[MS-NOTESWS]:
MS Search Lotus Notes Web Service Protocol Specification

Revision Summary

Date	Revision History	Revision Class	Comments
07/13/2009	0.1	Major	Initial Availability
08/28/2009	0.2	Editorial	Revised and edited the technical content
11/06/2009	0.3	Editorial	Revised and edited the technical content
02/19/2010	1.0	Editorial	Revised and edited the technical content
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06/07/2010	1.03	Editorial	Revised and edited the technical content
06/29/2010	1.04	Editorial	Changed language and formatting in the technical content.
07/23/2010	1.05	Minor	Clarified the meaning of the technical content.
09/27/2010	1.05	No change	No changes to the meaning, language, or formatting of the technical content.
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01/20/2012	2.0	Major	Significantly changed the technical content.
04/11/2012	2.0	No change	No changes to the meaning, language, or formatting of the technical content.
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10/08/2012	2.0.1	Editorial	Changed language and formatting in the technical content.

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1 Introduction

This document specifies the MS Search Lotus Notes Web Service Protocol. This protocol enables a client to query a Lotus Notes application to discover Domino servers available, discover databases available on those Domino servers, and pull content and properties from those databases.

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 RFC 2119. Sections 1.5 and 1.9 are also normative but cannot contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

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

Hypertext Transfer Protocol (HTTP)
Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
server

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

crawled property
display URL
endpoint
file extension
item
security descriptor
Simple Object Access Protocol (SOAP)
SOAP action
SOAP body
SOAP fault
Uniform Resource Identifier (URI)
Web Services Description Language (WSDL)
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 described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the technical 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. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-DOC] Microsoft Corporation, "Word Binary File Format (.doc) Structure Specification".

[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.ietf.org/rfc/rfc2616.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.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "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-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

[MS-OFCGLOS] Microsoft Corporation, "Microsoft Office Master Glossary".

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

[MS-SPTWS] Microsoft Corporation, "Service Platform Topology Web Service Protocol Specification".

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

[SOAP1.2/2] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 2: Adjuncts", W3C Recommendation, June 2003, http://www.w3.org/TR/2003/REC-soap12-part2-20030624

1.3 Overview

The Lotus Notes Web Service enables a protocol client to query a Lotus Notes Client application to discover Domino servers available, discover databases available on those Domino servers, and pull content and properties from those databases.

A typical scenario for using this protocol involves two stages. First, a Domino server and database are identified. This step typically involves the following sequence:

- The protocol client gets the list of servers.
- Choose a server.
- For that specific Domino server, the protocol client gets the list of databases.
- For each database, the protocol client gets the properties of that database.
- Choose a database.

The second step, after a specific database is chosen, is to retrieve items from that database. This step typically involves the following sequence:

- For that specific database, the protocol client gets the list of **items**.
- For each item, the protocol client gets the content and properties of that item.
- If an item has attachments, for each attachment, the protocol client gets the contents and properties of that attachment.

1.4 Relationship to Other Protocols

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

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

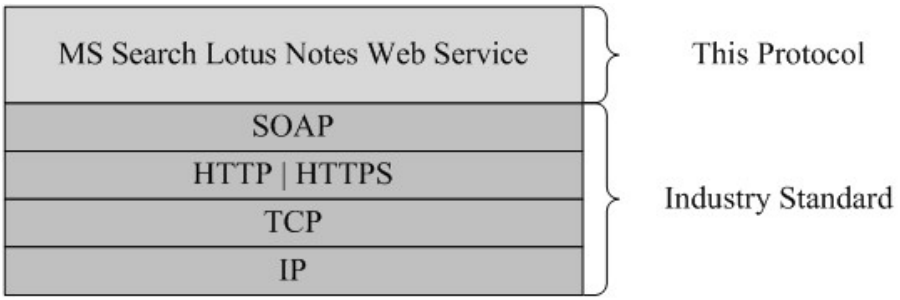

Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

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

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

This protocol requires the protocol client to have 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 described in [MS-SPSTWS].

1.6 Applicability Statement

This protocol was designed to allow a client to discover **Domino Servers**, discover databases on those **servers**, and retrieve indexable content, **crawled properties**, and attachments from **Lotus Notes items** on those databases. It is intended to be used as a means to crawl content on **Domino Servers**. This protocol was designed to return 10,000 or less items per call and support a minimum crawl speed of 10 items per second.

1.7 Versioning and Capability Negotiation

This specification covers versioning issues in the following areas:

- **Supported Transports**: This protocol can be implemented by using transports that support sending Simple Object Access Protocol (SOAP) messages, as 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

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 Microsoft product behavior. For example, the schema definition might allow for an element to be empty, null, or not present but the behavior of the protocol as specified restricts the same elements to being non-empty, not null, and present.

2.1 Transport

Protocol servers MUST support SOAP over HTTP. Protocol servers SHOULD additionally support SOAP over HTTPS for securing communication with protocol clients.

Protocol messages MUST be formatted as specified either in [SOAP1.1], Section 4 or in [SOAP1.2/1], Section 5. Protocol server faults MUST be returned either using HTTP Status Codes as specified in [RFC2616], Section 10 or using **SOAP faults** as specified either in [SOAP1.1], (Section 4.4) or in [SOAP1.2/1], (Section 5.4, SOAP Fault).

2.2 Common Message Syntax

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

2.2.1 Namespaces

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

Prefix	Namespace URI	Reference
q4	http://schemas.microsoft.com/Message	
ser	http://schemas.microsoft.com/2003/10/Serialization/	
soap	http://schemas.xmlsoap.org/wsdl/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://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission	
tns3	http://tempuri.org/	
tns4	http://tempuri.org/Imports	
wsaw	http://www.w3.org/2006/05/addressing/wsdl	
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1

Prefix	Namespace URI	Reference
		] [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
ArrayOfNOTESATTACHMENTID	This type represents an array of NOTESATTACHMENTID values. Every **NOTESATTACHMENTID.attachmentName** MUST be a unique value within this array.
ArrayOfPROPERTY	This type represents an array of arbitrary **PROPERTY** values.
INDEXABLECONTENT	This type contains the content of the **Lotus Notes item** or the content of an attachment of a **Lotus Notes Item**.
NOTESATTACHMENTID	This type contains the unique identifier of an attachment in a Lotus Notes document.
NOTESITEM	This type contains the crawled properties, indexable content, **security descriptor**, **display URL** and attachment ids of a **Lotus Notes item**.
PROPERTY	This type contains the crawled property of a **Lotus Notes Item**.
SecurityDescriptor	This type contains the security descriptor of a **Lotus Notes item**.
SERVERITEM	This type contains the unique identifier and display URL of the **Domino server**.

2.2.4.1 ArrayOfNOTESATTACHMENTID

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

This type represents an array of NOTESATTACHMENTID values. Every **NOTESATTACHMENTID.attachmentName** MUST be a unique value within this array.

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

```
    <xs:element minOccurs="0" maxOccurs="unbounded" name="NOTESATTACHMENTID"
type="tns:NOTESATTACHMENTID"/>
  </xs:sequence>
</xs:complexType>
```

NOTESATTACHMENTID: The **NOTESATTACHMENTID** element contains the unique identifier of an attachment in a Lotus Notes document.

2.2.4.2 ArrayOfPROPERTY

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

This type represents an array of arbitrary **PROPERTY** values.

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

PROPERTY: The **PROPERTY** element contains a name/value pair.

2.2.4.3 INDEXABLECONTENT

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

This type contains the content of the **Lotus Notes item** or the content of an attachment of a **Lotus Notes Item**.

```
<xs:complexType name="INDEXABLECONTENT" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="content" nillable="true" type="xs:base64Binary"/>
    <xs:element minOccurs="0" name="contentType" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="extension" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

content: Specifies the content of a **Lotus Notes Item** or the content of an attachment of a **Lotus Notes Item**.

contentType: It is currently unused and its contents MUST be ignored by the protocol client.

extension: Specifies the **file extension** of the data specified in the **content** element. If the content is of a specific file format such as Word (specified in [MS-DOC]) document then the extension of that specific format MUST be specified. If the data is a string then the extension 'txt' MUST be specified. The extension MUST be specified without a leading period.

2.2.4.4 NOTESATTACHMENTID

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

This type contains the unique identifier of an attachment in a Lotus Notes document.

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

attachmentName: Specifies the unique identifier of the attachment in a **Lotus Notes item**.

itemId: A string value that uniquely identifies the **Lotus Notes item** that contains the attachment.

2.2.4.5 NOTESITEM

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

This type contains the crawled properties, indexable content, security descriptor, display URL and attachment ids of a **Lotus Notes item**.

```
<xs:complexType name="NOTESITEM" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="attachmentId" nillable="true"
type="tns:ArrayOfNOTESATTACHMENTID"/>
    <xs:element minOccurs="0" name="displayUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="itemContent" type="tns:INDEXABLECONTENT"/>
    <xs:element minOccurs="0" name="itemId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="itemProps" nillable="true" type="tns:ArrayOfPROPERTY"/>
    <xs:element minOccurs="0" name="lastModifiedTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="securityDesc" type="tns:SecurityDescriptor"/>
  </xs:sequence>
</xs:complexType>
```

attachmentId: Specifies the list of unique identifiers of the attachments.

displayUrl: Specifies the display URL of the **Lotus Notes item**.

itemContent: Specifies the content of the **Lotus Notes Item**.

itemId: Specifies the unique identifier of the **Lotus Notes item**. MUST be unique across **Domino Servers**.

itemProps: Specifies the list of crawled properties for the **Lotus Notes item**.

lastModifiedTime: Specifies the time at which the **Lotus Notes item** was last modified.

securityDesc: Specifies the security descriptor of the **Lotus Notes item**.

2.2.4.6 PROPERTY

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

This type contains the crawled property of a **Lotus Notes Item**.

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

Name: Specifies the name of the crawled property.

Value: Specifies the value of the crawled property. This MUST be of type xs:string, xs:integer or xs:dateTime.

2.2.4.7 SecurityDescriptor

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

This type contains the security descriptor of a **Lotus Notes item**.

```
<xs:complexType name="SecurityDescriptor" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="SD" nillable="true" type="xs:base64Binary"/>
    <xs:element minOccurs="0" name="isNTSD" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

SD: Specifies the security descriptor of the **Lotus Notes item**.

isNTSD: MUST always be set to true if the value of **SecurityDescriptor.SD** is not NULL. If the value of **SecurityDescriptor.SD** is NULL then **isNTSD** MUST be set to false.

2.2.4.8 SERVERITEM

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

This type contains the unique identifier and display URL of the **Domino server**.

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

displayUrl: Specifies the display URL of the **Domino server**.

serverId: Specifies the unique identifier of the **Domino server**.

2.2.5 Simple Types

This specification does not define any common XML schema simple type definitions.

2.2.6 Attributes

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

2.2.7 Groups

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

2.2.8 Attribute Groups

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

2.2.9 Common Data Structures

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

3 Protocol Details

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

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls 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.

Except where specified, protocol clients SHOULD interpret HTTP Status Codes returned by the protocol server as specified in [RFC2616], Section 10.

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

3.1 Server Details

The Server role is described in this section.

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.

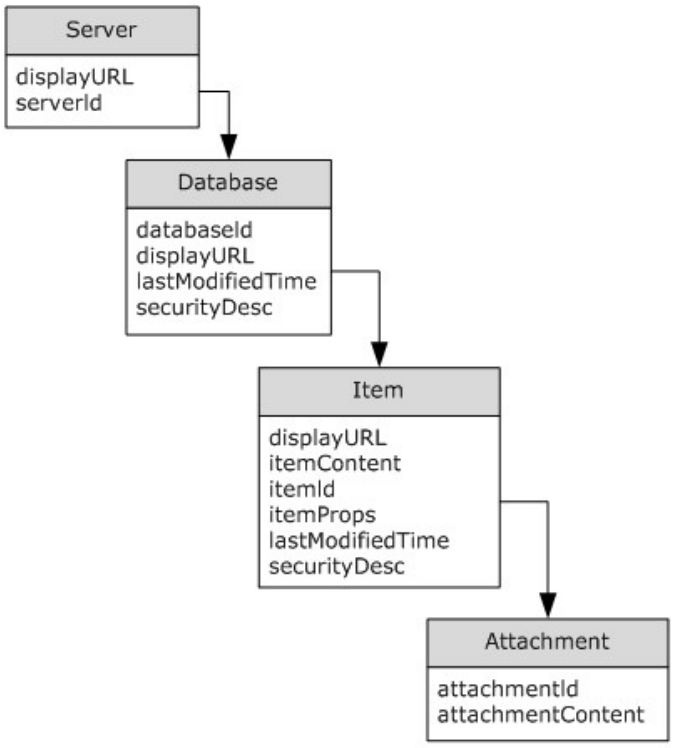

Figure 2: Object Hierarchy

3.1.1.1 Object Hierarchy

The protocol server maintains a hierarchy of objects representing state of the Lotus Notes Web Service protocol. The properties of these objects affect the information returned from queries to the server.

3.1.1.2 Server

There MAY be zero or more server objects.

displayURL: The display URL associated with the Domino server this object represents

serverId: The unique identifier for this server.

3.1.1.3 Database

Each server has zero or more databases associated with it. This object represents a database that can be queried for items.

databaseId: Unique identifier for this database in the server.

displayURL: The display URL associated with the database this object represents.

lastModifiedTime: Timestamp indicating the last time this database was changed.

securityDesc: The security descriptor for the database.

3.1.1.4 Item

Each database has zero or more items associated with it.

displayURL: The display URL for the item this object represents.

itemContent: The indexable content of this item.

itemId: Unique identifier for this item in the database.

itemProps: An array consisting of zero or more name/value pairs. These pairs make up the crawled properties for this item.

lastModifiedTime: The timestamp representing the last time this item changed.

securityDesc: The security descriptor for this item.

3.1.1.5 Attachment

Each item has zero or more attachments associated with it.

attachmentID: The unique identifier for the attachment.

attachmentContent: The indexable content of the attachment.

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
EnumerateDatabases	This operation is used by the protocol client to retrieve the list of all the Lotus Notes databases in a Domino server. If the value of **lastSeenDatabase** element is an empty string, this operation MUST return all the **Lotus Notes databases** in the **Domino server**. If the value of **lastSeenDatabase** element is the value of the **DATABASEITEMID.databaseId** element, this operation MUST return all the **Lotus Notes databases** in the **Domino server** whose **databaseId** is greater than **DATABASEITEMID.databaseId**.
EnumerateItems	This operation is used by the protocol client to retrieve the list of all the Lotus Notes items in a Lotus Notes database.
EnumerateServers	This operation is used by the protocol client to retrieve all the available **Domino servers**.
FetchAttachment	This operation is used by the protocol client to retrieve an attachment of a **Lotus Notes item**.

Operation	Description
FetchItem	This operation is used by the protocol client to retrieve the crawled properties, indexable content, security descriptor**,** display URL and attachment ids of the **Lotus Notes item**.
GetDatabase	This operation is used by the protocol client to retrieve the unique identifier, display URL, last modified time and security descriptor of a Lotus Notes database.
GetServer	This operation is not used and MUST NOT be invoked.

3.1.4.1 EnumerateDatabases

This operation is used by the protocol client to retrieve the list of all the Lotus Notes databases in a Domino server.

If the value of **lastSeenDatabase** element is an empty string, this operation MUST return all the **Lotus Notes databases** in the **Domino server**.

If the value of **lastSeenDatabase** element is the value of the **DATABASEITEMID.databaseId** element, this operation MUST return all the **Lotus Notes databases** in the **Domino server** whose **databaseId** is greater than **DATABASEITEMID.databaseId**.

```
<wsdl:operation name="EnumerateDatabases" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateDatabases"
message="tns3:INotesWebServiceApplication_EnumerateDatabases_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateDatabasesResponse"
message="tns3:INotesWebServiceApplication_EnumerateDatabases_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an INotesWebServiceApplication_EnumerateDatabases_InputMessage request message, and the protocol server responds with an INotesWebServiceApplication_EnumerateDatabases_OutputMessage response message, as follows.

- On success, the protocol server MUST return the list of Lotus Notes databases in the Domino server.
- On error, the protocol server MUST send a FaultException<ExceptionDetail> message to the protocol client.

3.1.4.1.1 Messages

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

Message	Description
INotesWebServiceApplication_EnumerateDatabases_InputMessage	The request WSDL message for the **EnumerateDatabases WSDL operation**.

Message	Description
INotesWebServiceApplication_EnumerateDatabases_OutputMessage	The response WSDL message for the **EnumerateDatabases** WSDL operation.

3.1.4.1.1.1 INotesWebServiceApplication_EnumerateDatabases_InputMessage

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

The **SOAP action** value is:

```
http://tempuri.org/INotesWebServiceApplication/EnumerateDatabases
```

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

3.1.4.1.1.2 INotesWebServiceApplication_EnumerateDatabases_OutputMessage

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

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

3.1.4.1.2 Elements

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

Element	Description
EnumerateDatabases	The input data for the **EnumerateDatabases** WSDL operation.
EnumerateDatabasesResponse	The result data for the **EnumerateDatabases** WSDL operation.

3.1.4.1.2.1 EnumerateDatabases

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

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

serverName: Specifies the unique identifier of the **Domino server**. This MUST be the value of the **SERVERITEM.serverId** element returned by the GetServer operation.

lastSeenDatabase: Specifies the unique identifier of the **Lotus Notes database**. This MUST be an empty string or the value of the **DATABASEITEMID.databaseId** element returned by a previous call to **EnumerateDatabases** operation.

- If this is an empty string, the **EnumerateDatabases** operation MUST return all the **Lotus Notes databases** in the **Domino Server**.
- If this is the value of a **DATABASEITEMID.databaseId** element, the **EnumerateDatabases** operation MUST return all the **Lotus Notes databases** in the **Domino Server** whose **databaseId** is greater than **DATABASEITEMID.databaseId**.

3.1.4.1.2.2 EnumerateDatabasesResponse

The **EnumerateDatabasesResponse** element specifies the result data for the **EnumerateDatabases** WSDL operation.

```
<xs:element name="EnumerateDatabasesResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateDatabasesResult" nillable="true"
type="tns:ArrayOfDATABASEITEMID"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

EnumerateDatabasesResult: This contains the list of **Lotus Notes databases** in the Domino server.

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
ArrayOfDATABASEITEMID	Represents an array of arbitrary DATABASEITEMID values.
DATABASEITEMID	Contains the unique identifier of a **Lotus Notes database**.

3.1.4.1.3.1 ArrayOfDATABASEITEMID

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

This type represents an array of arbitrary DATABASEITEMID values.

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

DATABASEITEMID: The **DATABASEITEMID** contains the unique identifier of a **Lotus Notes database**.

3.1.4.1.3.2 DATABASEITEMID

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

This type contains the unique identifier of a **Lotus Notes database**.

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

databaseId: Specifies the unique identifier of the **Lotus Notes database**.

lastModifiedTime: Specifies the time at which the **Lotus Notes database** was last modified.

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 EnumerateItems

This operation is used by the protocol client to retrieve the list of all the Lotus Notes items in a Lotus Notes database.

```
<wsdl:operation name="EnumerateItems" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateItems"
message="tns3:INotesWebServiceApplication_EnumerateItems_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateItemsResponse"
message="tns3:INotesWebServiceApplication_EnumerateItems_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an INotesWebServiceApplication_EnumerateItems_InputMessage request message, and the protocol server responds with an INotesWebServiceApplication_EnumerateItems_OutputMessage response message, as follows.

- On success, the protocol server MUST return the list of Lotus Notes items in the Lotus Notes database.

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

3.1.4.2.1 Messages

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

Message	Description
INotesWebServiceApplication_EnumerateItems_InputMessage	The request WSDL message for the **EnumerateItems** WSDL operation.
INotesWebServiceApplication_EnumerateItems_OutputMessage	The response WSDL message for the **EnumerateItems** WSDL operation.

3.1.4.2.1.1 INotesWebServiceApplication_EnumerateItems_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/EnumerateItems
```

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

3.1.4.2.1.2 INotesWebServiceApplication_EnumerateItems_OutputMessage

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

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

3.1.4.2.2 Elements

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

Element	Description
EnumerateItems	The input data for the **EnumerateItems** WSDL operation.
EnumerateItemsResponse	The result data for the **EnumerateItems** WSDL operation.

3.1.4.2.2.1 EnumerateItems

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

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

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

databasePath: Specifies the unique identifier of the **Lotus Notes database**. This MUST be the value of the **DATABASEITEM.databaseId** element returned by GetDatabase operation.

lastSeenItem: Specifies the unique identifier of a **Lotus Notes item**. This MUST be an empty string or the value of the **NOTESITEM.itemId** element returned by a previous call to **EnumerateItems** operation.

- If this is an empty string then the **EnumerateItems** operation MUST return all the **Lotus Notes items** in the **Lotus Notes database**.
- If this is the value of a **NOTESITEM.itemId** element then the **EnumerateItems** operation MUST return all the **Lotus Notes items** in the **Lotus Notes database** whose **ItemId** is greater than **NOTESITEM.itemId**.

3.1.4.2.2.2 EnumerateItemsResponse

The **EnumerateItemsResponse** element specifies the result data for the **EnumerateItems** WSDL operation.

```
<xs:element name="EnumerateItemsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateItemsResult" nillable="true" type="tns:ArrayOfNOTESITEM"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

EnumerateItemsResult: This contains the list of **Lotus Notes items** in the **Lotus Notes database**.

3.1.4.2.3 Complex Types

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

Complex type	Description
ArrayOfNOTESITEM	Represents an array of **NOTESITEM** values.

3.1.4.2.3.1 ArrayOfNOTESITEM

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

This type represents an array of **NOTESITEM** values.

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

```
      <xs:element minOccurs="0" maxOccurs="unbounded" name="NOTESITEM" type="tns:NOTESITEM"/>
    </xs:sequence>
  </xs:complexType>
```

NOTESITEM: The **NOTESITEM** element contains the content of a **Lotus Notes item**.

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 EnumerateServers

This operation is used by the protocol client to retrieve all the available **Domino servers**.

```
<wsdl:operation name="EnumerateServers" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateServers"
message="tns3:INotesWebServiceApplication_EnumerateServers_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateServersResponse"
message="tns3:INotesWebServiceApplication_EnumerateServers_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an INotesWebServiceApplication_EnumerateServers_InputMessage request, message and the protocol server responds with an INotesWebServiceApplication_EnumerateServers_OutputMessage response message, as follows.

- The protocol server MUST return the list of Domino servers.
- On error, the protocol server MUST send a FaultException<ExceptionDetail> message to the protocol client.

3.1.4.3.1 Messages

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

Message	Description
INotesWebServiceApplication_EnumerateServers_InputMessage	The request WSDL message for the **EnumerateServers**

Message	Description
	WSDL operation.
INotesWebServiceApplication_EnumerateServers_OutputMessage	The response WSDL message for the **EnumerateServers** WSDL operation.

3.1.4.3.1.1 INotesWebServiceApplication_EnumerateServers_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/EnumerateServers
```

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

3.1.4.3.1.2 INotesWebServiceApplication_EnumerateServers_OutputMessage

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

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

3.1.4.3.2 Elements

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

Element	Description
EnumerateServers	The input data for the **EnumerateServers** WSDL operation.
EnumerateServersResponse	The result data for the **EnumerateServers** WSDL operation.

3.1.4.3.2.1 EnumerateServers

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

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

3.1.4.3.2.2 EnumerateServersResponse

The **EnumerateServersResponse** element specifies the result data for the **EnumerateServers** WSDL operation.

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

```
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateServersResult" nillable="true"
type="tns:ArrayOfSERVERITEM"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

EnumerateServersResult: This contains the list of **Domino servers.**

3.1.4.3.3 Complex Types

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

Complex type	Description
ArrayOfSERVERITEM	Represents an array of arbitrary **SERVERITEM** values.

3.1.4.3.3.1 ArrayOfSERVERITEM

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

This type represents an array of arbitrary **SERVERITEM** values.

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

SERVERITEM: The **SERVERITEM** element contains the unique identifier and display URL of a **Domino server**.

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 FetchAttachment

This operation is used by the protocol client to retrieve an attachment of a **Lotus Notes item**.

```
<wsdl:operation name="FetchAttachment" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchAttachment"
message="tns3:INotesWebServiceApplication_FetchAttachment_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchAttachmentResponse"
message="tns3:INotesWebServiceApplication_FetchAttachment_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an INotesWebServiceApplication_FetchAttachment_InputMessage request, message and the protocol server responds with an INotesWebServiceApplication_FetchAttachment_OutputMessage response message, as follows.

- On success, the protocol server MUST return the attachment of a Lotus Notes item.
- On error, the protocol server MUST send a FaultException<ExceptionDetail> message to the protocol client.

3.1.4.4.1 Messages

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

Message	Description
INotesWebServiceApplication_FetchAttachment_InputMessage	The request WSDL message for the **FetchAttachment** WSDL operation.
INotesWebServiceApplication_FetchAttachment_OutputMessage	The response WSDL message for the **FetchAttachment** WSDL operation.

3.1.4.4.1.1 INotesWebServiceApplication_FetchAttachment_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/FetchAttachment
```

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

3.1.4.4.1.2 INotesWebServiceApplication_FetchAttachment_OutputMessage

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

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

3.1.4.4.2 Elements

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

Element	Description
FetchAttachment	The input data for the **FetchAttachment** WSDL operation.
FetchAttachmentResponse	The result data for the **FetchAttachment** WSDL operation.

3.1.4.4.2.1 FetchAttachment

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

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

itemId: Specifies the unique identifier of the **Lotus Notes item** that contains the attachment. This MUST be the value of the **NOTESITEM.NOTESATTACHMENTID.itemId** element returned by the FetchItem operation.

attachmentName: Specifies the unique identifier of the attachment in a **Lotus Notes item**. This MUST be the value of the **NOTESITEM.NOTESATTACHMENTID.attachmentName** element returned by the FetchItem operation.

3.1.4.4.2.2 FetchAttachmentResponse

The **FetchAttachmentResponse** element specifies the result data for the **FetchAttachment** WSDL operation.

```
<xs:element name="FetchAttachmentResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="FetchAttachmentResult" type="tns:NOTESATTACHMENT"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

FetchAttachmentResult: Contains the attachment of a **Lotus Notes item**.

3.1.4.4.3 Complex Types

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

Complex type	Description
NOTESATTACHMENT	Contains the contents of an attachment in a **Lotus Notes item**.

3.1.4.4.3.1 NOTESATTACHMENT

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

This type contains the contents of an attachment in a **Lotus Notes item**.

```
<xs:complexType name="NOTESATTACHMENT" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="attachmentContent" type="tns:INDEXABLECONTENT"/>
    <xs:element minOccurs="0" name="attachmentId" type="tns:NOTESATTACHMENTID"/>
  </xs:sequence>
</xs:complexType>
```

attachmentContent: Specifies the indexable content of the attachment of a **Lotus Notes Item**.

attachmentId: Specifies the unique identifier of the attachment of a **Lotus Notes item**.

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 FetchItem

This operation is used by the protocol client to retrieve the crawled properties, indexable content, security descriptor**,** display URL and attachment ids of the **Lotus Notes item**.

```
<wsdl:operation name="FetchItem" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchItem"
message="tns3:INotesWebServiceApplication_FetchItem_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchItemResponse"
message="tns3:INotesWebServiceApplication_FetchItem_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an INotesWebServiceApplication_FetchItem_InputMessage request message, and the protocol server responds with an INotesWebServiceApplication_FetchItem_OutputMessage response message, as follows.

- On success, the protocol server MUST return the crawled properties, indexable content, security descriptor and attachment IDs of the Lotus Notes item.
- On error, the protocol server MUST send a FaultException<ExceptionDetail> message to the protocol client.

3.1.4.5.1 Messages

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

Message	Description
INotesWebServiceApplication_FetchItem_InputMessage	The request WSDL message for the **FetchItem** WSDL operation.
INotesWebServiceApplication_FetchItem_OutputMessage	The response WSDL message for the **FetchItem** WSDL operation.

3.1.4.5.1.1 INotesWebServiceApplication_FetchItem_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/FetchItem
```

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

3.1.4.5.1.2 INotesWebServiceApplication_FetchItem_OutputMessage

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

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

3.1.4.5.2 Elements

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

Element	Description
FetchItem	The input data for the **FetchItem** WSDL operation.
FetchItemResponse	The result data for the **FetchItem** WSDL operation.

3.1.4.5.2.1 FetchItem

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

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

itemId: Specifies the unique identifier of the **Lotus Notes item**. This MUST be the value of one of the **NOTESITEM.itemId** elements returned by the EnumerateItems operation.

3.1.4.5.2.2 FetchItemResponse

The **FetchItemResponse** element specifies the result data for the **FetchItem** WSDL operation.

```
<xs:element name="FetchItemResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="FetchItemResult" type="tns:NOTESITEM"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

FetchItemResult: This contains the content of the **Lotus Notes item**.

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 GetDatabase

This operation is used by the protocol client to retrieve the unique identifier, display URL, last modified time and security descriptor of a Lotus Notes database.

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

```
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetDatabase"
message="tns3:INotesWebServiceApplication_GetDatabase_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetDatabaseResponse"
message="tns3:INotesWebServiceApplication_GetDatabase_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends an **INotesWebServiceApplication_GetDatabase_InputMessage** (section 3.1.4.6.1.1) request message, and the protocol server responds with an **INotesWebServiceApplication_GetDatabase_OutputMessage** (section 3.1.4.6.1.2) response message, as follows.

- On success, the protocol server MUST return the unique identifier, display URL, last modified time and security descriptor of the Lotus Notes database.
- On error, the protocol server MUST send a FaultException<ExceptionDetail> message to the protocol client.

3.1.4.6.1 Messages

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

Message	Description
INotesWebServiceApplication_GetDatabase_InputMessage	The request WSDL message for the **GetDatabase** WSDL operation.
INotesWebServiceApplication_GetDatabase_OutputMessage	The response WSDL message for the **GetDatabase** WSDL operation.

3.1.4.6.1.1 INotesWebServiceApplication_GetDatabase_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/GetDatabase
```

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

3.1.4.6.1.2 INotesWebServiceApplication_GetDatabase_OutputMessage

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

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

3.1.4.6.2 Elements

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

Element	Description
GetDatabase	The input data for the **GetDatabase** WSDL operation.
GetDatabaseResponse	The result data for the **GetDatabase** WSDL operation.

3.1.4.6.2.1 GetDatabase

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

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

databaseName: Specifies the unique identifier of the **Lotus Notes database**. This MUST be the value of one of the **DATABASEITEMID.databaseId** elements returned by EnumerateDatabases operation.

3.1.4.6.2.2 GetDatabaseResponse

The **GetDatabaseResponse** element specifies the result data for the **GetDatabase** WSDL operation.

```
<xs:element name="GetDatabaseResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="GetDatabaseResult" type="tns:DATABASEITEM"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetDatabaseResult: This contains the unique identifier, display URL, last modified time and security descriptor of the **Lotus Notes database**.

3.1.4.6.3 Complex Types

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

Complex type	Description
DATABASEITEM	Contains the unique identifier, display URL, last modified time and security descriptor of a **Lotus Notes database**.

3.1.4.6.3.1 DATABASEITEM

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

This type contains the unique identifier, display URL, last modified time and security descriptor of a **Lotus Notes database**.

```
<xs:complexType name="DATABASEITEM" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="databaseId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="displayUrl" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="lastModifiedTime" type="xs:dateTime"/>
    <xs:element minOccurs="0" name="securityDesc" type="tns:SecurityDescriptor"/>
  </xs:sequence>
</xs:complexType>
```

databaseId: Specifies the unique identifier of the **Lotus Notes database**.

displayUrl: Specifies the display URL of the **Lotus Notes database**.

lastModifiedTime: Specifies the time at which the **Lotus Notes database** was last modified.

securityDesc: Specifies the security descriptor of the **Lotus Notes database**.

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 GetServer

This operation is not used and MUST NOT be invoked.

```
<wsdl:operation name="GetServer" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetServer"
message="tns3:INotesWebServiceApplication_GetServer_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetServerResponse"
message="tns3:INotesWebServiceApplication_GetServer_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

3.1.4.7.1 Messages

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

Message	Description
INotesWebServiceApplication_GetServer_InputMessage	The request WSDL message for the **GetServer** WSDL operation.
INotesWebServiceApplication_GetServer_OutputMessage	The response WSDL message for the **GetServer** WSDL operation.

3.1.4.7.1.1 INotesWebServiceApplication_GetServer_InputMessage

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

The SOAP action value is:

```
http://tempuri.org/INotesWebServiceApplication/GetServer
```

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

3.1.4.7.1.2 INotesWebServiceApplication_GetServer_OutputMessage

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

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

3.1.4.7.2 Elements

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

Element	Description
GetServer	The input data for the **GetServer** WSDL operation.
GetServerResponse	The result data for the **GetServer** WSDL operation.

3.1.4.7.2.1 GetServer

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

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

serverName:

3.1.4.7.2.2 GetServerResponse

The **GetServerResponse** element specifies the result data for the **GetServer** WSDL operation.

```
<xs:element name="GetServerResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="GetServerResult" type="tns:SERVERITEM"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetServerResult:

3.1.4.7.3 Complex Types

None.

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.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

4.1 Identifying Servers and Databases

To enumerate servers, databases and to get properties for a database, the protocol client sends the following messages to the protocol server.

4.1.1 EnumerateServers

To enumerate the available Domino servers, the protocol client sends the following message:

Request message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/EnumerateServers
    </a:Action>
    <a:MessageID>
      urn:uuid:73bf4a5d-4c0b-4d61-b621-e255a45c5f4d
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        b14b0e1c-f5a5-4b96-bd92-2936264a5e5a
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId>
        00000000-0000-0000-0000-000000000000
      </siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/088ec4ed4144457bb36088e0b5c0bea8/NotesWebService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <EnumerateServers xmlns="http://tempuri.org/">
    </EnumerateServers>
  </s:Body>
</s:Envelope>
```

Response message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
```

```
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/EnumerateServersResponse
    </a:Action>
    <a:RelatesTo>
      urn:uuid:73bf4a5d-4c0b-4d61-b621-e255a45c5f4d
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <EnumerateServersResponse xmlns="http://tempuri.org/">
      <EnumerateServersResult

xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administratio
n"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:SERVERITEM>
          <b:displayUrl>http://servernotes1</b:displayUrl>
          <b:serverId>servernotes1</b:serverId>
        </b:SERVERITEM>
        <b:SERVERITEM>
          <b:displayUrl>http://servernotes2</b:displayUrl>
          <b:serverId>servernotes2</b:serverId>
        </b:SERVERITEM>
      </EnumerateServersResult>
    </EnumerateServersResponse>
  </s:Body>
</s:Envelope>
```

4.1.2 GetDatabase

To get the properties for a specific database, the protocol client sends the following message:

Request message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/GetDatabase
    </a:Action>
    <a:MessageID>
      urn:uuid:c7f4e90c-2c6f-4d43-983e-a52a8a2d35a7
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
```

```
        00000000-0000-0000-0000-000000000000
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/088ec4ed4144457bb36088e0b5c0bea8/NotesWebService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <GetDatabase xmlns="http://tempuri.org/">
      <databaseName>servernotes1\database.nsf</databaseName>
    </GetDatabase>
  </s:Body>
</s:Envelope>
```

Response message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/GetDatabaseResponse
    </a:Action>
    <a:RelatesTo>
      urn:uuid:c7f4e90c-2c6f-4d43-983e-a52a8a2d35a7
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <GetDatabaseResponse xmlns="http://tempuri.org/">
      <GetDatabaseResult

xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administratio
n"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:databaseId>servernotes1\database.nsf</b:databaseId>
        <b:displayUrl>http://servernotes1/database.nsf/</b:displayUrl>
        <b:lastModifiedTime>2009-12-28T15:12:16</b:lastModifiedTime>
        <b:securityDesc>
          <b:SD>sercurity_desc_value</b:SD>
          <b:isNTSD>true</b:isNTSD>
        </b:securityDesc>
      </GetDatabaseResult>
    </GetDatabaseResponse>
  </s:Body>
</s:Envelope>
```

4.2 Retrieving Items from the Database

To retrieve items from the database, the protocol client sends the following messages to the protocol server:

4.2.1 EnumerateItems

To enumerate the available items in a specific database, the protocol client sends the following message:

Request message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/EnumerateItems
    </a:Action>
    <a:MessageID>
      urn:uuid:6d826f02-57ea-464a-b579-cb4cb4b199d0
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        00000000-0000-0000-0000-000000000000
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/088ec4ed4144457bb36088e0b5c0bea8/NotesWebService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <EnumerateItems xmlns="http://tempuri.org/">
      <databasePath>servernotes1\database.nsf</databasePath>
      <lastSeenItem></lastSeenItem>
    </EnumerateItems>
  </s:Body>
</s:Envelope>
```

Response message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/EnumerateItemsResponse
    </a:Action>
    <a:RelatesTo>
```

```
      urn:uuid:6d826f02-57ea-464a-b579-cb4cb4b199d0
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <EnumerateItemsResponse xmlns="http://tempuri.org/">
      <EnumerateItemsResult

xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administratio
n"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:NOTESITEM>
          <b:attachmentId i:nil="true"></b:attachmentId>
          <b:displayUrl>
            http://servernotes1/database.nsf/$DEFAULTVIEW/1f8e15d909ded77188256f4e0083811b
          </b:displayUrl>
          <b:itemContent>
            <b:content i:nil="true"></b:content>
            <b:contentType i:nil="true"></b:contentType>
            <b:extension i:nil="true"></b:extension>
          </b:itemContent>
          <b:itemId>
            servernotes1\database.nsf\1f8e15d909ded77188256f4e0083811b
          </b:itemId>
          <b:itemProps i:nil="true"></b:itemProps>
          <b:lastModifiedTime>2004-12-05T17:52:57</b:lastModifiedTime>
          <b:securityDesc>
            <b:SD i:nil="true"></b:SD>
            <b:isNTSD>false</b:isNTSD>
          </b:securityDesc>
        </b:NOTESITEM>
        <b:NOTESITEM>
          <b:attachmentId i:nil="true"></b:attachmentId>
          <b:displayUrl>
            http://servernotes1/database.nsf/$DEFAULTVIEW/9a903eb367b0c32788256f4f00000fa7
          </b:displayUrl>
          <b:itemContent>
            <b:content i:nil="true"></b:content>
            <b:contentType i:nil="true"></b:contentType>
            <b:extension i:nil="true"></b:extension>
          </b:itemContent>
          <b:itemId>
            servernotes1\database.nsf\9a903eb367b0c32788256f4f00000fa7
          </b:itemId>
          <b:itemProps i:nil="true"></b:itemProps>
          <b:lastModifiedTime>2004-12-05T17:52:57</b:lastModifiedTime>
          <b:securityDesc>
            <b:SD i:nil="true"></b:SD>
            <b:isNTSD>false</b:isNTSD>
          </b:securityDesc>
        </b:NOTESITEM>
        <b:NOTESITEM>
          <b:attachmentId i:nil="true"></b:attachmentId>
          <b:displayUrl>
            http://servernotes1/database.nsf/$DEFAULTVIEW/2f774d849acbe245882570c1000634d4
          </b:displayUrl>
          <b:itemContent>
            <b:content i:nil="true"></b:content>
            <b:contentType i:nil="true"></b:contentType>
            <b:extension i:nil="true"></b:extension>
```

```
          </b:itemContent>
          <b:itemId>
            servernotes1\database.nsf\2f774d849acbe245882570c1000634d4
          </b:itemId>
          <b:itemProps i:nil="true"></b:itemProps>
          <b:lastModifiedTime>2005-11-21T17:09:41</b:lastModifiedTime>
          <b:securityDesc>
            <b:SD i:nil="true"></b:SD>
            <b:isNTSD>false</b:isNTSD>
          </b:securityDesc>
        </b:NOTESITEM>
      </EnumerateItemsResult>
    </EnumerateItemsResponse>
  </s:Body>
</s:Envelope>
```

4.2.2 FetchItem

To retrieve the properties for a specific item, the protocol client sends the following message:

Request message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/FetchItem
    </a:Action>
    <a:MessageID>
      urn:uuid:675c026d-f85f-425c-bf31-dc74c22a6fd8
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        00000000-0000-0000-0000-000000000000
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/088ec4ed4144457bb36088e0b5c0bea8/NotesWebService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <FetchItem xmlns="http://tempuri.org/">
      <itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</itemId>
    </FetchItem>
```

```
  </s:Body>
</s:Envelope>
```

Response message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/FetchItemResponse
    </a:Action>
    <a:RelatesTo>
      urn:uuid:675c026d-f85f-425c-bf31-dc74c22a6fd8
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <FetchItemResponse xmlns="http://tempuri.org/">
      <FetchItemResult

xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administratio
n"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:attachmentId>
          <b:NOTESATTACHMENTID>
            <b:attachmentName>EXT07956</b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
          <b:NOTESATTACHMENTID>
            <b:attachmentName i:nil="true"></b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
          <b:NOTESATTACHMENTID>
            <b:attachmentName i:nil="true"></b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
          <b:NOTESATTACHMENTID>
            <b:attachmentName i:nil="true"></b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
          <b:NOTESATTACHMENTID>
            <b:attachmentName i:nil="true"></b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
          <b:NOTESATTACHMENTID>
            <b:attachmentName i:nil="true"></b:attachmentName>
            <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
          </b:NOTESATTACHMENTID>
        </b:attachmentId>

<b:displayUrl>http://servernotes1/database.nsf/$DEFAULTVIEW/2f774d849acbe245882570c1000634d4<
/b:displayUrl>
        <b:itemContent>
          <b:content>IA==</b:content>
          <b:contentType i:nil="true"></b:contentType>
          <b:extension>txt</b:extension>
```

```
        </b:itemContent>
        <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
        <b:itemProps>
          <b:PROPERTY>
            <b:Name>Author</b:Name>
            <b:Value i:type="c:string"
xmlns:c="http://www.w3.org/2001/XMLSchema">Author</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>Comments</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>Company</b:Name>
            <b:Value i:type="c:string"
xmlns:c="http://www.w3.org/2001/XMLSchema">Microsoft</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>Keywords</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>Subject</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>Title</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>DateCreated</b:Name>
            <b:Value i:type="c:dateTime" xmlns:c="http://www.w3.org/2001/XMLSchema">2005-11-
21T17:08:00</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>LastSavedBy</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>LastSavedDate</b:Name>
            <b:Value i:type="c:dateTime" xmlns:c="http://www.w3.org/2001/XMLSchema">2005-11-
21T17:08:00</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>LinksUpToDate</b:Name>
            <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">0</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>NameOfApplication</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"> </b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>NumberOfCharacters</b:Name>
            <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">12</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>NumberOfCharactersWithSpaces</b:Name>
            <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">13</b:Value>
          </b:PROPERTY>
```

```
            <b:PROPERTY>
              <b:Name>NumberOfLines</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">1</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>NumberOfPages</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">1</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>NumberOfParagraphs</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">1</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>NumberOfRevisions</b:Name>
              <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema">1</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>NumberOfWords</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">2</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>Template</b:Name>
              <b:Value i:type="c:string"
  xmlns:c="http://www.w3.org/2001/XMLSchema">Normal.dot</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>TotalEditingTime</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">0</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>ScaleOrCrop</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">0</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>Security</b:Name>
              <b:Value i:type="c:long" xmlns:c="http://www.w3.org/2001/XMLSchema">0</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>DocumentClass</b:Name>
              <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>FORM</b:Name>
              <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>embedTitle</b:Name>
              <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>$UpdatedBy</b:Name>
              <b:Value i:type="c:string"
  xmlns:c="http://www.w3.org/2001/XMLSchema">CN=username/O=domain</b:Value>
            </b:PROPERTY>
            <b:PROPERTY>
              <b:Name>$Revisions</b:Name>
              <b:Value i:type="c:dateTime" xmlns:c="http://www.w3.org/2001/XMLSchema">2005-11-
  21T17:09:26</b:Value>
            </b:PROPERTY>
```

```
          <b:PROPERTY>
            <b:Name>Author</b:Name>
            <b:Value i:type="c:string" xmlns:c="http://www.w3.org/2001/XMLSchema"></b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>lastaccessed</b:Name>
            <b:Value i:type="c:dateTime" xmlns:c="http://www.w3.org/2001/XMLSchema">2005-11-
21T17:09:41</b:Value>
          </b:PROPERTY>
          <b:PROPERTY>
            <b:Name>creationdate</b:Name>
            <b:Value i:type="c:dateTime" xmlns:c="http://www.w3.org/2001/XMLSchema">2005-11-
21T17:07:47</b:Value>
          </b:PROPERTY>
        </b:itemProps>
        <b:lastModifiedTime>2005-11-21T17:09:41</b:lastModifiedTime>
        <b:securityDesc>
          <b:SD>security_desc_value</b:SD>
          <b:isNTSD>true</b:isNTSD>
        </b:securityDesc>
      </FetchItemResult>
    </FetchItemResponse>
  </s:Body>
</s:Envelope>
```

4.2.3 FetchAttachment

To retrieve a specific attachment, the protocol client sends the following message:

Request message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/FetchAttachment
    </a:Action>
    <a:MessageID>
      urn:uuid:8f720c2c-b4c4-4925-966d-33e74a577ede
    </a:MessageID>
    <a:ReplyTo>
      <a:Address>
        http://www.w3.org/2005/08/addressing/anonymous
      </a:Address>
    </a:ReplyTo>
    <ServiceContext
      xmlns="http://schemas.microsoft.com/sharepoint/servicecontext"
      xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <correlationId>
        00000000-0000-0000-0000-000000000000
      </correlationId>
      <language>en-US</language>
      <region>en-US</region>
      <siteSubscriptionId i:nil="true"></siteSubscriptionId>
```

```
    </ServiceContext>
    <a:To s:mustUnderstand="1" u:Id="_1">
      http://example.com:32843/088ec4ed4144457bb36088e0b5c0bea8/NotesWebService.svc
    </a:To>
  </s:Header>
  <s:Body>
    <FetchAttachment xmlns="http://tempuri.org/">
      <itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</itemId>
      <attachmentName>EXT07956</attachmentName>
    </FetchAttachment>
  </s:Body>
</s:Envelope>
```

Response message:

```
<s:Envelope
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:u="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
  <s:Header>
    <a:Action s:mustUnderstand="1">
      http://tempuri.org/INotesWebServiceApplication/FetchAttachmentResponse
    </a:Action>
    <a:RelatesTo>
      urn:uuid:8f720c2c-b4c4-4925-966d-33e74a577ede
    </a:RelatesTo>
  </s:Header>
  <s:Body>
    <FetchAttachmentResponse xmlns="http://tempuri.org/">
      <FetchAttachmentResult

xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administratio
n"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:attachmentContent>
          <b:content></b:content>
          <b:contentType i:nil="true"></b:contentType>
          <b:extension>0\Data\NotesAttachment\2f774d849acbe245882570c1000634d4-
EXT07956</b:extension>
        </b:attachmentContent>
        <b:attachmentId>
          <b:attachmentName>EXT07956</b:attachmentName>
          <b:itemId>servernotes1\database.nsf\2f774d849acbe245882570c1000634d4</b:itemId>
        </b:attachmentId>
      </FetchAttachmentResult>
    </FetchAttachmentResponse>
  </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:xs="http://www.w3.org/2001/XMLSchema"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" xmlns:tns3="http://tempuri.org/"
targetNamespace="http://tempuri.org/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <xs:schema xmlns:tns4="http://tempuri.org/Imports"
targetNamespace="http://tempuri.org/Imports">
      <xs:import namespace="http://tempuri.org/"/>
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"/>
      <xs:import
namespace="http://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission"/>
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
      <xs:import namespace="http://schemas.microsoft.com/Message"/>
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
    </xs:schema>
  </wsdl:types>
  <wsdl:message name="INotesWebServiceApplication_EnumerateServers_InputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateServers"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_EnumerateServers_OutputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateServersResponse"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_GetServer_InputMessage">
    <wsdl:part name="parameters" element="tns3:GetServer"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_GetServer_OutputMessage">
    <wsdl:part name="parameters" element="tns3:GetServerResponse"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_EnumerateDatabases_InputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateDatabases"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_EnumerateDatabases_OutputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateDatabasesResponse"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_GetDatabase_InputMessage">
    <wsdl:part name="parameters" element="tns3:GetDatabase"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_GetDatabase_OutputMessage">
    <wsdl:part name="parameters" element="tns3:GetDatabaseResponse"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_EnumerateItems_InputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateItems"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_EnumerateItems_OutputMessage">
    <wsdl:part name="parameters" element="tns3:EnumerateItemsResponse"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_FetchItem_InputMessage">
    <wsdl:part name="parameters" element="tns3:FetchItem"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_FetchItem_OutputMessage">
    <wsdl:part name="parameters" element="tns3:FetchItemResponse"/>
  </wsdl:message>
```

```
  <wsdl:message name="INotesWebServiceApplication_FetchAttachment_InputMessage">
    <wsdl:part name="parameters" element="tns3:FetchAttachment"/>
  </wsdl:message>
  <wsdl:message name="INotesWebServiceApplication_FetchAttachment_OutputMessage">
    <wsdl:part name="parameters" element="tns3:FetchAttachmentResponse"/>
  </wsdl:message>
  <wsdl:portType name="INotesWebServiceApplication">
    <wsdl:operation name="EnumerateServers">
      <wsdl:input
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateServers"
message="tns3:INotesWebServiceApplication_EnumerateServers_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateServersResponse"
message="tns3:INotesWebServiceApplication_EnumerateServers_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetServer">
      <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetServer"
message="tns3:INotesWebServiceApplication_GetServer_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetServerResponse"
message="tns3:INotesWebServiceApplication_GetServer_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="EnumerateDatabases">
      <wsdl:input
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateDatabases"
message="tns3:INotesWebServiceApplication_EnumerateDatabases_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateDatabasesResponse"
message="tns3:INotesWebServiceApplication_EnumerateDatabases_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetDatabase">
      <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetDatabase"
message="tns3:INotesWebServiceApplication_GetDatabase_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/GetDatabaseResponse"
message="tns3:INotesWebServiceApplication_GetDatabase_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="EnumerateItems">
      <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateItems"
message="tns3:INotesWebServiceApplication_EnumerateItems_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/EnumerateItemsResponse"
message="tns3:INotesWebServiceApplication_EnumerateItems_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="FetchItem">
      <wsdl:input wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchItem"
message="tns3:INotesWebServiceApplication_FetchItem_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchItemResponse"
message="tns3:INotesWebServiceApplication_FetchItem_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="FetchAttachment">
      <wsdl:input
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchAttachment"
message="tns3:INotesWebServiceApplication_FetchAttachment_InputMessage"/>
      <wsdl:output
wsaw:Action="http://tempuri.org/INotesWebServiceApplication/FetchAttachmentResponse"
message="tns3:INotesWebServiceApplication_FetchAttachment_OutputMessage"/>
    </wsdl:operation>
  </wsdl:portType>
```

```
  <wsdl:binding name="DefaultBinding_INotesWebServiceApplication"
type="tns3:INotesWebServiceApplication">
    <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
    <wsdl:operation name="EnumerateServers">
      <soap:operation
soapAction="http://tempuri.org/INotesWebServiceApplication/EnumerateServers"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="GetServer">
      <soap:operation soapAction="http://tempuri.org/INotesWebServiceApplication/GetServer"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="EnumerateDatabases">
      <soap:operation
soapAction="http://tempuri.org/INotesWebServiceApplication/EnumerateDatabases"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="GetDatabase">
      <soap:operation soapAction="http://tempuri.org/INotesWebServiceApplication/GetDatabase"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="EnumerateItems">
      <soap:operation
soapAction="http://tempuri.org/INotesWebServiceApplication/EnumerateItems" style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="FetchItem">
      <soap:operation soapAction="http://tempuri.org/INotesWebServiceApplication/FetchItem"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
```

```
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="FetchAttachment">
      <soap:operation
soapAction="http://tempuri.org/INotesWebServiceApplication/FetchAttachment"
style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

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

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://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission	tns2	7.4
http://schemas.microsoft.com/Message	q4	7.5
http://tempuri.org/	tns3	7.6

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.Administrat
ion" elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Admin
istration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"/>
  <xs:complexType name="ArrayOfSERVERITEM">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="SERVERITEM"
type="tns:SERVERITEM"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfSERVERITEM" nillable="true" type="tns:ArrayOfSERVERITEM"/>
  <xs:complexType name="SERVERITEM">
    <xs:sequence>
      <xs:element minOccurs="0" name="displayUrl" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="serverId" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SERVERITEM" nillable="true" type="tns:SERVERITEM"/>
  <xs:complexType name="ArrayOfDATABASEITEMID">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="DATABASEITEMID"
type="tns:DATABASEITEMID"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfDATABASEITEMID" nillable="true" type="tns:ArrayOfDATABASEITEMID"/>
  <xs:complexType name="DATABASEITEMID">
    <xs:sequence>
      <xs:element minOccurs="0" name="databaseId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="lastModifiedTime" type="xs:dateTime"/>
    </xs:sequence>
  </xs:complexType>
```

```
  <xs:element name="DATABASEITEMID" nillable="true" type="tns:DATABASEITEMID"/>
  <xs:complexType name="DATABASEITEM">
    <xs:sequence>
      <xs:element minOccurs="0" name="databaseId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="displayUrl" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="lastModifiedTime" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="securityDesc" type="tns:SecurityDescriptor"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="DATABASEITEM" nillable="true" type="tns:DATABASEITEM"/>
  <xs:complexType name="SecurityDescriptor">
    <xs:sequence>
      <xs:element minOccurs="0" name="SD" nillable="true" type="xs:base64Binary"/>
      <xs:element minOccurs="0" name="isNTSD" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SecurityDescriptor" nillable="true" type="tns:SecurityDescriptor"/>
  <xs:complexType name="ArrayOfNOTESITEM">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="NOTESITEM" type="tns:NOTESITEM"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfNOTESITEM" nillable="true" type="tns:ArrayOfNOTESITEM"/>
  <xs:complexType name="NOTESITEM">
    <xs:sequence>
      <xs:element minOccurs="0" name="attachmentId" nillable="true"
type="tns:ArrayOfNOTESATTACHMENTID"/>
      <xs:element minOccurs="0" name="displayUrl" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="itemContent" type="tns:INDEXABLECONTENT"/>
      <xs:element minOccurs="0" name="itemId" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="itemProps" nillable="true" type="tns:ArrayOfPROPERTY"/>
      <xs:element minOccurs="0" name="lastModifiedTime" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="securityDesc" type="tns:SecurityDescriptor"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="NOTESITEM" nillable="true" type="tns:NOTESITEM"/>
  <xs:complexType name="ArrayOfNOTESATTACHMENTID">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="NOTESATTACHMENTID"
type="tns:NOTESATTACHMENTID"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfNOTESATTACHMENTID" nillable="true"
type="tns:ArrayOfNOTESATTACHMENTID"/>
  <xs:complexType name="NOTESATTACHMENTID">
    <xs:sequence>
      <xs:element minOccurs="0" name="attachmentName" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="itemId" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="NOTESATTACHMENTID" nillable="true" type="tns:NOTESATTACHMENTID"/>
  <xs:complexType name="INDEXABLECONTENT">
    <xs:sequence>
      <xs:element minOccurs="0" name="content" nillable="true" type="xs:base64Binary"/>
      <xs:element minOccurs="0" name="contentType" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="extension" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="INDEXABLECONTENT" nillable="true" type="tns:INDEXABLECONTENT"/>
```

```
  <xs:complexType name="ArrayOfPROPERTY">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="PROPERTY" type="tns:PROPERTY"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfPROPERTY" nillable="true" type="tns:ArrayOfPROPERTY"/>
  <xs:complexType name="PROPERTY">
    <xs:sequence>
      <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Value" nillable="true" type="xs:anyType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="PROPERTY" nillable="true" type="tns:PROPERTY"/>
  <xs:complexType name="NOTESATTACHMENT">
    <xs:sequence>
      <xs:element minOccurs="0" name="attachmentContent" type="tns:INDEXABLECONTENT"/>
      <xs:element minOccurs="0" name="attachmentId" type="tns:NOTESATTACHMENTID"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="NOTESATTACHMENT" nillable="true" type="tns:NOTESATTACHMENT"/>
</xs:schema>
```

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

```
<?xml version="1.0"?>
<xs:schema xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
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="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="tns1:ArrayOfKeyValueOfstringanyType"/>
  <xs:complexType name="ArrayOfstring">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfstring" nillable="true" type="tns1:ArrayOfstring"/>
  <xs:complexType name="ArrayOfdateTime">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="dateTime" type="xs:dateTime"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfdateTime" nillable="true" type="tns1:ArrayOfdateTime"/>
```

```
    <xs:complexType name="ArrayOflong">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="long" type="xs:long"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOflong" nillable="true" type="tns1:ArrayOflong"/>
    <xs:complexType name="ArrayOffloat">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="float" type="xs:float"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOffloat" nillable="true" type="tns1:ArrayOffloat"/>
    <xs:complexType name="ArrayOfint">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="int" type="xs:int"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfint" nillable="true" type="tns1:ArrayOfint"/>
    <xs:complexType name="ArrayOfdouble">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="double" type="xs:double"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfdouble" nillable="true" type="tns1:ArrayOfdouble"/>
    <xs:complexType name="ArrayOfbase64Binary">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="base64Binary" nillable="true"
  type="xs:base64Binary"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfbase64Binary" nillable="true" type="tns1:ArrayOfbase64Binary"/>
    <xs:complexType name="ArrayOfdecimal">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="decimal" type="xs:decimal"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfdecimal" nillable="true" type="tns1:ArrayOfdecimal"/>
    <xs:complexType name="ArrayOfKeyValueOfstringstring">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValueOfstringstring">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="Key" nillable="true" type="xs:string"/>
              <xs:element name="Value" nillable="true" type="xs:string"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfKeyValueOfstringstring" nillable="true"
  type="tns1:ArrayOfKeyValueOfstringstring"/>
    <xs:complexType name="ArrayOfboolean">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="boolean" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfboolean" nillable="true" type="tns1:ArrayOfboolean"/>
    <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="tns1:ArrayOfguid"/>
</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://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission Schema

```
<?xml version="1.0"?>
<xs:schema
xmlns:tns2="http://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission"
xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/ceres/contenttransformation/2009/11/submission"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"/>
  <xs:import namespace="http://schemas.microsoft.com/Message"/>
  <xs:complexType name="FeedingDocument">
    <xs:sequence>
      <xs:element minOccurs="0" name="OperationId" type="xs:int"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Values" nillable="true" type="tns1:ArrayOfKeyValueOfstringanyType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FeedingDocument" nillable="true" type="tns2:FeedingDocument"/>
  <xs:complexType name="ArrayOfFeedingDocument">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="FeedingDocument" nillable="true"
type="tns2:FeedingDocument"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfFeedingDocument" nillable="true"
type="tns2:ArrayOfFeedingDocument"/>
  <xs:element name="CreateSession">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="settings" nillable="true"
type="tns2:FeedingSessionSettings"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="FeedingSessionSettings">
    <xs:sequence>
      <xs:element minOccurs="0" name="CallbackLevel" type="tns2:CallbackLevel"/>
      <xs:element minOccurs="0" name="Causality" type="tns2:Causality"/>
      <xs:element minOccurs="0" name="DebugFlow" type="xs:boolean"/>
      <xs:element minOccurs="0" name="DocumentIdField" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Flow" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="FlowInput" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="MaxLatency" type="ser:duration"/>
      <xs:element minOccurs="0" name="NodeSet" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="PerformancePolicy" type="tns2:PerformancePolicy"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Properties" nillable="true" type="tns1:ArrayOfKeyValueOfstringstring"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FeedingSessionSettings" nillable="true"
type="tns2:FeedingSessionSettings"/>
  <xs:simpleType name="CallbackLevel">
    <xs:restriction base="xs:string">
      <xs:enumeration value="None"/>
      <xs:enumeration value="Received"/>
      <xs:enumeration value="Full"/>
```

```
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="CallbackLevel" nillable="true" type="tns2:CallbackLevel"/>
  <xs:simpleType name="Causality">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Session"/>
      <xs:enumeration value="Document"/>
      <xs:enumeration value="Unconstrained"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="Causality" nillable="true" type="tns2:Causality"/>
  <xs:simpleType name="PerformancePolicy">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Balanced"/>
      <xs:enumeration value="HighThroughput"/>
      <xs:enumeration value="LowLatency"/>
      <xs:enumeration value="RealTime"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="PerformancePolicy" nillable="true" type="tns2:PerformancePolicy"/>
  <xs:element name="CreateSessionResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="CreateSessionResult" nillable="true"
type="tns2:FeedingSession"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="FeedingSession">
    <xs:sequence>
      <xs:element minOccurs="0" name="Callbacks" nillable="true"
type="tns2:ArrayOfCallbackType"/>
      <xs:element minOccurs="0" name="SessionId" type="ser:guid"/>
      <xs:element minOccurs="0" name="SupportedOperations" nillable="true"
type="tns2:ArrayOfOperationInfo"/>
      <xs:element minOccurs="0" name="SupportsAtomicGrouping" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FeedingSession" nillable="true" type="tns2:FeedingSession"/>
  <xs:complexType name="ArrayOfCallbackType">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="CallbackType" nillable="true"
type="tns2:CallbackType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfCallbackType" nillable="true" type="tns2:ArrayOfCallbackType"/>
  <xs:complexType name="CallbackType">
    <xs:sequence>
      <xs:element minOccurs="0" name="Id" type="xs:int"/>
      <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="CallbackType" nillable="true" type="tns2:CallbackType"/>
  <xs:complexType name="ArrayOfOperationInfo">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="OperationInfo" nillable="true"
type="tns2:OperationInfo"/>
    </xs:sequence>
  </xs:complexType>
```

```
  <xs:element name="ArrayOfOperationInfo" nillable="true" type="tns2:ArrayOfOperationInfo"/>
  <xs:complexType name="OperationInfo">
    <xs:sequence>
      <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="OperationId" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="OperationInfo" nillable="true" type="tns2:OperationInfo"/>
  <xs:element name="RefreshSession">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="sessionId" type="ser:guid"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RefreshSessionResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RefreshSessionResult" nillable="true"
type="tns2:FeedingSession"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="CloseSession">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="sessionId" type="ser:guid"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="SubmitContent">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="sessionId" type="ser:guid"/>
        <xs:element minOccurs="0" name="feedingGroups" nillable="true"
type="tns2:ArrayOfFeedingGroup"/>
        <xs:element minOccurs="0" name="completeFeedingGroup" type="xs:boolean"/>
        <xs:element minOccurs="0" name="piggybackCallbacks" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="ArrayOfFeedingGroup">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="FeedingGroup" nillable="true"
type="tns2:FeedingGroup"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfFeedingGroup" nillable="true" type="tns2:ArrayOfFeedingGroup"/>
  <xs:complexType name="FeedingGroup">
    <xs:sequence>
      <xs:element minOccurs="0" name="Documents" nillable="true"
type="tns2:ArrayOfFeedingDocument"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FeedingGroup" nillable="true" type="tns2:FeedingGroup"/>
  <xs:element name="SubmitContentResponse">
    <xs:complexType>
      <xs:sequence>
```

```
        <xs:element minOccurs="0" name="SubmitContentResult" nillable="true"
type="tns2:SubmitResult"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="SubmitResult">
    <xs:sequence>
      <xs:element minOccurs="0" name="Callbacks" nillable="true"
type="tns2:ArrayOfCallback"/>
      <xs:element minOccurs="0" name="FirstFeedingGroupId" type="xs:long"/>
      <xs:element minOccurs="0" name="LastFeedingGroupId" type="xs:long"/>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="Results" nillable="true" type="tns1:ArrayOfboolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SubmitResult" nillable="true" type="tns2:SubmitResult"/>
  <xs:complexType name="ArrayOfCallback">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="Callback" nillable="true"
type="tns2:Callback"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfCallback" nillable="true" type="tns2:ArrayOfCallback"/>
  <xs:complexType name="Callback">
    <xs:sequence>
      <xs:element minOccurs="0" name="CallbackTypeId" type="xs:int"/>
      <xs:element minOccurs="0" name="CorrelationId" nillable="true" type="ser:guid"/>
      <xs:element minOccurs="0" name="ErrorId" type="xs:int"/>
      <xs:element minOccurs="0" name="FeedingGroupId" type="xs:long"/>
      <xs:element minOccurs="0" name="HostName" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Messages" nillable="true" type="tns2:ArrayOfMessage"/>
      <xs:element minOccurs="0" name="NodeName" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="PartitionId" nillable="true" type="ser:guid"/>
      <xs:element minOccurs="0" name="SessionId" type="ser:guid"/>
      <xs:element minOccurs="0" name="TransienceLevel" type="tns2:TransienceLevel"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="Callback" nillable="true" type="tns2:Callback"/>
  <xs:complexType name="ArrayOfMessage">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="Message" nillable="true"
type="tns2:Message"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfMessage" nillable="true" type="tns2:ArrayOfMessage"/>
  <xs:complexType name="Message">
    <xs:sequence>
      <xs:element minOccurs="0" name="CustomInfo" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="MessageText" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="MessageType" type="tns2:MessageType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="Message" nillable="true" type="tns2:Message"/>
  <xs:simpleType name="MessageType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Info"/>
      <xs:enumeration value="Warning"/>
      <xs:enumeration value="Error"/>
    </xs:restriction>
```

```
  </xs:simpleType>
  <xs:element name="MessageType" nillable="true" type="tns2:MessageType"/>
  <xs:simpleType name="TransienceLevel">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Permanent"/>
      <xs:enumeration value="Retryable"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="TransienceLevel" nillable="true" type="tns2:TransienceLevel"/>
  <xs:element name="SubmitStreamMessage">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:q4="http://schemas.microsoft.com/Message" name="Stream"
type="q4:StreamBody"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="SubmitStreamInfo">
    <xs:sequence>
      <xs:element name="SessionId" type="ser:guid"/>
      <xs:element name="Document" nillable="true" type="tns2:FeedingDocument"/>
      <xs:element name="StartNewFeedingGroup" type="xs:boolean"/>
      <xs:element name="CompleteFeedingGroup" type="xs:boolean"/>
      <xs:element name="StreamFieldName" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SubmitStreamInfo" nillable="true" type="tns2:SubmitStreamInfo"/>
  <xs:element name="ContentInfo" nillable="true" type="tns2:SubmitStreamInfo"/>
  <xs:element name="PollCallbacks">
    <xs:complexType>
      <xs:sequence>
        <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="sessionsToPoll" nillable="true" type="tns1:ArrayOfguid"/>
        <xs:element minOccurs="0" name="timeout" type="ser:duration"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="PollCallbacksResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="PollCallbacksResult" nillable="true"
type="tns2:ArrayOfCallback"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="WaitForCallback">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="callbackRequest" nillable="true"
type="tns2:CallbackRequest"/>
        <xs:element minOccurs="0" name="timeout" type="ser:duration"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="CallbackRequest">
    <xs:sequence>
      <xs:element minOccurs="0" name="FeedingGroupId" type="xs:long"/>
      <xs:element minOccurs="0" name="SessionId" type="ser:guid"/>
    </xs:sequence>
```

```
  </xs:complexType>
  <xs:element name="CallbackRequest" nillable="true" type="tns2:CallbackRequest"/>
  <xs:element name="WaitForCallbackResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="WaitForCallbackResult" nillable="true"
type="tns2:Callback"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RequestStatus">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="callbackRequests" nillable="true"
type="tns2:ArrayOfCallbackRequest"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="ArrayOfCallbackRequest">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="CallbackRequest" nillable="true"
type="tns2:CallbackRequest"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfCallbackRequest" nillable="true"
type="tns2:ArrayOfCallbackRequest"/>
  <xs:element name="RequestStatusResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="RequestStatusResult" nillable="true"
type="tns2:ArrayOfCallback"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetMetadata">
    <xs:complexType>
      <xs:sequence/>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetMetadataResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="GetMetadataResult" nillable="true"
type="tns2:ContentSubmissionMetadata"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="ContentSubmissionMetadata">
    <xs:sequence>
      <xs:element minOccurs="0" name="SupportsStreaming" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ContentSubmissionMetadata" nillable="true"
type="tns2:ContentSubmissionMetadata"/>
  </xs:schema>
```

7.5 http://schemas.microsoft.com/Message Schema

```
<?xml version="1.0"?>
<xs:schema elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/Message"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="StreamBody">
    <xs:restriction base="xs:base64Binary"/>
  </xs:simpleType>
</xs:schema>
```

7.6 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:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion"/>
  <xs:element name="EnumerateServers">
    <xs:complexType>
      <xs:sequence/>
    </xs:complexType>
  </xs:element>
  <xs:element name="EnumerateServersResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateServersResult" nillable="true"
type="tns:ArrayOfSERVERITEM"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetServer">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="serverName" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetServerResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="GetServerResult" type="tns:SERVERITEM"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="EnumerateDatabases">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="serverName" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="lastSeenDatabase" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="EnumerateDatabasesResponse">
```

```
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateDatabasesResult" nillable="true"
type="tns:ArrayOfDATABASEITEMID"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetDatabase">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="databaseName" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="GetDatabaseResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="GetDatabaseResult" type="tns:DATABASEITEM"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="EnumerateItems">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="databasePath" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="lastSeenItem" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="EnumerateItemsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="EnumerateItemsResult" nillable="true" type="tns:ArrayOfNOTESITEM"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="FetchItem">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="itemId" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="FetchItemResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="FetchItemResult" type="tns:NOTESITEM"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="FetchAttachment">
    <xs:complexType>
```

```
      <xs:sequence>
        <xs:element minOccurs="0" name="itemId" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="attachmentName" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="FetchAttachmentResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.Search.Administrat
ion" minOccurs="0" name="FetchAttachmentResult" type="tns:NOTESATTACHMENT"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

8 Appendix C: Product Behavior

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

- Microsoft® FAST™ Search Server 2010
- Microsoft® SharePoint® Server 2010
- Microsoft® SharePoint® Server 2013

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

This section identifies changes that were made to the [MS-NOTESWS] protocol document between the September 2012 and October 2012 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

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

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- The removal of a document from the documentation set.
- Changes made for template compliance.

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

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated.**

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1.3 Overview	Changed the name from 'Protocol Overview (Synopsis)' to 'Overview'.	N	Content updated for template compliance.

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