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Appendix B: Full XML Schema


https://tempuri.org/ Schema

https://www.microsoft.com/sharepoint/search/KnownTypes/2008/08 Schema


https://schemas.microsoft.com/2003/10/Serialization/Arrays Schema


Appendix C: Product Behavior

Change Tracking

Index
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:

access control entry (ACE): An entry in an access control list (ACL) that contains a set of user rights and a security identifier (SID) that identifies a principal for whom the rights are allowed, denied, or audited.

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 "".

**endpoint**: A communication port that is exposed by an application server for a specific shared service and to which messages can be addressed.

**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].

**Hypertext Transfer Protocol (HTTP)**: An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Hypertext Transfer Protocol Secure (HTTPS)**: An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [SSL3] and [RFC5246].

**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 [RFC7159]. 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 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 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 preformed 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.

**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 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 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 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**: A lightweight protocol for exchanging structured information in a decentralized, distributed environment. SOAP uses XML technologies to define an extensible messaging framework, which provides a message construct that can be exchanged over a variety of underlying protocols. The framework has been designed to be independent of any particular programming model and other implementation-specific semantics. SOAP 1.2 supersedes SOAP 1.1. See [SOAP1.2-1/2003].

**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.

SOAP fault: A container for error and status information within a SOAP message. See [SOAP1.2-1/2007] section 5.4 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".

Transmission Control Protocol (TCP): A protocol used with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. TCP handles keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

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. 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. We will assist you in finding the relevant information.

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


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


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


1.2.2 Informative References


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:

![Diagram showing 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 URIs that are known by protocol clients. The endpoint 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 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 [XMLSCHEMA1/2] and [XMLSCHEMA2/2], 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.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Namespace URI</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>q2</td>
<td><a href="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08">http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08</a></td>
<td></td>
</tr>
<tr>
<td>q3</td>
<td><a href="http://schemas.microsoft.com/2003/10/Serialization/Arrays">http://schemas.microsoft.com/2003/10/Serialization/Arrays</a></td>
<td></td>
</tr>
<tr>
<td>ser</td>
<td><a href="http://schemas.microsoft.com/2003/10/Serialization/">http://schemas.microsoft.com/2003/10/Serialization/</a></td>
<td></td>
</tr>
<tr>
<td>soap</td>
<td><a href="http://schemas.xmlsoap.org/wsd/soap/">http://schemas.xmlsoap.org/wsd/soap/</a></td>
<td>[SOAP1.1]</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AggregatedOMQueryLatencyDataBuffer</td>
<td>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</td>
</tr>
<tr>
<td>AggregatedUIQueryLatencyDataBuffer</td>
<td>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</td>
</tr>
<tr>
<td>Complex type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>AlertInfo</td>
<td>The AlertInfo complex type contains information about a search alert.</td>
</tr>
<tr>
<td>ArrayOfAggregatedOMQueryLatencyDataBuffer</td>
<td>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.</td>
</tr>
<tr>
<td>ArrayOfAggregatedUIQueryLatencyDataBuffer</td>
<td>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.</td>
</tr>
<tr>
<td>ArrayOfanyType</td>
<td>The ArrayOfanyType complex type represents an array of arbitrary object values.</td>
</tr>
<tr>
<td>ArrayOfboolean</td>
<td>A list of Boolean flags.</td>
</tr>
<tr>
<td>ArrayOfint</td>
<td>The ArrayOfint complex type represents an array of integer values.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az</td>
<td>The ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az 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 search of search queries executed within a time period determined by the protocol server.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az</td>
<td>The ArrayOfKeyValueOfstringAggregatedOMQueryLatencyDataBuffer_PFsic3Az 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 search of search queries executed within a time period determined by the protocol server.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az</td>
<td>The ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az complex type 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.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1</td>
<td>The ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1 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 search of search queries executed within a time period determined by the protocol server.</td>
</tr>
<tr>
<td>Complex type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringstring</td>
<td>The <strong>ArrayOfKeyValueOfstringstring</strong> complex type represents an array of properties in the form of key-value pairs.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer__PFsic3Az</td>
<td>The <strong>ArrayOfKeyValueOfstringVerboseOMQueryLatencyDataBuffer__PFsic3Az</strong> 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.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer__PFsic3Az</td>
<td>The <strong>ArrayOfKeyValueOfstringVerboseUIQueryLatencyDataBuffer__PFsic3Az</strong> 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.</td>
</tr>
<tr>
<td>ArrayOfPersonalResultSuggestion</td>
<td>The <strong>ArrayOfPersonalResultSuggestion</strong> complex type contains an array of personal results suggestions.</td>
</tr>
<tr>
<td>ArrayOfQuerySuggestionQuery</td>
<td>The <strong>ArrayOfQuerySuggestionQuery</strong> complex type contains an array of suggested queries.</td>
</tr>
<tr>
<td>ArrayOfSerializableSecureStoreCredential</td>
<td>The <strong>ArrayOfSerializableSecureStoreCredential</strong> complex type contains an array of serialized secure store credentials.</td>
</tr>
<tr>
<td>ArrayOfstring</td>
<td>The <strong>ArrayOfstring</strong> complex type represents an array of arbitrary string values.</td>
</tr>
<tr>
<td>ArrayOfVerboseOMQueryLatencyDataBuffer</td>
<td>The <strong>ArrayOfVerboseOMQueryLatencyDataBuffer</strong> 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.</td>
</tr>
<tr>
<td>ArrayOfVerboseQueryErrorDataBuffer</td>
<td>The <strong>ArrayOfVerboseQueryErrorDataBuffer</strong> 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.</td>
</tr>
<tr>
<td>ArrayOfVerboseUIQueryLatencyDataBuffer</td>
<td>The <strong>ArrayOfVerboseUIQueryLatencyDataBuffer</strong> 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.</td>
</tr>
<tr>
<td>ArrayOfVerboseWebPartQueryLatencyDataBuffer</td>
<td>The <strong>ArrayOfVerboseWebPartQueryLatencyDataBuffer</strong> 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.</td>
</tr>
<tr>
<td>AzureApiConfiguration</td>
<td>The <strong>AzureApiConfiguration</strong> complex type contains the Azure API configurations.</td>
</tr>
<tr>
<td>DataBuffer</td>
<td>The <strong>DataBuffer</strong> complex type defines a common set of properties that are used by the different types of <strong>DataBuffer</strong> objects as specified in abstract data model</td>
</tr>
<tr>
<td>Complex type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DateRefinementInterval</td>
<td>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.</td>
</tr>
<tr>
<td>FullTextSqlQueryProperties</td>
<td>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.</td>
</tr>
<tr>
<td>HighlightedString</td>
<td>The HighlightedString complex type represents a particular highlighted string within a text.</td>
</tr>
<tr>
<td>NumericRefinementInterval</td>
<td>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.</td>
</tr>
<tr>
<td>OMQueryLatencyDataBuffer</td>
<td>The OMQueryLatencyDataBuffer complex type contains a list of aggregated query latencies that are approximated to a value that is determined by the protocol server.</td>
</tr>
<tr>
<td>PagingCookie</td>
<td>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.</td>
</tr>
<tr>
<td>PersonalResultSuggestion</td>
<td>The PersonalResultSuggestion complex type contains a personal search result suggestion.</td>
</tr>
<tr>
<td>QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBuferYrv50AqE</td>
<td>The QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE 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.</td>
</tr>
<tr>
<td>QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferYrv50AqE</td>
<td>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.</td>
</tr>
</tbody>
</table>
| QueryErrorDataBuffer                                   | The QueryErrorDataBuffer complex type contains a
<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>QueryHealthMonitoringSettings</td>
<td>The <code>QueryHealthMonitoringSettings</code> complex type defines settings that are used to configure query health monitoring data collection into the objects defined in section 3.1.1.5.</td>
</tr>
<tr>
<td>QueryPersonalizationData</td>
<td>The <code>QueryPersonalizationData</code> complex type contains a unique identifier for the current user who is executing a search query.</td>
</tr>
<tr>
<td>QueryProperties</td>
<td>The <code>QueryProperties</code> complex type contains information common to all types of search queries. The <code>QueryProperties</code> data type is extended by the <code>KeywordQueryProperties</code> data type, as specified in section 3.1.4.7.3.1, and the <code>FullTextSqlQueryProperties</code> data type, as specified in section 2.2.4.7.</td>
</tr>
<tr>
<td>QuerySuggestionQuery</td>
<td>The <code>QuerySuggestionQuery</code> complex type contains a single suggested query.</td>
</tr>
<tr>
<td>QuerySuggestionResults</td>
<td>The <code>QuerySuggestionResults</code> complex type is a container for arrays of query suggestions, people name suggestions, and personal result suggestions.</td>
</tr>
<tr>
<td>SerializableSecureStoreCredential</td>
<td>The <code>SerializableSecureStoreCredential</code> complex type contains a serialized secure store credential.</td>
</tr>
<tr>
<td>UIQueryLatencyDataBuffer</td>
<td>The <code>UIQueryLatencyDataBuffer</code> complex type contains the search query latency of the search results page for search queries within a time period determined by the protocol server.</td>
</tr>
<tr>
<td>VerboseOMQueryLatencyDataBuffer</td>
<td>The <code>VerboseOMQueryLatencyDataBuffer</code> complex type contains details of the search query latency for a single search query.</td>
</tr>
<tr>
<td>VerboseQueryErrorDataBuffer</td>
<td>The <code>VerboseQueryErrorDataBuffer</code> complex type contains the information of an error occurred during the processing of a search query in the protocol client.</td>
</tr>
<tr>
<td>VerboseUIQueryLatencyDataBuffer</td>
<td>The <code>VerboseUIQueryLatencyDataBuffer</code> complex type contains details of search query latency for a single search query.</td>
</tr>
<tr>
<td>VerboseWebPartQueryLatencyDataBuffer</td>
<td>The <code>VerboseWebPartQueryLatencyDataBuffer</code> complex type contains detail of search query latency of a single Web Part.</td>
</tr>
<tr>
<td>WebPartQueryLatencyDataBuffer</td>
<td>The <code>WebPartQueryLatencyDataBuffer</code> complex type contains the latency of the Web Parts in processing search queries within a 60-second time period</td>
</tr>
</tbody>
</table>

### 2.2.4.1 PagingCookie

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.

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

```xml
<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.

```xml
<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.

```xml
<xs:complexType name="AlertInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element ns5:AlertChangeType"/>
  </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.

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.

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.

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

```xml
<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.

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

```xml
<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.

```xml
<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: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 ns="q3=http://schemas.microsoft.com/2003/10/Serialization/Arrays" minOccurs="0" name="HitHighlightedProperties" nillable="true" type="q3:ArrayOfanyType"/>
    <xs:element minOccurs="0" name="Locale" type="xs:int"/>
    <xs:element minOccurs="0" name="MergeWithDefaultPartition" type="xs:boolean"/>
    <xs:element ns="tns5=http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Query" minOccurs="0" name="ResultTypes" type="tns5:ResultType"/>
    <xs:element minOccurs="0" name="IgnoreAllNoiseQuery" type="xs:boolean"/>
    <xs:element minOccurs="0" name="RankingModelId" nillable="true" type="xs:string"/>
    <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="ResultTypes" type="tns5:ResultType"/>
  </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.

**OLSQuerySession:** This parameter MUST be set to NULL by the protocol client if set. This parameter is ignored by the protocol server.

**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.

<table>
<thead>
<tr>
<th>Query role for the protocol</th>
<th>Result provider computation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SharePoint Server search query role</td>
<td>The value of the <strong>ResultsProvider</strong> element that is set by the protocol client MUST be ignored and the protocol server MUST use &quot;SearchProvider.SharepointSearch&quot; as the value for <strong>ResultsProvider</strong>.</td>
</tr>
<tr>
<td>FAST search query role</td>
<td>The protocol server MUST maintain a user-configurable default value for the result provider, as specified in SearchServiceApplication.DefaultSearchProvider in section 3.1.1.2. This value MUST be either &quot;SearchProvider.FASTSearch&quot; or &quot;SearchProvider.SharepointSearch&quot;. If the <strong>ResultsProvider</strong> element is specified, the protocol server MUST use the value specified in the <strong>ResultsProvider</strong> element. If the value is &quot;SearchProvider.Default&quot;, or if the <strong>ResultsProvider</strong> element is not specified, the protocol server MUST use the configured default value as the value for <strong>ResultsProvider</strong>.</td>
</tr>
</tbody>
</table>

**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.

**UrlZone:** The zone that is used for alternate access mapping, MUST be a SPUrlZone 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 SPUrlZone.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.

**UseOLSQuery:** This parameter MUST be set to zero ("0") by the protocol client if set. This parameter is 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 are 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 are 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:

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No deduping.</td>
</tr>
<tr>
<td>1</td>
<td>Only remove from substrate if the result is already included in a higher ranking block.</td>
</tr>
<tr>
<td>2</td>
<td>Remove duplicates from substrate and blocks if already seen in a higher ranking block.</td>
</tr>
<tr>
<td>3</td>
<td>Remove entire block if any block document is already seen in a higher ranking block or substrate (default).</td>
</tr>
</tbody>
</table>

- 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: An endpoint URI that serves search. The protocol server will provide the endpoint URI if this value is null.

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.

```xml
<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="Constellation" 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>
```

**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.<12>

**Constellation:** The identification of the index constellation. The identification is added by the protocol server and identifies the index instance.

**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.<13>

**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.<14>

**ImsFlow:** 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 ImsFlow MUST be equal to it, otherwise it will be assigned a value by the protocol server.<15>

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

**QPTimeMs:** 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.<16>

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.<17>

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

<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.<18>

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.<19>

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

ImsFlow: 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 ImsFlow MUST be equal to it, otherwise it will be assigned a value by the protocol server.<20>
**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. <21>

**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. <22>

**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 <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.

```xml
<xs:complexType name="ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az" type="ArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Az">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" type="integer"/>
          <xs:element name="Value" type="AggregatedOMQueryLatencyDataBuffer" nillable="true"/>
        </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<sup>24</sup> 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.

```xml
<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 <sup>2.2.4.12</sup>

### 2.2.4.16 ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az

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

The **ArrayOfKeyValueOfstringAggregatedUIQueryLatencyDataBuffer_PFsic3Az** complex type<sup>25</sup> 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.

```xml
<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 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 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.

```xml
<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>
```

**KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1**: Specifies a list of aggregated values for query latencies of a set of search queries.

**KeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1.Key**: A value that is 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 defines an array of **KeyValueOfstringanyType** complex type.
<KeyValueOfstringanyType>
  Specifies an array of dictionaries of string keys to anyType values. This element MUST be present and MUST NOT be null.
</KeyValueOfstringanyType>

<KeyValueOfstringanyType.Key>
  Specifies the string key for addressing the values in the dictionary.
</KeyValueOfstringanyType.Key>

<KeyValueOfstringanyType.Value>
  Specifies the anyType value in the dictionary.
</KeyValueOfstringanyType.Value>

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 contains a list of aggregated latency information. Each entry in the list provides latency information about a single search query.

<KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az>
  Specifies query latencies for processing a sing search query on the protocol server.
</KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az.Key>

<KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az.Value>
  A value that is uniquely identifies a KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az.Key within this complex type.
</KeyValueOfstringVerboseOMQueryLatencyDataBuffer_PFsic3Az.Value>
**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 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.

```xml
<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 minOccurs="true" name="Key" type="xs:string"/>
          <xs:element name="Value"
            xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" 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.

```xml
<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.

```xml
<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.

```xml
<xs:complexType name="OMQueryLatencyDataBuffer" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexContent mixed="false">
    <xs:extension base="q2:QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE">
      <xs:sequence>
        <xs:element xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays" minOccurs="0" name="bucketedQueryTimings" nillable="true" type="q3:ArrayOfKeyValueOfstringArrayOfKeyValueOfintAggregatedOMQueryLatencyDataBuffer_PFsic3Azty7Ep6D1"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

bucketedQueryTimings: Specifies the aggregated search latency on the protocol server.

2.2.4.24 QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE

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

The QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE 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.
AggregatedQueryTimings: Specifies the aggregated search latency on the protocol server.

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.

m_AggregatedQueryTimings: Specifies the aggregated search latency on the protocol server.

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.

2.2.4.25 QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE

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

The QueryDataBufferBaseOfAggregatedOMQueryLatencyDataBufferVerboseOMQueryLatencyDataBufferYrv50AqE 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: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>

AggregatedQueryTimings: Specifies the aggregated search latency for the search results page.<35>

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.<36>

m_AggregatedQueryTimings: Specifies the aggregated search latency for the search results page.<37>

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.<38>

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>

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:QueryDataBufferBaseOfAggregatedUIQueryLatencyDataBufferVerboseUIQueryLatencyDataBufferYrv50AqE">
            <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="Constellation" nillable="true" type="xs:string"/>
<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>

Constellation:  The identification of the index constellation. The identification is added by the protocol server and identifies the index instance.

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.<39>

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. <40>

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.

```xml
<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.

```xml
<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.

```xml
<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.

```xml
<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.

```xml
<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.

```xml
<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.

```xml
<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 represents an array of integer values.

```xml
<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.

```xml
<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>
```

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.

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

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

2.2.4.40 QueryHealthMonitoringSettings


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.

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Corresponds to the <strong>PartitionId</strong> of the search query.</td>
</tr>
<tr>
<td>2</td>
<td>Corresponds to the <strong>ClientType</strong> property of the search query.</td>
</tr>
<tr>
<td>3</td>
<td>Corresponds to the <strong>ResultsUrl</strong> property of the search query.</td>
</tr>
<tr>
<td>4</td>
<td>Corresponds to the <strong>FlowName</strong> property of the search query.</td>
</tr>
<tr>
<td>5</td>
<td>Corresponds to the <strong>QueryTag</strong> property of the search query and any other tags added by the protocol server.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Corresponds to the unique identifier of the <strong>PartitionId</strong> property for the search query.</td>
</tr>
<tr>
<td>2</td>
<td>Corresponds to the <strong>ClientType</strong> property of the search query.</td>
</tr>
<tr>
<td>3</td>
<td>Corresponds to the <strong>ResultsUrl</strong> property of the search query.</td>
</tr>
<tr>
<td>4</td>
<td>Corresponds to the <strong>FlowName</strong> property of the search query.</td>
</tr>
<tr>
<td>5</td>
<td>Corresponds to the <strong>QueryTag</strong> property of the search query and any other tags added by the protocol server.</td>
</tr>
</tbody>
</table>

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.

2.2.4.42  ArrayOfPersonalResultSuggestion

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

The **ArrayOfPersonalResultSuggestion** complex type contains an array of personal results 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.

2.2.4.43  ArrayOfQuerySuggestionQuery

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

The **ArrayOfQuerySuggestionQuery** complex type contains an 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 **QueryProperties.QueryText** defined in section 2.2.4.11.
2.2.4.44 ArrayOfSerializableSecureStoreCredential


The **ArrayOfSerializableSecureStoreCredential** complex type contains an array of serialized secure store credentials.

```xml
<xs:complexType name="ArrayOfSerializableSecureStoreCredential" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="SerializableSecureStoreCredential" nillable="true" type="tns3:SerializableSecureStoreCredential"/>
  </xs:sequence>
</xs:complexType>
```

**SerializableSecureStoreCredential**: A serialized secure store credential.

2.2.4.45 AzureApiConfiguration


The **AzureApiConfiguration** complex type contains the Azure API configurations.

```xml
<xs:complexType name="AzureApiConfiguration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ContentFarmId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="EchoFarmId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="EndPointAddress" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="FarmId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="FrontendServiceTenant" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Owner" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ServiceTenant" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="TestId" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

**ContentFarmId**: The content farm identifier.

**EchoFarmId**: The echo search farm identifier.

**EndPointAddress**: The Azure backend API endpoint address point.

**FarmId**: The search farm identifier.

**FrontendServiceTenant**: The service tenant, whose credentials are used for connecting to the azure frontend API endpoint.

**Owner**: The string with unique farm identifier.

**ServiceTenant**: The service tenant, whose credentials are used for connecting to the azure backend API endpoint.

**TestId**: The token used for test isolation, which ought to be provided in each request to the content service by both the crawler and broker component.

2.2.4.46 PersonalResultSuggestion

Namespace: http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08
The **PersonalResultSuggestion** complex type contains a personal search result suggestion.

```xml
<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 the `<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.

### 2.2.4.47 QuerySuggestionQuery

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

The **QuerySuggestionQuery** complex type contains a single suggested query.

```xml
<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.

### 2.2.4.48 QuerySuggestionResults

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

The **QuerySuggestionResults** complex type is a container for arrays of query suggestions, people name suggestions, and personal result suggestions.

```xml
<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.
2.2.4.49 **SerializableSecureStoreCredential**


The **SerializableSecureStoreCredential** complex type contains a serialized secure store credential.

```
<xs:complexType name="SerializableSecureStoreCredential"
    xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:sequence>
        <xs:element name="credential" nillable="true" type="xs:base64Binary"/>
        <xs:element
            ureStore" name="credentialType" type="tns1:SecureStoreCredentialType"/>
    </xs:sequence>
</xs:complexType>
```

- **credential**: The credential value.
- **credentialType**: The credential type.

### 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.

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlertChangeType</td>
<td>The <strong>AlertChangeType</strong> simple type is used to represent the change types for which a search alert is generated.</td>
</tr>
<tr>
<td>guid</td>
<td>The <strong>guid</strong> simple type represents a <strong>GUID</strong>.</td>
</tr>
<tr>
<td>KeywordInclusion</td>
<td>The <strong>KeywordInclusion</strong> 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.</td>
</tr>
<tr>
<td>QueryAuthenticationType</td>
<td>The <strong>QueryAuthenticationType</strong> simple type is used to represent the type search security descriptor.</td>
</tr>
<tr>
<td>QueryHint</td>
<td>The <strong>QueryHint</strong> simple type is used to represent how the protocol server processes a search query.</td>
</tr>
<tr>
<td>ResultType</td>
<td>The <strong>ResultType</strong> 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 <strong>ResultTable</strong> (section 3.1.4.1.3.6) data type to indicate the type of search results contained in it.</td>
</tr>
<tr>
<td>SearchProvider</td>
<td>The <strong>SearchProvider</strong> simple type represents the search provider that is used to handle the current request.</td>
</tr>
<tr>
<td>SecureStoreCredentialType</td>
<td>The <strong>SecureStoreCredentialType</strong> simple type contains information about the type of the secure store credential.</td>
</tr>
<tr>
<td>SPUrlZone</td>
<td>The <strong>SPUrlZone</strong> simple type contains information about the URL zone that...</td>
</tr>
</tbody>
</table>
### 2.2.5.1 AlertChangeType


The `AlertChangeType` simple type is used to represent the change types for which a search alert is generated.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovered</td>
<td>A search alert MUST be generated if at least 1 new search result matches the search query registered as part of the alert subscription. The new search result MUST be crawled after the last time the alert for the search query was generated.</td>
</tr>
<tr>
<td>Modified</td>
<td>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.</td>
</tr>
<tr>
<td>DiscoveredOrModified</td>
<td>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.</td>
</tr>
</tbody>
</table>

### 2.2.5.2 KeywordInclusion


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.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllKeywords</td>
<td>A search query MUST be generated if all search results match the query</td>
</tr>
<tr>
<td>AnyKeyword</td>
<td>A search query MUST be generated if any search result matches the query</td>
</tr>
</tbody>
</table>
### 2.2.5.3 QueryAuthenticationType


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

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>NtAuthenticatedQuery</td>
<td>MUST be a <strong>Windows security descriptor</strong></td>
</tr>
<tr>
<td>PluggableAuthenticatedQuery</td>
<td>MUST be a custom security descriptor used in <strong>pluggable security authentication</strong></td>
</tr>
</tbody>
</table>

### 2.2.5.4 QueryHint


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

```xml
<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.

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

### 2.2.5.5 ResultType


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.

```xml
<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>
```

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

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No result type is specified.</td>
</tr>
<tr>
<td>RelevantResults</td>
<td>Specifies that the protocol server MUST return the result set 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 <strong>ResultTable.ResultType</strong> (as specified in section 3.1.4.1.3.6) with value <strong>RelevantResults</strong>.</td>
</tr>
<tr>
<td>SpecialTermResults</td>
<td>Specifies that the protocol server MUST return the result set that contains the best bets that apply to the search query. The protocol server MUST annotate the corresponding</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Default</td>
<td>Specifies that the default search provider specified in ResultTable.ResultType (as specified in section 3.1.4.1.3.6), if the result set it contains does not correspond to any of the above ResultType values.</td>
</tr>
<tr>
<td>HighConfidenceResults</td>
<td>Specifies that the protocol server MUST return the result set that contains the high confidence results that apply to the search query. The protocol server MUST annotate the corresponding result set in ResultTable.ResultType (as specified in section 3.1.4.1.3.6) with value HighConfidenceResults. If QueryProperties.ResultsProvider (as specified in section 2.2.4.11) is SearchServer.FASTSearch, this value MUST be ignored by the protocol server.</td>
</tr>
<tr>
<td>DefinitionResults</td>
<td>Specifies that the protocol server MUST return the extracted definitions that apply to the search query. The protocol server MUST annotate the corresponding result set in ResultTable.ResultType (as specified in section 3.1.4.1.3.6) with value DefinitionResults. If QueryProperties.ResultsProvider (as specified in section 2.2.4.11) is SearchServer.FASTSearch, this value MUST be ignored by the protocol server.</td>
</tr>
<tr>
<td>VisualBestBetsResults</td>
<td>Specifies that the protocol server MUST return the visual best bet results that apply to the search query. The protocol server MUST annotate the corresponding result set in ResultTable.ResultType (as specified in section 3.1.4.1.3.6) with value VisualBestBetsResults. If QueryProperties.ResultsProvider (as specified in section 2.2.4.11) is SearchServer.SharepointSearch, this value MUST be ignored by the protocol server.</td>
</tr>
<tr>
<td>RefinementResults</td>
<td>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 ResultTable.ResultType (as specified in section 3.1.4.1.3.6) with value RefinementResults. If QueryProperties.ResultsProvider (as specified in section 2.2.4.11) is SearchServer.SharepointSearch, this value MUST be ignored by the protocol server.</td>
</tr>
</tbody>
</table>

### 2.2.5.6 SearchProvider


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

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Specifies that the default search provider specified in ResultTable.ResultType (as specified in section 3.1.4.1.3.6) is used to handle the current request.</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SearchServiceApplication.DefaultSearchProvider</td>
<td>as specified in abstract data model section 3.1.1.2 MUST be used for the current request.</td>
</tr>
<tr>
<td>SharepointSearch</td>
<td>Specifies that the search provider with name SharePointSearch MUST be used for the current request.</td>
</tr>
<tr>
<td>FASTSearch</td>
<td>Specifies that the search provider with name FASTSearch MUST be used for the current request.</td>
</tr>
</tbody>
</table>

### 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.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Specifies that the protocol server MUST use the mappings defined in the default zone for alternate access mapping.</td>
</tr>
<tr>
<td>Intranet</td>
<td>Specifies that the protocol server MUST use the mappings defined in the Intranet zone for alternate access mapping.</td>
</tr>
<tr>
<td>Internet</td>
<td>Specifies that the protocol server MUST use the mappings defined in the Internet zone for alternate access mapping.</td>
</tr>
<tr>
<td>Custom</td>
<td>Specifies that the protocol server MUST use the mappings defined in the Custom zone for alternate access mapping.</td>
</tr>
<tr>
<td>Extranet</td>
<td>Specifies that the protocol server MUST use the mappings defined in the Extranet zone for alternate access mapping.</td>
</tr>
</tbody>
</table>

### 2.2.5.8 guid

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

The guid simple type represents a GUID.

```xml
<xs:simpleType name="guid" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
</xs:simpleType>
```
2.2.5.9 SecureStoreCredentialType

Namespace:

The SecureStoreCredentialType simple type contains information about the type of the secure store credential.

```
<xs:simpleType name="SecureStoreCredentialType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="UserName"/>
    <xs:enumeration value="Password"/>
    <xs:enumeration value="Pin"/>
    <xs:enumeration value="Key"/>
    <xs:enumeration value="Generic"/>
    <xs:enumeration value="WindowsUserName"/>
    <xs:enumeration value="WindowsPassword"/>
    <xs:enumeration value="Certificate"/>
    <xs:enumeration value="CertificatePassword"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the SecureStoreCredentialType simple type.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>UserName</td>
<td>The user name credential type.</td>
</tr>
<tr>
<td>Password</td>
<td>The password credential type.</td>
</tr>
<tr>
<td>Pin</td>
<td>The pin credential type.</td>
</tr>
<tr>
<td>Key</td>
<td>The key credential type.</td>
</tr>
<tr>
<td>Generic</td>
<td>The generic credential type.</td>
</tr>
<tr>
<td>WindowsUserName</td>
<td>The window user name credential type.</td>
</tr>
<tr>
<td>WindowsPassword</td>
<td>The window password credential type.</td>
</tr>
<tr>
<td>Certificate</td>
<td>The certificate credential type.</td>
</tr>
<tr>
<td>CertificatePassword</td>
<td>The password associated with the certificate credential type.</td>
</tr>
</tbody>
</table>

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`.\(^{<44>}\)

- **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.

- **FullTextQueriable**: If "true", the managed property is a property that can be searched in a full-text search. Otherwise, the managed property is not a 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.

![Query Monitoring Information Diagram]

**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 server 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.
- **ImsFlow**: 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 server 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.
  - **ImsFlow**: The name of the main query and result processing flow used to process the search queries.
  - **IMSPproxyTimeMs**: The total time in milliseconds taken by 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.
  - **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.
  - **ImsFlow**: 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 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. 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 server. 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 server 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. 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:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Promoted results</td>
</tr>
<tr>
<td>1</td>
<td>Personal favorite results</td>
</tr>
<tr>
<td>2</td>
<td>Original user query results</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Execute</strong></td>
<td>This operation is used to execute a <strong>search query</strong> 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.</td>
</tr>
<tr>
<td><strong>GetAzureApiConfiguration</strong></td>
<td>The <strong>GetAzureApiConfiguration</strong> is to get Azure API configurations.</td>
</tr>
<tr>
<td><strong>GetClickFrequenciesForUrl</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>GetImsEndpointAddresses</strong></td>
<td>The <strong>GetImsEndpointAddresses</strong> 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.</td>
</tr>
<tr>
<td><strong>GetProperties</strong></td>
<td>This operation is used by the protocol client to retrieve information about all the <strong>managed properties</strong> defined in the protocol server.</td>
</tr>
<tr>
<td><strong>GetQueryCompletions</strong></td>
<td>The <strong>GetQueryCompletions</strong> operation is used by the protocol client to obtain the query completions for a query from the protocol server.</td>
</tr>
<tr>
<td><strong>GetQueryHealthMonitoringSettings</strong></td>
<td>This operation is used by the protocol client to obtain query health monitoring settings from the protocol server.</td>
</tr>
<tr>
<td><strong>GetQueryHealthMonitoringSettingsForComponents</strong></td>
<td>This operation is used by the protocol client to obtain query health monitoring settings from the protocol server.</td>
</tr>
<tr>
<td><strong>GetQuerySuggestions</strong></td>
<td>This operation is used to retrieve a list of query suggestions to match a search query. There are two types of query suggestions: <strong>pre-query suggestions</strong> and <strong>post-query suggestions</strong>. 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 query suggestions也应该 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 <strong>URL</strong> 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 <strong>ClearUserClickHistory</strong> was called, as</td>
</tr>
<tr>
<td><strong>GetQuerySuggestionsWithResults</strong></td>
<td>This operation 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也应该 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 <strong>URL</strong> 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 <strong>ClearUserClickHistory</strong> was called, as</td>
</tr>
<tr>
<td>Operation</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>GetScopes</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>GetSearchServiceApplicationInfo</strong></td>
<td>This operation is used by the protocol client to get the properties configured for the search application.</td>
</tr>
<tr>
<td><strong>GetSearchTerms</strong></td>
<td>The GetSearchTerms operation is used by the protocol client to retrieve the text restriction of a keyword query as interpreted by the protocol server.</td>
</tr>
<tr>
<td><strong>GetTopQueryStringsForUrl</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>GetZeroTermsQuerySuggestionsWithResults</strong></td>
<td>Returns query suggestions without any user keywords. The protocol client MAY call this method when implementing a search box to show suggestions before the user types anything into the search box.</td>
</tr>
<tr>
<td><strong>HighlightStringValue</strong></td>
<td>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 (&lt;b&gt;) and close (&lt;/b&gt;) tag.</td>
</tr>
<tr>
<td><strong>HighlightStringValueQuerySuggestions</strong></td>
<td>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 (&lt;b&gt;) and close (&lt;/b&gt;) tag in the context of query suggestions.</td>
</tr>
<tr>
<td><strong>IsUrlMappingCached</strong></td>
<td>The IsUrlMappingCached operation is used by the protocol client to obtain information about the cache status of the URL mapping in the protocol server and to trigger a refresh of the cache.</td>
</tr>
<tr>
<td><strong>RecordClick</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>RecordOMQueryDone</strong></td>
<td>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</td>
</tr>
<tr>
<td>Operation</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RecordOMQueryDoneEvent</td>
<td>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 <code>ExecuteResult</code> element of the <code>ExecuteResponse</code> 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. &lt;51&gt;</td>
</tr>
<tr>
<td>RecordPageClick</td>
<td>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 <code>ExecuteResult</code> element of the <code>ExecuteResponse</code> 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. &lt;51&gt;</td>
</tr>
<tr>
<td>RecordQueryError</td>
<td>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 it in a single message. &lt;53&gt;</td>
</tr>
<tr>
<td>RecordQueryErrorEvent</td>
<td>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 it in a single message. &lt;53&gt;</td>
</tr>
<tr>
<td>RecordUIQueryDone</td>
<td>This operation is used by the protocol client 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. &lt;55&gt;</td>
</tr>
<tr>
<td>RecordUIQueryDoneEvent</td>
<td>This operation is used by the protocol client 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. &lt;55&gt;</td>
</tr>
<tr>
<td>RecordWebPartQueryDone</td>
<td>This operation is used by the protocol client 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. &lt;55&gt;</td>
</tr>
</tbody>
</table>
### Operation Description

<table>
<thead>
<tr>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RecordWebPartQueryDoneEvent</strong></td>
<td>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. &lt;58&gt;</td>
</tr>
</tbody>
</table>

#### 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**.

```xml
<wSDL:operation name="Execute" xmlns:wSDL="http://schemas.xmlsoap.org/wSDL/">
  <wSDL:input wsaw:Action="http://tempuri.org/IQuerySearchServiceApplication/Execute"
  message="tns:IQuerySearchServiceApplication_Execute_InputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wSDL"/>
  <wSDL:output
  wsaw:Action="http://tempuri.org/IQuerySearchServiceApplication/ExecuteResponse"
  message="tns:IQuerySearchServiceApplication_Execute_OutputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wSDL"/>
  <wSDL:fault
  wsaw:Action="http://tempuri.org/IQuerySearchServiceApplication/ExecuteSearchServiceApplicationFaultFault"
  name="SearchServiceApplicationFaultFault"
  message="tns:IQuerySearchServiceApplication_Execute_SearchServiceApplicationFaultFault_FaultMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wSDL"/>
</wSDL:operation>
```

The protocol client sends an **IQuerySearchServiceApplication_Execute_InputMessage** request message, as specified in section 3.1.4.1.1, and the protocol server responds with an **IQuerySearchServiceApplication_Execute_OutputMessage** response message, as specified in section 3.1.4.1.2, 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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_Execute_InputMessage</td>
<td>The request WSDL message for the Execute WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_Execute_OutputMessage</td>
<td>The response WSDL message for the Execute WSDL operation.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Execute</td>
<td>The input data for the Execute WSDL operation.</td>
</tr>
<tr>
<td>ExecuteResponse</td>
<td>The result data for the Execute WSDL operation.</td>
</tr>
</tbody>
</table>
3.1.4.1.2.1 Execute

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

```xml
<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.

```xml
<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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfKeyValueOfResultTypeResultTableU TLV0zE5</td>
<td>This element contains a list of zero or more pairs of <strong>Key</strong> and <strong>Value</strong> elements. Each pair represents a set of <strong>query results</strong> of a specific type.</td>
</tr>
<tr>
<td>ArrayOfKeyValueOfStringSearchServiceApplicationFaulty6h3NzC8</td>
<td>This type contains a list of zero or more pairs of <strong>Key</strong> and <strong>Value</strong> elements. Each pair consists of a <strong>QueryId</strong> and the <strong>SearchServiceApplicationFault</strong> (specified in section 3.1.4.1.3.10) encountered by the search query identified by the <strong>QueryId</strong>.</td>
</tr>
<tr>
<td>ArrayOfKeyValuePairOfStringResultTable_PFsic3Az</td>
<td>This element contains a list of zero or more pairs of <strong>Key</strong> and <strong>Value</strong> elements. Each pair represents a set...</td>
</tr>
<tr>
<td>Complex type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>ArrayOfResultDefinition</strong></td>
<td>An array of zero or more <em>extracted definitions</em> for a search query.</td>
</tr>
<tr>
<td><strong>KeyValuePairOfstringResultTable_PFsic3Az</strong></td>
<td>This type contains pairs that represent set of query results of a specific type.</td>
</tr>
<tr>
<td><strong>KeywordInformation</strong></td>
<td>This type specifies zero or more tokens and their associated user authored definitions that are stored in the protocol server.</td>
</tr>
<tr>
<td><strong>ResultDefinition</strong></td>
<td>An extracted definition for a search query.</td>
</tr>
<tr>
<td><strong>ResultTable</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>ResultTableCollection</strong></td>
<td>Contains the search results and associated properties for a search query.</td>
</tr>
<tr>
<td><strong>SearchServiceApplicationFault</strong></td>
<td>Contains error detail of a SOAP fault.</td>
</tr>
</tbody>
</table>

### 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.

```xml
<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 minOccurs="0" name="IgnoredNoiseWords" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element 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 minOccurs="0" name="QueryTerms" nillable="true" type="q3:ArrayOfstring"/>
    <xs:element minOccurs="0" name="SpellingSuggestion" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="m_ResultTables" nillable="true" type="q3:ArrayOfKeyValueOfResultTypeResultTableUTLV0zE5"/>
    <xs:element minOccurs="0" name="IMSProxyTime" type="xs:int"/>
  </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.<59>. The criteria used to modify
the query are specific to the implementation of the protocol server. If
QueryProperties.ResultProvider (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.ResultProvider, 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.<60> 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.

IMSPProxyTime: 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.

---

```xml
<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.

```xml
<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 name="Key" type="tns5:ResultType"/>
          <xs:element 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.
**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.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RelevantResults Table</td>
<td>The <strong>RelevantResults</strong> table contains the actual query results. It MUST only be present if the <strong>ResultTypes</strong> element in the <strong>properties</strong> element of the <strong>Execute</strong> message contains <strong>ResultType.RelevantResults</strong>, as specified in section 2.2.5.5. The table MUST have one column per requested property that is specified in <strong>KeywordQueryProperties.SelectProperties</strong>, as specified in , or <strong>SELECT</strong> statement of the <strong>SharePoint Search SQL syntax</strong> as specified in [MS-SEARCH] 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 <strong>ManagedPropertyInformation.Type</strong> in section 3.1.1.3.</td>
</tr>
<tr>
<td>SpecialTermResults Table</td>
<td>The <strong>SpecialTermResults</strong> table contains best bets that apply to the search query. It MUST only be present if the <strong>ResultTypes</strong> element in the <strong>properties</strong> element of the <strong>Execute</strong> operation contains <strong>ResultType.SpecialTermResults</strong>, as specified in section 2.2.5.5. It MUST have one row per best bet, and it MUST have the columns <strong>Title</strong>, <strong>Url</strong> and <strong>Description</strong>. 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.</td>
</tr>
<tr>
<td>HighConfidenceResults Table</td>
<td>The <strong>HighConfidenceResults</strong> table contains high confidence results that apply to the search query. It MUST only be present if the <strong>ResultTypes</strong> element in the <strong>properties</strong> element of the <strong>Execute</strong> operation contains <strong>ResultType.HighConfidenceResults</strong> (as specified in section 2.2.5.5) and <strong>ResultsProvider</strong> element in the <strong>properties</strong> element of the <strong>Execute</strong> operation</td>
</tr>
<tr>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>VisualBestBetsResults Table</td>
<td>The <code>VisualBestBetsResults</code> table contains visual best bets that apply to the search query. It MUST only be present if the <code>ResultTypes</code> element in the <code>properties</code> element of the <code>Execute</code> operation contains <code>ResultType.VisualBestBetsResults</code> (as specified in section 2.2.5.5) and <code>ResultsProvider</code> element in the <code>properties</code> element of the <code>Execute</code> operation is not <code>SearchServer.SharepointSearch</code>. It MUST have one row per visual best bet, and it MUST have the columns <code>Name</code>, <code>Uri</code>, <code>Description</code>, <code>Keyword</code>, <code>Teaser</code>, <code>TeaserContentType</code>. 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.</td>
</tr>
<tr>
<td>RefinementResults Table</td>
<td>The <code>RefinementResults</code> table contains refinement results that apply to the search query. It MUST only be present if the <code>ResultTypes</code> element in the <code>properties</code> element of the <code>Execute</code> operation contains <code>ResultType.RefinementResults</code> (as specified in section 2.2.5.5) and <code>ResultsProvider</code> element in the <code>properties</code> element of the <code>Execute</code> operation is not <code>SearchServer.SharepointSearch</code>. It MUST have one row per refinement, and it MUST have the columns <code>RefinerName</code>, <code>RefinementName</code>, <code>RefinementValue</code>, <code>RefinementCount</code>, and <code>RefinementToken</code>. 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 <code>RefinementCount</code> which is of type integer.</td>
</tr>
</tbody>
</table>

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-SRCHCSON] 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.

**Properties**: Specifies a property bag of key value pairs. MUST be of **ArrayOfKeyValuePairOfstringanyType** 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 will be arranged.
- **ItemTemplateId**: Specifies the identifier of the layout template that specifies how the result item will 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


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.

```xml
<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="tns7: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


This type 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: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 ArrayOfKeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8

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="ArrayOfKeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
name="KeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

KeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8: 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.

KeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8.Key: The QueryId as specified in section 3.1.4.1.3.6 of the search query that encounters the SearchServiceApplicationFault in KeyValuePairOfstringSearchServiceApplicationFaulty6h3NzC8.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


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

```xml
<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.

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SearchServiceApplicationFaultType</td>
<td>Represents the type of failure for a SearchServiceApplicationFault as specified by section 3.1.4.1.3.10.</td>
</tr>
</tbody>
</table>

#### 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.

```xml
<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:restriction>
</xs:simpleType>
```
The following table specifies the allowable values for the `SearchServiceApplicationFaultType` simple type.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpecialTerm_NotFound</td>
<td>The specified keyword was not found on the protocol server.</td>
</tr>
<tr>
<td>SpecialTerm_DuplicateError</td>
<td>The query text specified cannot be used, because it is already a keyword or keyword synonym.</td>
</tr>
<tr>
<td>Synonym_NotFound</td>
<td>The specified keyword synonym was not found on the protocol server.</td>
</tr>
<tr>
<td>BestBet_NotFound</td>
<td>The specified best bet was not found on the protocol server.</td>
</tr>
<tr>
<td>BestBet_OrderDuplicationError</td>
<td>The best bet cannot be added to the keyword because there is already a best bet at the specified position.</td>
</tr>
<tr>
<td>AllNoiseQuery</td>
<td>Cannot complete the search query because it is composed entirely of noise words.</td>
</tr>
<tr>
<td>SearchServiceNotFound</td>
<td>The protocol server was unable to connect to the search service application.</td>
</tr>
<tr>
<td>QueryMalformed</td>
<td>Cannot complete the search query because its syntax is invalid.</td>
</tr>
<tr>
<td>ScopeNotFound</td>
<td>The specified search scope was not found on the protocol server.</td>
</tr>
<tr>
<td>InvalidProperty</td>
<td>Cannot complete the search query because it uses an invalid managed property.</td>
</tr>
</tbody>
</table>

[MS-QSSWS] - v20190129
Search Query Shared Services Protocol
Copyright © 2019 Microsoft Corporation
Release: January 29, 2019
<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>OnlyExcludedTerms</td>
<td>Cannot complete the search query because it is composed entirely of noise words.</td>
</tr>
<tr>
<td>RankingModelNotFound</td>
<td>Cannot complete the search query because the ranking model does not exist.</td>
</tr>
<tr>
<td>UnSupportedTopology</td>
<td>Cannot complete the search query because the farm uses a topology unsupported by its version of the protocol server software.</td>
</tr>
<tr>
<td>FASTSearchQuery</td>
<td>Cannot complete the search query from the FAST search provider.</td>
</tr>
<tr>
<td>Timeout</td>
<td>Cannot complete the search query because the query took too long to be processed by the protocol server.</td>
</tr>
<tr>
<td>ExtendedConnectorApplication</td>
<td>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.</td>
</tr>
<tr>
<td>PartitionOptionsMismatch</td>
<td>Cannot complete the search query because the partition options of the search service application do not match options of the search service application proxy.</td>
</tr>
<tr>
<td>TooComplexQueryException</td>
<td>Cannot complete the search query because there are too many results for it.</td>
</tr>
<tr>
<td>QueryThrottled</td>
<td>Cannot complete the search query because the protocol server was overloaded.</td>
</tr>
<tr>
<td>InternalError</td>
<td>Cannot complete the search query because there was an error on the protocol server</td>
</tr>
<tr>
<td>QueryTransformInvalidProperty</td>
<td>Cannot complete the search query because the query transform has invalid property.</td>
</tr>
<tr>
<td>QueryConfigurationImportException</td>
<td>The query configuration settings cannot be imported because of an error on the protocol server.</td>
</tr>
<tr>
<td>ApplicationSpecificException</td>
<td></td>
</tr>
<tr>
<td>DiscoveryFederatedSourceNotFound</td>
<td>The protocol server was unable to locate an exchange result source.</td>
</tr>
<tr>
<td>RemoteSharepointSourceFault</td>
<td>Cannot complete the search query because the remote SharePoint search provider had an error.</td>
</tr>
<tr>
<td>TenantSiteCollectionMismatchException</td>
<td>The schema is found with an inconsistent tenant/site collection pair.</td>
</tr>
<tr>
<td>InvalidNameException</td>
<td>The given category, crawled property, or managed property is invalid.</td>
</tr>
<tr>
<td>InvalidPropertyTypeException</td>
<td>The given managed property type is invalid.</td>
</tr>
<tr>
<td>CouldNotModifySchemaException</td>
<td>There was an error modifying a schema.</td>
</tr>
<tr>
<td>InvalidMappingException</td>
<td>An invalid mapping was found.</td>
</tr>
<tr>
<td>ObjectNotFoundException</td>
<td>An object (category, crawled property, or managed property) could not be found.</td>
</tr>
<tr>
<td>PropertyIsReadOnlyException</td>
<td>The managed property is read only and cannot be modified.</td>
</tr>
<tr>
<td>PropertyCannotHaveMappingsException</td>
<td>A managed property cannot have mappings, and the protocol server thus cannot add, delete, or modify mappings.</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidManagedPropertyValue</td>
<td>A managed property is given an invalid value.</td>
</tr>
<tr>
<td>ArgumentNullException</td>
<td>A NULL value was unexpectedly given.</td>
</tr>
<tr>
<td>UnauthorizedAccessException</td>
<td>The client does not have sufficient access to this operation.</td>
</tr>
<tr>
<td>DatabaseException</td>
<td>A database related error occurred.</td>
</tr>
<tr>
<td>SchemaExportException</td>
<td>The given schema cannot be exported.</td>
</tr>
<tr>
<td>SchemaImportException</td>
<td>The given schema cannot be imported.</td>
</tr>
<tr>
<td>NotSupported</td>
<td>The protocol server was unable to perform the action as it is not supported.</td>
</tr>
<tr>
<td>QueryPropertyOutOfRange</td>
<td>Cannot complete the search query because one of the query properties as specified in section 2.2.4.11 had a value outside the acceptable range.</td>
</tr>
</tbody>
</table>

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.

```xml
<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_SearchServiceApplicationFaultMessage"
    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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ISearchQueryServiceApplication_GetClickFrequenciesForUrl_InputMessage</code></td>
<td>The request WSDL message for the <code>GetClickFrequenciesForUrl</code> WSDL operation.</td>
</tr>
<tr>
<td><code>ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage</code></td>
<td>The response WSDL message for the <code>GetClickFrequenciesForUrl</code> WSDL operation.</td>
</tr>
</tbody>
</table>

### 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.
### 3.1.4.2.2.1 GetClickFrequenciesForUrl

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

```xml
<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: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.

### 3.1.4.2.2.2 GetClickFrequenciesForUrlResponse

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

```xml
<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.

```xml
<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/GetPropertiesSearchServiceApplicationFault"
        name="SearchServiceApplicationFault"
        message="tns:ISearchQueryServiceApplication_GetProperties_SearchServiceApplicationFaultFaultMessage"
        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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetProperties_InputMessage</td>
<td>The request WSDL message for the GetProperties WSDL operation.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetProperties</td>
<td>The input data for the GetProperties WSDL operation.</td>
</tr>
<tr>
<td>GetPropertiesResponse</td>
<td>The result data for the GetProperties WSDL operation.</td>
</tr>
</tbody>
</table>

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 name="properties" q2:="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" minOccurs="0" 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: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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfPropertyInformation</td>
<td>Contains information about a collection of managed properties</td>
</tr>
<tr>
<td>PropertyInformation</td>
<td>Each PropertyInformation child element MUST contain information about a managed property.</td>
</tr>
</tbody>
</table>

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="FullTextQueriable" 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.

FullTextQueriable: 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**.

```xml
<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/GetQuerySuggestionsSearchServiceApplicationFault"
    name="SearchServiceApplicationFault" message="tns:ISearchQueryServiceApplication_GetQuerySuggestions_SearchServiceApplicationFault_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetQuerySuggestions_InputMessage</td>
<td>The request WSDL message for the <strong>GetQuerySuggestions WSDL operation</strong>.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetQuerySuggestions_OutputMessage</td>
<td>The response WSDL message for the <strong>GetQuerySuggestions WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetQuerySuggestions</td>
<td>The input data for the GetQuerySuggestions WSDL operation.</td>
</tr>
<tr>
<td>GetQuerySuggestionsResponse</td>
<td>The result data for the GetQuerySuggestions WSDL operation.</td>
</tr>
</tbody>
</table>

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 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.

GetQuerySuggestionsResponse: 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.

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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetScopes_InputMessage</td>
<td>The request WSDL message for the <strong>GetScopes</strong> WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetScopes_OutputMessage</td>
<td>The response WSDL message for the <strong>GetScopes</strong> WSDL operation.</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetScopes</td>
<td>The input data for the GetScopes WSDL operation.</td>
</tr>
<tr>
<td>GetScopesResponse</td>
<td>The result data for the GetScopes WSDL operation.</td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfScopeInformation</td>
<td>Contains information about a collection of search scopes</td>
</tr>
<tr>
<td>ScopeInformation</td>
<td>Contains information about a single search scope</td>
</tr>
</tbody>
</table>

### 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.

```xml
<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.

```xml
<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: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.

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScopeCompilationState</td>
<td>Compilation state of the corresponding search scope</td>
</tr>
</tbody>
</table>

3.1.4.5.4.1 ScopeCompilationState


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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty</td>
<td>The search scope is empty and there MUST be no search scope rules defined for the search scope.</td>
</tr>
<tr>
<td>Invalid</td>
<td>The search scope is invalid.</td>
</tr>
<tr>
<td>QueryExpanded</td>
<td>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.</td>
</tr>
<tr>
<td>NeedsCompile</td>
<td>The search scope needs to be compiled for the first time.</td>
</tr>
<tr>
<td>Compiled</td>
<td>The search scope is compiled.</td>
</tr>
<tr>
<td>NeedsRecompile</td>
<td>The search scope needs to be recompiled.</td>
</tr>
</tbody>
</table>

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.

```xml
<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
        xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:fault
        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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_InputMessage</td>
<td>The request WSDL message for the GetSearchServiceApplicationInfo WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetSearchServiceApplicationInfo_OutputMessage</td>
<td>The response WSDL message for the GetSearchServiceApplicationInfo WSDL operation.</td>
</tr>
</tbody>
</table>
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_Output Message

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetSearchServiceApplicationInfo</td>
<td>The input data for the GetSearchServiceApplicationInfo WSDL operation.</td>
</tr>
<tr>
<td>GetSearchServiceApplicationInfoResponse</td>
<td>The result data for the GetSearchServiceApplicationInfo WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.6.2.1 GetSearchServiceApplicationInfo

The GetSearchServiceApplicationInfo element specifies the input data for the GetSearchServiceApplicationInfo WSDL operation.

```xml
<x:s:element name="GetSearchServiceApplicationInfo" xmlns:x="http://www.w3.org/2001/XMLSchema">
  <x:s:complexType>
    <x:s:sequence/>
  </x:s:complexType>
</x:s:element>
```

3.1.4.6.2.2 GetSearchServiceApplicationInfoResponse

The GetSearchServiceApplicationInfoResponse element specifies the result data for the GetSearchServiceApplicationInfo WSDL operation.

```xml
<x:s:element name="GetSearchServiceApplicationInfoResponse" xmlns:x="http://www.w3.org/2001/XMLSchema">
  <x:s:complexType>
    <x:s:sequence>
      <x:s:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" minOccurs="0" name="GetSearchServiceApplicationInfoResult" nillable="true" type="q2:SearchServiceApplicationInfo"/>
    </x:s:sequence>
  </x:s:complexType>
</x:s: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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SearchServiceApplicationInfo</td>
<td>Properties configured for a search application</td>
</tr>
</tbody>
</table>

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.

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.

<table>
<thead>
<tr>
<th>Key</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FASTSearchContextProperties</strong></td>
<td>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: &quot;title,skills&quot;. The protocol client SHOULD submit values for these properties in <code>UserContextData</code> when querying (see section 3.1.4.7.3.1).</td>
</tr>
<tr>
<td><strong>FASTSearchAdminServiceAuthenticationUser</strong></td>
<td>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 <code>FASTSearchAdministrators</code> 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.</td>
</tr>
<tr>
<td><strong>FASTSearchAdminServiceLocation</strong></td>
<td>The host name and port number which the protocol server MUST use to access all administration services, except the resource store service (see <code>FASTSearchResourceStoreLocation</code>). This value MUST be specified as &quot;&lt;host&gt;:&lt;port&gt;&quot; 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.</td>
</tr>
<tr>
<td><strong>FASTSearchResourceStoreLocation</strong></td>
<td>The host name and port number that the protocol server MUST use to access the resource store. This value MUST be specified as &quot;&lt;host&gt;:&lt;port&gt;&quot; 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.</td>
</tr>
<tr>
<td><strong>FASTSearchQueryServiceLocation</strong></td>
<td>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 &quot;&lt;host&gt;:&lt;port&gt;&quot; 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.</td>
</tr>
<tr>
<td><strong>FASTSearchContextCacheTimeout</strong></td>
<td>The timeout period the protocol client SHOULD use to cache values read in <code>FASTSearchContextProperties</code>. When the timeout period expires, the protocol client SHOULD read the value of <code>FASTSearchContextProperties</code> into the cache again.</td>
</tr>
<tr>
<td>Key</td>
<td>Meaning</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FASTSearchDisableUserContext</td>
<td>If &quot;true&quot;, the protocol client SHOULD NOT submit values for FASTSearchContextProperties in UserContextData when querying (see section 3.1.4.7.3.1). If false, the protocol client SHOULD submit values for FASTSearchContextProperties in UserContextData when querying.</td>
</tr>
<tr>
<td>FASTSearchAlternateAccessMapProperties</td>
<td>A comma-separated list of managed properties the protocol server MUST use for alternate access mapping.</td>
</tr>
<tr>
<td>FASTSearchManagedPropertyResultMapping</td>
<td>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 key managed property into the corresponding value managed property from the map. All managed properties in the set MUST be specified in the KeywordQueryProperties.SelectProperties property.</td>
</tr>
</tbody>
</table>

**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**: Specified 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: Specifies the timeout in milliseconds for a query that have sub-queries towards the substrate and the local search application. <64>

The minimum allowed value is 500 milliseconds. MUST be less than the value specified for DefaultQueryTimeout.

SPHomeMaxQueryTextLength: Specifies the maximum length of a query from the home web part. MUST NOT be greater than 20480.

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.

```xml
<wSDL:operation name="GetSearchTerms" xmlns:wSDL="http://schemas.xmlsoap.org/wsd1/">
  <wSDL:input wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetSearchTerms" message="tns:ISearchQueryServiceApplication_GetSearchTerms_InputMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsd1"/>
</wSDL:operation>
```

The protocol client sends an ISearchQueryServiceApplication_GetSearchTerms_InputMessage request message and the protocol server responds with an
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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetSearchTerms_InputMessage</td>
<td>The request WSDL message for the GetSearchTerms WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetSearchTerms_OutputMessage</td>
<td>The response WSDL message for the GetSearchTerms WSDL operation.</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetSearchTerms</td>
<td>The input data for the GetSearchTerms WSDL operation.</td>
</tr>
<tr>
<td>GetSearchTermsResponse</td>
<td>The result data for the GetSearchTerms WSDL operation.</td>
</tr>
</tbody>
</table>

### 3.1.4.7.2.1 GetSearchTerms

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

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

```xml
<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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfKeyValueOfstringArrayOfRefinementInterval_PFsic3Az</td>
<td>Contains information about the refinement bins for a collection of refiners.</td>
</tr>
<tr>
<td>Complex type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ArrayOfRefinementInterval</td>
<td>Contains the refinement bins the protocol server MUST use when returning refinement values for a refiner</td>
</tr>
<tr>
<td>ArrayOfReorderingRule</td>
<td>Contains information about a list of rules to reorder search results.</td>
</tr>
<tr>
<td>ArrayOfSort</td>
<td>Contains information about a list of properties to sort the search results by.</td>
</tr>
<tr>
<td>KeywordQueryProperties</td>
<td>Contains information about a <strong>Keyword query search query</strong>. <strong>KeywordQueryProperties</strong> extends the <strong>QueryProperties</strong> data type specified in section 2.2.4.11.</td>
</tr>
<tr>
<td>RefinementInterval</td>
<td>The <strong>RefinementInterval</strong> complex type contains information about a refinement bin for a refiner. The protocol server MUST use this as a refinement bin if returning <strong>refinement values</strong> for a refiner when this is specified in <strong>CustomRefinementIntervals</strong>, as specified in 3.1.4.7.3.1.</td>
</tr>
<tr>
<td>ReorderingRule</td>
<td>Contains information about how search results will be reordered if they met the condition.</td>
</tr>
<tr>
<td>ReorderingRuleCollection</td>
<td>Contains information about how to reorder the search results.</td>
</tr>
<tr>
<td>Sort</td>
<td>Contains information about the property to sort the search results on, and how to sort on the property.</td>
</tr>
<tr>
<td>SortCollection</td>
<td>Contains information about how to sort the search results.</td>
</tr>
</tbody>
</table>

### 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.

```xml
<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 minOccurs="0" name="EnableSpellcheck" type="tns5:SpellcheckMode"/>
                <xs:element minOccurs="0" name="EnableUrlSmashing" type="xs:boolean"/>
                <xs:element minOccurs="0" name="GenerationId" type="xs:long"/>
            </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) is 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
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.keepcount, 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 is 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.

```xml
<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.

```xml
<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.

```xml
<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.

```xml
<xs:complexType name="Sort" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <!--Definition for Sort element here-->
</xs:complexType>
```
<xs:sequence>
  <xs:element
    minOccurs="0"
    name="direction"
    type="tns5: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 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 minOccurs="0"
      maxOccurs="unbounded"
      name="ReorderingRule"
      nillable="true"
      type="tns5:ReorderingRule"/>
  </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


The ArrayOfReorderingRule complex type 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="tns5: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


The ReorderingRule complex type contains information about how search results SHOULD be reordered if they met the condition.

```xml
<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="tns5: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.

```xml
<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

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReorderingRuleMatchType</td>
<td>Represents the type of the condition which reordering rule is used to match search results.</td>
</tr>
<tr>
<td>ResubmitFlag</td>
<td>It is used to specify how the protocol server MUST behave if no results are returned from a search query.</td>
</tr>
<tr>
<td>SimilarType</td>
<td>Represents the type of transformation the protocol server MUST apply to the search query.</td>
</tr>
<tr>
<td>SortDirection</td>
<td>Represents the direction in which the search results MUST be sorted.</td>
</tr>
<tr>
<td>SpellcheckMode</td>
<td>Represents the type of spelling behavior the protocol server MUST apply to the query text.</td>
</tr>
</tbody>
</table>

#### 3.1.4.7.4.1 SpellcheckMode


The `SpellcheckMode` simple type represents the type of spelling behavior the protocol server MUST apply to the query text.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The protocol server MUST NOT suggest or modify the search query.</td>
</tr>
<tr>
<td>Suggest</td>
<td>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 <code>SpellingSuggestion</code> property of the <code>ResultTableCollection</code>.</td>
</tr>
<tr>
<td>On</td>
<td>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 <code>QueryModification</code> property of the <code>ResultTableCollection</code>.</td>
</tr>
</tbody>
</table>

#### 3.1.4.7.4.2 ResubmitFlag


The `ResubmitFlag` simple type is used to specify how the protocol server MUST behave if no results are returned from a search query.

```xml
<xs:simpleType name="ResubmitFlag" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="Off"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```
The following table specifies the allowable values for the `ResubmitFlag` simple type.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>NoResubmit</td>
<td>The protocol server MUST NOT resubmit the search query when there are no query results and MUST ignore other <code>ResubmitFlag</code> elements.</td>
</tr>
<tr>
<td>EnableSpellcheckOnResubmit</td>
<td>The protocol server MUST set <code>EnableSpellcheck</code> to <code>SpellcheckMode.On</code> for the resubmitted search query.</td>
</tr>
<tr>
<td>EnableSpellcheckSuggestOnResubmit</td>
<td>The protocol server MUST set <code>EnableSpellcheck</code> to <code>SpellcheckMode.Suggest</code> for the resubmitted search query.</td>
</tr>
<tr>
<td>EnableStemmingOnResubmit</td>
<td>The protocol server MUST set <code>EnableStemming</code> to &quot;true&quot; when resubmitting the search query.</td>
</tr>
<tr>
<td>AddSynonymsAutomatically</td>
<td>Reserved. MUST be ignored by the protocol server.</td>
</tr>
</tbody>
</table>

### 3.1.4.7.4.3 SimilarType


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.

```xml
<x:simpleType name="SimilarType" xmlns:x=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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>The protocol server MUST NOT add any value to the search query in <code>QueryText</code>.</td>
</tr>
<tr>
<td>Find</td>
<td>The protocol server MUST add the value in <code>SimilarTo</code> to <code>QueryText</code> using the OR operator.</td>
</tr>
<tr>
<td>Refine</td>
<td>The protocol server MUST add the value in <code>SimilarTo</code> to <code>QueryText</code> using the AND operator.</td>
</tr>
<tr>
<td>Exclude</td>
<td>The protocol server MUST add the value in <code>SimilarTo</code> to <code>QueryText</code> using the ANDNOT operator.</td>
</tr>
</tbody>
</table>
3.1.4.7.4.4 SortDirection


The SortDirection simple type represents the direction in which the search results MUST be sorted.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascending</td>
<td>The search results MUST be sorted in ascending order of the values of the property specified by Sort.strProperty as specified in section 3.1.4.7.3.6.</td>
</tr>
<tr>
<td>Descending</td>
<td>The search results MUST be sorted in descending order of the values of the property specified by Sort.strProperty as specified in section 3.1.4.7.3.6.</td>
</tr>
<tr>
<td>FQLFormula</td>
<td>The search results MUST be sorted according to formula specified by Sort.strProperty as specified in section 3.1.4.7.3.6. The formula MUST be a valid formula expression as specified in [MS-FQL2] section 2. If QueryProperties.ResultsProvider (as specified in section 2.2.4.11) is SearchProvider.SharepointSearch, the value MUST be ignored by the protocol server.</td>
</tr>
</tbody>
</table>

3.1.4.7.4.5 ReorderingRuleMatchType


The ReorderingRuleMatchType simple type represents how the reordering rule matches search results that are reordered.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResultContainsKeyword</td>
<td>Rule matches search results whose content has keywords specified by matchValue.</td>
</tr>
<tr>
<td>TitleContainsKeyword</td>
<td>Rule matches search results whose title contains keywords specified by matchValue.</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TitleMatchesKeyword</td>
<td>Rule matches search results whose titles equal to the string specified by matchValue.</td>
</tr>
<tr>
<td>UrlStartsWith</td>
<td>Rule matches search results whose URL begins with the string specified by matchValue.</td>
</tr>
<tr>
<td>UrlExactlyMatches</td>
<td>Rule matches search results whose URL equals to the string specified by matchValue.</td>
</tr>
<tr>
<td>ContentTypeIs</td>
<td>Rule matches search results whose ContentType matches with the string specified by matchValue.</td>
</tr>
<tr>
<td>FileExtensionMatches</td>
<td>Rule matches search results whose file extension match with the string specified by matchValue.</td>
</tr>
<tr>
<td>ResultHasTag</td>
<td>Rule matches search results which are tagged with taxonomy term specified by matchValue.</td>
</tr>
<tr>
<td>ManualCondition</td>
<td>Rule matches search results which matches KQL query syntax specified by matchValue.</td>
</tr>
</tbody>
</table>

### 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**.

```xml
<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_SearchServiceApplicationFaultFaultMessage"
        xmlns:wsaw="http://www.w3.org/2006/05/addressing/wSDL"/>
</wSDL:operation>
```
The protocol client sends an
\texttt{ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_InputMessage} request message,
as specified in section 3.1.4.8.1.1, and the protocol server responds with an
\texttt{ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_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 \texttt{url} element. If the
element is absent, empty or contains more than 1024 characters, the protocol server MUST send a
\texttt{FaultException\<ExceptionDetail\>} message to the protocol client.

- The protocol server verifies the value of the \texttt{topCount} element. If the value is smaller than 0 or
greater than 2,147,483,647, the protocol server MUST send a
\texttt{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 \texttt{FaultException\<ExceptionDetail\>} message to the
protocol client.

\subsection*{3.1.4.8.1 Messages}

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

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\texttt{ISearchQueryServiceApplication_GetTopQueryStringsForUrl_InputMessage}</td>
<td>The request WSDL message for the \texttt{GetTopQueryStringsForUrl} WSDL operation.</td>
</tr>
<tr>
<td>\texttt{ISearchQueryServiceApplication_GetTopQueryStringsForUrl_OutputMessage}</td>
<td>The response WSDL message for the \texttt{GetTopQueryStringsForUrl} WSDL operation.</td>
</tr>
</tbody>
</table>

\subsection*{3.1.4.8.1.1 \texttt{ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_InputMessage}}

The request WSDL message for the \texttt{GetTopQueryStringsForUrl} WSDL operation.

The SOAP action value is:

\begin{center}
http://tempuri.org/ISearchQueryServiceApplication/GetTopQueryStringsForUrl
\end{center}

The SOAP body contains the \texttt{GetTopQueryStringsForUrl} element.

\subsection*{3.1.4.8.1.2 \texttt{ISearchQueryServiceApplication\_GetTopQueryStringsForUrl\_OutputMessage}}

The response WSDL message for the \texttt{GetTopQueryStringsForUrl} WSDL operation.

The SOAP body contains the \texttt{GetTopQueryStringsForUrlResponse} element.
3.1.4.8.2 Elements

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetTopQueryStringsForUrl</td>
<td>The input data for the GetTopQueryStringsForUrl WSDL operation.</td>
</tr>
<tr>
<td>GetTopQueryStringsForUrlResponse</td>
<td>The result data for the GetTopQueryStringsForUrl WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.8.2.1 GetTopQueryStringsForUrl

The GetTopQueryStringsForUrl element specifies the input data for the GetTopQueryStringsForUrl WSDL operation.

```xml
<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: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.

```xml
<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.

```xml
<wSDL:operation name="HighlightStringValue" xmlns:wSDL="http://schemas.xmlsoap.org/wSDL/">
  <wSDL:input
    wsaw:Action="http://tempuri.org/ISeachQueryServiceApplication/HighlightStringValue"
    message="tns:ISeachQueryServiceApplication_HighlightStringValue_InputMessage"
    xmlns:wsaw="http://www.w3.org/200/05/addressing/wSDL"/>
  <wSDL:output
    wsaw:Action="http://tempuri.org/ISeachQueryServiceApplication/HighlightStringValueResponse"
    message="tns:ISeachQueryServiceApplication_HighlightStringValue_OutputMessage"
    xmlns:wsaw="http://www.w3.org/200/05/addressing/wSDL"/>
  <wSDL:fault
    wsaw:Action="http://tempuri.org/ISeachQueryServiceApplication/HighlightStringValueSearchServiceApplicationFaultFault"
    name="ISeachQueryServiceApplication_HighlightStringValue_SearchServiceApplicationFaultFault"
    message="tns:ISeachQueryServiceApplication_HighlightStringValue_SearchServiceApplicationFaultFault_FaultMessage"
    xmlns:wsaw="http://www.w3.org/200/05/addressing/wSDL"/>
</wSDL:operation>
```

The protocol client sends an ISeachQueryServiceApplication_HighlightStringValue_InputMessage request message, as specified in section 3.1.4.9.1.1, and the protocol server responds with an ISeachQueryServiceApplication_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISeachQueryServiceApplication_HighlightStringValue_InputMessage</td>
<td>The request WSDL message for the HighlightStringValue WSDL operation.</td>
</tr>
<tr>
<td>ISeachQueryServiceApplication_HighlightStringValue_OutputMessage</td>
<td>The response WSDL message for the HighlightStringValue</td>
</tr>
</tbody>
</table>
### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HighlightStringValue</td>
<td>The input data for the <strong>HighlightStringValue WSDL operation</strong>.</td>
</tr>
<tr>
<td>HighlightStringValueResponse</td>
<td>The result data for the <strong>HighlightStringValue WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

### 3.1.4.9.2.1 HighlightStringValue

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

```xml
<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 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.

```xml
<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/HighlightStringValu
    eQuerySuggestions"
    message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_In
    putMessage" 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/HighlightStringValueQuerySugges
    stionsSearchServiceApplicationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_SearchServiceAp
    plicationFaultFault_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
</table>
| ISearchQueryServiceApplication_HighlightStringVa
  lueQuerySuggestions_InputMessage                  | The request WSDL message for the HighlightStringValue
  QuerySuggestions WSDL operation.                     |
| ISearchQueryServiceApplication_HighlightStringVa
  lueQuerySuggestions_OutputMessage                  | The response WSDL message for the HighlightStringValue
  QuerySuggestions 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:
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.

#### Elements

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HighlightStringValueQuerySuggestions</td>
<td>The input data for the <strong>HighlightStringValueQuerySuggestions</strong> <strong>WSDL</strong> operation.</td>
</tr>
<tr>
<td>HighlightStringValueQuerySuggestionsResponse</td>
<td>The result data for the <strong>HighlightStringValueQuerySuggestions</strong> <strong>WSDL</strong> operation.</td>
</tr>
</tbody>
</table>

### 3.1.4.10.2.1  HighlightStringValueQuerySuggestions

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

```xml
<x:s:element name="HighlightStringValueQuerySuggestions"
    xmlns:x="http://www.w3.org/2001/XMLSchema">
    <x:s:complexType>
        <x:s:sequence>
            <x:s:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
                minOccurs="0" name="properties" nillable="true" type="q2:QueryProperties"/>
            <x:s:element minOccurs="0" name="strValue" nillable="true" type="xs:string"/>
            <x:s:element minOccurs="0" name="fLastTermByPrefix" type="xs:boolean"/>
        </x:s:sequence>
    </x:s:complexType>
</x:s: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="HighlightedStringValueQuerySuggestionsResult" nillable="true"
        type="q2:HighlightedString"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

HighlightedStringValueQuerySuggestionsResult: 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.
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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ISearchQueryServiceApplication_RecordClick_InputMessage</code></td>
<td>The request WSDL message for the RecordClick WSDL operation.</td>
</tr>
<tr>
<td><code>ISearchQueryServiceApplication_RecordClick_OutputMessage</code></td>
<td>The response WSDL message for the RecordClick WSDL operation.</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordClick</td>
<td>The input data for the RecordClick WSDL operation.</td>
</tr>
<tr>
<td>RecordClickResponse</td>
<td>The result data for the RecordClick WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.11.2.1 RecordClick

The RecordClick element specifies the input data for the RecordClick WSDL operation.

```xml
<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.

3.1.4.11.2.2 RecordClickResponse

The RecordClickResponse element specifies the result data for the RecordClick WSDL operation.

```xml
<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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QueryInfo</td>
<td>Information about the clickthrough and the corresponding search query</td>
</tr>
</tbody>
</table>

3.1.4.11.3.1 QueryInfo
The QueryInfo complex type contains the details about the clickthrough and its corresponding search query.

```xml
<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 minOccurs="0" name="ClientType" type="tns5: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 minOccurs="0" name="LogType" type="tns5:QueryLogType"/>
    <xs:element 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 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: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.
ReferrerUrl: 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].

ResultsUrl: 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.

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QueryLogClientType</td>
<td>An application where the search query is sent from.</td>
</tr>
<tr>
<td>QueryLogType</td>
<td>A type of event that query logging records.</td>
</tr>
</tbody>
</table>

3.1.4.11.4.1 QueryLogClientType


The QueryLogClientType simple type represents the place where the search query is sent from.

```xml
<xs:simpleType name="QueryLogClientType" xmlns:xsi="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:restriction>
</xs:simpleType>
```
The following table specifies the allowable values for the **QueryLogClientType** simple type.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ObjectModel</td>
<td>The search query is sent from the query object model.</td>
</tr>
<tr>
<td>WebService</td>
<td>The search query is sent from the web service.</td>
</tr>
<tr>
<td>UI</td>
<td>The search query is sent from a Web Part.</td>
</tr>
<tr>
<td>Custom</td>
<td>The search query is sent from a place which is not the query object model, web service or Web Part.</td>
</tr>
<tr>
<td>CSOM</td>
<td>The search query is sent through CSOM</td>
</tr>
<tr>
<td>RSS</td>
<td>The search query is used to retrieve RSS feeds</td>
</tr>
<tr>
<td>Alerts</td>
<td>MUST NOT be used</td>
</tr>
<tr>
<td>ObjectModelBackwardsCompatible</td>
<td>The search query is sent through backward compatible object model.</td>
</tr>
<tr>
<td>AllResultsQuery</td>
<td>The search query is sent from a Web Part that returns all results except people.</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PeopleResultsQuery</td>
<td>The search query is sent from a Web Part that returns only people results.</td>
</tr>
<tr>
<td>VideoResultsQuery</td>
<td>The search query is sent from a Web Part that returns only video results.</td>
</tr>
<tr>
<td>SiteResultsQuery_All</td>
<td>The search query is sent from a Web Part that returns all results from a particular site.</td>
</tr>
<tr>
<td>SiteResultsQuery_Docs</td>
<td>The search query is sent from a Web Part that returns all document results from a particular site.</td>
</tr>
<tr>
<td>SiteResultsQuery_Sites</td>
<td>The search query is sent from a Web Part that returns all site results from a particular site.</td>
</tr>
<tr>
<td>ContentSearchHigh</td>
<td>The search query is sent from a Content Search Web Part where the priority is set to &quot;high&quot;.</td>
</tr>
<tr>
<td>ContentSearchRegular</td>
<td>The search query is sent from a Content Search Web Part where the priority is set to &quot;regular&quot;.</td>
</tr>
<tr>
<td>CatalogItemReuseQuery</td>
<td>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.</td>
</tr>
<tr>
<td>ContentSearchLow</td>
<td>The search query is sent from a Content Search Web Part where the priority is set to &quot;low&quot;.</td>
</tr>
<tr>
<td>SearchWebPartConfiguration</td>
<td>The search query is sent from the Query Builder and the Content Search Web Part.</td>
</tr>
<tr>
<td>DiscoverySearch</td>
<td>The search query is sent from a discovery center.</td>
</tr>
<tr>
<td>DiscoveryDownloadManager</td>
<td>The search query is sent from the Discovery Download Manager Tool which is used to download discovery results.</td>
</tr>
<tr>
<td>DocsSharedWithMe</td>
<td>The search query is used to retrieve documents that are shared with a particular user.</td>
</tr>
<tr>
<td>MyTaskSync</td>
<td>The search query is used to retrieve tasks for a particular user.</td>
</tr>
<tr>
<td>SEOsiteMapQuery</td>
<td>The search query is used to retrieve all results within a site to build a site map.</td>
</tr>
<tr>
<td>MySiteSecurityTrimmer</td>
<td>The search query is used to decide which URLs a user has access to.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>This value MUST NOT be used.</td>
</tr>
<tr>
<td>ReportsAndDataResultsQuery</td>
<td>The search query is sent from a Web Part that returns results that represent data reports.</td>
</tr>
<tr>
<td>InplaceListSearch</td>
<td>The search query is sent from a Web Part that returns results from a particular list.</td>
</tr>
<tr>
<td>TrendingTagsQuery</td>
<td>The search query is used to retrieve popular hash tags.</td>
</tr>
<tr>
<td>QueryBoxSkyDrive</td>
<td>The search query is sent from a query box on sky drive.</td>
</tr>
<tr>
<td>QueryBoxSearchLandingPage</td>
<td>The search query is sent from a query box on a search landing page.</td>
</tr>
<tr>
<td>SiteSearch</td>
<td>The search query is sent from a query box on a site page.</td>
</tr>
<tr>
<td>EnterpriseSearchCenter</td>
<td>The search query is sent from the enterprise search center.</td>
</tr>
<tr>
<td>BasicSearchCenter</td>
<td>The search query is sent from the basic search center.</td>
</tr>
</tbody>
</table>
### Value

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPHomeWeb</td>
<td>The search query is sent from SharePoint home.</td>
</tr>
<tr>
<td>DelveAndroidMobile</td>
<td>The search query is sent from the Delve application running on an Android device.</td>
</tr>
<tr>
<td>DelveAppleMobile</td>
<td>The search query is sent from the Delve application running on an Apple device.</td>
</tr>
<tr>
<td>DelveWeb</td>
<td>The search query is sent from the Delve application running in a browser.</td>
</tr>
<tr>
<td>DelveWebTNarrow</td>
<td>The search query is sent from the Delve application running in a browser in the phone view.</td>
</tr>
<tr>
<td>DelveWindows</td>
<td>The search query is sent from the Delve application running on windows.</td>
</tr>
<tr>
<td>OneDriveWeb</td>
<td>The search query is sent from One Drive Web.</td>
</tr>
<tr>
<td>Unknown</td>
<td>The search query is sent from an unknown source.</td>
</tr>
</tbody>
</table>

#### 3.1.4.11.4.2 QueryLogType


The **QueryLogType** simple type represents the type of event that *query logging* records.

```xml
<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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click</td>
<td>The type of event query logging records is a click on search results.</td>
</tr>
<tr>
<td>Query</td>
<td>The type of event query logging records is a search query.</td>
</tr>
</tbody>
</table>

#### 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.<69>

The following is the WSDL port type specification of the RecordOMQueryDoneEvent WSDL operation.

```
<wSDL:operation name="RecordOMQueryDoneEvent" xmlns:wSDL="http://schemas.xmlsoap.org/wsdI/">
  <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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_RecordOMQueryDoneEvent_InputMessage</td>
<td>The request WSDL message for the RecordOMQueryDoneEvent WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage</td>
<td>The response WSDL message for the RecordOMQueryDoneEvent WSDL operation.</td>
</tr>
</tbody>
</table>

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 request **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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordOMQueryDoneEvent</td>
<td>The input data for the <strong>RecordOMQueryDoneEvent WSDL operation</strong>.</td>
</tr>
<tr>
<td>RecordOMQueryDoneEventResponse</td>
<td>The result data for the <strong>RecordOMQueryDoneEvent WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

### 3.1.4.12.2.1 RecordOMQueryDoneEvent

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

```xml
<xs:element name="RecordOMQueryDoneEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns="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**.

```xml
<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>
```
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 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.

```xml
<wsdl:operation name="RecordQueryErrorEvent" xmlns:wsdl="http://schemas.xmlsoap.org/wsd1/">
  <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"
message="tns:ISearchQueryServiceApplication_RecordQueryErrorEvent_SearchServiceApplicationFaultFaultMessage"
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
**IISearchQueryServiceApplication_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IISearchQueryServiceApplication_RecordQueryErrorEvent_InputMessage</td>
<td>The request WSDL message for the RecordQueryErrorEvent WSDL operation.</td>
</tr>
<tr>
<td>IISearchQueryServiceApplication_RecordQueryErrorEvent_OutputMessage</td>
<td>The response WSDL message for the RecordQueryErrorEvent WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.13.1.1 IISearchQueryServiceApplication_RecordQueryErrorEvent_InputMessage

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

The **SOAP action** value is:

http://tempuri.org/IISearchQueryServiceApplication/RecordQueryErrorEvent

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

#### 3.1.4.13.1.2 IISearchQueryServiceApplication_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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordQueryErrorEvent</td>
<td>The input data for the RecordQueryErrorEvent WSDL operation.</td>
</tr>
<tr>
<td>RecordQueryErrorEventResponse</td>
<td>The result data for the RecordQueryErrorEvent WSDL operation.</td>
</tr>
</tbody>
</table>
3.1.4.13.2.1 RecordQueryErrorEvent

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

```xml
<xsd:element name="RecordQueryErrorEvent" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element xmlns:q2="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08" minOccurs="0" name="buffer" nillable="true" type="q2:QueryErrorDataBuffer"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd: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**.

```xml
<xsd:element name="RecordQueryErrorEventResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="0" name="RecordQueryErrorEventResult" type="xs:boolean"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd: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 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.

```xml
<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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_RecordUIQueryDoneEvent_InputMessage</td>
<td>The request WSDL message for the RecordUIQueryDoneEvent WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_RecordUIQueryDoneEvent_OutputMessage</td>
<td>The response WSDL message for the RecordUIQueryDoneEvent WSDL operation.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordUIQueryDoneEvent</td>
<td>The input data for the <strong>RecordUIQueryDoneEvent WSDL operation</strong>.</td>
</tr>
<tr>
<td>RecordUIQueryDoneEventResponse</td>
<td>The result data for the <strong>RecordUIQueryDoneEvent</strong> WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.14.2.1 RecordUIQueryDoneEvent

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

```xml
<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**.

```xml
<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 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.

```xml
<wsdl:operation name="RecordWebPartQueryDoneEvent"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsd1/"
>
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEvent"
    message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsd1"/>

  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventResponse"
    message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsd1"/>

  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordWebPartQueryDoneEventSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_SearchServiceApplicationFaultFaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsd1"/>
</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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
</table>
| ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_Inpu
 tMessage                        | The request WSDL message for the RecordWebPartQueryDoneEvent WSDL operation. |
| ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_Out
 putMessage                        | The response WSDL message for the RecordWebPartQueryDoneEvent WSDL operation. |

#### 3.1.4.15.1.1 ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_Input Message

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordWebPartQueryDoneEvent</td>
<td>The input data for the RecordWebPartQueryDoneEvent WSDL operation.</td>
</tr>
</tbody>
</table>
3.1.4.15.2.1 RecordWebPartQueryDoneEvent

The RecordWebPartQueryDoneEvent element specifies the input data for the RecordWebPartQueryDoneEvent WSDL operation.

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

```xml
<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 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.

```xml
<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/RecordPageClickSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_RecordPageClick_SearchServiceApplicationFaultFault_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_RecordPageClick_InputMessage</td>
<td>The request WSDL message for the RecordPageClick WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_RecordPageClick_OutputMessage</td>
<td>The response WSDL message for the RecordPageClick WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.16.1.1 ISearchQueryServiceApplication_RecordPageClick_InputMessage
The request **WSDL message** for the **RecordPageClick WSDL operation**.

The **SOAP action** value is:

```xml
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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordPageClick</td>
<td>The input data for the <strong>RecordPageClick WSDL operation</strong>.</td>
</tr>
<tr>
<td>RecordPageClickResponse</td>
<td>The result data for the <strong>RecordPageClick WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

#### 3.1.4.16.2.1 RecordPageClick

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

```xml
<xs:element name="RecordPageClick" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
        minOccurs="0" name="click" nillable="true" type="tns5:QueryLogPageClick"/>
      <xs:element
        minOccurs="0" name="immediacy" nillable="true" type="tns5: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**.

```xml
<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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QueryLogImmediacyInfo</td>
<td>Additional data about the clicked query result</td>
</tr>
<tr>
<td>QueryLogPageClick</td>
<td>Data about the clicked query result</td>
</tr>
</tbody>
</table>

3.1.4.16.3.1 QueryLogPageClick


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="tns5: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

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).

```xml
<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: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.

<table>
<thead>
<tr>
<th>Simple type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QueryLogClickType</td>
<td>Type of clicks</td>
</tr>
</tbody>
</table>

#### 3.1.4.16.4.1 QueryLogClickType


The **QueryLogClickType** simple type contains information about click types which are processed by search service.

```xml
<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:restriction>
</xs:simpleType>
```
The following table specifies the allowable values for the `QueryLogClickType` simple type.

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>A particular search result was clicked</td>
</tr>
<tr>
<td>InsideBlock</td>
<td>Some result inside result block was clicked.</td>
</tr>
<tr>
<td>More</td>
<td>“More” link for result block was clicked</td>
</tr>
<tr>
<td>DeepLink</td>
<td>A result from <strong>deeplinks</strong> column of a corresponding search result was clicked.</td>
</tr>
<tr>
<td>Hover</td>
<td>A particular result was hovered over and the hover panel did not have an embedded Office Online view.</td>
</tr>
<tr>
<td>HoverWithWAC</td>
<td>A particular result was hovered over and the hover panel had an embedded Office Online view.</td>
</tr>
<tr>
<td>HoverSection</td>
<td>Some section heading in a hover panel was clicked.</td>
</tr>
<tr>
<td>ActionFollow</td>
<td>The Follow action in a hover panel was clicked.</td>
</tr>
<tr>
<td>ActionViewLibrary</td>
<td>The View Library action in a hover panel was clicked.</td>
</tr>
<tr>
<td>ActionEdit</td>
<td>The Edit action in a hover panel was clicked.</td>
</tr>
<tr>
<td>ActionSend</td>
<td>The Send action in a hover panel was clicked.</td>
</tr>
<tr>
<td>ActionViewDupes</td>
<td>The View Duplicates action in a hover panel was clicked.</td>
</tr>
<tr>
<td>OneDriveQueryBoxResult</td>
<td>The one drive query box result panel was clicked.</td>
</tr>
</tbody>
</table>

### 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 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.

```xml
<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
    name="SearchHealthMonitoringServiceApplicationFaultFault"
    message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_InputMessage</td>
<td>The request WSDL message for the GetQueryHealthMonitoringSettings WSDL operation.</td>
</tr>
</tbody>
</table>

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_Settings_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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>GetQueryHealthMonitoringSettings</code></td>
<td>The input data for the <strong>GetQueryHealthMonitoringSettings WSDL operation</strong>.</td>
</tr>
<tr>
<td><code>GetQueryHealthMonitoringSettingsResponse</code></td>
<td>The result data for the <strong>GetQueryHealthMonitoringSettings WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

#### 3.1.4.17.2.1 GetQueryHealthMonitoringSettings

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

```xml
<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.

```xml
<xs:element name="GetQueryHealthMonitoringSettingsResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
        minOccurs="0"
        name="GetQueryHealthMonitoringSettingsResult"
        nillable="true"
        type="tns4: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 <75> 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.

```xml
<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/GetQuerySuggestionsWithResultsResponse" message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wSDL:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetQuerySuggestionsWithResultsSearchServiceApplicationFault" name="SearchServiceApplicationFault" message="tns:ISearchQueryServiceApplication_GetQuerySuggestionsWithResultsSearchServiceApplicationFaultMessage"
    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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_InputMessage</td>
<td>The request WSDL message for the GetQuerySuggestionsWithResults WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_OutputMessage</td>
<td>The response WSDL message for the GetQuerySuggestionsWithResults WSDL operation.</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetQuerySuggestionsWithResults</td>
<td>The input data for the GetQuerySuggestionsWithResults WSDL operation.</td>
</tr>
<tr>
<td>GetQuerySuggestionsWithResultsResponse</td>
<td>The result data for the GetQuerySuggestionsWithResults WSDL operation.</td>
</tr>
</tbody>
</table>

### 3.1.4.18.2.1 GetQuerySuggestionsWithResults

The GetQuerySuggestionsWithResults element specifies the input data for the GetQuerySuggestionsWithResults WSDL operation.

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

```xml
<xs:element name="GetQuerySuggestionsWithResultsResponse"
    xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:complexType>
        <xs:sequence>
            <xs:element ns="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
None.

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. <76>

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

```xml
<wsdl:operation name="GetQueryHealthMonitoringSettingsForComponents"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
    <wsdl:input
        wsaw:Action="http://tempuri.org/ISeachHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents"
        message="tns:ISeachHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_InputMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:output
        wsaw:Action="http://tempuri.org/ISeachHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponentsResponse"
        message="tns:ISeachHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_OutputMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
```
The protocol client sends an \texttt{ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_InputMessage} (section \ref{sec:isearchhealthmonitoringserviceapplication\_getqueryhealthmonitoringsettingsforcomponents\_inputmessage}) request message and the protocol server responds with an \texttt{ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_OutputMessage} (section \ref{sec:isearchhealthmonitoringserviceapplication\_getqueryhealthmonitoringsettingsforcomponents\_outputmessage}) response message, as follows:

- On successful processing, the protocol server returns its query health monitoring settings.
- On error, the protocol server returns a \texttt{FaultException<ExceptionDetail>} message to the protocol client.

\subsection{3.1.4.19.1 Messages}

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

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
Message & Description \\
\hline
\texttt{ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_InputMessage} & The request WSDL message for the \texttt{GetQueryHealthMonitoringSettingsForComponents} WSDL operation. \\
\hline
\texttt{ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_OutputMessage} & The response WSDL message for the \texttt{GetQueryHealthMonitoringSettingsForComponents} WSDL operation. \\
\hline
\end{tabular}
\end{table}

\subsubsection{3.1.4.19.1.1 \texttt{ISearchHealthMonitoringServiceApplication\_GetQueryHealthMonitoringSettingsForComponents\_InputMessage}}

The request WSDL message for the \texttt{GetQueryHealthMonitoringSettingsForComponents} WSDL operation.

The SOAP action value is:

\url{http://tempuri.org/ISearchHealthMonitoringServiceApplication/GetQueryHealthMonitoringSettingsForComponents}

The SOAP body contains the \texttt{GetQueryHealthMonitoringSettingsForComponents} element.

\subsubsection{3.1.4.19.1.2 \texttt{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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetQueryHealthMonitoringSettingsForComponents</td>
<td>The input data for the GetQueryHealthMonitoringSettingsForComponents WSDL operation.</td>
</tr>
<tr>
<td>GetQueryHealthMonitoringSettingsForComponentsResponse</td>
<td>The result data for the GetQueryHealthMonitoringSettingsForComponents WSDL operation.</td>
</tr>
</tbody>
</table>

### 3.1.4.19.2.1 GetQueryHealthMonitoringSettingsForComponents

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

```xml
<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.

```xml
<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:ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetQueryHealthMonitoringSettingsForComponentsResult: List of query health monitoring settings. MUST be of type ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z 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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z</td>
<td>List of settings that are used to configure health monitoring data collection</td>
</tr>
</tbody>
</table>

3.1.4.19.3.1  ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z

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

The ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z 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.

```xml
<xs:complexType name="ArrayOfKeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z"
                 xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded"
                  name="KeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element
            name="Value" nillable="true" type="tns4:QueryHealthMonitoringSettings"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

KeyValueOfstringQueryHealthMonitoringSettingsvvncQr8z: 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.<77>

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_SearchServiceApplicationFaultFaultMessage"
    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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage</code></td>
<td>The request WSDL message for the <code>RecordOMQueryDone</code> WSDL operation.</td>
</tr>
<tr>
<td><code>ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_OutputMessage</code></td>
<td>The response WSDL message for the <code>RecordOMQueryDone</code> WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.20.1.1 `ISearchHealthMonitoringServiceApplication_RecordOMQueryDone_InputMessage`

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>RecordOMQueryDone</code></td>
<td>The input data for the <code>RecordOMQueryDone</code> <strong>WSDL operation</strong>.</td>
</tr>
<tr>
<td><code>RecordOMQueryDoneResponse</code></td>
<td>The result data for the <code>RecordOMQueryDone</code> <strong>WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

#### 3.1.4.20.2.1 `RecordOMQueryDone`

The `RecordOMQueryDone` element specifies the input data for the `RecordOMQueryDone` **WSDL operation**.
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.

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.<78>

The following is the WSDL port type specification of the RecordQueryError WSDL operation.

```xml
<wsdl:operation name="RecordQueryError" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl">
  <wsld:input
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryError"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>

  <wsld:output
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorResponse"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>

  <wsld:fault
    wsaw:Action="http://tempuri.org/ISearchHealthMonitoringServiceApplication/RecordQueryErrorSearchServiceApplicationFault"
    message="tns:ISearchHealthMonitoringServiceApplication_RecordQueryError_SearchServiceApplicationFaultMessage"
    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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage</td>
<td>The request WSDL message for the RecordQueryError WSDL operation.</td>
</tr>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage</td>
<td>The response WSDL message for the RecordQueryError WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.21.1.1 ISearchHealthMonitoringServiceApplication_RecordQueryError_InputMessage

The request WSDL message for the RecordQueryError WSDL operation.

The SOAP action value is:
3.1.4.21.1.2 ISearchHealthMonitoringServiceApplication_RecordQueryError_OutputMessage

The SOAP body contains the RecordQueryError element.

3.1.4.21.1.2.1 RecordQueryError

The response WSDL message for the RecordQueryError WSDL operation.

3.1.4.21.2 Elements

The SOAP body contains the RecordQueryErrorResponse element.

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.<79>

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

```xml
<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/RecordUIQueryDoneServiceApplicationFault"
      name="SearchServiceApplicationFault" name="SearchServiceApplicationFault"
      message="tns:ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_SearchServiceApplicationFaultMessage"
      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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage</td>
<td>The request WSDL message for the RecordUIQueryDone WSDL operation.</td>
</tr>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_OutputMessage</td>
<td>The response WSDL message for the RecordUIQueryDone WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.22.1.1 ISearchHealthMonitoringServiceApplication_RecordUIQueryDone_InputMessage

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordUIQueryDone</td>
<td>The input data for the RecordUIQueryDone WSDL operation.</td>
</tr>
<tr>
<td>RecordUIQueryDoneResponse</td>
<td>The result data for the RecordUIQueryDone WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.22.2.1 RecordUIQueryDone
The **RecordUIQueryDone** element specifies the input data for the **RecordUIQueryDone WSDL operation**.

```xml
<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**.

```xml
<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.<80>

The following is the WSDL port type specification of the RecordWebPartQueryDone WSDL operation.

```xml
<wsdl:operation name="RecordWebPartQueryDone" xmlns:wsdl="http://schemas.xmlsoap.org/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&lt;ExceptionDetail&gt; 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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_InputMessage</td>
<td>The request WSDL message for the RecordWebPartQueryDone WSDL operation.</td>
</tr>
<tr>
<td>ISearchHealthMonitoringServiceApplication_RecordWebPartQueryDone_OutputMessage</td>
<td>The response WSDL message for the RecordWebPartQueryDone WSDL operation.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecordWebPartQueryDone</td>
<td>The input data for the RecordWebPartQueryDone WSDL operation.</td>
</tr>
<tr>
<td>RecordWebPartQueryDoneResponse</td>
<td>The result data for the RecordWebPartQueryDone WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.23.2.1  RecordWebPartQueryDone

The RecordWebPartQueryDone element specifies the input data for the RecordWebPartQueryDone WSDL operation.

```xml
<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.

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

```xml
<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"
      message="tns:ISearchQueryServiceApplication_GetImsEndpointAddresses_SearchServiceApplicationFaultFaultMessage"
      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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetImsEndpointAddresses_InputMessage</td>
<td>The request WSDL message for the GetImsEndpointAddresses WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetImsEndpointAddresses_OutputMessage</td>
<td>The response WSDL message for the GetImsEndpointAddresses WSDL operation.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetImsEndpointAddresses</td>
<td>The input data for the GetImsEndpointAddresses WSDL operation.</td>
</tr>
<tr>
<td>GetImsEndpointAddressesResponse</td>
<td>The result data for the GetImsEndpointAddresses WSDL operation.</td>
</tr>
</tbody>
</table>
### 3.1.4.24.2.1 GetImsEndpointAddresses

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

```xml
<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**.

```xml
<xs:element name="GetImsEndpointAddressesResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element type="q3:ArrayOfanyURI" name="GetImsEndpointAddressesResult" nillable="true" minOccurs="0"/>
    </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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfanyURI</td>
<td>List of URIs. Each URI in the list serve search.</td>
</tr>
</tbody>
</table>

### 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.

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

```xml
<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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetQueryCompletions_InputMessage</td>
<td>The request WSDL message</td>
</tr>
</tbody>
</table>
**3.1.4.25.1.1 ISearchQueryServiceApplication_GetQueryCompletions_InputMessage**

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

The **SOAP action** value is:

http://tempuri.org/ISearchQueryServiceApplication/GetQueryCompletions

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetQueryCompletions</td>
<td>The input data for the <strong>GetQueryCompletions</strong> <strong>WSDL operation</strong>.</td>
</tr>
<tr>
<td>GetQueryCompletionsResponse</td>
<td>The result data for the <strong>GetQueryCompletions</strong> <strong>WSDL operation</strong>.</td>
</tr>
</tbody>
</table>

**3.1.4.25.2.1 GetQueryCompletions**

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

```xml
<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 3.1.7.3.1.

numberOfCompletions: Specifies the maximum number query completion results in GetQueryCompletionsResponse 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 GetQueryCompletionsResponse

The GetQueryCompletionsResponse element specifies the result data for the GetQueryCompletions WSDL operation.

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.

<table>
<thead>
<tr>
<th>Complex type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArrayOfQueryAutoCompletion</td>
<td>List of QueryAutoCompletion.</td>
</tr>
<tr>
<td>ArrayOfQueryAutoCompletionMatch</td>
<td>List of QueryAutoCompletionMatch.</td>
</tr>
<tr>
<td>QueryAutoCompletion</td>
<td>The matches for the Query in one Source.</td>
</tr>
<tr>
<td>QueryAutoCompletionMatch</td>
<td>One match for the Query in one Source.</td>
</tr>
<tr>
<td>QueryAutoCompletionResults</td>
<td>The result of the operation GetQueryCompletions WSDL operation.</td>
</tr>
</tbody>
</table>

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.
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.

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.

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.
**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 represents 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.

**CoreExecutionTimeMs:** This element represents the time spent in the protocol server retrieving the result.

**CorrelationId:** This element represents the correlation identification of the request.

**Queries:** This complex type represents 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.

3.1.4.26 IsUrlMappingCached
The IsUrlMappingCached operation is used by the protocol client to obtain information about the cache status of the URL mapping in the protocol server and to trigger a refresh of the cache.

The following is the WSDL port type specification of the IsUrlMappingCached WSDL operation.

```
<wsdl:operation name="IsUrlMappingCached" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/IsUrlMappingCached"
    message="tns:ISearchQueryServiceApplication_IsUrlMappingCached_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/IsUrlMappingCachedResponse"
    message="tns:ISearchQueryServiceApplication_IsUrlMappingCached_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:Fault
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an IsSearchQueryServiceApplication_IsUrlMappingCached_InputMessage request message as specified in section 3.1.4.26.1.1, and the protocol server responds with an IsSearchQueryServiceApplication_IsUrlMappingCached_OutputMessage response message as specified in section 3.1.4.26.1.2 as follows:

- On successful processing, the protocol server MUST return the IsUrlMappingCachedResponse as specified in section 3.1.4.26.2.2.

On error, the protocol server MUST return a FaultException<ExceptionDetail> message to the protocol client.

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

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IsSearchQueryServiceApplication_IsUrlMappingCached_InputMessage</td>
<td>The request WSDL message for the IsUrlMappingCached WSDL operation.</td>
</tr>
</tbody>
</table>
3.1.4.26.1.1 ISearchQueryServiceApplication_IsUrlMappingCached_InputMessage

The request WSDL message for the IsUrlMappingCached WSDL operation.
The SOAP action value is:

http://tempuri.org/ISearchQueryServiceApplication/IsUrlMappingCached

The SOAP body contains the IsUrlMappingCached element.

3.1.4.26.1.2 ISearchQueryServiceApplication_IsUrlMappingCached_OutputMessage

The response WSDL message for the IsUrlMappingCached WSDL operation.
The SOAP body contains the IsUrlMappingCachedResponse element.

3.1.4.26.2 Elements

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IsUrlMappingCached</td>
<td>The input data for the IsUrlMappingCached WSDL operation.</td>
</tr>
<tr>
<td>IsUrlMappingCachedResponse</td>
<td>The result data for the IsUrlMappingCached WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.26.2.1 IsUrlMappingCached

The IsUrlMappingCached element specifies the input data for the IsUrlMappingCached WSDL operation.

```xml
<xs:element name="IsUrlMappingCached" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
                   minOccurs="0" name="subscriptionId" type="ser:guid"/>
                   minOccurs="0" name="zone" type="tns6:SPUrlZone"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

subscriptionId: The identification of the tenant that is performing the operation.
zone: The SPUrlZone as specified in section 2.2.5.7.

3.1.4.26.2.2 IsUrlMappingCachedResponse

The IsUrlMappingCachedResponse element specifies the result data for the IsUrlMappingCached WSDL operation.
<xs:element name="IsUrlMappingCachedResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="IsUrlMappingCachedResult" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

**IsUrlMappingCachedResult**: Specifies the cache operation result. The result type is an integer, and has the following meaning:

- ’0’ - The item is not cached.
  
  The URL mapping cache does not contain the item. The client MUST update the URL mapping cache on the server side by inserting the entries for the default URL and the zone URL in the property bag of the query, and by setting the query property ‘UrlMapCaching’ = true.

  The client gets the URL mapping and inserts the URL mapping into the property bag of the query using the keys “defaultUrl” and “zoneUrl”.

  The following query property is set in addition to the URL mapping in the query property bag, (see ‘Query property bag’ below):
  - UrlMappingCache = True

- ’1’ - The cache state is old.

  The URL mapping cache state is old. The cache MUST be refreshed offline by inserting the entries for the default URL and the zone URL in the property bag of an ‘offline query’. The ‘offline query’ is a query that is sent to the server side to initiate a cache refresh. This query is sent in addition to the query in progress.

  The offline query is a query with the URL mapping included in the property bag of the query. The query is described in section 4.1.

  The following query properties are set in addition to the URL mapping in the query property bag, (see ‘Query property bag’ below):
  - ‘CorrelationId’ = Set to the unique identifier for the current query.
  - QueryText = ‘FastPbFast’
  - MaxKeywordQueryLenght = 2048
  - StartRow = 1
  - RowsPerPage = 1
  - SelectProperties = ‘Title’
  - PartitionId = Set to partition id of current query
  - UrlZone = Set to UrlZone of current query
  - UrlMappingCache = True

- ’2’ - The item is cached.

  The URL mapping is cached in the client. The server gets the URL mapping from the cache.
• ‘3’ – The update of the cache is in progress.

The URL mapping is cached in the client. A cache update is in progress on the server side. The client MUST NOT trigger another update of the cache while the cache state is in progress.

**Query property bag**

The query property bag, see section 2.2.4, is a serialized dictionary that stores key-value pairs. The client can set several key-values pairs in this dictionary. The key-values for the URL mapping is set in the query property bag.

Query property bag:

```
minOccurs="0" name="PropertyBag" nillable="true" type="q3:ArrayOfKeyValueOfstringstring"/>
```

Key-values for URL mapping:

```
<xs:element minOccurs="0" name="defaultUrl" type="ArrayOfKeyValueOfstringstring "/>
<xs:element minOccurs="0" name="zoneUrl" type="ArrayOfKeyValueOfstringstring "/>
```

The key "defaultUrl" contains the URL mapping for the default UrlMapping. The key "zoneUrl" contains URL for the mapping for the zoneUrl. This is the reverse mapping of the "defaultUrl".

Each of the properties are a dictionary, that contain the mapping for the URLs:

Properties["defaultUrl"]="A serialized dictionary of the default URL mappings, pairs of “URL key”- “URL value”.

Properties["zoneUrl"]= "A serialized dictionary of the reverse URL mappings of the “defaultUrl” property, pairs of “URL key” – “URL value”, where the “URL key” is the “URL value”, and the “URL value” is the “URL key” of the items in the Properties[“defaultUrl”].

### 3.1.4.26.3 Complex Types

None.

### 3.1.4.26.4 Simple Types

None.

### 3.1.4.26.5 Attributes

None.

### 3.1.4.26.6 Groups

None.

### 3.1.4.26.7 Attribute Groups

None.

### 3.1.4.27 GetAzureApiConfiguration

The **GetAzureApiConfiguration** is to get Azure API configurations.<81>
The following is the WSDL port type specification of the **GetAzureApiConfiguration** WSDL operation.

```xml
<wsdl:operation name="GetAzureApiConfiguration"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfiguration"
    message="tns:ISearchQueryServiceApplication_GetAzureApiConfiguration_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>

  <wsdl:output
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfigurationResponse"
    message="tns:ISearchQueryServiceApplication_GetAzureApiConfiguration_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>

  <wsdl:fault
    wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfigurationSearchServiceApplicationFaultFault"
    name="SearchServiceApplicationFaultFault"
    message="tns:ISearchQueryServiceApplication_GetAzureApiConfiguration_SearchServiceApplicationFaultFaultMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

### 3.1.4.27.1 Messages

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

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetAzureApiConfiguration_InputMessage</td>
<td>The request WSDL message for the <strong>GetAzureApiConfiguration</strong> WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetAzureApiConfiguration_OutputMessage</td>
<td>The response WSDL message for the <strong>GetAzureApiConfiguration</strong> WSDL operation.</td>
</tr>
</tbody>
</table>

#### 3.1.4.27.1.1 ISearchQueryServiceApplication_GetAzureApiConfiguration_InputMessage

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

The **SOAP action** value is:

http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfiguration

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

#### 3.1.4.27.1.2 ISearchQueryServiceApplication_GetAzureApiConfiguration_OutputMessage

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

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

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetAzureApiConfiguration</td>
<td>The input data for the GetAzureApiConfiguration WSDL operation.</td>
</tr>
<tr>
<td>GetAzureApiConfigurationResponse</td>
<td>The result data for the GetAzureApiConfiguration WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.27.2.1 GetAzureApiConfiguration

The GetAzureApiConfiguration element specifies the input data for the GetAzureApiConfiguration WSDL operation.

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

3.1.4.27.2.2 GetAzureApiConfigurationResponse

The GetAzureApiConfigurationResponse element specifies the result data for the GetAzureApiConfiguration WSDL operation.

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

GetAzureApiConfigurationResult: This element specifies the result data for the GetAzureApiConfiguration WSDL operation.

3.1.4.27.3 Complex Types

None.

3.1.4.27.4 Simple Types

None.

3.1.4.27.5 Attributes

None.

3.1.4.27.6 Groups

None.

3.1.4.27.7 Attribute Groups
3.1.4.28 GetZeroTermsQuerySuggestionsWithResults

Returns query suggestions without any user keywords. The protocol client MAY call this method when implementing a search box to show suggestions before the user types anything into the search box.

The following is the WSDL port type specification of the GetZeroTermsQuerySuggestionsWithResults WSDL operation.

```xml
<wsdl:operation name="GetZeroTermsQuerySuggestionsWithResults"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
    <wsdl:input
        wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetZeroTermsQuerySuggestionsWithResults"
        message="tns:ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_InputMessage"
        xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:output
        wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetZeroTermsQuerySuggestionsWithResultsResponse"
        message="tns:ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_OutputMessage"
        xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
    <wsdl:Fault
        wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetZeroTermsQuerySuggestionsWithResultsSearchServiceApplicationFault"
        name="SearchServiceApplicationFault"
        message="tns:ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResultsSearchServiceApplicationFaultMessage"
        xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

3.1.4.28.1 Messages

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

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_InputMessage</td>
<td>The request WSDL message for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.</td>
</tr>
<tr>
<td>ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_OutputMessage</td>
<td>The response WSDL message for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.28.1.1 ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_InputMessage

The request WSDL message for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.

The SOAP action value is:

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

The SOAP body contains the GetZeroTermsQuerySuggestionsWithResults element.
3.1.4.28.1.2 ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_OutputMessage

The response WSDL message for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.

The SOAP body contains the GetZeroTermsQuerySuggestionsWithResultsResponse element.

3.1.4.28.2 Elements

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GetZeroTermsQuerySuggestionsWithResults</td>
<td>The input data for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.</td>
</tr>
<tr>
<td>GetZeroTermsQuerySuggestionsWithResultsResponse</td>
<td>The result data for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.</td>
</tr>
</tbody>
</table>

3.1.4.28.2.1 GetZeroTermsQuerySuggestionsWithResults

The GetZeroTermsQuerySuggestionsWithResults element specifies the input data for the GetZeroTermsQuerySuggestionsWithResults WSDL operation.

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

**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.

**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.

3.1.4.28.2.2 GetZeroTermsQuerySuggestionsWithResultsResponse

The GetZeroTermsQuerySuggestionsWithResultsResponse element specifies the result data for the GetZeroTermsQuerySuggestionsWithResultsWithResults WSDL operation.
GetZeroTermsQuerySuggestionsWithResultsResult:

3.1.4.28.3  Complex Types
None.

3.1.4.28.4  Simple Types
None.

3.1.4.28.5  Attributes
None.

3.1.4.28.6  Groups
None.

3.1.4.28.7  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:

```xml
<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>
    </s:Header>
    <s:Body>
        <Execute xmlns="http://tempuri.org/">
            <properties
                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: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:HitHighlightedProperties/>
                    <b:HitHighlightedProperties/>
                    <b:HitHighlightedProperties/>
                </b:AlertInfo>
                <b:ChangeType>Discovered</b:ChangeType>
                <b:LastUpdateTime>0001-01-01T00:00:00</b:LastUpdateTime>
            </properties>
        </Execute>
    </s:Body>
</s:Envelope>
```
<b:ResubmitFlags>NoResubmit</b:ResubmitFlags>
<b:SelectProperties xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
    <c:anyType i:type="d:string">
        WorkId</c:anyType>
    <c:anyType i:type="d:string">
        UserProfile_GUID</c:anyType>
    <c:anyType i:type="d:string">
        AccountName</c:anyType>
    <c:anyType i:type="d:string">
        PreferredName</c:anyType>
    <c:anyType i:type="d:string">
        YomiDisplayName</c:anyType>
    <c:anyType i:type="d:string">
        JobTitle</c:anyType>
    <c:anyType i:type="d:string">
        Department</c:anyType>
    <c:anyType i:type="d:string">
        WorkPhone</c:anyType>
    <c:anyType i:type="d:string">
        OfficeNumber</c:anyType>
    <c:anyType i:type="d:string">
        PictureURL</c:anyType>
    <c:anyType i:type="d:string">
        HierarchyUrl</c:anyType>
    <c:anyType i:type="d:string">
        WorkEmail</c:anyType>
    <c:anyType i:type="d:string">
        Path</c:anyType>
    <c:anyType i:type="d:string">
        HitHighlightedSummary</c:anyType>
    <c:anyType i:type="d:string">
        HitHighlightedProperties</c:anyType>
    <c:anyType i:type="d:string">
        Responsibility</c:anyType>
    <c:anyType i:type="d:string">
        Skills</c:anyType>
    <c:anyType i:type="d:string">
        SipAddress</c:anyType>
    <c:anyType i:type="d:string">
        Schools</c:anyType>
    <c:anyType i:type="d:string">
        PastProjects</c:anyType>
    <c:anyType i:type="d:string">
        Interests</c:anyType>
    <c:anyType i:type="d:string">
        OrgNames</c:anyType>
    <c:anyType i:type="d:string">
        OrgUrls</c:anyType>
    <c:anyType i:type="d:string">
        OrgParentNames</c:anyType>
    <c:anyType i:type="d:string">
        OrgParentUrls</c:anyType>
    <c:anyType i:type="d:string">
        Memberships</c:anyType>
    <c:anyType i:type="d:string">
        AboutMe</c:anyType>
    <c:anyType i:type="d:string">
        BaseOfficeLocation</c:anyType>
    <c:anyType i:type="d:string">
        ServiceApplicationID</c:anyType>
    <c:anyType i:type="d:string">
        SocialDistance</c:anyType>
</b:SelectProperties>

<b:SimilarTo></b:SimilarTo>
<b:SimilarType>None</b:SimilarType>
<b:SortList>
    <b:m_elements>
        <b:Sort>
            <b:SortFlag>NoSort</b:SortFlag>
        </b:Sort>
    </b:m_elements>
</b:SortList>
The protocol server then responds with the following:

```xml
<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">
      b4751329-28ff-489f-81c7-7c0e5f3dad7a
    </ActivityId>
    <a:RelatesTo urn:uuid:e72b47ca-9794-46f9-8bd3-b0a84c16e4fe/>
  </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>
          <c:string>Sample Search Terms</c:string>
        </b:IgnoredNoiseWords>
        <b:KeywordInformation>
          <b:Definition></b:Definition>
        </b:KeywordInformation>
        <b:Keyword i:nil="true"></b:Keyword>
        <b:KeywordInformation>
          <b:Definition i:nil="true"></b:Definition>
        </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:m_ResultTables xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
            <c:KeyValueOfResultTypeResultTableUTLV0zE5 i:nil="true">
              <c:Key><b:IsTotalRowsExact>true</b:IsTotalRowsExact>
                <b:ResultType>RelevantResults</b:ResultType>
              </c:Key>
              <c:Value>
                <b:RowCount>0</b:RowCount>
              </c:Value>
            </c:KeyValueOfResultTypeResultTableUTLV0zE5>
          </b:m_ResultTables>
        </b:SpellingSuggestion>
      </ExecuteResult>
    </ExecuteResponse>
  </s:Body>
</s:Envelope>
```
<xs:schema id="NewDataSet" xmlns:xs="http://www.w3.org/2001/XMLSchema"
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 name="UserProfile_GUID" type="xs:string" minOccurs="0"/>
<xs:element name="AccountName" type="xs:string" minOccurs="0"/>
<xs:element name="PreferredName" type="xs:string" minOccurs="0"/>
<xs:element name="YomiDisplayName" type="xs:string" minOccurs="0"/>
<xs:element name="JobTitle" type="xs:string" minOccurs="0"/>
<xs:element name="Department" type="xs:string" minOccurs="0"/>
<xs:element name="WorkPhone" type="xs:string" minOccurs="0"/>
<xs:element name="OfficeNumber" type="xs:string" minOccurs="0"/>
<xs:element name="PictureURL" type="xs:string" minOccurs="0"/>
<xs:element name="HierarchyUrl" type="xs:string" minOccurs="0"/>
<xs:element name="WorkEmail" type="xs:string" minOccurs="0"/>
<xs:element name="Path" type="xs:string" minOccurs="0"/>
<xs:element name="HitHighlightedSummary" type="xs:string" minOccurs="0"/>
<xs:element name="HitHighlightedProperties" type="xs:string" minOccurs="0"/>
<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 name="Skills" msdata:DataType="System.String[]
mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"/>
<xs:element name="SipAddress" type="xs:string" minOccurs="0"/>
<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 name="PastProjects" msdata:DataType="System.String[]
mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"/>
<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 name="OrgNames" msdata:DataType="System.String[]
mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"/>
<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 name="OrgParentNames" msdata:DataType="System.String[]
mscorlib, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=b77a5c561934e089" type="xs:anyType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:element>
</xs:schema>
4.2 Retrieve Information About the Available Search Scopes

To obtain a list of search scopes, the protocol client sends the following message:

```xml
<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:Envelope>
```
<GetScopes xmlns="http://tempuri.org/">

</GetScopes>
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"
    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>
```
4.3 Notify the Occurrence of a Clickthrough

To notify the protocol server that a **clickthrough** occurs, the protocol client sends the following message:

```xml
  <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>
      <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/dc46e19968e743720529b721db8c8c60/SearchService.svc</a:To>
  </s:Header>
  <s:Body>
    <RecordClick xmlns="http://tempuri.org/">
        <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-url i:nil="true"></b:ContextualScope-url>
        <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"></b:NonClickedUrls>
        <b:NumBe bestBets>0</b:NumBe bestBets>
        <b:NumHighConfidenceResults>0</b:NumHighConfidenceResults>
        <b:NumResults>1</b:NumResults>
        <b:QueryCulture i:nil="true"></b:QueryCulture>
      </Info>
    </RecordClick>
  </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: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/">
  </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-c2f83b0506a2</correlationId>
  <language>en-US</language>
  <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-cce881c72e3"
        3e203ddf-387a-49da-90da-9d6a9ef1f9b4
    </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>
  </s:Body>
</s:Envelope>
5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.
Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided in this appendix.

```xml
<?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/">

    <wsdl:types>
        <xs:schema xmlns:tns8="http://tempuri.org/Imports"
            targetNamespace="http://tempuri.org/Imports">
            <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:operation>
        <wsdl:operation name="Execute">
        </wsdl:operation>
    </wsdl:portType>
</wsdl:definitions>
```
<wsdl:operation name="GetProperties">
  <wsdl:input
  <wsdl:output
  <wsdl:fault
</wsdl:operation>

<wsdl:operation name="GetScopes">
  <wsdl:input
  <wsdl:output
  <wsdl:fault
</wsdl:operation>

<wsdl:operation name="GetQuerySuggestions">
  <wsdl:input
  <wsdl:output
  <wsdl:fault
</wsdl:operation>

<wsdl:operation name="HighlightStringValue">
  <wsdl:input
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValue" message="tns:ISearchQueryServiceApplication_HighlightStringValue_InputMessage"/>
  <wsdl:output
  <wsdl:fault
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueSearchServiceApplicationFault" name="SearchServiceApplicationFault" message="tns:ISearchQueryServiceApplication_HighlightStringValue_SearchServiceApplicationFault_FaultMessage"/>
</wsdl:operation>

<wsdl:operation name="HighlightStringValueQuerySuggestions">
  <wsdl:input
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/HighlightStringValueQuerySuggestions" message="tns:ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_InputMessage"/>
  <wsdl:output
  <wsdl:fault
</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/GetClickFrequenciesForUrlResponse"
  message="tns:ISearchQueryServiceApplication_GetClickFrequenciesForUrl_OutputMessage"/>
<wsdl:fault
  wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetClickFrequenciesForUrlSearchServiceApplicationFaultFault"
  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/GetQueryCompletionsResponse"
message="tns:ISearchQueryServiceApplication_GetQueryCompletions_OutputMessage"/>
<wsdl:operation name="GetImsEndpointAddresses">
<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
</wsdl:operation>
<wsdl:operation name="IsUrlMappingCached">
<wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/IsUrlMappingCached"
message="tns:ISearchQueryServiceApplication_IsUrlMappingCached_InputMessage"/>
<wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/IsUrlMappingCachedResponse"
message="tns:ISearchQueryServiceApplication_IsUrlMappingCached_OutputMessage"/>
<wsdl:fault
</wsdl:operation>
<wsdl:operation name="GetAzureApiConfiguration">
<wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfiguration"
message="tns:ISearchQueryServiceApplication_GetAzureApiConfiguration_InputMessage"/>
<wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetAzureApiConfigurationResponse"
message="tns:ISearchQueryServiceApplication_GetAzureApiConfiguration_OutputMessage"/>
<wsdl:fault
</wsdl:operation>
<wsdl:operation name="GetZeroTermsQuerySuggestionsWithResults">
<wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetZeroTermsQuerySuggestionsWithResults"
message="tns:ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_InputMessage"/>
<wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/GetZeroTermsQuerySuggestionsWithResultsResponse"
message="tns:ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_OutputMessage"/>
<wsdl:fault
</wsdl:operation>
</wsdl:portType>
<wsdl:portType name="ISearchHealthMonitoringServiceApplication">
<wsdl:operation name="RecordUIQueryDone">
<wsdl:input
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDone"
message="tns:ISearchQueryServiceApplication_RecordUIQueryDone_InputMessage"/>
<wsdl:output
wsaw:Action="http://tempuri.org/ISearchQueryServiceApplication/RecordUIQueryDoneResponse"
message="tns:ISearchQueryServiceApplication_RecordUIQueryDone_OutputMessage"/>
</wsdl:operation>
</wsdl:portType>
<wsdl:operation name="GetQueryHealthMonitoringSettingsForComponents">
  message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_InputMessage"/>
  message="tns:ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettingsForComponents_OutputMessage"/>
  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">
    <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: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/HighlightStringValueQuerySuggestions" 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>

<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: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>
<wsdl:message name="ISearchHealthMonitoringServiceApplication_GetQueryHealthMonitoringSettings_Searc
<wsdl:message name="ISearchHealthMonitoringServiceApplication_RecordQueryError_SearchServiceApplicationFault_FaultMessage">
</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_SearchServiceApplicationFault_FaultMessage">
</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_SearchServiceApplicationFault_FaultMessage">
</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:message>

<wsdl:message name="ISearchQueryServiceApplication_GetAzureApiConfiguration_InputMessage">
    <wsdl:part name="parameters" element="tns:GetAzureApiConfiguration"/>
</wsdl:message>

<wsdl:message name="ISearchQueryServiceApplication_GetAzureApiConfiguration_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetAzureApiConfigurationResponse"/>
</wsdl:message>

<wsdl:message name="ISearchQueryServiceApplication_GetAzureApiConfiguration_SearchServiceApplicationFaultFault_FaultMessage">
</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_SearchServiceApplicationFaultFault_FaultMessage">
</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_GetQuerySuggestionsWithResults_FaultFault_FaultMessage">
</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_FaultFault_FaultMessage">
</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_FaultFault_FaultMessage">
</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_FaultFault_FaultMessage">
</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_FaultFault_FaultMessage">
</wsdl:message>

<wsdl:message name="ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_InputMessage">
  <wsdl:part name="parameters" element="tns:GetZeroTermsQuerySuggestionsWithResults"/>
</wsdl:message>

<wsdl:message name="ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_OutputMessage">
  <wsdl:part name="parameters" element="tns:GetZeroTermsQuerySuggestionsWithResultsResponse"/>
</wsdl:message>

<wsdl:message name="ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_FaultFault_FaultMessage">
</wsdl:message>
</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_GetZeroTermsQuerySuggestionsWithResults_Searc

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_HighlightStringValue_OutputMessage"

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_HighlightStringValueQuerySuggestions_Searc

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_IsUrlMappingCached_OutputMessage"

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_OutputMessage"

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_FaultMessage"

</wsdl:message>
<wsdl:message name="ISearchQueryServiceApplication_RecordOMQueryDoneEvent_SearchServiceApplicationFaultFaulMessage">
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  <wsdl:part name="parameters" element="tns:RecordPageClickResponse"/>
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<wsdl:message name="ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_InputMessage">
  <wsdl:part name="parameters" element="tns:RecordWebPartQueryDoneEvent"/>
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<wsdl:message name="ISearchQueryServiceApplication_RecordWebPartQueryDoneEvent_OutputMessage">
  <wsdl:part name="parameters" element="tns:RecordWebPartQueryDoneEventResponse"/>
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</wsdl:message>
## Appendix B: Full XML Schema

<table>
<thead>
<tr>
<th>Schema name</th>
<th>Prefix</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://tempuri.org/">http://tempuri.org/</a></td>
<td>tns</td>
<td>7.3</td>
</tr>
<tr>
<td><a href="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08">http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08</a></td>
<td>q2</td>
<td>7.4</td>
</tr>
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<td><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></td>
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<td>tns6</td>
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<tr>
<td><a href="http://schemas.microsoft.com/2003/10/Serialization/Arrays">http://schemas.microsoft.com/2003/10/Serialization/Arrays</a></td>
<td>q3</td>
<td>7.7</td>
</tr>
<tr>
<td><a href="http://schemas.microsoft.com/2003/10/Serialization/">http://schemas.microsoft.com/2003/10/Serialization/</a></td>
<td>ser</td>
<td>7.8</td>
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</table>

For ease of implementation, the following sections provide the full XML schema for this protocol.


```xml
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      <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string"/>
    </xs:sequence>
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</xs:schema>
```
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<xs:enumeration value="Compiled"/>
<xs:enumeration value="NeedsRecompile"/>
</xs:restriction>
</xs:simpleType>
</xs:element>
</xs:schema>


<?xml version="1.0" encoding="UTF-8"?>
<xs:schema

7.3  http://tempuri.org/ Schema

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/"
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<xs:element minOccurs="0" name="cursorPosition" type="xs:int" />
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</xs:element>
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7.4 http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08 Schema

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    xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/
    xmlns:xs="http://www.w3.org/2001/XMLSchema">
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          <xs:element name="EnableSpellcheck" type="tns5:SpellcheckMode"/>
          <xs:element name="EnableUrlSmashing" type="xs:boolean"/>
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<xs:element minOccurs="0" name="CustomTags" nillable="true" type="xs:string"/>
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    <xs:element minOccurs="0" name="PersonalResults" nillable="true" type="q2:ArrayOfPersonalResultSuggestion"/>
    <xs:element minOccurs="0" name="Queries" nillable="true" type="q2:ArrayOfQuerySuggestionQuery"/>
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    <xs:element minOccurs="0" name="IsBestBet" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Title" nillable="true" type="xs:string"/>
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    <xs:element minOccurs="0" name="Queries" nillable="true" type="q2:ArrayOfQueryAutoCompletion"/>
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    <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"/>
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    <xs:element minOccurs="0" name="Start" type="xs:long"/>
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    <xs:element minOccurs="0" name="Start" type="xs:long"/>
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      <xs:enumeration value="Modified"/>
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  </xs:simpleType>
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  </xs:simpleType>
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          <xs:enumeration value="PropertySelectWithInClause"/>
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          <xs:enumeration value="UseSqlFirstJoinStrategy"/>
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          <xs:enumeration value="DefinitionResults"/>
          <xs:enumeration value="VisualBestBetsResults"/>
          <xs:enumeration value="RefinementResults"/>
          <xs:enumeration value="Extended"/>
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  </xs:simpleType>
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<xs:enumeration value="UrlExactlyMatches"/>
<xs:enumeration value="ContentTypeIs"/>
<xs:enumeration value="FileExtensionMatches"/>
<xs:enumeration value="ResultHasTag"/>
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<xs:restriction base="xs:string">
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<xs:enumeration value="WebService"/>
<xs:enumeration value="UI"/>
<xs:enumeration value="Custom"/>
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<xs:enumeration value="Alerts"/>
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<xs:enumeration value="VideoResultsQuery"/>
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<xs:enumeration value="SiteResultsQuery_Docs"/>
<xs:enumeration value="SiteResultsQuery_Sites"/>
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<xs:enumeration value="MyTaskSync"/>
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<xs:enumeration value="Monitoring"/>
<xs:enumeration value="ReportsAndDataResultsQuery"/>
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<xs:enumeration value="Unknown"/>
</xs:restriction>
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<xs:enumeration value="Click"/>
</xs:restriction>
</xs:simpleType>
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<xs:complexType name="QueryLogPageClick">
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<xs:element minOccurs="0" name="ClickTime" type="xs:dateTime"/>
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<xs:element minOccurs="0" name="PageImpressionId" type="xs:long"/>
<xs:element minOccurs="0" name="PartitionBucket" type="xs:short"/>
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<xs:restriction base="xs:string">
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<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>
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<xs:sequence>
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<xs:element minOccurs="0" name="QueryString" nillable="true" type="xs:string"/>
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<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"/>
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<xs:element minOccurs="0" name="UserName" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="WebGuid" type="ser:guid"/>
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</xs:schema>

7.6 http://schemas.datacontract.org/2004/07/Microsoft.SharePoint.Administration Schema

<xs:element minOccurs="0" name="QueryLogPageClick" nillable="true" type="tns5:QueryLogPageClick"/>
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<xs:enumeration value="InsideBlock"/>
<xs:enumeration value="More"/>
<xs:enumeration value="DeepLink"/>
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<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="tns5:QueryLogClickType"/>
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<xs:sequence>
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<xs:element minOccurs="0" name="WebGuid" type="ser:guid"/>
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7.7 http://schemas.microsoft.com/2003/10/Serialization/Arrays Schema

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<xs:schema xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
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targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
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  <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
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    <xs:sequence>
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    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfanyType" nillable="true" type="q3:ArrayOfanyType"/>

  <xs:complexType name="ArrayOfKeyValueOfstringanyType">
    <xs:sequence>
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        <xs:complexType>
          <xs:sequence>
            <xs:element name="Key" nillable="true" type="xs:string"/>
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          </xs:sequence>
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    </xs:sequence>
  </xs:complexType>
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  </xs:complexType>
  <xs:element name="ArrayOfint" nillable="true" type="q3:ArrayOfint"/>

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            <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">
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      <xs:element minOccurs="0" maxOccurs="unbounded" name="guid" nillable="true" type="ser:guid"/>
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  </xs:complexType>
  <xs:element name="ArrayOfguid" nillable="true" type="q3:ArrayOfguid"/>
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```
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</xs:sequence>
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</xs:element>
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<xs:sequence>
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</xs:element>
</xs:complexType>

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<xs:sequence>
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</xs:simpleType>
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<xs:restriction base="xs:duration">
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<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: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>


<xs:complexType name="ArrayOfKeyValuePairOfstringResultTable_PFsic3Az">
<xs:sequence>
<xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValuePairOfstringResultTable_PFsic3Az" type="tns7:KeyValuePairOfstringResultTable_PFsic3Az"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="KeyValuePairOfstringResultTable_PFsic3Az">
<xs:sequence>
<xs:element name="key" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" maxOccurs="unbounded" name="q2:ResultTable" type="q2:ResultTable"/>
</xs:sequence>
</xs:complexType>

```xml
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  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>
```


```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  elementFormDefault="qualified"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="SecureStoreCredentialType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="UserName"/>
      <xs:enumeration value="Password"/>
      <xs:enumeration value="Key"/>
      <xs:enumeration value="Generic"/>
      <xs:enumeration value="WindowsUserName"/>
      <xs:enumeration value="WindowsPassword"/>
      <xs:enumeration value="Certificate"/>
      <xs:enumeration value="CertificatePassword"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="SecureStoreCredentialType" nillable="true" type="tns1:SecureStoreCredentialType"/>
</xs:schema>
```


```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
  elementFormDefault="qualified"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="AzureApiConfiguration">
    <xs:sequence>
      <xs:element minOccurs="0" name="ContentFarmId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="EchoFarmId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="EndPointAddress" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```
<xs:element minOccurs="0" name="FarmId" nillable="true" type="xs:string"/>
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<xs:element minOccurs="0" name="TestId" nillable="true" type="xs:string"/>
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</xs:complexType>
</xs:element name="AzureApiConfiguration" nillable="true" type="tns2:AzureApiConfiguration"/>
</xs:schema>


<?xml version="1.0" encoding="UTF-8"?>
<xs:complexType name="ArrayOfSerializableSecureStoreCredential">
<xs:sequence>
<xs:element minOccurs="0" maxOccurs="unbounded" name="SerializableSecureStoreCredential" nillable="true" type="tns3:SerializableSecureStoreCredential"/>
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</xs:complexType>
</xs:element name="ArrayOfSerializableSecureStoreCredential" nillable="true" type="tns3:ArrayOfSerializableSecureStoreCredential"/>
<xs:complexType name="SerializableSecureStoreCredential">
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</xs:sequence>
</xs:complexType>
</xs:element name="SerializableSecureStoreCredential" nillable="true" type="tns3:SerializableSecureStoreCredential"/>
</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 updates to those products.

- Microsoft FAST Search Server 2010
- Microsoft SharePoint Server 2010
- Microsoft SharePoint Server 2013
- Microsoft SharePoint Server 2016
- Microsoft SharePoint Server 2019

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates 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 not available in SharePoint Server 2010.
<2> Section 2.2.4: This type is not available in SharePoint Server 2010.
<3> Section 2.2.4: This type is not available in SharePoint Server 2010.
<4> Section 2.2.4: This type is not available in SharePoint Server 2010.
<5> Section 2.2.4: This type is not available in SharePoint Server 2010.
<6> Section 2.2.4: This type is not available in SharePoint Server 2010.
<7> Section 2.2.4: This type is not available in SharePoint Server 2010.
<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 2.2.4.11: This element is not supported by SharePoint Server 2010 and SharePoint Server 2013.
<12> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
<13> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
<14> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
<15> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
<16> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
<17> Section 2.2.4.12: This value is not used in SharePoint Server 2010.
This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This value is only used if the protocol client is running SharePoint Server 2010 or Search Server 2010.

This value is only used if the protocol client is running SharePoint Server 2010 or Search Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This type is not available in SharePoint Server 2010.

This value is not available in SharePoint Server 2010.

This value is not available in SharePoint Server 2010.

This value is not available in SharePoint Server 2010.

This value is only used if the protocol client is running SharePoint Server 2010 or Search Server 2010.

This value is only used if the protocol client is running SharePoint Server 2010 or Search Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This value is not used in SharePoint Server 2010.

This type is available only in SharePoint Server 2010.

This type is not supported in SharePoint Server 2010.

SharePoint Server 2019 does not use this method.
Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is only used when the protocol client is running SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: Operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: Operation is not supported in SharePoint Server 2010.

Section 3.1.4: Operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: FAST Search Server 2010 performs this transformation.

Section 3.1.4: FAST Search Server 2010 performs this suggestion.

Section 3.1.4: In SharePoint Server 2010, this element is set to 0.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This timeout is not used by SharePoint Server 2019.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This type is not available in SharePoint Server 2010.

Section 3.1.4: This operation is only used when the protocol client is running SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: This operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: Operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: Operation is supported only by SharePoint Server 2010 or Search Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: Operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.

Section 3.1.4: This operation is not supported in SharePoint Server 2010.
**Section 3.1.4.19**: This operation is not supported in SharePoint Server 2010.

**Section 3.1.4.20**: This operation is not supported in SharePoint Server 2010.

**Section 3.1.4.21**: This operation is not supported in SharePoint Server 2010.

**Section 3.1.4.22**: This operation is not supported in SharePoint Server 2010.

**Section 3.1.4.23**: This operation is not supported in SharePoint Server 2010.

**Section 3.1.4.27**: SharePoint Server 2019 does not use this method.
9 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

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<th>Description</th>
<th>Revision class</th>
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<td>Updated description for OLSQuerySession and UseOLSQuery.</td>
<td>Minor</td>
</tr>
<tr>
<td>2.2.4.42 ArrayOfPersonalResultSuggestion</td>
<td>Restored content in this section.</td>
<td>Minor</td>
</tr>
<tr>
<td>2.2.4.43 ArrayOfQuerySuggestionQuery</td>
<td>Restored content in this section.</td>
<td>Minor</td>
</tr>
<tr>
<td>2.2.4.44 ArrayOfSerializableSecureStoreCredential</td>
<td>Added description for the ArrayOfSerializableSecureStoreCredential complex type.</td>
<td>Minor</td>
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<td>2.2.4.45 AzureApiConfiguration</td>
<td>Added description for the AzureApiConfiguration complex type.</td>
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<td>3.1.4.6.3.1 SearchServiceApplicationInfo</td>
<td>Updated description of the MinimumPartialQueryTimeout element.</td>
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<td>3.1.4.11.4.1 QueryLogClientType</td>
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<td>3.1.4.27 GetAzureApiConfiguration</td>
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<td>Minor</td>
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