```
<xs:simpleType name="QueryAuthenticationType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="NtAuthenticatedQuery"/>
    <xs:enumeration value="PluggableAuthenticatedQuery"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **QueryAuthenticationType** simple type.

| Value                       | Meaning  |
|-----------------------------|--|
| NtAuthenticatedQuery        | <b>MUST</b> be a <b>Windows security descriptor</b>  |
| PluggableAuthenticatedQuery | <b>MUST</b> be a custom security descriptor used in <b>pluggable security authentication</b> . |

### 2.2.5.4 QueryHint

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **QueryHint** simple type is used to represent how the protocol server processes a search query.

```

<xs:simpleType name="QueryHint" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="OptimizeWithFullTextIndex"/>
        <xs:enumeration value="OptimizeWithPropertyStore"/>
        <xs:enumeration value="PropertySelectWithInClause"/>
        <xs:enumeration value="PropertySelectWithTempTable"/>
        <xs:enumeration value="UseSqlFirstJoinStrategy"/>
        <xs:enumeration value="AvoidSqlOuterJoins"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>

```

The following table specifies the allowable values for the **QueryHint** simple type.

| Value                       | Meaning   |
|-----------------------------|---|
| None                        | The protocol server MUST determine whether to use the metadata index or the full-text index catalog first when processing a query.            |
| OptimizeWithFullTextIndex   | The protocol server MUST use the full-text index catalog first when processing a query.   |
| OptimizeWithPropertyStore   | The protocol server MUST use the metadata index first when processing a query.  |
| PropertySelectWithInClause  | Obsolete.   |
| PropertySelectWithTempTable | Obsolete.   |
| UseSqlFirstJoinStrategy     | The protocol server MUST use the metadata index first when it guarantees correctness of the results. Otherwise, MUST use the full-text index. |
| AvoidSqlOuterJoins          | The protocol server MUST NOT use outer joins when processing a query.   |

### 2.2.5.5 ResultType

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **ResultType** simple type specifies an enumeration of the types of search results to return for a search query. Any element of this type MUST contain one or more of the enumeration values specified in this section. This enumeration is also used to annotate the **ResultTable** (section [3.1.4.1.3.6](#)) data type to indicate the type of search results contained in it.

```

<xs:simpleType name="ResultType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="RelevantResults"/>
        <xs:enumeration value="SpecialTermResults"/>
        <xs:enumeration value="HighConfidenceResults"/>
        <xs:enumeration value="DefinitionResults"/>
        <xs:enumeration value="VisualBestBetsResults"/>
        <xs:enumeration value="RefinementResults"/>
        <xs:enumeration value="Extended"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>

```

```
</xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for the **ResultType** simple type.

| Value                 | Meaning  |
|-----------------------|--|
| None                  | No result type is specified.   |
| RelevantResults       | Specifies that the protocol server MUST return the <b>result set</b> that contains the actual query results from the crawled items that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>RelevantResults</b> .   |
| SpecialTermResults    | Specifies that the protocol server MUST return the result set that contains the <b>best bets</b> that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>SpecialTermResults</b> . If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is <b>SearchServer.FASTSearch</b> , this value MUST be ignored by the protocol server.                        |
| HighConfidenceResults | Specifies that the protocol server MUST return the result set that contains the <b>high confidence results</b> that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>HighConfidenceResults</b> . If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is <b>SearchServer.FASTSearch</b> , this value MUST be ignored by the protocol server.       |
| DefinitionResults     | Specifies that the protocol server MUST return the <b>extracted definitions</b> that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>DefinitionResults</b> . If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is <b>SearchServer.FASTSearch</b> , this value MUST be ignored by the protocol server.  |
| VisualBestBetsResults | Specifies that the protocol server MUST return the result set that contains the <b>visual best bet</b> results that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>VisualBestBetsResults</b> . If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is <b>SearchServer.SharepointSearch</b> , this value MUST be ignored by the protocol server. |
| RefinementResults     | Specifies that the protocol server MUST return the result set that contains the refinement results that apply to the search query. The protocol server MUST annotate the corresponding result set in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6) with value <b>RefinementResults</b> . If <b>QueryProperties.ResultsProvider</b> (as specified in section 2.2.4.11) is <b>SearchServer.SharepointSearch</b> , this value MUST be ignored by the protocol server.                 |
| Extended              | Specifies that a protocol server MUST annotate the result set with the <b>Extended</b> value in <b>ResultTable.ResultType</b> (as specified in section 3.1.4.1.3.6), if the result set it contains does not correspond to any of the above <b>ResultType</b> values.   |

## 2.2.5.6 SearchProvider

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **SearchProvider** simple type represents the search provider that is used to handle the current request.

```

<xs:simpleType name="SearchProvider" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Default"/>
    <xs:enumeration value="SharepointSearch"/>
    <xs:enumeration value="FASTSearch"/>
  </xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for the **SearchProvider** simple type.

| Value            | Meaning   |
|------------------|---|
| Default          | Specifies that the default search provider specified in <b>SearchServiceApplication.DefaultSearchProvider</b> as specified in abstract data model section <a href="#">3.1.1.2</a> MUST be used for the current request. |
| SharepointSearch | Specifies that the search provider with name <b>SharePointSearch</b> MUST be used for the current request.  |
| FASTSearch       | Specifies that the search provider with name FASTSearch MUST be used for the current request.   |

### 2.2.5.7 SPUrlZone

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration

The **SPUrlZone** simple type contains information about the URL zone that MUST be used for alternate access mapping of incoming URL(s) to the right content and vice versa.

```

<xs:simpleType name="SPUrlZone" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Default"/>
    <xs:enumeration value="Intranet"/>
    <xs:enumeration value="Internet"/>
    <xs:enumeration value="Custom"/>
    <xs:enumeration value="Extranet"/>
  </xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for the **SPUrlZone** simple type.

| Value    | Meaning   |
|----------|---|
| Default  | Specifies that the protocol server MUST use the mappings defined in the default zone for alternate access mapping.  |
| Intranet | Specifies that the protocol server MUST use the mappings defined in the Intranet zone for alternate access mapping. |
| Internet | Specifies that the protocol server MUST use the mappings defined in the Internet zone for alternate access mapping. |
| Custom   | Specifies that the protocol server MUST use the mappings defined in the Custom zone for alternate access mapping.   |
| Extranet | Specifies that the protocol server MUST use the mappings defined in the Extranet zone for alternate access mapping. |

### 2.2.5.8 guid

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/

The **guid** simple type represents a GUID.

```
<xs:simpleType name="guid" xmlns:xs="http://www.w3.org/2001/XMLSchema">  
  <xs:restriction base="xs:string">  
    <xs:pattern value="\da-fA-F}{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>  
  </xs:restriction>  
</xs:simpleType>
```

### 2.2.6 Attributes

This specification does not define any common XML schema attribute definitions.

### 2.2.7 Groups

This specification does not define any common XML schema group definitions.

### 2.2.8 Attribute Groups

This specification does not define any common XML schema attribute group definitions.

### 2.2.9 Common Data Structures

This specification does not define any common XML schema data structures.

## 3 Protocol Details

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The WSDL in this specification matches the WSDL that shipped with the product and provides a base description of the schema. The text that introduces the WSDL might specify differences that reflect actual Microsoft product behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **not null**, and **present**.

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls that are made by the higher-layer protocol or application are passed directly to the transport, and the results that are returned by the transport are passed directly to the higher-layer protocol or application.

Except where specified, protocol clients SHOULD interpret Hypertext Transfer Protocol (HTTP) status codes that are returned by the protocol server as specified in [RFC2616], section 10.

This protocol allows protocol servers to notify protocol clients of application-level faults by using SOAP faults. Except where otherwise specified, these SOAP faults are not significant for interoperability and protocol clients can interpret them in an implementation-specific manner.

This protocol allows protocol servers to perform implementation-specific authorization checks and to notify protocol clients of authorization faults by using either HTTP status codes or SOAP faults, as specified previously in this section.

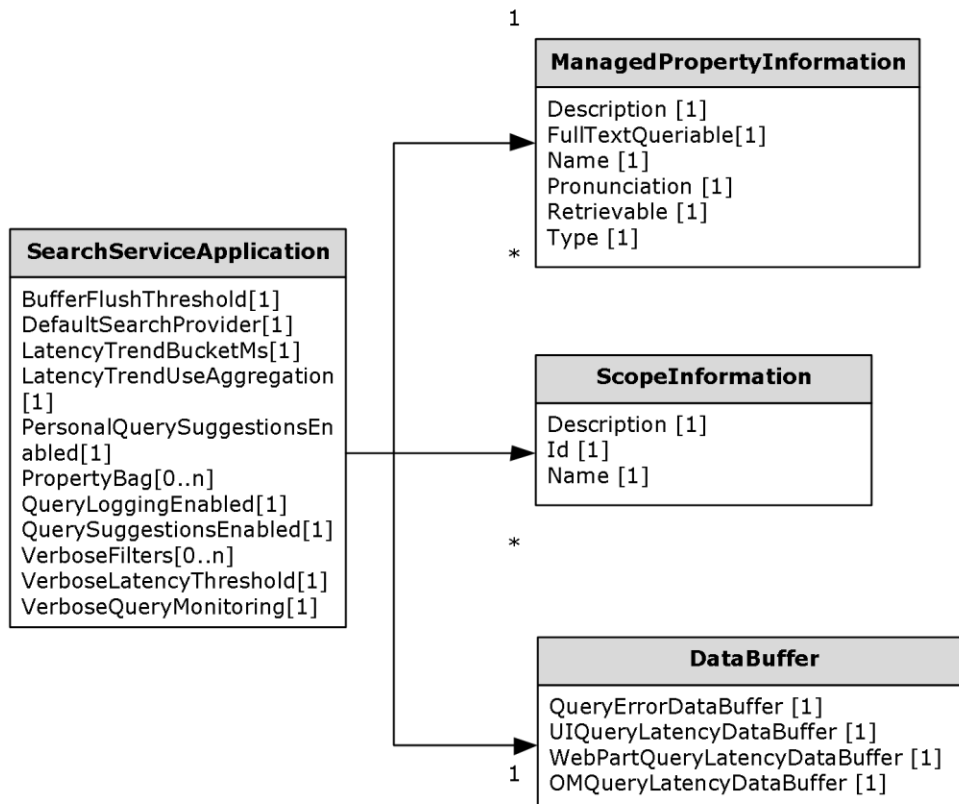
### 3.1 Server Details

#### 3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

##### 3.1.1.1 Object Hierarchy

The protocol server maintains a hierarchy of objects representing the state of the Search Query Shared Services Protocol. These objects are primarily used by the protocol server to respond to protocol client requests for information about Search Service, to execute a search query, for storing verbose query monitoring data, or to store query log data. The following figure is a diagram of these objects. Properties followed by [0..n] are collections of items of the same kind, whereas those followed by [1] are single properties. Following the diagram are descriptions of each property.



**Figure 2: Object hierarchy**

**SearchServiceApplication:** This object represents information about the search service application.

**ManagedPropertyInformation:** This object stores information about **managed properties** defined in the protocol server.

**ScopeInformation:** This object stores information about search scopes defined in the protocol server.

**DataBuffer:** This object stores query monitoring data sent from protocol client which assists the administrators of the protocol server to collect information about query performance as well as errors encountered in the protocol client.

### 3.1.1.2 Search Service Application Information

The protocol server maintains a **SearchServiceApplication** object to store information configured for the search service application. The protocol client can request this information to get the properties for the search service application and call operations based on the properties.

**SearchServiceApplication:** This object represents information about the search service application.

- **DefaultSearchProvider:** The default search provider configured for this search service application.
- **PersonalQuerySuggestionsEnabled:** if "true", personal query and results suggestions are turned on for the search service application.



- **PropertyBag:** Specifies configuration settings as key-value pairs. This property exists only if **QueryProperties.ResultsProvider** is equal to **SearchProvider.FASTSearch**.<43>
- **QueryLoggingEnabled:** If "true", the query logging is enabled for the search service application.
- **QuerySuggestionsEnabled:** If "true", query suggestions are turned on for the search service application.
- **VerboseQueryMonitoring:** If "true", verbose query monitoring is turned on for the search service application.

### 3.1.1.3 Managed Property Information

The protocol server maintains a collection of **ManagedPropertyInformation** objects to store information about managed properties defined in the protocol server. The protocol client can request this information to get details about the managed properties and then use that information to create search queries.

**ManagedPropertyInformation:** This object represents information about a managed property defined in the protocol server.

- **Description:** The description of the managed property.
- **FullTextQueryable:** If "true", the managed property is property that can be searched in a full-text search. Otherwise, the managed property is not property that can be searched in a full-text search.
- **Name:** The name for the managed property.
- **Pronunciation:** If "true", the protocol server maintains a phonetic form of the managed property values, otherwise, the protocol server does not maintain a phonetic form of the managed property values.
- **Retrievable:** If "true", the managed property is a retrievable managed property. That is, it can be returned as part of a search result. Otherwise, the managed property is not a retrievable property.
- **Type:** Specifies the type of the managed property.

### 3.1.1.4 Scope Information

The protocol server maintains a collection of **ScopeInformation** objects to store information about search scopes defined in the protocol server. The protocol client can request these objects to get details about the search scopes defined in the protocol server and then generate search queries using those scopes. The protocol server also maintains a collection of **search scope consumers**.

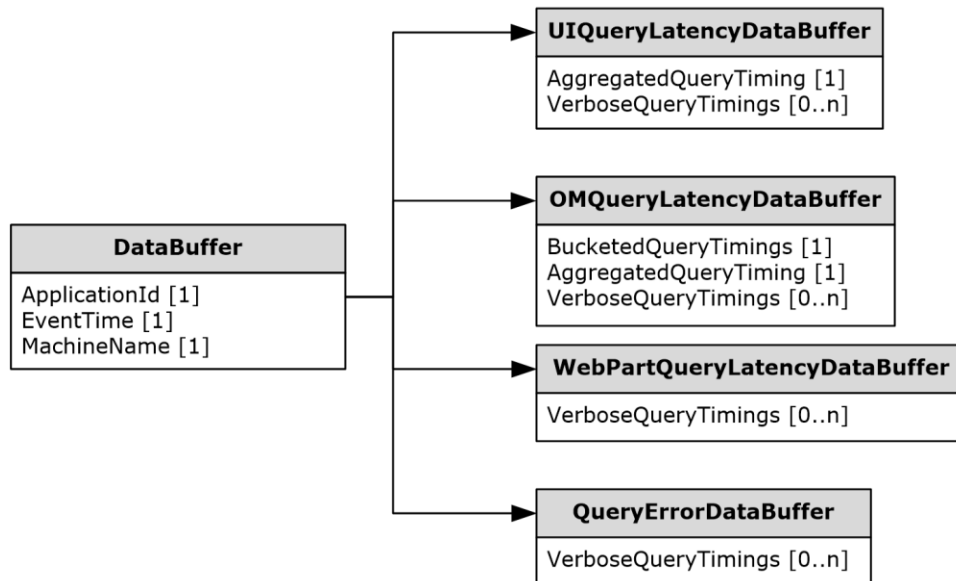
**ScopeInformation:** This object represents information about a search scope defined in the protocol server. The protocol client can request this information to identify which scopes are defined in the protocol server and then use those for search queries.

- **Description:** The description of the search scope.
- **ID:** The unique identifier of the search scope.
- **Name:** The name of the search scope.

### 3.1.1.5 Query Monitoring Information

The following diagram shows the hierarchy of objects representing information about query monitoring data. Properties followed by "[0..n]" are collections of items of the same kind, whereas those followed

by [1] are single properties. The protocol server stores the query monitoring data in the hierarchy of objects in the following figure. The query monitoring data is available to assist the administrators of the protocol server to collect information about query performance as well as errors encountered in the protocol client.



**Figure 3: Query monitoring information**

**DataBuffer:** This is the base object used by all the different types of **DataBuffer** objects. This object defines a common set of properties for all types of **DataBuffer** object. The protocol server maintains one object for each type of **DataBuffer**.

- **ApplicationId:** The unique identifier of the search service application.
- **EventTime:** The date and time, in UTC format, at which the event occurred.
- **MachineName:** The name of the computer on which the event occurred.

**UIQueryLatencyDataBuffer:** This is the top-level object that represents information about time spent in rendering search results in the search results page in the protocol client.

This object extends the **DataBuffer** object. The protocol sever maintains one object of this type per-search service application. It contains aggregated latency information for all search queries as well as information for each query, if verbose query monitoring is turned on. The object has the following properties:

- **AggregatedQueryTiming:** The aggregated latency information for all search queries. It contains:
  - **ApplicationType:** The ClientType of the search queries.
  - **CustomTags:** Any specific tags that identify the search queries.
  - **ExclusiveWebpartTimeMs:** The total time, in milliseconds, consumed exclusively by search Web Parts to process all the search queries.
  - **ImFlow:** The name of the main query and result processing flow used to process the search queries.
  - **InclusiveWebpartTimeMs:** The total time, in milliseconds, consumed by all Web Parts during the processing of all the search queries.

- **NumQueries:** The total number of search queries processed by the protocol client.
- **ResultPageUrl:** The URI of the result page from which the search queries originate.
- **TenantId:** The unique identifier of the tenant from which the search queries were issued.
- **TotalQueryTimeMs:** The total time, in milliseconds, consumed by the search results page to process all the search queries.
- **VerboseQueryTimings:** The collection of the latency information for each search query. It will be maintained by the protocol server only if **SearchServiceApplication.VerboseQueryMonitoring** is set to "true". Each item in the collection holds:
  - **CorrelationId:** The unique identifier used to identify all the query monitoring data for the search query.
  - **ExclusiveWebpartTimeMs:** The time in milliseconds consumed exclusively by search Web Parts to process the search query.
  - **InclusiveWebpartTimeMs:** The time in milliseconds consumed by all Web Parts during the processing of the search query.
  - **QueryTerms:** The query terms of the search query.
  - **TotalQueryTimeMs:** The latency in milliseconds consumed by search results page to execute the search query.
  - **Url:** The URI of the page that issued the search query.

**OMQueryLatencyDataBuffer:** This is the top-level object that represents information about time spent in processing of search queries in the protocol server.

This object extends the **DataBuffer** object. The protocol sever maintains one object of this type per search service application. It contains aggregated latency information for processing all search queries in the protocol server. If verbose query monitoring is turned on, it also contains latency information for processing every single search query in the protocol server. It has the following properties:

- **BucketedQueryTimings:** The aggregated latency information for all search queries, approximated to a value determined by the protocol server.
  - **ApplicationType:** The **ClientType** of the search queries.
  - **CustomTags:** Any specific tags that identify the search queries.
  - **ImFlow:** The name of the main query and result processing flow used to process the search queries.
  - **IMSProxyTimeMs:** The total time in milliseconds taken by intermediate processing of all search queries in the protocol sever, approximated to a value determined by the protocol server. The value stored here is specific to the implementation of the protocol server.
  - **NumQueries:** The total number of search queries processed.
  - **QPTimeMs:** The total time in milliseconds taken by any intermediate processing of all search queries in the protocol server, approximated to a value determined by the protocol server. The value stored here is specific to the implementation of the protocol server.
  - **ResultPageUrl:** The URI of the result page from which the search queries originate.
  - **TenantId:** The unique identifier of the tenant that issued the search queries.

- **TotalQueryTimeMs:** The total time, in milliseconds, taken by the protocol server to process all the search queries, approximated to a value determined by the protocol server
- **AggregatedQueryTiming:** The aggregated latency information for all search queries. It contains:
  - **ApplicationType:** The **ClientType** of the search queries.
  - **CustomTags:** Any specific tags that identify the search queries.
  - **ImFlow:** The name of the main query and result processing flow used to process the search queries.
  - **IMSProxyTimeMs:** The total time in milliseconds taken by intermediate processing of all search queries in the protocol sever. The value stored here is specific to the implementation of the protocol server.
  - **NumQueries:** The total number of search queries processed.
  - **QPTimeMs:** The total time in milliseconds taken by any intermediate processing of all search queries in the protocol server. The value stored here is specific to the implementation of the protocol server.
  - **ResultPageUrl:** The URI of the result page from which the search queries originate.
  - **TenantId:** The unique identifier of the tenant that issued the search queries.
  - **TotalQueryTimeMs:** The total time, in milliseconds, taken by the protocol server to process all the search queries.
- **VerboseQueryTimings:** The collection of the latency information for each search query. It will be maintained by the protocol server only if **SearchServiceApplication.VerboseQueryMonitoring** is set to "true". Each item in the collection holds:
  - **CorrelationId:** The unique identifier used to identify all the query monitoring data for the search query.
  - **IMSProxyTimeMs:** The total time in milliseconds taken by intermediate processing of the search query in the protocol sever. The value stored here is specific to the implementation of the protocol server.
  - **QPMachine:** The name of the computer that processed the search query in the protocol server.
  - **QPTimeMs:** The time in milliseconds taken by intermediate processing of the search query in the protocol server. The value stored here is specific to the implementation of the protocol server.
  - **QueryTerms:** The query terms of the search query.
  - **TotalQueryTimeMs:** The total latency, in milliseconds, taken by the protocol server to process the search query.

**WebPartQueryLatencyDataBuffer:** This is the top level object that represents information about time spent to render each search Web Part on the search results page on every query executed. This object extends the **DataBuffer** object. If verbose query monitoring is turned on, the protocol server maintains one object of this type per search service application. Its properties are:

- **VerboseQueryTimings:** The collection of the rendering time information for each search query and search Web Part. Each item in the collection has these properties:

- **CorrelationId:** The unique identifier used to identify all the query monitoring data for the search query.
- **ExclusiveWebpartTimeMs:** The time spent in milliseconds to render the search Web Part with the specified **WebPartId**.
- **InclusiveWebpartTimeMs:** The time spent in milliseconds to render all the search Web Parts on the search results page.
- **WebPartId:** The unique identifier of the search Web Part for which the latency information is represented.
- **WebPartTitle:** The title of the search Web Part.

**QueryErrorDataBuffer:** This is the top level object that represents information about errors occurred during processing of search queries in the protocol client. This object extends the **DataBuffer** object. The protocol sever maintains one object of this type, that contains query error information if verbose query monitoring is turned on. This object has the following properties:

- **VerboseQueryTimings:** The list of errors occurred during the processing of all the search queries in the protocol client. It is maintained by the protocol server only if **SearchServiceApplication.VerboseQueryMonitoring** is set to "true". Each item in the collection represents an error and has the following properties:
  - **CorrelationId:** The unique identifier used to identify all the query monitoring data for the search query.
  - **Exception:** The details of the exception that is specific to the implementation of the protocol client.
  - **Operation:** The details of the operation that caused the exception of the search query in the protocol client.

### 3.1.1.6 Query logging

The search service stores the information about each executed query into the query log as page impressions. <44> A page impression represents some query properties as well as data returned by search, including documents, promoted results, et cetera. Each page impression has a unique identifier and is assigned to one partition bucket which is used to partition data among link databases. Each partition bucket is assigned to exactly one of the link databases. If a new link database is added or one needs to be deleted then the query information can be repartitioned between databases using these buckets.

Each page impression is built out of query properties based on user settings and a ResultTableCollection (section 3.1.4.1.3.1) returned by executing the query.

The ResultTableCollection is represented by a list of ResultTables (section 3.1.4.1.3.6) which are grouped into sets of blocks. Each block set is represented as an ordered list of blocks.

Each block contains a list of references to search results. There is a set of standard blocks with fixed identifiers such as common results, promoted results, and people results. Other blocks are added dynamically based on query rules.

The following block types have predefined identifiers:

| Value | Description      |
|-------|------------------|
| 0     | Promoted results |

| Value | Description                 |
|-------|-----------------------------|
| 1     | Personal favorite results   |
| 2     | Original user query results |

Block types with value greater or equal 100 are custom blocks and represent result blocks produced by query rules for particular queries.

In turn, each search result consists of a URL and a title; each search result is assigned a search result unique identifier and a partition bucket. Page impressions and search results are partitioned separately.

Each ResultTable represents a block of results in a page impression except for a ResultTable with TableType "RefinementResults" which contains refiners returned by search service. Refiners are not logged in query logging.

When a user clicks on a search result, information about the click is sent to the server. The information includes a page impression identifier and partition bucket associated with the query and information about which result was clicked.

On a high level, query logging happens in the following way:

1. A client search request is executed and its query results are retrieved.
2. The query is assigned a page impression identifier from a pool of unused page impression identifiers, or a new pool is requested if necessary. A partition bucket is assigned based on the user query.
3. The page impression is built from the query results and query properties and is cached into the memory. Information about the assigned page impression identifier, partition bucket, and query language code identifier is added to the query properties to be returned to the client. To track future clicks on the query's results, additional information, such as block type, result position, and click types, is added to each search result.
4. Once the page impression cache reaches its limit, or after an implementation-specific time has passed, the page impressions are flushed to databases. Some data goes directly to final tables and some data, such as search results, goes to the unprocessed table, where temporary identifiers are assigned that will require further resolution.
5. If a search result gets clicked on the client, the client code collects information about the page impression and its search results and then calls RecordPageClick with this data using CSOM ([\[MS-SRCHCSOM\]](#) section 3.1.5.18.2.1.3).

### 3.1.2 Timers

None.

### 3.1.3 Initialization

None.

### 3.1.4 Message Processing Events and Sequencing Rules

The following table summarizes the list of operations as defined by this specification.

| Operation  | Description  |
|--|--|
| <b>Execute</b>                                       | This operation is used to execute a search query and retrieve a list of links to items, crawled locally by the protocol server or provided by another search engine, that are relevant to the search query, together with associated properties.   |
| <b>GetClickFrequenciesForUrl</b>                     | This operation is used to retrieve the click frequencies of a given URI for the past week and the past month from a given reference date.  |
| <b>GetImsEndpointAddresses</b>                       | The <b>GetImsEndpointAddresses</b> operation is used by the protocol client to obtain a list web service URIs from the protocol server. Each of the URIs in the list serves search.  |
| <b>GetProperties</b>                                 | This operation is used by the protocol client to retrieve information about all the managed properties defined in the protocol server.   |
| <b>GetQueryCompletions</b>                           | The <b>GetQueryCompletions</b> operation is used by the protocol client to obtain the query completions for a query from the protocol server.  |
| <b>GetQueryHealthMonitoringSettings</b>              | This operation <a href="#">&lt;45&gt;</a> is used by the protocol client to obtain query health monitoring settings from the protocol server.  |
| <b>GetQueryHealthMonitoringSettingsForComponents</b> | This operation is used by the protocol client to obtain query health monitoring settings from the protocol server. <a href="#">&lt;46&gt;</a>  |
| <b>GetQuerySuggestions</b>                           | This operation is used to retrieve a list of query suggestions to match a search query. There are two types of query suggestions: pre-query suggestions and post-query suggestions. In pre-query suggestions, the last term in the search box MUST be matched by prefix. In post-query suggestions the last term MUST be matched exactly.  |
| <b>GetQuerySuggestionsWithResults</b>                | This operation <a href="#">&lt;47&gt;</a> is used to retrieve a list of query suggestions and suggested personal results to match a search query. There are two types of query suggestions: pre-query suggestions and post-query suggestions. In pre-query suggestions, the last term in the search box SHOULD be matched by prefix. In post-query suggestions, the last term SHOULD be matched exactly. The query suggestions SHOULD also include queries issued by the current user multiple times before this request. The personal results SHOULD be returned when the current user has clicked repeatedly on the same URL in the search results for any of the suggested queries. Query suggestions and personal results MUST NOT include any queries or results that were clicked by the user before <b>ClearUserClickHistory</b> was called, as specified in <a href="#">[MS-SADMWS]</a> section 3.1.4.85 |
| <b>GetScopes</b>                                     | This operation is used by the protocol client to retrieve information about all the <b>search scopes</b> that are available on the protocol server for the specified search scope consumer.  |

| Operation                                   | Description   |
|---|---|
| <b>GetSearchServiceApplicationInfo</b>      | This operation is used by the protocol client to get the properties configured for the <b>search application</b> .  |
| <b>GetSearchTerms</b>                       | The <b>GetSearchTerms</b> operation is used by the protocol client to retrieve the text restriction of a keyword query as interpreted by the protocol server.   |
| <b>GetTopQueryStringsForUrl</b>             | For each crawled item that is identified by a URI, the protocol server MUST store a list of executed search queries that return this item in their query results within 366 days. This list MUST be sorted in descending order by the frequency of occurrence of the search queries. This operation returns a specified number of search queries from this sorted list for a given URI.   |
| <b>HighlightStringValue</b>                 | This operation is used by the protocol client to highlight all the occurrences of specified query terms in a specified <b>string</b> value by enclosing each of them within an open (<b>) and close (</b>) tag.   |
| <b>HighlightStringValueQuerySuggestions</b> | This operation is used by the protocol client to highlight all the occurrences of specified query terms in a specified string value by enclosing each of them within an open (<b>) and close (</b>) tag in the context of query suggestions.  |
| <b>RecordClick</b>                          | <p>This operation MUST be used only when <b>PropertiesContractVersion</b> used to send search queries has a value of either 14.0.0.0 or 14.5.0.0. (section <a href="#">2.2.4.11</a>). In all other cases, the <b>RecordPageClick</b> operation (section <a href="#">3.1.4.16</a>) MUST be used instead of the <b>RecordClick</b> operation.</p> <p>This operation is used by the protocol client to inform the protocol server that a <b>clickthrough</b> happened or the user navigated away from the page. When a clickthrough happens, the protocol client sends the details of the clickthrough and the search query, for which the query result was clicked, to the protocol server. When a user navigates away from the page, the protocol client sends the details of the search query to the protocol server.</p> |
| <b>RecordOMQueryDone</b>                    | This operation is used by the protocol client to inform the protocol server about the latency for processing the search query on the protocol server, as reported by the protocol server in the <b>ExecuteResult</b> element of the <b>ExecuteResponse</b> message, as specified in section <a href="#">3.1.4.1.2.2</a> . The protocol client MUST collect this latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server. <a href="#">&lt;48&gt;</a>  |
| <b>RecordOMQueryDoneEvent</b>               | This operation is used by the protocol client to inform the protocol server about the latency for processing the search query on the protocol server, as reported by the protocol server in the <b>ExecuteResult</b> element of the <b>ExecuteResponse</b> message, as specified in section <a href="#">3.1.4.1.2.2</a> . The protocol client MUST collect this latency information for search queries executed within each time period determined by the protocol  |



| Operation                          | Description  |
|------------------------------------|--|
|                                    | server and send it in a single message to the protocol server.<49>   |
| <b>RecordPageClick</b>             | This operation<50> is used by the protocol client to inform the protocol server that a user clicked a query result on a page. When a click happens, the protocol client sends the details about the click and the <b>page impression</b> for which the query result was clicked to the protocol server. This operation MUST NOT be used if no query logging information is returned for a query. Also this operation MUST NOT be used if a user clicks a query result for which <b>query logging</b> information was not returned (section 3.1.1.6). |
| <b>RecordQueryError</b>            | This operation is used by the protocol client to inform the protocol server of any errors that occurred during the processing of search queries in the protocol client. The protocol client MUST collect the error information for all queries executed within each time period determined by the protocol server and send them in a single message.<51>   |
| <b>RecordQueryErrorEvent</b>       | This operation<52> is used by the protocol client to inform the protocol server of any errors that occurred during the processing of search queries in the protocol client. The protocol client MUST collect the error information for all queries executed within each time period determined by the protocol server and send them in a single message.   |
| <b>RecordUIQueryDone</b>           | This operation is used to inform the protocol server about the search query latency of the search results page. The protocol client MUST collect the latency information for all search queries executed in each time period determined by the protocol server and send it in a single message to the protocol server.<53>   |
| <b>RecordUIQueryDoneEvent</b>      | This operation<54> is used to inform the protocol server about the search query latency of the search results page. The protocol client MUST collect the latency information for all search queries executed in each time period determined by the protocol server and send it in a single message to the protocol server.   |
| <b>RecordWebPartQueryDone</b>      | This operation is used by the protocol client to inform the protocol server about the search query latency of the Web Parts on the search results page. The protocol client MUST collect the latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server.<55>   |
| <b>RecordWebPartQueryDoneEvent</b> | This operation<56> is used by the protocol client to inform the protocol server about the search query latency of the Web Parts on the search results page. The protocol client MUST collect the latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server.   |

### 3.1.4.1 Execute

This operation is used to execute a search query and retrieve a list of links to items, crawled locally by the protocol server or provided by another search engine, that are relevant to the search query, together with associated properties.

The following is the WSDL port type specification of the **Execute WSDL operation**.

```
<wsdl:operation name="Execute" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/Execute"
  message="tns:ISearchQueryServiceApplication_Execute_InputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/ExecuteResponse"
  message="tns:ISearchQueryServiceApplication_Execute_OutputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/ExecuteSearchServiceApplicationFaultFault"
  name="SearchServiceApplicationFaultFault"
  message="tns:ISearchQueryServiceApplication_Execute_SearchServiceApplicationFaultFault_FaultMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_Execute\_InputMessage** request message, as specified in section [3.1.4.1.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_Execute\_OutputMessage** response message, as specified in section [3.1.4.1.1.2](#), as follows:

- The client formulates a search query that specifies which items to retrieve, which **result source** to retrieve them from, how to sort the retrieved items, and which properties to retrieve for each item, as specified in section [3.1.1](#). On receipt, the protocol server interprets the search query and assembles a list of items that are relevant to the search query. Then, it retrieves the properties for each result that were specified in the search query, and includes them in the response to the search query.
- If the **properties** element is absent or is empty, the protocol server MUST return a **FaultException<ExceptionDetail>** error message.
- If the **properties** element conforms to the schema of the **KeywordQueryProperties** data type, as specified in section [3.1.4.7.3.1](#), and if for at least one managed property specified in the **properties.SelectProperties** element, the **Retrievable** flag, as specified in section [3.1.1.3](#), is not set to "true", the protocol server MUST return a **FaultException<SearchServiceApplicationFault>** error message.
- If the **properties** element conforms to the schema of the **KeywordQueryProperties** data type, as specified in section [3.1.4.7.3.1](#), and if the same managed property is specified more than once in the **properties.SelectProperties** element, the protocol server MUST return a **FaultException<SearchServiceApplicationFault>** error message.
- If the time required by the protocol server to interpret the search query and assemble the list of items that are relevant to the search query takes longer than the time specified in the **properties.Timeout** element, the protocol server MUST return a **FaultException<SearchServiceApplicationFault>** error message.
- On any error processing the request, the protocol server MUST return a **FaultException<ExceptionDetail>** error message.

#### 3.1.4.1.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_Execute_InputMessage</b>  | The request WSDL message for the <b>Execute</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_Execute_OutputMessage</b> | The response WSDL message for the <b>Execute</b> WSDL operation. |

### 3.1.4.1.1.1 ISearchQueryServiceApplication\_Execute\_InputMessage

The request WSDL message for the **Execute** WSDL operation.

The **SOAP action** value is:

```
http://tempuri.org/ISearchQueryServiceApplication/Execute
```

The **SOAP body** contains the **Execute** element.

### 3.1.4.1.1.2 ISearchQueryServiceApplication\_Execute\_OutputMessage

The response WSDL message for the **Execute** WSDL operation.

The SOAP body contains the **ExecuteResponse** element.

### 3.1.4.1.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                | Description  |
|------------------------|--|
| <b>Execute</b>         | The input data for the <b>Execute</b> WSDL operation.  |
| <b>ExecuteResponse</b> | The result data for the <b>Execute</b> WSDL operation. |

#### 3.1.4.1.2.1 Execute

The **Execute** element specifies the input data for the **Execute** WSDL operation.

```
<xs:element name="Execute" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** Specifies the properties for the search query. This element **MUST NOT** be empty. This element **MUST** conform to the schema of either the **KeywordQueryProperties** complex type, as

specified in section [3.1.4.7.3.1](#) or the **FullTextSqlQueryProperties** complex type, as specified in section [2.2.4.7](#).

### 3.1.4.1.2.2 ExecuteResponse

The **ExecuteResponse** element specifies the result data for the **Execute** WSDL operation.

```
<xs:element name="ExecuteResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="ExecuteResult" nillable="true" type="q2:ResultTableCollection"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**ExecuteResult:** This element contains the query results for the search query. This element MUST conform to the schema of the **ResultTableCollection** complex type.

### 3.1.4.1.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type  | Description  |
|---|--|
| <b>ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5</b>               | This element contains a list of zero or more pairs of <b>Key</b> and <b>Value</b> elements. Each pair represents a set of query results of a specific type.  |
| <b>ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8</b> | This type contains a list of zero or more pairs of Key and Value elements. Each pair consists of a <b>QueryId</b> and the <b>SearchServiceApplicationFault</b> (specified in section <a href="#">3.1.4.1.3.10</a> ) encountered by the search query identified by the <b>QueryId</b> |
| <b>ArrayOfKeyValuePairOfstringResultTable_PFsic3Az</b>              | This element contains a list of zero or more pairs of <b>Key</b> and <b>Value</b> elements. Each pair represents a set of query results of a specific type.  |
| <b>ArrayOfResultDefinition</b>                                      | An array of zero or more extracted definitions for a search query.   |
| <b>KeyValuePairOfstringResultTable_PFsic3Az</b>                     | This type contains pairs that represent set of query results of a specific type.   |
| <b>KeywordInformation</b>   | This type specifies zero or more tokens and their associated user authored definitions that are stored in the protocol server.   |
| <b>ResultDefinition</b>   | An extracted definition for a search query.  |
| <b>ResultTable</b>  | This contains a list of query results, all of which are of the type specified  |

| Complex type                         | Description  |
|--------------------------------------|--|
|                                      | in <b>TableType</b> . The format of the <b>Table</b> element depends on the type of query results. |
| <b>ResultTableCollection</b>         | Contains the search results and associated properties for a search query.                          |
| <b>SearchServiceApplicationFault</b> | Contains error detail of a SOAP fault.   |

### 3.1.4.1.3.1 ResultTableCollection

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

Contains the search results and associated properties for a search query.

```
<xs:complexType name="ResultTableCollection" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="DatabaseTime" type="xs:int"/>
    <xs:element minOccurs="0" name="Definition" nillable="true"
type="q2:ArrayOfResultDefinition"/>
    <xs:element minOccurs="0" name="ElapsedTime" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="IgnoredNoiseWords" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="InternalQueryErrors" nillable="true"
type="q3:ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8"/>
    <xs:element minOccurs="0" name="KeywordInformation" nillable="true"
type="q2:KeywordInformation"/>
    <xs:element minOccurs="0" name="QueryMachine" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="QueryModification" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="QueryProcessingTime" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="QueryTerms" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="SpellingSuggestion" nillable="true" type="xs:string"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_ResultTables" nillable="true"
type="q3:ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5"/>
    <xs:element minOccurs="0" name="IMSPROXYTime" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
    <xs:element minOccurs="0" name="PropertiesContractVersion" nillable="true"
type="xs:string"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="QueryParameterTimestamps" nillable="true"
type="q3:ArrayOfKeyValueOfstringstring"/>
    <xs:element minOccurs="0" name="RemainingDeserializationSkips" type="xs:int"/>
    <xs:element minOccurs="0" name="SerializedResultTables" nillable="true"
type="xs:string"/>
    <xs:element
xmlns:tns4="http://schemas.datacontract.org/2004/07/System.Collections.Generic" minOccurs="0"
name="mResultTables" nillable="true"
type="tns4:ArrayOfKeyValuePairOfstringResultTable_PFSic3Az"/>
  </xs:sequence>
</xs:complexType>
```

**DatabaseTime:** The time it took to execute the database operations for retrieving results for a search query, in milliseconds. This element **MUST** contain a non-negative number. If **QueryProperties.ResultsProvider** (as specified in section 2.2.4.11) is equal to

**SearchProvider.FASTSearch**, this MUST be the time that was used to process the request by the query processing service.

**Definition:** An array of zero or more extracted definitions for a search query. The protocol server SHOULD compute a list of crawled items that contain definitions for the search query. The criteria used to determine what constitutes an extracted definition are specific to the implementation of the protocol server. This element MUST only be present if the **ResultTypes** element in the **properties** element of the **Execute** operation (as specified in section [3.1.4.1](#)) contains

**ResultType.DefinitionResults** (as specified in section [2.2.5.5](#)). If

**QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is equal to

**SearchProvider.FASTSearch**, the protocol server MUST NOT return any extracted definitions.

**ElapsedTime:** The time it took to execute the search query, in milliseconds. This element MUST contain a non-negative number.

**IgnoredNoiseWords:** An array of zero or more noise words that were found in the search query. If the **properties** element specified in **Execute** message is of the complex type

**FullTextSqlQueryProperties** (as specified in section [2.2.4.7](#)), then this SHOULD include all noise words that are used in the CONTAINS predicate of the search query (as specified in [\[MS-SEARCH\]](#) section [2.2.13.3.1.1](#)) and FREETEXT predicate of the search query (as specified in [\[MS-SEARCH\]](#) section [2.2.13.3.1.2](#)). If the **properties** element specified in **Execute** message is of the complex type **KeywordQueryProperties** (as specified in section [3.1.4.7.3.1](#)), then this SHOULD include all noise words used in the text of the search query. If **QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is equal to **SearchProvider.FASTSearch**, the protocol server MUST return an empty array.

**InternalQueryErrors:** This element contains the list of query errors if there were errors during execution of the search query. If there were no errors, this element MUST be empty. This element is of type **ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8** as specified in section [3.1.4.1.3.9](#).

**KeywordInformation:** The protocol server SHOULD store a list of user authored definitions for tokens. If such a token is found in the query text, this element SHOULD contain the token and associated definition. If no definition could be found for any of the tokens in the query text, this extended property MUST be empty.

**QueryMachine:** The name of the computer that is running the search service that executes the search query. The value of this element is specific to the implementation of the protocol server.

**QueryModification:** The modified search query. The protocol server MAY transform query terms if **EnableSpellcheck** is set to **SpellcheckMode.On** on the request, and there is a good chance that the modified query terms will increase the quality of the search results [<57>](#). The criteria used to modify the query are specific to the implementation of the protocol server. If

**QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is equal to

**SearchProvider.SharepointSearch**, the protocol server MUST NOT return a modified search query.

**QueryProcessingTime:** The time it took for intermediate processing of the search query on the protocol server, in milliseconds. This value is specific to the implementation of the protocol server.

**QueryTerms:** An array of zero or more tokens extracted from the search query in the order that they occur. If the **properties** element specified in **Execute** message is of the complex type

**FullTextSqlQueryProperties**, this SHOULD include all tokens that are used in the **CONTAINS** predicate of the search query, as specified in [\[MS-SEARCH\]](#) section [2.2.13.3.1.1](#), and **FREETEXT** predicate of the search query, as specified in [\[MS-SEARCH\]](#) section [2.2.13.3.1.2](#). If the **properties** element specified in the **Execute** message is of the complex type **KeywordQueryProperties**, this SHOULD include all tokens used in the text of the search query. If

**QueryProperties.ResultsProvider**, as specified in section [2.2.4.11](#), is equal to

**SearchProvider.FASTSearch**, the protocol server MUST return the complete search query in the first element of the array.

**SpellingSuggestion:** The spelling suggestion for the search query. The protocol server can suggest a different spelling of the search query if there is a good chance that the spelling suggestion will increase the quality of the search results. <58> The criteria used to determine the spelling suggestion and when to show it are specific to the implementation of the protocol server.

**m\_ResultTables:** This element contains the query results for the search query. Depending on the formulation of the search query, there can be multiple sets of query results contained within this element. Each set MUST contain query results of a specific type. MUST NOT include any result sets which are a result of executing query rule actions to add result blocks. MUST be set to NULL if **PropertiesContractVersion** is not set to 14.0.0.0.

**IMSProxyTime:** The time it took for intermediate processing of the search query on the protocol server, in milliseconds. This value is specific to the implementation of the protocol server.

**Properties:** Specifies a property bag of key value pairs. MUST be of **ArrayOfKeyValueOfstringanyType** data type as specified in section 2.2.4.18 SHOULD contain the following properties:

- **QueryErrors:** This property contains the list of query errors if there were errors during execution of the search query. If there were no errors, this property MUST be empty. This element is an array of **Key** and **Value** pairs. Each pair of **Key** and **Value** elements consists of a **QueryId** and the **Exception** encountered by the search query identified by the **QueryId**. If the error was encountered while producing a result set for a query rule, **QueryId** MUST be the unique identifier of the query rule, otherwise it MUST be the same value as the **Id** element of **QueryProperties** specified in section 2.2.4.11.
- **QueryId:** Specifies an identifier for the query. MUST be the same value as specified by the protocol client in **properties.Properties.Id**.
- **TriggeredRules:** This element contains the list of unique identifiers of the **query rules** that were executed for the search query.

**PropertiesContractVersion:** Specifies the version of **ResultTableCollection** complex type being used by the protocol client. MUST be set to the same value as specified in **QueryProperties.PropertiesContractVersion** in section 2.2.4.11.

**QueryParameterTimestamps:** MUST be ignored.

**RemainingDeserializationSkips:** Specifies the recommended serialization steps to skip. If the value specified in **PropertiesContractVersion** is 14.0.0.0 then the value MUST be set to -1. For all other values in **PropertiesContractVersion** the value MUST be set to 0.

**SerializedResultTables:** Specifies a serialized representation of **mResultTables** serialized using **DataContractSerializer**. MUST be set to NULL if **PropertiesContractVersion** is 14.0.0.0.

**mResultTables:** This element contains the query results for the search query. Depending on the formulation of the search query, there can be multiple sets of query results contained within this element. Each set MUST contain query results of a specific type. MUST be set to NULL, if **PropertiesContractVersion** is not 14.0.0.0 and the value of **SerializedResultTables** has been computed.

### 3.1.4.1.3.2 ArrayOfResultDefinition

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

An array of zero or more extracted definitions for a search query.

```
<xs:complexType name="ArrayOfResultDefinition" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
```

```

    <xs:element minOccurs="0" maxOccurs="unbounded" name="ResultDefinition"
type="q2:ResultDefinition"/>
  </xs:sequence>
</xs:complexType>

```

**ResultDefinition:** This contains a single extracted definition for a search query.

### 3.1.4.1.3.3 ResultDefinition

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

An extracted definition for a search query.

```

<xs:complexType name="ResultDefinition" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="DocHref" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DocTitle" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Sentence" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="TermLength" type="xs:int"/>
    <xs:element minOccurs="0" name="TermOffset" type="xs:int"/>
  </xs:sequence>
</xs:complexType>

```

**DocHref:** The URL of a document that contains the extracted definition. The URL MUST be in the format specified in [RFC1738](#). This element MUST NOT contain more than 2000 characters.

**DocTitle:** The title of the document that is referenced by **DocHref**. This element MUST NOT contain more than 2000 characters.

**Sentence:** The sentence in the document referenced by **DocHref** that has the extracted definition. This element MUST NOT contain more than 255 characters.

**TermLength:** This is the number of characters in the search query text. This MUST be a non-negative number.

**TermOffset:** This is the zero based offset of the search query text in the sentence contained in the **Sentence** element. This MUST be a non-negative number. This value MUST be less than the length of the sentence contained in the **Sentence** element.

### 3.1.4.1.3.4 KeywordInformation

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

This type specifies zero or more tokens and their associated user authored definitions that are stored in the protocol server.

```

<xs:complexType name="KeywordInformation" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Definition" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Keyword" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

**Definition:** The definitions of the tokens specified in the **Keyword** element, separated by semicolons. If the value of the **Keyword** element is empty, the value of this element MUST also be empty.

**Keyword:** The extracted tokens from the search query, separated by semicolons, which have associated definitions stored in the protocol server.



### 3.1.4.1.3.5 ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

This element contains a list of zero or more pairs of **Key** and **Value** elements. Each pair represents a set of query results of a specific type. See section [3.1.4.1.3.6](#) for the available types of query results.

```
<xs:complexType name="ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfResultTypeResultTableUTLV0zE5">
      <xs:complexType>
        <xs:sequence>
          <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
name="Key" type="tns2:ResultType"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:ResultTable"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfResultTypeResultTableUTLV0zE5:** This contains the pairs that represent sets of query results of a specific type.

**KeyValueOfResultTypeResultTableUTLV0zE5.Key:** The type of the query results present in the **Value** element. MUST be of **ResultType** simple type as specified in section [2.2.5.5](#).

**KeyValueOfResultTypeResultTableUTLV0zE5.Value:** The set of query results of the type specified in the **Key** element. MUST be of the **ResultTable** complex type as specified in section [3.1.4.1.3.6](#).

### 3.1.4.1.3.6 ResultTable

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

This contains a list of query results, all of which are of the type specified in **TableType**. The format of the **Table** element depends on the type of query results. The different types of query results are specified in section [2.2.5.5](#).

```
<xs:complexType name="ResultTable" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="IsTotalRowsExact" type="xs:boolean"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultType" type="tns2:ResultType"/>
    <xs:element minOccurs="0" name="RowCount" type="xs:int"/>
    <xs:element minOccurs="0" name="Table" nillable="true">
      <xs:complexType>
        <xs:sequence>
          <xs:any minOccurs="0" maxOccurs="unbounded"
namespace="http://www.w3.org/2001/XMLSchema" processContents="lax"/>
          <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
processContents="lax"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" name="TimeZoneID" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRows" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRowsIncludingDuplicates" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
```

```
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
</xs:sequence>
</xs:complexType>
```

**IsTotalRowsExact:** This MUST be "true" if the number given in **TotalRows** is an exact number, rather than an approximation, and "false" otherwise.

**ResultType:** The type of query results returned in the **Table** element.

**RowCount:** The number of query results contained in the **Table** element.

**Table:** This contains a table of query results. The information MUST be encoded as an ADO.NET DataTable object using the DiffGram format. This format is specified in [\[MS-DSDIFFGRAM\]](#). This element MUST contain one of the following types of tables.

| Type                        | Description  |
|-----------------------------|--|
| RelevantResults Table       | The <b>RelevantResults</b> table contains the actual query results. It MUST only be present if the <b>ResultTypes</b> element in the <b>properties</b> element of the <b>Execute</b> message contains <b>ResultType.RelevantResults</b> , as specified in section 2.2.5.5. The table MUST have one column per requested property that is specified in <b>KeywordQueryProperties.SelectProperties</b> , as specified in , or <b>SELECT</b> statement of the <b>SharePoint Search SQL syntax</b> as specified in <a href="#">[MS-SEARCH]</a> section 2.2.12.3 and 2.2.13.3. It MUST have one row per search result. In any given row, the values in the columns MUST represent the value that the corresponding property has for that item. The type of the column MUST be the type of the managed property, as specified in <b>ManagedPropertyInformation.Type</b> in section <a href="#">3.1.1.3</a> .   |
| SpecialTermResults Table    | The <b>SpecialTermResults</b> table contains best bets that apply to the search query. It MUST only be present if the <b>ResultTypes</b> element in the <b>properties</b> element of the <b>Execute</b> operation contains <b>ResultType.SpecialTermResults</b> , as specified in section 2.2.5.5. It MUST have one row per best bet, and it MUST have the columns <i>Title</i> , <i>Url</i> and <i>Description</i> . The columns MUST contain, respectively, the title of the best bet, the URL that the best bet links to, and a human-readable description of the best bet. All of these columns are of the string type.  |
| HighConfidenceResults Table | The <b>HighConfidenceResults</b> table contains high confidence results that apply to the search query. It MUST only be present if the <b>ResultTypes</b> element in the <b>properties</b> element of the <b>Execute</b> operation contains <b>ResultType.HighConfidenceResults</b> (as specified in section 2.2.5.5) and <b>ResultsProvider</b> element in the <b>properties</b> element of the <b>Execute</b> operation is not <b>SearchServer.FASTSearch</b> . It MUST have one row per high confidence result, and it MUST have the following columns - Title, Url, Description, HighConfidenceImageUrl, HighConfidenceDisplayProperty1, HighConfidenceDisplayProperty2, HighConfidenceDisplayProperty3, HighConfidenceDisplayProperty4, HighConfidenceDisplayProperty5, HighConfidenceDisplayProperty6, HighConfidenceDisplayProperty7, HighConfidenceDisplayProperty8, HighConfidenceDisplayProperty9, HighConfidenceDisplayProperty10, HighConfidenceDisplayProperty11, HighConfidenceDisplayProperty12, HighConfidenceDisplayProperty13, HighConfidenceDisplayProperty14, HighConfidenceDisplayProperty15, HighConfidenceType. All of these columns are of string type. The <i>Title</i> column MUST contain the title of the high confidence result. This column MUST NOT be empty. The <i>URL</i> column MUST contain a valid URL that points to the high confidence result. This column MUST NOT be empty. The <i>Description</i> column SHOULD contain a description of the high confidence result. The <i>HighConfidenceImageUrl</i> column SHOULD contain the URL of a picture that represents the high confidence result. The <i>HighConfidenceType</i> column MUST contain the type of the high confidence result. It MUST NOT be empty. The |

| Type                        | Description   |
|-----------------------------|---|
|                             | possible value for this column is defined by the search administrator. The use of all other columns is at the discretion of the search administrator.   |
| VisualBestBetsResults Table | The <b>VisualBestBetsResults</b> table contains visual best bets that apply to the search query. It MUST only be present if the <b>ResultTypes</b> element in the <b>properties</b> element of the <b>Execute</b> operation contains <b>ResultType.VisualBestBetsResults</b> (as specified in section 2.2.5.5) and <b>ResultsProvider</b> element in the <b>properties</b> element of the <b>Execute</b> operation is not <b>SearchServer.SharepointSearch</b> . It MUST have one row per visual best bet, and it MUST have the columns <i>Name</i> , <i>Uri</i> , <i>Description</i> , <i>Keyword</i> , <i>Teaser</i> , <i>TeaserContentType</i> . The columns MUST contain, respectively, the name of the visual best bet, the URL that the visual best bet links to, a human-readable description of the visual best bet, the keyword term for the visual best bet, a short summary to be displayed, and the content type of the summary. All of these columns are of string type.   |
| RefinementResults Table     | The <b>RefinementResults</b> table contains refinement results that apply to the search query. It MUST only be present if the <b>ResultTypes</b> element in the <b>properties</b> element of the <b>Execute</b> operation contains <b>ResultType.RefinementResults</b> (as specified in section 2.2.5.5) and <b>ResultsProvider</b> element in the <b>properties</b> element of the <b>Execute</b> operation is not <b>SearchServer.SharepointSearch</b> . It MUST have one row per <b>refinement</b> , and it MUST have the columns <i>RefinerName</i> , <i>RefinementName</i> , <i>RefinementValue</i> , <i>RefinementCount</i> and <i>RefinementToken</i> . The columns MUST contain, respectively, the name of the refined managed property, the display name of the refinement, the value of the refinement bucket, the result count for this refinement, and the token used to apply the refinement through a new query. All of these columns are of string type, except <i>RefinementCount</i> which is of type integer. |

The table of each type SHOULD contain column *piSearchResultId*, which contains information about a particular search result for query logging. This information SHOULD be sent to **RecordPageClick** method as a *clickedResultId* parameter of the **RecordPageClick** method of **SearchExecutor** ([\[MS-SRCHCSOM\]](#) section 3.1.5.18). If this column doesn't exist or is an empty string, then the client MUST NOT call **RecordPageClick**. The information is represented as a set of integer values encoded in a string in the following format: BlockType\_ResultPosition\_ImmediacyInformation\_ClickType. These fields MUST BE parsed and set to the appropriate properties when RecordPageClick is called (section [3.1.4.16](#)). If ImmediacyInformation equals to 1 then QueryLogImmediacyInfo (section [3.1.4.16.3.2](#)) MUST BE set and passed to RecordPageClick, otherwise a NULL value MUST BE passed.

**TimeZoneID:** Contains the local time zone identifier, which represents the local time zone of the website that processes the search query. The protocol server MUST return local time identifier according to the specified time zone.

**TotalRows:** This element MUST contain the total number of results that match the conditions given in the search query and are of the type specified in the **ResultType** element.

**TotalRowsIncludingDuplicates:** This element SHOULD contain the total number of results, including duplicates, that match the conditions given in the search query and are of the type specified in the **ResultType** element [<59>](#).

**Properties:** Specifies a property bag of key value pairs. MUST be of **ArrayOfKeyValueOfstringanyType** data type as specified section in section [2.2.4.18](#) SHOULD contain the following properties:

- **Order:** Reserved for future use.
- **ResultTitle:** Specifies the title associated with results for the transformed query by query rule action. MUST NOT be more than 64 characters in length.

- **ResultTitleUrl:** Specifies the URL to be linked to the **ResultTitle**. MUST NOT be more than 2048 characters in length.
- **GroupTemplateId:** Specifies the identifier of the layout template that specifies how the results returned should be arranged.
- **ItemTemplateId:** Specifies the identifier of the layout template that specifies how the result item should be displayed.
- **QueryRuleId:** Specifies the unique identifier of the query rule that produced the result set. MUST be {00000000-0000-0000-0000-000000000000} if the result set is not associated to a query rule.
- **Error:** Specifies the details of the exception if any that occurred on the protocol server while processing the search query. The value of this field is specific to the implementation of the protocol client.
- **TableType:** Specifies the type of results in the **Table** element. MUST NOT be NULL.
- **QueryId:** Specifies the identifier for the search query. MUST be the same value as specified by the protocol client in **properties.Properties.Id** if **QueryRuleId** is set to {00000000-0000-0000-0000-000000000000}. Otherwise, MUST be the value specified in **QueryRuleId**.
- **piPageImpressionBlockType:** Specifies the identifier of a result block inside query logging page impression corresponding to the ResultTable. It is represented in a byte format and MUST BE sent to RecordPageClick method of SearchExecutor to record a user click ([MS-SRCHCSOM] section 3.1.5.18). If this property doesn't exist or is an empty string then RecordPageClick MUST NOT be called.

### 3.1.4.1.3.7 ArrayOfKeyValuePairOfstringResultTable\_PFsic3Az

**Namespace:** http://schemas.datacontract.org/2004/07/System.Collections.Generic

This element [<60>](#) contains a list of zero or more pairs of **Key** and **Value** elements. Each pair represents a set of query results of a specific type. See section [3.1.4.1.3.6](#) for the available types of query results.

```
<xs:complexType name="ArrayOfKeyValuePairOfstringResultTable_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValuePairOfstringResultTable_PFsic3Az"
type="tns4:KeyValuePairOfstringResultTable_PFsic3Az"/>
  </xs:sequence>
</xs:complexType>
```

**KeyValuePairOfstringResultTable\_PFsic3Az:** Specifies a list of zero or more pairs that represent sets of query results of specific type. MUST be of **KeyValuePairOfstringResultTable\_PFsic3Az** as specified in section [3.1.4.1.3.8](#).

### 3.1.4.1.3.8 KeyValuePairOfstringResultTable\_PFsic3Az

**Namespace:** http://schemas.datacontract.org/2004/07/System.Collections.Generic

This type [<61>](#) contains pairs that represent set of query results of a specific type.

```
<xs:complexType name="KeyValuePairOfstringResultTable_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="key" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

```

    <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
name="value" nillable="true" type="q2:ResultTable"/>
  </xs:sequence>
</xs:complexType>

```

**key:** The type of the query results present in the **value** element.

**value:** The set of the query results of the type specified in the **key** element. MUST be of the **ResultTable** data type as specified in section [3.1.4.1.3.6](#).

### 3.1.4.1.3.9 ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

This type contains a list of zero or more pairs of **Key** and **Value** elements. Each pair consists of a **QueryId** and the **SearchServiceApplicationFault** (specified in section [3.1.4.1.3.10](#)) encountered by the search query identified by the **QueryId**.

```

<xs:complexType name="ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="Value" nillable="true" type="q1:SearchServiceApplicationFault"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

**KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8:** A pair of **Key** and **Value** elements consisting of a **QueryId** and the **SearchServiceApplicationFault** (specified in section [3.1.4.1.3.10](#)) encountered by the search query identified by the **QueryId**. If the error was encountered while producing a result set for a query rule, the **QueryId** MUST be the unique identifier of the query rule, otherwise it MUST be the same value as the **Id** element of **QueryProperties** specified in section [2.2.4.11](#).

**KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8.Key:** The **QueryId** as specified in section [3.1.4.1.3.6](#) of the search query that encounters the **SearchServiceApplicationFault** in **KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8.Value**.

**KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8.Value:** The **SearchServiceApplicationFault** as specified in section [3.1.4.1.3.10](#) encountered by the search query identified by the **QueryId** in **KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8.Key**.

### 3.1.4.1.3.10 SearchServiceApplicationFault

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration>

The **SearchServiceApplicationFault** complex type represents the error detail of a SOAP fault generated by an operation.

```

<xs:complexType name="SearchServiceApplicationFault"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ErrorCode" type="xs:int"/>
    <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="FaultType" type="q2:SearchServiceApplicationFaultType"/>
    <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

**ErrorCode:**

**FaultType:** Type, as specified in section [3.1.4.1.4.1](#)

**Message:** Message of the fault.

### 3.1.4.1.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

| Simple type                              | Description  |
|--|--|
| <b>SearchServiceApplicationFaultType</b> | Represents the type of failure for a <b>SearchServiceApplicationFault</b> as specified by section <a href="#">3.1.4.1.3.10</a> . |

#### 3.1.4.1.4.1 SearchServiceApplicationFaultType

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **SearchServiceApplicationFaultType** simple type represents the type of failure for a **SearchServiceApplicationFault** as specified by section [3.1.4.1.3.10](#).

```

<xs:simpleType name="SearchServiceApplicationFaultType"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="SpecialTerm_NotFound"/>
    <xs:enumeration value="SpecialTerm_DuplicateError"/>
    <xs:enumeration value="Synonym_NotFound"/>
    <xs:enumeration value="BestBet_NotFound"/>
    <xs:enumeration value="BestBet_OrderDuplicationError"/>
    <xs:enumeration value="AllNoiseQuery"/>
    <xs:enumeration value="SearchServiceNotFound"/>
    <xs:enumeration value="QueryMalformed"/>
    <xs:enumeration value="ScopeNotFound"/>
    <xs:enumeration value="InvalidProperty"/>
    <xs:enumeration value="OnlyExcludedTerms"/>
    <xs:enumeration value="RankingModelNotFound"/>
    <xs:enumeration value="UnsupportedTopology"/>
    <xs:enumeration value="FASTSearchQuery"/>
    <xs:enumeration value="Timeout"/>
    <xs:enumeration value="ExtendedConnectorApplicaion"/>
    <xs:enumeration value="PartitionOptionsMismatch"/>
    <xs:enumeration value="TooComplexQueryException"/>
    <xs:enumeration value="QueryThrottled"/>
    <xs:enumeration value="InternalError"/>
    <xs:enumeration value="QueryTransformInvalidProperty"/>
    <xs:enumeration value="QueryConfigurationImportException"/>
    <xs:enumeration value="ApplicationSpecific"/>
    <xs:enumeration value="DiscoveryFederatedSourceNotFound"/>
    <xs:enumeration value="RemoteSharepointSourceFault"/>
  </xs:restriction>
</xs:simpleType>

```

```

<xs:enumeration value="TenantSiteCollectionMismatchException"/>
<xs:enumeration value="InvalidNameException"/>
<xs:enumeration value="InvalidPropertyTypeException"/>
<xs:enumeration value="CouldNotModifySchemaException"/>
<xs:enumeration value="InvalidMappingException"/>
<xs:enumeration value="ObjectNotFoundException"/>
<xs:enumeration value="PropertyIsReadOnlyException"/>
<xs:enumeration value="PropertyCannotHaveMappingsException"/>
<xs:enumeration value="InvalidManagedPropertyValue"/>
<xs:enumeration value="ArgumentNullException"/>
<xs:enumeration value="UnauthorizedAccessException"/>
<xs:enumeration value="DatabaseException"/>
<xs:enumeration value="SchemaExportException"/>
<xs:enumeration value="SchemaImportException"/>
<xs:enumeration value="NotSupported"/>
<xs:enumeration value="QueryPropertyOutOfRange"/>
</xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for the **SearchServiceApplicationFaultType** simple type.

| Value                         | Meaning   |
|-------------------------------|---|
| SpecialTerm_NotFound          | The specified <b>keyword</b> was not found on the protocol server.  |
| SpecialTerm_DuplicateError    | The query text specified cannot be used, because it is already a keyword or keyword synonym.                                  |
| Synonym_NotFound              | The specified <b>keyword synonym</b> was not found on the protocol server.  |
| BestBet_NotFound              | The specified best bet was not found on the protocol server.  |
| BestBet_OrderDuplicationError | The best bet cannot be added to the keyword because there is already a best bet at the specified position.                    |
| AllNoiseQuery                 | Cannot complete the search query because it is composed entirely of noise words.  |
| SearchServiceNotFound         | The protocol server was unable to connect to the search service application.  |
| QueryMalformed                | Cannot complete the search query because its syntax is invalid.   |
| ScopeNotFound                 | The specified search scope was not found on the protocol server.  |
| InvalidProperty               | Cannot complete the search query because it uses an invalid managed property.   |
| OnlyExcludedTerms             | Cannot complete the search query because it is composed entirely of noise words.  |
| RankingModelNotFound          | Cannot complete the search query because the ranking model does not exist.  |
| UnSupportedTopology           | Cannot complete the search query because the farm uses a topology unsupported by its version of the protocol server software. |
| FASTSearchQuery               | Cannot complete the search query from the FAST search provider.   |
| Timeout                       | Cannot complete the search query because the query took too long to be processed by the protocol server.                      |

| <b>Value</b>                          | <b>Meaning</b>  |
|---------------------------------------|---|
| ExtendedConnectorApplicaion           | Cannot complete the search query because the extended search application cannot process queries. An extended search service application is specific for FAST search provider and is used only in crawling and not for query processing. |
| PartitionOptionsMismatch              | Cannot complete the search query because the partition options of the search service application do not match options of the search service application proxy.  |
| TooComplexQueryException              | Cannot complete the search query because there are too many results for it.   |
| QueryThrottled                        | Cannot complete the search query because the protocol server was overloaded.  |
| InternalError                         | Cannot complete the search query because there was an error on the protocol server  |
| QueryTransformInvalidProperty         | Cannot complete the search query because the query transform has invalid property.  |
| QueryConfigurationImportException     | The query configuration settings cannot be imported because of an error on the protocol server.   |
| ApplicationSpecific                   |   |
| DiscoveryFederatedSourceNotFound      | The protocol server was unable to locate an exchange result source.   |
| RemoteSharepointSourceFault           | Cannot complete the search query because the remote SharePoint search provider had an error.  |
| TenantSiteCollectionMismatchException | The schema is found with an inconsistent tenant/site collection pair.   |
| InvalidNameException                  | The given category, crawled property, or managed property is invalid.   |
| InvalidPropertyTypeException          | The given managed property type is invalid.   |
| CouldNotModifySchemaException         | There was an error modifying a schema.  |
| InvalidMappingException               | An invalid mapping was found.   |
| ObjectNotFoundException               | An object (category, crawled property, or managed property) could not be found.   |
| PropertyIsReadOnlyException           | The managed property is read only and cannot be modified.   |
| PropertyCannotHaveMappingsException   | A managed property cannot have mappings, and the protocol server thus cannot add, delete, or modify mappings.   |
| InvalidManagedPropertyValue           | A managed property is given an invalid value.   |
| ArgumentNullException                 | A NULL value was unexpectedly given.  |
| UnauthorizedAccessException           | The client does not have sufficient access to this operation.   |
| DatabaseException                     | A database related error occurred.  |
| SchemaExportException                 | The given schema cannot be exported.  |
| SchemaImportException                 | The given schema cannot be imported.  |
| NotSupported                          | The protocol server was unable to perform the action as it is not supported.  |



| Value                   | Meaning   |
|-------------------------|---|
| QueryPropertyOutOfRange | Cannot complete the search query because one of the query properties as specified in section <a href="#">2.2.4.11</a> had a value outside the acceptable range. |

### 3.1.4.1.5 Attributes

None.

### 3.1.4.1.6 Groups

None.

### 3.1.4.1.7 Attribute Groups

None.

### 3.1.4.2 GetClickFrequenciesForUrl

This operation is used to retrieve the click frequencies of a given URI for the past week and the past month from a given reference date.

The following is the WSDL port type specification of the **GetClickFrequenciesForUrl** WSDL operation.

```
<wsdl:operation name="GetClickFrequenciesForUrl"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrl"
    message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlResponse"
    message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_GetClickFrequenciesForUrl\_InputMessage** request message, as specified in section [3.1.4.2.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_GetClickFrequenciesForUrl\_OutputMessage** response message, as specified in section [3.1.4.2.1.2](#), as follows:

- On receipt, the protocol server checks the value of **url**. If the **url** element is absent, empty or contains more than 1024 characters, the protocol server MUST return a **FaultException<ExceptionDetail>** message to the protocol client.
- On success, the protocol server returns the numbers specifying the click frequencies of **url** to the protocol client.
- On error, the protocol server MUST return a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.2.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetClickFrequenciesForUrl_InputMessage</b>  | The request WSDL message for the <b>GetClickFrequenciesForUrl</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage</b> | The response WSDL message for the <b>GetClickFrequenciesForUrl</b> WSDL operation. |

#### 3.1.4.2.1.1 ISearchQueryServiceApplication\_GetClickFrequenciesForUrl\_InputMessage

The request WSDL message for the **GetClickFrequenciesForUrl** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrl
```

The SOAP body contains the **GetClickFrequenciesForUrl** element.

#### 3.1.4.2.1.2 ISearchQueryServiceApplication\_GetClickFrequenciesForUrl\_OutputMessage

The response WSDL message for the **GetClickFrequenciesForUrl** WSDL operation.

The SOAP body contains the **GetClickFrequenciesForUrlResponse** element.

### 3.1.4.2.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                                  | Description  |
|--|--|
| <b>GetClickFrequenciesForUrl</b>         | The input data for the <b>GetClickFrequenciesForUrl</b> WSDL operation.  |
| <b>GetClickFrequenciesForUrlResponse</b> | The result data for the <b>GetClickFrequenciesForUrl</b> WSDL operation. |

#### 3.1.4.2.2.1 GetClickFrequenciesForUrl

The **GetClickFrequenciesForUrl** element specifies the input data for the **GetClickFrequenciesForUrl** WSDL operation.

```
<xs:element name="GetClickFrequenciesForUrl" xmlns:xs="http://www.w3.org/2001/XMLSchema">  
  <xs:complexType>  
    <xs:sequence>  
      <xs:element minOccurs="0" name="url" nillable="true" type="xs:string"/>  
    </xs:sequence>  
  </xs:complexType>  
</xs:element>
```

```

        <xs:element minOccurs="0" name="referenceDate" type="xs:dateTime"/>
    </xs:sequence>
</xs:complexType>
</xs:element>

```

**url:** Specifies the URI of which the click frequencies MUST be returned. The value MUST have the valid URI format, as specified in [\[RFC2396\]](#).

**referenceDate:** Specifies the date from which the past 7 days (week) and past 30 days (month) of click frequencies are calculated.

### 3.1.4.2.2 GetClickFrequenciesForUrlResponse

The **GetClickFrequenciesForUrlResponse** element specifies the result data for the **GetClickFrequenciesForUrl** WSDL operation.

```

<xs:element name="GetClickFrequenciesForUrlResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="GetClickFrequenciesForUrlResult" nillable="true" type="q3:ArrayOfint"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**GetClickFrequenciesForUrlResult:** Specifies the click frequencies of **url** for the past week (7 days) and past month (30 days) from a given reference date.

### 3.1.4.2.3 Complex Types

None.

### 3.1.4.2.4 Simple Types

None.

### 3.1.4.2.5 Attributes

None.

### 3.1.4.2.6 Groups

None.

### 3.1.4.2.7 Attribute Groups

None.

### 3.1.4.3 GetProperties

This operation is used by the protocol client to retrieve information about all the managed properties defined in the protocol server.

The following is the WSDL port type specification of the **GetProperties** WSDL operation.

```

<wsdl:operation name="GetProperties" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">

```

```

    <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetProperties"
    message="tns:ISearchQueryServiceApplication_GetProperties_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetPropertiesResponse"
    message="tns:ISearchQueryServiceApplication_GetProperties_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetPropertiesSearchServiceApp
    licationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetProperties_SearchServiceApplicationFaultFault
    FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

The protocol client sends an **ISearchQueryServiceApplication\_GetProperties\_InputMessage** request message, as specified in section [3.1.4.3.1.1](#) and the protocol server responds with an **ISearchQueryServiceApplication\_GetProperties\_OutputMessage** response message, as specified in section [3.1.4.3.1.2](#), as follows:

- The **properties** element in the request message MUST conform to the schema of the **KeywordQueryProperties** data type as specified in section [3.1.4.7.3.1](#) or MUST conform to the schema of **FullTextSqlQueryProperties** data type as specified in section [2.2.4.7](#).
- On receipt, the protocol server MUST ignore the properties element in the request.
- The protocol server returns information about all the managed properties defined in the protocol server.
- On any error processing the request, the protocol server MUST return a **FaultException<ExceptionDetail>** error message.

### 3.1.4.3.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetProperties_InputMessage</b>  | The request WSDL message for the <b>GetProperties</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetProperties_OutputMessage</b> | The response WSDL message for the <b>GetProperties</b> WSDL operation. |

#### 3.1.4.3.1.1 ISearchQueryServiceApplication\_GetProperties\_InputMessage

The request WSDL message for the **GetProperties** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetProperties
```

The SOAP body contains the **GetProperties** element.

#### 3.1.4.3.1.2 ISearchQueryServiceApplication\_GetProperties\_OutputMessage

The response WSDL message for the **GetProperties** WSDL operation.

The SOAP body contains the **GetPropertiesResponse** element.

### 3.1.4.3.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                      | Description  |
|------------------------------|--|
| <b>GetProperties</b>         | The input data for the <b>GetProperties</b> WSDL operation.  |
| <b>GetPropertiesResponse</b> | The result data for the <b>GetProperties</b> WSDL operation. |

#### 3.1.4.3.2.1 GetProperties

The **GetProperties** element specifies the input data for the **GetProperties** WSDL operation.

```
<xs:element name="GetProperties" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** Specifies the properties configured in a search query. This element MUST NOT be empty. This element MUST conform to the schema of either the **KeywordQueryProperties** data type as specified in section [3.1.4.7.3.1](#) or the **FullTextSqlQueryProperties** data type as specified in section [2.2.4.7](#).

#### 3.1.4.3.2.2 GetPropertiesResponse

The **GetPropertiesResponse** element specifies the result data for the **GetProperties** WSDL operation.

```
<xs:element name="GetPropertiesResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetPropertiesResult" nillable="true"
type="q2:ArrayOfPropertyInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetPropertiesResult: An ArrayOfPropertyInformation** data type as specified in section [3.1.4.3.3.1](#). Each **PropertyInformation** child element MUST represent information about a managed property defined in the protocol server.

#### 3.1.4.3.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                      | Description  |
|-----------------------------------|--|
| <b>ArrayOfPropertyInformation</b> | Contains information about a collection of managed properties                                    |
| <b>PropertyInformation</b>        | Each <b>PropertyInformation</b> child element MUST contain information about a managed property. |

### 3.1.4.3.3.1 ArrayOfPropertyInformation

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfPropertyInformation** complex type contains information about a collection of managed properties.

```
<xs:complexType name="ArrayOfPropertyInformation"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PropertyInformation"
nillable="true" type="q2:PropertyInformation"/>
  </xs:sequence>
</xs:complexType>
```

**PropertyInformation:** Each **PropertyInformation** child element MUST contain information about a managed property. Each **PropertyInformation** element MUST be of **PropertyInformation** data type as specified in section [3.1.4.3.3.2](#).

### 3.1.4.3.3.2 PropertyInformation

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **PropertyInformation** complex type contains information about a managed property

```
<xs:complexType name="PropertyInformation" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="FullTextQueryable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Refinable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Retrievable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Sortable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="m_TypeFullName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**Description:** Specifies the description of the property.

**FullTextQueryable:** Specifies whether the managed property can be searched in a full-text search. A value of "true" specifies that the property is a full-text searchable managed property; a value of "false" specifies that the property is not a full-text searchable managed property.

**Name:** Specifies the name of the managed property.

**Refinable:** Specifies whether the managed property has a deep refiner. A value of "true" specifies that the property has a refiner; a value of "false" specifies that the property does not have a refiner. If **QueryProperties.ResultsProvider** is "SharepointSearch", the property MUST be "false".

**Retrievable:** Specifies if the managed property is a retrievable managed property. A value of "true" specifies that the property is a retrievable managed property; a value of "false" specifies that the property is not a retrievable managed property.

**Sortable:** Specifies whether the managed property can be used to sort search results ascending or descending. A value of "true" specifies that the property can be used for sorting; a value of "false" specifies that the property cannot be used for sorting. If **QueryProperties.ResultsProvider** is "SharepointSearch", the property MUST be "false".

**m\_TypeFullName:** Specifies the type of the managed property. MUST be one of the following values:

- System.String
- System.Int64
- System.Double
- System.DateTime
- System.Boolean
- System.Byte

#### 3.1.4.3.4 Simple Types

None.

#### 3.1.4.3.5 Attributes

None.

#### 3.1.4.3.6 Groups

None.

#### 3.1.4.3.7 Attribute Groups

None.

#### 3.1.4.4 GetQuerySuggestions

This operation is used to retrieve a list of query suggestions to match a search query. There are two types of query suggestions: pre-query suggestions and post-query suggestions. In pre-query suggestions, the last term in the search box MUST be matched by prefix. In post-query suggestions the last term MUST be matched exactly.

The following is the WSDL port type specification of the **GetQuerySuggestions** WSDL operation.

```
<wsdl:operation name="GetQuerySuggestions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestions"
    message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsResponse"
    message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"/>
```

```
message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_SearchServiceApplicationFault
Fault FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an

**ISearchQueryServiceApplication\_GetQuerySuggestions\_InputMessage** request message, as specified in section [3.1.4.4.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_GetQuerySuggestions\_OutputMessage** response message, as specified in section [3.1.4.4.1.2](#), as follows:

- On success, the protocol server returns a list of query suggestions.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.4.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetQuerySuggestions_InputMessage</b>  | The request WSDL message for the <b>GetQuerySuggestions</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetQuerySuggestions_OutputMessage</b> | The response WSDL message for the <b>GetQuerySuggestions</b> WSDL operation. |

#### 3.1.4.4.1.1 ISearchQueryServiceApplication\_GetQuerySuggestions\_InputMessage

The request WSDL message for the **GetQuerySuggestions** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestions
```

The SOAP body contains the **GetQuerySuggestions** element.

#### 3.1.4.4.1.2 ISearchQueryServiceApplication\_GetQuerySuggestions\_OutputMessage

The response WSDL message for the **GetQuerySuggestions** WSDL operation.

The SOAP body contains the **GetQuerySuggestionsResponse** element.

### 3.1.4.4.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                    | Description   |
|----------------------------|---|
| <b>GetQuerySuggestions</b> | The input data for the <b>GetQuerySuggestions</b> WSDL operation. |



| Element                            | Description  |
|------------------------------------|--|
| <b>GetQuerySuggestionsResponse</b> | The result data for the <b>GetQuerySuggestions</b> WSDL operation. |

### 3.1.4.4.2.1 GetQuerySuggestions

The **GetQuerySuggestions** element specifies the input data for the **GetQuerySuggestions** WSDL operation.

```
<xs:element name="GetQuerySuggestions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="iNumberOfSuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="fPreQuerySuggestions" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fHitHighlighting" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fCapitalizeFirstLetters" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** The query properties of the search query. The value MUST be a **QueryProperties** data type, as specified in section [2.2.4.11](#).

**iNumberOfSuggestions:** The number of query suggestions to retrieve. The value MUST be a positive integer.

**fPreQuerySuggestions:** Specifies whether to retrieve pre-query suggestions. If "true", the protocol server MUST return pre-query suggestions. Otherwise, the protocol server MUST return post-query suggestions.

**fHitHighlighting:** Specifies whether protocol server MUST highlight the collection of query suggestions. If "true", the protocol server MUST surround the terms in the returned query suggestions that match terms in the specified query with **B** and **/B** HTML tags. Otherwise, the protocol server MUST NOT surround matching terms by any **HTML** tags.

**fCapitalizeFirstLetters:** Specifies whether to capitalize first letters in each term in query suggestions. A value of "true" indicates that the protocol server MUST capitalize terms. Otherwise, the protocol server MUST NOT capitalize terms.

### 3.1.4.4.2.2 GetQuerySuggestionsResponse

The **GetQuerySuggestionsResponse** element specifies the result data for the **GetQuerySuggestions** WSDL operation.

```
<xs:element name="GetQuerySuggestionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetQuerySuggestionsResult" nillable="true" type="q3:ArrayOfanyType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetQuerySuggestionsResult:** Specifies a collection of query suggestions for the search query terms in the search box.

### 3.1.4.4.3 Complex Types

None.

### 3.1.4.4.4 Simple Types

None.

### 3.1.4.4.5 Attributes

None.

### 3.1.4.4.6 Groups

None.

### 3.1.4.4.7 Attribute Groups

None.

### 3.1.4.5 GetScopes

This operation is used by the protocol client to retrieve information about all the search scopes that are available on the protocol server for the specified search scope consumer.

The following is the WSDL port type specification of the **GetScopes** WSDL operation.

```
<wsdl:operation name="GetScopes" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw>Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopes"
  message="tns:ISearchQueryServiceApplication_GetScopes_InputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
  wsaw>Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopesResponse"
  message="tns:ISearchQueryServiceApplication_GetScopes_OutputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
  wsaw>Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopesSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
  message="tns:ISearchQueryServiceApplication_GetScopes_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_GetScopes\_InputMessage** request message, as specified in section [3.1.4.5.1.1](#) and the protocol server responds with an **ISearchQueryServiceApplication\_GetScopes\_OutputMessage** response message, as specified in section [3.1.4.5.1.2](#), as follows:

- The protocol client MUST place in the **properties** element the Identifier of the search scope consumer for which all the search scopes MUST be returned by the protocol server. The properties element MUST conform to the schema of **KeywordQueryProperties** data type as specified in section [3.1.4.7.3.1](#) or the schema of **FullTextSqlQueryProperties** data type as specified in section [2.2.4.7](#). The protocol client MUST specify the identifier of the search scope consumer in the **QueryProperties.SiteID** child element.
- On receipt the protocol server looks up the value of the **QueryProperties.SiteID** child element of the request message in the collection of consumers and return information about all the **shared search scopes** and **local search scopes** defined for the search scope consumer in the protocol server.

- If the **QueryProperties.SiteID** element is not present in the collection of search scope consumers or a value is not specified, then the protocol server MUST only return all the shared search scopes defined in the protocol server.
- The protocol server MUST return a **FaultException<ExceptionDetail>** error message in the following conditions
  - The identifier specified in the **QueryProperties.SiteID** child element does not match the identifier of any search scope consumer defined in the protocol server.
  - Any error in interpreting the request message.

### 3.1.4.5.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetScopes_InputMessage</b>  | The request WSDL message for the <b>GetScopes</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetScopes_OutputMessage</b> | The response WSDL message for the <b>GetScopes</b> WSDL operation. |

#### 3.1.4.5.1.1 ISearchQueryServiceApplication\_GetScopes\_InputMessage

The request WSDL message for the **GetScopes** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetScopes
```

The SOAP body contains the **GetScopes** element.

#### 3.1.4.5.1.2 ISearchQueryServiceApplication\_GetScopes\_OutputMessage

The response WSDL message for the **GetScopes** WSDL operation.

The SOAP body contains the **GetScopesResponse** element.

### 3.1.4.5.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                  | Description  |
|--------------------------|--|
| <b>GetScopes</b>         | The input data for the <b>GetScopes</b> WSDL operation.  |
| <b>GetScopesResponse</b> | The result data for the <b>GetScopes</b> WSDL operation. |

#### 3.1.4.5.2.1 GetScopes

The **GetScopes** element specifies the input data for the **GetScopes** WSDL operation.

```
<xs:element name="GetScopes" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** This element MUST NOT be empty. This element MUST conform to the schema of **KeywordQueryProperties** data type as specified in section [3.1.4.7.3.1](#) or the schema of **FullTextSqlQueryProperties** data type as specified in section [2.2.4.7](#). The protocol client MUST specify the identifier of the search scope consumer in the **QueryProperties.SiteID** child element. The value of **QueryProperties.SiteID** MUST be used by the protocol server to identify local search scopes that MUST be returned. If **QueryProperties.SiteID** is an empty GUID or not present then the protocol server MUST return zero local search scopes and all the shared search scopes.

### 3.1.4.5.2.2 GetScopesResponse

The **GetScopesResponse** element specifies the result data for the **GetScopes** WSDL operation.

```
<xs:element name="GetScopesResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetScopesResult" nillable="true" type="q2:ArrayOfScopeInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetScopesResult:** An **ArrayOfScopeInformation** data type as specified in section [3.1.4.5.3.1](#). Each **ScopeInformation** child element MUST represent information about a search scope. The protocol server MUST include all the shared search scopes and all the local search scopes for the specified consumer in the **GetScopesResult** element.

### 3.1.4.5.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                   | Description  |
|--------------------------------|--|
| <b>ArrayOfScopeInformation</b> | Contains information about a collection of search scopes |
| <b>ScopeInformation</b>        | Contains information about a single search scope         |

#### 3.1.4.5.3.1 ArrayOfScopeInformation

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfScopeInformation** complex type contains information about a collection of search scopes.

```
<xs:complexType name="ArrayOfScopeInformation" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
```

```

    <xs:element minOccurs="0" maxOccurs="unbounded" name="ScopeInformation" nillable="true"
type="q2:ScopeInformation"/>
  </xs:sequence>
</xs:complexType>

```

**ScopeInformation:** Each **ScopeInformation** child element **MUST** contain information about a search scope. Each **ScopeInformation** element **MUST** be a **ScopeInformation** data type as specified in Section [3.1.4.5.3.2](#).

### 3.1.4.5.3.2 ScopeInformation

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ScopeInformation** complex type contains information about a search scope

```

<xs:complexType name="ScopeInformation" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Filter" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ID" type="xs:int"/>
    <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
    <xs:element
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" minOccurs="0" name="State" type="q1:ScopeCompilationState"/>
  </xs:sequence>
</xs:complexType>

```

**Description:** Description of the search scope.

**Filter:** Filter of the search scope. The **Filter** element **MUST** either contain an expression in **FAST Query Language (FQL)** syntax as described in [\[MS-FQL2\]](#), the name of a searchable property, or both. The name of a searchable property **MUST** be prefixed with "fulltextindex=". If both are specified, the FAST Query Language expression **MUST** be specified first, followed by ",fulltextindex=" and the name of the property that can be searched in a full-text search. The filter of the scope **MUST** be ignored by the protocol server if **QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is **SearchProvider.SharepointSearch**.

**ID:** Specifies the unique identifier of the search scope.

**Name:** Specifies the name of the search scope.

**State:** Specifies the compilation state of the search scope. This element **MUST** be a **ScopeCompilationState** data type as specified in section [3.1.4.5.4.1](#).

### 3.1.4.5.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

| Simple type                  | Description   |
|------------------------------|---|
| <b>ScopeCompilationState</b> | Compilation state of the corresponding search scope |

#### 3.1.4.5.4.1 ScopeCompilationState

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration>

The **ScopeCompilationState** simple type contains information about the compilation state of a search scope.

```
<xs:simpleType name="ScopeCompilationState" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Empty"/>
    <xs:enumeration value="Invalid"/>
    <xs:enumeration value="QueryExpanded"/>
    <xs:enumeration value="NeedsCompile"/>
    <xs:enumeration value="Compiled"/>
    <xs:enumeration value="NeedsRecompile"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **ScopeCompilationState** simple type.

| Value          | Meaning   |
|----------------|---|
| Empty          | The search scope is empty and there MUST be no <b>search scope rules</b> defined for the search scope.  |
| Invalid        | The search scope is invalid.  |
| QueryExpanded  | The search scope is expanded at query time. The search scope MUST have more than or equal to 1 and less than or equal to 25 search scope rules. |
| NeedsCompile   | The search scope needs to be compiled for the first time.   |
| Compiled       | The search scope is compiled.   |
| NeedsRecompile | The search scope needs to be recompiled.  |

### 3.1.4.5.5 Attributes

None.

### 3.1.4.5.6 Groups

None.

### 3.1.4.5.7 Attribute Groups

None.

### 3.1.4.6 GetSearchServiceApplicationInfo

This operation is used by the protocol client to get the properties configured for the search application.

The following is the WSDL port type specification of the **GetSearchServiceApplicationInfo** WSDL operation.

```
<wsdl:operation name="GetSearchServiceApplicationInfo"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfo"
    message="tns:ISearchQueryServiceApplication GetSearchServiceApplicationInfo InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
```

```

    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfoResponse"
message="tns:ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfoSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

The protocol client sends an **ISearchQueryServiceApplication\_getSearchServiceApplicationInfo\_InputMessage** request message, as specified in section [3.1.4.6.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_getSearchServiceApplicationInfo\_OutputMessage** response message, as specified in section [3.1.4.6.1.2](#), as follows:

- On receipt, the protocol server returns properties configured by the protocol server for the search application.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.6.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_InputMessage</b>  | The request WSDL message for the <b>GetSearchServiceApplicationInfo</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_OutputMessage</b> | The response WSDL message for the <b>GetSearchServiceApplicationInfo</b> WSDL operation. |

#### 3.1.4.6.1.1 ISearchQueryServiceApplication\_GetSearchServiceApplicationInfo\_Input Message

The request WSDL message for the **GetSearchServiceApplicationInfo** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfo
```

The SOAP body contains the **GetSearchServiceApplicationInfo** element.

#### 3.1.4.6.1.2 ISearchQueryServiceApplication\_GetSearchServiceApplicationInfo\_OutputMessage

The response WSDL message for the **GetSearchServiceApplicationInfo** WSDL operation.

The SOAP body contains the **GetSearchServiceApplicationInfoResponse** element.

### 3.1.4.6.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element  | Description  |
|--|--|
| <b>GetSearchServiceApplicationInfo</b>         | The input data for the <b>GetSearchServiceApplicationInfo</b> WSDL operation.  |
| <b>GetSearchServiceApplicationInfoResponse</b> | The result data for the <b>GetSearchServiceApplicationInfo</b> WSDL operation. |

#### 3.1.4.6.2.1 GetSearchServiceApplicationInfo

The **GetSearchServiceApplicationInfo** element specifies the input data for the **GetSearchServiceApplicationInfo** WSDL operation.

```
<xs:element name="GetSearchServiceApplicationInfo"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

#### 3.1.4.6.2.2 GetSearchServiceApplicationInfoResponse

The **GetSearchServiceApplicationInfoResponse** element specifies the result data for the **GetSearchServiceApplicationInfo** WSDL operation.

```
<xs:element name="GetSearchServiceApplicationInfoResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetSearchServiceApplicationInfoResult" nillable="true"
type="q2:SearchServiceApplicationInfo"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetSearchServiceApplicationInfoResult:** Contains properties configured for the search application.

#### 3.1.4.6.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                        | Description                                    |
|-------------------------------------|--|
| <b>SearchServiceApplicationInfo</b> | Properties configured for a search application |

#### 3.1.4.6.3.1 SearchServiceApplicationInfo



**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **SearchServiceApplicationInfo** complex type represents the properties configured for a search application.

```
<xs:complexType name="SearchServiceApplicationInfo"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="AlertsEnabled" type="xs:boolean"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="DefaultSearchProvider" type="tns2:SearchProvider"/>
    <xs:element minOccurs="0" name="PersonalQuerySuggestionsEnabled" type="xs:boolean"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PropertyBag" nillable="true" type="q3:ArrayOfKeyValueOfstringstring"/>
    <xs:element minOccurs="0" name="QueryLoggingDailyLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="QueryLoggingEnabled" type="xs:boolean"/>
    <xs:element minOccurs="0" name="QuerySuggestionsEnabled" type="xs:boolean"/>
    <xs:element minOccurs="0" name="SearchCenterUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SearchServiceApplicationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="SharedSearchBoxSettings" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="DefaultQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="DiscoveryMaxKeywordQueryTextLength" type="xs:int"/>
    <xs:element minOccurs="0" name="DiscoveryMaxRowLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="InstallLanguageLCID" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="InstalledLanguages" nillable="true" type="q3:ArrayOfint"/>
    <xs:element minOccurs="0" name="MaxKeywordQueryTextLength" type="xs:int"/>
    <xs:element minOccurs="0" name="MaxQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="MaxRowLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="MinimumPartialQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="UseSimpleSchemaUI" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

**AlertsEnabled:** Specifies if alerts are enabled for the search application. MUST return "true" if alerts processing is enabled; MUST return false if alerts processing is disabled.

**DefaultSearchProvider:** Specifies the default search provider that will be used to serve the search requests if a search provider is not explicitly provided. This element MUST be **SearchProvider** data type as specified in section [2.2.5.6](#).

**PersonalQuerySuggestionsEnabled:** Specifies whether personal query and results suggestions are enabled for the search application. The protocol server MUST return "true" if personal query and results suggestions are enabled; the protocol server MUST return "false" if personal query and results suggestions are not enabled.

**PropertyBag:** Specifies configuration settings applicable when **QueryProperties.ResultsProvider** (as specified in section 2.2.4.11) is **SearchProvider.FASTSearch**. When **QueryProperties.ResultsProvider** (as specified in section 2.2.4.11) is not **SearchProvider.FASTSearch**, this element MUST be ignored. MUST be key-value pairs, as specified in the following table.

| Key   | Meaning   |
|---|---|
| <b>FASTSearchContextProperties</b>              | <p>A comma separated string of user-specific managed properties the protocol server MUST use when allowing a site administrator to define a search setting context to associate with best bets, visual best bets, promotions and demotions. Example value: "title,skills".</p> <p>The protocol client SHOULD submit values for these properties in <b>UserContextData</b> when querying (see section <a href="#">3.1.4.7.3.1</a>).</p>  |
| <b>FASTSearchAdminServiceAuthenticationUser</b> | <p>A user that the protocol server MUST use for authentication and authorization of operations on the site administration and central administration services. The user MUST be part of the <b>FASTSearchAdministrators</b> local group. User MUST be a domain user and specified either as <code>&lt;domain&gt;\&lt;user&gt;</code> or <code>&lt;user&gt;@&lt;domain&gt;</code>, where <code>&lt;domain&gt;</code> is the domain the user belongs to, and <code>&lt;user&gt;</code> is the user alias.</p>   |
| <b>FASTSearchAdminServiceLocation</b>           | <p>The <b>host name</b> and port number which the protocol server MUST use to access all administration services, except the resource store service (see <b>FASTSearchResourceStoreLocation</b>). This value MUST be specified as "<code>&lt;host&gt;:&lt;port&gt;</code>" where <code>&lt;host&gt;</code> MUST be the fully qualified domain name of the computer on which the administration services are running, and <code>&lt;port&gt;</code> MUST be the port number on the <code>&lt;host&gt;</code> computer on which these services are running.</p>   |
| <b>FASTSearchResourceStoreLocation</b>          | <p>The host name and port number that the protocol server MUST use to access the resource store. This value MUST be specified as "<code>&lt;host&gt;:&lt;port&gt;</code>" where <code>&lt;host&gt;</code> MUST be the fully qualified domain name of the computer on which the resource store is running, and <code>&lt;port&gt;</code> MUST be the port number on the <code>&lt;host&gt;</code> computer on which the resource store is running.</p>   |
| <b>FASTSearchQueryServiceLocation</b>           | <p>The location of one or more query matching services that the protocol server MUST access to get search results. A location MUST be specified as "<code>&lt;host&gt;:&lt;port&gt;</code>" where <code>&lt;host&gt;</code> MUST be the fully qualified domain name of the computer on which the query matching service is available, and <code>&lt;port&gt;</code> MUST be the port number on the <code>&lt;host&gt;</code> computer on which the query matching service is available. If multiple service locations are specified, they MUST be separated by comma. The protocol server MUST only access one query matching service for each query.</p> |
| <b>FASTSearchContextCacheTimeout</b>            | <p>The timeout period the protocol client SHOULD use to cache values read in <b>FASTSearchContextProperties</b>. When the timeout period expires, the protocol client SHOULD read the value of <b>FASTSearchContextProperties</b> into the cache again.</p>   |
| <b>FASTSearchDisableUserContext</b>             | <p>If "true", the protocol client SHOULD NOT submit values for <b>FASTSearchContextProperties</b> in <b>UserContextData</b> when querying (see section 3.1.4.7.3.1). If false, the protocol client SHOULD submit values for <b>FASTSearchContextProperties</b> in <b>UserContextData</b> when querying.</p>   |
| <b>FASTSearchAlternateAccessMapProperties</b>   | <p>A comma-separated list of managed properties the protocol server MUST use for alternate access mapping.</p>  |

| Key   | Meaning   |
|---|---|
| <b>FASTSearchManagedPropertyResultMapping</b> | A key-value set of managed properties used to override value of one managed property with value of another managed property. For each set of managed properties specified in the map, the protocol server MUST copy value of <b>key</b> managed property into the corresponding <b>value</b> managed property from the map. All managed properties in the set MUST be specified in the <b>KeywordQueryProperties.SelectProperties</b> property. |

**QueryLoggingDailyLimit:** MUST be 0.

**QueryLoggingEnabled:** Specifies whether query logging is enabled for the search application. The protocol server MUST return "true" if query logging is enabled; the protocol server MUST return "false" if query logging is not enabled.

**QuerySuggestionsEnabled:** Specifies whether query suggestions is turned on for the search application. The protocol server MUST return "true" if query suggestions is turned on; the protocol server MUST return "false" if query suggestions are turned off. If query suggestions are turned off, the **GetQuerySuggestions** method MUST return an empty list of query suggestions, as specified in section [3.1.4.4](#).

**SearchCenterUrl:** Specifies the URL of the default protocol client.

**SearchServiceApplicationId:** Specifies a global unique identifier of the **SearchServiceApplication**.

**SharedSearchBoxSettings:** Specifies the SharedSearchBoxSettings as specified in section [2.2.4.41](#) to be used by the search box. The value MUST be formatted using **JavaScript Object Notation (JSON)** as specified in [\[RFC4627\]](#).

**DefaultQueryTimeout:** Specifies the default timeout value to use during query execution if none is specified in **QueryProperties.Timeout**, as specified in section [2.2.4.11](#). MUST be greater than 0 and MUST be less than value specified for **MaxQueryTimeout**.

**DiscoveryMaxKeywordQueryTextLength:** Specifies the maximum allowed characters in **QueryProperties.QueryText**, as specified in section 2.2.4.11, for query issued from **electronic discovery (eDiscovery)** site. MUST be greater than 0; MUST NOT be greater than 20480.

**DiscoveryMaxRowLimit:** Specifies the maximum number of rows that can be requested in **QueryProperties.RowLimit**, as specified in section 2.2.4.11, for query issued from electronic discovery (eDiscovery) site. MUST be greater than 0; MUST NOT be greater than 100000.

**InstallLanguageLCID:** Specifies the LCID for the protocol server.

**InstalledLanguages:** Specifies list of LCIDs, for the language packs installed on the protocol server.

**MaxKeywordQueryTextLength:** Specifies the maximum allowed characters in **QueryProperties.QueryText**, as specified in section 2.2.4.11, for a query not issued from electronic discovery (eDiscovery) site. MUST be greater than 0; MUST NOT be greater than 20480.

**MaxQueryTimeout:** Specifies the maximum allowed timeout value in **QueryProperties.Timeout**, as specified in section 2.2.4.11. MUST be greater than value specified for **DefaultQueryTimeout**.

**MaxRowLimit:** Specifies the maximum number of rows that can be requested in **QueryProperties.QueryText** as specified in section 2.2.4.11. MUST be greater than 0; MUST NOT be greater than 100000.

**MinimumPartialQueryTimeout:**

**UseSimpleSchemaUI:** Specifies if the managed property configuration is displayed in a simplified user interface by the protocol client.

#### 3.1.4.6.4 Simple Types

None.

#### 3.1.4.6.5 Attributes

None.

#### 3.1.4.6.6 Groups

None.

#### 3.1.4.6.7 Attribute Groups

None.

#### 3.1.4.7 GetSearchTerms

The **GetSearchTerms** operation is used by the protocol client to retrieve the text restriction of a keyword query as interpreted by the protocol server.

The following is the WSDL port type specification of the **GetSearchTerms** WSDL operation.

```
<wsdl:operation name="GetSearchTerms" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTerms"
    message="tns:ISearchQueryServiceApplication_GetSearchTerms_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTermsResponse"
    message="tns:ISearchQueryServiceApplication_GetSearchTerms_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTermsSearchServiceApp
    licationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetSearchTerms_SearchServiceApplicationFaultFault
    _FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_GetSearchTerms\_InputMessage** request message and the protocol server responds with an **ISearchQueryServiceApplication\_GetSearchTerms\_OutputMessage** response message, as follows:

- The protocol client MUST place in the **properties** element the query text for which the text restriction MUST be returned by the protocol server. The **properties** element MUST conform to the schema of the **KeywordQueryProperties** data type, as specified in section [3.1.4.7.3.1](#). The protocol client MUST specify the query text in the **properties.QueryText** child element.
- On receipt, the protocol server MUST return, in the **GetSearchTermsResult** child element of the response message, a modified version of the **QueryText** child element of the request message. The modified query MUST have replaced every part of the query text that is interpreted as a property-expression or and-operator, as specified in [\[MS-SEARCH\]](#) section 2.2.10.2, with a Unicode code point U+0020 (space character).

- The protocol server MUST return a **FaultException<ExceptionDetail>** error message in the following conditions:
  - The properties element does not conform to the schema of the **KeywordQueryProperties** complex type.
  - There is an error in interpreting the **QueryText** child element.

### 3.1.4.7.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_GetSearchTerms_InputMessage</b>  | The request WSDL message for the <b>GetSearchTerms</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetSearchTerms_OutputMessage</b> | The response WSDL message for the <b>GetSearchTerms</b> WSDL operation. |

#### 3.1.4.7.1.1 ISearchQueryServiceApplication\_GetSearchTerms\_InputMessage

The request WSDL message for the **GetSearchTerms** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetSearchTerms
```

The SOAP body contains the **GetSearchTerms** element.

#### 3.1.4.7.1.2 ISearchQueryServiceApplication\_GetSearchTerms\_OutputMessage

The response WSDL message for the **GetSearchTerms** WSDL operation.

The SOAP body contains the **GetSearchTermsResponse** element.

### 3.1.4.7.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                       | Description   |
|-------------------------------|---|
| <b>GetSearchTerms</b>         | The input data for the <b>GetSearchTerms</b> WSDL operation.  |
| <b>GetSearchTermsResponse</b> | The result data for the <b>GetSearchTerms</b> WSDL operation. |

#### 3.1.4.7.2.1 GetSearchTerms

The **GetSearchTerms** element specifies the input data for the **GetSearchTerms** WSDL operation.

```
<xs:element name="GetSearchTerms" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
```

```

    <xs:element xmlns:g2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="g2:KeywordQueryProperties"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

**properties:** Specifies the properties for the search query. This element MUST NOT be empty. This element MUST conform to the schema of the **KeywordQueryProperties** data type as specified in section [3.1.4.7.3.1](#). The protocol client MUST specify the query text for which the text restriction MUST be included in the response from the protocol server in the **properties.QueryText** child element. If the element does not match the schema of the **KeywordQueryProperties** complex type, the protocol server MUST return a **FaultException<ExceptionDetail>** error message.

### 3.1.4.7.2.2 GetSearchTermsResponse

The **GetSearchTermsResponse** element specifies the result data for the **GetSearchTerms** WSDL operation.

```

<xs:element name="GetSearchTermsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetSearchTermsResult" nillable="true"
type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**GetSearchTermsResult:** Specifies the text restriction of **properties.QueryText** element as interpreted by the protocol server.

### 3.1.4.7.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type   | Description  |
|--|--|
| <b>ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az</b> | Contains information about the refinement bins for a collection of refiners.   |
| <b>ArrayOfRefinementInterval</b>                                 | Contains the refinement bins the protocol server MUST use when returning refinement values for a refiner   |
| <b>ArrayOfReorderingRule</b>                                     | Contains information about a list of rules to reorder search results.  |
| <b>ArrayOfSort</b>   | Contains information about a list of properties to sort the search results by.   |
| <b>KeywordQueryProperties</b>                                    | Contains information about a <b>Keyword query</b> search query. <b>KeywordQueryProperties</b> extends the <b>QueryProperties</b> data type specified in section <a href="#">2.2.4.11</a> . |
| <b>RefinementInterval</b>  | The <b>RefinementInterval</b> complex type contains information about a refinement bin for a refiner. The protocol server  |

| Complex type                    | Description  |
|---------------------------------|--|
|                                 | MUST use this as a refinement bin if returning refinement values for a refiner when this is specified in <b>CustomRefinementIntervals</b> , as specified in 3.1.4.7.3.1. |
| <b>ReorderingRule</b>           | Contains information about how search result should be reordered if they met the condition.  |
| <b>ReorderingRuleCollection</b> | Contains information about how to reorder the search results.  |
| <b>Sort</b>                     | Contains information about the property to sort the search results on, and how to sort on the property.  |
| <b>SortCollection</b>           | Contains information about how to sort the search results.   |

### 3.1.4.7.3.1 KeywordQueryProperties

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **KeywordQueryProperties** complex type contains information about a Keyword query search query. **KeywordQueryProperties** extends the **QueryProperties** data type specified in section [2.2.4.11](#).

```
<xs:complexType name="KeywordQueryProperties" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:QueryProperties">
      <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="CustomRefinementIntervals" nillable="true"
          type="q3:ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFSic3Az"/>
        <xs:element minOccurs="0" name="EnableFQL" type="xs:boolean"/>
        <xs:element
          xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
          minOccurs="0" name="EnableSpellcheck" type="tns2:SpellcheckMode"/>
        <xs:element minOccurs="0" name="EnableUrlSmashing" type="xs:boolean"/>
        <xs:element minOccurs="0" name="GenerationId" type="xs:long"/>
        <xs:element minOccurs="0" name="HiddenConstraints" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="IsCachable" type="xs:boolean"/>
        <xs:element minOccurs="0" name="MaxShallowRefinementHits" type="xs:int"/>
        <xs:element minOccurs="0" name="MaxSummaryLength" type="xs:int"/>
        <xs:element minOccurs="0" name="MaxUrlLength" type="xs:int"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="RefinementFilters" nillable="true" type="q3:ArrayOfanyType"/>
        <xs:element minOccurs="0" name="Refiners" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="ReorderingRules" nillable="true"
          type="q2:ReorderingRuleCollection"/>
        <xs:element
          xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
          minOccurs="0" name="ResubmitFlags" type="tns2:ResubmitFlag"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="SelectProperties" nillable="true" type="q3:ArrayOfanyType"/>
        <xs:element minOccurs="0" name="SimilarTo" nillable="true" type="xs:string"/>
        <xs:element
          xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
          minOccurs="0" name="SimilarType" type="tns2:SimilarType"/>
        <xs:element minOccurs="0" name="SortList" nillable="true" type="q2:SortCollection"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```

    <xs:element minOccurs="0" name="SortSimilar" type="xs:boolean"/>
    <xs:element minOccurs="0" name="TrimDuplicatesIncludeId" type="xs:long"/>
    <xs:element minOccurs="0" name="TrimDuplicatesKeepCount" type="xs:int"/>
    <xs:element minOccurs="0" name="TrimDuplicatesOnProperty" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="UserContextData" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="UserContextGroupID" nillable="true"
type="xs:string"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

**CustomRefinementIntervals:** Specifies the refinement bins for one or more refiners. The protocol server MUST use these refinement bins if returning refinement values for the refiner. If

**QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is

**SearchProvider.SharepointSearch**, and the value MUST be ignored by the protocol server.

**EnableFQL:** Specifies the type of the query. A value of "true" specifies that the query is specified as a **FAST Query Language (FQL)** query, as specified in [\[MS-FQL2\]](#); a value of "false" indicates that the query is specified as a **SharePoint Search keyword** query, as specified in [\[MS-SEARCH\]](#) section 2.2.10. If **EnableFQL** is not set by the protocol client, the protocol server MUST behave as if the value "false" is specified by protocol client. If **QueryProperties.ResultsProvider** is

**SearchProvider.SharepointSearch**, the value MUST be ignored by the protocol server.

**EnableSpellcheck:** Specifies how the protocol server SHOULD suggest a different spelling of the search query, as specified in section [3.1.4.7.4.1](#). If the value is "SpellcheckMode.Off", the protocol server MUST NOT suggest a different spelling of the search query. If the value is "SpellcheckMode.Suggest", the protocol server SHOULD suggest a different spelling if there is a good chance that the spelling suggestion will increase the quality of the search results. The criteria used to determine the spelling suggestion is specific to the implementation of the protocol server. If there is a spelling suggestion, the protocol server MUST set it in the **SpellingSuggestion** property of the search result, as specified in [3.1.4.1.3.1](#). If the value is "SpellcheckMode.On", the protocol server MUST rewrite the search query to be the same as the spelling suggestion before evaluating the query and returning results, if there is a good chance that the spelling suggestion will increase the quality of the search results. The exact details of how the protocol server decides if there is a good chance to improve quality of the search results is an implementation detail of the server and is not specified by this protocol. If there was a rewrite of the query, the protocol server MUST set it in the

**QueryModification** property of the search result, as specified in 3.1.4.1.3.1. If **EnableSpellcheck** is not set by the protocol client, the protocol server MUST behave as if the value "SpellcheckMode.Suggest" is specified by the protocol client. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**EnableUrlSmashing:** Specifies whether the protocol server MUST combine all the **tokens** of the query text to form a query result with the URL formed by combining the tokens. A value of "true" specifies that the protocol server SHOULD return the URL formed by combining the tokens as a search result; a value of "false" specifies that the protocol server MUST NOT return the URL formed by combining tokens as a search result. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is equal to "SearchProvider.FASTSearch", the complex type MUST be ignored by the protocol server.

**GenerationId:** Specifies the identifier for the **search index** generation to get the query results from.

**HiddenConstraints:** Specifies additional query terms that MUST be appended to the **QueryProperties.queryText** element. This element is used by the end-user interface to pass hidden constraints of the query that are not entered by the end user. If this element is not present or a value is not specified, a default value of an empty string MUST be used. If there are two or more query terms, use " " as a separator.



**IsCachable:** Specifies if the user-specific access control entry (ACE) should be ignored while security trimming the query results.

**MaxShallowRefinementHits:** For details see **Query.IncludeRefinementResults.MaxShallowRefinementHits**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**MaxSummaryLength:** Specifies the maximum length of characters of the property with the name **HitHighlightedSummary**. MUST be a positive integer.

**MaxUrlLength:** Reserved. MUST be ignored by the protocol server.

**RefinementFilters:** The list of **refinement tokens** for drilldown into search results. Refinement tokens are returned as part of the **RefinementResults** table, as specified in [3.1.4.1.3.6](#), for the search query. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**Refiners:** Specifies a list of refiners as a comma-separated list of **strings**. A refiner is a **Query.IncludeRefinementResults.Refiners.Refiner**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**ReorderingRules:** Specifies the list of rules used to reorder search results. MUST be a **ReorderingRuleCollection** data type, as specified in section [3.1.4.7.3.7](#).

**ResubmitFlags:** Specifies how the protocol server MUST behave if no query results are returned from the original query. If present, the value MUST be a **ResubmitFlag** data type, as specified in section [3.1.4.7.4.2](#). Section 3.1.4.7.4.2 also describes how the protocol server MUST behave. If not present, the protocol server MUST behave as if **ResubmitFlag.NoResubmit** was set. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**SelectProperties:** Specifies the list of managed properties that the protocol server MUST return for each search result. For all the managed properties specified in the child elements of this element the value of the **Retrievable** flag MUST be set to "true" in the search schema, as specified in section [3.1.1.3](#).

If this element is not present or a value is not specified, and **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is not "SearchProvider.FASTSearch", the protocol server MUST use the following list of default managed properties, if available:

- **WorkId**
- **Rank**
- **Title**
- **Author**
- **Size**
- **Path**
- **Description**
- **Write**
- **SiteName**
- **CollapsingStatus**

- **HitHighlightedSummary**
- **HitHighlightedProperties**
- **ContentClass**
- **PictureThumbnailURL**
- **IsDocument**

For a description of these properties, see section 3.1.1.3.

If this element is not present or a value is not specified, and **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.FASTSearch", the protocol server **MUST** use the following list of default managed properties if available:

- **WorkId**
- **Rank**
- **Title**
- **Author**
- **Size**
- **Path**
- **Description**
- **Write**
- **SiteName**
- **CollapsingStatus**
- **HitHighlightedSummary**
- **HitHighlightedProperties**
- **ContentClass**
- **IsDocument**
- **PictureThumbnailURL**
- **Url**
- **ServerRedirectUrl**
- **FileExtension**
- **SpSiteUrl**
- **docvector**
- **fcocount**
- **fcoid**
- **PictureHeight**
- **PictureWidth**

**SimilarTo:** For details see **Query.FindSimilar.SimilarTo**, as specified in [MS-SEARCH] section 2.2.3.1. [MS-SEARCH] section 2.2.5.6 specifies the syntax. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**SimilarType:** Specifies how the protocol server MUST transform the search query when **SimilarTo** is set. The protocol server MUST append the query text in **SimilarTo** to the **QueryText** based on **SimilarType**. MUST be one of the values specified in section [3.1.4.7.4.3](#). If not set, but **SimilarTo** is set, the protocol server MUST behave as if "SimilarType.Find" was specified. If set, but **SimilarTo** is not set, the protocol server MUST ignore this value and MUST NOT transform the query text. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**SortList:** Specifies the list of properties with which to sort the search results. MUST be a **SortCollection** data type, as specified in section [3.1.4.7.3.4](#). If this element is not present or a value is not specified, the default managed property **Rank** and default **direction** of "Descending" MUST be used.

**SortSimilar:** For details see **Query.FindSimilar.SortSimilar**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**TrimDuplicatesIncludeId:** For details see **Query.TrimDuplicates.includeid**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**TrimDuplicatesKeepCount:** For details see **Query.TrimDuplicates.keeppcount**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**TrimDuplicatesOnProperty:** For details see **Query.TrimDuplicates.onproperty**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**UserContextData:** For details see **Query.UserContext.UserContextData**, as specified in [MS-SEARCH] section 2.2.3.1. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchProvider.SharepointSearch", the value MUST be ignored by the protocol server.

**UserContextGroupID:** Specifies an identifier that is used to group keywords used for matching best bets and visual best bets to the search query. If **UserContextGroupID** is present, and **QueryProperties.ResultTypes** is set to include **SpecialTermResults**, the protocol server MUST only return best bets and visual best bets results when the search query contains a keyword in the specified group. If **QueryProperties.ResultsProvider**, as specified in section 2.2.4.11, is "SearchServer.SharepointSearch", the value MUST be ignored by protocol server.

**Properties:** Specifies a property bag of key-value pairs as specified in section 2.2.4.11. SHOULD contain the following properties besides the properties specified in **QueryProperties.Properties**:

**CollapseSpecification:** A set of collapse specifications containing managed properties that are used to determine how to collapse individual search results. Results are collapsed into one or a specified number of results if they match any of the individual collapse specifications. Within a single collapse specification, results will be collapsed if their properties match all of the individual properties in the collapse specification.

**EnableSorting:** Specifies whether sorting of results should be enabled or not. MUST ignore the **SortList** specified if this value is set to **false**.

**MaxKeywordQueryTextLength:** Specifies the maximum characters allowed in **QueryProperties.QueryText** as specified in section 2.2.4.11. The protocol server MUST

return a **FaultException<ExceptionDetail>** message if the **QueryProperties.QueryText** exceeds the maximum characters allowed.

### 3.1.4.7.3.2 ArrayOfKeyValueOfstringArrayOfRefinementInterval\_PFsic3Az

**Namespace:** http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfKeyValueOfstringArrayOfRefinementInterval\_PFsic3Az** complex type contains information about the refinement bins for a collection of refiners. The protocol server **MUST** use the specified refinement bins when returning refinement values for the refiners.

```
<xs:complexType name="ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringArrayOfRefinementInterval_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:ArrayOfRefinementInterval"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfstringArrayOfRefinementInterval\_PFsic3Az:** Specifies a collection of refiners and associated refinement bins the protocol server **MUST** apply to refinement values belonging to a particular refiner.

**KeyValueOfstringArrayOfRefinementInterval\_PFsic3Az.Key:** Specifies the refiner name.

**KeyValueOfstringArrayOfRefinementInterval\_PFsic3Az.Value:** Specifies the refinement bins the protocol server **MUST** apply to the refinement values for a refiner. The value **MUST** be of type **ArrayOfRefinementInterval** as described in 3.1.4.7.3.3.

### 3.1.4.7.3.3 ArrayOfRefinementInterval

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **ArrayOfRefinementInterval** complex type contains the refinement bins the protocol server **MUST** use when returning refinement values for a refiner.

```
<xs:complexType name="ArrayOfRefinementInterval" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="RefinementInterval" nillable="true"
type="q2:RefinementInterval"/>
  </xs:sequence>
</xs:complexType>
```

**RefinementInterval:** Specifies the array of refinement bins. The element of the array **MUST** either be of type **DateRefinementInterval** as described in section [2.2.4.6](#) or **NumericRefinementInterval** as described in section [2.2.4.9](#).

### 3.1.4.7.3.4 SortCollection

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

The **SortCollection** complex type contains information about how to sort the search results.

```
<xs:complexType name="SortCollection" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="m elements" nillable="true" type="q2:ArrayOfSort"/>
  </xs:sequence>
</xs:complexType>
```

**m\_elements:** Specifies the collection of properties to sort the search results by. MUST be an **ArrayOfSort** data type as specified in section [3.1.4.7.3.5](#).

### 3.1.4.7.3.5 ArrayOfSort

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ArrayOfSort** complex type contains information about a list of properties to sort the search results by. Each child element of this complex type defines a property to sort the search results on, and how to sort on it. If this element contains more than one child element, then the protocol server MUST sort the search results on the first child element, with ties broken by the second child element and so on.

```
<xs:complexType name="ArrayOfSort" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="Sort" nillable="true"
      type="q2:Sort"/>
  </xs:sequence>
</xs:complexType>
```

**Sort:** Specifies the name of the property to sort the search results on, and the direction in which the results MUST be sorted. MUST be a **Sort** data type, as specified in section [3.1.4.7.3.6](#).

### 3.1.4.7.3.6 Sort

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **Sort** complex type contains information about the property to sort the search results on, and how to sort on the property.

```
<xs:complexType name="Sort" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element
      xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
      minOccurs="0" name="direction" type="tns2:SortDirection"/>
    <xs:element minOccurs="0" name="strProperty" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**direction:** The direction in which to sort on the property specified in the **strProperty** element. MUST be a **SortDirection** data type as specified in section [3.1.4.7.4.4](#). If the **direction** element is not specified, the protocol server MUST use **SortDirection.Ascending** as the default. If direction is equal to **SortDirection.FQLFormula**, then the **strProperty** MUST specify the formula that MUST be used for sorting the search results, as specified in section [3.1.4.7.4.4](#). If

**QueryProperties.ResultsProvider** (as specified in section [2.2.4.11](#)) is **SearchServer.SharepointSearch** and direction is set to **SortDirection.FQLFormula**, the value of **strProperty** MUST be ignored by the protocol server.

**strProperty:** If **direction** is equal to **SortDirection.Ascending** or **SortDirection.Descending**, then this element specifies the name of the managed property to sort the search results on.

If **direction** is equal to **SortDirection.FQLFormula**, then this element specifies the formula (as specified in section 3.1.4.7.4.4) that MUST be used for sorting the search results.

### 3.1.4.7.3.7 ReorderingRuleCollection

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **ReorderingRuleCollection** complex type [62](#) contains information about how to reorder the search results.

```
<xs:complexType name="ReorderingRuleCollection" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element
      xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
      minOccurs="0" name="m_elements" nillable="true" type="tns2:ArrayOfReorderingRule"/>
  </xs:sequence>
</xs:complexType>
```

**m\_elements:** Specifies the collection of reordering rules that modifies the rank of search results. MUST be an **ArrayOfReorderingRule** data type as specified in section [3.1.4.7.3.8](#).

### 3.1.4.7.3.8 ArrayOfReorderingRule

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **ArrayOfReorderingRule** complex type [63](#) contains information about a list of rules used to reorder search results. Each child element of this complex type defines a reordering rule in accordance with which search results get a higher or lower rank as they met rule conditions.

```
<xs:complexType name="ArrayOfReorderingRule" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ReorderingRule" nillable="true"
      type="tns2:ReorderingRule"/>
  </xs:sequence>
</xs:complexType>
```

**ReorderingRule:** Specifies the rule in accordance with which the search results MUST be reordered. MUST be a **ReorderingRule** data type, as specified in section [3.1.4.7.3.9](#).

### 3.1.4.7.3.9 ReorderingRule

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **ReorderingRule** complex type [64](#) contains information about how search results SHOULD be reordered if they met the condition.

```
<xs:complexType name="ReorderingRule" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Boost" type="xs:int"/>
    <xs:element minOccurs="0" name="MatchType" type="tns2:ReorderingRuleMatchType"/>
    <xs:element minOccurs="0" name="MatchValue" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**Boost:** Rank boost coefficient. If boost is higher than 10 then matching search results MUST be ranked at the top of search results. If boost is lower than -10 then matching search results MUST be ranked at the bottom of search results. If boost is between -10 and 10 then the rank of matched

search results MUST be modified toward the top if boost is greater than 0, or toward the bottom otherwise.

**MatchType:** The type of condition by which the rule matches search results.

**MatchValue:** The custom value which is used to match search results. The actual value depends on the match type.

### 3.1.4.7.3.10 RefinementInterval

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **RefinementInterval** complex type contains information about a refinement bin for a refiner. The protocol server MUST use this as a refinement bin if returning refinement values for a refiner when this is specified in **CustomRefinementIntervals**, as specified in 3.1.4.7.3.1.

```
<xs:complexType name="RefinementInterval" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="CustomValue" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Lower" nillable="true" type="xs:anyType"/>
    <xs:element minOccurs="0" name="Upper" nillable="true" type="xs:anyType"/>
  </xs:sequence>
</xs:complexType>
```

**CustomValue:** The custom value for this refinement bin. The protocol client MAY label the refinement bin with a custom string value.

**Lower:** The lower bound of this refinement bin. Only values larger than or equal to this value MUST be part of this refinement bin.

**Upper:** The upper bound of this refinement bin. Only values smaller than or equal to this value MUST be part of this refinement bin.

### 3.1.4.7.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

| Simple type                    | Description   |
|--------------------------------|---|
| <b>ReorderingRuleMatchType</b> | Represents the type of the condition which reordering rule is used to match search results.               |
| <b>ResubmitFlag</b>            | It is used to specify how the protocol server MUST behave if no results are returned from a search query. |
| <b>SimilarType</b>             | Represents the type of transformation the protocol server MUST apply to the search query.                 |
| <b>SortDirection</b>           | Represents the direction in which the search results MUST be sorted.                                      |
| <b>SpellcheckMode</b>          | Represents the type of spelling behavior the protocol server MUST apply to the query text.                |

#### 3.1.4.7.4.1 SpellcheckMode

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **SpellcheckMode** simple type represents the type of spelling behavior the protocol server MUST apply to the query text.

```
<xs:simpleType name="SpellcheckMode" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Off"/>
    <xs:enumeration value="Suggest"/>
    <xs:enumeration value="On"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **SpellcheckMode** simple type.

| Value   | Meaning   |
|---------|---|
| Off     | The protocol server MUST NOT suggest or modify the search query.  |
| Suggest | A suggested modification to the search query MUST be returned if there is a good chance that the spelling suggestion will increase the quality of the search results. If there is a suggestion, it MUST be returned in the <b>SpellingSuggestion</b> property of the <b>ResultTableCollection</b> . |
| On      | The search query MUST be modified automatically if there is a good chance that the spelling suggestion will increase the quality of the search results. If a modification has been done, it MUST be returned in the <b>QueryModification</b> property of the <b>ResultTableCollection</b> .         |

### 3.1.4.7.4.2 ResubmitFlag

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **ResubmitFlag** simple type is used to specify how the protocol server MUST behave if no results are returned from a search query.

```
<xs:simpleType name="ResubmitFlag" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="NoResubmit"/>
        <xs:enumeration value="EnableSpellcheckOnResubmit"/>
        <xs:enumeration value="EnableSpellcheckSuggestOnResubmit"/>
        <xs:enumeration value="EnableStemmingOnResubmit"/>
        <xs:enumeration value="AddSynonymsAutomatically"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for the **ResubmitFlag** simple type.

| Value                             | Meaning  |
|-----------------------------------|--|
| NoResubmit                        | The protocol server MUST NOT resubmit the search query when there are no query results and MUST ignore other <b>ResubmitFlag</b> elements. |
| EnableSpellcheckOnResubmit        | The protocol server MUST set <b>EnableSpellcheck</b> to <b>SpellcheckMode.On</b> for the resubmitted search query.                         |
| EnableSpellcheckSuggestOnResubmit | The protocol server MUST set <b>EnableSpellcheck</b> to <b>SpellcheckMode.Suggest</b> for the resubmitted search query.                    |



| Value                    | Meaning  |
|--------------------------|--|
| EnableStemmingOnResubmit | The protocol server MUST set <b>EnableStemming</b> to "true" when resubmitting the search query. |
| AddSynonymsAutomatically | Reserved. MUST be ignored by the protocol server.  |

### 3.1.4.7.4.3 SimilarType

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **SimilarType** simple type represents the type of transformation the protocol server MUST apply to the search query. See [\[MS-SEARCH\]](#) section 2.2.11.2, Keyword Query for a specification of keyword query operators.

```
<xs:simpleType name="SimilarType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="Find"/>
    <xs:enumeration value="Refine"/>
    <xs:enumeration value="Exclude"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **SimilarType** simple type.

| Value   | Meaning   |
|---------|---|
| None    | The protocol server MUST NOT add any value to the search query in <b>QueryText</b> .                      |
| Find    | The protocol server MUST add the value in <b>SimilarTo</b> to <b>QueryText</b> using the OR operator.     |
| Refine  | The protocol server MUST add the value in <b>SimilarTo</b> to <b>QueryText</b> using the AND operator.    |
| Exclude | The protocol server MUST add the value in <b>SimilarTo</b> to <b>QueryText</b> using the ANDNOT operator. |

### 3.1.4.7.4.4 SortDirection

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **SortDirection** simple type represents the direction in which the search results MUST be sorted.

```
<xs:simpleType name="SortDirection" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Ascending"/>
    <xs:enumeration value="Descending"/>
    <xs:enumeration value="FQLFormula"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **SortDirection** simple type.

| Value      | Meaning   |
|------------|---|
| Ascending  | The search results MUST be sorted in <b>ascending order</b> of the values of the property specified by <b>Sort.strProperty</b> as specified in section <a href="#">3.1.4.7.3.6</a> .  |
| Descending | The search results MUST be sorted in <b>descending order</b> of the values of the property specified by <b>Sort.strProperty</b> as specified in section <a href="#">3.1.4.7.3.6</a> .   |
| FQLFormula | The search results MUST be sorted according to formula specified by <b>Sort.strProperty</b> as specified in section <a href="#">3.1.4.7.3.6</a> . The formula MUST be a valid formula expression as specified in <a href="#">[MS-FQL2]</a> section 2. If <b>QueryProperties.ResultsProvider</b> (as specified in section <a href="#">2.2.4.11</a> ) is <b>SearchProvider.SharepointSearch</b> , the value MUST be ignored by the protocol server. |

### 3.1.4.7.4.5 ReorderingRuleMatchType

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **ReorderingRuleMatchType** simple type [<65>](#) represents how the reordering rule matches search results which should be reordered.

```
<xs:simpleType name="ReorderingRuleMatchType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ResultContainsKeyword"/>
    <xs:enumeration value="TitleContainsKeyword"/>
    <xs:enumeration value="TitleMatchesKeyword"/>
    <xs:enumeration value="UrlStartsWith"/>
    <xs:enumeration value="UrlExactlyMatches"/>
    <xs:enumeration value="ContentTypeIs"/>
    <xs:enumeration value="FileExtensionMatches"/>
    <xs:enumeration value="ResultHasTag"/>
    <xs:enumeration value="ManualCondition"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **ReorderingRuleMatchType** simple type.

| Value                 | Meaning   |
|-----------------------|---|
| ResultContainsKeyword | Rule matches search results whose content has keywords specified by matchValue.                           |
| TitleContainsKeyword  | Rule matches search results whose title contains keywords specified by matchValue.                        |
| TitleMatchesKeyword   | Rule matches search results whose titles equal to the string specified by matchValue.                     |
| UrlStartsWith         | Rule matches search results whose URL begins with the string specified by matchValue.                     |
| UrlExactlyMatches     | Rule matches search results whose URL equals to the string specified by matchValue.                       |
| ContentTypeIs         | Rule matches search results whose SharePoint ContentType matches with the string specified by matchValue. |
| FileExtensionMatches  | Rule matches search results whose file extension match with the string specified by matchValue.           |
| ResultHasTag          | Rule matches search results which are tagged with taxonomy term specified by matchValue.                  |
| ManualCondition       | Rule matches search results which matches KQL query syntax specified by matchValue.                       |

### 3.1.4.7.5 Attributes

None.

### 3.1.4.7.6 Groups

None.

### 3.1.4.7.7 Attribute Groups

None.

### 3.1.4.8 GetTopQueryStringsForUrl

For each crawled item that is identified by a URI, the protocol server MUST store a list of executed search queries that return this item in their query results within 366 days. This list MUST be sorted in descending order by the frequency of occurrence of the search queries. This operation returns a specified number of search queries from this sorted list for a given URI.

The following is the WSDL port type specification of the **GetTopQueryStringsForUrl** WSDL operation.

```
<wsdl:operation name="GetTopQueryStringsForUrl"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrl"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrlResponse"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrlSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_SearchServiceApplicationFaultFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an

**ISearchQueryServiceApplication\_GetTopQueryStringForUrl\_InputMessage** request message, as specified in section [3.1.4.8.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_GetTopQueryStringForUrl\_OutputMessage** response message, as specified in section [3.1.4.8.1.2](#), as follows:

- On receipt, the protocol server verifies the value of the URI specified in the **url** element. If the element is absent, empty or contains more than 1024 characters, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.
- The protocol server verifies the value of the **topCount** element. If the value is smaller than 0 or greater than 2,147,483,647, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.
- On success, the protocol server returns the specified number of search queries to the protocol client. If the specified number is greater than the number of search queries that the protocol server stores, the protocol server returns all the search queries it stores to the protocol client.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.8.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_GetTopQueryStringsForUrl_InputMessage</b>  | The request WSDL message for the <b>GetTopQueryStringsForUrl</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetTopQueryStringsForUrl_OutputMessage</b> | The response WSDL message for the <b>GetTopQueryStringsForUrl</b> WSDL operation. |

#### 3.1.4.8.1.1 ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_InputMessage

The request WSDL message for the **GetTopQueryStringsForUrl** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrl
```

The SOAP body contains the **GetTopQueryStringsForUrl** element.

#### 3.1.4.8.1.2 ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_OutputMessage

The response WSDL message for the **GetTopQueryStringsForUrl** WSDL operation.

The SOAP body contains the **GetTopQueryStringsForUrlResponse** element.

### 3.1.4.8.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                                 | Description   |
|---|---|
| <b>GetTopQueryStringsForUrl</b>         | The input data for the <b>GetTopQueryStringsForUrl</b> WSDL operation.  |
| <b>GetTopQueryStringsForUrlResponse</b> | The result data for the <b>GetTopQueryStringsForUrl</b> WSDL operation. |

#### 3.1.4.8.2.1 GetTopQueryStringsForUrl

The **GetTopQueryStringsForUrl** element specifies the input data for the **GetTopQueryStringsForUrl** WSDL operation.

```
<xs:element name="GetTopQueryStringsForUrl" xmlns:xs="http://www.w3.org/2001/XMLSchema">  
  <xs:complexType>  
    <xs:sequence>  
      <xs:element minOccurs="0" name="url" nillable="true" type="xs:string"/>  
    </xs:sequence>  
  </xs:complexType>  
</xs:element>
```

```

    <xs:element minOccurs="0" name="topCount" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

**url:** Specifies the URI for which corresponding search queries **MUST** be returned by the protocol server.

**topCount:** Specifies the number of search queries to return, which are associated with the URI specified in **url** element.

### 3.1.4.8.2.2 GetTopQueryStringsForUrlResponse

The **GetTopQueryStringsForUrlResponse** element specifies the result data for the **GetTopQueryStringsForUrl** WSDL operation.

```

<xs:element name="GetTopQueryStringsForUrlResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="GetTopQueryStringsForUrlResult" nillable="true" type="q3:ArrayOfstring"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**GetTopQueryStringsForUrlResult:** Specifies a list of most frequently occurring search queries corresponding to the given URI.

### 3.1.4.8.3 Complex Types

None.

### 3.1.4.8.4 Simple Types

None.

### 3.1.4.8.5 Attributes

None.

### 3.1.4.8.6 Groups

None.

### 3.1.4.8.7 Attribute Groups

None.

### 3.1.4.9 HighlightStringValue

This operation is used by the protocol client to highlight all the occurrences of specified query terms in a specified **string** value by enclosing each of them within an open (**<b>**) and close (**</b>**) tag.

The following is the WSDL port type specification of the **HighlightStringValue** WSDL operation.

```

<wsdl:operation name="HighlightStringValue" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">

```

```

    <wsdl:input
      wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValue"
      message="tns:ISearchQueryServiceApplication_HighlightStringValue_InputMessage"
      xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:output
      wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueResponse"
      message="tns:ISearchQueryServiceApplication_HighlightStringValue_OutputMessage"
      xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:fault
      wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
      message="tns:ISearchQueryServiceApplication_HighlightStringValue_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  </wsdl:operation>

```

The protocol client sends an **ISearchQueryServiceApplication\_HighlightStringValue\_InputMessage** request message, as specified in section 3.1.4.9.1.1, and the protocol server responds with an **ISearchQueryServiceApplication\_HighlightStringValue\_OutputMessage** response message, as specified in section 3.1.4.9.1.2, as follows:

- On receipt, the protocol server returns the details of a string in which all the occurrences of query terms are highlighted.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.9.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_HighlightStringValue_InputMessage</b>  | The request WSDL message for the <b>HighlightStringValue</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_HighlightStringValue_OutputMessage</b> | The response WSDL message for the <b>HighlightStringValue</b> WSDL operation. |

#### 3.1.4.9.1.1 ISearchQueryServiceApplication\_HighlightStringValue\_InputMessage

The request WSDL message for the **HighlightStringValue** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValue
```

The SOAP body contains the **HighlightStringValue** element.

#### 3.1.4.9.1.2 ISearchQueryServiceApplication\_HighlightStringValue\_OutputMessage

The response WSDL message for the **HighlightStringValue** WSDL operation.

The SOAP body contains the **HighlightStringValueResponse** element.

### 3.1.4.9.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                             | Description   |
|-------------------------------------|---|
| <b>HighlightStringValue</b>         | The input data for the <b>HighlightStringValue</b> WSDL operation.  |
| <b>HighlightStringValueResponse</b> | The result data for the <b>HighlightStringValue</b> WSDL operation. |

#### 3.1.4.9.2.1 HighlightStringValue

The **HighlightStringValue** element specifies the input data for the **HighlightStringValue** WSDL operation.

```
<xs:element name="HighlightStringValue" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="strValue" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="fLastTermByPrefix" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** Specifies the properties of the search query for which the **strValue** MUST be highlighted. The protocol client MUST specify the query terms in the **QueryText** element of the **QueryProperties** data type. The **QueryProperties** data type MUST be of **KeywordQueryProperties** or **FullTextSqlQueryProperties** type. If it is **KeywordQueryProperties**, the query terms apply to the whole **QueryText**. If this is **FullTextSqlQueryProperties**, the query terms apply to the **FREETEXT** predicate, as specified in [\[MS-SEARCH\]](#) section 2.2.13.3.1.2. For properties other than **QueryText**, the protocol server MUST send a **FaultException**<ExceptionDetail> message to the protocol client.

**strValue:** Specifies the value of the string to be highlighted.

**fLastTermByPrefix:** Specifies whether the last query token MUST be matched by prefix. If "true", any token in the **strValue** element that matches the prefix of the last token in the query MUST be highlighted; if "false", all tokens in **strValue** MUST be highlighted only if they match the query tokens exactly. When **stemming** is turned on, as specified in section [2.2.4.11](#), for the search query, stemming is applied to search terms so that even words in **strValue** matching the stemmed results of search terms MUST be highlighted. When a search term is matched by prefix, no stemming MUST be applied to this term.

#### 3.1.4.9.2.2 HighlightStringValueResponse

The **HighlightStringValueResponse** element specifies the result data for the **HighlightStringValue** WSDL operation.

```
<xs:element name="HighlightStringValueResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="HighlightStringValueResult" nillable="true" type="q2:HighlightedString"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**HighlightStringValueResult:** Specifies the string in which search terms were highlighted. It MUST be of type **HighlightedString** as specified by section [2.2.4.8](#).

### 3.1.4.9.3 Complex Types

None.

### 3.1.4.9.4 Simple Types

None.

### 3.1.4.9.5 Attributes

None.

### 3.1.4.9.6 Groups

None.

### 3.1.4.9.7 Attribute Groups

None.

## 3.1.4.10 HighlightStringValueQuerySuggestions

This operation is used by the protocol client to highlight all the occurrences of specified query terms in a specified string value by enclosing each of them within an open (<b>) and close (</b>) tag in the context of query suggestions.

The following is the WSDL port type specification of the **HighlightStringValueQuerySuggestions** WSDL operation.

```
<wsdl:operation name="HighlightStringValueQuerySuggestions"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
    stions"
    message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
    stionsResponse"
    message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_OutputMessag
    e" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
    stionsSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_SearchServic
    eApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an `ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage` request message, as specified in section [3.1.4.10.1.1](#) and the protocol server responds with a `ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_OutputMessage` response message, as specified in section [3.1.4.10.1.2](#), as follows:

- On receipt, the protocol server returns the details of a string in which all the occurrences of query terms are highlighted.



- If the language of the specified query, according to the properties element of the request is Chinese, Japanese or Korean, the query terms that MUST be used to match and highlight in the string MUST be generated according to the rules of English, in other words based on white space.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.10.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage</b>  | The request WSDL message for the <b>HighlightStringValueQuerySuggestions</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_OutputMessage</b> | The response WSDL message for the <b>HighlightStringValueQuerySuggestions</b> WSDL operation. |

#### 3.1.4.10.1.1 ISearchQueryServiceApplication\_HighlightStringValueQuerySuggestions\_InputMessage

The request WSDL message for the **HighlightStringValueQuerySuggestions** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySuggestions
```

The SOAP body contains the **HighlightStringValueQuerySuggestions** element.

#### 3.1.4.10.1.2 ISearchQueryServiceApplication\_HighlightStringValueQuerySuggestions\_OutputMessage

The response WSDL message for the **HighlightStringValueQuerySuggestions** WSDL operation.

The SOAP body contains the **HighlightStringValueQuerySuggestionsResponse** element.

### 3.1.4.10.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element   | Description   |
|---|---|
| <b>HighlightStringValueQuerySuggestions</b>         | The input data for the <b>HighlightStringValueQuerySuggestions</b> WSDL operation.  |
| <b>HighlightStringValueQuerySuggestionsResponse</b> | The result data for the <b>HighlightStringValueQuerySuggestions</b> WSDL operation. |

### 3.1.4.10.2.1 HighlightStringValueQuerySuggestions

The **HighlightStringValueQuerySuggestions** element specifies the input data for the **HighlightStringValueQuerySuggestions** WSDL operation.

```
<xs:element name="HighlightStringValueQuerySuggestions"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="strValue" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="fLastTermByPrefix" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** Specifies the properties of the search query for which **strValue** MUST be highlighted. The protocol client MUST specify the query terms in the **QueryText** element of the QueryProperties data type, as specified in section 2.2.4.11. The QueryProperties data type can be KeywordQueryProperties as specified in section 3.1.4.7.3.1 or FullTextSqlQueryProperties as specified in section 2.2.4.7. If it is **KeywordQueryProperties**, the query terms apply to the whole **QueryText**. If this is **FullTextSqlQueryProperties**, the query terms apply to the **FREETEXT** predicate (as specified in [\[MS-SEARCH\]](#) section 2.2.13.3.1.2). For properties other than **QueryText**, the protocol server MUST send a **FaultException**<**ExceptionDetail**> message to the protocol client.

**strValue:** Specifies the value of the string to be highlighted.

**fLastTermByPrefix:** Specifies whether the last query token MUST be matched by prefix. If it is equal to "true", any token in the **strValue** element that matches the prefix of the last token in the query MUST be highlighted; if it is equal to "false", all tokens in the **strValue** MUST be highlighted only if they match the query tokens exactly. When stemming is turned on (see section 2.2.4.11) for the search query, stemming is applied to search terms so that even words in **strValue** matching the stemmed results of search terms are highlighted. When a search term is matched by prefix, no stemming MUST apply to this term.

### 3.1.4.10.2.2 HighlightStringValueQuerySuggestionsResponse

The **HighlightStringValueQuerySuggestionsResponse** element specifies the result data for the **HighlightStringValueQuerySuggestions** WSDL operation.

```
<xs:element name="HighlightStringValueQuerySuggestionsResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="HighlightStringValueQuerySuggestionsResult" nillable="true"
        type="q2:HighlightedString"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**HighlightStringValueQuerySuggestionsResult:** Specifies the string in which search terms were highlighted. It MUST be of type **HighlightedString** as specified by section 2.2.4.8.

### 3.1.4.10.3 Complex Types

None.

#### 3.1.4.10.4 Simple Types

None.

#### 3.1.4.10.5 Attributes

None.

#### 3.1.4.10.6 Groups

None.

#### 3.1.4.10.7 Attribute Groups

None.

#### 3.1.4.11 RecordClick

This operation MUST be used only when **PropertiesContractVersion** used to send search queries has a value of either 14.0.0.0 or 14.5.0.0. (section [2.2.4.11](#)). In all other cases, the **RecordPageClick** operation (section [3.1.4.16](#)) MUST be used instead of the **RecordClick** operation.

This operation is used by the protocol client to inform the protocol server that a clickthrough happened or the user navigated away from the page. When a clickthrough happens, the protocol client sends the details of the clickthrough and the search query, for which the query result was clicked, to the protocol server. When a user navigates away from the page, the protocol client sends the details of the search query to the protocol server.

The following is the WSDL port type specification of the **RecordClick** WSDL operation.

```
<wsdl:operation name="RecordClick" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClick"
    message="tns:ISearchQueryServiceApplication_RecordClick_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClickResponse"
    message="tns:ISearchQueryServiceApplication_RecordClick_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClickSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordClick_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordClick\_InputMessage** (section 3.1.4.11.1.1) request message and the protocol server responds with an **ISearchQueryServiceApplication\_RecordClick\_OutputMessage** (section 3.1.4.11.1.2) response message, as follows:

- On receipt of the **ISearchQueryServiceApplication\_RecordClick\_InputMessage** request message, the protocol server checks if the value of the **info.SearchTime** element is earlier than Jan 01, 1900 or later than Jun 5, 2079. If it is, and if query logging is not enabled, the protocol server MUST ignore the **info** element; if it is, and if query logging is enabled, the protocol server MUST return a **FaultException<ExceptionDetail>** message.

- The protocol server checks if the **info.NumResults** element is less than -2,147,483,648 or greater than 2,147,483,647. If it is, the protocol server MUST ignore the **info** element.
- On success, the protocol server stores the details of the clickthrough and its corresponding search query.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.11.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_RecordClick_InputMessage</b>  | The request WSDL message for the <b>RecordClick</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordClick_OutputMessage</b> | The response WSDL message for the <b>RecordClick</b> WSDL operation. |

#### 3.1.4.11.1.1 ISearchQueryServiceApplication\_RecordClick\_InputMessage

The request WSDL message for the **RecordClick** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordClick
```

The SOAP body contains the **RecordClick** element.

#### 3.1.4.11.1.2 ISearchQueryServiceApplication\_RecordClick\_OutputMessage

The response WSDL message for the **RecordClick** WSDL operation.

The SOAP body contains the **RecordClickResponse** element.

### 3.1.4.11.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                    | Description  |
|----------------------------|--|
| <b>RecordClick</b>         | The input data for the <b>RecordClick</b> WSDL operation.  |
| <b>RecordClickResponse</b> | The result data for the <b>RecordClick</b> WSDL operation. |

#### 3.1.4.11.2.1 RecordClick

The **RecordClick** element specifies the input data for the **RecordClick** WSDL operation.

```
<xs:element name="RecordClick" xmlns:xs="http://www.w3.org/2001/XMLSchema">
```

```

<xs:complexType>
  <xs:sequence>
    <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="Info" nillable="true" type="q2:QueryInfo"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

**Info:** The details about the clickthrough and its corresponding search query.

### 3.1.4.11.2 RecordClickResponse

The **RecordClickResponse** element specifies the result data for the **RecordClick** WSDL operation.

```

<xs:element name="RecordClickResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>

```

### 3.1.4.11.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type     | Description   |
|------------------|---|
| <b>QueryInfo</b> | Information about the clickthrough and the corresponding search query |

#### 3.1.4.11.3.1 QueryInfo

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **QueryInfo** complex type contains the details about the clickthrough and its corresponding search query.

```

<xs:complexType name="QueryInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="AdvancedSearch" type="xs:boolean"/>
    <xs:element minOccurs="0" name="BestBetClicked" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ClickTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="ClickedUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ClickedUrlRank" type="xs:int"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ClientType" type="tns2:QueryLogClientType"/>
    <xs:element minOccurs="0" name="ContextualScope" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ContextualScopeUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ContinuedSession" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Definitions" type="xs:boolean"/>
    <xs:element minOccurs="0" name="DidYouMean" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DidYouMeanReturned" type="xs:boolean"/>
    <xs:element minOccurs="0" name="ItemsPerPage" type="xs:int"/>
    <xs:element minOccurs="0" name="Location" nillable="true" type="xs:string"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="LogType" type="tns2:QueryLogType"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="NonClickedUrls" nillable="true" type="q3:ArrayOfstring"/>
  </xs:sequence>
</xs:complexType>

```

```

<xs:element minOccurs="0" name="NumBestBets" type="xs:int"/>
<xs:element minOccurs="0" name="NumHighConfidenceResults" type="xs:int"/>
<xs:element minOccurs="0" name="NumResults" type="xs:long"/>
<xs:element minOccurs="0" name="QueryCulture" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="QueryGuid" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="QueryServer" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="QueryString" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="ReferrerUrl" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="ResultView" type="xs:short"/>
<xs:element minOccurs="0" name="ResultsUrl" nillable="true" type="xs:string"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Scopes" nillable="true" type="q3:ArrayOfstring"/>
<xs:element minOccurs="0" name="SearchServiceApplicationID" nillable="true"
type="xs:string"/>
<xs:element minOccurs="0" name="SearchTime" type="xs:dateTime"/>
<xs:element minOccurs="0" name="SessionId" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="SiteGuid" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="StartItem" type="xs:int"/>
<xs:element minOccurs="0" name="TenantId" type="ser:guid"/>
<xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="TotalResults" type="xs:long"/>
<xs:element minOccurs="0" name="UserName" nillable="true" type="xs:string"/>
</xs:sequence>
</xs:complexType>

```

**AdvancedSearch:** Specifies whether the search query was issued as an advanced search query. A value of "true" SHOULD indicate the search query was issued as an advanced search query. A value of "false" SHOULD indicate the search query was not issued as an advanced search query. The criteria of what constitutes an Advanced Search Query is implementation-specific.

**BestBetClicked:** Specifies whether a best bet result was clicked. A value of "true" SHOULD indicate best bet result was clicked. A value of "false" SHOULD indicate no best bet was clicked.

**ClickTime:** Specifies the date and time, in Coordinated Universal Time (UTC) format, at which the URI specified in **clickedUrl** was clicked. The value MUST be NULL if **clickedUrl** is NULL.

**ClickedUrl:** Specifies the URI of the query result that was clicked. The value MUST be NULL if search query information was logged in response to user navigating away from the search results page. The value MUST have the valid URI format, as specified in [RFC2396](#).

**ClickedUrlRank:** Specifies the position of the search result that was clicked among all search results. The value MUST be NULL if **clickedUrl** is NULL.

**ClientType:** Specifies the type of the query client. It MUST be of **QueryLogClientType** data type as specified in section [3.1.4.11.4.1](#).

**ContextualScope:** Specifies the **contextual search scope** under which the search query was executed.

**ContextualScopeUrl:** Specifies the URI of the contextual search scope. This value is used in search query to inform the protocol server of the contextual search scope to search from. The value MUST have the valid URI format, as specified in [RFC2396](#).

**ContinuedSession:** Specifies whether the info element is the first entry for this search query in the **search query log**. A value of "true" indicates it is not the first entry for this search query. A value of "false" indicates it is the first entry for this search query.

**Definitions:** Specifies whether an extracted definition result is clicked. A value of "true" SHOULD indicate an extracted definition was clicked. A value of "false" SHOULD indicate no extracted definition was clicked.

**DidYouMean:** Specifies the results that spelling suggestion returned.

**DidYouMeanReturned:** Specifies whether spelling suggestion returned result for the search query. A value of "true" SHOULD indicate spelling suggestion returned result for the search query. A value of "false" SHOULD indicate no result was returned by the spelling suggestion.

**ItemsPerPage:** Specifies the number of query results returned for the search query.

**Location:** Specifies the name of the **federated location** which the search query was executed against.

**LogType:** Specifies the type of the query log data. It differentiates between a query log for the query and a query log for the user click-throughs on the results of the query. The value MUST be of **QueryLogType** data type, as specified in section [3.1.4.11.4.2](#).

**NonClickedUrls:** Specifies the collection of URIs that the search query returned but were not clicked. The value of each URI in the collection MUST have the valid URI format, as specified in [RFC2396].

**NumBestBets:** Specifies the number of best bet results returned for the search query.

**NumHighConfidenceResults:** Specifies the number of high confidence results returned for the search query.

**NumResults:** Specifies the number of results returned for the search query.

**QueryCulture:** Specifies the name of the language culture of the search query. If present, the value MUST be a valid culture name, as specified in [\[RFC3066\]](#).

**QueryGuid:** Specifies the unique identifier of the Web Part that issued the search query. The value MUST be a **guid** data type, as specified in section [2.2.5.8](#).

**QueryServer:** Specifies the name of the server in which the search query was executed. The value MUST NOT contain more than 256 characters.

**QueryString:** Specifies the query text of the search query. The value MUST NOT contain more than 1024 characters.

**ReferrerUri:** Specifies the URI of a page that contains the URI, which directs to the current page where clickthrough happened. The value MUST have a valid URI format specified in [RFC2396].

**ResultView:** Specifies the results sort view of the query results. The value MUST be the corresponding integer values of the ResultsView enum data type, as described in [\[MSDN-ResultsView\]](#).

**ResultsUri:** Specifies the URI of the page where clickthrough happened. The value MUST have valid URI format specified in [RFC2396].

**Scopes:** Specifies the search scopes, under which the search query was executed.

**SearchServiceApplicationID:** Specifies a global unique identifier of the SearchServiceApplication.

**SearchTime:** Specifies the date and time, in Coordinated Universal Time (UTC) format, when the search query was executed.

**SessionId:** Specifies a unique identifier for the search session of a specific user in which the search query was sent. The value of this element is specific to the implementation of the protocol client.

**SiteGuid:** Specifies the unique identifier of the site collection from which the search request was executed. The value MUST be a valid **guid** type, as specified in section 2.2.5.8. The value of this element is specific to the implementation of the protocol client.

**StartItem:** Specifies a zero-based index of the first search result in the list of all search results the protocol server MUST return.

**TenantId:** Specifies the unique identifier for the tenant executing the search query. The value of this element is specific to the implementation of the protocol client.

**Title:** Specifies the title of the query result that was clicked.

**TotalResults:** This element **MUST** contain the total number of results that match the conditions given in the search query and are of the type specified in the **ResultType** element.

**UserName:** Specifies the name of the **user** who issued the search query.

### 3.1.4.11.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

| Simple type               | Description   |
|---------------------------|---|
| <b>QueryLogClientType</b> | An application where the search query is sent from. |
| <b>QueryLogType</b>       | A type of event that query logging records.         |

#### 3.1.4.11.4.1 QueryLogClientType

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **QueryLogClientType** simple type represents the place where the search query is sent from.

```
<xs:simpleType name="QueryLogClientType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ObjectModel"/>
    <xs:enumeration value="WebService"/>
    <xs:enumeration value="UI"/>
    <xs:enumeration value="Custom"/>
    <xs:enumeration value="CSOM"/>
    <xs:enumeration value="RSS"/>
    <xs:enumeration value="Alerts"/>
    <xs:enumeration value="ObjectModelBackwardsCompatible"/>
    <xs:enumeration value="AllResultsQuery"/>
    <xs:enumeration value="PeopleResultsQuery"/>
    <xs:enumeration value="VideoResultsQuery"/>
    <xs:enumeration value="SiteResultsQuery_All"/>
    <xs:enumeration value="SiteResultsQuery_Docs"/>
    <xs:enumeration value="SiteResultsQuery_Sites"/>
    <xs:enumeration value="ContentSearchHigh"/>
    <xs:enumeration value="ContentSearchRegular"/>
    <xs:enumeration value="CatalogItemReuseQuery"/>
    <xs:enumeration value="ContentSearchLow"/>
    <xs:enumeration value="SearchWebPartConfiguration"/>
    <xs:enumeration value="DiscoverySearch"/>
    <xs:enumeration value="DiscoveryDownloadManager"/>
    <xs:enumeration value="DocsSharedWithMe"/>
    <xs:enumeration value="MyTaskSync"/>
    <xs:enumeration value="SEOSiteMapQuery"/>
    <xs:enumeration value="MySiteSecurityTrimmer"/>
    <xs:enumeration value="Monitoring"/>
    <xs:enumeration value="ReportsAndDataResultsQuery"/>
    <xs:enumeration value="InplaceListSearch"/>
    <xs:enumeration value="TrendingTagsQuery"/>
    <xs:enumeration value="QueryBoxSkyDrive"/>
    <xs:enumeration value="QueryBoxSearchLandingPage"/>
    <xs:enumeration value="Unknown"/>
  </xs:restriction>
</xs:simpleType>
```



</xs:simpleType>

The following table specifies the allowable values for the **QueryLogClientType** simple type.

| Value                          | Meaning  |
|--------------------------------|--|
| ObjectModel                    | The search query is sent from the query <b>object model</b> .  |
| WebService                     | The search query is sent from the web service.   |
| UI                             | The search query is sent from a Web Part.  |
| Custom                         | The search query is sent from a place which is not the query object model, web service or Web Part.  |
| CSOM                           | The search query is sent through CSOM  |
| RSS                            | The search query is used to retrieve RSS feeds   |
| Alerts                         | MUST NOT be used   |
| ObjectModelBackwardsCompatible | The search query is sent through backward compatible object model.   |
| AllResultsQuery                | The search query is sent from a Web Part that returns all results except people.   |
| PeopleResultsQuery             | The search query is sent from a Web Part that returns only people results.   |
| VideoResultsQuery              | The search query is sent from a Web Part that returns only video results.  |
| SiteResultsQuery_All           | The search query is sent from a Web Part that returns all results from a particular site.  |
| SiteResultsQuery_Docs          | The search query is sent from a Web Part that returns all document results from a particular site.   |
| SiteResultsQuery_Sites         | The search query is sent from a Web Part that returns all site results from a particular site.   |
| ContentSearchHigh              | The search query is sent from a Content Search Web Part where the priority is set to "high".   |
| ContentSearchRegular           | The search query is sent from a Content Search Web Part where the priority is set to "regular".  |
| CatalogItemReuseQuery          | The search query is sent from a Catalog Item Reuse Web Part. In a publishing scenario that involves connecting a catalog, a Catalog Item Reuse Web Part is created for item details pages. |
| ContentSearchLow               | The search query is sent from a Content Search Web Part where the priority is set to "low".  |
| SearchWebPartConfiguration     | The search query is sent from the Query Builder and the Content Search Web Part.   |
| DiscoverySearch                | The search query is sent from a <b>discovery center</b> .  |
| DiscoveryDownloadManager       | The search query is sent from the Discovery Download Manager Tool which is used to download discovery results.   |
| DocsSharedWithMe               | The search query is used to retrieve documents that are shared with a particular user.   |

| Value                      | Meaning   |
|----------------------------|---|
| MyTaskSync                 | The search query is used to retrieve <b>tasks</b> for a particular user.                      |
| SEOSiteMapQuery            | The search query is used to retrieve all results within a site to build a site map.           |
| MySiteSecurityTrimmer      | The search query is used to decide which URLs a user has access to.                           |
| Monitoring                 | This value MUST NOT be used.  |
| ReportsAndDataResultsQuery | The search query is sent from a Web Part that returns results that represent data reports.    |
| InplaceListSearch          | The search query is sent from a Web Part that returns results from a particular <b>list</b> . |
| TrendingTagsQuery          | The search query is used to retrieve popular hash tags.                                       |
| QueryBoxSkyDrive           |   |
| QueryBoxSearchLandingPage  |   |
| Unknown                    | The search query is sent from an unknown source.  |

### 3.1.4.11.4.2 QueryLogType

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **QueryLogType** simple type represents the type of event that query logging records.

```
<xs:simpleType name="QueryLogType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Click"/>
    <xs:enumeration value="Query"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **QueryLogType** simple type.

| Value | Meaning   |
|-------|---|
| Click | The type of event query logging records is a click on search results. |
| Query | The type of event query logging records is a search query.            |

### 3.1.4.11.5 Attributes

None.

### 3.1.4.11.6 Groups

None.

### 3.1.4.11.7 Attribute Groups

None.

### 3.1.4.12 RecordOMQueryDoneEvent

This operation is used by the protocol client to inform the protocol server about the latency for processing the search query on the protocol server, as reported by the protocol server in the **ExecuteResult** element of the **ExecuteResponse** message, as specified in section [3.1.4.1.2.2](#). The protocol client MUST collect this latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server. [<66>](#)

The following is the WSDL port type specification of the **RecordOMQueryDoneEvent** WSDL operation.

```
<wsdl:operation name="RecordOMQueryDoneEvent" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEvent"
    message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEventResponse"
    message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEventSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordOMQueryDoneEvent\_InputMessage** request message, as specified in section [3.1.4.12.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_RecordOMQueryDoneEvent\_OutputMessage** response message, as specified in section [3.1.4.12.1.2](#), as follows:

- On successfully processing the search query latency, the protocol server returns whether verbose query monitoring is turned on for the search service application.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

#### 3.1.4.12.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_RecordOMQueryDoneEvent_InputMessage</b>  | The request WSDL message for the <b>RecordOMQueryDoneEvent</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage</b> | The response WSDL message for the <b>RecordOMQueryDoneEvent</b> WSDL operation. |

### 3.1.4.12.1.1 ISearchQueryServiceApplication\_RecordOMQueryDoneEvent\_InputMessage

The request WSDL message for the **RecordOMQueryDoneEvent** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEvent
```

The SOAP body contains the **RecordOMQueryDoneEvent** element.

### 3.1.4.12.1.2 ISearchQueryServiceApplication\_RecordOMQueryDoneEvent\_OutputMessage

The response WSDL message for the **RecordOMQueryDoneEvent** WSDL operation.

The SOAP body contains the **RecordOMQueryDoneEventResponse** element.

### 3.1.4.12.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                               | Description   |
|---------------------------------------|---|
| <b>RecordOMQueryDoneEvent</b>         | The input data for the <b>RecordOMQueryDoneEvent</b> WSDL operation.  |
| <b>RecordOMQueryDoneEventResponse</b> | The result data for the <b>RecordOMQueryDoneEvent</b> WSDL operation. |

#### 3.1.4.12.2.1 RecordOMQueryDoneEvent

The **RecordOMQueryDoneEvent** element specifies the input data for the **RecordOMQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordOMQueryDoneEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:OMQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the latency for processing the query on the protocol server. It contains aggregated latency information as well as verbose latency information of every single search query.

#### 3.1.4.12.2.2 RecordOMQueryDoneEventResponse

The **RecordOMQueryDoneEventResponse** element specifies the result data for the **RecordOMQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordOMQueryDoneEventResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordOMQueryDoneEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

```
</xs:sequence>
</xs:complexType>
</xs:element>
```

**RecordOMQueryDoneEventResult:** Specifies whether the verbose query monitoring is turned on for the search service application. The protocol server MUST return "true" if it is turned on; the protocol server MUST return "false" if it is turned off. If "true" is returned, in the subsequent call the protocol client MUST include verbose and aggregated query latency information in the **buffer** element; if "false" is returned, in the subsequent call the protocol client MUST only include aggregated query latency information in the **buffer** element.

### 3.1.4.12.3 Complex Types

None.

### 3.1.4.12.4 Simple Types

None.

### 3.1.4.12.5 Attributes

None.

### 3.1.4.12.6 Groups

None.

### 3.1.4.12.7 Attribute Groups

None.

### 3.1.4.13 RecordQueryErrorEvent

This operation [<67>](#) is used by the protocol client to inform the protocol server of any errors that occurred during the processing of search queries in the protocol client. The protocol client MUST collect the error information for all queries executed within each time period determined by the protocol server and send them in a single message.

The following is the WSDL port type specification of the **RecordQueryErrorEvent** WSDL operation.

```
<wsdl:operation name="RecordQueryErrorEvent" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEvent"
    message="tns:ISearchQueryServiceApplication RecordQueryErrorEvent InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEventResponse"
    message="tns:ISearchQueryServiceApplication RecordQueryErrorEvent OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEventSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication RecordQueryErrorEvent SearchServiceApplicationFaultFault FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordQueryErrorEvent\_InputMessage** request message, as

specified in section [3.1.4.13.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_RecordQueryErrorEvent\_OutputMessage** response message, as specified in section [3.1.4.13.1.2](#), as follows:

- On successfully processing the error information, the protocol server returns whether **verbose query monitoring** is turned on for the search application or not.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.13.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_RecordQueryErrorEvent_InputMessage</b>  | The request WSDL message for the <b>RecordQueryErrorEvent</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordQueryErrorEvent_OutputMessage</b> | The response WSDL message for the <b>RecordQueryErrorEvent</b> WSDL operation. |

#### 3.1.4.13.1.1 ISearchQueryServiceApplication\_RecordQueryErrorEvent\_InputMessage

The request WSDL message for the **RecordQueryErrorEvent** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEvent
```

The SOAP body contains the **RecordQueryErrorEvent** element.

#### 3.1.4.13.1.2 ISearchQueryServiceApplication\_RecordQueryErrorEvent\_OutputMessage

The response WSDL message for the **RecordQueryErrorEvent** WSDL operation.

The SOAP body contains the **RecordQueryErrorEventResponse** element.

### 3.1.4.13.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                              | Description  |
|--------------------------------------|--|
| <b>RecordQueryErrorEvent</b>         | The input data for the <b>RecordQueryErrorEvent</b> WSDL operation.  |
| <b>RecordQueryErrorEventResponse</b> | The result data for the <b>RecordQueryErrorEvent</b> WSDL operation. |

### 3.1.4.13.2.1 RecordQueryErrorEvent

The **RecordQueryErrorEvent** element specifies the input data for the **RecordQueryErrorEvent** WSDL operation.

```
<xs:element name="RecordQueryErrorEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:QueryErrorDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies a list of information for errors that occurred during the processing of all search queries executed within a time period determined by the protocol server, in the protocol client. Each entry in the list corresponds to an error.

### 3.1.4.13.2.2 RecordQueryErrorEventResponse

The **RecordQueryErrorEventResponse** element specifies the result data for the **RecordQueryErrorEvent** WSDL operation.

```
<xs:element name="RecordQueryErrorEventResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordQueryErrorEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordQueryErrorEventResult:** Specifies whether the verbose query monitoring for the search application is turned on. The protocol server MUST return "true" if it is turned on; the protocol server MUST return "false" if it is turned off. If the protocol server returns "false", subsequent calls to the protocol server MUST NOT include any error information in **QueryErrorDataBuffer** (section [2.2.4.26](#)). If the protocol server returns "true", subsequent calls to the protocol server MUST include error information in **QueryErrorDataBuffer**.

### 3.1.4.13.3 Complex Types

None.

### 3.1.4.13.4 Simple Types

None.

### 3.1.4.13.5 Attributes

None.

### 3.1.4.13.6 Groups

None.

### 3.1.4.13.7 Attribute Groups

None.

### 3.1.4.14 RecordUIQueryDoneEvent

This operation [<68>](#) is used to inform the protocol server about the search query latency of the search results page. The protocol client MUST collect the latency information for all search queries executed in each time period determined by the protocol server and send it in a single message to the protocol server.

The following is the WSDL port type specification of the **RecordUIQueryDoneEvent** WSDL operation.

```
<wsdl:operation name="RecordUIQueryDoneEvent" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEvent"
    message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEventResponse"
    message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEventSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordUIQueryDoneEvent\_InputMessage** request message, as specified in section [3.1.4.14.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_RecordUIQueryDoneEvent\_OutputMessage** response message, as specified in section [3.1.4.14.1.2](#), as follows:

- On successful processing the search query latency of the results page, the protocol server returns whether verbose query monitoring is turned on for the search application or not.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

#### 3.1.4.14.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_RecordUIQueryDoneEvent_InputMessage</b>  | The request WSDL message for the <b>RecordUIQueryDoneEvent</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordUIQueryDoneEvent_OutputMessage</b> | The response WSDL message for the <b>RecordUIQueryDoneEvent</b> WSDL operation. |

##### 3.1.4.14.1.1 ISearchQueryServiceApplication\_RecordUIQueryDoneEvent\_InputMessage

The request WSDL message for the **RecordUIQueryDoneEvent** WSDL operation.



The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEvent
```

The SOAP body contains the **RecordUIQueryDoneEvent** element.

### 3.1.4.14.1.2 ISearchQueryServiceApplication\_RecordUIQueryDoneEvent\_OutputMessage

The response WSDL message for the **RecordUIQueryDoneEvent** WSDL operation.

The SOAP body contains the **RecordUIQueryDoneEventResponse** element.

### 3.1.4.14.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                               | Description   |
|---------------------------------------|---|
| <b>RecordUIQueryDoneEvent</b>         | The input data for the <b>RecordUIQueryDoneEvent</b> WSDL operation.  |
| <b>RecordUIQueryDoneEventResponse</b> | The result data for the <b>RecordUIQueryDoneEvent</b> WSDL operation. |

#### 3.1.4.14.2.1 RecordUIQueryDoneEvent

The **RecordUIQueryDoneEvent** element specifies the input data for the **RecordUIQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordUIQueryDoneEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:UIQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the search query latency of the search results page. It MUST contain aggregated latency information. When verbose query monitoring is turned on for the search application, it MUST also contain verbose latency information for every single search query.

#### 3.1.4.14.2.2 RecordUIQueryDoneEventResponse

The **RecordUIQueryDoneEventResponse** element specifies the result data for the **RecordUIQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordUIQueryDoneEventResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordUIQueryDoneEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordUIQueryDoneEventResult:** Specifies whether verbose query monitoring is turned on for search application. The protocol server MUST return "true" if it is turned on; the protocol MUST return "false" if it is turned off. If "true" was returned, in the subsequent call the protocol client MUST include both aggregated and verbose query latency information in the **buffer** element; if "false" is returned, in the subsequent call the protocol client MUST only include aggregated query latency information in the **buffer** element.

#### 3.1.4.14.3 Complex Types

None.

#### 3.1.4.14.4 Simple Types

None.

#### 3.1.4.14.5 Attributes

None.

#### 3.1.4.14.6 Groups

None.

#### 3.1.4.14.7 Attribute Groups

None.

### 3.1.4.15 RecordWebPartQueryDoneEvent

This operation<69> is used by the protocol client to inform the protocol server about the search query latency of the Web Parts on the search results page. The protocol client MUST collect the latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server.

The following is the WSDL port type specification of the **RecordWebPartQueryDoneEvent** WSDL operation.

```
<wsdl:operation name="RecordWebPartQueryDoneEvent"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEvent"
    message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventRes
    ponse" message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventSea
    rchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_SearchServiceApplicat
    ionFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordWebPartQueryDoneEvent\_InputMessage** request message, as specified in section [3.1.4.15.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_RecordWebPartQueryDoneEvent\_OutputMessage** response message, as specified in section [3.1.4.15.1.2](#), as follows:

- On successfully processing the search query latency of the Web Parts, the protocol server returns a message that indicates whether verbose query monitoring is turned on for the search service application or not.
- On error, the protocol server MUST return a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.15.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage</b>  | The request WSDL message for the <b>RecordWebPartQueryDoneEvent</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage</b> | The response WSDL message for the <b>RecordWebPartQueryDoneEvent</b> WSDL operation. |

#### 3.1.4.15.1.1 ISearchQueryServiceApplication\_RecordWebPartQueryDoneEvent\_InputMessage

The request WSDL message for the **RecordWebPartQueryDoneEvent** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEvent
```

The SOAP body contains the **RecordWebPartQueryDoneEvent** element.

#### 3.1.4.15.1.2 ISearchQueryServiceApplication\_RecordWebPartQueryDoneEvent\_OutputMessage

The response WSDL message for the **RecordWebPartQueryDoneEvent** WSDL operation.

The SOAP body contains the **RecordWebPartQueryDoneEventResponse** element.

### 3.1.4.15.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                                    | Description  |
|--|--|
| <b>RecordWebPartQueryDoneEvent</b>         | The input data for the <b>RecordWebPartQueryDoneEvent</b> WSDL operation.  |
| <b>RecordWebPartQueryDoneEventResponse</b> | The result data for the <b>RecordWebPartQueryDoneEvent</b> WSDL operation. |

### 3.1.4.15.2.1 RecordWebPartQueryDoneEvent

The **RecordWebPartQueryDoneEvent** element specifies the input data for the **RecordWebPartQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordWebPartQueryDoneEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:WebPartQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the verbose search query latency of the Web Parts.

### 3.1.4.15.2.2 RecordWebPartQueryDoneEventResponse

The **RecordWebPartQueryDoneEventResponse** element specifies the result data for the **RecordWebPartQueryDoneEvent** WSDL operation.

```
<xs:element name="RecordWebPartQueryDoneEventResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordWebPartQueryDoneEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordWebPartQueryDoneEventResult:** Specifies whether verbose query monitoring is turned on for the search service application. The protocol server MUST return "true" if it is turned on; the protocol server MUST return "false" if it is turned off. If "true" is returned, in the subsequent call the protocol client MUST send the search query latency of the Web Parts to the protocol server; if "false" was returned, in the subsequent call the protocol client MUST NOT send the search query latency of the Web Parts to the protocol server.

### 3.1.4.15.3 Complex Types

None.

### 3.1.4.15.4 Simple Types

None.

### 3.1.4.15.5 Attributes

None.

### 3.1.4.15.6 Groups

None.

### 3.1.4.15.7 Attribute Groups

None.

### 3.1.4.16 RecordPageClick

This operation [<70>](#) is used by the protocol client to inform the protocol server that a user clicked a query result on a page. When a click happens, the protocol client sends the details about the click and the page impression for which the query result was clicked to the protocol server. This operation MUST NOT be used if no query logging information is returned for a query. Also this operation MUST NOT be used if a user clicks a query result for which query logging information was not returned (section [3.1.1.6](#)).

The following is the WSDL port type specification of the **RecordPageClick** WSDL operation.

```
<wsdl:operation name="RecordPageClick" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClick"
    message="tns:ISearchQueryServiceApplication_RecordPageClick_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClickResponse"
    message="tns:ISearchQueryServiceApplication_RecordPageClick_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClickSearchServiceAp
    plicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordPageClick_SearchServiceApplicationFaultFaul
    t_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_RecordPageClick\_InputMessage** (section [3.1.4.16.1.1](#)) request message and the protocol server responds with an **ISearchQueryServiceApplication\_RecordPageClick\_OutputMessage** (section [3.1.4.16.1.2](#)) response message, as follows:

- On success, the protocol server stores the details of the click.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

#### 3.1.4.16.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_RecordPageClick_InputMessage</b>  | The request WSDL message for the <b>RecordPageClick</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_RecordPageClick_OutputMessage</b> | The response WSDL message for the <b>RecordPageClick</b> WSDL operation. |

##### 3.1.4.16.1.1 ISearchQueryServiceApplication\_RecordPageClick\_InputMessage

The request WSDL message for the **RecordPageClick** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/RecordPageClick
```

The SOAP body contains the **RecordPageClick** element.

### 3.1.4.16.1.2 ISearchQueryServiceApplication\_RecordPageClick\_OutputMessage

The response WSDL message for the **RecordPageClick** WSDL operation.

The SOAP body contains the **RecordPageClickResponse** element.

### 3.1.4.16.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                        | Description  |
|--------------------------------|--|
| <b>RecordPageClick</b>         | The input data for the <b>RecordPageClick</b> WSDL operation.  |
| <b>RecordPageClickResponse</b> | The result data for the <b>RecordPageClick</b> WSDL operation. |

#### 3.1.4.16.2.1 RecordPageClick

The **RecordPageClick** element specifies the input data for the **RecordPageClick** WSDL operation.

```
<xs:element name="RecordPageClick" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
        xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
        minOccurs="0" name="click" nillable="true" type="tns2:QueryLogPageClick"/>
      <xs:element
        xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
        minOccurs="0" name="immediacy" nillable="true" type="tns2:QueryLogImmediacyInfo"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**click:** Data on the clicked query result.

**immediacy:** Additional data about the clicked query result which is logged separately from query logging and is used by query suggestions.

#### 3.1.4.16.2.2 RecordPageClickResponse

The **RecordPageClickResponse** element specifies the result data for the **RecordPageClick** WSDL operation.

```
<xs:element name="RecordPageClickResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

### 3.1.4.16.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                 | Description                                    |
|------------------------------|--|
| <b>QueryLogImmediacyInfo</b> | Additional data about the clicked query result |
| <b>QueryLogPageClick</b>     | Data about the clicked query result            |

### 3.1.4.16.3.1 QueryLogPageClick

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **QueryLogPageClick** complex type contains the details about the clicked query result and the corresponding page impression.

```
<xs:complexType name="QueryLogPageClick" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="BlockType" type="xs:unsignedByte"/>
    <xs:element minOccurs="0" name="ClickTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="ClickType" type="tns2:QueryLogClickType"/>
    <xs:element minOccurs="0" name="PageImpressionId" type="xs:long"/>
    <xs:element minOccurs="0" name="PartitionBucket" type="xs:short"/>
    <xs:element minOccurs="0" name="ResultPosition" type="xs:int"/>
    <xs:element minOccurs="0" name="SubResultIndex" type="xs:unsignedByte"/>
  </xs:sequence>
</xs:complexType>
```

**BlockType:** Type of query results in the page impression block (section [3.1.1.6](#)).

**ClickTime:** Local time when the query result was clicked.

**ClickType:** Type of clicks. If a particular query result is clicked then the click type returned by the search service for this query result **MUST** be used. If "more" link is clicked then "ClickMore" click type **MUST** be used.

**PageImpressionId:** Identifier of the page impression assigned to the search query.

**PartitionBucket:** Partition bucket assigned to the search query (section [3.1.1.6](#)).

**ResultPosition:** Position of a query result within a block. Position is assigned to each query result at the time of page impression logging and is returned for each query result (section [3.1.1.6](#)).

**SubResultIndex:** The index of the document associated with search result. **MUST** be 0 if search result is clicked or **MUST** be a 1-based index of a document returned in **deeplinks** column of a corresponding **ResultTable**. Documents in **deeplinks** column are represented as encoded URLs separated by spaces.

### 3.1.4.16.3.2 QueryLogImmediacyInfo

**Namespace:** <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query>

The **QueryLogImmediacyInfo** complex type contains additional data about the clicked query result if it is requested by the search service (section [3.1.1.6](#)).

```
<xs:complexType name="QueryLogImmediacyInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="LCID" type="xs:int"/>
    <xs:element minOccurs="0" name="QueryString" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SiteGuid" type="ser:guid"/>
    <xs:element minOccurs="0" name="SourceId" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
```

```

<xs:element minOccurs="0" name="TenantId" type="ser:guid"/>
<xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="UserName" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="WebGuid" type="ser:guid"/>
</xs:sequence>
</xs:complexType>

```

**LCID:** Language code identifier (LCID) of the search query which is returned by search service with page impression data.

**QueryString:** Specifies the query text of the search query.

**SiteGuid:** Unique identifier of the site collection.

**SourceId:** Unique identifier of the result source.

**TenantId:** Partition identifier. This value MUST NOT be NULL. For non-partitioned configuration MUST be set to '0C37852B-34D0-418E-91C6-2AC25AF4BE5B'.

**Title:** Title of the clicked query result.

**Url:** URL of the clicked query result.

**UserName:** The name of the **user** who issued the search query.

**WebGuid:** The unique identifier of the site.

### 3.1.4.16.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

| Simple type       | Description    |
|-------------------|----------------|
| QueryLogClickType | Type of clicks |

#### 3.1.4.16.4.1 QueryLogClickType

**Namespace:** http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query

The **QueryLogClickType** simple type contains information about click types which are processed by search service.

```

<xs:simpleType name="QueryLogClickType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Result"/>
    <xs:enumeration value="InsideBlock"/>
    <xs:enumeration value="More"/>
    <xs:enumeration value="DeepLink"/>
    <xs:enumeration value="Hover"/>
    <xs:enumeration value="HoverWithWAC"/>
    <xs:enumeration value="HoverSection"/>
    <xs:enumeration value="ActionFollow"/>
    <xs:enumeration value="ActionViewLibrary"/>
    <xs:enumeration value="ActionEdit"/>
    <xs:enumeration value="ActionSend"/>
    <xs:enumeration value="ActionViewDupes"/>
    <xs:enumeration value="OneDriveQueryBoxResult"/>
  </xs:restriction>
</xs:simpleType>

```



```
</xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **QueryLogClickType** simple type.

| Value                  | Meaning   |
|------------------------|---|
| Result                 | A particular search result was clicked  |
| InsideBlock            | Some result inside result block was clicked.  |
| More                   | "More" link for result block was clicked  |
| DeepLink               | A result from <b>deeplinks</b> column of a corresponding search result was clicked.                   |
| Hover                  | A particular result was hovered over and the hover panel did not have an embedded Office Online view. |
| HoverWithWAC           | A particular result was hovered over and the hover panel had an embedded Office Online view.          |
| HoverSection           | Some section heading in a hover panel was clicked.  |
| ActionFollow           | The Follow action in a hover panel was clicked.   |
| ActionViewLibrary      | The View Library action in a hover panel was clicked.   |
| ActionEdit             | The Edit action in a hover panel was clicked.   |
| ActionSend             | The Send action in a hover panel was clicked.   |
| ActionViewDupes        | The View Duplicates action in a hover panel was clicked.  |
| OneDriveQueryBoxResult | The one drive query box result panel was clicked.   |

### 3.1.4.16.5 Attributes

None.

### 3.1.4.16.6 Groups

None.

### 3.1.4.16.7 Attribute Groups

None.

### 3.1.4.17 GetQueryHealthMonitoringSettings

This operation [71](#) is used by the protocol client to obtain query health monitoring settings from the protocol server.

The following is the WSDL port type specification of the **GetQueryHealthMonitoringSettings** WSDL operation.

```
<wsdl:operation name="GetQueryHealthMonitoringSettings"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
```

```

    <wsdl:input
      wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettings"
      message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_InputMessage"
      xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:output
      wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsResponse"
      message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_OutputMessage"
      xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:fault
      wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsSearchServiceApplicationFaultFault"
      name="SearchServiceApplicationFaultFault"
      message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_SearchServiceApplicationFaultFault_FaultMessage"
      xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  </wsdl:operation>

```

The protocol client sends an **ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettings\_InputMessage** (section [3.1.4.17.1.1](#)) request message and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettings\_OutputMessage** (section [3.1.4.17.1.2](#)) response message, as follows:

- On successful processing, the protocol server returns its query health monitoring settings.
- On error, the protocol server returns a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.17.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description   |
|---|---|
| <b>ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_InputMessage</b>  | The request WSDL message for the <b>GetQueryHealthMonitoringSettings</b> WSDL operation.  |
| <b>ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_OutputMessage</b> | The response WSDL message for the <b>GetQueryHealthMonitoringSettings</b> WSDL operation. |

#### 3.1.4.17.1.1 ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettings\_InputMessage

The request WSDL message for the **GetQueryHealthMonitoringSettings** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettings
```

The SOAP body contains the **GetQueryHealthMonitoringSettings** element.

### 3.1.4.17.1.2 ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettings\_OutputMessage

The response WSDL message for the **GetQueryHealthMonitoringSettings** WSDL operation.

The SOAP body contains the **GetQueryHealthMonitoringSettingsResponse** element.

#### 3.1.4.17.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element   | Description   |
|---|---|
| <b>GetQueryHealthMonitoringSettings</b>         | The input data for the <b>GetQueryHealthMonitoringSettings</b> WSDL operation.  |
| <b>GetQueryHealthMonitoringSettingsResponse</b> | The result data for the <b>GetQueryHealthMonitoringSettings</b> WSDL operation. |

#### 3.1.4.17.2.1 GetQueryHealthMonitoringSettings

The **GetQueryHealthMonitoringSettings** element specifies the input data for the **GetQueryHealthMonitoringSettings** WSDL operation.

```
<xs:element name="GetQueryHealthMonitoringSettings"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="component" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**component:** Specifies the name of the component for which to retrieve settings. The value MUST be one of the following: "Overall", "Trend", "Flow", "SubFlow", "IndexEngine", "QueryTags", "Counters".

Overall – the component that tracks the **ElapsedTime** and the **QueryProcessingTime** of a query as specified in section [3.1.4.1.3.1](#).

Trend – the component that tracks the percentiles over the **ElapsedTime** specified in section [3.1.4.1.3.1](#).

Flow – the component that tracks the latencies of search providers.

SubFlow – the component that tracks the breakdown of latencies of each search provider.

IndexEngine – the component that tracks the latencies of the queries in the backend of the protocol server.

QueryTags – the component that tracks the statistics of execution of query rules.

Counters – the component that tracks the statistics of **query throttling**.

#### 3.1.4.17.2.2 GetQueryHealthMonitoringSettingsResponse

The **GetQueryHealthMonitoringSettingsResponse** element specifies the result data for the **GetQueryHealthMonitoringSettings** WSDL operation.

```

<xs:element name="GetQueryHealthMonitoringSettingsResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring
" minOccurs="0" name="GetQueryHealthMonitoringSettingsResult" nillable="true"
type="tns1:QueryHealthMonitoringSettings"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**GetQueryHealthMonitoringSettingsResult:** Query health monitoring settings. MUST be of type **QueryHealthMonitoringSettings** as specified in section [2.2.4.40](#).

### 3.1.4.17.3 Complex Types

None.

### 3.1.4.17.4 Simple Types

None.

### 3.1.4.17.5 Attributes

None.

### 3.1.4.17.6 Groups

None.

### 3.1.4.17.7 Attribute Groups

None.

## 3.1.4.18 GetQuerySuggestionsWithResults

This operation [<72>](#) is used to retrieve a list of query suggestions and suggested personal results to match a search query. There are two types of query suggestions: pre-query suggestions and post-query suggestions. In pre-query suggestions, the last term in the search box SHOULD be matched by prefix. In post-query suggestions, the last term SHOULD be matched exactly. The query suggestions SHOULD also include queries issued by the current user multiple times before this request. The personal results SHOULD be returned when the current user has clicked repeatedly on the same URL in the search results for any of the suggested queries. Query suggestions and personal results MUST NOT include any queries or results that were clicked by the user before **ClearUserClickHistory** was called, as specified in [\[MS-SADMWS\]](#) section 3.1.4.85

The following is the WSDL port type specification of the **GetQuerySuggestionsWithResults** WSDL operation.

```

<wsdl:operation name="GetQuerySuggestionsWithResults"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
" message="tns:ISearchQueryServiceApplication GetQuerySuggestionsWithResults InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
Response"

```

```

message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
SearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_SearchServiceAppli
cationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

### 3.1.4.18.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description   |
|--|---|
| <b>ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_InputMessage</b>  | The request WSDL message for the <b>GetQuerySuggestionsWithResults</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage</b> | The response WSDL message for the <b>GetQuerySuggestionsWithResults</b> WSDL operation. |

#### 3.1.4.18.1.1 ISearchQueryServiceApplication\_GetQuerySuggestionsWithResults\_InputMessage

The request WSDL message for the **GetQuerySuggestionsWithResults** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
```

The SOAP body contains the **GetQuerySuggestionsWithResults** element.

#### 3.1.4.18.1.2 ISearchQueryServiceApplication\_GetQuerySuggestionsWithResults\_OutputMessage

The response WSDL message for the **GetQuerySuggestionsWithResults** WSDL operation.

The SOAP body contains the **GetQuerySuggestionsWithResultsResponse** element.

### 3.1.4.18.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                                       | Description   |
|---|---|
| <b>GetQuerySuggestionsWithResults</b>         | The input data for the <b>GetQuerySuggestionsWithResults</b> WSDL operation.  |
| <b>GetQuerySuggestionsWithResultsResponse</b> | The result data for the <b>GetQuerySuggestionsWithResults</b> WSDL operation. |

### 3.1.4.18.2.1 GetQuerySuggestionsWithResults

The **GetQuerySuggestionsWithResults** element specifies the input data for the **GetQuerySuggestionsWithResults** WSDL operation.

```
<xs:element name="GetQuerySuggestionsWithResults"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="iNumberOfQuerySuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="iNumberOfResultSuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="fPreQuerySuggestions" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fHitHighlighting" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fCapitalizeFirstLetters" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fPrefixMatchAllTerms" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** The query properties of the search query. The value MUST be a **QueryProperties** data type, as specified in section [2.2.4.11](#)

**iNumberOfQuerySuggestions:** The number of query suggestions to retrieve. The value MUST be a non-negative **integer**.

**iNumberOfResultSuggestions:** The number of personal results to retrieve. The value MUST be a non-negative **integer**.

**fPreQuerySuggestions:** Specifies whether to retrieve pre-query suggestions. If "true", the protocol server SHOULD return pre-query suggestions. Otherwise, the protocol server SHOULD return post-query suggestions.

**fHitHighlighting:** Specifies whether protocol server SHOULD highlight the collection of query suggestions. If "true", the protocol server SHOULD surround the terms in the returned query suggestions that match terms in the specified query with **B** and **/B** HTML tags. Otherwise, the protocol server SHOULD NOT surround matching terms by any HTML tags

**fCapitalizeFirstLetters:** Specifies whether to capitalize first letters in each term in query suggestions. A value of "true" indicates that the protocol server SHOULD capitalize terms. Otherwise, the protocol server SHOULD NOT capitalize terms.

**fPrefixMatchAllTerms:** Specified whether returned query suggestions SHOULD be matched to the query text specified in the properties element by prefix. If "true" the query suggestions SHOULD be matched by prefix. Otherwise, the query suggestions SHOULD match tokens in the specified query entirely.

### 3.1.4.18.2.2 GetQuerySuggestionsWithResultsResponse

The **GetQuerySuggestionsWithResultsResponse** element specifies the result data for the **GetQuerySuggestionsWithResults** WSDL operation.

```
<xs:element name="GetQuerySuggestionsWithResultsResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
```

```

    <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
      minOccurs="0" name="GetQuerySuggestionsWithResultsResult" nillable="true"
      type="q2:QuerySuggestionResults"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

**GetQuerySuggestionsWithResultsResult:** Specifies a collection of query suggestions and personal results for the search query terms in the search box

### 3.1.4.18.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                           | Description  |
|--|--|
| <b>ArrayOfPersonalResultSuggestion</b> | Array of personal results  |
| <b>ArrayOfQuerySuggestionQuery</b>     | Array of suggested queries   |
| <b>PersonalResultSuggestion</b>        | Personal result  |
| <b>QuerySuggestionQuery</b>            | Suggested query  |
| <b>QuerySuggestionResults</b>          | Container for query suggestions, people name suggestions and personal result suggestions |

#### 3.1.4.18.3.1 QuerySuggestionResults

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

Container for arrays of query suggestions, people name suggestions, and personal result suggestions

```

<xs:complexType name="QuerySuggestionResults" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
      minOccurs="0" name="PeopleNames" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="PersonalResults" nillable="true"
      type="q2:ArrayOfPersonalResultSuggestion"/>
    <xs:element minOccurs="0" name="Queries" nillable="true"
      type="q2:ArrayOfQuerySuggestionQuery"/>
  </xs:sequence>
</xs:complexType>

```

**PeopleNames:** People names suggested for the user query. MUST be null if ShowPeopleNameSuggestions in **properties** input element is set to false.

**PersonalResults:** Search results for any of the suggested queries from the **Queries** element that were clicked repeatedly by the current user before the current request was made.

**Queries:** Suggested queries that match the QueryText of the **properties** input element

#### 3.1.4.18.3.2 ArrayOfPersonalResultSuggestion

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

Array of personal result suggestions.

```
<xs:complexType name="ArrayOfPersonalResultSuggestion"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PersonalResultSuggestion"
nillable="true" type="q2:PersonalResultSuggestion"/>
  </xs:sequence>
</xs:complexType>
```

**PersonalResultSuggestion:** Single personal result suggestion

### 3.1.4.18.3.3 PersonalResultSuggestion

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

Personal result suggestion.

```
<xs:complexType name="PersonalResultSuggestion" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="HighlightedTitle" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="IsBestBet" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**HighlightedTitle:** Title of the suggested result. Tokens that match the corresponding personal query MUST be surrounded by <c0></c0> tags.

**IsBestBet:** MUST be TRUE if the suggested result was a best bet for the query.

**Title:** Title of the suggested result.

**Url:** URL of the suggested result.

### 3.1.4.18.3.4 ArrayOfQuerySuggestionQuery

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

Array of suggested queries.

```
<xs:complexType name="ArrayOfQuerySuggestionQuery"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="QuerySuggestionQuery"
nillable="true" type="q2:QuerySuggestionQuery"/>
  </xs:sequence>
</xs:complexType>
```

**QuerySuggestionQuery:** Suggested query that matches the QueryText of the **properties** input element.

### 3.1.4.18.3.5 QuerySuggestionQuery

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

A single suggested query.



```

<xs:complexType name="QuerySuggestionQuery" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="IsPersonal" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

**IsPersonal:** MUST be TRUE if the current user has issued this query repeatedly before the current request was made.

**Query:** Text of the query.

#### 3.1.4.18.4 Simple Types

None.

#### 3.1.4.18.5 Attributes

None.

#### 3.1.4.18.6 Groups

None.

#### 3.1.4.18.7 Attribute Groups

None.

#### 3.1.4.19 GetQueryHealthMonitoringSettingsForComponents

This operation is used by the protocol client to obtain query health monitoring settings from the protocol server. [<73>](#)

The following is the WSDL port type specification of the **GetQueryHealthMonitoringSettingsForComponents** WSDL operation.

```

<wsdl:operation name="GetQueryHealthMonitoringSettingsForComponents"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents"
    message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponentsResponse"
    message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponentsSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents SearchServiceApplicationFaultFault FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

The protocol client sends an **ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents**

**ents\_InputMessage** (section [3.1.4.19.1.1](#)) request message and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_OutputMessage** (section [3.1.4.19.1.2](#)) response message, as follows:

- On successful processing, the protocol server returns its query health monitoring settings.
- On error, the protocol server returns a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.19.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description  |
|--|--|
| <b>ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_InputMessage</b>  | The request WSDL message for the <b>GetQueryHealthMonitoringSettingsForComponents</b> WSDL operation.  |
| <b>ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_OutputMessage</b> | The response WSDL message for the <b>GetQueryHealthMonitoringSettingsForComponents</b> WSDL operation. |

#### 3.1.4.19.1.1 ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_InputMessage

The request WSDL message for the **GetQueryHealthMonitoringSettingsForComponents** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents
```

The SOAP body contains the **GetQueryHealthMonitoringSettingsForComponents** element.

#### 3.1.4.19.1.2 ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_OutputMessage

The response WSDL message for the **GetQueryHealthMonitoringSettingsForComponents** WSDL operation.

The SOAP body contains the **GetQueryHealthMonitoringSettingsForComponentsResponse** element.

### 3.1.4.19.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element  | Description  |
|--|--|
| <b>GetQueryHealthMonitoringSettingsForComponents</b>         | The input data for the <b>GetQueryHealthMonitoringSettingsForComponents</b> WSDL operation.  |
| <b>GetQueryHealthMonitoringSettingsForComponentsResponse</b> | The result data for the <b>GetQueryHealthMonitoringSettingsForComponents</b> WSDL operation. |

### 3.1.4.19.2.1 GetQueryHealthMonitoringSettingsForComponents

The **GetQueryHealthMonitoringSettingsForComponents** element specifies the input data for the **GetQueryHealthMonitoringSettingsForComponents** WSDL operation.

```
<xs:element name="GetQueryHealthMonitoringSettingsForComponents"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="components" nillable="true" type="q3:ArrayOfstring"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**components:** Specifies a list of components for which to retrieve settings. The values MUST be one of the following: "Overall", "Trend", "Flow", "SubFlow", "IndexEngine", "QueryTags", "Counters".

Overall – the component that tracks the **ElapsedTime** and the **QueryProcessingTime** of a query as specified in section [3.1.4.1.3.1](#).

Trend – the component that tracks the percentiles over the **ElapsedTime** specified in section [3.1.4.1.3.1](#).

Flow – the component that tracks the latencies of search providers.

SubFlow – the component that tracks the breakdown of latencies of each search provider.

IndexEngine – the component that tracks the latencies of the queries in the backend of the protocol server.

QueryTags – the component that tracks the statistics of execution of query rules.

Counters – the component that tracks the statistics of query throttling

### 3.1.4.19.2.2 GetQueryHealthMonitoringSettingsForComponentsResponse

The **GetQueryHealthMonitoringSettingsForComponentsResponse** element specifies the result data for the **GetQueryHealthMonitoringSettingsForComponents** WSDL operation.

```
<xs:element name="GetQueryHealthMonitoringSettingsForComponentsResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetQueryHealthMonitoringSettingsForComponentsResult" nillable="true"
type="q3:ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z"/>
    </xs:sequence>
  </xs:complexType>
```

</xs:element>

**GetQueryHealthMonitoringSettingsForComponentsResult:** List of query health monitoring settings. MUST be of type **ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z** as specified in section [3.1.4.19.3.1](#).

### 3.1.4.19.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type   | Description   |
|--|---|
| <b>ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z</b> | List of settings that are used to configure health monitoring data collection |

#### 3.1.4.19.3.1 ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z** complex type defines a list of settings that are used to configure query health monitoring data collection into the objects defined in section [3.1.1.5](#).

```
<xs:complexType name="ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:tns1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring
" name="Value" nillable="true" type="tns1:QueryHealthMonitoringSettings"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z:** Represents the query health monitoring settings for a component.

**KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z.Key:** String value identifying the component that the query health monitoring settings in

**KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z.Value** represents.

**KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z.Value:** Query health monitoring settings for the component in **KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z.Key**. MUST be of type [QueryHealthMonitoringSettings](#) section [2.2.4.40](#).

### 3.1.4.19.4 Simple Types

None.

### 3.1.4.19.5 Attributes

None.

### 3.1.4.19.6 Groups

None.

### 3.1.4.19.7 Attribute Groups

None.

### 3.1.4.20 RecordOMQueryDone

This operation is used by the protocol client to inform the protocol server about the latency for processing the search query on the protocol server, as reported by the protocol server in the **ExecuteResult** element of the **ExecuteResponse** message, as specified in section [3.1.4.1.2.2](#). The protocol client MUST collect this latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server. [<74>](#)

The following is the WSDL port type specification of the **RecordOMQueryDone** WSDL operation.

```
<wsdl:operation name="RecordOMQueryDone" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDone"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDoneResponse"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDoneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchHealthMonitoringServiceApplication\_RecordOMQueryDone\_InputMessage** request message, as specified in section [3.1.4.20.1.1](#), and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_RecordOMQueryDone\_OutputMessage** response message, as specified in section [3.1.4.20.1.2](#), as follows:

- On successfully processing search query latency, the protocol server returns whether verbose query monitoring is turned on for the search service application or not.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

#### 3.1.4.20.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description      |
|---|------------------|
| <b>ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage</b> | The request WSDL |

| Message  | Description  |
|--|--|
| <b>ge</b>  | message for the <b>RecordOMQueryDone</b> WSDL operation.                   |
| <b>ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_OutputMessage</b> | The response WSDL message for the <b>RecordOMQueryDone</b> WSDL operation. |

### 3.1.4.20.1.1 ISearchHealthMonitoringServiceApplication\_RecordOMQueryDone\_Input Message

The request WSDL message for the **RecordOMQueryDone** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDone
```

The SOAP body contains the **RecordOMQueryDone** element.

### 3.1.4.20.1.2 ISearchHealthMonitoringServiceApplication\_RecordOMQueryDone\_OutputMessage

The response WSDL message for the **RecordOMQueryDone** WSDL operation.

The SOAP body contains the **RecordOMQueryDoneResponse** element.

### 3.1.4.20.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                          | Description  |
|----------------------------------|--|
| <b>RecordOMQueryDone</b>         | The input data for the <b>RecordOMQueryDone</b> WSDL operation.  |
| <b>RecordOMQueryDoneResponse</b> | The result data for the <b>RecordOMQueryDone</b> WSDL operation. |

### 3.1.4.20.2.1 RecordOMQueryDone

The **RecordOMQueryDone** element specifies the input data for the **RecordOMQueryDone** WSDL operation.

```
<xs:element name="RecordOMQueryDone" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:OMQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the latency for processing the query on the protocol server. It contains aggregated latency information as well as verbose latency information of every single search query.

### 3.1.4.20.2.2 RecordOMQueryDoneResponse

The **RecordOMQueryDoneResponse** element specifies the result data for the **RecordOMQueryDone** WSDL operation.

```
<xs:element name="RecordOMQueryDoneResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordOMQueryDoneResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordOMQueryDoneResult:** Specifies whether the verbose query monitoring is turned on for the search service application. The protocol server **MUST** return "true" if it is turned on; the protocol server **MUST** return "false" if it is turned off. If "true" is returned, in the subsequent call the protocol client **MUST** include verbose and aggregated query latency information in the buffer element; if "false" is returned, in the subsequent call the protocol client **MUST** only include aggregated query latency information in the buffer element.

### 3.1.4.20.3 Complex Types

None.

### 3.1.4.20.4 Simple Types

None.

### 3.1.4.20.5 Attributes

None.

### 3.1.4.20.6 Groups

None.

### 3.1.4.20.7 Attribute Groups

None.

### 3.1.4.21 RecordQueryError

This operation is used by the protocol client to inform the protocol server of any errors that occurred during the processing of search queries in the protocol client. The protocol client **MUST** collect the error information for all queries executed within each time period determined by the protocol server and send them in a single message. [<75>](#)

The following is the WSDL port type specification of the **RecordQueryError** WSDL operation.

```
<wsdl:operation name="RecordQueryError" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryError"
    message="tns:ISearchHealthMonitoringServiceApplication RecordQueryError InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
```

```

<wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorRes
ponse" message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
<wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorSea
rchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_SearchServiceApplicat
ionFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

The protocol client sends an **ISearchHealthMonitoringServiceApplication\_RecordQueryError\_InputMessage** request message, as specified in section [3.1.4.21.1.1](#), and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_RecordQueryError\_OutputMessage** response message, as specified in section [3.1.4.21.1.2](#), as follows:

- On successfully processing the error information, the protocol server returns whether verbose query monitoring is turned on for the search application or not.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.21.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description   |
|---|---|
| <b>ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage</b>  | The request WSDL message for the <b>RecordQueryError</b> WSDL operation.  |
| <b>ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage</b> | The response WSDL message for the <b>RecordQueryError</b> WSDL operation. |

#### 3.1.4.21.1.1 ISearchHealthMonitoringServiceApplication\_RecordQueryError\_InputMessage

The request WSDL message for the **RecordQueryError** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryError
```

The SOAP body contains the **RecordQueryError** element.

#### 3.1.4.21.1.2 ISearchHealthMonitoringServiceApplication\_RecordQueryError\_OutputMessage

The response WSDL message for the **RecordQueryError** WSDL operation.



The SOAP body contains the **RecordQueryErrorResponse** element.

### 3.1.4.21.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                         | Description   |
|---------------------------------|---|
| <b>RecordQueryError</b>         | The input data for the <b>RecordQueryError</b> WSDL operation.  |
| <b>RecordQueryErrorResponse</b> | The result data for the <b>RecordQueryError</b> WSDL operation. |

#### 3.1.4.21.2.1 RecordQueryError

The **RecordQueryError** element specifies the input data for the **RecordQueryError** WSDL operation.

```
<xs:element name="RecordQueryError" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:QueryErrorDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies a list of information for errors that occurred during the processing of all search queries executed within a time period determined by the protocol server, in the protocol client. Each entry in the list corresponds to an error.

#### 3.1.4.21.2.2 RecordQueryErrorResponse

The **RecordQueryErrorResponse** element specifies the result data for the **RecordQueryError** WSDL operation.

```
<xs:element name="RecordQueryErrorResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordQueryErrorResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordQueryErrorResult:** Specifies whether the verbose query monitoring for the search application is turned on. The protocol server MUST return "true" if it is turned on; the protocol server MUST return "false" if it is turned off. If the protocol server returns "false", subsequent calls to the protocol server MUST NOT include any error information in **QueryErrorDataBuffer** (section [2.2.4.26](#)). If the protocol server returns "true", subsequent calls to the protocol server MUST include error information in **QueryErrorDataBuffer**.

### 3.1.4.21.3 Complex Types

None.

### 3.1.4.21.4 Simple Types

None.

### 3.1.4.21.5 Attributes

None.

### 3.1.4.21.6 Groups

None.

### 3.1.4.21.7 Attribute Groups

None.

## 3.1.4.22 RecordUIQueryDone

This operation is used to inform the protocol server about the search query latency of the search results page. The protocol client **MUST** collect the latency information for all search queries executed in each time period determined by the protocol server and send it in a single message to the protocol server. [<76>](#)

The following is the WSDL port type specification of the **RecordUIQueryDone** WSDL operation.

```
<wsdl:operation name="RecordUIQueryDone" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDone"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDoneResponse"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDoneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_SearchServiceApplicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an

**ISearchHealthMonitoringServiceApplication\_RecordUIQueryDone\_InputMessage** request message, as specified in section [3.1.4.14.1.1](#), and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_RecordUIQueryDone\_OutputMessage** response message, as specified in section [3.1.4.14.1.2](#), as follows:

- On successfully processing the search query latency of the results page, the protocol server returns whether verbose query monitoring is turned on for the search application or not.
- On error, the protocol server **MUST** send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.22.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description                      |
|---|----------------------------------|
| <b>ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage</b> | The request WSDL message for the |

| Message  | Description  |
|--|--|
|  | <b>RecordUIQueryDone</b> WSDL operation.                                   |
| <b>ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_OutputMessage</b> | The response WSDL message for the <b>RecordUIQueryDone</b> WSDL operation. |

### 3.1.4.22.1.1 ISearchHealthMonitoringServiceApplication\_RecordUIQueryDone\_Input Message

The request WSDL message for the **RecordUIQueryDone** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDone
```

The SOAP body contains the **RecordUIQueryDone** element.

### 3.1.4.22.1.2 ISearchHealthMonitoringServiceApplication\_RecordUIQueryDone\_OutputMessage

The response WSDL message for the **RecordUIQueryDone** WSDL operation.

The SOAP body contains the **RecordUIQueryDoneResponse** element.

### 3.1.4.22.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                          | Description  |
|----------------------------------|--|
| <b>RecordUIQueryDone</b>         | The input data for the <b>RecordUIQueryDone</b> WSDL operation.  |
| <b>RecordUIQueryDoneResponse</b> | The result data for the <b>RecordUIQueryDone</b> WSDL operation. |

#### 3.1.4.22.2.1 RecordUIQueryDone

The **RecordUIQueryDone** element specifies the input data for the **RecordUIQueryDone** WSDL operation.

```
<xs:element name="RecordUIQueryDone" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:UIQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the search query latency of the search results page. It MUST contain aggregated latency information. When verbose query monitoring is turned on for the search application, it MUST also contain verbose latency information for every single search query.

#### 3.1.4.22.2 RecordUIQueryDoneResponse

The **RecordUIQueryDoneResponse** element specifies the result data for the **RecordUIQueryDone** WSDL operation.

```
<xs:element name="RecordUIQueryDoneResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordUIQueryDoneResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordUIQueryDoneResult:** Specifies whether verbose query monitoring is turned on for search application. The protocol server MUST return "true" if it is turned on; the protocol MUST return "false" if it is turned off. If "true" was returned, in the subsequent call the protocol client MUST include both aggregated and verbose query latency information in the **buffer** element; if "false" is returned, in the subsequent call the protocol client MUST only include aggregated query latency information in the **buffer** element.

#### 3.1.4.22.3 Complex Types

None.

#### 3.1.4.22.4 Simple Types

None.

#### 3.1.4.22.5 Attributes

None.

#### 3.1.4.22.6 Groups

None.

#### 3.1.4.22.7 Attribute Groups

None.

#### 3.1.4.23 RecordWebPartQueryDone

This operation is used by the protocol client to inform the protocol server about the search query latency of the Web Parts on the search results page. The protocol client MUST collect the latency information for search queries executed within each time period determined by the protocol server and send it in a single message to the protocol server. [<77>](#)

The following is the WSDL port type specification of the **RecordWebPartQueryDone** WSDL operation.

```
<wsdl:operation name="RecordWebPartQueryDone" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryD
```

```

one"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryD
oneResponse"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryD
oneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_SearchServiceAp
plicationFaultFault_FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>

```

The protocol client sends an **ISearchHealthMonitoringServiceApplication\_RecordWebPartQueryDone\_InputMessage** request message, as specified in section [3.1.4.15.1.1](#), and the protocol server responds with an **ISearchHealthMonitoringServiceApplication\_RecordWebPartQueryDone\_OutputMessage** response message, as specified in section [3.1.4.15.1.2](#), as follows:

- On successfully processing the search query latency of the Web Parts, the protocol server returns a message that indicates whether verbose query monitoring is turned on for the search service application or not.
- On error, the protocol server MUST return a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.23.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message  | Description  |
|--|--|
| <b>ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_Inp<br/>utMessage</b>  | The request WSDL message for the <b>RecordWebPartQueryD<br/>one</b> WSDL operation.  |
| <b>ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_Out<br/>putMessage</b> | The response WSDL message for the <b>RecordWebPartQueryD<br/>one</b> WSDL operation. |

#### 3.1.4.23.1.1 ISearchHealthMonitoringServiceApplication\_RecordWebPartQueryDone\_ InputMessage

The request WSDL message for the **RecordWebPartQueryDone** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryDone
```

The SOAP body contains the **RecordWebPartQueryDone** element.

### 3.1.4.23.1.2 ISearchHealthMonitoringServiceApplication\_RecordWebPartQueryDone\_OutputMessage

The response WSDL message for the **RecordWebPartQueryDone** WSDL operation.

The SOAP body contains the **RecordWebPartQueryDoneResponse** element.

### 3.1.4.23.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                               | Description   |
|---------------------------------------|---|
| <b>RecordWebPartQueryDone</b>         | The input data for the <b>RecordWebPartQueryDone</b> WSDL operation.  |
| <b>RecordWebPartQueryDoneResponse</b> | The result data for the <b>RecordWebPartQueryDone</b> WSDL operation. |

#### 3.1.4.23.2.1 RecordWebPartQueryDone

The **RecordWebPartQueryDone** element specifies the input data for the **RecordWebPartQueryDone** WSDL operation.

```
<xs:element name="RecordWebPartQueryDone" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="buffer" nillable="true" type="q2:WebPartQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**buffer:** Specifies the verbose search query latency of the Web Parts.

#### 3.1.4.23.2.2 RecordWebPartQueryDoneResponse

The **RecordWebPartQueryDoneResponse** element specifies the result data for the **RecordWebPartQueryDone** WSDL operation.

```
<xs:element name="RecordWebPartQueryDoneResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordWebPartQueryDoneResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**RecordWebPartQueryDoneResult:** Specifies whether verbose query monitoring is turned on for the search service application. The protocol server **MUST** return "true" if it is turned on; the protocol server **MUST** return "false" if it is turned off. If "true" is returned, in the subsequent call the protocol client **MUST** send the search query latency of the Web Parts to the protocol server; if "false" was returned, in the subsequent call the protocol client **MUST NOT** send the search query latency of the Web Parts to the protocol server.

### 3.1.4.23.3 Complex Types

None.

### 3.1.4.23.4 Simple Types

None.

### 3.1.4.23.5 Attributes

None.

### 3.1.4.23.6 Groups

None.

### 3.1.4.23.7 Attribute Groups

None.

## 3.1.4.24 GetImsEndpointAddresses

The **GetImsEndpointAddresses** operation is used by the protocol client to obtain a list web service URIs from the protocol server. Each of the URIs in the list serves search.

The following is the WSDL port type specification of the **GetImsEndpointAddresses** WSDL operation.

```
<wsdl:operation name="GetImsEndpointAddresses" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddresses"
    message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddressesResponse"
    message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddressesSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an

**ISearchQueryServiceApplication\_GetImsEndpointAddresses\_InputMessage** input request message, as specified in section [3.1.4.24.1.1](#), and the server responds with an **ISearchQueryServiceApplication\_GetImsEndpointAddresses\_OutputMessage**, as specified in section [3.1.4.24.1.2](#), as follows:

- On successful processing the protocol server MUST return a list of web service URIs that can serve search.
- On error, the protocol server MUST send a **FaultException<ExceptionDetail>** message to the protocol client.

### 3.1.4.24.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetImsEndpointAddresses_InputMessage</b>  | The request WSDL message for the <b>GetImsEndpointAddresses</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetImsEndpointAddresses_OutputMessage</b> | The response WSDL message for the <b>GetImsEndpointAddresses</b> WSDL operation. |

### 3.1.4.24.1.1 ISearchQueryServiceApplication\_GetImsEndpointAddresses\_InputMessage

The request WSDL message for the **GetImsEndpointAddresses** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddresses
```

The SOAP body contains the **GetImsEndpointAddresses** element.

### 3.1.4.24.1.2 ISearchQueryServiceApplication\_GetImsEndpointAddresses\_OutputMessage

The response WSDL message for the **GetImsEndpointAddresses** WSDL operation.

The SOAP body contains the **GetImsEndpointAddressesResponse** element.

### 3.1.4.24.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                                | Description  |
|--|--|
| <b>GetImsEndpointAddresses</b>         | The input data for the <b>GetImsEndpointAddresses</b> WSDL operation.  |
| <b>GetImsEndpointAddressesResponse</b> | The result data for the <b>GetImsEndpointAddresses</b> WSDL operation. |

#### 3.1.4.24.2.1 GetImsEndpointAddresses

The **GetImsEndpointAddresses** element specifies the input data for the **GetImsEndpointAddresses** WSDL operation.

```
<xs:element name="GetImsEndpointAddresses" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

#### 3.1.4.24.2.2 GetImsEndpointAddressesResponse



The **GetImsEndpointAddressesResponse** element specifies the result data for the **GetImsEndpointAddresses** WSDL operation.

```
<xs:element name="GetImsEndpointAddressesResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="GetImsEndpointAddressesResult" nillable="true" type="q3:ArrayOfanyURI"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetImsEndpointAddressesResult:** Specifies a collection of URI that can serve search.

### 3.1.4.24.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type         | Description                                      |
|----------------------|--|
| <b>ArrayOfanyURI</b> | List of URIs. Each URI in the list serve search. |

#### 3.1.4.24.3.1 ArrayOfanyURI

**Namespace:** <http://schemas.microsoft.com/2003/10/Serialization/Arrays>

The **ArrayOfanyURI** is a list of URIs that the protocol client can connect to. The URIs in the list is a web service endpoint that serve search.

```
<xs:complexType name="ArrayOfanyURI" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="anyURI" nillable="true"
      type="xs:anyURI"/>
  </xs:sequence>
</xs:complexType>
```

**anyURI:** A URI that serve search.

#### 3.1.4.24.4 Simple Types

None.

#### 3.1.4.24.5 Attributes

None.

#### 3.1.4.24.6 Groups

None.

#### 3.1.4.24.7 Attribute Groups

None.

### 3.1.4.25 GetQueryCompletions

The **GetQueryCompletions** operation is used by the protocol client to obtain the query completions for a query from the protocol server.

The following is the WSDL port type specification of the **GetQueryCompletions** WSDL operation.

```
<wsdl:operation name="GetQueryCompletions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletions"
    message="tns:ISearchQueryServiceApplication_GetQueryCompletions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletionsResponse"
    message="tns:ISearchQueryServiceApplication_GetQueryCompletions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletionsSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetQueryCompletions_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **ISearchQueryServiceApplication\_GetQueryCompletions\_InputMessage** request message as specified in section [3.1.4.25.1.1](#), and the protocol server responds with an **ISearchQueryServiceApplication\_GetQueryCompletions\_OutputMessage** response message as specified in section [3.1.4.25.1.2](#), as follows:

- On successful processing, the protocol server MUST return the complex element **QueryAutoCompletionResults** as specified in section [3.1.4.25.3.5](#).
- On error, the protocol server MUST return a **FaultException<ExceptionDetail>** message to the protocol client.

#### 3.1.4.25.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

| Message   | Description  |
|---|--|
| <b>ISearchQueryServiceApplication_GetQueryCompletions_InputMessage</b>  | The request WSDL message for the <b>GetQueryCompletions</b> WSDL operation.  |
| <b>ISearchQueryServiceApplication_GetQueryCompletions_OutputMessage</b> | The response WSDL message for the <b>GetQueryCompletions</b> WSDL operation. |

##### 3.1.4.25.1.1 ISearchQueryServiceApplication\_GetQueryCompletions\_InputMessage

The request WSDL message for the **GetQueryCompletions** WSDL operation.

The SOAP action value is:

The SOAP body contains the **GetQueryCompletions** element.

### 3.1.4.25.1.2 ISearchQueryServiceApplication\_GetQueryCompletions\_OutputMessage

The response WSDL message for the **GetQueryCompletions** WSDL operation.

The SOAP body contains the **GetQueryCompletionsResponse** element.

### 3.1.4.25.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

| Element                            | Description  |
|------------------------------------|--|
| <b>GetQueryCompletions</b>         | The input data for the <b>GetQueryCompletions</b> WSDL operation.  |
| <b>GetQueryCompletionsResponse</b> | The result data for the <b>GetQueryCompletions</b> WSDL operation. |

#### 3.1.4.25.2.1 GetQueryCompletions

The **GetQueryCompletions** element specifies the input data for the **GetQueryCompletions** WSDL operation.

```
<xs:element name="GetQueryCompletions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="numberOfCompletions" type="xs:int"/>
      <xs:element minOccurs="0" name="sources" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="cursorPosition" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**properties:** Specifies the properties for the search query. This element MAY be empty, in which case the server MUST return 0 completions. This element MUST conform to the schema of the **KeywordQueryProperties** complex type, as specified in section [3.1.4.7.3.1](#).

**numberOfCompletions:** Specifies the maximum number query completion results in **GetQueryCompletionResponse** response message.

**sources:** Specifies the sources that the protocol server SHOULD use when computing the result. If NULL, the protocol server SHOULD use all of the sources for autocompletions. The value SHOULD be a comma separated set of sources for autocompletions. The set of available sources the server SHOULD support is "Tag", which MAY be compiled from the set of #tags applied to documents. If the sources value is not a comma separated set of sources, or any of the source does not match "Tag", the server SHOULD return completions from all available sources.

**cursorPosition:** Specifies the cursor position in the query text when this operation is sent to the protocol server.

#### 3.1.4.25.2.2 GetQueryCompletionsResponse

The **GetQueryCompletionsResponse** element specifies the result data for the **GetQueryCompletions** WSDL operation.

```
<xs:element name="GetQueryCompletionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="GetQueryCompletionsResult" nillable="true"
        type="q2:QueryAutoCompletionResults"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetQueryCompletionsResult:** Specifies a collection of matches.

### 3.1.4.25.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

| Complex type                           | Description   |
|--|---|
| <b>ArrayOfQueryAutoCompletion</b>      | List of <b>QueryAutoCompletion</b> .                                    |
| <b>ArrayOfQueryAutoCompletionMatch</b> | List of <b>QueryAutoCompletionMatch</b> .                               |
| <b>QueryAutoCompletion</b>             | The matches for the <b>Query</b> in one <b>Source</b> .                 |
| <b>QueryAutoCompletionMatch</b>        | One match for the <b>Query</b> in one <b>Source</b> .                   |
| <b>QueryAutoCompletionResults</b>      | The result of the operation <b>GetQueryCompletions WSDL operation</b> . |

#### 3.1.4.25.3.1 ArrayOfQueryAutoCompletion

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

**ArrayOfQueryAutoCompletion** complex type defines a list of **QueryAutoCompletion**. There is one element in the list per source in the request.

```
<xs:complexType name="ArrayOfQueryAutoCompletion"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryAutoCompletion"
      nillable="true" type="q2:QueryAutoCompletion"/>
  </xs:sequence>
</xs:complexType>
```

**QueryAutoCompletion:** The element per source that contains the list of matches for the query in the source.

#### 3.1.4.25.3.2 ArrayOfQueryAutoCompletionMatch

**Namespace:** http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08

**ArrayOfQueryAutoCompletionMatch** complex type defines a list of **QueryAutoCompletionMatch**. There is one element in the list per match of the **Query** in the **Source**

```

<xs:complexType name="ArrayOfQueryAutoCompletionMatch"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryAutoCompletionMatch"
nillable="true" type="q2:QueryAutoCompletionMatch"/>
  </xs:sequence>
</xs:complexType>

```

**QueryAutoCompletionMatch:** The element that represents the matched item used to generate the auto-completion.

### 3.1.4.25.3.3 QueryAutoCompletion

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The **QueryAutoCompletion** complex type represents the matches for the **Query** in one **Source**.

```

<xs:complexType name="QueryAutoCompletion" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Matches" nillable="true"
type="q2:ArrayOfQueryAutoCompletionMatch"/>
    <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Score" type="xs:double"/>
    <xs:element minOccurs="0" name="Source" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

**Matches:** This element represents the list of **QueryAutoCompletionMatch** for this source.

**Query:** This element represents the query text for the matched results.

**Score:** This element represents the score for the **Query** in the **Source** over all matches in the **Source**.

**Source:** This element represents the **Source** used when retrieving the matched results.

### 3.1.4.25.3.4 QueryAutoCompletionMatch

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The complex type **QueryAutoCompletionMatch** represents one match in the **Source** for the **Query**.

```

<xs:complexType name="QueryAutoCompletionMatch" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Alternation" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Key" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Length" type="xs:long"/>
    <xs:element minOccurs="0" name="MatchType" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Score" type="xs:double"/>
    <xs:element minOccurs="0" name="SourceName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Start" type="xs:long"/>
    <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

**Alternation:** This element indicates whether the suggested **Query** is an alternation of the actual match in the **Source**

**Key:** This element represents the matched **Key** in the **SourceName**.

**Length:** This element represents the length of the match between the **Query** and the **Key**.

**MatchType:** This element represent the type of the match.

**Score:** This element represents the score of the match.

**SourceName:** This element represents the name of the **Source** that generated the match.

**Start:** This element represents the start position of the match.

**Value:** This element represents the **Value** of the matched **Key**.

### 3.1.4.25.3.5 QueryAutoCompletionResults

**Namespace:** <http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08>

The complex type **QueryAutoCompletionResults** represent the result of the operation **GetQueryCompletions** as specified in section [3.1.4.25.2.1](#).

```
<xs:complexType name="QueryAutoCompletionResults"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="CoreExecutionTimeMs" type="xs:long"/>
    <xs:element minOccurs="0" name="CorrelationId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Queries" nillable="true"
  type="q2:ArrayOfQueryAutoCompletion"/>
  </xs:sequence>
</xs:complexType>
```

**CoreExecutionTimeMs:** This element represent the time spent in the protocol server retrieving the result.

**CorrelationId:** This element represent the correlation identification of the request.

**Queries:** This complex type represent the list of **QueryAutoCompletion** as specified in section [3.1.4.25.3.4](#) for the **Query**.

### 3.1.4.25.4 Simple Types

None.

### 3.1.4.25.5 Attributes

None.

### 3.1.4.25.6 Groups

None.

### 3.1.4.25.7 Attribute Groups

None.

## 3.1.5 Timer Events

None.

### **3.1.6 Other Local Events**

None.

## 4 Protocol Examples

### 4.1 Issue a Search Query

To issue the query "Sample Search Terms", the protocol client sends a message such as this one:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/Execute
    </a:Action>
    <a:MessageID>
      urn:uuid:e72b47ca-9794-46f9-8bd3-b0a84c16e4fe
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        2da8038b-27f4-422a-bd8f-e20801fb8980
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId>00000000-0000-0000-0000-000000000000</siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/dc46e19968e743728529b721db8c8c60/SearchService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <Execute xmlns="http://tempuri.org/">
      <properties
        i:type="b:KeywordQueryProperties"
        xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:AlertInfo>
          <b:ChangeType>Discovered</b:ChangeType>
          <b:LastUpdateTime>0001-01-01T00:00:00</b:LastUpdateTime>
        </b:AlertInfo>
        <b:AuthenticationType>NtAuthenticatedQuery</b:AuthenticationType>
        <b:CorrelationId>2da8038b-27f4-422a-bd8f-e20801fb8980</b:CorrelationId>
        <b:EnableNicknames>true</b:EnableNicknames>
        <b:EnablePhonetic>true</b:EnablePhonetic>
        <b:EnableStemming>>false</b:EnableStemming>
        <b:HighlightedSentenceCount>2</b:HighlightedSentenceCount>
        <b:Hint>None</b:Hint>
        <b:HitHighlightedProperties
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
          <c:anyType i:type="d:string"
            xmlns:d="http://www.w3.org/2001/XMLSchema">PreferredName</c:anyType>
          <c:anyType i:type="d:string"
            xmlns:d="http://www.w3.org/2001/XMLSchema">YomiDisplayName</c:anyType>
          <c:anyType i:type="d:string"
            xmlns:d="http://www.w3.org/2001/XMLSchema">JobTitle</c:anyType>
          <c:anyType i:type="d:string"
            xmlns:d="http://www.w3.org/2001/XMLSchema">Department</c:anyType>
          <c:anyType i:type="d:string"
            xmlns:d="http://www.w3.org/2001/XMLSchema">WorkPhone</c:anyType>
```



```

    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OfficeNumber</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">WorkEmail</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Responsibility</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Skills</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">SipAddress</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Schools</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">PastProjects</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Interests</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgNames</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgParentNames</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Memberships</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">AboutMe</c:anyType>
    <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">BaseOfficeLocation</c:anyType>
</b:HitHighlightedProperties>
<b:IgnoreAllNoiseQuery>true</b:IgnoreAllNoiseQuery>
<b:KeywordInclusion>AllKeywords</b:KeywordInclusion>
<b:Locale>1033</b:Locale>
<b:MergeWithDefaultPartition>false</b:MergeWithDefaultPartition>
<b:PagingCookie
i:nil="true"

xmlns:c="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"></b:PagingCookie>
    <b:PartitionId>00000000-0000-0000-0000-000000000000</b:PartitionId>
    <b:PersonalizationData>
    <b:UserId>8cd810f6-fc28-425c-b6f4-aac2e170699b</b:UserId>
    </b:PersonalizationData>
    <b:QueryText>Sample Search Terms</b:QueryText>
    <b:RankingModelId>D9BFB1A1-9036-4627-83B2-BBD9983AC8A1</b:RankingModelId>
    <b:ResultTypes>RelevantResults</b:ResultTypes>
    <b:ResultsProvider>SharepointSearch</b:ResultsProvider>
    <b:RowLimit>3</b:RowLimit>
    <b:RowsPerPage>3</b:RowsPerPage>
    <b:Sid></b:Sid>
    <b:SiteId>496f265c-4758-4ac5-b14d-d02dfa131a64</b:SiteId>
    <b:StartRow>0</b:StartRow>
    <b:SummaryLength>200</b:SummaryLength>
    <b:TimeZoneID>13</b:TimeZoneID>
    <b:Timeout>9000</b:Timeout>
    <b>TotalRowsExactMinimum>100</b>TotalRowsExactMinimum>
    <b:TrimDuplicates>true</b:TrimDuplicates>
    <b:UrlZone>Default</b:UrlZone>
    <b:CustomRefinementIntervals
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
    </b:CustomRefinementIntervals>
    <b:EnableFQL>false</b:EnableFQL>
    <b:EnableSpellcheck>Suggest</b:EnableSpellcheck>
    <b:EnableUrlSmashing>true</b:EnableUrlSmashing>
    <b:HiddenConstraints>scope:"People"</b:HiddenConstraints>
    <b:MaxShallowRefinementHits>100</b:MaxShallowRefinementHits>
    <b:MaxSummaryLength>185</b:MaxSummaryLength>
    <b:MaxUrlLength>2048</b:MaxUrlLength>
    <b:RefinementFilters
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
    </b:RefinementFilters>
    <b:Refiners></b:Refiners>

```

```

    <b:ResubmitFlags>NoResubmit</b:ResubmitFlags>
    <b>SelectProperties
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">WorkId</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">UserProfile_GUID</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">AccountName</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">PreferredName</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">YomiDisplayName</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">JobTitle</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Department</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">WorkPhone</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OfficeNumber</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">PictureURL</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">HierarchyUrl</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">WorkEmail</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Path</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">HitHighlightedSummary</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">HitHighlightedProperties</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Responsibility</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Skills</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">SipAddress</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Schools</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">PastProjects</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Interests</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgNames</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgUrls</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgParentNames</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">OrgParentUrls</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">Memberships</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">AboutMe</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">BaseOfficeLocation</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">ServiceApplicationID</c:anyType>
  <c:anyType i:type="d:string"
xmlns:d="http://www.w3.org/2001/XMLSchema">SocialDistance</c:anyType>
</b>SelectProperties>
<b:SimilarTo></b:SimilarTo>
<b:SimilarType>None</b:SimilarType>
<b:SortList>
  <b:m_elements>
    <b:Sort>

```

```

        <b:direction>Descending</b:direction>
        <b:strProperty>Rank</b:strProperty>
      </b:Sort>
    </b:m_elements>
  </b:SortList>
  <b:SortSimilar>true</b:SortSimilar>
  <b:TrimDuplicatesIncludeId>0</b:TrimDuplicatesIncludeId>
  <b:TrimDuplicatesKeepCount>1</b:TrimDuplicatesKeepCount>
  <b:TrimDuplicatesOnProperty></b:TrimDuplicatesOnProperty>
  <b:UserContextData i:nil="true"></b:UserContextData>
  <b:UserContextGroupID i:nil="true"></b:UserContextGroupID>
</properties>
</Execute>
</s:Body>
</s:Envelope>

```

The protocol server then responds with the following:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/ExecuteResponse
    </a:Action>
    <ActivityId
      CorrelationId="b0fc7d5c-0bd2-4724-8aef-d40eb251c154"
      xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">
      b4751329-28ff-489f-81c7-7c0e5f3dad7a
    </ActivityId>
    <a:RelatesTo
      urn:uuid:e72b47ca-9794-46f9-8bd3-b0a84c16e4fe
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <ExecuteResponse xmlns="http://tempuri.org/">
      <ExecuteResult
        xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:DatabaseTime>16</b:DatabaseTime>
        <b:Definition i:nil="true"></b:Definition>
        <b:ElapsedTime>65</b:ElapsedTime>
        <b:IgnoredNoiseWords
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
        </b:IgnoredNoiseWords>
        <b:KeywordInformation
          <b:Definition></b:Definition>
          <b:Keyword></b:Keyword>
        </b:KeywordInformation>
        <b:QueryMachine>.\ff04f7fc-650a-4317-8806-49d4a9b49d43-query-0</b:QueryMachine>
        <b:QueryModification i:nil="true"></b:QueryModification>
        <b:QueryProcessingTime>65</b:QueryProcessingTime>
        <b:QueryTerms xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
          <c:string>Sample Search Terms</c:string>
        </b:QueryTerms>
        <b:SpellingSuggestion></b:SpellingSuggestion>
        <b:m_ResultTables
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
          <c:KeyValueOfResultTypeResultTableUTLV0zE5>
            <c:Key>RelevantResults</c:Key>
            <c:Value>
              <b:IsTotalRowsExact>true</b:IsTotalRowsExact>
              <b:ResultType>RelevantResults</b:ResultType>
              <b:RowCount>0</b:RowCount>
              <b:Table>

```

```

        <xs:schema id="NewDataSet" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="" xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
        <xs:element name="NewDataSet" msdata:IsDataSet="true"
msdata:MainDataTable="RelevantResults" msdata:UseCurrentLocale="true">
        <xs:complexType>
        <xs:choice minOccurs="0" maxOccurs="unbounded">
        <xs:element name="RelevantResults">
        <xs:complexType>
        <xs:sequence>
        <xs:element name="WorkId" type="xs:long"
minOccurs="0"></xs:element>
        <xs:element name="UserProfile_GUID" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="AccountName" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="PreferredName" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="YomiDisplayName" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="JobTitle" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="Department" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="WorkPhone" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="OfficeNumber" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="PictureURL" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="HierarchyUrl" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="WorkEmail" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="Path" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="HitHighlightedSummary" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="HitHighlightedProperties" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="Responsibility"
msdata:DataType="System.String[], mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="Skills" msdata:DataType="System.String[],
mscorlib, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="SipAddress" type="xs:string"
minOccurs="0"></xs:element>
        <xs:element name="Schools" msdata:DataType="System.String[],
mscorlib, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="PastProjects"
msdata:DataType="System.String[], mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="Interests" msdata:DataType="System.String[],
mscorlib, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="OrgNames" msdata:DataType="System.String[],
mscorlib, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="OrgUrls" msdata:DataType="System.String[],
mscorlib, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089"
type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="OrgParentNames"
msdata:DataType="System.String[], mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"></xs:element>
        <xs:element name="OrgParentUrls"
msdata:DataType="System.String[], mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"></xs:element>

```

```

        <xs:element name="Memberships"
msdata:DataType="System.String[], mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"/></xs:element>
        <xs:element name="AboutMe" type="xs:string"
minOccurs="0"/></xs:element>
        <xs:element name="BaseOfficeLocation" type="xs:string"
minOccurs="0"/></xs:element>
        <xs:element name="ServiceApplicationID" type="xs:string"
minOccurs="0"/></xs:element>
        <xs:element name="SocialDistance" type="xs:long"
minOccurs="0"/></xs:element>
    </xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:schema>
<diffgr:diffgram xmlns:diffgr="urn:schemas-microsoft-com:xml-diffgram-v1"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"></diffgr:diffgram>
</b:Table>
<b:TimeZoneID>13</b:TimeZoneID>
<b:TotalRows>0</b:TotalRows>
<b:TotalRowsIncludingDuplicates>0</b:TotalRowsIncludingDuplicates>
</c:Value>
</c:KeyValueOfResultTypeResultTableUTLV0zE5>
</b:m_ResultTables>
</ExecuteResult>
</ExecuteResponse>
</s:Body>
</s:Envelope>

```

## 4.2 Retrieve Information About the Available Search Scopes

To obtain a list of search scopes, the protocol client sends the following message:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/GetScopes
    </a:Action>
    <a:MessageID>
      urn:uuid:d7d4cf86-c037-465c-a3b4-312f815c7389
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        00000000-0000-0000-0000-000000000000
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id=" 1">
      http://example.com:32843/dc46e19968e743728529b721db8c8c60/SearchService.svc
    </a:To>
  </s:Header>
  <s:Body>
  </s:Body>
</s:Envelope>

```

```

</s:Header>
<s:Body>
  <GetScopes xmlns="http://tempuri.org/">
    <properties
      i:type="b:KeywordQueryProperties"
      xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <b:AlertInfo>
        <b:ChangeType>Discovered</b:ChangeType>
        <b:LastUpdateTime>0001-01-01T00:00:00</b:LastUpdateTime>
      </b:AlertInfo>
      <b:AuthenticationType>NtAuthenticatedQuery</b:AuthenticationType>
      <b:CorrelationId>00000000-0000-0000-0000-000000000000</b:CorrelationId>
      <b:EnableNicknames>>false</b:EnableNicknames>
      <b:EnablePhonetic>>false</b:EnablePhonetic>
      <b:EnableStemming>>false</b:EnableStemming>
      <b:HighlightedSentenceCount>2</b:HighlightedSentenceCount>
      <b:Hint>None</b:Hint>
      <b:HitHighlightedProperties
        xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b:HitHighlightedPropert
        ies>
        <b:IgnoreAllNoiseQuery>true</b:IgnoreAllNoiseQuery>
        <b:KeywordInclusion>AllKeywords</b:KeywordInclusion>
        <b:Locale>1033</b:Locale>
        <b:MergeWithDefaultPartition>>false</b:MergeWithDefaultPartition>
        <b:PagingCookie i:nil="true"
          xmlns:c="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"></b:Pa
          gingCookie>
        <b:PartitionId>00000000-0000-0000-0000-000000000000</b:PartitionId>
        <b:PersonalizationData i:nil="true"></b:PersonalizationData>
        <b:QueryText></b:QueryText>
        <b:RankingModelId></b:RankingModelId>
        <b:ResultTypes>None</b:ResultTypes>
        <b:ResultsProvider>Default</b:ResultsProvider>
        <b:RowLimit>50</b:RowLimit>
        <b:RowsPerPage>50</b:RowsPerPage>
        <b:Sid></b:Sid>
        <b:SiteId>496f265c-4758-4ac5-b14d-d02dfal31a64</b:SiteId>
        <b:StartRow>0</b:StartRow>
        <b:SummaryLength>200</b:SummaryLength>
        <b:TimeZoneID>-1</b:TimeZoneID>
        <b:Timeout>10000</b:Timeout>
        <b>TotalRowsExactMinimum>200</b>TotalRowsExactMinimum>
        <b:TrimDuplicates>true</b:TrimDuplicates>
        <b:UrlZone>Default</b:UrlZone>
        <b:CustomRefinementIntervals
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b:CustomRefinementInter
          vals>
        <b:EnableFQL>>false</b:EnableFQL>
        <b:EnableSpellcheck>Suggest</b:EnableSpellcheck>
        <b:EnableUrlSmashing>true</b:EnableUrlSmashing>
        <b:HiddenConstraints></b:HiddenConstraints>
        <b:MaxShallowRefinementHits>100</b:MaxShallowRefinementHits>
        <b:MaxSummaryLength>185</b:MaxSummaryLength>
        <b:MaxUrlLength>2048</b:MaxUrlLength>
        <b:RefinementFilters
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b:RefinementFilters>
        <b:Refiners></b:Refiners>
        <b:ResubmitFlags>NoResubmit</b:ResubmitFlags>
        <b>SelectProperties
          xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b>SelectProperties>
        <b:SimilarTo></b:SimilarTo>
        <b:SimilarType>None</b:SimilarType>
        <b:SortList>
          <b:m elements></b:m elements>
        </b:SortList>
        <b:SortSimilar>true</b:SortSimilar>
        <b:TrimDuplicatesIncludeId>0</b:TrimDuplicatesIncludeId>
        <b:TrimDuplicatesKeepCount>1</b:TrimDuplicatesKeepCount>

```

```

        <b:TrimDuplicatesOnProperty></b:TrimDuplicatesOnProperty>
        <b:UserContextData i:nil="true"></b:UserContextData>
        <b:UserContextGroupID i:nil="true"></b:UserContextGroupID>
    </properties>
</GetScopes>
</s:Body>
</s:Envelope>

```

The protocol server then responds with the following message:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/GetScopesResponse
    </a:Action>
    <ActivityId
      CorrelationId="bdba89e0-c9c9-4666-8e9b-6e6a973698e3"
      xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">
      91f7046f-9144-48ed-9eb0-4518e8739b56
    </ActivityId>
    <a:RelatesTo
      urn:uuid:d7d4cf86-c037-465c-a3b4-312f815c7389
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <GetScopesResponse xmlns="http://tempuri.org/">
      <GetScopesResult
        xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:ScopeInformation>
          <b:Description>Search for people.</b:Description>
          <b:Filter i:nil="true"></b:Filter>
          <b:ID>0</b:ID>
          <b>Name>People</b>Name>
          <b:State>Compiled</b:State>
        </b:ScopeInformation>
        <b:ScopeInformation>
          <b:Description>Search for everything available for searching.</b:Description>
          <b:Filter i:nil="true"></b:Filter>
          <b:ID>1</b:ID>
          <b>Name>All Sites</b>Name>
          <b:State>Compiled</b:State>
        </b:ScopeInformation>
        <b:ScopeInformation>
          <b:Description>Everything that should be omitted from all searches by
default.</b:Description>
          <b:Filter i:nil="true"></b:Filter>
          <b:ID>2</b:ID>
          <b>Name>Global Query Exclusion</b>Name>
          <b:State>Empty</b:State>
        </b:ScopeInformation>
        <b:ScopeInformation>
          <b:Description>Sites whose ranks will be demoted in click-distance
calculation.</b:Description>
          <b:Filter i:nil="true"></b:Filter>
          <b:ID>3</b:ID>
          <b>Name>Rank Demoted Sites</b>Name>
          <b:State>Empty</b:State>
        </b:ScopeInformation>
      </GetScopesResult>
    </GetScopesResponse>
  </s:Body>

```

```
</s:Envelope>
```

### 4.3 Notify the Occurrence of a Clickthrough

To notify the protocol server that a clickthrough occurs, the protocol client sends the following message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/RecordClick
    </a:Action>
    <a:MessageID>
      urn:uuid:e3abfa76-8102-4474-80dc-c1fb0f4d3e6b
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        e43114bd-1945-4b2a-9b34-2de773bd373d
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId>
        00000000-0000-0000-0000-000000000000
      </siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id=" 1">
      http://example.com:32843/dc46e19968e743728529b721db8c8c60/SearchService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <RecordClick xmlns="http://tempuri.org/">
      <Info
        xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:AdvancedSearch>>false</b:AdvancedSearch>
        <b:BestBetClicked i:nil="true"></b:BestBetClicked>
        <b:ClickTime>2010-01-09T03:02:37.5372195Z</b:ClickTime>
        <b:ClickedUrl>http://example.com:9001/329.htm</b:ClickedUrl>
        <b:ClickedUrlRank>1</b:ClickedUrlRank>
        <b:ClientType>ObjectModel</b:ClientType>
        <b:ContextualScope i:nil="true"></b:ContextualScope>
        <b:ContextualScopeUrl i:nil="true"></b:ContextualScopeUrl>
        <b:ContinuedSession>>false</b:ContinuedSession>
        <b:Definitions>>false</b:Definitions>
        <b:DidYouMean i:nil="true"></b:DidYouMean>
        <b:DidYouMeanReturned>>false</b:DidYouMeanReturned>
        <b:ItemsPerPage>0</b:ItemsPerPage>
        <b:Location>LocalPeopleSearchIndex</b:Location>
        <b:LogType>Click</b:LogType>
        <b:NonClickedUrls i:nil="true"
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b:NonClickedUrls>
        <b:NumBestBets>0</b:NumBestBets>
        <b:NumHighConfidenceResults>0</b:NumHighConfidenceResults>
        <b:NumResults>1</b:NumResults>
        <b:QueryCulture i:nil="true"></b:QueryCulture>
```



```

    <b:QueryGuid>f975132d-c078-4d1d-a21a-95e3e4f1236e</b:QueryGuid>
    <b:QueryServer i:nil="true"></b:QueryServer>
    <b:QueryString>username</b:QueryString>
    <b:ReferrerUrl></b:ReferrerUrl>
    <b:ResultView>0</b:ResultView>
    <b:ResultsUrl>
      http://example.com/sites/enterprise/Pages/peoplereults.aspx
    </b:ResultsUrl>
    <b:Scopes i:nil="true"
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays"></b:Scopes>
    <b:SearchServiceApplicationID i:nil="true"></b:SearchServiceApplicationID>
    <b:SearchTime>2010-01-08T19:02:33.6804183-08:00</b:SearchTime>
    <b:SessionId>88d37ff3-3032-4db0-afd7-f58a027630d3</b:SessionId>
    <b:SiteGuid>496f265c-4758-4ac5-b14d-d02dfa131a64</b:SiteGuid>
    <b:StartItem>1</b:StartItem>
    <b:TenantId>00000000-0000-0000-0000-000000000000</b:TenantId>
    <b>Title></b>Title>
    <b>TotalResults>1</b>TotalResults>
    <b:UserName>DOMAINNAME\username</b:UserName>
  </Info>
</RecordClick>
</s:Body>
</s:Envelope>

```

The protocol server then responds with the message:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/RecordClickResponse
    </a:Action>
    <ActivityId
      CorrelationId="70e5cebf-95c6-478d-b4ef-3ff8ab75e1bf"
      xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">
      b9a7b9dc-5f47-4ff5-be9f-c720f2b687cd
    </ActivityId>
    <a:RelatesTo>urn:uuid:e3abfa76-8102-4474-80dc-clfb0f4d3e6b</a:RelatesTo>
  </s:Header>
  <s:Body>
    <RecordClickResponse xmlns="http://tempuri.org/"></RecordClickResponse>
  </s:Body>
</s:Envelope>

```

#### 4.4 Obtain the Click Frequency for a Given URI

To obtain the frequency of clicks in the last week and in the last month for a given URI, the protocol client sends a message such as this one:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrl
    </a:Action>
    <a:MessageID>
      urn:uuid:b55f5f0f-01fc-4a69-9bb7-c838fc30ab8d
    </a:MessageID>
  </s:Header>
  <s:Body>
    <GetClickFrequenciesForUrl xmlns="http://tempuri.org/"></GetClickFrequenciesForUrl>
  </s:Body>
</s:Envelope>

```

```

    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>f6c1f646-bb29-40f4-ae6d-c2fb3b0506a2</correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId>
        00000000-0000-0000-0000-000000000000
      </siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/dc46e19968e743728529b721db8c8c60/SearchService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <GetClickFrequenciesForUrl xmlns="http://tempuri.org/">
      <url>
        http://example.com/my/Person.aspx?accountname=DOMAINNAME\username
      </url>
      <referenceDate>2010-01-09T00:00:00Z</referenceDate>
    </GetClickFrequenciesForUrl>
  </s:Body>
</s:Envelope>

```

And then the protocol server returns the message:

```

<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlResponse
    </a:Action>
    <ActivityId
      CorrelationId="85651650-f78f-495d-b291-cce8811c72e3"
      xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">
      3e203fdf-387a-49da-90da-9d6eaef1f9b4
    </ActivityId>
    <a:RelatesTo
      urn:uuid:b55f5f0f-01fc-4a69-9bb7-c838fc30ab8d
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <GetClickFrequenciesForUrlResponse xmlns="http://tempuri.org/">
      <GetClickFrequenciesForUrlResult>
        <int xmlns="http://schemas.microsoft.com/2003/10/Serialization/Arrays">1</int>
        <int xmlns="http://schemas.microsoft.com/2003/10/Serialization/Arrays">1</int>
      </GetClickFrequenciesForUrlResult>
    </GetClickFrequenciesForUrlResponse>
  </s:Body>
</s:Envelope>

```

## **5 Security**

### **5.1 Security Considerations for Implementers**

None.

### **5.2 Index of Security Parameters**

None.

## 6 Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided in this appendix.

```
<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://tempuri.org/"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://tempuri.org/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <xs:schema xmlns:tns5="http://tempuri.org/Imports"
targetNamespace="http://tempuri.org/Imports">
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring"
/>
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"/>
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"/>
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/System.Collections.Generic"/>
      <xs:import namespace="http://schemas.datacontract.org/2004/07/System.Data"/>
      <xs:import namespace="http://schemas.datacontract.org/2004/07/System.Globalization"/>
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization"/>
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
      <xs:import namespace="http://tempuri.org/">
      <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
    </xs:schema>
  </wsdl:types>
  <wsdl:portType name="ISearchQueryServiceApplication">
    <wsdl:operation name="GetSearchTerms">
      <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTerms"
message="tns:ISearchQueryServiceApplication_GetSearchTerms_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTermsResponse"
message="tns:ISearchQueryServiceApplication_GetSearchTerms_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTermsSearchServiceApp
licationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetSearchTerms_SearchServiceApplicationFaultFault
_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="Execute">
      <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/Execute"
message="tns:ISearchQueryServiceApplication_Execute_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/ExecuteResponse"
message="tns:ISearchQueryServiceApplication_Execute_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/ExecuteSearchServiceApplicatio
nFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_Execute_SearchServiceApplicationFaultFault_FaultM
essage"/>
    </wsdl:operation>
    <wsdl:operation name="GetProperties">
      <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetProperties"
message="tns:ISearchQueryServiceApplication_GetProperties_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetPropertiesResponse"
message="tns:ISearchQueryServiceApplication_GetProperties_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetPropertiesSearchServiceAppl
```

```

icationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication GetProperties SearchServiceApplicationFaultFault
FaultMessage"/>
</wsdl:operation>
<wsdl:operation name="GetScopes">
  <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopes"
message="tns:ISearchQueryServiceApplication_GetScopes_InputMessage"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopesResponse"
message="tns:ISearchQueryServiceApplication GetScopes OutputMessage"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetScopesSearchServiceApplicat
ionFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication GetScopes SearchServiceApplicationFaultFault Faul
tMessage"/>
</wsdl:operation>
<wsdl:operation name="GetQuerySuggestions">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestions"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_InputMessage"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsResponse"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_OutputMessage"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsSearchServi
ceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication GetQuerySuggestions SearchServiceApplicationFault
Fault_FaultMessage"/>
</wsdl:operation>
<wsdl:operation name="HighlightStringValue">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValue"
message="tns:ISearchQueryServiceApplication HighlightStringValue InputMessage"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueResponse"
message="tns:ISearchQueryServiceApplication_HighlightStringValue_OutputMessage"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueSearchServ
iceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication HighlightStringValue SearchServiceApplicationFaul
tFault_FaultMessage"/>
</wsdl:operation>
<wsdl:operation name="HighlightStringValueQuerySuggestions">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
stions"
message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage
"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
stionsResponse"
message="tns:ISearchQueryServiceApplication HighlightStringValueQuerySuggestions OutputMessag
e"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugge
stionsSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_SearchServic
eApplicationFaultFault FaultMessage"/>
</wsdl:operation>
<wsdl:operation name="GetClickFrequenciesForUrl">
  <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrl"
message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_InputMessage"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlRespo
nse" message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage"/>
  <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlSearc
hServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"

```

```

message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_SearchServiceApplicationFaultFault_FaultMessage"/>
  </wsdl:operation>
  <wsdl:operation name="GetTopQueryStringsForUrl">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrl"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrlResponse"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrlSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetTopQueryStringsForUrl_SearchServiceApplicationFaultFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="RecordClick">
      <wsdl:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClick"
message="tns:ISearchQueryServiceApplication_RecordClick_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClickResponse"
message="tns:ISearchQueryServiceApplication_RecordClick_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordClickSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordClick_SearchServiceApplicationFaultFault_FaultMessage"/>
      </wsdl:operation>
      <wsdl:operation name="RecordPageClick">
        <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClick"
message="tns:ISearchQueryServiceApplication_RecordPageClick_InputMessage"/>
        <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClickResponse"
message="tns:ISearchQueryServiceApplication_RecordPageClick_OutputMessage"/>
        <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClickSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordPageClick_SearchServiceApplicationFaultFault_FaultMessage"/>
        </wsdl:operation>
        <wsdl:operation name="GetSearchServiceApplicationInfo">
          <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfo"
message="tns:ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_InputMessage"/>
          <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfoResponse"
message="tns:ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_OutputMessage"/>
          <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfoSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_SearchServiceApplicationFaultFault_FaultMessage"/>
          </wsdl:operation>
          <wsdl:operation name="RecordUIQueryDoneEvent">
            <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEvent"
message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_InputMessage"/>
            <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEventResponse"
message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_OutputMessage"/>
            <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEventSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordUIQueryDoneEvent_SearchServiceApplicationFaultFault_FaultMessage"/>
            </wsdl:operation>
            <wsdl:operation name="RecordWebPartQueryDoneEvent">

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    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEvent"
message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventRes
ponse"
message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventSea
rchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_SearchServiceApplicat
ionFaultFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="RecordOMQueryDoneEvent">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEvent"
message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEventResponse"
message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEventSearchSe
rviceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordOMQueryDoneEvent_SearchServiceApplicationFa
ultFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="RecordQueryErrorEvent">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEvent"
message="tns:ISearchQueryServiceApplication_RecordQueryErrorEvent_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEventResponse"
message="tns:ISearchQueryServiceApplication_RecordQueryErrorEvent_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEventSearchSer
viceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_RecordQueryErrorEvent_SearchServiceApplicationFau
ltFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetQuerySuggestionsWithResults">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
Response"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults
SearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_SearchServiceAppli
cationFaultFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetQueryCompletions">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletions"
message="tns:ISearchQueryServiceApplication_GetQueryCompletions_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletionsResponse"
message="tns:ISearchQueryServiceApplication_GetQueryCompletions_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletionsSearchSer
viceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetQueryCompletions_SearchServiceApplicationFault
Fault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetImsEndpointAddresses">

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```

    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddresses"
message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddressesResponse" message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddressesSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_SearchServiceApplicationFaultFault_FaultMessage"/>
    </wsdl:operation>
  </wsdl:portType>
  <wsdl:portType name="ISearchHealthMonitoringServiceApplication">
    <wsdl:operation name="RecordUIQueryDone">
      <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDone"
message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDoneResponse"
message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDoneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_SearchServiceApplicationFaultFault_FaultMessage"/>
      </wsdl:operation>
    <wsdl:operation name="RecordWebPartQueryDone">
      <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryDone"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryDoneResponse"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_OutputMessage"/>
    </wsdl:operation>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryDoneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_SearchServiceApplicationFaultFault_FaultMessage"/>
    </wsdl:operation>
  <wsdl:operation name="RecordOMQueryDone">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDone"
message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDoneResponse"
message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDoneSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_SearchServiceApplicationFaultFault_FaultMessage"/>
    </wsdl:operation>
  <wsdl:operation name="RecordQueryError">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryError"
message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorResponse"
message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"

```



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message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_SearchServiceApplicationFaultFault_FaultMessage"/>
  </wsdl:operation>
  <wsdl:operation name="GetQueryHealthMonitoringSettings">
    <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettings"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_InputMessage"/>
    <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsResponse"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_OutputMessage"/>
    <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_SearchServiceApplicationFaultFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetQueryHealthMonitoringSettingsForComponents">
      <wsdl:input
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponentsResponse"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponentsSearchServiceApplicationFaultFault"
name="SearchServiceApplicationFaultFault"
message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_SearchServiceApplicationFaultFault_FaultMessage"/>
      </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="DefaultBinding ISearchQueryServiceApplication"
type="tns:ISearchQueryServiceApplication">
      <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
      <wsdl:operation name="GetSearchTerms">
        <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTerms"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="Execute">
        <soap:operation soapAction="http://tempuri.org/ISearchQueryServiceApplication/Execute"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
    </wsdl:operation name="GetProperties">

```

```

    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetProperties"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetScopes">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetScopes" style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetQuerySuggestions">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestions"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="HighlightStringValue">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValue"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="HighlightStringValueQuerySuggestions">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySugges
tions" style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetClickFrequenciesForUrl">

```

```

    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrl"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetTopQueryStringsForUrl">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrl"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordClick">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordClick" style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordPageClick">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordPageClick"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetSearchServiceApplicationInfo">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetSearchServiceApplicationInfo"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordUIQueryDoneEvent">

```

```

    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneEvent"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordWebPartQueryDoneEvent">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEvent"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordOMQueryDoneEvent">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordOMQueryDoneEvent"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RecordQueryErrorEvent">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/RecordQueryErrorEvent"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetQuerySuggestionsWithResults">
    <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResults"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
    </wsdl:fault>
</wsdl:operation>

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    <wsdl:operation name="GetQueryCompletions">
      <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletions"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
      </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="GetImsEndpointAddresses">
      <soap:operation
soapAction="http://tempuri.org/ISearchQueryServiceApplication/GetImsEndpointAddresses"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
      </wsdl:fault>
    </wsdl:operation>
  </wsdl:binding>
  <wsdl:binding name="DefaultBinding_ISearchHealthMonitoringServiceApplication"
type="tns:ISearchHealthMonitoringServiceApplication">
    <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
    <wsdl:operation name="RecordUIQueryDone">
      <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordUIQueryDone"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
      </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="RecordWebPartQueryDone">
      <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordWebPartQueryDone"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SearchServiceApplicationFaultFault">
        <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
      </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="RecordOMQueryDone">
      <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordOMQueryDone"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>

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        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="RecordQueryError">
        <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryError"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="GetQueryHealthMonitoringSettings">
        <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettings" style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="GetQueryHealthMonitoringSettingsForComponents">
        <soap:operation
soapAction="http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents" style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SearchServiceApplicationFaultFault">
          <soap:fault use="literal" name="SearchServiceApplicationFaultFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
    </wsdl:binding>
    <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_InputMessage">
      <wsdl:part name="parameters" element="tns:GetQueryHealthMonitoringSettings"/>
    </wsdl:message>
    <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_OutputMessage">
      <wsdl:part name="parameters" element="tns:GetQueryHealthMonitoringSettingsResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_SearchServiceApplicationFault_FaultMessage">
      <wsdl:part
xmlns:ql="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="ql:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_InputMessage">

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```

    <wsdl:part name="parameters"
element="tns:GetQueryHealthMonitoringSettingsForComponents"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents
OutputMessage">
    <wsdl:part name="parameters"
element="tns:GetQueryHealthMonitoringSettingsForComponentsResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents
_SearchServiceApplicationFaultFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordOMQueryDone"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordOMQueryDoneResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_SearchServiceApplicationFau
ltFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordQueryError"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordQueryErrorResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordQueryError_SearchServiceApplicationFau
ltFault FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordUIQueryDone"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordUIQueryDoneResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_SearchServiceApplicationFau
ltFault FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordWebPartQueryDone"/>
  </wsdl:message>
  <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordWebPartQueryDoneResponse"/>
  </wsdl:message>

```

```

    <wsdl:message
name="ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_SearchServiceApplicati
onFaultFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_Execute_InputMessage">
    <wsdl:part name="parameters" element="tns:Execute"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_Execute_OutputMessage">
    <wsdl:part name="parameters" element="tns:ExecuteResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_Execute_SearchServiceApplicationFaultFault_FaultMessage"
>
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetClickFrequenciesForUrl_InputMessage">
    <wsdl:part name="parameters" element="tns:GetClickFrequenciesForUrl"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetClickFrequenciesForUrlResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_GetClickFrequenciesForUrl_SearchServiceApplicationFaultF
ault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetImsEndpointAddresses_InputMessage">
    <wsdl:part name="parameters" element="tns:GetImsEndpointAddresses"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetImsEndpointAddresses_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetImsEndpointAddressesResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_GetImsEndpointAddresses_SearchServiceApplicationFaultFau
lt_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetProperties_InputMessage">
    <wsdl:part name="parameters" element="tns:GetProperties"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetProperties_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetPropertiesResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_GetProperties_SearchServiceApplicationFaultFault_FaultMe
ssage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetQueryCompletions_InputMessage">
    <wsdl:part name="parameters" element="tns:GetQueryCompletions"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_GetQueryCompletions_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetQueryCompletionsResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_GetQueryCompletions_SearchServiceApplicationFaultFault_F
aultMessage">

```



```

    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetQuerySuggestions_InputMessage">
    <wsdl:part name="parameters" element="tns:GetQuerySuggestions"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetQuerySuggestions_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetQuerySuggestionsResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetQuerySuggestions_SearchServiceApplicationFaultFault_F
aultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_InputMessage">
    <wsdl:part name="parameters" element="tns:GetQuerySuggestionsWithResults"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetQuerySuggestionsWithResultsResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_SearchServiceApplicationF
aultFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetScopes_InputMessage">
    <wsdl:part name="parameters" element="tns:GetScopes"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetScopes_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetScopesResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetScopes_SearchServiceApplicationFaultFault_FaultMessag
e">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_InputMessage">
    <wsdl:part name="parameters" element="tns:GetSearchServiceApplicationInfo"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetSearchServiceApplicationInfoResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_SearchServiceApplication
FaultFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetSearchTerms_InputMessage">
    <wsdl:part name="parameters" element="tns:GetSearchTerms"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetSearchTerms_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetSearchTermsResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetSearchTerms_SearchServiceApplicationFaultFault_FaultM
essage">

```

```

    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetTopQueryStringsForUrl_InputMessage">
    <wsdl:part name="parameters" element="tns:GetTopQueryStringsForUrl"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_GetTopQueryStringsForUrl_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetTopQueryStringsForUrlResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_GetTopQueryStringsForUrl_SearchServiceApplicationFaultFa
ult_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_HighlightStringValue_InputMessage">
    <wsdl:part name="parameters" element="tns:HighlightStringValue"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_HighlightStringValue_OutputMessage">
    <wsdl:part name="parameters" element="tns:HighlightStringValueResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_HighlightStringValue_SearchServiceApplicationFaultFault_
FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage">
    <wsdl:part name="parameters" element="tns:HighlightStringValueQuerySuggestions"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_OutputMessage">
    <wsdl:part name="parameters" element="tns:HighlightStringValueQuerySuggestionsResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_SearchServiceApplic
ationFaultFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordClick_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordClick"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordClick_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordClickResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_RecordClick_SearchServiceApplicationFaultFault_FaultMess
age">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordOMQueryDoneEvent"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordOMQueryDoneEventResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_SearchServiceApplicationFaultFaul
t_FaultMessage">

```

```

    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordPageClick_InputMessage">
    <wsdl:part name="parameters" element="tns:RecordPageClick"/>
  </wsdl:message>
  <wsdl:message name="ISearchQueryServiceApplication_RecordPageClick_OutputMessage">
    <wsdl:part name="parameters" element="tns:RecordPageClickResponse"/>
  </wsdl:message>
  <wsdl:message
name="ISearchQueryServiceApplication_RecordPageClick_SearchServiceApplicationFaultFault_Fault
Message">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_RecordQueryErrorEvent_InputMessage">
      <wsdl:part name="parameters" element="tns:RecordQueryErrorEvent"/>
    </wsdl:message>
    <wsdl:message name="ISearchQueryServiceApplication_RecordQueryErrorEvent_OutputMessage">
      <wsdl:part name="parameters" element="tns:RecordQueryErrorEventResponse"/>
    </wsdl:message>
    <wsdl:message
name="ISearchQueryServiceApplication_RecordQueryErrorEvent_SearchServiceApplicationFaultFault
_FaultMessage">
      <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
      </wsdl:message>
      <wsdl:message name="ISearchQueryServiceApplication_RecordUIQueryDoneEvent_InputMessage">
        <wsdl:part name="parameters" element="tns:RecordUIQueryDoneEvent"/>
      </wsdl:message>
      <wsdl:message name="ISearchQueryServiceApplication_RecordUIQueryDoneEvent_OutputMessage">
        <wsdl:part name="parameters" element="tns:RecordUIQueryDoneEventResponse"/>
      </wsdl:message>
      <wsdl:message
name="ISearchQueryServiceApplication_RecordUIQueryDoneEvent_SearchServiceApplicationFaultFaul
t_FaultMessage">
        <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
        </wsdl:message>
        <wsdl:message
name="ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage">
          <wsdl:part name="parameters" element="tns:RecordWebPartQueryDoneEvent"/>
        </wsdl:message>
        <wsdl:message
name="ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage">
          <wsdl:part name="parameters" element="tns:RecordWebPartQueryDoneEventResponse"/>
        </wsdl:message>
        <wsdl:message
name="ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_SearchServiceApplicationFaul
tFault FaultMessage">
          <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="detail" element="q1:SearchServiceApplicationFault"/>
          </wsdl:message>
        </wsdl:definitions>

```

## 7 Appendix B: Full XML Schema

| Schema name   | Prefix     | Section              |
|---|------------|----------------------|
| http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration | q1         | <a href="#">7.1</a>  |
| http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring     | tns1       | <a href="#">7.2</a>  |
| http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query          | tns2       | <a href="#">7.5</a>  |
| http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration           | tns3       | <a href="#">7.6</a>  |
| http://schemas.microsoft.com/2003/10/Serialization/Arrays                             | q3         | <a href="#">7.7</a>  |
| http://schemas.microsoft.com/2003/10/Serialization/                                   | ser        | <a href="#">7.8</a>  |
| http://schemas.datacontract.org/2004/07/System.Collections.Generic                    | tns4       | <a href="#">7.9</a>  |
| http://schemas.datacontract.org/2004/07/System.Data                                   | Unassigned | <a href="#">7.10</a> |
| http://tempuri.org/   | tns        | <a href="#">7.3</a>  |
| http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08                         | q2         | <a href="#">7.4</a>  |

For ease of implementation, the following sections provide the full XML schema for this protocol.

### 7.1 http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration" elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
  <xs:complexType name="SearchServiceApplicationFault">
    <xs:sequence>
      <xs:element minOccurs="0" name="ErrorCode" type="xs:int"/>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" minOccurs="0" name="FaultType" type="q2:SearchServiceApplicationFaultType"/>
      <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SearchServiceApplicationFault" nillable="true" type="q1:SearchServiceApplicationFault"/>
  <xs:simpleType name="ScopeCompilationState">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Empty"/>
      <xs:enumeration value="Invalid"/>
      <xs:enumeration value="QueryExpanded"/>
      <xs:enumeration value="NeedsCompile"/>
      <xs:enumeration value="Compiled"/>
      <xs:enumeration value="NeedsRecompile"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="ScopeCompilationState" nillable="true" type="q1:ScopeCompilationState"/>
</xs:schema>
```

## 7.2 [http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring Schema](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring.Schema)

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  xmlns:tns1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
  <xs:complexType name="QueryHealthMonitoringSettings">
    <xs:sequence>
      <xs:element minOccurs="0" name="AggregatedBufferFlushTimeoutMinutes" type="xs:int"/>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="AggregatorFilters" nillable="true" type="q3:ArrayOfboolean"/>
      <xs:element minOccurs="0" name="BufferFlushThreshold" type="xs:int"/>
      <xs:element minOccurs="0" name="LatencyTrendBucketMs" type="xs:int"/>
      <xs:element minOccurs="0" name="LatencyTrendUseAggregation" type="xs:boolean"/>
      <xs:element minOccurs="0" name="MaxSizeMb" type="xs:int"/>
      <xs:element minOccurs="0" name="RetentionPeriodDays" type="xs:int"/>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="VerboseFilters" nillable="true" type="q3:ArrayOfstring"/>
      <xs:element minOccurs="0" name="VerboseLatencyThreshold" type="xs:int"/>
      <xs:element minOccurs="0" name="VerboseQueryMonitoring" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="QueryHealthMonitoringSettings" nillable="true"
    type="tns1:QueryHealthMonitoringSettings"/>
</xs:schema>
```

## 7.3 <http://tempuri.org/> Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="GetSearchTerms">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
          minOccurs="0" name="properties" nillable="true" type="q2:KeywordQueryProperties"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetSearchTermsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="GetSearchTermsResult" nillable="true"
          type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="Execute">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
          minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="ExecuteResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
          minOccurs="0" name="ExecuteResult" nillable="true" type="q2:ResultTableCollection"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
```

```

<xs:element name="GetProperties">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetPropertiesResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetPropertiesResult" nillable="true"
type="q2:ArrayOfPropertyInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetScopes">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetScopesResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetScopesResult" nillable="true" type="q2:ArrayOfScopeInformation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQuerySuggestions">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="iNumberOfSuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="fPreQuerySuggestions" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fHitHighlighting" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fCapitalizeFirstLetters" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQuerySuggestionsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetQuerySuggestionsResult" nillable="true" type="q3:ArrayOfanyType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="HighlightStringValue">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="strValue" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="fLastTermByPrefix" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="HighlightStringValueResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="HighlightStringValueResult" nillable="true" type="q2:HighlightedString"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

    </xs:complexType>
  </xs:element>
  <xs:element name="HighlightStringValueQuerySuggestions">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
        <xs:element minOccurs="0" name="strValue" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="fLastTermByPrefix" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="HighlightStringValueQuerySuggestionsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="HighlightStringValueQuerySuggestionsResult" nillable="true"
type="q2:HighlightedString"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetClickFrequenciesForUrl">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="url" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="referenceDate" type="xs:dateTime"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetClickFrequenciesForUrlResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetClickFrequenciesForUrlResult" nillable="true" type="q3:ArrayOfint"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetTopQueryStringsForUrl">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="url" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="topCount" type="xs:int"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetTopQueryStringsForUrlResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetTopQueryStringsForUrlResult" nillable="true" type="q3:ArrayOfstring"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordClick">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="Info" nillable="true" type="q2:QueryInfo"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordClickResponse">
    <xs:complexType>
      <xs:sequence/>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordPageClick">
    <xs:complexType>
      <xs:sequence>

```

```

    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="click" nillable="true" type="tns2:QueryLogPageClick"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="immediacy" nillable="true" type="tns2:QueryLogImmediacyInfo"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="RecordPageClickResponse">
    <xs:complexType>
        <xs:sequence/>
    </xs:complexType>
</xs:element>
<xs:element name="GetSearchServiceApplicationInfo">
    <xs:complexType>
        <xs:sequence/>
    </xs:complexType>
</xs:element>
<xs:element name="GetSearchServiceApplicationInfoResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetSearchServiceApplicationInfoResult" nillable="true"
type="q2:SearchServiceApplicationInfo"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordUIQueryDoneEvent">
    <xs:complexType>
        <xs:sequence>
            <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:UIQueryLatencyDataBuffer"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordUIQueryDoneEventResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="RecordUIQueryDoneEventResult" type="xs:boolean"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordWebPartQueryDoneEvent">
    <xs:complexType>
        <xs:sequence>
            <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:WebPartQueryLatencyDataBuffer"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordWebPartQueryDoneEventResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="RecordWebPartQueryDoneEventResult"
type="xs:boolean"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordOMQueryDoneEvent">
    <xs:complexType>
        <xs:sequence>
            <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:OMQueryLatencyDataBuffer"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="RecordOMQueryDoneEventResponse">
    <xs:complexType>

```



```

    <xs:sequence>
      <xs:element minOccurs="0" name="RecordOMQueryDoneEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="RecordQueryErrorEvent">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:QueryErrorDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="RecordQueryErrorEventResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="RecordQueryErrorEventResult" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQuerySuggestionsWithResults">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="iNumberOfQuerySuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="iNumberOfResultSuggestions" type="xs:int"/>
      <xs:element minOccurs="0" name="fPreQuerySuggestions" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fHitHighlighting" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fCapitalizeFirstLetters" type="xs:boolean"/>
      <xs:element minOccurs="0" name="fPrefixMatchAllTerms" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQuerySuggestionsWithResultsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetQuerySuggestionsWithResultsResult" nillable="true"
type="q2:QuerySuggestionResults"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQueryCompletions">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
      <xs:element minOccurs="0" name="numberOfCompletions" type="xs:int"/>
      <xs:element minOccurs="0" name="sources" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="cursorPosition" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQueryCompletionsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="GetQueryCompletionsResult" nillable="true"
type="q2:QueryAutoCompletionResults"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetImsEndpointAddresses">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
<xs:element name="GetImsEndpointAddressesResponse">

```

```

    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetImsEndpointAddressesResult" nillable="true" type="q3:ArrayOfanyURI"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordUIQueryDone">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:UIQueryLatencyDataBuffer"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordUIQueryDoneResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RecordUIQueryDoneResult" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordWebPartQueryDone">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:WebPartQueryLatencyDataBuffer"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordWebPartQueryDoneResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RecordWebPartQueryDoneResult" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordOMQueryDone">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:OMQueryLatencyDataBuffer"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordOMQueryDoneResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RecordOMQueryDoneResult" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordQueryError">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
minOccurs="0" name="buffer" nillable="true" type="q2:QueryErrorDataBuffer"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RecordQueryErrorResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RecordQueryErrorResult" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetQueryHealthMonitoringSettings">
    <xs:complexType>

```

```

    <xs:sequence>
      <xs:element minOccurs="0" name="component" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetQueryHealthMonitoringSettingsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring
" minOccurs="0" name="GetQueryHealthMonitoringSettingsResult" nillable="true"
type="tns1:QueryHealthMonitoringSettings"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
<xs:element name="GetQueryHealthMonitoringSettingsForComponents">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="components" nillable="true" type="q3:ArrayOfstring"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
<xs:element name="GetQueryHealthMonitoringSettingsForComponentsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetQueryHealthMonitoringSettingsForComponentsResult" nillable="true"
type="q3:ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
<xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring"
/>
  <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"/>
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
  <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
</xs:schema>

```

## 7.4 http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08 Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"
targetNamespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="KeywordQueryProperties">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:QueryProperties">
        <xs:sequence>
          <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="CustomRefinementIntervals" nillable="true"
type="q3:ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az"/>
          <xs:element minOccurs="0" name="EnableFQL" type="xs:boolean"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="EnableSpellcheck" type="tns2:SpellcheckMode"/>
  <xs:element minOccurs="0" name="EnableUrlSmashing" type="xs:boolean"/>
  <xs:element minOccurs="0" name="GenerationId" type="xs:long"/>
  <xs:element minOccurs="0" name="HiddenConstraints" nillable="true"
type="xs:string"/>
  <xs:element minOccurs="0" name="IsCachable" type="xs:boolean"/>
  <xs:element minOccurs="0" name="MaxShallowRefinementHits" type="xs:int"/>
  <xs:element minOccurs="0" name="MaxSummaryLength" type="xs:int"/>

```

```

        <xs:element minOccurs="0" name="MaxUrlLength" type="xs:int"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="RefinementFilters" nillable="true" type="q3:ArrayOfanyType"/>
        <xs:element minOccurs="0" name="Refiners" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="ReorderingRules" nillable="true"
type="q2:ReorderingRuleCollection"/>
        <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResubmitFlags" type="tns2:ResubmitFlag"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="SelectProperties" nillable="true" type="q3:ArrayOfanyType"/>
        <xs:element minOccurs="0" name="SimilarTo" nillable="true" type="xs:string"/>
        <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="SimilarType" type="tns2:SimilarType"/>
        <xs:element minOccurs="0" name="SortList" nillable="true"
type="q2:SortCollection"/>
        <xs:element minOccurs="0" name="SortSimilar" type="xs:boolean"/>
        <xs:element minOccurs="0" name="TrimDuplicatesIncludeId" type="xs:long"/>
        <xs:element minOccurs="0" name="TrimDuplicatesKeepCount" type="xs:int"/>
        <xs:element minOccurs="0" name="TrimDuplicatesOnProperty" nillable="true"
type="xs:string"/>
        <xs:element minOccurs="0" name="UserContextData" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="UserContextGroupID" nillable="true"
type="xs:string"/>
    </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="KeywordQueryProperties" nillable="true"
type="q2:KeywordQueryProperties"/>
<xs:complexType name="QueryProperties">
    <xs:sequence>
        <xs:element minOccurs="0" name="AlertInfo" nillable="true" type="q2:AlertInfo"/>
    </xs:sequence>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="AuthenticationType" type="tns2:QueryAuthenticationType"/>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="EnableNicknames" type="xs:boolean"/>
        <xs:element minOccurs="0" name="EnablePhonetic" type="xs:boolean"/>
        <xs:element minOccurs="0" name="EnableStemming" type="xs:boolean"/>
        <xs:element minOccurs="0" name="FarmId" type="ser:guid"/>
    </xs:element>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="Hint" type="tns2:QueryHint"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="HitHighlightedProperties" nillable="true" type="q3:ArrayOfanyType"/>
        <xs:element minOccurs="0" name="IgnoreAllNoiseQuery" type="xs:boolean"/>
    </xs:element>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="KeywordInclusion" type="tns2:KeywordInclusion"/>
        <xs:element minOccurs="0" name="Locale" type="xs:int"/>
        <xs:element minOccurs="0" name="MergeWithDefaultPartition" type="xs:boolean"/>
    </xs:element>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="PagingCookie" nillable="true" type="tns2:PagingCookie"/>
        <xs:element minOccurs="0" name="PartitionId" type="ser:guid"/>
        <xs:element minOccurs="0" name="PersonalizationData" nillable="true"
type="q2:QueryPersonalizationData"/>
        <xs:element minOccurs="0" name="QueryText" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="RankingModelId" nillable="true" type="xs:string"/>
    </xs:element>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultTypes" type="tns2:ResultType"/>
    </xs:element>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultsProvider" type="tns2:SearchProvider"/>
        <xs:element minOccurs="0" name="RowLimit" type="xs:int"/>
        <xs:element minOccurs="0" name="RowsPerPage" type="xs:int"/>

```

```

    <xs:element minOccurs="0" name="Sid" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SiteId" type="ser:guid"/>
    <xs:element minOccurs="0" name="StartRow" type="xs:int"/>
    <xs:element minOccurs="0" name="SummaryLength" type="xs:int"/>
    <xs:element minOccurs="0" name="TimeZoneID" type="xs:int"/>
    <xs:element minOccurs="0" name="Timeout" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRowsExactMinimum" type="xs:int"/>
    <xs:element minOccurs="0" name="TrimDuplicates" type="xs:boolean"/>
    <xs:element
xmlns:tns3="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"
minOccurs="0" name="UrlZone" type="tns3:SPUrlZone"/>
    <xs:element minOccurs="0" name="WcfTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="WebId" type="ser:guid"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
    <xs:element minOccurs="0" name="PropertiesContractVersion" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="RemainingDeserializationSkips" type="xs:int"/>
    <xs:element minOccurs="0" name="SerializedPropertyBag" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="DirectImsEndpointUri" nillable="true"
type="xs:anyURI"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QueryProperties" nillable="true" type="q2:QueryProperties"/>
<xs:complexType name="AlertInfo">
  <xs:sequence>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ChangeType" type="tns2:AlertChangeType"/>
    <xs:element minOccurs="0" name="LastUpdateTime" type="xs:dateTime"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="AlertInfo" nillable="true" type="q2:AlertInfo"/>
<xs:complexType name="QueryPersonalizationData">
  <xs:sequence>
    <xs:element minOccurs="0" name="UserId" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QueryPersonalizationData" nillable="true"
type="q2:QueryPersonalizationData"/>
<xs:complexType name="SortCollection">
  <xs:sequence>
    <xs:element minOccurs="0" name="m_elements" nillable="true" type="q2:ArrayOfSort"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="SortCollection" nillable="true" type="q2:SortCollection"/>
<xs:complexType name="ArrayOfSort">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="Sort" nillable="true"
type="q2:Sort"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfSort" nillable="true" type="q2:ArrayOfSort"/>
<xs:complexType name="Sort">
  <xs:sequence>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="direction" type="tns2:SortDirection"/>
    <xs:element minOccurs="0" name="strProperty" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="Sort" nillable="true" type="q2:Sort"/>
<xs:complexType name="ReorderingRuleCollection">
  <xs:sequence>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="m_elements" nillable="true" type="tns2:ArrayOfReorderingRule"/>
  </xs:sequence>

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</xs:complexType>
<xs:element name="ReorderingRuleCollection" nillable="true"
type="q2:ReorderingRuleCollection"/>
<xs:complexType name="FullTextSqlQueryProperties">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:QueryProperties">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FullTextSqlQueryProperties" nillable="true"
type="q2:FullTextSqlQueryProperties"/>
<xs:complexType name="ArrayOfRefinementInterval">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="RefinementInterval"
nillable="true" type="q2:RefinementInterval"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfRefinementInterval" nillable="true"
type="q2:ArrayOfRefinementInterval"/>
<xs:complexType name="RefinementInterval">
  <xs:sequence>
    <xs:element minOccurs="0" name="CustomValue" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Lower" nillable="true" type="xs:anyType"/>
    <xs:element minOccurs="0" name="Upper" nillable="true" type="xs:anyType"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="RefinementInterval" nillable="true" type="q2:RefinementInterval"/>
<xs:complexType name="DateRefinementInterval">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:RefinementInterval">
      <xs:sequence>
        <xs:element minOccurs="0" name="LowerDate" type="xs:dateTime"/>
        <xs:element minOccurs="0" name="UpperDate" type="xs:dateTime"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="DateRefinementInterval" nillable="true"
type="q2:DateRefinementInterval"/>
<xs:complexType name="NumericRefinementInterval">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:RefinementInterval">
      <xs:sequence>
        <xs:element minOccurs="0" name="LowerNum" type="xs:long"/>
        <xs:element minOccurs="0" name="UpperNum" type="xs:long"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="NumericRefinementInterval" nillable="true"
type="q2:NumericRefinementInterval"/>
<xs:simpleType name="SearchServiceApplicationFaultType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="SpecialTerm_NotFound"/>
    <xs:enumeration value="SpecialTerm_DuplicateError"/>
    <xs:enumeration value="Synonym_NotFound"/>
    <xs:enumeration value="BestBet_NotFound"/>
    <xs:enumeration value="BestBet_OrderDuplicationError"/>
    <xs:enumeration value="AllNoiseQuery"/>
    <xs:enumeration value="SearchServiceNotFound"/>
    <xs:enumeration value="QueryMalformed"/>
    <xs:enumeration value="ScopeNotFound"/>
    <xs:enumeration value="InvalidProperty"/>
    <xs:enumeration value="OnlyExcludedTerms"/>
    <xs:enumeration value="RankingModelNotFound"/>
    <xs:enumeration value="UnsupportedTopology"/>
    <xs:enumeration value="FASTSearchQuery"/>
    <xs:enumeration value="Timeout"/>
  </xs:restriction>
</xs:simpleType>

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<xs:enumeration value="ExtendedConnectorApplicaion"/>
<xs:enumeration value="PartitionOptionsMismatch"/>
<xs:enumeration value="TooComplexQueryException"/>
<xs:enumeration value="QueryThrottled"/>
<xs:enumeration value="InternalError"/>
<xs:enumeration value="QueryTransformInvalidProperty"/>
<xs:enumeration value="QueryConfigurationImportException"/>
<xs:enumeration value="ApplicationSpecific"/>
<xs:enumeration value="DiscoveryFederatedSourceNotFound"/>
<xs:enumeration value="RemoteSharepointSourceFault"/>
<xs:enumeration value="TenantSiteCollectionMismatchException"/>
<xs:enumeration value="InvalidNameException"/>
<xs:enumeration value="InvalidPropertyTypeException"/>
<xs:enumeration value="CouldNotModifySchemaException"/>
<xs:enumeration value="InvalidMappingException"/>
<xs:enumeration value="ObjectNotFoundException"/>
<xs:enumeration value="PropertyIsReadOnlyException"/>
<xs:enumeration value="PropertyCannotHaveMappingsException"/>
<xs:enumeration value="InvalidManagedPropertyValue"/>
<xs:enumeration value="ArgumentNullException"/>
<xs:enumeration value="UnauthorizedAccessException"/>
<xs:enumeration value="DatabaseException"/>
<xs:enumeration value="SchemaExportException"/>
<xs:enumeration value="SchemaImportException"/>
<xs:enumeration value="NotSupported"/>
<xs:enumeration value="QueryPropertyOutOfRange"/>
</xs:restriction>
</xs:simpleType>
<xs:element name="SearchServiceApplicationFaultType" nillable="true"
type="q2:SearchServiceApplicationFaultType"/>
<xs:complexType name="ResultTableCollection">
<xs:sequence>
<xs:element minOccurs="0" name="DatabaseTime" type="xs:int"/>
<xs:element minOccurs="0" name="Definition" nillable="true"
type="q2:ArrayOfResultDefinition"/>
<xs:element minOccurs="0" name="ElapsedTime" type="xs:int"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="IgnoredNoiseWords" nillable="true" type="q3:ArrayOfstring"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="InternalQueryErrors" nillable="true"
type="q3:ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8"/>
<xs:element minOccurs="0" name="KeywordInformation" nillable="true"
type="q2:KeywordInformation"/>
<xs:element minOccurs="0" name="QueryMachine" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="QueryModification" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="QueryProcessingTime" type="xs:int"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="QueryTerms" nillable="true" type="q3:ArrayOfstring"/>
<xs:element minOccurs="0" name="SpellingSuggestion" nillable="true" type="xs:string"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_ResultTables" nillable="true"
type="q3:ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5"/>
<xs:element minOccurs="0" name="IMSProxyTime" type="xs:int"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
<xs:element minOccurs="0" name="PropertiesContractVersion" nillable="true"
type="xs:string"/>
<xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="QueryParameterTimestamps" nillable="true"
type="q3:ArrayOfKeyValueOfstringstring"/>
<xs:element minOccurs="0" name="RemainingDeserializationSkips" type="xs:int"/>
<xs:element minOccurs="0" name="SerializedResultTables" nillable="true"
type="xs:string"/>
<xs:element
xmlns:tns4="http://schemas.datacontract.org/2004/07/System.Collections.Generic" minOccurs="0"
name="mResultTables" nillable="true"
type="tns4:ArrayOfKeyValuePairOfstringResultTable_PFsic3Az"/>
</xs:sequence>
</xs:complexType>

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<xs:element name="ResultTableCollection" nillable="true" type="q2:ResultTableCollection"/>
<xs:complexType name="ArrayOfResultDefinition">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ResultDefinition"
type="q2:ResultDefinition"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfResultDefinition" nillable="true"
type="q2:ArrayOfResultDefinition"/>
<xs:complexType name="ResultDefinition">
  <xs:sequence>
    <xs:element minOccurs="0" name="DocHref" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DocTitle" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Sentence" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="TermLength" type="xs:int"/>
    <xs:element minOccurs="0" name="TermOffset" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ResultDefinition" nillable="true" type="q2:ResultDefinition"/>
<xs:complexType name="KeywordInformation">
  <xs:sequence>
    <xs:element minOccurs="0" name="Definition" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Keyword" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="KeywordInformation" nillable="true" type="q2:KeywordInformation"/>
<xs:complexType name="ResultTable">
  <xs:sequence>
    <xs:element minOccurs="0" name="IsTotalRowsExact" type="xs:boolean"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ResultType" type="tns2:ResultType"/>
    <xs:element minOccurs="0" name="RowCount" type="xs:int"/>
    <xs:element minOccurs="0" name="Table" nillable="true">
      <xs:complexType>
        <xs:sequence>
          <xs:any minOccurs="0" maxOccurs="unbounded"
namespace="http://www.w3.org/2001/XMLSchema" processContents="lax"/>
          <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
processContents="lax"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" name="TimeZoneID" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRows" type="xs:int"/>
    <xs:element minOccurs="0" name="TotalRowsIncludingDuplicates" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="q3:ArrayOfKeyValueOfstringanyType"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ResultTable" nillable="true" type="q2:ResultTable"/>
<xs:complexType name="ArrayOfPropertyInformation">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PropertyInformation"
nillable="true" type="q2:PropertyInformation"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfPropertyInformation" nillable="true"
type="q2:ArrayOfPropertyInformation"/>
<xs:complexType name="PropertyInformation">
  <xs:sequence>
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="FullTextQueryable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Refinable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Retrievable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Sortable" type="xs:boolean"/>
    <xs:element minOccurs="0" name="m_TypeFullName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```



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</xs:complexType>
<xs:element name="PropertyInformation" nillable="true" type="q2:PropertyInformation"/>
<xs:complexType name="ArrayOfScopeInformation">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ScopeInformation" nillable="true"
type="q2:ScopeInformation"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfScopeInformation" nillable="true"
type="q2:ArrayOfScopeInformation"/>
<xs:complexType name="ScopeInformation">
  <xs:sequence>
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Filter" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ID" type="xs:int"/>
    <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
    <xs:element
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" minOccurs="0" name="State" type="q1:ScopeCompilationState"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ScopeInformation" nillable="true" type="q2:ScopeInformation"/>
<xs:complexType name="HighlightedString">
  <xs:sequence>
    <xs:element minOccurs="0" name="HighlightCount" type="xs:int"/>
    <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="HighlightedString" nillable="true" type="q2:HighlightedString"/>
<xs:complexType name="QueryInfo">
  <xs:sequence>
    <xs:element minOccurs="0" name="AdvancedSearch" type="xs:boolean"/>
    <xs:element minOccurs="0" name="BestBetClicked" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ClickTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="ClickedUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ClickedUrlRank" type="xs:int"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="ClientType" type="tns2:QueryLogClientType"/>
    <xs:element minOccurs="0" name="ContextualScope" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ContextualScopeUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ContinuedSession" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Definitions" type="xs:boolean"/>
    <xs:element minOccurs="0" name="DidYouMean" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DidYouMeanReturned" type="xs:boolean"/>
    <xs:element minOccurs="0" name="ItemsPerPage" type="xs:int"/>
    <xs:element minOccurs="0" name="Location" nillable="true" type="xs:string"/>
    <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
minOccurs="0" name="LogType" type="tns2:QueryLogType"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="NonClickedUrls" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="NumBestBets" type="xs:int"/>
    <xs:element minOccurs="0" name="NumHighConfidenceResults" type="xs:int"/>
    <xs:element minOccurs="0" name="NumResults" type="xs:long"/>
    <xs:element minOccurs="0" name="QueryCulture" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="QueryGuid" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="QueryServer" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="QueryString" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ReferrerUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ResultView" type="xs:short"/>
    <xs:element minOccurs="0" name="ResultsUrl" nillable="true" type="xs:string"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Scopes" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="SearchServiceApplicationID" nillable="true"
type="xs:string"/>
    <xs:element minOccurs="0" name="SearchTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="SessionId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SiteGuid" nillable="true" type="xs:string"/>

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    <xs:element minOccurs="0" name="StartItem" type="xs:int"/>
    <xs:element minOccurs="0" name="TenantId" type="ser:guid"/>
    <xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="TotalResults" type="xs:long"/>
    <xs:element minOccurs="0" name="UserName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QueryInfo" nillable="true" type="q2:QueryInfo"/>
<xs:complexType name="SearchServiceApplicationInfo">
  <xs:sequence>
    <xs:element minOccurs="0" name="AlertsEnabled" type="xs:boolean"/>
    <xs:element
      xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
      minOccurs="0" name="DefaultSearchProvider" type="tns2:SearchProvider"/>
    <xs:element minOccurs="0" name="PersonalQuerySuggestionsEnabled" type="xs:boolean"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
      minOccurs="0" name="PropertyBag" nillable="true" type="q3:ArrayOfKeyValueOfstringstring"/>
    <xs:element minOccurs="0" name="QueryLoggingDailyLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="QueryLoggingEnabled" type="xs:boolean"/>
    <xs:element minOccurs="0" name="QuerySuggestionsEnabled" type="xs:boolean"/>
    <xs:element minOccurs="0" name="SearchCenterUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SearchServiceApplicationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="SharedSearchBoxSettings" nillable="true"
      type="xs:string"/>
    <xs:element minOccurs="0" name="DefaultQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="DiscoveryMaxKeywordQueryTextLength" type="xs:int"/>
    <xs:element minOccurs="0" name="DiscoveryMaxRowLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="InstallLanguageLCID" type="xs:int"/>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
      minOccurs="0" name="InstalledLanguages" nillable="true" type="q3:ArrayOfint"/>
    <xs:element minOccurs="0" name="MaxKeywordQueryTextLength" type="xs:int"/>
    <xs:element minOccurs="0" name="MaxQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="MaxRowLimit" type="xs:int"/>
    <xs:element minOccurs="0" name="MinimumPartialQueryTimeout" type="xs:int"/>
    <xs:element minOccurs="0" name="UseSimpleSchemaUI" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="SearchServiceApplicationInfo" nillable="true"
  type="q2:SearchServiceApplicationInfo"/>
<xs:complexType name="UIQueryLatencyDataBuffer">
  <xs:complexContent mixed="false">
    <xs:extension
      base="q2:QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBuff
      erYrv50AqE">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="UIQueryLatencyDataBuffer" nillable="true"
  type="q2:UIQueryLatencyDataBuffer"/>
<xs:complexType
  name="QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferY
  rv50AqE">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="AggregatedQueryTimings" nillable="true"
          type="q2:ArrayOfAggregatedUIQueryLatencyDataBuffer"/>
        <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
          type="q2:ArrayOfVerboseUIQueryLatencyDataBuffer"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="m_AggregatedQueryTimings" nillable="true"
          type="q3:ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer PFsic3Az"/>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          minOccurs="0" name="m_VerboseQueryTimings" nillable="true"
          type="q3:ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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</xs:complexType>
<xs:element
name="QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferY
rv50AqE" nillable="true"
type="q2:QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBuff
erYrv50AqE"/>
  <xs:complexType name="DataBuffer">
    <xs:sequence>
      <xs:element minOccurs="0" name="ApplicationId" type="ser:guid"/>
      <xs:element minOccurs="0" name="EventTime" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="MachineName" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="DataBuffer" nillable="true" type="q2:DataBuffer"/>
  <xs:complexType name="ArrayOfAggregatedUIQueryLatencyDataBuffer">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="AggregatedUIQueryLatencyDataBuffer" nillable="true"
type="q2:AggregatedUIQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfAggregatedUIQueryLatencyDataBuffer" nillable="true"
type="q2:ArrayOfAggregatedUIQueryLatencyDataBuffer"/>
  <xs:complexType name="AggregatedUIQueryLatencyDataBuffer">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:DataBuffer">
        <xs:sequence>
          <xs:element minOccurs="0" name="ApplicationType" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="CustomTags" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="ImsFlow" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="NumQueries" type="xs:int"/>
          <xs:element minOccurs="0" name="ResultPageUrl" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="TenantId" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="AggregatedUIQueryLatencyDataBuffer" nillable="true"
type="q2:AggregatedUIQueryLatencyDataBuffer"/>
  <xs:complexType name="ArrayOfVerboseUIQueryLatencyDataBuffer">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseUIQueryLatencyDataBuffer"
nillable="true" type="q2:VerboseUIQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfVerboseUIQueryLatencyDataBuffer" nillable="true"
type="q2:ArrayOfVerboseUIQueryLatencyDataBuffer"/>
  <xs:complexType name="VerboseUIQueryLatencyDataBuffer">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:DataBuffer">
        <xs:sequence>
          <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
          <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="QueryTerms" nillable="true" type="xs:string"/>
          <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="VerboseUIQueryLatencyDataBuffer" nillable="true"
type="q2:VerboseUIQueryLatencyDataBuffer"/>
  <xs:complexType name="WebPartQueryLatencyDataBuffer">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:DataBuffer">

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        <xs:sequence>
          <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
type="q2:ArrayOfVerboseWebPartQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="WebPartQueryLatencyDataBuffer" nillable="true"
type="q2:WebPartQueryLatencyDataBuffer"/>
  <xs:complexType name="ArrayOfVerboseWebPartQueryLatencyDataBuffer">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="VerboseWebPartQueryLatencyDataBuffer" nillable="true"
type="q2:VerboseWebPartQueryLatencyDataBuffer"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfVerboseWebPartQueryLatencyDataBuffer" nillable="true"
type="q2:ArrayOfVerboseWebPartQueryLatencyDataBuffer"/>
  <xs:complexType name="VerboseWebPartQueryLatencyDataBuffer">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:DataBuffer">
        <xs:sequence>
          <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
          <xs:element minOccurs="0" name="ExclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="InclusiveWebpartTimeMs" type="xs:int"/>
          <xs:element minOccurs="0" name="WebPartId" type="ser:guid"/>
          <xs:element minOccurs="0" name="WebPartTitle" nillable="true" type="xs:string"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="VerboseWebPartQueryLatencyDataBuffer" nillable="true"
type="q2:VerboseWebPartQueryLatencyDataBuffer"/>
  <xs:complexType name="OMQueryLatencyDataBuffer">
    <xs:complexContent mixed="false">
      <xs:extension
base="q2:QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBuff
erYrv50AqE">
        <xs:sequence>
          <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="bucketedQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer PFsic3
Azty7Ep6D1"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="OMQueryLatencyDataBuffer" nillable="true"
type="q2:OMQueryLatencyDataBuffer"/>
  <xs:complexType
name="QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferY
rv50AqE">
    <xs:complexContent mixed="false">
      <xs:extension base="q2:DataBuffer">
        <xs:sequence>
          <xs:element minOccurs="0" name="AggregatedQueryTimings" nillable="true"
type="q2:ArrayOfAggregatedOMQueryLatencyDataBuffer"/>
          <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
type="q2:ArrayOfVerboseOMQueryLatencyDataBuffer"/>
          <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_AggregatedQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az"/>
          <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="m_VerboseQueryTimings" nillable="true"
type="q3:ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer PFsic3Az"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

```

```

    <xs:element
name="QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferY
rv50AqE" nillable="true"
type="q2:QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBuff
erYrv50AqE"/>
    <xs:complexType name="ArrayOfAggregatedOMQueryLatencyDataBuffer">
        <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded"
name="AggregatedOMQueryLatencyDataBuffer" nillable="true"
type="q2:AggregatedOMQueryLatencyDataBuffer"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfAggregatedOMQueryLatencyDataBuffer" nillable="true"
type="q2:ArrayOfAggregatedOMQueryLatencyDataBuffer"/>
    <xs:complexType name="AggregatedOMQueryLatencyDataBuffer">
        <xs:complexContent mixed="false">
            <xs:extension base="q2:DataBuffer">
                <xs:sequence>
                    <xs:element minOccurs="0" name="ApplicationType" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="CustomTags" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="IMSProxyTimeMs" type="xs:int"/>
                    <xs:element minOccurs="0" name="ImsFlow" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="NumQueries" type="xs:int"/>
                    <xs:element minOccurs="0" name="QPTimeMs" type="xs:int"/>
                    <xs:element minOccurs="0" name="ResultPageUrl" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="TenantId" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:element name="AggregatedOMQueryLatencyDataBuffer" nillable="true"
type="q2:AggregatedOMQueryLatencyDataBuffer"/>
    <xs:complexType name="ArrayOfVerboseOMQueryLatencyDataBuffer">
        <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseOMQueryLatencyDataBuffer"
nillable="true" type="q2:VerboseOMQueryLatencyDataBuffer"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfVerboseOMQueryLatencyDataBuffer" nillable="true"
type="q2:ArrayOfVerboseOMQueryLatencyDataBuffer"/>
    <xs:complexType name="VerboseOMQueryLatencyDataBuffer">
        <xs:complexContent mixed="false">
            <xs:extension base="q2:DataBuffer">
                <xs:sequence>
                    <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
                    <xs:element minOccurs="0" name="IMSProxyTimeMs" type="xs:int"/>
                    <xs:element minOccurs="0" name="NumHitsRequested" type="xs:int"/>
                    <xs:element minOccurs="0" name="QPMachine" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="QPTimeMs" type="xs:int"/>
                    <xs:element minOccurs="0" name="QueryTerms" nillable="true" type="xs:string"/>
                    <xs:element minOccurs="0" name="TotalQueryTimeMs" type="xs:int"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:element name="VerboseOMQueryLatencyDataBuffer" nillable="true"
type="q2:VerboseOMQueryLatencyDataBuffer"/>
    <xs:complexType name="QueryErrorDataBuffer">
        <xs:complexContent mixed="false">
            <xs:extension base="q2:DataBuffer">
                <xs:sequence>
                    <xs:element minOccurs="0" name="VerboseQueryTimings" nillable="true"
type="q2:ArrayOfVerboseQueryErrorDataBuffer"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:element name="QueryErrorDataBuffer" nillable="true" type="q2:QueryErrorDataBuffer"/>

```

```

<xs:complexType name="ArrayOfVerboseQueryErrorDataBuffer">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="VerboseQueryErrorDataBuffer"
nillable="true" type="q2:VerboseQueryErrorDataBuffer"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfVerboseQueryErrorDataBuffer" nillable="true"
type="q2:ArrayOfVerboseQueryErrorDataBuffer"/>
<xs:complexType name="VerboseQueryErrorDataBuffer">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:DataBuffer">
      <xs:sequence>
        <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
        <xs:element minOccurs="0" name="Exception" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Operation" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="VerboseQueryErrorDataBuffer" nillable="true"
type="q2:VerboseQueryErrorDataBuffer"/>
<xs:complexType name="QuerySuggestionResults">
  <xs:sequence>
    <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PeopleNames" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="PersonalResults" nillable="true"
type="q2:ArrayOfPersonalResultSuggestion"/>
    <xs:element minOccurs="0" name="Queries" nillable="true"
type="q2:ArrayOfQuerySuggestionQuery"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QuerySuggestionResults" nillable="true"
type="q2:QuerySuggestionResults"/>
<xs:complexType name="ArrayOfPersonalResultSuggestion">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PersonalResultSuggestion"
nillable="true" type="q2:PersonalResultSuggestion"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfPersonalResultSuggestion" nillable="true"
type="q2:ArrayOfPersonalResultSuggestion"/>
<xs:complexType name="PersonalResultSuggestion">
  <xs:sequence>
    <xs:element minOccurs="0" name="HighlightedTitle" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="IsBestBet" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="PersonalResultSuggestion" nillable="true"
type="q2:PersonalResultSuggestion"/>
<xs:complexType name="ArrayOfQuerySuggestionQuery">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="QuerySuggestionQuery"
nillable="true" type="q2:QuerySuggestionQuery"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfQuerySuggestionQuery" nillable="true"
type="q2:ArrayOfQuerySuggestionQuery"/>
<xs:complexType name="QuerySuggestionQuery">
  <xs:sequence>
    <xs:element minOccurs="0" name="IsPersonal" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QuerySuggestionQuery" nillable="true" type="q2:QuerySuggestionQuery"/>
<xs:complexType name="QueryAutoCompletionResults">
  <xs:sequence>
    <xs:element minOccurs="0" name="CoreExecutionTimeMs" type="xs:long"/>
  </xs:sequence>
</xs:complexType>

```

```

        <xs:element minOccurs="0" name="CorrelationId" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Queries" nillable="true"
type="q2:ArrayOfQueryAutoCompletion"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="QueryAutoCompletionResults" nillable="true"
type="q2:QueryAutoCompletionResults"/>
<xs:complexType name="ArrayOfQueryAutoCompletion">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryAutoCompletion"
nillable="true" type="q2:QueryAutoCompletion"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfQueryAutoCompletion" nillable="true"
type="q2:ArrayOfQueryAutoCompletion"/>
<xs:complexType name="QueryAutoCompletion">
    <xs:sequence>
        <xs:element minOccurs="0" name="Matches" nillable="true"
type="q2:ArrayOfQueryAutoCompletionMatch"/>
        <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Score" type="xs:double"/>
        <xs:element minOccurs="0" name="Source" nillable="true" type="xs:string"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="QueryAutoCompletion" nillable="true" type="q2:QueryAutoCompletion"/>
<xs:complexType name="ArrayOfQueryAutoCompletionMatch">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryAutoCompletionMatch"
nillable="true" type="q2:QueryAutoCompletionMatch"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfQueryAutoCompletionMatch" nillable="true"
type="q2:ArrayOfQueryAutoCompletionMatch"/>
<xs:complexType name="QueryAutoCompletionMatch">
    <xs:sequence>
        <xs:element minOccurs="0" name="Alternation" type="xs:boolean"/>
        <xs:element minOccurs="0" name="Key" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Length" type="xs:long"/>
        <xs:element minOccurs="0" name="MatchType" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Score" type="xs:double"/>
        <xs:element minOccurs="0" name="SourceName" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="Start" type="xs:long"/>
        <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="QueryAutoCompletionMatch" nillable="true"
type="q2:QueryAutoCompletionMatch"/>
<xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
<xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"/>
<xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"/>
<xs:import namespace="http://schemas.datacontract.org/2004/07/System.Collections.Generic"/>
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
</xs:schema>

```

## 7.5 <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query> Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"

```

```

targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query
" xmlns:xs="http://www.w3.org/2001/XMLSchema"
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
<xs:simpleType name="AlertChangeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Discovered" />
    <xs:enumeration value="Modified" />
    <xs:enumeration value="DiscoveredOrModified" />
  </xs:restriction>
</xs:simpleType>
<xs:element name="AlertChangeType" nillable="true" type="tns2:AlertChangeType" />
<xs:simpleType name="QueryAuthenticationType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="NtAuthenticatedQuery" />
    <xs:enumeration value="PluggableAuthenticatedQuery" />
  </xs:restriction>
</xs:simpleType>
<xs:element name="QueryAuthenticationType" nillable="true"
type="tns2:QueryAuthenticationType" />
<xs:simpleType name="QueryHint">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None" />
        <xs:enumeration value="OptimizeWithFullTextIndex" />
        <xs:enumeration value="OptimizeWithPropertyStore" />
        <xs:enumeration value="PropertySelectWithInClause" />
        <xs:enumeration value="PropertySelectWithTempTable" />
        <xs:enumeration value="UseSqlFirstJoinStrategy" />
        <xs:enumeration value="AvoidSqlOuterJoins" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:element name="QueryHint" nillable="true" type="tns2:QueryHint" />
<xs:simpleType name="KeywordInclusion">
  <xs:restriction base="xs:string">
    <xs:enumeration value="AllKeywords" />
    <xs:enumeration value="AnyKeyword" />
  </xs:restriction>
</xs:simpleType>
<xs:element name="KeywordInclusion" nillable="true" type="tns2:KeywordInclusion" />
<xs:complexType name="PagingCookie">
  <xs:sequence>
    <xs:any minOccurs="0" maxOccurs="unbounded" namespace="##local"
processContents="skip" />
  </xs:sequence>
  <xs:attribute ref="ser:FactoryType" />
</xs:complexType>
<xs:element name="PagingCookie" nillable="true" type="tns2:PagingCookie" />
<xs:simpleType name="ResultType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None" />
        <xs:enumeration value="RelevantResults" />
        <xs:enumeration value="SpecialTermResults" />
        <xs:enumeration value="HighConfidenceResults" />
        <xs:enumeration value="DefinitionResults" />
        <xs:enumeration value="VisualBestBetsResults" />
        <xs:enumeration value="RefinementResults" />
        <xs:enumeration value="Extended" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:element name="ResultType" nillable="true" type="tns2:ResultType" />
<xs:simpleType name="SearchProvider">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Default" />

```



```

    <xs:enumeration value="SharepointSearch"/>
    <xs:enumeration value="FASTSearch"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="SearchProvider" nillable="true" type="tns2:SearchProvider"/>
<xs:simpleType name="ResubmitFlag">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="NoResubmit"/>
        <xs:enumeration value="EnableSpellcheckOnResubmit"/>
        <xs:enumeration value="EnableSpellcheckSuggestOnResubmit"/>
        <xs:enumeration value="EnableStemmingOnResubmit"/>
        <xs:enumeration value="AddSynonymsAutomatically"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:element name="ResubmitFlag" nillable="true" type="tns2:ResubmitFlag"/>
<xs:simpleType name="SimilarType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="Find"/>
    <xs:enumeration value="Refine"/>
    <xs:enumeration value="Exclude"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="SimilarType" nillable="true" type="tns2:SimilarType"/>
<xs:simpleType name="SpellcheckMode">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Off"/>
    <xs:enumeration value="Suggest"/>
    <xs:enumeration value="On"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="SpellcheckMode" nillable="true" type="tns2:SpellcheckMode"/>
<xs:simpleType name="SortDirection">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Ascending"/>
    <xs:enumeration value="Descending"/>
    <xs:enumeration value="FQLFormula"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="SortDirection" nillable="true" type="tns2:SortDirection"/>
<xs:complexType name="ArrayOfReorderingRule">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ReorderingRule" nillable="true"
type="tns2:ReorderingRule"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfReorderingRule" nillable="true"
type="tns2:ArrayOfReorderingRule"/>
<xs:complexType name="ReorderingRule">
  <xs:sequence>
    <xs:element minOccurs="0" name="Boost" type="xs:int"/>
    <xs:element minOccurs="0" name="MatchType" type="tns2:ReorderingRuleMatchType"/>
    <xs:element minOccurs="0" name="MatchValue" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ReorderingRule" nillable="true" type="tns2:ReorderingRule"/>
<xs:simpleType name="ReorderingRuleMatchType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ResultContainsKeyword"/>
    <xs:enumeration value="TitleContainsKeyword"/>
    <xs:enumeration value="TitleMatchesKeyword"/>
    <xs:enumeration value="UrlStartsWith"/>
    <xs:enumeration value="UrlExactlyMatches"/>
    <xs:enumeration value="ContentTypeIs"/>
    <xs:enumeration value="FileExtensionMatches"/>
  </xs:restriction>
</xs:simpleType>

```

```

        <xs:enumeration value="ResultHasTag"/>
        <xs:enumeration value="ManualCondition"/>
    </xs:restriction>
</xs:simpleType>
<xs:element name="ReorderingRuleMatchType" nillable="true"
type="tns2:ReorderingRuleMatchType"/>
<xs:simpleType name="QueryLogClientType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="ObjectModel"/>
        <xs:enumeration value="WebService"/>
        <xs:enumeration value="UI"/>
        <xs:enumeration value="Custom"/>
        <xs:enumeration value="CSOM"/>
        <xs:enumeration value="RSS"/>
        <xs:enumeration value="Alerts"/>
        <xs:enumeration value="ObjectModelBackwardsCompatible"/>
        <xs:enumeration value="AllResultsQuery"/>
        <xs:enumeration value="PeopleResultsQuery"/>
        <xs:enumeration value="VideoResultsQuery"/>
        <xs:enumeration value="SiteResultsQuery_All"/>
        <xs:enumeration value="SiteResultsQuery_Docs"/>
        <xs:enumeration value="SiteResultsQuery_Sites"/>
        <xs:enumeration value="ContentSearchHigh"/>
        <xs:enumeration value="ContentSearchRegular"/>
        <xs:enumeration value="CatalogItemReuseQuery"/>
        <xs:enumeration value="ContentSearchLow"/>
        <xs:enumeration value="SearchWebPartConfiguration"/>
        <xs:enumeration value="DiscoverySearch"/>
        <xs:enumeration value="DiscoveryDownloadManager"/>
        <xs:enumeration value="DocsSharedWithMe"/>
        <xs:enumeration value="MyTaskSync"/>
        <xs:enumeration value="SEOSiteMapQuery"/>
        <xs:enumeration value="MySiteSecurityTrimmer"/>
        <xs:enumeration value="Monitoring"/>
        <xs:enumeration value="ReportsAndDataResultsQuery"/>
        <xs:enumeration value="InplaceListSearch"/>
        <xs:enumeration value="TrendingTagsQuery"/>
        <xs:enumeration value="QueryBoxSkyDrive"/>
        <xs:enumeration value="QueryBoxSearchLandingPage"/>
        <xs:enumeration value="Unknown"/>
    </xs:restriction>
</xs:simpleType>
<xs:element name="QueryLogClientType" nillable="true" type="tns2:QueryLogClientType"/>
<xs:simpleType name="QueryLogType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Click"/>
        <xs:enumeration value="Query"/>
    </xs:restriction>
</xs:simpleType>
<xs:element name="QueryLogType" nillable="true" type="tns2:QueryLogType"/>
<xs:complexType name="QueryLogPageClick">
    <xs:sequence>
        <xs:element minOccurs="0" name="BlockType" type="xs:unsignedByte"/>
        <xs:element minOccurs="0" name="ClickTime" type="xs:dateTime"/>
        <xs:element minOccurs="0" name="ClickType" type="tns2:QueryLogClickType"/>
        <xs:element minOccurs="0" name="PageImpressionId" type="xs:long"/>
        <xs:element minOccurs="0" name="PartitionBucket" type="xs:short"/>
        <xs:element minOccurs="0" name="ResultPosition" type="xs:int"/>
        <xs:element minOccurs="0" name="SubResultIndex" type="xs:unsignedByte"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="QueryLogPageClick" nillable="true" type="tns2:QueryLogPageClick"/>
<xs:simpleType name="QueryLogClickType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Result"/>
        <xs:enumeration value="InsideBlock"/>
        <xs:enumeration value="More"/>
        <xs:enumeration value="DeepLink"/>
        <xs:enumeration value="Hover"/>
    </xs:restriction>

```

```

    <xs:enumeration value="HoverWithWAC"/>
    <xs:enumeration value="HoverSection"/>
    <xs:enumeration value="ActionFollow"/>
    <xs:enumeration value="ActionViewLibrary"/>
    <xs:enumeration value="ActionEdit"/>
    <xs:enumeration value="ActionSend"/>
    <xs:enumeration value="ActionViewDupes"/>
    <xs:enumeration value="OneDriveQueryBoxResult"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="QueryLogClickType" nillable="true" type="tns2:QueryLogClickType"/>
<xs:complexType name="QueryLogImmediacyInfo">
  <xs:sequence>
    <xs:element minOccurs="0" name="LCID" type="xs:int"/>
    <xs:element minOccurs="0" name="QueryString" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="SiteGuid" type="ser:guid"/>
    <xs:element minOccurs="0" name="SourceId" type="ser:guid"/>
    <xs:element minOccurs="0" name="TenantId" type="ser:guid"/>
    <xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Url" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="UserName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="WebGuid" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="QueryLogImmediacyInfo" nillable="true"
type="tns2:QueryLogImmediacyInfo"/>
</xs:schema>

```

## 7.6 <http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration> Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
xmlns:tns3="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="SPUrlZone">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Default"/>
      <xs:enumeration value="Intranet"/>
      <xs:enumeration value="Internet"/>
      <xs:enumeration value="Custom"/>
      <xs:enumeration value="Extranet"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="SPUrlZone" nillable="true" type="tns3:SPUrlZone"/>
</xs:schema>

```

## 7.7 <http://schemas.microsoft.com/2003/10/Serialization/Arrays> Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfanyType">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="anyType" nillable="true"
type="xs:anyType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfanyType" nillable="true" type="q3:ArrayOfanyType"/>
  <xs:complexType name="ArrayOfKeyValueOfstringanyType">

```

```

<xs:sequence>
  <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringanyType">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Key" nillable="true" type="xs:string"/>
        <xs:element name="Value" nillable="true" type="xs:anyType"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringanyType" nillable="true"
type="q3:ArrayOfKeyValueOfstringanyType"/>
<xs:complexType name="ArrayOfstring">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfstring" nillable="true" type="q3:ArrayOfstring"/>
<xs:complexType name="ArrayOfint">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="int" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfint" nillable="true" type="q3:ArrayOfint"/>
<xs:complexType name="ArrayOfKeyValueOfstringstring">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringstring">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" nillable="true" type="xs:string"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringstring" nillable="true"
type="q3:ArrayOfKeyValueOfstringstring"/>
<xs:complexType name="ArrayOfguid">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="guid" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfguid" nillable="true" type="q3:ArrayOfguid"/>
<xs:complexType name="ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringArrayOfRefinementInterval_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:ArrayOfRefinementInterval"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az"
nillable="true" type="q3:ArrayOfKeyValueOfstringArrayOfRefinementInterval PFsic3Az"/>
<xs:complexType name="ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringSearchServiceApplicationFaulty6h3NzC8">
      <xs:complexType>
        <xs:sequence>

```

```

        <xs:element name="Key" nillable="true" type="xs:string"/>
      </xs:element>
    xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrati
on" name="Value" nillable="true" type="q1:SearchServiceApplicationFault"/>
  </xs:sequence>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8"
nillable="true" type="q3:ArrayOfKeyValueOfstringSearchServiceApplicationFaulty6h3NzC8"/>
<xs:complexType name="ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfResultTypeResultTableUTLV0zE5">
      <xs:complexType>
        <xs:sequence>
          <xs:element
xmlns:tns2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"
name="Key" type="tns2:ResultType"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:ResultTable"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5" nillable="true"
type="q3:ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5"/>
<xs:complexType name="ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer PFsic3Az">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringAggregatedUIQueryLatencyDataBuffer PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedUIQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer PFsic3Az"
nillable="true"
type="q3:ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer PFsic3Az"/>
<xs:complexType name="ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringVerboseUIQueryLatencyDataBuffer PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:VerboseUIQueryLatencyDataBuffer"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer_PFsic3Az"
nillable="true" type="q3:ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer PFsic3Az"/>
<xs:complexType name="ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az">

```

```

    <xs:complexType>
      <xs:sequence>
        <xs:element name="Key" nillable="true" type="xs:string"/>
        <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedOMQueryLatencyDataBuffer"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az"
nillable="true"
type="q3:ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az"/>
  <xs:complexType name="ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Key" nillable="true" type="xs:string"/>
            <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:VerboseOMQueryLatencyDataBuffer"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az"
nillable="true" type="q3:ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az"/>
  <xs:complexType
name="ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1
">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Key" nillable="true" type="xs:string"/>
            <xs:element name="Value" nillable="true"
type="q3:ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:element
name="ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1" nillable="true"
type="q3:ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1"/>
  <xs:complexType name="ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Key" type="xs:int"/>
            <xs:element
xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" name="Value"
nillable="true" type="q2:AggregatedOMQueryLatencyDataBuffer"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>

```

```

    <xs:element name="ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFSic3Az"
nillable="true" type="q3:ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFSic3Az"/>
    <xs:complexType name="ArrayOfanyURI">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="anyURI" nillable="true"
type="xs:anyURI"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfanyURI" nillable="true" type="q3:ArrayOfanyURI"/>
    <xs:complexType name="ArrayOfboolean">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="boolean" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfboolean" nillable="true" type="q3:ArrayOfboolean"/>
    <xs:complexType name="ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValueOfstringQueryHealthMonitoringSettingsvncQr8z">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="Key" nillable="true" type="xs:string"/>
              <xs:element
xmlns:tns1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring
" name="Value" nillable="true" type="tns1:QueryHealthMonitoringSettings"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z"
nillable="true" type="q3:ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvncQr8z"/>
    <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
    <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Monitoring"
/>
    <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query"/>
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/">
    <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
  </xs:schema>

```

## 7.8 http://schemas.microsoft.com/2003/10/Serialization/ Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="anyType" nillable="true" type="xs:anyType"/>
  <xs:element name="anyURI" nillable="true" type="xs:anyURI"/>
  <xs:element name="base64Binary" nillable="true" type="xs:base64Binary"/>
  <xs:element name="boolean" nillable="true" type="xs:boolean"/>
  <xs:element name="byte" nillable="true" type="xs:byte"/>
  <xs:element name="dateTime" nillable="true" type="xs:dateTime"/>
  <xs:element name="decimal" nillable="true" type="xs:decimal"/>
  <xs:element name="double" nillable="true" type="xs:double"/>
  <xs:element name="float" nillable="true" type="xs:float"/>
  <xs:element name="int" nillable="true" type="xs:int"/>
  <xs:element name="long" nillable="true" type="xs:long"/>
  <xs:element name="QName" nillable="true" type="xs:QName"/>
  <xs:element name="short" nillable="true" type="xs:short"/>
  <xs:element name="string" nillable="true" type="xs:string"/>
  <xs:element name="unsignedByte" nillable="true" type="xs:unsignedByte"/>
  <xs:element name="unsignedInt" nillable="true" type="xs:unsignedInt"/>

```

```

<xs:element name="unsignedLong" nillable="true" type="xs:unsignedLong"/>
<xs:element name="unsignedShort" nillable="true" type="xs:unsignedShort"/>
<xs:element name="char" nillable="true" type="ser:char"/>
<xs:simpleType name="char">
  <xs:restriction base="xs:int"/>
</xs:simpleType>
<xs:element name="duration" nillable="true" type="ser:duration"/>
<xs:simpleType name="duration">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?"/>
    <xs:minInclusive value="-P10675199DT2H48M5.4775808S"/>
    <xs:maxInclusive value="P10675199DT2H48M5.4775807S"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="guid" nillable="true" type="ser:guid"/>
<xs:simpleType name="guid">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>
  </xs:restriction>
</xs:simpleType>
<xs:attribute name="FactoryType" type="xs:QName"/>
<xs:attribute name="Id" type="xs:ID"/>
<xs:attribute name="Ref" type="xs:IDREF"/>
</xs:schema>

```

## 7.9 <http://schemas.datacontract.org/2004/07/System.Collections.Generic> Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:tns4="http://schemas.datacontract.org/2004/07/System.Collections.Generic"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/System.Collections.Generic"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfKeyValuePairOfStringResultTable_PFsic3Az">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded"
        name="KeyValuePairOfStringResultTable_PFsic3Az"
        type="tns4:KeyValuePairOfStringResultTable_PFsic3Az"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfKeyValuePairOfStringResultTable_PFsic3Az" nillable="true"
    type="tns4:ArrayOfKeyValuePairOfStringResultTable_PFsic3Az"/>
  <xs:complexType name="KeyValuePairOfStringResultTable_PFsic3Az">
    <xs:sequence>
      <xs:element name="key" nillable="true" type="xs:string"/>
      <xs:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        name="value" nillable="true" type="q2:ResultTable"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="KeyValuePairOfStringResultTable_PFsic3Az" nillable="true"
    type="tns4:KeyValuePairOfStringResultTable_PFsic3Az"/>
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
  <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08/" />
</xs:schema>

```

## 7.10 <http://schemas.datacontract.org/2004/07/System.Data> Schema

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/System.Data"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="DataTable" nillable="true">
    <xs:complexType>
      <xs:sequence>

```



```
        <xs:any minOccurs="0" maxOccurs="unbounded"
namespace="http://www.w3.org/2001/XMLSchema" processContents="lax"/>
        <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
processContents="lax"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

## 8 Appendix C: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs.

- Microsoft FAST Search Server 2010
- Microsoft SharePoint Server 2010
- Microsoft SharePoint Server 2013
- Microsoft SharePoint Server 2016

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that the product does not follow the prescription.

[<1> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<2> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<3> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<4> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<5> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<6> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<7> Section 2.2.4](#): This type is available only in SharePoint Server 2013.

[<8> Section 2.2.4.11](#): Applicable to protocol client running Microsoft SharePoint Server 2010 or Microsoft Search Server 2010.

[<9> Section 2.2.4.11](#): Applicable to protocol client running SharePoint Server 2013 in SharePoint Server 2010 **compatibility mode**.

[<10> Section 2.2.4.11](#): Applicable to protocol client running SharePoint Server 2013.

[<11> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<12> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<13> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<14> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<15> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<16> Section 2.2.4.12](#): This value MUST only be used in SharePoint Server 2013.

[<17> Section 2.2.4.13](#): This value MUST only be used in SharePoint Server 2013.

[<18> Section 2.2.4.13](#): This value MUST only be used in SharePoint Server 2013.

[<19> Section 2.2.4.13](#): This value MUST only be used in SharePoint Server 2013.

- <20> [Section 2.2.4.13](#): This value MUST only be used in SharePoint Server 2013.
- <21> [Section 2.2.4.13](#): This value MUST only be used in SharePoint Server 2013.
- <22> [Section 2.2.4.14](#): This type is available only in SharePoint Server 2013.
- <23> [Section 2.2.4.15](#): This type is available only in SharePoint Server 2013.
- <24> [Section 2.2.4.16](#): This type is available only in SharePoint Server 2013.
- <25> [Section 2.2.4.17](#): This type is available only in SharePoint Server 2013.
- <26> [Section 2.2.4.18](#): This type is available only in SharePoint Server 2013.
- <27> [Section 2.2.4.19](#): This type is available only in SharePoint Server 2013.
- <28> [Section 2.2.4.20](#): This type is available only in SharePoint Server 2013.
- <29> [Section 2.2.4.23](#): This value MUST only be used in SharePoint Server 2013.
- <30> [Section 2.2.4.24](#): This value MUST only be used if the protocol client is running SharePoint Server 2010 or Search Server 2010.
- <31> [Section 2.2.4.24](#): This value MUST only be used if the protocol client is running SharePoint Server 2010 or Search Server 2010.
- <32> [Section 2.2.4.24](#): This value MUST only be used in SharePoint Server 2013.
- <33> [Section 2.2.4.24](#): This value MUST only be used in SharePoint Server 2013.
- <34> [Section 2.2.4.25](#): This value MUST only be used if the protocol client is running SharePoint Server 2010 or Search Server 2010.
- <35> [Section 2.2.4.25](#): This value MUST only be used if the protocol client is running SharePoint Server 2010 or Search Server 2010.
- <36> [Section 2.2.4.25](#): This value MUST only be used in SharePoint Server 2013.
- <37> [Section 2.2.4.25](#): This value MUST only be used in SharePoint Server 2013.
- <38> [Section 2.2.4.28](#): This value MUST only be used in SharePoint Server 2013.
- <39> [Section 2.2.4.28](#): This value MUST only be used in SharePoint Server 2013.
- <40> [Section 2.2.4.36](#): This type is available only in SharePoint Server 2013.
- <41> [Section 2.2.5](#): This type is available only in SharePoint Server 2013.
- <42> [Section 2.2.5.1](#): This type is available only in SharePoint Server 2013.
- <43> [Section 3.1.1.2](#): This property exists only in Microsoft FAST Search Server 2010 for SharePoint and Microsoft FAST Search Server 2010 for SharePoint Internet Sites.
- <44> [Section 3.1.1.6](#): This behavior is supported only by SharePoint Server 2013.
- <45> [Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.
- <46> [Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.
- <47> [Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.
- <48> [Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.

[<49> Section 3.1.4](#): This operation MUST only be used when the protocol client is running SharePoint Server 2010 or Search Server 2010.

[<50> Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.

[<51> Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.

[<52> Section 3.1.4](#): This operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<53> Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.

[<54> Section 3.1.4](#): Operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<55> Section 3.1.4](#): This operation is supported only by SharePoint Server 2013.

[<56> Section 3.1.4](#): Operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<57> Section 3.1.4.1.3.1](#): FAST Search Server 2010 performs this transformation.

[<58> Section 3.1.4.1.3.1](#): FAST Search Server 2010 performs this suggestion.

[<59> Section 3.1.4.1.3.6](#): In SharePoint Server 2010, this element is always set to 0.

[<60> Section 3.1.4.1.3.7](#): This type is available only in SharePoint Server 2013.

[<61> Section 3.1.4.1.3.8](#): This type is available only in SharePoint Server 2013.

[<62> Section 3.1.4.7.3.7](#): This type is available only in SharePoint Server 2013.

[<63> Section 3.1.4.7.3.8](#): This type is available only in SharePoint Server 2013.

[<64> Section 3.1.4.7.3.9](#): This type is available only in SharePoint Server 2013.

[<65> Section 3.1.4.7.4.5](#): This type is available only in SharePoint Server 2013.

[<66> Section 3.1.4.12](#): This operation MUST only be used when the protocol client is running SharePoint Server 2010 or Search Server 2010.

[<67> Section 3.1.4.13](#): This operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<68> Section 3.1.4.14](#): Operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<69> Section 3.1.4.15](#): Operation is supported only by SharePoint Server 2010 or Search Server 2010.

[<70> Section 3.1.4.16](#): This operation is supported only by SharePoint Server 2013.

[<71> Section 3.1.4.17](#): This operation is supported only by SharePoint Server 2013.

[<72> Section 3.1.4.18](#): This operation is supported only by SharePoint Server 2013.

[<73> Section 3.1.4.19](#): This operation is supported only by SharePoint Server 2013.

[<74> Section 3.1.4.20](#): This operation is supported only by SharePoint Server 2013.

[<75> Section 3.1.4.21](#): This operation is supported only by SharePoint Server 2013.

[<76> Section 3.1.4.22](#): This operation is supported only by SharePoint Server 2013.

[<77> Section 3.1.4.23](#): This operation is supported only by SharePoint Server 2013.

## 9 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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