

[MS-EDSA]: eDiscovery Service Application Protocol

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Revision Summary

Date	Revision History	Revision Class	Comments
01/20/2012	0.1	New	Released new document.
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1 Introduction

The eDiscovery Service Application Protocol enables clients to perform operations to manage **legal holds**.

Sections 1.8, 2, and 3 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in [\[RFC2119\]](#). Sections 1.5 and 1.9 are also normative but do not contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

The following terms are defined in [MS-OFCGLOS]:

- discovery case**
- discovery source**
- email address**
- GUID**
- Hypertext Transfer Protocol (HTTP)**
- Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)**
- legal hold**
- mailbox**
- policy**
- search query**
- site collection**
- SOAP**
- SOAP action**
- SOAP body**
- tenant**
- Transmission Control Protocol (TCP)**
- Unicode**
- Uniform Resource Locator (URL)**
- Web Services Description Language (WSDL)**
- website**
- WSDL message**
- WSDL operation**
- XML namespace**
- XML namespace prefix**
- XML schema**

The following terms are specific to this document:

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

References to Microsoft Open Specification documents do not include a publishing year because links are to the latest version of the documents, which are updated frequently. References to other documents include a publishing year when one is available.

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-QSSWS] Microsoft Corporation, "[Search Query Shared Services Protocol](#)".

[MS-SPSTWS] Microsoft Corporation, "[SharePoint Security Token Service Web Service Protocol](#)".

[MS-SPTWS] Microsoft Corporation, "[Service Platform Topology Web Service Protocol](#)".

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

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, <http://www.rfc-editor.org/rfc/rfc2616.txt>

[RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, <http://www.rfc-editor.org/rfc/rfc2818.txt>

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

[SOAP1.2/1] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, <http://www.w3.org/TR/2003/REC-soap12-part1-20030624>

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

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

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

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

1.2.2 Informative References

[MS-OFGLGLOS] Microsoft Corporation, "[Microsoft Office Master Glossary](#)".

1.3 Overview

This protocol enables a protocol client to manage the actions that can be applied to the **discovery sources**. Actions can be invoked and deleted. The protocol also provides the means to get the status of the actions that have already been sent to the protocol server. A typical scenario for using this protocol is an application used to centrally manage the different discovery sources.

1.4 Relationship to Other Protocols

This protocol uses **SOAP** over **HTTP**, as specified in [\[RFC2616\]](#), and **SOAP** over **HTTPS**, as specified in [\[RFC2818\]](#), as shown in the following layering diagram.

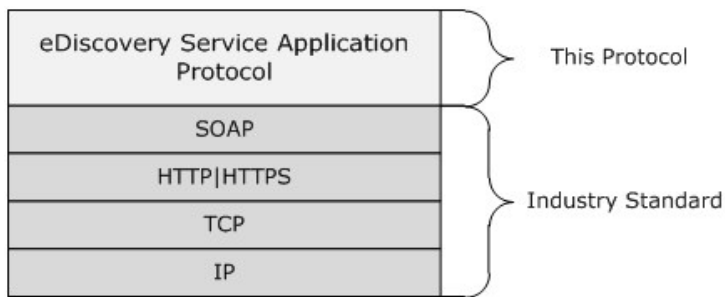


Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

The operations described by this protocol operate 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 specified 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 specified in [\[MS-SPTWS\]](#), by means that are independent of either protocol.

This protocol requires the protocol client to have appropriate 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 specified 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.

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 SOAP messages, as specified 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

2.1 Transport

Protocol servers MUST support SOAP over HTTP, 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 SHOULD 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 structures used by this protocol. The syntax of the structures uses **XML schema**, as specified in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#) and **WSDL**, as specified in [\[WSDL\]](#).

2.2.1 Namespaces

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

Prefix	Namespace URI	Reference
q1	http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08	
q3	http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11	
ser	http://schemas.microsoft.com/2003/10/Serialization/	
soap	http://schemas.xmlsoap.org/wsd/soap/	[SOAP1.1]
tns	http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration	
tns1	http://schemas.microsoft.com/2003/10/Serialization/Arrays	
tns2	http://tempuri.org/	
tns3	http://tempuri.org/Imports	
wsaw	http://www.w3.org/2006/05/addressing/wsd	

Prefix	Namespace URI	Reference
wSDL	http://schemas.xmlsoap.org/wSDL/	[WSDL]
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1] [XMLSCHEMA2]

2.2.2 Messages

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

2.2.3 Elements

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

2.2.4 Complex Types

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

Complex type	Description
ArrayOfDiscoveryAction	The ArrayOfDiscoveryAction type contains a list of DiscoveryAction elements.
ArrayOfDiscoveryActionStatus	The ArrayOfDiscoveryActionStatus type contains a list of DiscoveryActionStatus elements.
ArrayOfKeyValueOfstringstring	The ArrayOfKeyValueOfstringstring complex type is a list of key-value pairs.
DiscoveryAction	The DiscoveryAction complex type contains information about an action to be performed on a discovery source.
DiscoveryActionStatus	The DiscoveryActionStatus complex type contains information about the status of an action to be performed on a discovery source.
SearchServiceApplicationFault	The SearchServiceApplicationFault type represents the error detail of a SOAP fault generated by an operation.

2.2.4.1 ArrayOfDiscoveryAction

Namespace: http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11

The **ArrayOfDiscoveryAction** type contains a list of **DiscoveryAction** elements.

```
<xs:complexType name="ArrayOfDiscoveryAction" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoveryAction" nillable="true"
      type="q3:DiscoveryAction"/>
  </xs:sequence>
</xs:complexType>
```

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

DiscoveryAction: Information about an action to be performed on a discovery source.

2.2.4.2 ArrayOfDiscoveryActionStatus

Namespace: <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11>

The **ArrayOfDiscoveryActionStatus** type contains a list of **DiscoveryActionStatus** elements.

```
<xs:complexType name="ArrayOfDiscoveryActionStatus"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoveryActionStatus"
nillable="true" type="q3:DiscoveryActionStatus"/>
  </xs:sequence>
</xs:complexType>
```

DiscoveryActionStatus: Information about the status of an action to be performed on a discovery source.

2.2.4.3 DiscoveryAction

Namespace: <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11>

The **DiscoveryAction** complex type contains information about an action to be performed on a discovery source.

```
<xs:complexType name="DiscoveryAction" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ActionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="ActionType" type="q3:DiscoveryActionType"/>
    <xs:element minOccurs="0" name="CaseId" type="ser:guid"/>
    <xs:element minOccurs="0" name="ContainerId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="DiscoveryConsoleId" type="ser:guid"/>
    <xs:element minOccurs="0" name="ExternalFederationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="FederationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="HoldId" type="ser:guid"/>
    <xs:element minOccurs="0" name="PartitionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="PreservationListQuery" nillable="true" type="xs:string"/>
    <xs:element xmlns:tnsl="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PropertyBag" nillable="true" type="tnsl:ArrayOfKeyValueOfstringstring"/>
    <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="TimeCreated" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="WebId" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
```

ActionId: The identifier of the action.

ActionType: The type of action to apply. This element **MUST** be a value from the **DiscoveryActionType** data simple type as specified in section [2.2.5.2](#).

CaseId: The identifier of the **discovery case** associated with this action.

ContainerId: The identifier of the discovery source for which the action applies. This value MUST be a non-empty **Uniform Resource Locator (URL)** or **e-mail address**.

CorrelationId: Reserved. MUST be ignored.

DiscoveryConsoleId: The identifier of the collection that contains the discovery case.

ExternalFederationId: The identifier of an external system to which the action is distributed.

FederationId: The identifier of the system that contains the discovery source.

HoldId: The identifier of the legal hold associated with this action.

PartitionId: The identifier of the **tenant**.

PreservationListQuery: Reserved. MUST be ignored.

PropertyBag: A list of properties that are associated with the action.

Query: A **search query** associated with the action.

TimeCreated: The date and time when the action was created.

WebId: The identifier of the **Web site** (2) for the discovery case if **ContainerId** is a URL. This element SHOULD be an empty **GUID** if **ContainerId** is an email address.

2.2.4.4 DiscoveryActionStatus

Namespace: <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11>

The **DiscoveryActionStatus** complex type contains information about the status of an action to be performed on a discovery source.

```
<xs:complexType name="DiscoveryActionStatus" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ActionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="ActionType" type="q3:DiscoveryActionType"/>
    <xs:element minOccurs="0" name="CaseId" type="ser:guid"/>
    <xs:element minOccurs="0" name="DiscoveryConsoleId" type="ser:guid"/>
    <xs:element minOccurs="0" name="ErrorMessage" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="HoldId" type="ser:guid"/>
    <xs:element minOccurs="0" name="Status" type="q3:DiscoveryStatus"/>
    <xs:element minOccurs="0" name="TimeCreated" type="xs:dateTime"/>
  </xs:sequence>
</xs:complexType>
```

ActionId: The identifier of the action.

ActionType: The type of action to apply. This element MUST be a value from the **DiscoveryActionType** data simple type as specified in section [2.2.5.2](#).

CaseId: The identifier of the discovery case associated with this action.

DiscoveryConsoleId: The identifier of the collection that contains the discovery case.

ErrorMessage: Empty if the action succeeded, that is, **Status** is one of **OnHold** or **NotOnHold**; otherwise, an error message that MUST NOT be empty.

HoldId: The identifier of the legal hold associated with this action.

Status: The status of the action. This element MUST be a value from the **DiscoveryStatus** simple type as specified in section [2.2.5.3](#).

TimeCreated: Specifies the date and time when the action was created.

2.2.4.5 ArrayOfKeyValueOfstringstring

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

The **ArrayOfKeyValueOfstringstring** complex type is a list of key-value pairs.

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

KeyValueOfstringstring: A dictionary entry that consists of a key and a value.

KeyValueOfstringstring.Key: The name of a property. Each value MUST be unique within the list and MUST NOT be NULL.

KeyValueOfstringstring.Value: The value of the property, which MUST NOT be null.

2.2.4.6 SearchServiceApplicationFault

Namespace:

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

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

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

FaultType: The specific kind of error specified by the **SearchServiceApplicationFault** element.

Message: The error message associated with the error detail given by the **SearchServiceApplicationFault** element.

2.2.5 Simple Types

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

Simple type	Description
char	The char simple type represents a Unicode character.
DiscoveryActionType	The DiscoveryActionType simple type defines the different actions that can be applied to a discovery source.
DiscoveryStatus	The DiscoveryStatus simple type specifies the status of an action applied to a discovery source.
duration	The duration simple type specifies the time interval or duration of time measured as positive or negative number of days, hours, minutes, seconds and fractions of a second.
guid	The guid simple type contains an identifier that is globally unique.
SearchServiceApplicationFaultType	The SearchServiceApplicationFaultType type represents the type of failure for a SearchServiceApplicationFault, as defined in section 2.2.4.6 . All types other than DiscoveryFederatedSourceNotFound are not relevant to this protocol and are defined in [MS-QSSWS] section 3.1.4.1.4.1.

2.2.5.1 char

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

The **char** simple type represents a Unicode character.

```
<xs:simpleType name="char" xmlns:xs="http://www.w3.org/2001/XMLSchema">  
  <xs:restriction base="xs:int"/>  
</xs:simpleType>
```

2.2.5.2 DiscoveryActionType

Namespace: <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11>

The **DiscoveryActionType** simple type defines the different actions that can be applied to a discovery source.

```
<xs:simpleType name="DiscoveryActionType" xmlns:xs="http://www.w3.org/2001/XMLSchema">  
  <xs:restriction base="xs:string">  
    <xs:enumeration value="CreateHold"/>  
    <xs:enumeration value="UpdateHold"/>  
    <xs:enumeration value="ReleaseHold"/>  
  </xs:restriction>  
</xs:simpleType>
```

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

Value	Meaning
CreateHold	This value indicates that the action will put the source on a new legal hold.
UpdateHold	This value indicates that the action will update an existing legal hold for a discovery source.
ReleaseHold	This value indicates that the action will release the source from legal hold.

2.2.5.3 DiscoveryStatus

Namespace: <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11>

The **DiscoveryStatus** simple type specifies the status of an action applied to a discovery source.

```
<xs:simpleType name="DiscoveryStatus" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="CannotHold"/>
    <xs:enumeration value="NotOnHold"/>
    <xs:enumeration value="Pending"/>
    <xs:enumeration value="InProgress"/>
    <xs:enumeration value="OnFilteredHold"/>
    <xs:enumeration value="OnHold"/>
    <xs:enumeration value="PartiallyOnHold"/>
    <xs:enumeration value="Failed"/>
    <xs:enumeration value="TimedOut"/>
  </xs:restriction>
</xs:simpleType>
```

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

Value	Meaning
CannotHold	This value indicates that the discovery source does not support the action of being put on legal hold.
NotOnHold	This value indicates that a ReleaseHold action, as defined in section 2.2.5.2 , has been finished successfully. Therefore, the discovery source is not on legal hold.
Pending	This value indicates that an action is pending for the discovery source.
InProgress	This value indicates that an action is being processed for a discovery source.
OnFilteredHold	This value indicates that a CreateHold action, as defined in section 2.2.5.2 , has been applied successfully. Therefore, contents that match the specified filter in the discovery source are on legal hold.
OnHold	This value indicates that a CreateHold action, as defined in section 2.2.5.2 , has been applied successfully. Therefore, the discovery source is on legal hold.
PartiallyOnHold	Reserved. MUST NOT be used.
Failed	This value indicates that an action was applied to the discovery source, but it was not successful.
TimedOut	This value indicates that an action timed out for the discovery source.

2.2.5.4 duration

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

The **duration** simple type specifies the time interval or duration of time measured as positive or negative number of days, hours, minutes, seconds and fractions of a second.

```
<xs:simpleType name="duration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?" />
    <xs:minInclusive value="-P10675199DT2H48M5.4775808S" />
    <xs:maxInclusive value="P10675199DT2H48M5.4775807S" />
  </xs:restriction>
</xs:simpleType>
```

2.2.5.5 guid

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

The **guid** simple type contains an identifier that is globally unique.

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

2.2.5.6 SearchServiceApplicationFaultType

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

The **SearchServiceApplicationFaultType** type represents the type of failure for a SearchServiceApplicationFault, as defined in section 2.2.4.6. All types other than **DiscoveryFederatedSourceNotFound** are not relevant to this protocol and are defined in [\[MS-QSSWS\]](#) section 3.1.4.1.4.1.

```
<xs:simpleType name="SearchServiceApplicationFaultType"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="SpecialTerm_NotFound" />
    <xs:enumeration value="SpecialTerm_DuplicateError" />
    <xs:enumeration value="Synonym_NotFound" />
    <xs:enumeration value="BestBet_NotFound" />
    <xs:enumeration value="BestBet_OrderDuplicationError" />
    <xs:enumeration value="AllNoiseQuery" />
    <xs:enumeration value="SearchServiceNotFound" />
    <xs:enumeration value="QueryMalformed" />
    <xs:enumeration value="ScopeNotFound" />
    <xs:enumeration value="InvalidProperty" />
    <xs:enumeration value="OnlyExcludedTerms" />
    <xs:enumeration value="RankingModelNotFound" />
    <xs:enumeration value="UnsupportedTopology" />
    <xs:enumeration value="FASTSearchQuery" />
    <xs:enumeration value="Timeout" />
  </xs:restriction>
</xs:simpleType>
```

```

<xs:enumeration value="ExtendedConnectorApplicaion"/>
<xs:enumeration value="PartitionOptionsMismatch"/>
<xs:enumeration value="TooComplexQueryException"/>
<xs:enumeration value="QueryThrottled"/>
<xs:enumeration value="InternalError"/>
<xs:enumeration value="QueryTransformInvalidProperty"/>
<xs:enumeration value="QueryConfigurationImportException"/>
<xs:enumeration value="DiscoveryFederatedSourceNotFound"/>
<xs:enumeration value="RemoteSharepointSourceFault"/>
<xs:enumeration value="TenantSiteCollectionMismatchException"/>
<xs:enumeration value="InvalidNameException"/>
<xs:enumeration value="InvalidPropertyTypeException"/>
<xs:enumeration value="CouldNotModifySchemaException"/>
<xs:enumeration value="InvalidMappingException"/>
<xs:enumeration value="ObjectNotFoundException"/>
<xs:enumeration value="PropertyIsReadOnlyException"/>
<xs:enumeration value="PropertyCannotHaveMappingsException"/>
<xs:enumeration value="InvalidManagedPropertyValue"/>
<xs:enumeration value="ArgumentNullException"/>
<xs:enumeration value="UnauthorizedAccessException"/>
<xs:enumeration value="DatabaseException"/>
<xs:enumeration value="SchemaExportException"/>
<xs:enumeration value="SchemaImportException"/>
<xs:enumeration value="NotSupported"/>
<xs:enumeration value="QueryPropertyOutOfRange"/>
</xs:restriction>
</xs:simpleType>

```

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

Value	Meaning
SpecialTerm_NotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
SpecialTerm_DuplicateError	Defined in [MS-QSSWS] section 3.1.4.1.4.1
Synonym_NotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
BestBet_NotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
BestBet_OrderDuplicationError	Defined in [MS-QSSWS] section 3.1.4.1.4.1
AllNoiseQuery	Defined in [MS-QSSWS] section 3.1.4.1.4.1
SearchServiceNotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
QueryMalformed	Defined in [MS-QSSWS] section 3.1.4.1.4.1
ScopeNotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InvalidProperty	Defined in [MS-QSSWS] section 3.1.4.1.4.1
OnlyExcludedTerms	Defined in [MS-QSSWS] section 3.1.4.1.4.1
RankingModelNotFound	Defined in [MS-QSSWS] section 3.1.4.1.4.1
UnsupportedTopology	Defined in [MS-QSSWS] section 3.1.4.1.4.1

Value	Meaning
FASTSearchQuery	Defined in [MS-QSSWS] section 3.1.4.1.4.1
Timeout	Defined in [MS-QSSWS] section 3.1.4.1.4.1
ExtendedConnectorApplicaion	Defined in [MS-QSSWS] section 3.1.4.1.4.1
PartitionOptionsMismatch	Defined in [MS-QSSWS] section 3.1.4.1.4.1
TooComplexQueryException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
QueryThrottled	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InternalError	Defined in [MS-QSSWS] section 3.1.4.1.4.1
QueryTransformInvalidProperty	Defined in [MS-QSSWS] section 3.1.4.1.4.1
QueryConfigurationImportException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
DiscoveryFederatedSourceNotFound	The discovery source is not found.
RemoteSharepointSourceFault	Defined in [MS-QSSWS] section 3.1.4.1.4.1
TenantSiteCollectionMismatchException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InvalidNameException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InvalidPropertyTypeException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
CouldNotModifySchemaException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InvalidMappingException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
ObjectNotFoundException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
PropertyIsReadOnlyException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
PropertyCannotHaveMappingsException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
InvalidManagedPropertyValue	Defined in [MS-QSSWS] section 3.1.4.1.4.1
ArgumentNullException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
UnauthorizedAccessException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
DatabaseException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
SchemaExportException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
SchemaImportException	Defined in [MS-QSSWS] section 3.1.4.1.4.1
NotSupported	Defined in [MS-QSSWS] section 3.1.4.1.4.1
QueryPropertyOutOfRange	Defined in [MS-QSSWS] section 3.1.4.1.4.1

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

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 made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

In the following sections, the schema definition might be less restrictive than 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 specifies additional restrictions that reflect actual 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.

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.

The protocol server maintains a multiple collections of discovery cases, for example lawsuits for 2005-2010 and lawsuits for 2000-2005.

For each case, the protocol server maintains a list of discovery sources that are applicable to the scope of the discovery case. For example, if a case were about Contoso vs. Fabrikam, an exemplary discovery source might be the email mailbox for the executives of Contoso. Discovery sources can be organized in groups, such as locations associated with a given person (that is, custodian). The protocol server also maintains internal state about actions that need to be performed for discovery sources, such as when a given discovery source should be placed on legal hold, as well as the status of whether those actions have been performed.

In addition, the protocol server maintains a list of search queries applicable to the discovery sources of a given case, as well as metadata about when those search queries have been exported (that is, downloaded).

The protocol server also maintains a directory of valid email mailboxes and Web sites (2) that can be used as discovery sources. In addition, the protocol server maintains a set of **policies** that can be associated with the location.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

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

Operation	Description
ClearDiscoveryActions	This operation is used by the protocol client to delete the actions identified by the provided actionIds .
ClearOldDiscoveryActions	This operation is used by the protocol client to delete expired actions.
GetAllStatus	This operation is used by the protocol client to get the status of all actions that have been initiated for a collection of discovery cases.
GetDiscoveryActions	This operation is used by the protocol client to retrieve the actions that have not been processed.
GetNonIndexableItemStatistics	This operation is used by the protocol client to get statistics on items that cannot be successfully indexed by the search system.
InvokeDiscoveryActions	This operation is used by the protocol clients to initiate actions for the protocol server to perform for discovery cases.
ReportDiscoveryActionStatus	This operation is used by the protocol client to update the status of processed actions.
ValidateSources	This operation is used by the protocol client to validate a discovery source.

3.1.4.1 ClearDiscoveryActions

This operation is used by the protocol client to delete the actions identified by the provided **actionIds**.

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

```
<wsdl:operation name="ClearDiscoveryActions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActions"
    message="tns2:IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActionsResponse"
    message="tns2:IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage** request message, and the protocol server responds with an **IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage** response message as follows:

- The protocol server deletes the actions identified by the **actionIds** parameter.

3.1.4.1.1 Messages

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

Message	Description
IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage	The request WSDL message for the ClearDiscoveryActions WSDL operation.
IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage	The response WSDL message for the ClearDiscoveryActions WSDL operation.

3.1.4.1.1.1 IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage

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

The **SOAP action** value is:

```
http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActions
```

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

3.1.4.1.1.2 IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage

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

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

3.1.4.1.2 Elements

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

Element	Description
ClearDiscoveryActions	The input data for the ClearDiscoveryActions WSDL operation.
ClearDiscoveryActionsResponse	The result data for the ClearDiscoveryActions WSDL operation.

3.1.4.1.2.1 ClearDiscoveryActions

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

```
<xs:element name="ClearDiscoveryActions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="rawPartitionId" type="ser:guid"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
        minOccurs="0" name="actionIds" nillable="true" type="tns1:ArrayOfguid"/>
    </xs:sequence>
  </xs:complexType>
```

```
</xs:element>
```

discoveryConsoleId: The identifier of a collection of discovery cases.

rawPartitionId: The identifier of the tenant.

actionIds: The list of IDs of the actions to be deleted.

3.1.4.1.2.2 ClearDiscoveryActionsResponse

The **ClearDiscoveryActionsResponse** element specifies the result data for the **ClearDiscoveryActions** WSDL operation.

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

3.1.4.1.3 Complex Types

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

Complex type	Description
ArrayOfguid	This complex type is defined in section 3.1.4.1.3.1 .

3.1.4.1.3.1 ArrayOfguid

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

An array of zero or more **guids** used to identify discovery Actions.

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

guid: A simple type that represents a GUID.

3.1.4.1.4 Simple Types

None.

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 ClearOldDiscoveryActions

This operation is used by the protocol client to delete expired actions.

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

```
<wsdl:operation name="ClearOldDiscoveryActions"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActions"
message="tns2:IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActionsResponse"
message="tns2:IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage** request message, and the protocol server responds with an **IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage** response message, as follows:

- The protocol server determines an implementation-specific expiration date that is used to determine which actions are old enough to be deleted.
- The protocol server deletes all the actions that were created prior to the expiration date.

3.1.4.2.1 Messages

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

Message	Description
IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage	The request WSDL message for the ClearOldDiscoveryActions WSDL operation.
IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage	The response WSDL message for the ClearOldDiscoveryActions WSDL operation.

3.1.4.2.1.1

IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActions
```

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

3.1.4.2.1.2

IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage

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

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

3.1.4.2.2 Elements

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

Element	Description
ClearOldDiscoveryActions	The input data for the ClearOldDiscoveryActions WSDL operation.
ClearOldDiscoveryActionsResponse	The result data for the ClearOldDiscoveryActions WSDL operation.

3.1.4.2.2.1 ClearOldDiscoveryActions

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

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

3.1.4.2.2.2 ClearOldDiscoveryActionsResponse

The **ClearOldDiscoveryActionsResponse** element specifies the result data for the **ClearOldDiscoveryActions** WSDL operation.

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

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 GetAllStatus

This operation is used by the protocol client to get the status of all actions that have been initiated for a collection of discovery cases.

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

```
<wsdl:operation name="GetAllStatus" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetAllStatus"
  message="tns2:IDiscoveryServiceApplication_GetAllStatus_InputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
  wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetAllStatusResponse"
  message="tns2:IDiscoveryServiceApplication_GetAllStatus_OutputMessage"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_GetAllStatus_InputMessage** request message and the protocol server responds with an **IDiscoveryServiceApplication_GetAllStatus_OutputMessage** response message as follows:

- The protocol server returns the status of all actions.

3.1.4.3.1 Messages

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

Message	Description
IDiscoveryServiceApplication_GetAllStatus_InputMessage	The request WSDL message for the GetAllStatus WSDL operation.
IDiscoveryServiceApplication_GetAllStatus_OutputMessage	The response WSDL message for the GetAllStatus WSDL operation.

3.1.4.3.1.1 IDiscoveryServiceApplication_GetAllStatus_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/GetAllStatus
```

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

3.1.4.3.1.2 IDiscoveryServiceApplication_GetAllStatus_OutputMessage

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

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

3.1.4.3.2 Elements

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

Element	Description
GetAllStatus	The input data for the GetAllStatus WSDL operation.
GetAllStatusResponse	The result data for the GetAllStatus WSDL operation.

3.1.4.3.2.1 GetAllStatus

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

```
<xs:element name="GetAllStatus" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="rawPartitionId" type="ser:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

rawPartitionId: The identifier of the tenant.

3.1.4.3.2.2 GetAllStatusResponse

The **GetAllStatusResponse** element specifies the result data for the **GetAllStatus** WSDL operation.

```
<xs:element name="GetAllStatusResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
        minOccurs="0" name="GetAllStatusResult" nillable="true"
        type="q3:ArrayOfDiscoveryActionStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

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

GetAllStatusResult: The status of the actions for the tenant.

3.1.4.3.3 Complex Types

None.

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 GetDiscoveryActions

This operation is used by the protocol client to retrieve the actions that have not been processed.

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

```
<wsdl:operation name="GetDiscoveryActions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActions"
    message="tns2:IDiscoveryServiceApplication_GetDiscoveryActions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActionsResponse"
    message="tns2:IDiscoveryServiceApplication_GetDiscoveryActions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_GetServiceActions_InputMessage** request message and the protocol server responds with an **IDiscoveryServiceApplication_GetServiceActions_OutputMessage** response message, as follows:

- The protocol server returns a list of actions that have not been processed. If there are no actions to process, the protocol server **MUST** return null.

3.1.4.4.1 Messages

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

Message	Description
IDiscoveryServiceApplication_GetDiscoveryActions_InputMessage	The request WSDL message for the GetDiscoveryActions WSDL operation.
IDiscoveryServiceApplication_GetDiscoveryActions_OutputMessage	The response WSDL message for the GetDiscoveryActions WSDL operation.

3.1.4.4.1.1 IDiscoveryServiceApplication_GetDiscoveryActions_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActions
```

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

3.1.4.4.1.2 IDiscoveryServiceApplication_GetDiscoveryActions_OutputMessage

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

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

3.1.4.4.2 Elements

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

Element	Description
GetDiscoveryActions	The input data for the GetDiscoveryActions WSDL operation.
GetDiscoveryActionsResponse	The result data for the GetDiscoveryActions WSDL operation.

3.1.4.4.2.1 GetDiscoveryActions

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

```
<xs:element name="GetDiscoveryActions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="rawPartitionId" type="ser:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

rawPartitionId: The identifier of the tenant.

3.1.4.4.2 GetDiscoveryActionsResponse

The **GetDiscoveryActionsResponse** element specifies the result data for the **GetDiscoveryActions** WSDL operation.

```
<xs:element name="GetDiscoveryActionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
        minOccurs="0" name="GetDiscoveryActionsResult" nillable="true"
        type="q3:ArrayOfDiscoveryAction"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetDiscoveryActionsResult: The actions for the tenant.

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 InvokeDiscoveryActions

This operation is used by the protocol clients to initiate actions for the protocol server to perform for discovery cases.

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

```
<wsdl:operation name="InvokeDiscoveryActions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActions"
    message="tns2:IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActionsResponse"
    message="tns2:IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage** request message and the protocol server responds with an **IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage** response message, as follows:

- The protocol server records the action. This action is performed synchronously, asynchronously, or in a federated manner (as in processed by an external system) by the protocol server in an implementation-specific manner.

3.1.4.5.1 Messages

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

Message	Description
IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage	The request WSDL message for the InvokeDiscoveryActions WSDL operation.
IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage	The response WSDL message for the InvokeDiscoveryActions WSDL operation.

3.1.4.5.1.1 IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActions
```

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

3.1.4.5.1.2

IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage

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

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

3.1.4.5.2 Elements

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

Element	Description
InvokeDiscoveryActions	The input data for the InvokeDiscoveryActions WSDL operation.
InvokeDiscoveryActionsResponse	The result data for the InvokeDiscoveryActions WSDL

Element	Description
	operation.

3.1.4.5.2.1 InvokeDiscoveryActions

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

```
<xs:element name="InvokeDiscoveryActions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="rawPartitionId" type="ser:guid"/>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
        minOccurs="0" name="actions" nillable="true" type="q3:ArrayOfDiscoveryAction"/>
      <xs:element minOccurs="0" name="userInitiated" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

discoveryConsoleId: The identifier of the collection of discovery cases.

rawPartitionId: The identifier of the tenant.

actions: The list of actions to perform.

userInitiated: Specifies if the operation is invoked by a user (vs. for example an automated system process).

3.1.4.5.2.2 InvokeDiscoveryActionsResponse

The **InvokeDiscoveryActionsResponse** element specifies the result data for the **InvokeDiscoveryActions** WSDL operation.

```
<xs:element name="InvokeDiscoveryActionsResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
        minOccurs="0" name="InvokeDiscoveryActionsResult" nillable="true"
        type="q3:ArrayOfDiscoveryActionStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

InvokeDiscoveryActionsResult: The status of the actions.

3.1.4.5.3 Complex Types

None.

3.1.4.5.4 Simple Types

None.

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 ReportDiscoveryActionStatus

This operation is used by the protocol client to update the status of processed actions.

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

```
<wsdl:operation name="ReportDiscoveryActionStatus"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatus"
message="tns2:IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatusRespo
nse" message="tns2:IDiscoveryServiceApplication_ReportDiscoveryActionStatus_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage** request message and the protocol server responds with an **IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage** response message, as follows:

- The protocol server records the status for the action.

3.1.4.6.1 Messages

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

Message	Description
IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage	The request WSDL message for the ReportDiscoveryActionStatus WSDL operation.
IDiscoveryServiceApplication_ReportDiscoveryActionStatus_OutputMessage	The response WSDL message

Message	Description
essage	for the ReportDiscoveryActionStatus WSDL operation.

3.1.4.6.1.1

IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatus
```

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

3.1.4.6.1.2

IDiscoveryServiceApplication_ReportDiscoveryActionStatus_OutputMessage

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

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

3.1.4.6.2 Elements

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

Element	Description
ReportDiscoveryActionStatus	The input data for the ReportDiscoveryActionStatus WSDL operation.
ReportDiscoveryActionStatusResponse	The result data for the ReportDiscoveryActionStatus WSDL operation.

3.1.4.6.2.1 ReportDiscoveryActionStatus

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

```
<xs:element name="ReportDiscoveryActionStatus" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
        minOccurs="0" name="rawPartitionId" type="ser:guid"/>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
        minOccurs="0" name="status" nillable="true" type="q3:ArrayOfDiscoveryActionStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

rawPartitionId: The identifier of the tenant.

status: The list of statuses.

3.1.4.6.2.2 ReportDiscoveryActionStatusResponse

The **ReportDiscoveryActionStatusResponse** element specifies the result data for the **ReportDiscoveryActionStatus** WSDL operation.

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

3.1.4.6.3 Complex Types

None.

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 ValidateSources

This operation is used by the protocol client to validate a discovery source.

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

```
<wsdl:operation name="ValidateSources" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSources"
    message="tns2:IDiscoveryServiceApplication_ValidateSources_InputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSourcesResponse"
    message="tns2:IDiscoveryServiceApplication_ValidateSources_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSourcesSearchServiceApp
    licationFaultFault" name="SearchServiceApplicationFaultFault"
    message="tns2:IDiscoveryServiceApplication_ValidateSources_SearchServiceApplicationFaultFault
    _FaultMessage" xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **IDiscoveryServiceApplication_ValidateSources_InputMessage** input message and the protocol server responds with an **IDiscoveryServiceApplication_ValidateSources_OutputMessage** as follows:

- The protocol server determines if there are one or more discovery sources that match the filter. If so, it returns them. Otherwise, it returns an empty list.

3.1.4.7.1 Messages

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

Message	Description
IDiscoveryServiceApplication_ValidateSources_InputMessage	The request WSDL message for the ValidateSources WSDL operation.
IDiscoveryServiceApplication_ValidateSources_OutputMessage	The response WSDL message for the ValidateSources WSDL operation.

3.1.4.7.1.1 IDiscoveryServiceApplication_ValidateSources_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/IDiscoveryServiceApplication/ValidateSources
```

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

3.1.4.7.1.2 IDiscoveryServiceApplication_ValidateSources_OutputMessage

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

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

3.1.4.7.2 Elements

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

Element	Description
ValidateSources	The input data for the ValidateSources WSDL operation.
ValidateSourcesResponse	The result data for the ValidateSources WSDL operation.

3.1.4.7.2.1 ValidateSources

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

```
<xs:element name="ValidateSources" xmlns:xs="http://www.w3.org/2001/XMLSchema">
```

```

<xs:complexType>
  <xs:sequence>
    <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
    <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="sourceType" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="filter" nillable="true" type="xs:string"/>
    <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="federationSettings" nillable="true"
type="tns1:ArrayOfKeyValueOfstringstring"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

discoveryConsoleId: The identifier of a collection of discovery cases.

rawPartitionId: The identifier of the tenant.

sourceType: Reserved. MUST be the value "exchange".

filter: A string used to filter the result sources.

federationSettings: The property bag that contains the implementation specific connection info to connect to the federated system.

3.1.4.7.2.2 ValidateSourcesResponse

The **ValidateSourcesResponse** element specifies the result data for the **ValidateSources** WSDL operation.

```

<xs:element name="ValidateSourcesResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="ValidateSourcesResult" nillable="true" type="q3:ArrayOfDiscoverySource"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

ValidateSourcesResult: A list of discovery sources.

3.1.4.7.3 Complex Types

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

Complex type	Description
ArrayOfDiscoverySource	Specifies a list of sources. This complex type is defined in section 3.1.4.7.3.1 .
ArrayOfKeyValueOfstringanyType	Specifies properties associated with a source. This complex type is defined in section 3.1.4.7.3.3 .
DiscoverySource	Specifies a source. This complex type is defined in section

Complex type	Description
	3.1.4.7.3.2.

3.1.4.7.3.1 ArrayOfDiscoverySource

Namespace: http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11

The ArrayOfDiscoverySource type contains information about a collection of DiscoverySource.

```
<xs:complexType name="ArrayOfDiscoverySource" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoverySource" nillable="true"
type="q3:DiscoverySource"/>
  </xs:sequence>
</xs:complexType>
```

DiscoverySource: Information about a discovery source.

3.1.4.7.3.2 DiscoverySource

Namespace: http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11

The DiscoverySource type contains information about a discovery source.

```
<xs:complexType name="DiscoverySource" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="ContainerId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="DisplayName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ExternalFederationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="FederationId" type="ser:guid"/>
    <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PropertyBag" nillable="true" type="tns1:ArrayOfKeyValueOfstringanyType"/>
  </xs:sequence>
</xs:complexType>
```

ContainerId: The identifier of the discovery source. This value MUST be a non-empty Uniform Resource Locator (URL) or e-mail address.

DisplayName: The name of the discovery source.

ExternalFederationId: The identifier of an external system to which actions for the discovery source need to be distributed.

FederationId: The identifier of the system that contains the discovery source.

PropertyBag: A list of properties associated with the discovery source.

3.1.4.7.3.3 ArrayOfKeyValueOfstringanyType

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

The ArrayOfKeyValueOfstringanyType complex type is a list of key-value pairs.

```

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

```

KeyValueOfstringanyType: A dictionary entry that consists of a key and a value.

KeyValueOfstringanyType.Key: The name of a property. Each value MUST be unique within the list and MUST NOT be NULL.

KeyValueOfstringanyType.Value: The value of the property, which MUST NOT be null.

3.1.4.7.4 Simple Types

None.

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 GetNonIndexableItemStatistics

This operation is used by the protocol client to get statistics on items that cannot be successfully indexed by the search system.

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

```

<wsdl:operation name="GetNonIndexableItemStatistics"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatistics"
message="tns2:IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatisticsRes
ponse"
message="tns2:IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>

```


</wsdl:operation>

The protocol client sends an **IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage** input message and the protocol server responds with an **IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage** as follows:

- The protocol server determines if there are indexing errors for items contained in the discovery sources. If so, it returns statistics on those errors. Otherwise, it returns an empty list.

3.1.4.8.1 Messages

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

Message	Description
IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage	The request WSDL message for the GetNonIndexableItemStatistics WSDL operation.
IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage	The response WSDL message for the GetNonIndexableItemStatistics WSDL operation.

3.1.4.8.1.1

IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage

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

The SOAP action value is:

`http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatistics`

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

3.1.4.8.1.2

IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage

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

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

3.1.4.8.2 Elements

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

Element	Description
GetNonIndexableItemStatistics	The input data for the GetNonIndexableItemStatistics

Element	Description
	WSDL operation.
GetNonIndexableItemStatisticsResponse	The result data for the GetNonIndexableItemStatistics WSDL operation.

3.1.4.8.2.1 GetNonIndexableItemStatistics

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

```
<xs:element name="GetNonIndexableItemStatistics" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="partitionId" type="ser:guid"/>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="mailboxes" nillable="true" type="tns1:ArrayOfstring"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="federationSettings" nillable="true"
type="tns1:ArrayOfKeyValueOfstringstring"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

partitionId: The identifier of the tenant.

discoveryConsoleId: The identifier of the **site collection** that contains the discovery case.

mailboxes: The list of **mailboxes** for which statistics need to be obtained.

federationSettings: The property bag that contains necessary information to connect to the federated system.

3.1.4.8.2.2 GetNonIndexableItemStatisticsResponse

The **GetNonIndexableItemStatisticsResponse** element specifies the result data for the **GetNonIndexableItemStatistics** WSDL operation.

```
<xs:element name="GetNonIndexableItemStatisticsResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetNonIndexableItemStatisticsResult" nillable="true"
type="tns1:ArrayOfKeyValueOfstringlong"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetNonIndexableItemStatisticsResult: The statistics on index errors for the requested mailboxes. The statistics information MUST be of complex type **ArrayOfKeyValueOfstringlong**

section [3.1.4.8.3.2](#) with keys representing the statistic name, such as "Size", and the values representing the statistic value.

3.1.4.8.3 Complex Types

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

Complex type	Description
ArrayOfKeyValueOfstringlong	The ArrayOfKeyValueOfstringlong complex type represents an array of key value pairs.
ArrayOfstring	The ArrayOfstring complex type represents an array of string values.

3.1.4.8.3.1 ArrayOfstring

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

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

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

string: A single string value.

3.1.4.8.3.2 ArrayOfKeyValueOfstringlong

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

The **ArrayOfKeyValueOfstringlong** complex type represents an array of key value pairs. The datatype of keys MUST be string and the datatype of values MUST be long.

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

KeyValueOfstringlong: A dictionary entry that consists of a key and a value.

KeyValueOfstringlong.Key: The name of a property. Each value MUST be unique within the list and MUST NOT be NULL.

KeyValueOfstringlong.Value: The value of the property, which MUST NOT be null and MUST be of datatype long.

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.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

4.1 Invoke Discovery Actions

The following example shows the request that a protocol client sends to put a couple of discovery sources on legal hold. To do so, the protocol client calls the **InvokeDiscoveryActions** request message with the actions to apply as shown:

```
<s:Envelope xmlns:a="http://www.w3.org/2005/08/addressing"
xmlns:s="http://www.w3.org/2003/05/soap-envelope">
  <s:Header>
    <a:Action
s:mustUnderstand="1">http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActions</
a:Action>
    <a:MessageID>urn:uuid:7c697165-7b28-4df7-9f37-e6cd60b7ca75</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
    <ServiceContext xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://schemas.microsoft.com/sharepoint/servicecontext">
      <correlationId>00000000-0000-0000-0000-000000000000</correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
    </ServiceContext>
  </s:Header>
  <s:Body>
    <InvokeDiscoveryActions xmlns="http://tempuri.org/">
      <discoveryConsoleId>541b75dc-07f7-422a-8990-2ee8b1e70613</discoveryConsoleId>
      <rawPartitionId>0c37852b-34d0-418e-91c6-2ac25af4be5b</rawPartitionId>
      <actions xmlns:d4p1="http://www.microsoft.com/sharepoint/search/ActionTypes/2010/11"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <d4p1:DiscoveryAction>
          <d4p1:ActionId>74a7709b-5aa9-4cb1-b405-39177166af9b</d4p1:ActionId>
          <d4p1:ActionType>CreateHold</d4p1:ActionType>
          <d4p1:CaseId>3d652524-93a7-4e6b-ad10-5f52c781a66a</d4p1:CaseId>
          <d4p1:ContainerId>http://contoso/sites/DiscoveryTest/TestWeb0</d4p1:ContainerId>
          <d4p1:CorrelationId>00000000-0000-0000-0000-000000000000</d4p1:CorrelationId>
          <d4p1:DiscoveryConsoleId>541b75dc-07f7-422a-8990-
2ee8b1e70613</d4p1:DiscoveryConsoleId>
          <d4p1:ExternalFederationId>00000000-0000-0000-0000-
000000000000</d4p1:ExternalFederationId>
          <d4p1:FederationId>00000000-0000-0000-0000-000000000000</d4p1:FederationId>
          <d4p1:HoldId>6dc65c15-9477-4e97-95bc-51a6c04a962e</d4p1:HoldId>
          <d4p1:PreservationListQuery></d4p1:PreservationListQuery>
          <d4p1:Query></d4p1:Query>
          <d4p1:TimeCreated>0001-01-01T00:00:00</d4p1:TimeCreated>
          <d4p1:WebId>46fea5d1-5ae1-419f-b617-53a3bb15eb8e</d4p1:WebId>
        </d4p1:DiscoveryAction>
        <d4p1:DiscoveryAction>
          <d4p1:ActionId>db03d91e-3fd0-4eca-99ff-caa00bd1d7c0</d4p1:ActionId>
          <d4p1:ActionType>CreateHold</d4p1:ActionType>
          <d4p1:CaseId>3d652524-93a7-4e6b-ad10-5f52c781a66a</d4p1:CaseId>
          <d4p1:ContainerId>http://contoso/sites/DiscoveryTest/TestWeb1</d4p1:ContainerId>
          <d4p1:CorrelationId>00000000-0000-0000-0000-000000000000</d4p1:CorrelationId>
          <d4p1:DiscoveryConsoleId>541b75dc-07f7-422a-8990-
2ee8b1e70613</d4p1:DiscoveryConsoleId>
```

```

    <d4pl:ExternalFederationId>00000000-0000-0000-0000-
000000000000</d4pl:ExternalFederationId>
    <d4pl:FederationId>00000000-0000-0000-0000-000000000000</d4pl:FederationId>
    <d4pl:HoldId>6dc65c15-9477-4e97-95bc-51a6c04a962e</d4pl:HoldId>
    <d4pl:PreservationListQuery></d4pl:PreservationListQuery>
    <d4pl:Query></d4pl:Query>
    <d4pl:TimeCreated>0001-01-01T00:00:00</d4pl:TimeCreated>
    <d4pl:WebId>06c463d3-384f-490f-b4ce-19236e7f4122</d4pl:WebId>
  </d4pl:DiscoveryAction>
</actions>
</InvokeDiscoveryActions>
</s:Body>
</s:Envelope>

```

The protocol server responds with an **InvokeDiscoveryActionResult** response message which contains the status of each of the applied actions:

```

<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/IDiscoveryServiceApplication/InvokeDiscoveryActionsRe
sponse</a:Action>
    <ActivityId CorrelationId="539ab7b2-a92b-4b91-ae7e-74b9432eb61e"
xmlns="http://schemas.microsoft.com/2004/09/ServiceModel/Diagnostics">83ede828-ca06-465b-
balf-2e23d90b57e5</ActivityId>
    <a:RelatesTo>urn:uuid:7c697165-7b28-4df7-9f37-e6cd60b7ca75</a:RelatesTo>
    <o:Security s:mustUnderstand="1" xmlns:o="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-secext-1.0.xsd">
      <u:Timestamp u:Id="_0">
        <u:Created>2011-04-16T07:59:46.872Z</u:Created>
        <u:Expires>2011-04-16T08:04:46.872Z</u:Expires>
      </u:Timestamp>
    </o:Security>
  </s:Header>
  <s:Body>
    <InvokeDiscoveryActionsResponse xmlns="http://tempuri.org/">
      <InvokeDiscoveryActionResult
xmlns:b="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:DiscoveryActionStatus>
          <b>ActionId>74a7709b-5aa9-4cb1-b405-39177166af9b</b>ActionId>
          <b>ActionType>CreateHold</b>ActionType>
          <b:CaseId>3d652524-93a7-4e6b-ad10-5f52c781a66a</b:CaseId>
          <b:DiscoveryConsoleId>541b75dc-07f7-422a-8990-2ee8b1e70613</b:DiscoveryConsoleId>
          <b:ErrorMessage></b:ErrorMessage>
          <b:HoldId>6dc65c15-9477-4e97-95bc-51a6c04a962e</b:HoldId>
          <b>Status>Pending</b>Status>
          <b:TimeCreated>0001-01-01T00:00:00</b:TimeCreated>
        </b:DiscoveryActionStatus>
        <b:DiscoveryActionStatus>
          <b>ActionId>db03d91e-3fd0-4eca-99ff-caa00bd1d7c0</b>ActionId>
          <b>ActionType>CreateHold</b>ActionType>
          <b:CaseId>3d652524-93a7-4e6b-ad10-5f52c781a66a</b:CaseId>
          <b:DiscoveryConsoleId>541b75dc-07f7-422a-8990-2ee8b1e70613</b:DiscoveryConsoleId>
          <b:ErrorMessage></b:ErrorMessage>

```

```
<b:HoldId>6dc65c15-9477-4e97-95bc-51a6c04a962e</b:HoldId>
<b>Status>Pending</b>Status>
<b:TimeCreated>0001-01-01T00:00:00</b:TimeCreated>
</b:DiscoveryActionStatus>
</InvokeDiscoveryActionsResult>
</InvokeDiscoveryActionsResponse>
</s:Body>
</s:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

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

```
<?xml version="1.0"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns2="http://tempuri.org/" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://tempuri.org/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <xs:schema xmlns:tns3="http://tempuri.org/Imports"
targetNamespace="http://tempuri.org/Imports">
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/">
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
      <xs:import namespace="http://tempuri.org/">
      <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
      <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"/>
    </xs:schema>
  </wsdl:types>
  <wsdl:portType name="IDiscoveryServiceApplication">
    <wsdl:operation name="InvokeDiscoveryActions">
      <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActions"
message="tns2:IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActionsResponse"
message="tns2:IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="ValidateSources">
      <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSources"
message="tns2:IDiscoveryServiceApplication_ValidateSources_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSourcesResponse"
message="tns2:IDiscoveryServiceApplication_ValidateSources_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ValidateSourcesSearchServiceAppl
icationFaultFault" name="SearchServiceApplicationFaultFault"
message="tns2:IDiscoveryServiceApplication_ValidateSources_SearchServiceApplicationFaultFault
_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetDiscoveryActions">
      <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActions"
message="tns2:IDiscoveryServiceApplication_GetDiscoveryActions_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActionsResponse"
message="tns2:IDiscoveryServiceApplication_GetDiscoveryActions_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="ReportDiscoveryActionStatus">
      <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatus"
message="tns2:IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatusRespo
nse" message="tns2:IDiscoveryServiceApplication_ReportDiscoveryActionStatus_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetAllStatus">
```

```

        <wsdl:input wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetAllStatus"
message="tns2:IDiscoveryServiceApplication_GetAllStatus_InputMessage"/>
        <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetAllStatusResponse"
message="tns2:IDiscoveryServiceApplication_GetAllStatus_OutputMessage"/>
        </wsdl:operation>
        <wsdl:operation name="ClearDiscoveryActions">
        <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActions"
message="tns2:IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage"/>
        <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActionsResponse"
message="tns2:IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage"/>
        </wsdl:operation>
        <wsdl:operation name="ClearOldDiscoveryActions">
        <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActions"
message="tns2:IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage"/>
        <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActionsResponse"
" message="tns2:IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage"/>
        </wsdl:operation>
        <wsdl:operation name="GetNonIndexableItemStatistics">
        <wsdl:input
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatistics"
message="tns2:IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage"/>
        <wsdl:output
wsaw:Action="http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatisticsRes
ponse"
message="tns2:IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage"/>
        </wsdl:operation>
        </wsdl:portType>
        <wsdl:binding name="DefaultBinding_IDiscoveryServiceApplication"
type="tns2:IDiscoveryServiceApplication">
        <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
        <wsdl:operation name="InvokeDiscoveryActions">
        <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/InvokeDiscoveryActions"
style="document"/>
        <wsdl:input>
        <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
        <soap:body use="literal"/>
        </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="ValidateSources">
        <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/ValidateSources"
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="GetDiscoveryActions">

```

```

    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/GetDiscoveryActions"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
</wsdl:operation>
<wsdl:operation name="ReportDiscoveryActionStatus">
    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/ReportDiscoveryActionStatus"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
</wsdl:operation>
<wsdl:operation name="GetAllStatus">
    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/GetAllStatus" style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
</wsdl:operation>
<wsdl:operation name="ClearDiscoveryActions">
    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/ClearDiscoveryActions"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
</wsdl:operation>
<wsdl:operation name="ClearOldDiscoveryActions">
    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/ClearOldDiscoveryActions"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
</wsdl:operation>
<wsdl:operation name="GetNonIndexableItemStatistics">
    <soap:operation
soapAction="http://tempuri.org/IDiscoveryServiceApplication/GetNonIndexableItemStatistics"
style="document"/>
    <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>

```

```

        <wsdl:output>
            <soap:body use="literal"/>
        </wsdl:output>
    </wsdl:operation>
</wsdl:binding>
<wsdl:message name="IDiscoveryServiceApplication_ClearDiscoveryActions_InputMessage">
    <wsdl:part name="parameters" element="tns2:ClearDiscoveryActions"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ClearDiscoveryActions_OutputMessage">
    <wsdl:part name="parameters" element="tns2:ClearDiscoveryActionsResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ClearOldDiscoveryActions_InputMessage">
    <wsdl:part name="parameters" element="tns2:ClearOldDiscoveryActions"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ClearOldDiscoveryActions_OutputMessage">
    <wsdl:part name="parameters" element="tns2:ClearOldDiscoveryActionsResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_GetAllStatus_InputMessage">
    <wsdl:part name="parameters" element="tns2:GetAllStatus"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_GetAllStatus_OutputMessage">
    <wsdl:part name="parameters" element="tns2:GetAllStatusResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_GetDiscoveryActions_InputMessage">
    <wsdl:part name="parameters" element="tns2:GetDiscoveryActions"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_GetDiscoveryActions_OutputMessage">
    <wsdl:part name="parameters" element="tns2:GetDiscoveryActionsResponse"/>
</wsdl:message>
<wsdl:message
name="IDiscoveryServiceApplication_GetNonIndexableItemStatistics_InputMessage">
    <wsdl:part name="parameters" element="tns2:GetNonIndexableItemStatistics"/>
</wsdl:message>
<wsdl:message
name="IDiscoveryServiceApplication_GetNonIndexableItemStatistics_OutputMessage">
    <wsdl:part name="parameters" element="tns2:GetNonIndexableItemStatisticsResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_InvokeDiscoveryActions_InputMessage">
    <wsdl:part name="parameters" element="tns2:InvokeDiscoveryActions"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_InvokeDiscoveryActions_OutputMessage">
    <wsdl:part name="parameters" element="tns2:InvokeDiscoveryActionsResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ReportDiscoveryActionStatus_InputMessage">
    <wsdl:part name="parameters" element="tns2:ReportDiscoveryActionStatus"/>
</wsdl:message>
<wsdl:message
name="IDiscoveryServiceApplication_ReportDiscoveryActionStatus_OutputMessage">
    <wsdl:part name="parameters" element="tns2:ReportDiscoveryActionStatusResponse"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ValidateSources_InputMessage">
    <wsdl:part name="parameters" element="tns2:ValidateSources"/>
</wsdl:message>
<wsdl:message name="IDiscoveryServiceApplication_ValidateSources_OutputMessage">
    <wsdl:part name="parameters" element="tns2:ValidateSourcesResponse"/>
</wsdl:message>
<wsdl:message
name="IDiscoveryServiceApplication_ValidateSources_SearchServiceApplicationFaultFault_FaultMe
ssage">

```

```
<wsdl:part
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" name="detail" element="tns:SearchServiceApplicationFault"/>
</wsdl:message>
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

Schema name	Prefix	Section
http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration	tns	7.1
http://schemas.microsoft.com/2003/10/Serialization/Arrays	tns1	7.2
http://schemas.microsoft.com/2003/10/Serialization/	ser	7.3
http://tempuri.org/	tns2	7.4
http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08	q1	7.5
http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11	q3	7.6

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

7.1

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

```
<?xml version="1.0"?>
<xs:schema
  xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administration"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"/>
  <xs:complexType name="SearchServiceApplicationFault">
    <xs:sequence>
      <xs:element xmlns:q1="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
        minOccurs="0" name="FaultType" type="q1:SearchServiceApplicationFaultType"/>
      <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SearchServiceApplicationFault" nillable="true"
    type="tns:SearchServiceApplicationFault"/>
</xs:schema>
```

7.2 <http://schemas.microsoft.com/2003/10/Serialization/Arrays> Schema

```
<?xml version="1.0"?>
<xs:schema xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
  <xs:complexType name="ArrayOfKeyValueOfstringstring">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringstring">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Key" nillable="true" type="xs:string"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```

```

        <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="tnsl:ArrayOfKeyValueOfstringstring"/>
<xs:complexType name="ArrayOfKeyValueOfstringanyType">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringanyType">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" nillable="true" type="xs:anyType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringanyType" nillable="true"
type="tnsl:ArrayOfKeyValueOfstringanyType"/>
<xs:complexType name="ArrayOfguid">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="guid" type="ser:guid"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfguid" nillable="true" type="tnsl:ArrayOfguid"/>
<xs:complexType name="ArrayOfstring">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfstring" nillable="true" type="tnsl:ArrayOfstring"/>
<xs:complexType name="ArrayOfKeyValueOfstringlong">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringlong">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Key" nillable="true" type="xs:string"/>
          <xs:element name="Value" type="xs:long"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfKeyValueOfstringlong" nillable="true"
type="tnsl:ArrayOfKeyValueOfstringlong"/>
</xs:schema>

```

7.3 <http://schemas.microsoft.com/2003/10/Serialization/> Schema

```

<?xml version="1.0"?>
<xs:schema xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">

```

```

<xs:element name="anyType" nillable="true" type="xs:anyType"/>
<xs:element name="anyURI" nillable="true" type="xs:anyURI"/>
<xs:element name="base64Binary" nillable="true" type="xs:base64Binary"/>
<xs:element name="boolean" nillable="true" type="xs:boolean"/>
<xs:element name="byte" nillable="true" type="xs:byte"/>
<xs:element name="dateTime" nillable="true" type="xs:dateTime"/>
<xs:element name="decimal" nillable="true" type="xs:decimal"/>
<xs:element name="double" nillable="true" type="xs:double"/>
<xs:element name="float" nillable="true" type="xs:float"/>
<xs:element name="int" nillable="true" type="xs:int"/>
<xs:element name="long" nillable="true" type="xs:long"/>
<xs:element name="QName" nillable="true" type="xs:QName"/>
<xs:element name="short" nillable="true" type="xs:short"/>
<xs:element name="string" nillable="true" type="xs:string"/>
<xs:element name="unsignedByte" nillable="true" type="xs:unsignedByte"/>
<xs:element name="unsignedInt" nillable="true" type="xs:unsignedInt"/>
<xs:element name="unsignedLong" nillable="true" type="xs:unsignedLong"/>
<xs:element name="unsignedShort" nillable="true" type="xs:unsignedShort"/>
<xs:element name="char" nillable="true" type="ser:char"/>
<xs:simpleType name="char">
  <xs:restriction base="xs:int"/>
</xs:simpleType>
<xs:element name="duration" nillable="true" type="ser:duration"/>
<xs:simpleType name="duration">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?"/>
    <xs:minInclusive value="-P10675199DT2H48M5.4775808S"/>
    <xs:maxInclusive value="P10675199DT2H48M5.4775807S"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="guid" nillable="true" type="ser:guid"/>
<xs:simpleType name="guid">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>
  </xs:restriction>
</xs:simpleType>
<xs:attribute name="FactoryType" type="xs:QName"/>
<xs:attribute name="Id" type="xs:ID"/>
<xs:attribute name="Ref" type="xs:IDREF"/>
</xs:schema>

```

7.4 http://tempuri.org/ Schema

```

<?xml version="1.0"?>
<xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="InvokeDiscoveryActions">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
        <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="actions" nillable="true" type="q3:ArrayOfDiscoveryAction"/>
        <xs:element minOccurs="0" name="userInitiated" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```



```

    </xs:complexType>
  </xs:element>
  <xs:element name="InvokeDiscoveryActionsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="InvokeDiscoveryActionsResult" nillable="true"
type="q3:ArrayOfDiscoveryActionStatus"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="ValidateSources">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
        <xs:element minOccurs="0" name="sourceType" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="filter" nillable="true" type="xs:string"/>
        <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="federationSettings" nillable="true"
type="tns1:ArrayOfKeyValueOfstringstring"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="ValidateSourcesResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="ValidateSourcesResult" nillable="true" type="q3:ArrayOfDiscoverySource"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetDiscoveryActions">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetDiscoveryActionsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="GetDiscoveryActionsResult" nillable="true"
type="q3:ArrayOfDiscoveryAction"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="ReportDiscoveryActionStatus">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
        <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="status" nillable="true" type="q3:ArrayOfDiscoveryActionStatus"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```

```

</xs:element>
<xs:element name="ReportDiscoveryActionStatusResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
<xs:element name="GetAllStatus">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="GetAllStatusResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
minOccurs="0" name="GetAllStatusResult" nillable="true"
type="q3:ArrayOfDiscoveryActionStatus"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="ClearDiscoveryActions">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="rawPartitionId" type="ser:guid"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="actionIds" nillable="true" type="tns1:ArrayOfguid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="ClearDiscoveryActionsResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
<xs:element name="ClearOldDiscoveryActions">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
<xs:element name="ClearOldDiscoveryActionsResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
<xs:element name="GetNonIndexableItemStatistics">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="partitionId" type="ser:guid"/>
      <xs:element xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
minOccurs="0" name="discoveryConsoleId" type="ser:guid"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="mailboxes" nillable="true" type="tns1:ArrayOfString"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="federationSettings" nillable="true"
type="tns1:ArrayOfKeyValueOfstringstring"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="GetNonIndexableItemStatisticsResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetNonIndexableItemStatisticsResult" nillable="true"
type="tns1:ArrayOfKeyValueOfstringlong"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays" />
<xs:import namespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11" />
</xs:schema>

```

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

```

<?xml version="1.0"?>
<xs:schema xmlns:q1="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
elementFormDefault="qualified"
targetNamespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2008/08"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:simpleType name="SearchServiceApplicationFaultType">
        <xs:restriction base="xs:string">
            <xs:enumeration value="SpecialTerm_NotFound"/>
            <xs:enumeration value="SpecialTerm_DuplicateError"/>
            <xs:enumeration value="Synonym_NotFound"/>
            <xs:enumeration value="BestBet_NotFound"/>
            <xs:enumeration value="BestBet_OrderDuplicationError"/>
            <xs:enumeration value="AllNoiseQuery"/>
            <xs:enumeration value="SearchServiceNotFound"/>
            <xs:enumeration value="QueryMalformed"/>
            <xs:enumeration value="ScopeNotFound"/>
            <xs:enumeration value="InvalidProperty"/>
            <xs:enumeration value="OnlyExcludedTerms"/>
            <xs:enumeration value="RankingModelNotFound"/>
            <xs:enumeration value="UnsupportedTopology"/>
            <xs:enumeration value="FASTSearchQuery"/>
            <xs:enumeration value="Timeout"/>
            <xs:enumeration value="ExtendedConnectorApplicaion"/>
            <xs:enumeration value="PartitionOptionsMismatch"/>
            <xs:enumeration value="TooComplexQueryException"/>
            <xs:enumeration value="QueryThrottled"/>
            <xs:enumeration value="InternalError"/>
            <xs:enumeration value="QueryTransformInvalidProperty"/>
            <xs:enumeration value="QueryConfigurationImportException"/>
            <xs:enumeration value="DiscoveryFederatedSourceNotFound"/>
            <xs:enumeration value="RemoteSharepointSourceFault"/>
            <xs:enumeration value="TenantSiteCollectionMismatchException"/>
            <xs:enumeration value="InvalidNameException"/>
            <xs:enumeration value="InvalidPropertyTypeException"/>
            <xs:enumeration value="CouldNotModifySchemaException"/>
        </xs:restriction>
    </xs:simpleType>

```

```

<xs:enumeration value="InvalidMappingException"/>
<xs:enumeration value="ObjectNotFoundException"/>
<xs:enumeration value="PropertyIsReadOnlyException"/>
<xs:enumeration value="PropertyCannotHaveMappingsException"/>
<xs:enumeration value="InvalidManagedPropertyValue"/>
<xs:enumeration value="ArgumentNullException"/>
<xs:enumeration value="UnauthorizedAccessException"/>
<xs:enumeration value="DatabaseException"/>
<xs:enumeration value="SchemaExportException"/>
<xs:enumeration value="SchemaImportException"/>
<xs:enumeration value="NotSupported"/>
<xs:enumeration value="QueryPropertyOutOfRange"/>
</xs:restriction>
</xs:simpleType>
<xs:element name="SearchServiceApplicationFaultType" nillable="true"
type="q1:SearchServiceApplicationFaultType"/>
</xs:schema>

```

7.6 <http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11> Schema

```

<?xml version="1.0"?>
<xs:schema xmlns:q3="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"
targetNamespace="http://www.microsoft.com/sharepoint/search/KnownTypes/2010/11"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfDiscoveryAction">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoveryAction" nillable="true"
type="q3:DiscoveryAction"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfDiscoveryAction" nillable="true"
type="q3:ArrayOfDiscoveryAction"/>
  <xs:complexType name="DiscoveryAction">
    <xs:sequence>
      <xs:element minOccurs="0" name="ActionId" type="ser:guid"/>
      <xs:element minOccurs="0" name="ActionType" type="q3:DiscoveryActionType"/>
      <xs:element minOccurs="0" name="CaseId" type="ser:guid"/>
      <xs:element minOccurs="0" name="ContainerId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="CorrelationId" type="ser:guid"/>
      <xs:element minOccurs="0" name="DiscoveryConsoleId" type="ser:guid"/>
      <xs:element minOccurs="0" name="ExternalFederationId" type="ser:guid"/>
      <xs:element minOccurs="0" name="FederationId" type="ser:guid"/>
      <xs:element minOccurs="0" name="HoldId" type="ser:guid"/>
      <xs:element minOccurs="0" name="PartitionId" type="ser:guid"/>
      <xs:element minOccurs="0" name="PreservationListQuery" nillable="true"
type="xs:string"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PropertyBag" nillable="true" type="tns1:ArrayOfKeyValueOfstringstring"/>
      <xs:element minOccurs="0" name="Query" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="TimeCreated" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="WebId" type="ser:guid"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="DiscoveryAction" nillable="true" type="q3:DiscoveryAction"/>
  <xs:simpleType name="DiscoveryActionType">

```

```

    <xs:restriction base="xs:string">
      <xs:enumeration value="CreateHold"/>
      <xs:enumeration value="UpdateHold"/>
      <xs:enumeration value="ReleaseHold"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="DiscoveryActionType" nillable="true" type="q3:DiscoveryActionType"/>
  <xs:complexType name="ArrayOfDiscoveryActionStatus">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoveryActionStatus"
nillable="true" type="q3:DiscoveryActionStatus"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfDiscoveryActionStatus" nillable="true"
type="q3:ArrayOfDiscoveryActionStatus"/>
  <xs:complexType name="DiscoveryActionStatus">
    <xs:sequence>
      <xs:element minOccurs="0" name="ActionId" type="ser:guid"/>
      <xs:element minOccurs="0" name="ActionType" type="q3:DiscoveryActionType"/>
      <xs:element minOccurs="0" name="CaseId" type="ser:guid"/>
      <xs:element minOccurs="0" name="DiscoveryConsoleId" type="ser:guid"/>
      <xs:element minOccurs="0" name="ErrorMessage" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="HoldId" type="ser:guid"/>
      <xs:element minOccurs="0" name="Status" type="q3:DiscoveryStatus"/>
      <xs:element minOccurs="0" name="TimeCreated" type="xs:dateTime"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="DiscoveryActionStatus" nillable="true" type="q3:DiscoveryActionStatus"/>
  <xs:simpleType name="DiscoveryStatus">
    <xs:restriction base="xs:string">
      <xs:enumeration value="CannotHold"/>
      <xs:enumeration value="NotOnHold"/>
      <xs:enumeration value="Pending"/>
      <xs:enumeration value="InProgress"/>
      <xs:enumeration value="OnFilteredHold"/>
      <xs:enumeration value="OnHold"/>
      <xs:enumeration value="PartiallyOnHold"/>
      <xs:enumeration value="Failed"/>
      <xs:enumeration value="TimedOut"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="DiscoveryStatus" nillable="true" type="q3:DiscoveryStatus"/>
  <xs:complexType name="ArrayOfDiscoverySource">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="DiscoverySource" nillable="true"
type="q3:DiscoverySource"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfDiscoverySource" nillable="true"
type="q3:ArrayOfDiscoverySource"/>
  <xs:complexType name="DiscoverySource">
    <xs:sequence>
      <xs:element minOccurs="0" name="ContainerId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="DisplayName" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="ExternalFederationId" type="ser:guid"/>
      <xs:element minOccurs="0" name="FederationId" type="ser:guid"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="PropertyBag" nillable="true" type="tns1:ArrayOfKeyValueOfstringanyType"/>
    </xs:sequence>
  </xs:complexType>

```

```
</xs:complexType>
<xs:element name="DiscoverySource" nillable="true" type="q3:DiscoverySource"/>
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
<xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays" />
</xs:schema>
```

8 Appendix C: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft SharePoint Server 2013

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that the product does not follow the prescription.

9 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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