

[MS-ADS]: Access Services Data Server Protocol Specification

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft's Open Specification Promise (available here: <http://www.microsoft.com/interop/osp>) or the Community Promise (available here: <http://www.microsoft.com/interop/cp/default.msp>). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications do not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments you are free to take advantage of them. Certain Open Specifications are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

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	Major	Updated and revised the technical content
03/31/2010	1.01	Editorial	Revised and edited the technical content
04/30/2010	1.02	Editorial	Revised and edited the technical content
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.
11/15/2010	1.05	No change	No changes to the meaning, language, or formatting of the technical content.
12/17/2010	1.05	No change	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1 Introduction	8
1.1 Glossary	8
1.2 References	9
1.2.1 Normative References	9
1.2.2 Informative References	10
1.3 Protocol Overview (Synopsis)	10
1.3.1 Session-based Protocol	10
1.3.2 Protocol Operations	10
1.4 Relationship to Other Protocols	11
1.5 Prerequisites/Preconditions	11
1.6 Applicability Statement	11
1.7 Versioning and Capability Negotiation	12
1.8 Vendor-Extensible Fields	12
1.9 Standards Assignments	12
2 Messages	13
2.1 Transport	13
2.2 Common Message Syntax	13
2.2.1 Namespaces	13
2.2.2 Messages	14
2.2.3 Elements	14
2.2.4 Complex Types	14
2.2.4.1 AccessServerMessage	16
2.2.4.2 ArrayOfAnyType	17
2.2.4.3 ArrayOfExcelServerMessage	17
2.2.4.4 ArrayOfKeyValuePair	17
2.2.4.5 ArrayOfPresenceUserInfo	18
2.2.4.6 ArrayOfString	18
2.2.4.7 CollaborationParameter	18
2.2.4.8 CollaborationResult	19
2.2.4.9 CollaborationState	19
2.2.4.10 CommandParameter	19
2.2.4.11 CommandResult	20
2.2.4.12 CommandResultExtendedInfo	21
2.2.4.13 ExcelServerMessage	22
2.2.4.14 KeyValuePair	23
2.2.4.15 PeriodicRefreshInfo	23
2.2.4.16 PresenceUserId	23
2.2.4.17 PresenceUserInfo	24
2.2.4.18 RequestLimits	24
2.2.4.19 ServerHealthInformation	24
2.2.4.20 ServerHealthInformation	25
2.2.4.21 VisibleSheetRange	25
2.2.4.22 WorkOnBehalf	26
2.2.5 Simple Types	27
2.2.5.1 AccessServerMessageButtons	28
2.2.5.2 AccessServerMessageId	28
2.2.5.3 AccessServerMessageSeverity	40
2.2.5.4 AccessServerMessageType	40
2.2.5.5 CommandParameterFlags	41

2.2.5.6	ExcelServerMessageAppearance	41
2.2.5.7	ExcelServerMessageId.....	42
2.2.5.8	ExcelServerMessageSeverity	53
2.2.5.9	ExcelServerMessageType.....	54
2.2.5.10	guid	54
2.2.5.11	ServerStateFlags	55
2.2.5.12	ServerStateFlags	55
2.2.5.13	SessionIdentifier	56
2.2.6	Attributes.....	56
2.2.7	Groups.....	56
2.2.8	Attribute Groups	57
2.2.9	Faults	57
2.2.9.1	Common Fault Identifiers	57
2.2.9.2	Query Fault Identifiers	57
3	Protocol Details.....	59
3.1	Server Details	59
3.1.1	Abstract Data Model	59
3.1.2	Timers	60
3.1.2.1	Session Timeout	60
3.1.3	Initialization	61
3.1.4	Message Processing Events and Sequencing Rules.....	61
3.1.4.1	CloseSession.....	61
3.1.4.1.1	Messages	62
3.1.4.1.1.1	AccessServiceSoap_CloseSession_InputMessage	62
3.1.4.1.1.2	AccessServiceSoap_CloseSession_OutputMessage	62
3.1.4.1.2	Elements.....	62
3.1.4.1.2.1	CloseSession.....	62
3.1.4.1.2.2	CloseSessionResponse	63
3.1.4.1.3	Complex Types	63
3.1.4.1.4	Simple Types.....	63
3.1.4.1.5	Attributes.....	63
3.1.4.1.6	Groups.....	63
3.1.4.1.7	Attribute Groups	63
3.1.4.2	DeleteData	63
3.1.4.2.1	Messages	64
3.1.4.2.1.1	AccessServiceSoap_DeleteData_InputMessage.....	64
3.1.4.2.1.2	AccessServiceSoap_DeleteData_OutputMessage.....	65
3.1.4.2.2	Elements.....	65
3.1.4.2.2.1	DeleteData	65
3.1.4.2.2.2	DeleteDataResponse	66
3.1.4.2.3	Complex Types	66
3.1.4.2.4	Simple Types.....	66
3.1.4.2.5	Attributes.....	66
3.1.4.2.6	Groups.....	66
3.1.4.2.7	Attribute Groups	66
3.1.4.3	FixupRow.....	66
3.1.4.3.1	Messages	67
3.1.4.3.1.1	AccessServiceSoap_FixupRow_InputMessage	67
3.1.4.3.1.2	AccessServiceSoap_FixupRow_OutputMessage.....	67
3.1.4.3.2	Elements.....	67
3.1.4.3.2.1	FixupRow	67
3.1.4.3.2.2	FixupRowResponse	68

3.1.4.3.3	Complex Types	69
3.1.4.3.4	Simple Types.....	69
3.1.4.3.5	Attributes.....	69
3.1.4.3.6	Groups.....	69
3.1.4.3.7	Attribute Groups	69
3.1.4.4	GetData	69
3.1.4.4.1	Messages	70
3.1.4.4.1.1	AccessServiceSoap_GetData_InputMessage.....	70
3.1.4.4.1.2	AccessServiceSoap_GetData_OutputMessage.....	71
3.1.4.4.2	Elements.....	71
3.1.4.4.2.1	GetData	71
3.1.4.4.2.2	GetDataResponse	72
3.1.4.4.3	Complex Types	72
3.1.4.4.4	Simple Types.....	73
3.1.4.4.4.1	CacheCommands.....	73
3.1.4.4.5	Attributes.....	73
3.1.4.4.6	Groups.....	73
3.1.4.4.7	Attribute Groups	73
3.1.4.5	GetDistinctValues	74
3.1.4.5.1	Messages	74
3.1.4.5.1.1	AccessServiceSoap_GetDistinctValues_InputMessage.....	74
3.1.4.5.1.2	AccessServiceSoap_GetDistinctValues_OutputMessage.....	74
3.1.4.5.2	Elements.....	74
3.1.4.5.2.1	GetDistinctValues	75
3.1.4.5.2.2	GetDistinctValuesResponse	75
3.1.4.5.3	Complex Types	75
3.1.4.5.4	Simple Types.....	76
3.1.4.5.5	Attributes.....	76
3.1.4.5.6	Groups.....	76
3.1.4.5.7	Attribute Groups	76
3.1.4.6	GetHealthScore	76
3.1.4.6.1	Messages	76
3.1.4.6.1.1	AccessServiceSoap_GetHealthScore_InputMessage	76
3.1.4.6.1.2	AccessServiceSoap_GetHealthScore_OutputMessage	77
3.1.4.6.2	Elements.....	77
3.1.4.6.2.1	GetHealthScore	77
3.1.4.6.2.2	GetHealthScoreResponse.....	77
3.1.4.6.3	Complex Types	77
3.1.4.6.4	Simple Types.....	77
3.1.4.6.5	Attributes.....	77
3.1.4.6.6	Groups.....	78
3.1.4.6.7	Attribute Groups	78
3.1.4.7	GetMacroState	78
3.1.4.7.1	Messages	78
3.1.4.7.1.1	AccessServiceSoap_GetMacroState_InputMessage.....	78
3.1.4.7.1.2	AccessServiceSoap_GetMacroState_OutputMessage.....	79
3.1.4.7.2	Elements.....	79
3.1.4.7.2.1	GetMacroState	79
3.1.4.7.2.2	GetMacroStateResponse	79
3.1.4.7.3	Complex Types	80
3.1.4.7.3.1	DataMacroInstanceState.....	80
3.1.4.7.4	Simple Types.....	80
3.1.4.7.4.1	DataMacroState.....	80

3.1.4.7.5	Attributes.....	81
3.1.4.7.6	Groups.....	81
3.1.4.7.7	Attribute Groups	81
3.1.4.8	InsertData	81
3.1.4.8.1	Messages	82
3.1.4.8.1.1	AccessServiceSoap_InsertData_InputMessage	82
3.1.4.8.1.2	AccessServiceSoap_InsertData_OutputMessage	82
3.1.4.8.2	Elements.....	82
3.1.4.8.2.1	InsertData	83
3.1.4.8.2.2	InsertDataResponse.....	84
3.1.4.8.3	Complex Types	84
3.1.4.8.4	Simple Types.....	84
3.1.4.8.5	Attributes.....	84
3.1.4.8.6	Groups.....	84
3.1.4.8.7	Attribute Groups	84
3.1.4.9	KeepAlive	84
3.1.4.9.1	Messages	85
3.1.4.9.1.1	AccessServiceSoap_KeepAlive_InputMessage.....	85
3.1.4.9.1.2	AccessServiceSoap_KeepAlive_OutputMessage	85
3.1.4.9.2	Elements.....	85
3.1.4.9.2.1	KeepAlive	85
3.1.4.9.2.2	KeepAliveResponse.....	86
3.1.4.9.3	Complex Types	86
3.1.4.9.4	Simple Types.....	86
3.1.4.9.5	Attributes.....	86
3.1.4.9.6	Groups.....	86
3.1.4.9.7	Attribute Groups	86
3.1.4.10	OpenResultSet.....	86
3.1.4.10.1	Messages	88
3.1.4.10.1.1	AccessServiceSoap_OpenResultSet_InputMessage	88
3.1.4.10.1.2	AccessServiceSoap_OpenResultSet_OutputMessage	88
3.1.4.10.2	Elements.....	88
3.1.4.10.2.1	OpenResultSet	88
3.1.4.10.2.2	OpenResultSetResponse	90
3.1.4.10.3	Complex Types	91
3.1.4.10.3.1	ArrayOfString	91
3.1.4.10.4	Simple Types	91
3.1.4.10.5	Attributes	91
3.1.4.10.6	Groups.....	91
3.1.4.10.7	Attribute Groups.....	91
3.1.4.11	OpenSession	91
3.1.4.11.1	Messages	92
3.1.4.11.1.1	AccessServiceSoap_OpenSession_InputMessage	92
3.1.4.11.1.2	AccessServiceSoap_OpenSession_OutputMessage	92
3.1.4.11.2	Elements.....	92
3.1.4.11.2.1	OpenSession	92
3.1.4.11.2.2	OpenSessionResponse.....	93
3.1.4.11.3	Complex Types	93
3.1.4.11.3.1	CultureCommandParameter	93
3.1.4.11.4	Simple Types	96
3.1.4.11.5	Attributes	96
3.1.4.11.6	Groups.....	96
3.1.4.11.7	Attribute Groups.....	96

3.1.4.12	RunDataMacro	96
3.1.4.12.1	Messages	97
3.1.4.12.1.1	AccessServiceSoap_RunDataMacro_InputMessage	97
3.1.4.12.1.2	AccessServiceSoap_RunDataMacro_OutputMessage	97
3.1.4.12.2	Elements	97
3.1.4.12.2.1	RunDataMacro	97
3.1.4.12.2.2	RunDataMacroResponse	99
3.1.4.12.3	Complex Types	99
3.1.4.12.4	Simple Types	99
3.1.4.12.5	Attributes	99
3.1.4.12.6	Groups	99
3.1.4.12.7	Attribute Groups	99
3.1.4.13	UpdateCache	100
3.1.4.13.1	Messages	100
3.1.4.13.1.1	AccessServiceSoap_UpdateCache_InputMessage	100
3.1.4.13.1.2	AccessServiceSoap_UpdateCache_OutputMessage	100
3.1.4.13.2	Elements	100
3.1.4.13.2.1	UpdateCache	101
3.1.4.13.2.2	UpdateCacheResponse	101
3.1.4.13.3	Complex Types	102
3.1.4.13.4	Simple Types	102
3.1.4.13.5	Attributes	102
3.1.4.13.6	Groups	102
3.1.4.13.7	Attribute Groups	102
3.1.4.14	UpdateData	102
3.1.4.14.1	Messages	103
3.1.4.14.1.1	AccessServiceSoap_UpdateData_InputMessage	103
3.1.4.14.1.2	AccessServiceSoap_UpdateData_OutputMessage	103
3.1.4.14.2	Elements	103
3.1.4.14.2.1	UpdateData	103
3.1.4.14.2.2	UpdateDataResponse	105
3.1.4.14.3	Complex Types	105
3.1.4.14.4	Simple Types	106
3.1.4.14.5	Attributes	106
3.1.4.14.6	Groups	106
3.1.4.14.7	Attribute Groups	106
3.1.5	Timer Events	106
3.1.5.1	Session Timeout	106
3.1.6	Other Local Events	106
4	Protocol Examples	107
5	Security	112
5.1	Security Considerations for Implementers	112
5.2	Index of Security Parameters	112
6	Appendix A: Full WSDL	113
7	Appendix B: Product Behavior	144
8	Change Tracking	145
9	Index	146

1 Introduction

This document specifies the Access Services Data Server Protocol. This protocol enables a protocol client to execute and monitor tasks on a server application.

1.1 Glossary

The following terms are defined in [\[MS-GLOS\]](#):

Augmented Backus-Naur Form (ABNF)
Hypertext Transfer Protocol (HTTP)
Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
XML

The following terms are defined in [\[MS-OFCGLOS\]](#):

absolute URL
alert
caption
content database
control button
data culture
data macro
data source
data type
endpoint
expression
fallback data culture
fallback UI culture
field
filter
Help topic identifier
host data language
license key
list
list item
primary key
result set
root element
row
session
session identifier
site
site identifier
SOAP (Simple Object Access Protocol)
SOAP action
SOAP body
SOAP fault
SOAP fault detail
state changing
time zone
time zone bias
time zone daylight bias
time zone daylight date
time zone standard bias

time zone standard date
UI culture
URI (Uniform Resource Identifier)
user display name
WSDL (Web Services Description Language)
WSDL message
WSDL operation
XML namespace
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

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-ASWS] Microsoft Corporation, "[Access Services Protocol Specification](#)", July 2009.

[MS-AXL] Microsoft Corporation, "[Access Application Transfer Protocol Structure Specification](#)", July 2009.

[MS-DSDIFFGRAM] Microsoft Corporation, "[SharePoint Web Services: DataSet DiffGram Structure Specification](#)", June 2008.

[MS-SPSTWS] Microsoft Corporation, "[SharePoint Security Token Service Web Service Protocol Specification](#)", July 2009.

[RFC1766] Alvestrand, H., "Tags for the Identification of Languages", RFC 1766, March 1995, <http://www.ietf.org/rfc/rfc1766.txt>

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

[RFC2234] Crocker, D., and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", RFC 2234, November 1997, <http://www.ietf.org/rfc/rfc2234.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>

[RFC3339] Klyne, G., and Newman, C., "Date and Time on the Internet: Timestamps", RFC 3339, July 2002, <http://www.ietf.org/rfc/rfc3339.txt>

[RFC4122] Leach, P., Mealling, M., and Salz, R., "A Universally Unique Identifier (UUID) URN Namespace", RFC 4122, July 2005, <http://www.ietf.org/rfc/rfc4122.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] World Wide Web Consortium, "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation 8 December 2009, <http://www.w3.org/TR/REC-xml-names/>

[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](#)", March 2007.

[MS-OFCGLOS] Microsoft Corporation, "[Microsoft Office Master Glossary](#)", June 2008.

[MS-SPTWS] Microsoft Corporation, "[Service Platform Topology Web Service Protocol Specification](#)", July 2009.

[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 Protocol Overview (Synopsis)

This protocol is used for managing data maintained by a protocol server, which provides access to a protocol client, which renders the data provided by the protocol server. The communication is always initiated by the protocol client using different operations, whose functionality is outlined in Protocol Operations (section [1.3.2](#)). A typical scenario for this protocol is opening a **result set** and updating data.

1.3.1 Session-based Protocol

The protocol is **session (2)** based and uses a unique **session identifier (2)**. This session identifier is generated when a new session is created and is used thereafter to refer to that particular session.

- Multiple sessions (2) can exist at the same time.
- Result sets are not shared across sessions (2).
- sessions (2) can be created and closed independently.

1.3.2 Protocol Operations

The protocol provides the following sets of functionality:

- Create, read, update and delete data

- Get information about the protocol server
- Trigger a **data macro**
- Get information about a data macro

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 **HTTPS**, as described in [\[RFC2818\]](#).

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

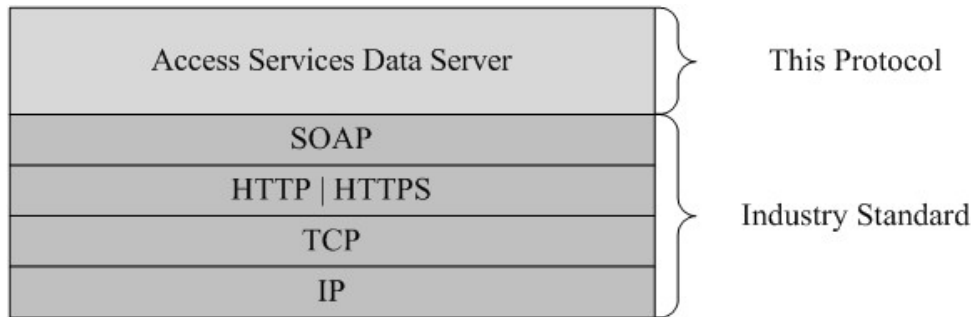


Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

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

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

This protocol requires the protocol client to have 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

The Access Services Data Server Protocol is applicable in the following scenarios:

1. Managing sessions (2) between protocol client and protocol server.
2. Inserting, updating, or deleting data on the protocol server.
3. Executing a data macro on the protocol server.
4. Monitoring the health of the protocol server.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol can be implemented by using transports that support sending SOAP messages, as specified in section [2.1](#).
- **Protocol Versions:** This protocol is not versioned.

Capability Negotiation: This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

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 protocol 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**, **present**, and **not null**.

2.1 Transport

Protocol servers **MUST** support SOAP over HTTP or HTTPS.

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

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

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

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

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

2.2 Common Message Syntax

This section contains common definitions used by this protocol. The syntax of the definitions uses XML Schema, as specified in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and Web Services Description Language, 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
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
wsam	http://www.w3.org/2007/05/addressing/metadata	
tns	http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/	
xsd	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]

Prefi x	Namespace URI	Reference
		[XMLSCHEM A2]
tns	http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/Imports	
q1	http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server	
soap	http://schemas.xmlsoap.org/wsdl/soap/	[SOAP1.1]
q1	http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/	
q3	http://microsoft.com/wsdl/types/	
tns	http://schemas.microsoft.com/2003/10/Serialization/	
q1	http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server	

2.2.2 Messages

None.

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
AccessServerMessage (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server)	Used to return alert information to the protocol client.
ArrayOfAnyType	An array of anyType elements.
ArrayOfExcelServerMessage (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	An array of ExcelServerMessage elements.
ArrayOfKeyValuePair	An array of KeyValuePair elements.
ArrayOfPresenceUserInfo (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ArrayOfString (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	Used to specify an

Complex Type	Description
rvice/)	array of strings.
CollaborationParameter (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
CollaborationResult (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
CollaborationState (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
CommandParameter (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	An input used by some protocol server operations.
CommandResult (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	An operation response message used by all protocol server operations.
CommandResultExtendedInfo (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ExcelServerMessage (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
KeyValuePair	Used as a container for a key and its associated value.
PeriodicRefreshInfo (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
PresenceUserId (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
PresenceUserInfo (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
RequestLimits (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ServerHealthInformation (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server)	Used to return information about the health of the protocol server.
ServerHealthInformation (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	Used to return information about the health of the

Complex Type	Description
	protocol server.
VisibleSheetRange (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
WorkOnBehalf (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.

2.2.4.1 AccessServerMessage

Namespace: <http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server>

The **AccessServerMessage** complex type is used to return alert information to the protocol client.

```
<xs:complexType name="AccessServerMessage">
  <xs:sequence>
    <xs:element minOccurs="0" name="Buttons" type="tns:AccessServerMessageButtons"/>
    <xs:element minOccurs="0" name="Caption" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ErrorNumber" nillable="true" type="xs:int"/>
    <xs:element minOccurs="0" name="ExtendedDescription" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="HealthInformation" nillable="true"
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server"
type="q1:ServerHealthInformation"/>
    <xs:element minOccurs="0" name="HelpDisplayText" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="HelpTopicId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="Id" type="tns:AccessServerMessageId"/>
    <xs:element minOccurs="0" name="Severity" type="tns:AccessServerMessageSeverity"/>
    <xs:element minOccurs="0" name="Type" type="tns:AccessServerMessageType"/>
  </xs:sequence>
</xs:complexType>
```

Buttons: The **control buttons** of the alert as specified in **AccessServerMessageButtons** (section [2.2.5.1](#)). MUST be present.

Caption: A **caption** for the alert. MUST be present. MUST be in the language **UI culture** of the session (2).

Description: A text description of the alert. MUST be present. MUST NOT be empty. MUST be in the language UI culture of the session (2).

ErrorNumber: The error number returned by the data macro. See [\[MS-AXL\]](#) section 2.2.5.1.14.

ExtendedDescription: An extended description of the alert. MUST be present. MUST be in the language UI culture of the session (2).

HealthInformation: The health information of the protocol server as specified in **ServerHealthInformation** (section [2.2.4.19](#)). MUST be present.

HelpDisplayText: A description of the help topic MUST be present. MUST be in the language UI culture of the session (2).

HelpTopicId: The **Help topic identifier**.

Id: The identifier of the alert as specified in **AccessServerMessageId** (section [2.2.5.2](#)). MUST be present.

Severity: The severity of the alert as specified in **AccessServerMessageSeverity** (section [2.2.5.3](#)). MUST be present.

Type: The type of the alert as specified in **AccessServerMessageType** (section [2.2.5.4](#)). MUST be present.

2.2.4.2 ArrayOfAnyType

Namespace:

<http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/>

An array of **anyType** elements.

```
<xs:complexType name="ArrayOfAnyType">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="anyType" nillable="true"/>
  </xs:sequence>
</xs:complexType>
```

anyType: An **anyType** value.

2.2.4.3 ArrayOfExcelServerMessage

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="ArrayOfExcelServerMessage">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ExcelServerMessage" nillable="true"
type="tns:ExcelServerMessage"/>
  </xs:sequence>
</xs:complexType>
```

ExcelServerMessage:

2.2.4.4 ArrayOfKeyValuePair

Namespace:

<http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/>

An array of **KeyValuePair** elements.

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

KeyValuePair: A **KeyValuePair** as specified in section [2.2.4.14](#). Each **KeyValuePair** in the **ArrayOfKeyValuePair** element MUST have a unique value in its **Key** element.

2.2.4.5 ArrayOfPresenceUserInfo

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="ArrayOfPresenceUserInfo">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PresenceUserInfo" nillable="true"
      type="tns:PresenceUserInfo"/>
  </xs:sequence>
</xs:complexType>
```

PresenceUserInfo:

2.2.4.6 ArrayOfString

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

The **ArrayOfString** complex type is used to specify an array of strings.

```
<xs:complexType name="ArrayOfString">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
      type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

string: A string value.

2.2.4.7 CollaborationParameter

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="CollaborationParameter">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationState"
      type="tns:CollaborationState"/>
  </xs:sequence>
</xs:complexType>
```

CollaborationState:

2.2.4.8 CollaborationResult

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:complexType name="CollaborationResult">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationState"
type="tns:CollaborationState"/>
    <xs:element minOccurs="0" maxOccurs="1" name="Users" type="tns:ArrayOfPresenceUserInfo"/>
  </xs:sequence>
</xs:complexType>
```

CollaborationState:

Users:

2.2.4.9 CollaborationState

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:complexType name="CollaborationState">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="UserListVersion" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
```

UserListVersion:

2.2.4.10 CommandParameter

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

The **CommandParameter** complex type is an input used by some protocol server operations.

The following applies to the **CommandParameter** complex type, unless extended or overridden by an operation specification:

```
<xs:complexType name="CommandParameter">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="WorkbookId" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="StateId" type="xs:int"/>
    <xs:element minOccurs="0" maxOccurs="1" name="VisibleSheetRangeRequest"
type="tns:VisibleSheetRange"/>
    <xs:element minOccurs="0" maxOccurs="1" name="WorkOnBehalfRequest"
type="tns:WorkOnBehalf"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Confirmation"
type="tns:ExcelServerMessageId"/>
    <xs:element minOccurs="1" maxOccurs="1" name="ConfirmationChoice" type="xs:boolean"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ProtocolClientId" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

```

    <xs:element minOccurs="0" maxOccurs="1" name="UserFriendlyDisplayName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="Zone" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="PreviousOwnerId" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="RequestSiteId"
xmlns:q1="http://microsoft.com/wsdl/types/" type="q1:guid"/>
    <xs:element minOccurs="0" maxOccurs="1" name="RequestId" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="CompleteResponseTimeout" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Flags" type="tns:CommandParameterFlags"/>
    <xs:element minOccurs="0" maxOccurs="1" name="RequestLimits" type="tns:RequestLimits"/>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationParameter"
type="tns:CollaborationParameter"/>
  </xs:sequence>
</xs:complexType>

```

WorkbookId: The session identifier (2) that is returned in the **sessionId** of the **OpenSessionResponse** element as specified in [3.1.4.11.1.2](#).

- If present then MUST NOT be empty and MUST be as specified in [2.2.5.13](#)
- For all operations other than OpenSession ([3.1.4.8](#)) MUST be present and MUST have a value which has been obtained from a previous call to the OpenSession (3.1.4.8) operation.

StateId: MUST be -1.

VisibleSheetRangeRequest: MUST NOT be present.

WorkOnBehalfRequest: MUST NOT be present.

Confirmation: MUST be the value **Blank**.

ConfirmationChoice: MUST be false.

ProtocolClientId: MUST NOT be present.

UserFriendlyDisplayName: The **user display name**. MUST be present.

Zone: MUST be present. MUST be empty.

PreviousOwnerId: MUST NOT be present.

RequestSiteId: The **site identifier**. MUST be present.

RequestId: MUST NOT be present.

CompleteResponseTimeout: MUST be 0.

Flags: MUST be present. Value MUST be ignored.

RequestLimits: MUST NOT be present.

CollaborationParameter: MUST NOT be present.

2.2.4.11 CommandResult

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

The **CommandResult** complex type is an operation response message used by all protocol server operations.

The following applies to the **CommandResult** complex type, unless extended or overridden by an operation specification:

```
<xs:complexType name="CommandResult">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="TransientEditSessionToken"
type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="StateId" type="xs:int"/>
    <xs:element minOccurs="0" maxOccurs="1" name="SpreadsheetData" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ExtendedInfo"
type="tns:CommandResultExtendedInfo"/>
    <xs:element minOccurs="0" maxOccurs="1" name="PeriodicRefreshInfo"
type="tns:PeriodicRefreshInfo"/>
    <xs:element minOccurs="0" maxOccurs="1" name="HealthInformation"
type="tns:ServerHealthInformation"/>
    <xs:element minOccurs="1" maxOccurs="1" name="SecondsBeforeNextPoll" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="EditSessionIsDirty" type="xs:boolean"/>
    <xs:element minOccurs="1" maxOccurs="1" name="EditSessionHasMultipleCollaborationUsers"
type="xs:boolean"/>
    <xs:element minOccurs="0" maxOccurs="1" name="RequestId" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationResult"
type="tns:CollaborationResult"/>
  </xs:sequence>
</xs:complexType>
```

TransientEditSessionToken: MUST NOT be used.

StateId: MUST be 0.

SpreadsheetData: MUST NOT be used.

ExtendedInfo: MUST NOT be used.

PeriodicRefreshInfo: MUST NOT be used.

HealthInformation: The health information of the protocol server as specified in section [2.2.4.20](#).

SecondsBeforeNextPoll: The protocol server MUST set this element to 0. The protocol client MUST ignore this element.

EditSessionIsDirty: MUST be false.

EditSessionHasMultipleCollaborationUsers: MUST be false.

RequestId: MUST NOT be used.

CollaborationResult: MUST NOT be present.

2.2.4.12 CommandResultExtendedInfo

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```

<xs:complexType name="CommandResultExtendedInfo">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="Messages"
type="tns:ArrayOfExcelServerMessage"/>
    <xs:element minOccurs="1" maxOccurs="1" name="WarnOnManualDataRefresh"
type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>

```

Messages:

WarnOnManualDataRefresh:

2.2.4.13 ExcelServerMessage

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```

<xs:complexType name="ExcelServerMessage">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="HasOpenItemPermission" type="xs:boolean"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Id" type="tns:ExcelServerMessageId"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Severity"
type="tns:ExcelServerMessageSeverity"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Type" type="tns:ExcelServerMessageType"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Appearance"
type="tns:ExcelServerMessageAppearance"/>
    <xs:element minOccurs="0" maxOccurs="1" name="Description" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ExtendedDescription" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="Caption" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="HelpTopicId" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="HelpDisplayText" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="HealthInformation"
type="tns:ServerHealthInformation"/>
    <xs:element minOccurs="0" maxOccurs="1" name="WrongEcsServerId" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

HasOpenItemPermission:

Id:

Severity:

Type:

Appearance:

Description:

ExtendedDescription:

Caption:

HelpTopicId:

HelpDisplayText:

HealthInformation:

WrongEcsServerId:

2.2.4.14 KeyValuePair

Namespace:

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/

The **KeyValuePair** complex type is used as a container for a key and its associated value.

```
<xs:complexType name="KeyValuePair">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="Key"/>
    <xs:element minOccurs="1" maxOccurs="1" name="Value" nillable="true"/>
  </xs:sequence>
</xs:complexType>
```

Key: Specifies a value that uniquely identifies the **KeyValuePair** within a collection. MUST be present. MUST be of type xs:string or xs:int.

Value: Data associated with a given **Key**. MUST be present. MUST be formatted in the **data culture** of the session (2).

2.2.4.15 PeriodicRefreshInfo

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:complexType name="PeriodicRefreshInfo">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="ExpirationTime" type="xs:int"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ConnectionNames" type="tns:ArrayOfString"/>
  </xs:sequence>
</xs:complexType>
```

ExpirationTime:

ConnectionNames:

2.2.4.16 PresenceUserId

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:complexType name="PresenceUserId">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="UserName" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="IsApiUser" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

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

UserName:

IsApiUser:

2.2.4.17 PresenceUserInfo

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="PresenceUserInfo">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="User" type="tns:PresenceUserId"/>
    <xs:element minOccurs="0" maxOccurs="1" name="UserColor" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="NumberOfTimesInSession" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
```

User:

UserColor:

NumberOfTimesInSession:

2.2.4.18 RequestLimits

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="RequestLimits">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="CellCount" nillable="true" type="xs:long"/>
  </xs:sequence>
</xs:complexType>
```

CellCount: MUST NOT be used.

2.2.4.19 ServerHealthInformation

Namespace: <http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server>

Used to return information about the health of the protocol server.

```
<xs:complexType name="ServerHealthInformation">
  <xs:sequence>
    <xs:element minOccurs="0" name="HealthScore" type="xs:float"/>
    <xs:element minOccurs="0" name="StateFlags" type="tns:ServerStateFlags"/>
  </xs:sequence>
```



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

HealthScore: An indication of the health of the protocol server. Smaller values indicate a healthier, more available system. Higher values indicate a less healthy system. MUST be present.

StateFlags: The state of the protocol server. MUST be present. MUST contain 0 or more values from **ServerStateFlags** as specified in section [2.2.5.11](#).

2.2.4.20 ServerHealthInformation

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

The **ServerHealthInformation** complex type is used to return information about the health of the protocol server.

```
<xs:complexType name="ServerHealthInformation">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="StateFlags" type="tns:ServerStateFlags"/>
    <xs:element minOccurs="1" maxOccurs="1" name="HealthScore" type="xs:float"/>
  </xs:sequence>
</xs:complexType>
```

StateFlags: The state of the protocol server. MUST be present. MUST contain 0 or more values from **ServerStateFlags** as specified in section [2.2.5.12](#).

HealthScore: An indication of the health of the protocol server. Smaller values indicate a healthier, more available system. Higher values indicate a less healthy system.

2.2.4.21 VisibleSheetRange

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="VisibleSheetRange">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="SheetName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ObjectName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ExcelRange" type="xs:string"/>
    <xs:element minOccurs="1" maxOccurs="1" name="FirstRow" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="VisibleRowsRequested" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="FirstColumn" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="VisibleColumnsRequested" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="VisibleFirstRowOffset" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="VisibleFirstColumnOffset" type="xs:int"/>
    <xs:element minOccurs="1" maxOccurs="1" name="NoAutoAdjustToPublishedUsedRange"
type="xs:boolean"/>
    <xs:element minOccurs="1" maxOccurs="1" name="CalculateVisibleOffsetFromOrigin"
type="xs:boolean"/>
    <xs:element minOccurs="1" maxOccurs="1" name="NeedAllBorderValues" type="xs:boolean"/>
    <xs:element minOccurs="1" maxOccurs="1" name="ChartsOnly" type="xs:boolean"/>
  </xs:sequence>
```

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

SheetName:

ObjectName:

ExcelRange:

FirstRow:

VisibleRowsRequested: .

FirstColumn:

VisibleColumnsRequested:

VisibleFirstRowOffset:

VisibleFirstColumnOffset:

NoAutoAdjustToPublishedUsedRange:

CalculateVisibleOffsetFromOrigin:

NeedAllBorderValues:

ChartsOnly:

2.2.4.22 WorkOnBehalf

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:complexType name="WorkOnBehalf">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="UserName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="UserSid" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="UserToken" type="xs:base64Binary"/>
    <xs:element minOccurs="1" maxOccurs="1" name="UserTokenTtl" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
```

UserName:

UserSid:

UserToken:

UserTokenTtl:

2.2.5 Simple Types

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

Simple Type	Description
guid (from namespace http://microsoft.com/wsd/types/)	Specifies a GUID value as specified in [RFC4122] .
AccessServerMessageButtons (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server)	Specifies the control buttons associated with an alert that the protocol server returns to the protocol client.
AccessServerMessageId (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server)	An enumeration of alerts returned from the protocol server.
AccessServerMessageSeverity (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server)	Specifies the severity of the alert that the protocol server returns to the protocol client.
AccessServerMessageType (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server)	Specifies type of the alert that the protocol server returns to the protocol client.
ServerStateFlags (from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server)	Specifies the state of the protocol server.
SessionIdentifier	The SessionIdentifier string is used to uniquely identify a session (2) on the protocol server, and to contain information about the session (2).
CommandParameterFlags (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ExcelServerMessageAppearance (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.

Simple Type	Description
ExcelServerMessageId (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ExcelServerMessageSeverity (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ExcelServerMessageType (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	MUST NOT be used.
ServerStateFlags (from namespace http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/)	An enumeration specifying the state of the protocol server.

2.2.5.1 AccessServerMessageButtons

Namespace: <http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server>

Specifies the control buttons associated with an alert that the protocol server returns to the protocol client. The list **MUST** contain only the value **OK**.

```
<xs:simpleType name="AccessServerMessageButtons">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="OK"/>
        <xs:enumeration value="Cancel"/>
        <xs:enumeration value="Yes"/>
        <xs:enumeration value="No"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for AccessServerMessageButtons:

Value	Meaning
None	MUST NOT be used.
OK	An OK control button.
Cancel	MUST NOT be used.
Yes	MUST NOT be used.
No	MUST NOT be used.

2.2.5.2 AccessServerMessageId

Namespace: <http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server>

The **AccessServerMessageId** type is an enumeration of alerts returned from the protocol server.

```
<xs:simpleType name="AccessServerMessageId">
  <xs:restriction base="xs:string">
    <xs:enumeration value="InternalError"/>
    <xs:enumeration value="ManagementUIInternalError"/>
    <xs:enumeration value="GetRecordsPermissionsFailure"/>
    <xs:enumeration value="WriteRecordsPermissionsFailure"/>
    <xs:enumeration value="EditValueListPermissionsFailure"/>
    <xs:enumeration value="NotMemberOfRole"/>
    <xs:enumeration value="MaxSessionsPerUserExceeded"/>
    <xs:enumeration value="SiteCollectionCpuQuotaExceeded"/>
    <xs:enumeration value="SessionMemoryQuotaExceeded"/>
    <xs:enumeration value="SiteCollectionMemoryQuotaExceeded"/>
    <xs:enumeration value="RetryError"/>
    <xs:enumeration value="MaxRequestDurationExceeded"/>
    <xs:enumeration value="ProductExpired"/>
    <xs:enumeration value="NewWorkbookSessionTimeout"/>
    <xs:enumeration value="DataException_DataOperationFailed"/>
    <xs:enumeration value="DataException_CacheOperationInvalid"/>
    <xs:enumeration value="DataException_ValidationFailed"/>
    <xs:enumeration value="DataException_MaxRecordsInTableExceeded"/>
    <xs:enumeration value="DataException_InvalidPageNumber"/>
    <xs:enumeration value="DataException_DataMacroNotFound"/>
    <xs:enumeration value="InvalidFilterExpression"/>
    <xs:enumeration value="InvalidAggregateExpression"/>
    <xs:enumeration value="InvalidArgument"/>
    <xs:enumeration value="NullArgument"/>
    <xs:enumeration value="WebServiceUpdateIdConflict"/>
    <xs:enumeration value="QueryException_AmbiguousValuesProvided"/>
    <xs:enumeration value="QueryException_InvalidCompiledQueryVersion"/>
    <xs:enumeration value="QueryException_InvalidSourceUsageWithoutJoin"/>
    <xs:enumeration value="QueryException_InvalidExpression"/>
    <xs:enumeration value="QueryException_InvalidLikeArgumentsExpression"/>
    <xs:enumeration value="QueryException_InvalidLikeFieldTypeInExpression"/>
    <xs:enumeration value="QueryException_InvalidInArgumentsExpression"/>
    <xs:enumeration value="QueryException_InvalidAxlEncoding"/>
    <xs:enumeration value="QueryException_InvalidOrderPropertyName"/>
    <xs:enumeration value="QueryException_InvalidOrderSourceName"/>
    <xs:enumeration value="QueryException_InvalidJoinLeftSourceName"/>
    <xs:enumeration value="QueryException_InvalidJoinRightSourceName"/>
    <xs:enumeration value="QueryException_InvalidJoinLeftPropertyName"/>
    <xs:enumeration value="QueryException_InvalidJoinRightPropertyName"/>
    <xs:enumeration value="QueryException_InvalidJoinType"/>
    <xs:enumeration value="QueryException_InvalidJoinPropertyType"/>
    <xs:enumeration value="QueryException_InvalidPropertyElement"/>
    <xs:enumeration value="QueryException_InvalidResultPropertySource"/>
    <xs:enumeration value="QueryException_InvalidResultPropertyName"/>
    <xs:enumeration value="QueryException_InvalidResultPropertyAlias"/>
    <xs:enumeration value="QueryException_InvalidResultExpression"/>
    <xs:enumeration value="QueryException_DuplicateResultAliases"/>
    <xs:enumeration value="QueryException_InvalidParameterName"/>
    <xs:enumeration value="QueryException_InvalidParameterType"/>
    <xs:enumeration value="QueryException_InvalidReferenceSourceName"/>
    <xs:enumeration value="QueryException_InvalidReferenceSourceType"/>
    <xs:enumeration value="QueryException_InvalidRestrictionExpression"/>
    <xs:enumeration value="QueryException_InvalidReferenceInExpression"/>
    <xs:enumeration value="QueryException_InvalidReferenceInExpression_OutsideOfQuery"/>
    <xs:enumeration value="QueryException_AmbiguousReferenceInExpression"/>
  </xs:restriction>
</xs:simpleType>
```

```

<xs:enumeration value="QueryException_FailedFilterOperation"/>
<xs:enumeration value="QueryException_FailedFilterEvaluation_CalcLibGeneral"/>
<xs:enumeration value="QueryException_FailedFilterEvaluation_DivZero"/>
<xs:enumeration value="QueryException_FailedSortOrFilterOperation"/>
<xs:enumeration value="QueryException_QueryNotCompiled"/>
<xs:enumeration value="QueryException_InvalidCompiledQueryFormat"/>
<xs:enumeration value="QueryException_InvalidJoinUsage"/>
<xs:enumeration value="QueryException_InvalidExecutionState"/>
<xs:enumeration value="QueryException_FailedFetchListData"/>
<xs:enumeration value="QueryException_FailedCalculatedFieldEvaluation"/>
<xs:enumeration value="QueryException_RequiredParameterNotSupplied"/>
<xs:enumeration value="QueryException_InvalidListOrQueryReference"/>
<xs:enumeration value="QueryException_BulkUpdatesNotSupported"/>
<xs:enumeration value="QueryException_MissingKeyColumn"/>
<xs:enumeration value="QueryException_CannotSetKeyColumn"/>
<xs:enumeration value="QueryException_CannotUpdateNonUpdatableColumn"/>
<xs:enumeration value="QueryException_MultiTableUpdatesNotSupported"/>
<xs:enumeration value="QueryException_RequiredFieldNotSupplied"/>
<xs:enumeration value="QueryException_QueryCompiling"/>
<xs:enumeration value="QueryException_QueryCompilationFailure"/>
<xs:enumeration value="QueryException_InvalidCircularExpressionReference"/>
<xs:enumeration value="QueryException_LicenseExpired"/>
<xs:enumeration value="QueryException_ServerUpgraded"/>
<xs:enumeration value="QueryThrottleMaxSourcesExceeded"/>
<xs:enumeration value="QueryThrottleMaxOutputsExceeded"/>
<xs:enumeration value="QueryThrottleMaxRowsExceeded"/>
<xs:enumeration value="QueryThrottleMaxRowsPerSourceExceeded"/>
<xs:enumeration value="QueryThrottleMaxOutputCalculatedColumnsExceeded"/>
<xs:enumeration value="QueryThrottleMaxOrderByColumnsExceeded"/>
<xs:enumeration value="QueryThrottleOuterJoinsDisabled"/>
<xs:enumeration value="QueryThrottleRemotableQueriesDisabled"/>
<xs:enumeration value="OrderingException_InvalidSpecification"/>
<xs:enumeration value="OrderingException_InvalidColumnName"/>
<xs:enumeration value="InvalidMetroFile"/>
<xs:enumeration value="InvalidAccessVersion"/>
<xs:enumeration value="InvalidTemplateVersion"/>
<xs:enumeration value="TemplateNotWebCompatible"/>
<xs:enumeration value="TemplateMaxSizeExceeded"/>
<xs:enumeration value="UpdateConflict"/>
<xs:enumeration value="DeleteConflict"/>
<xs:enumeration value="FieldSchemaChange_UpdateConflict"/>
<xs:enumeration value="FieldSchemaChange_ListNotFoundInMSysASO"/>
<xs:enumeration value="FieldSchemaChange_CompilationFailed"/>
<xs:enumeration value="ObjectCompilation_ObjectCompilationFailed"/>
<xs:enumeration value="ObjectCompilation_ListNotFound"/>
<xs:enumeration value="MacroCompilationException_InvalidAx1"/>
<xs:enumeration value="MacroCompilationException_UnexpectedAx1Element"/>
<xs:enumeration value="MacroCompilationException_InvalidAction"/>
<xs:enumeration value="MacroCompilationException_InvalidEventName"/>
<xs:enumeration value="MacroCompilationException_RequiredArgumentMissing"/>
<xs:enumeration value="MacroCompilationException_ArgumentValueNotSpecified"/>
<xs:enumeration value="MacroCompilationException_InvalidActionArgument"/>
<xs:enumeration value="MacroCompilationException_InvalidActionArgumentCount"/>
<xs:enumeration value="MacroCompilationException_InvalidParameter"/>
<xs:enumeration value="MacroCompilationException_MacroParameterLimitExceeded"/>
<xs:enumeration value="MacroCompilationException_MacroActionsLimitExceeded"/>
<xs:enumeration value="MacroCompilationException_MacroCallStackDepthExceeded"/>
<xs:enumeration value="MacroCompilationException_MacroSaveFailed"/>
<xs:enumeration value="MacroCompilationException_MacroAssociationFailed"/>

```

```

<xs:enumeration value="MacroCompilationException_InvalidControlName"/>
<xs:enumeration value="MacroCompilationException_Recursion"/>
<xs:enumeration value="MacroExecutionException_FailedToEvaluateExpression"/>
<xs:enumeration value="MacroExecutionException_MissingParameterToDataMacro"/>
<xs:enumeration value="MacroExecutionError_InvalidParameterName"/>
<xs:enumeration value="MacroExecutionException_FailedToResolveExpression"/>
<xs:enumeration value="MacroExecutionException_WrongExpressionVariableFormat"/>
<xs:enumeration value="MacroExecutionException_VariableNotFound"/>
<xs:enumeration value="MacroExecutionException_NoDataContext"/>
<xs:enumeration value="MacroExecutionException_KnownExpressionEvaluationErrorCode"/>
<xs:enumeration value="MacroExecutionException_FailedToExecuteQuery"/>
<xs:enumeration value="MacroExecutionException_FailedMoveToNextItem"/>
<xs:enumeration value="MacroExecutionException_FailedToSetField"/>
<xs:enumeration value="MacroExecutionException_FailedToCancelRecordChange"/>
<xs:enumeration value="MacroExecutionException_FailedToDeleteRecord"/>
<xs:enumeration value="MacroExecutionException_ChangeConflict"/>
<xs:enumeration value="MacroExecutionException_FailedToSetLocalVar"/>
<xs:enumeration value="MacroExecutionException_FailedToSetReturnVar"/>
<xs:enumeration value="MacroExecutionException_TooManyReturnVars"/>
<xs:enumeration value="MacroExecutionException_ReturnVarTooLong"/>
<xs:enumeration value="MacroExecutionException_InvalidReturnVarName"/>
<xs:enumeration value="MacroExecutionException_FailedToSaveItem"/>
<xs:enumeration value="MacroExecutionException_FailedToFindItemWithID"/>
<xs:enumeration value="MacroExecutionException_FailedToAddItem"/>
<xs:enumeration value="MacroExecutionException_FailedToDeleteListItem"/>
<xs:enumeration value="MacroExecutionException_FailedToUpdateListItem"/>
<xs:enumeration value="MacroExecutionException_FailedToSetFieldToValue"/>
<xs:enumeration value="MacroExecutionException_CannotFindField"/>
<xs:enumeration value="MacroExecutionException_CannotResolveIdentifier"/>
<xs:enumeration value="MacroExecutionException_CannotFindVariableOrParam"/>
<xs:enumeration value="MacroExecutionException_CannotReferenceMVOAttachmentFields"/>
<xs:enumeration value="MacroExecutionException_ComplexFieldInUpdatedFunc"/>
<xs:enumeration value="MacroExecutionException_CannotFindItemWithAlias"/>
<xs:enumeration value="MacroExecutionException_CannotUpdateReadOnlyItem"/>
<xs:enumeration value="MacroExecutionException_FailedToConfigureSendEmail"/>
<xs:enumeration value="MacroExecutionException_OutboundEmailNotConfigured"/>
<xs:enumeration value="MacroExecutionException_FailedToEnumerateList"/>
<xs:enumeration value="MacroExecutionException_FailedToStartMacro"/>
<xs:enumeration value="MacroExecutionException_TypeMismatch"/>
<xs:enumeration value="MacroExecutionException_CannotStartEventMacro"/>
<xs:enumeration value="MacroExecutionException_FailedToStopMacro"/>
<xs:enumeration value="MacroExecutionException_FailedToStopAllMacros"/>
<xs:enumeration value="MacroExecutionException_ExecutionFailed"/>
<xs:enumeration value="MacroExecutionException_FailedToRaiseError"/>
<xs:enumeration value="MacroExecutionException_FailedToLogEvent"/>
<xs:enumeration value="MacroExecutionException_MacroRecursionLimitExceeded"/>
<xs:enumeration value="MacroExecutionException_MacroLimitExceeded"/>
<xs:enumeration value="MacroExecutionException_InvalidUpdatedFunction"/>
<xs:enumeration value="MacroExecutionException_IntegerExpressionExpected"/>
<xs:enumeration value="MacroExecutionException_FailedToStartEditRecord"/>
<xs:enumeration value="MacroExecutionException_FailedToExecuteEditRecord"/>
<xs:enumeration value="MacroExecutionException_OperationNotAllowedInEditRecordBlock"/>
<xs:enumeration value="MacroExecutionException_OperationMustBeInEditRecordBlock"/>
<xs:enumeration value="MacroExecutionException_InvalidOperationOnItem"/>
<xs:enumeration value="MacroExecutionException_InvalidObject"/>
<xs:enumeration value="MacroExecutionException_FieldCannotBeUpdated"/>
<xs:enumeration value="MacroExecutionError_FailedToSetOnErrorBehavior"/>
<xs:enumeration value="MacroExecutionException_InsertRecordFailed"/>
<xs:enumeration value="MacroExecutionException_CannotQueryIDInCreateRecord"/>

```

```

<xs:enumeration value="MacroExecutionException_InvalidEditInForEachRecord"/>
<xs:enumeration value="MacroExecutionException_InvalidCreateRecordInForEachRecord"/>
<xs:enumeration value="MacroExecutionException_InvalidCalcColumnReference"/>
<xs:enumeration value="MacroExecutionException_ListItemNotFound"/>
<xs:enumeration value="FormRenderFailure"/>
<xs:enumeration value="FormCompilationFailure"/>
<xs:enumeration value="SettingValidationFailed"/>
<xs:enumeration value="SettingApplicationNameNotFound"/>
<xs:enumeration value="SettingApplicationIdNotFound"/>
<xs:enumeration value="SettingApplicationProxyNameNotFound"/>
<xs:enumeration value="FailedToRetrieveAccessServiceApplication"/>
<xs:enumeration value="CompilationInProgress"/>
<xs:enumeration value="CompilationFailed"/>
</xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for AccessServerMessageId:

Value	Meaning
InternalError	The protocol server has encountered an unexpected error.
ManagementUIInternalError	MUST NOT be used.
GetRecordsPermissionsFailure	The user does not have permissions to view the requested list items .
WriteRecordsPermissionsFailure	The user does not have permissions to create or edit the requested list items.
EditValueListPermissionsFailure	MUST NOT be used.
NotMemberOfRole	The user does not have sufficient rights to complete the operation.
MaxSessionsPerUserExceeded	The user has exceeded the maximum number of sessions (2) allowed by the protocol server.
SiteCollectionCpuQuotaExceeded	MUST NOT be used.
SessionMemoryQuotaExceeded	MUST NOT be used.
SiteCollectionMemoryQuotaExceeded	MUST NOT be used.
RetryError	The operation could not be finished at this time but the request may succeed if it is sent again by the protocol client.
MaxRequestDurationExceeded	The request failed because it took too long to process.
ProductExpired	The protocol server returns this error when the application license key is invalid.

Value	Meaning
NewWorkbookSessionTimeout	A session (2) has timed out.
DataException_DataOperationFailed	A data change operation failed.
DataException_CacheOperationInvalid	MUST NOT be used.
DataException_ValidationFailed	Data validation failed.
DataException_MaxRecordsInTableExceeded	The specified list (1) exceeded the maximum number of list items allowed in a list (1) by the protocol server.
DataException_InvalidPageNumber	The specified page attribute for an absolute URL is invalid.
DataException_DataMacroNotFound	A data macro cannot be found.
InvalidFilterExpression	The provided filter expression is not valid.
InvalidAggregateExpression	The provided aggregate expression is invalid.
InvalidArgument	An argument provided to the operation is invalid.
NullArgument	MUST NOT be used.
WebServiceUpdateIdConflict	MUST NOT be used.
QueryException_AmbiguousValuesProvided	A query failed to execute because more than one value is provided for the same field.
QueryException_InvalidCompiledQueryVersion	MUST NOT be used.
QueryException_InvalidSourceUsageWithoutJoin	A Query contains more than one Reference element that is not used in any Join elements.
QueryException_InvalidExpression	The value of an Expression element in a Query is invalid.
QueryException_InvalidLikeArgumentsExpression	An argument used in a LIKE expression in a Query is invalid.
QueryException_InvalidLikeFieldTypeInExpression	The reference field type used in a LIKE expression in a Query is invalid.
QueryException_InvalidInArgumentsExpression	An argument used in an IN expression in a Query is invalid.
QueryException_InvalidAxIEncoding	A query is not a valid CT_Query specified in [MS-AXL] section 2.2.3.20.
QueryException_InvalidOrderPropertyName	The Name attribute value of an Order element in a Query is invalid.

Value	Meaning
QueryException_InvalidOrderSourceName	The Source attribute value of an Order element in a Query is invalid.
QueryException_InvalidJoinLeftSourceName	The Left attribute value of a Join element in a Query is invalid.
QueryException_InvalidJoinRightSourceName	The Right attribute value of a Join element in a Query is invalid.
QueryException_InvalidJoinLeftPropertyName	The LeftProperty attribute value of a Join element in a Query is invalid.
QueryException_InvalidJoinRightPropertyName	The RightProperty attribute value of a Join element in a Query is invalid.
QueryException_InvalidJoinType	The Type attribute value of a Join element in a Query is invalid.
QueryException_InvalidJoinPropertyType	The field types of LeftProperty and RightProperty in a join element cannot be joined together in a Query.
QueryException_InvalidPropertyElement	A Property element in a Query is invalid.
QueryException_InvalidResultPropertySource	The Source attribute value of a Property element in a Results element in a Query is invalid.
QueryException_InvalidResultPropertyName	The Name attribute value of a Property element in a Results element in a Query is invalid.
QueryException_InvalidResultPropertyAlias	The alias attribute value of a Property element in a Results element in a Query is invalid.
QueryException_InvalidResultExpression	The Expression element of a Property element in a Results element in a Query is invalid.
QueryException_DuplicateResultAliases	An Alias attribute value is used in more than one Property elements in a Query.
QueryException_InvalidParameterName	The Name attribute value of a Parameter element in a Query is invalid.
QueryException_InvalidParameterType	The Type attribute value of a Parameter element in a Query is invalid.
QueryException_InvalidReferenceSourceName	The Source attribute value of a Reference element in a Query is invalid.
QueryException_InvalidReferenceSourceType	The Type attribute value of a Reference element in a Query is

Value	Meaning
	invalid.
QueryException_InvalidRestrictionExpression	The value of a restriction element in a Query is invalid.
QueryException_InvalidReferenceInExpression	A reference used in an Expression element in a Query is invalid.
QueryException_InvalidReferenceInExpression_OutsideOfQuery	A reference used in an Expression element in a Query in invalid.
QueryException_AmbiguousReferenceInExpression	The source of a reference used in an Expression element in a Query is ambiguous.
QueryException_FailedFilterOperation	Filter operation failed.
QueryException_FailedFilterEvaluation_CalcLibGeneral	Failed to filter result because of expression evaluation error.
QueryException_FailedFilterEvaluation_DivZero	Failed to filter result because of a divide by zero error.
QueryException_FailedSortOrFilterOperation	A sort or filter operation failed.
QueryException_QueryNotCompiled	A query is not compiled.
QueryException_InvalidCompiledQueryFormat	A compiled query format is invalid.
QueryException_InvalidJoinUsage	A Join element in a Query is invalid.
QueryException_InvalidExecutionState	Query execution failed.
QueryException_FailedFetchListData	Failed to fetch a data source .
QueryException_FailedCalculatedFieldEvaluation	Failed to evaluate an Expression element of a Property element in a Query.
QueryException_RequiredParameterNotSupplied	A required parameter is not supplied.
QueryException_InvalidListOrQueryReference	The Source attribute value of a Reference element in a Query is not in the content database .
QueryException_BulkUpdatesNotSupported	MUST NOT be used.
QueryException_MissingKeyColumn	MUST NOT be used.
QueryException_CannotSetKeyColumn	The value of a primary key MUST NOT be updated.
QueryException_CannotUpdateNonUpdatableColumn	A data update operation failed because one of the fields is not in an updatable list.
QueryException_MultiTableUpdatesNotSupported	A data update operation failed because more than one data source is used.

Value	Meaning
QueryException_RequiredFieldNotSupplied	A query failed to execute because one of the required field is not supplied.
QueryException_QueryCompiling	A query failed to execute because it is not compiled.
QueryException_QueryCompilationFailure	A query failed to execute because its compilation failed.
QueryException_InvalidCircularExpressionReference	MUST NOT be used.
QueryException_LicenseExpired	The application license key is invalid.
QueryException_ServerUpgraded	A query failed to execute because its compiled format is no longer supported.
QueryThrottleMaxSourcesExceeded	MUST NOT be used.
QueryThrottleMaxOutputsExceeded	MUST NOT be used.
QueryThrottleMaxRowsExceeded	The query returned more rows than is allowed by the protocol server.
QueryThrottleMaxRowsPerSourceExceeded	MUST NOT be used.
QueryThrottleMaxOutputCalculatedColumnsExceeded	MUST NOT be used.
QueryThrottleMaxOrderByColumnsExceeded	MUST NOT be used.
QueryThrottleOuterJoinsDisabled	MUST NOT be used.
QueryThrottleRemotableQueriesDisabled	MUST NOT be used.
OrderingException_InvalidSpecification	The provided sort expression is invalid.
OrderingException_InvalidColumnName	The provided sort expression references an invalid column name.
InvalidMetroFile	MUST NOT be used.
InvalidAccessVersion	MUST NOT be used.
InvalidTemplateVersion	MUST NOT be used.
TemplateNotWebCompatible	MUST NOT be used.
TemplateMaxSizeExceeded	MUST NOT be used.
UpdateConflict	The attempt to update the list item failed because the list item was modified by another user.
DeleteConflict	The attempt to update the list item failed because the list item was deleted by another user.
FieldSchemaChange_UpdateConflict	MUST NOT be used.

Value	Meaning
FieldSchemaChange_ListNotFoundInMSysASO	MUST NOT be used.
FieldSchemaChange_CompilationFailed	MUST NOT be used.
ObjectCompilation_ObjectCompilationFailed	MUST NOT be used.
ObjectCompilation_ListNotFound	MUST NOT be used.
MacroCompilationException_InvalidAxl	MUST NOT be used.
MacroCompilationException_UnexpectedAxlElement	MUST NOT be used.
MacroCompilationException_InvalidAction	MUST NOT be used.
MacroCompilationException_InvalidEventName	MUST NOT be used.
MacroCompilationException_RequiredArgumentMissing	MUST NOT be used.
MacroCompilationException_ArgumentValueNotSpecified	MUST NOT be used.
MacroCompilationException_InvalidActionArgument	MUST NOT be used.
MacroCompilationException_InvalidActionArgumentCount	MUST NOT be used.
MacroCompilationException_InvalidParameter	MUST NOT be used.
MacroCompilationException_MacroParameterLimitExceeded	MUST NOT be used.
MacroCompilationException_MacroActionsLimitExceeded	MUST NOT be used.
MacroCompilationException_MacroCallStackDepthExceeded	MUST NOT be used.
MacroCompilationException_MacroSaveFailed	MUST NOT be used.
MacroCompilationException_MacroAssociationFailed	MUST NOT be used.
MacroCompilationException_InvalidControlName	MUST NOT be used.
MacroCompilationException_Recursion	MUST NOT be used.
MacroExecutionException_FailedToEvaluateExpression	MUST NOT be used.
MacroExecutionException_MissingParameterToDataMacro	MUST NOT be used.
MacroExecutionError_InvalidParameterName	MUST NOT be used.
MacroExecutionException_FailedToResolveExpression	MUST NOT be used.
MacroExecutionException_WrongExpressionVariableFormat	MUST NOT be used.
MacroExecutionException_VariableNotFound	MUST NOT be used.
MacroExecutionException_NoDataContext	MUST NOT be used.
MacroExecutionException_KnownExpressionEvaluationErrorCode	MUST NOT be used.
MacroExecutionException_FailedToExecuteQuery	MUST NOT be used.
MacroExecutionException_FailedMoveToNextItem	MUST NOT be used.

Value	Meaning
MacroExecutionException_FailedToSetField	MUST NOT be used.
MacroExecutionException_FailedToCancelRecordChange	MUST NOT be used.
MacroExecutionException_FailedToDeleteRecord	MUST NOT be used.
MacroExecutionException_ChangeConflict	MUST NOT be used.
MacroExecutionException_FailedToSetLocalVar	MUST NOT be used.
MacroExecutionException_FailedToSetReturnVar	MUST NOT be used.
MacroExecutionException_TooManyReturnVars	MUST NOT be used.
MacroExecutionException_ReturnVarTooLong	MUST NOT be used.
MacroExecutionException_InvalidReturnVarName	MUST NOT be used.
MacroExecutionException_FailedToSaveItem	MUST NOT be used.
MacroExecutionException_FailedToFindItemWithID	MUST NOT be used.
MacroExecutionException_FailedToAddItem	MUST NOT be used.
MacroExecutionException_FailedToDeleteListItem	MUST NOT be used.
MacroExecutionException_FailedToUpdateListItem	MUST NOT be used.
MacroExecutionException_FailedToSetFieldToValue	MUST NOT be used.
MacroExecutionException_CannotFindField	MUST NOT be used.
MacroExecutionException_CannotResolveIdentifier	MUST NOT be used.
MacroExecutionException_CannotFindVariableOrParam	MUST NOT be used.
MacroExecutionException_CannotReferenceMVOAttachmentFields	MUST NOT be used.
MacroExecutionException_ComplexFieldInUpdatedFunc	MUST NOT be used.
MacroExecutionException_CannotFindItemWithAlias	MUST NOT be used.
MacroExecutionException_CannotUpdateReadOnlyItem	MUST NOT be used.
MacroExecutionException_FailedToConfigureSendEmail	MUST NOT be used.
MacroExecutionException_OutboundEmailNotConfigured	MUST NOT be used.
MacroExecutionException_FailedToEnumerateList	MUST NOT be used.
MacroExecutionException_FailedToStartMacro	MUST NOT be used.
MacroExecutionException_TypeMismatch	MUST NOT be used.
MacroExecutionException_CannotStartEventMacro	MUST NOT be used.
MacroExecutionException_FailedToStopMacro	MUST NOT be used.
MacroExecutionException_FailedToStopAllMacros	MUST NOT be used.

Value	Meaning
MacroExecutionException_ExecutionFailed	MUST NOT be used.
MacroExecutionException_FailedToRaiseError	MUST NOT be used.
MacroExecutionException_FailedToLogEvent	MUST NOT be used.
MacroExecutionException_MacroRecursionLimitExceeded	MUST NOT be used.
MacroExecutionException_MacroLimitExceeded	MUST NOT be used.
MacroExecutionException_InvalidUpdatedFunction	MUST NOT be used.
MacroExecutionException_IntegerExpressionExpected	MUST NOT be used.
MacroExecutionException_FailedToStartEditRecord	MUST NOT be used.
MacroExecutionException_FailedToExecuteEditRecord	MUST NOT be used.
MacroExecutionException_OperationNotAllowedInEditRecordBlock	MUST NOT be used.
MacroExecutionException_OperationMustBeInEditRecordBlock	MUST NOT be used.
MacroExecutionException_InvalidOperationOnItem	MUST NOT be used.
MacroExecutionException_InvalidObject	MUST NOT be used.
MacroExecutionException_FieldCannotBeUpdated	MUST NOT be used.
MacroExecutionError_FailedToSetOnErrorBehavior	MUST NOT be used.
MacroExecutionException_InsertRecordFailed	MUST NOT be used.
MacroExecutionException_CannotQueryIDInCreateRecord	MUST NOT be used.
MacroExecutionException_InvalidEditInForEachRecord	MUST NOT be used.
MacroExecutionException_InvalidCreateRecordInForEachRecord	MUST NOT be used.
MacroExecutionException_InvalidCalcColumnReference	MUST NOT be used.
MacroExecutionException_ListItemNotFound	MUST NOT be used.
FormRenderFailure	MUST NOT be used.
FormCompilationFailure	MUST NOT be used.
SettingValidationFailed	MUST NOT be used.
SettingApplicationNameNotFound	MUST NOT be used.
SettingApplicationIdNotFound	MUST NOT be used.
SettingApplicationProxyNameNotFound	MUST NOT be used.
FailedToRetrieveAccessServiceApplication	MUST NOT be used.
CompilationInProgress	Operation cannot be finished because the application is locked while it is being updated.

Value	Meaning
CompilationFailed	Operation cannot be finished because the application is in an invalid state.

2.2.5.3 AccessServerMessageSeverity

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

Specifies the severity of the alert that the protocol server returns to the protocol client.

```
<xs:simpleType name="AccessServerMessageSeverity">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Error"/>
    <xs:enumeration value="Warning"/>
    <xs:enumeration value="Information"/>
    <xs:enumeration value="Progress"/>
    <xs:enumeration value="GettingStarted"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for AccessServerMessageSeverity:

Value	Meaning
Error	The alert is of type error.
Warning	MUST NOT be used.
Information	The alert is of type information.
Progress	MUST NOT be used.
GettingStarted	MUST NOT be used.

2.2.5.4 AccessServerMessageType

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

Specifies type of the alert that the protocol server returns to the protocol client.

```
<xs:simpleType name="AccessServerMessageType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Alert"/>
    <xs:enumeration value="Status"/>
    <xs:enumeration value="Confirmation"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for AccessServerMessageType:

Value	Meaning
Alert	The alert is of type alert.

Value	Meaning
Status	The alert is of type status.
Confirmation	MUST NOT be used.

2.2.5.5 CommandParameterFlags

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:simpleType name="CommandParameterFlags">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="ForceOneTimeRecalc"/>
        <xs:enumeration value="SuppressOneTimeRecalc"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for CommandParameterFlags:

Value	Meaning
ForceOneTimeRecalc	MUST NOT be used.
SuppressOneTimeRecalc	MUST NOT be used.

2.2.5.6 ExcelServerMessageAppearance

Namespace:

http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/

MUST NOT be used.

```
<xs:simpleType name="ExcelServerMessageAppearance">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="OK"/>
        <xs:enumeration value="Cancel"/>
        <xs:enumeration value="Yes"/>
        <xs:enumeration value="No"/>
        <xs:enumeration value="Notification"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for ExcelServerMessageAppearance:

Value	Meaning
None	MUST NOT be used.
OK	MUST NOT be used.
Cancel	MUST NOT be used.
Yes	MUST NOT be used.
No	MUST NOT be used.
Notification	MUST NOT be used.

2.2.5.7 ExcelServerMessageId

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:simpleType name="ExcelServerMessageId">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Blank"/>
    <xs:enumeration value="InternalError"/>
    <xs:enumeration value="NotMemberOfRole"/>
    <xs:enumeration value="EncryptionTooLow"/>
    <xs:enumeration value="ConfirmDataRefresh"/>
    <xs:enumeration value="ExternalDataRefreshFailed"/>
    <xs:enumeration value="ExternalDataRefreshFailedReal"/>
    <xs:enumeration value="ExternalDataRefreshFailedReadOrViewOnly"/>
    <xs:enumeration value="NoAccessToOdcReadOrViewOnly"/>
    <xs:enumeration value="ErrorConnectingToDataSourceReadOrViewOnly"/>
    <xs:enumeration value="InvalidUserNameOrPasswordReadOrViewOnly"/>
    <xs:enumeration value="InvalidUserNameOrPassword"/>
    <xs:enumeration value="ExternalDataNotAllowedOnTL"/>
    <xs:enumeration value="InvalidUriOrLocalConnectionPath"/>
    <xs:enumeration value="DclNotTrusted"/>
    <xs:enumeration value="OdcFileDoesNotExist"/>
    <xs:enumeration value="ErrorAccessingSsoFromEcs"/>
    <xs:enumeration value="SsoError"/>
    <xs:enumeration value="ErrorConnectingToDataSource"/>
    <xs:enumeration value="UnattendedAccountNotConfigured"/>
    <xs:enumeration value="IncorrectAuthUsed"/>
    <xs:enumeration value="ExternalDataRefreshFailed_Details"/>
    <xs:enumeration value="PivotNoOverlapAllowed"/>
    <xs:enumeration value="PivotOverlapList"/>
    <xs:enumeration value="PivotCubeNotUnique"/>
    <xs:enumeration value="NoDataItemsOlap"/>
    <xs:enumeration value="OlapSchemaFail"/>
    <xs:enumeration value="InvalidPivot"/>
    <xs:enumeration value="OlapNoMoreDetail"/>
    <xs:enumeration value="DrillActionInvalid"/>
    <xs:enumeration value="DriverNotOlap"/>
    <xs:enumeration value="CubeMissing"/>
    <xs:enumeration value="SkipLine"/>
    <xs:enumeration value="CDimMismatch"/>
    <xs:enumeration value="DataSetAxisTooBig"/>
  </xs:restriction>
</xs:simpleType>
```

```

<xs:enumeration value="CubeIntegrityError"/>
<xs:enumeration value="PivotNotExpandedtoProtectCellContents"/>
<xs:enumeration value="PivotTruncatedSheetEdge"/>
<xs:enumeration value="DdlGrpNotSup"/>
<xs:enumeration value="PivotFormulasCollided"/>
<xs:enumeration value="NoRetItems"/>
<xs:enumeration value="OlapConnectVisualModeProvider"/>
<xs:enumeration value="PivotNoSourceData"/>
<xs:enumeration value="PivotFilteringError"/>
<xs:enumeration value="PivotTableIncorrectDateFormat"/>
<xs:enumeration value="PivotTableEndingLargerThanStarting"/>
<xs:enumeration value="PivotTableIncorrectNumberFormat"/>
<xs:enumeration value="PivotTableOutOfRange"/>
<xs:enumeration value="MergedCellOverlap"/>
<xs:enumeration value="PivotSourceNotAvailable"/>
<xs:enumeration value="UnexpectedPivotError"/>
<xs:enumeration value="EditModeCannotAcquireLockUnknownReason"/>
<xs:enumeration value="EditModeCannotAcquireLock"/>
<xs:enumeration value="EditModeCannotAcquireLockUnknownUser"/>
<xs:enumeration value="EditModeWorkbookCheckedOutRequired"/>
<xs:enumeration value="EditModeWorkbookCheckedOutToLocalDrafts"/>
<xs:enumeration value="SiteTooBusy"/>
<xs:enumeration value="SiteCollectionMemoryQuotaExceeded"/>
<xs:enumeration value="SessionMemoryQuotaExceeded"/>
<xs:enumeration value="SiteCollectionChartQuotaExceeded"/>
<xs:enumeration value="RequestLimitsExceeded"/>
<xs:enumeration value="SavingUnsupportedInViewMode"/>
<xs:enumeration value="SavingWorkbookNoWorkbookName"/>
<xs:enumeration value="FileSaveGeneric"/>
<xs:enumeration value="SavingWorkbookInvalidPermissions"/>
<xs:enumeration value="SavingWorkbookLockedOrCheckedOut"/>
<xs:enumeration value="SavingWorkbookNotCheckedOut"/>
<xs:enumeration value="SavingWorkbookAccessDenied"/>
<xs:enumeration value="SavingWorkbookInvalidFileType"/>
<xs:enumeration value="SavingWorkbookFileNameExists"/>
<xs:enumeration value="HostedSavingWorkbookFileNameExists"/>
<xs:enumeration value="HostedSavingWorkbookInvalidFileName"/>
<xs:enumeration value="SavingWorkbookNotTrustedLocation"/>
<xs:enumeration value="SavingWorkbookInvalidLocation"/>
<xs:enumeration value="SavingWorkbookInvalidFileName"/>
<xs:enumeration value="SavingWorkbookTrustedLocationSettingWarning"/>
<xs:enumeration value="SavingWorkbookAlmostTooLarge"/>
<xs:enumeration value="SavingWorkbookTooLarge"/>
<xs:enumeration value="NewWorkbookInvalidLocation"/>
<xs:enumeration value="FileOpenSecuritySettings"/>
<xs:enumeration value="FileOpenNotFound"/>
<xs:enumeration value="FileOpenAccessDenied"/>
<xs:enumeration value="FileCorrupt"/>
<xs:enumeration value="OpenWorkbookTooLarge"/>
<xs:enumeration value="OpenWorkbookLocationNotTrusted"/>
<xs:enumeration value="OpenWorkbookAccessDenied"/>
<xs:enumeration value="WorkbookNotSupported"/>
<xs:enumeration value="WorkbookNotSupportedViewRight"/>
<xs:enumeration value="UnsupportedFeatureViewWarning"/>
<xs:enumeration value="UnsupportedFeatureSaveCopyWarning"/>
<xs:enumeration value="ExternalWorkbookLinksDisabled"/>
<xs:enumeration value="WorkbookLockedRead"/>
<xs:enumeration value="EditModeCannotEditNonSharePointWorkbook"/>
<xs:enumeration value="EditModeAccessDenied"/>

```

```

<xs:enumeration value="GenericFileOpenError"/>
<xs:enumeration value="IRMedWorkbook"/>
<xs:enumeration value="ParameterInvalid"/>
<xs:enumeration value="ParameterLimitExceeded"/>
<xs:enumeration value="WorkbookInternalLimit"/>
<xs:enumeration value="OldFormatConversionFailed"/>
<xs:enumeration value="EditModeWorkbookExternalData"/>
<xs:enumeration value="FormulaEditingNotEnabled"/>
<xs:enumeration value="DimensionMismatch"/>
<xs:enumeration value="SetRangeFailure"/>
<xs:enumeration value="ObjectTypeNotSupported"/>
<xs:enumeration value="ParameterDoesNotExist"/>
<xs:enumeration value="FormulaParseFailed"/>
<xs:enumeration value="SetParameterFailure"/>
<xs:enumeration value="CannotEditPivotTable"/>
<xs:enumeration value="InsDelCellsNonblankCells"/>
<xs:enumeration value="InsDelCellsArrayFmla"/>
<xs:enumeration value="InsDelCellsPivotTable"/>
<xs:enumeration value="InsDelCellsTable"/>
<xs:enumeration value="InsDelCellsMergedCells"/>
<xs:enumeration value="InsDelCellsDatatable"/>
<xs:enumeration value="InsDelCellsRowsForWholeColumn"/>
<xs:enumeration value="InsDelCellsColumnsForWholeRow"/>
<xs:enumeration value="InvalidSheetName"/>
<xs:enumeration value="RangeParseError"/>
<xs:enumeration value="SpecifiedRangeNotFound"/>
<xs:enumeration value="RangeDefinitionError"/>
<xs:enumeration value="DiscontiguousRangeNotSupported"/>
<xs:enumeration value="RangeRequestAreaExceeded"/>
<xs:enumeration value="SheetRangeMismatch"/>
<xs:enumeration value="ImageGenFailed"/>
<xs:enumeration value="ApiInvalidArgument"/>
<xs:enumeration value="ApiInvalidCoordinate"/>
<xs:enumeration value="ConfirmationUnsupported"/>
<xs:enumeration value="ApiInvalidDimensionReturned"/>
<xs:enumeration value="ApiMissingSiteContext"/>
<xs:enumeration value="Ewr_IllegalPageSize"/>
<xs:enumeration value="Ewr_WorkbookNotSpecified"/>
<xs:enumeration value="Ewr_LoadProgress"/>
<xs:enumeration value="Ewr_FileCorrupt"/>
<xs:enumeration value="Ewr_WorkbookNotSupported"/>
<xs:enumeration value="Ewr_GenericFileOpenError"/>
<xs:enumeration value="Ewr_InvalidParameterGeneric"/>
<xs:enumeration value="Ewr_InvalidParameterMandatoryMissing"/>
<xs:enumeration value="Ewr_InvalidParameterUnexpectedFormat"/>
<xs:enumeration value="Ewr_InvalidParameterOutOfRange"/>
<xs:enumeration value="Ewr_InvalidParameterOperationNotAllowed"/>
<xs:enumeration value="Ewr_ParameterInvalid"/>
<xs:enumeration value="Ewr_ParameterLimitExceeded"/>
<xs:enumeration value="Ewr_ParameterDoesNotExist"/>
<xs:enumeration value="Ewr_SetParameterFailure"/>
<xs:enumeration value="Ewr_SetParameterFailureOnOpen"/>
<xs:enumeration value="Ewr_ParameterReadFromDocPropsError"/>
<xs:enumeration value="Ewr_FormulaEditingNotEnabled"/>
<xs:enumeration value="Ewr_InvalidVisibleItem"/>
<xs:enumeration value="Ewr_EditSaveAsOverCurrentWorkbook"/>
<xs:enumeration value="Ewr_RequestTimedOut"/>
<xs:enumeration value="Ewr_ServerCommunicationError"/>
<xs:enumeration value="Ewr_ServerAuthenticationError"/>

```

```
<xs:enumeration value="Ewr_Top10InvalidValue"/>
<xs:enumeration value="Ewr_Top10InvalidValue_Float"/>
<xs:enumeration value="Mewa_PageStateInitFailed"/>
<xs:enumeration value="Mewa_CriticalParameterMissing"/>
<xs:enumeration value="Mewa_GridViewRenderingFailed"/>
<xs:enumeration value="Mewa_FeatureNotActive"/>
<xs:enumeration value="OperationNotSupportedInViewOnly"/>
<xs:enumeration value="OperationOnInvalidState"/>
<xs:enumeration value="InvalidOrTimedOutSession"/>
<xs:enumeration value="InvalidOrTimedOutSessionPageRefresh"/>
<xs:enumeration value="ScratchPadChangesLost"/>
<xs:enumeration value="MaxSessionsPerUserExceeded"/>
<xs:enumeration value="OperationCanceled"/>
<xs:enumeration value="MaxRequestDurationExceeded"/>
<xs:enumeration value="NoOccurrencesFound"/>
<xs:enumeration value="EcsInvalidNamedObject"/>
<xs:enumeration value="NoPublishedItems"/>
<xs:enumeration value="RetryError"/>
<xs:enumeration value="StopOpenOnRefreshFailure"/>
<xs:enumeration value="ProductExpired"/>
<xs:enumeration value="SortActionInvalid"/>
<xs:enumeration value="SortActionNotSupportedWithPivot"/>
<xs:enumeration value="CircularReferencesFound"/>
<xs:enumeration value="SessionNotFound"/>
<xs:enumeration value="NewWorkbookSessionTimeout"/>
<xs:enumeration value="EditXLSFile"/>
<xs:enumeration value="UnsupportedFeatureEditWarning"/>
<xs:enumeration value="EditModeSessionExists"/>
<xs:enumeration value="NewerWorkbookExists"/>
<xs:enumeration value="ExternalDataOfficeLive"/>
<xs:enumeration value="LostAuthentication"/>
<xs:enumeration value="ListEntryNotFound_1"/>
<xs:enumeration value="ListEntryNotFound_2"/>
<xs:enumeration value="ListEntryAlreadyExists_1"/>
<xs:enumeration value="ListEntryAlreadyExists_2"/>
<xs:enumeration value="InvalidArgumentValue"/>
<xs:enumeration value="MissingArgumentName"/>
<xs:enumeration value="InvalidArgumentName"/>
<xs:enumeration value="ArgumentBadInRemove"/>
<xs:enumeration value="ManagementUIListEntryAlreadyExists"/>
<xs:enumeration value="ManagementUIListEntryNotFound"/>
<xs:enumeration value="ManagementUIInternalError"/>
<xs:enumeration value="UnsupportedUICulture"/>
<xs:enumeration value="UnsupportedDataCulture"/>
<xs:enumeration value="SpecifiedItemNotFound"/>
<xs:enumeration value="EcsSnapshotAccessDenied"/>
<xs:enumeration value="SaveFailed"/>
<xs:enumeration value="WrongEcs"/>
<xs:enumeration value="PasteDataLimitHit"/>
<xs:enumeration value="UndoStackEmpty"/>
<xs:enumeration value="RedoStackEmpty"/>
<xs:enumeration value="UndoRedoCollabFail"/>
<xs:enumeration value="HyperlinkLocationRequired"/>
<xs:enumeration value="CollabLocaleMismatch"/>
<xs:enumeration value="LocaleRestored"/>
<xs:enumeration value="InvalidEditSession"/>
<xs:enumeration value="InvalidEditSessionPageRefresh"/>
<xs:enumeration value="InvalidEditSessionId"/>
<xs:enumeration value="UnableToLoadEditSession"/>
```

```

<xs:enumeration value="SavingWorkbookFailed"/>
<xs:enumeration value="RefreshLockFailed"/>
<xs:enumeration value="InvalidChartName"/>
<xs:enumeration value="RetryOutOfSync"/>
<xs:enumeration value="OperationFailed"/>
<xs:enumeration value="OpenInExcelActiveXError"/>
<xs:enumeration value="OpenInExcelClientIntegrationDisabled"/>
<xs:enumeration value="ProcessingUserChangesFileDownloadIgnored"/>
<xs:enumeration value="PhoneticDataLossWarning"/>
<xs:enumeration value="Count"/>
</xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for ExcelServerMessageId:

Value	Meaning
Blank	MUST NOT be used.
InternalError	MUST NOT be used.
NotMemberOfRole	MUST NOT be used.
EncryptionTooLow	MUST NOT be used.
ConfirmDataRefresh	MUST NOT be used.
ExternalDataRefreshFailed	MUST NOT be used.
ExternalDataRefreshFailedReal	MUST NOT be used.
ExternalDataRefreshFailedReadOrViewOnly	MUST NOT be used.
NoAccessToOdcReadOrViewOnly	MUST NOT be used.
ErrorConnectingToDataSourceReadOrViewOnly	MUST NOT be used.
InvalidUserNameOrPasswordReadOrViewOnly	MUST NOT be used.
InvalidUserNameOrPassword	MUST NOT be used.
ExternalDataNotAllowedOnTL	MUST NOT be used.
InvalidUriorLocalConnectionPath	MUST NOT be used.
DclNotTrusted	MUST NOT be used.
OdcFileDoesNotExist	MUST NOT be used.
ErrorAccessingSsoFromEcs	MUST NOT be used.
SsoError	MUST NOT be used.
ErrorConnectingToDataSource	MUST NOT be used.
UnattendedAccountNotConfigured	MUST NOT be used.
IncorrectAuthUsed	MUST NOT be used.

Value	Meaning
ExternalDataRefreshFailed_Details	MUST NOT be used.
PivotNoOverlapAllowed	MUST NOT be used.
PivotOverlapList	MUST NOT be used.
PivotCubeNotUnique	MUST NOT be used.
NoDataItemsOlap	MUST NOT be used.
OlapSchemaFail	MUST NOT be used.
InvalidPivot	MUST NOT be used.
OlapNoMoreDetail	MUST NOT be used.
DrillActionInvalid	MUST NOT be used.
DriverNotOlap	MUST NOT be used.
CubeMissing	MUST NOT be used.
SkipLine	MUST NOT be used.
CDimMismatch	MUST NOT be used.
DataSetAxisTooBig	MUST NOT be used.
CubeIntegrityError	MUST NOT be used.
PivotNotExpandedtoProtectCellContents	MUST NOT be used.
PivotTruncatedSheetEdge	MUST NOT be used.
DdlGrpNotSup	MUST NOT be used.
PivotFormulasCollided	MUST NOT be used.
NoRetItems	MUST NOT be used.
OlapConnectVisualModeProvider	MUST NOT be used.
PivotNoSourceData	MUST NOT be used.
PivotFilteringError	MUST NOT be used.
PivotTableIncorrectDateFormat	MUST NOT be used.
PivotTableEndingLargerThanStarting	MUST NOT be used.
PivotTableIncorrectNumberFormat	MUST NOT be used.
PivotTableOutOfRange	MUST NOT be used.
MergedCellOverlap	MUST NOT be used.
PivotSourceNotAvailable	MUST NOT be used.
UnexpectedPivotError	MUST NOT be used.

Value	Meaning
EditModeCannotAcquireLockUnknownReason	MUST NOT be used.
EditModeCannotAcquireLock	MUST NOT be used.
EditModeCannotAcquireLockUnknownUser	MUST NOT be used.
EditModeWorkbookCheckedOutRequired	MUST NOT be used.
EditModeWorkbookCheckedOutToLocalDrafts	MUST NOT be used.
SiteTooBusy	MUST NOT be used.
SiteCollectionMemoryQuotaExceeded	MUST NOT be used.
SessionMemoryQuotaExceeded	MUST NOT be used.
SiteCollectionChartQuotaExceeded	MUST NOT be used.
RequestLimitsExceeded	MUST NOT be used.
SavingUnsupportedInViewMode	MUST NOT be used.
SavingWorkbookNoWorkbookName	MUST NOT be used.
FileSaveGeneric	MUST NOT be used.
SavingWorkbookInvalidPermissions	MUST NOT be used.
SavingWorkbookLockedOrCheckedOut	MUST NOT be used.
SavingWorkbookNotCheckedOut	MUST NOT be used.
SavingWorkbookAccessDenied	MUST NOT be used.
SavingWorkbookInvalidFileType	MUST NOT be used.
SavingWorkbookFileNameExists	MUST NOT be used.
HostedSavingWorkbookFileNameExists	MUST NOT be used.
HostedSavingWorkbookInvalidFileName	MUST NOT be used.
SavingWorkbookNotTrustedLocation	MUST NOT be used.
SavingWorkbookInvalidLocation	MUST NOT be used.
SavingWorkbookInvalidFileName	MUST NOT be used.
SavingWorkbookTrustedLocationSettingWarning	MUST NOT be used.
SavingWorkbookAlmostTooLarge	MUST NOT be used.
SavingWorkbookTooLarge	MUST NOT be used.
NewWorkbookInvalidLocation	MUST NOT be used.
FileOpenSecuritySettings	MUST NOT be used.
FileOpenNotFound	MUST NOT be used.

Value	Meaning
FileOpenAccessDenied	MUST NOT be used.
FileCorrupt	MUST NOT be used.
OpenWorkbookTooLarge	MUST NOT be used.
OpenWorkbookLocationNotTrusted	MUST NOT be used.
OpenWorkbookAccessDenied	MUST NOT be used.
WorkbookNotSupported	MUST NOT be used.
WorkbookNotSupportedViewRight	MUST NOT be used.
UnsupportedFeatureViewWarning	MUST NOT be used.
UnsupportedFeatureSaveCopyWarning	MUST NOT be used.
ExternalWorkbookLinksDisabled	MUST NOT be used.
WorkbookLockedRead	MUST NOT be used.
EditModeCannotEditNonSharePointWorkbook	MUST NOT be used.
EditModeAccessDenied	MUST NOT be used.
GenericFileOpenError	MUST NOT be used.
IRMedWorkbook	MUST NOT be used.
ParameterInvalid	MUST NOT be used.
ParameterLimitExceeded	MUST NOT be used.
WorkbookInternalLimit	MUST NOT be used.
OldFormatConversionFailed	MUST NOT be used.
EditModeWorkbookExternalData	MUST NOT be used.
FormulaEditingNotEnabled	MUST NOT be used.
DimensionMismatch	MUST NOT be used.
SetRangeFailure	MUST NOT be used.
ObjectTypeNotSupported	MUST NOT be used.
ParameterDoesNotExist	MUST NOT be used.
FormulaParseFailed	MUST NOT be used.
SetParameterFailure	MUST NOT be used.
CannotEditPivotTable	MUST NOT be used.
InsDelCellsNonblankCells	MUST NOT be used.
InsDelCellsArrayFmla	MUST NOT be used.

Value	Meaning
InsDelCellsPivotTable	MUST NOT be used.
InsDelCellsTable	MUST NOT be used.
InsDelCellsMergedCells	MUST NOT be used.
InsDelCellsDatatable	MUST NOT be used.
InsDelCellsRowsForWholeColumn	MUST NOT be used.
InsDelCellsColumnsForWholeRow	MUST NOT be used.
InvalidSheetName	MUST NOT be used.
RangeParseError	MUST NOT be used.
SpecifiedRangeNotFound	MUST NOT be used.
RangeDefinitionError	MUST NOT be used.
DiscontiguousRangeNotSupported	MUST NOT be used.
RangeRequestAreaExceeded	MUST NOT be used.
SheetRangeMismatch	MUST NOT be used.
ImageGenFailed	MUST NOT be used.
ApiInvalidArgument	MUST NOT be used.
ApiInvalidCoordinate	MUST NOT be used.
ConfirmationUnsupported	MUST NOT be used.
ApiInvalidDimensionReturned	MUST NOT be used.
ApiMissingSiteContext	MUST NOT be used.
Ewr_IllegalPageSize	MUST NOT be used.
Ewr_WorkbookNotSpecified	MUST NOT be used.
Ewr_LoadProgress	MUST NOT be used.
Ewr_FileCorrupt	MUST NOT be used.
Ewr_WorkbookNotSupported	MUST NOT be used.
Ewr_GenericFileOpenError	MUST NOT be used.
Ewr_InvalidParameterGeneric	MUST NOT be used.
Ewr_InvalidParameterMandatoryMissing	MUST NOT be used.
Ewr_InvalidParameterUnexpectedFormat	MUST NOT be used.
Ewr_InvalidParameterOutOfRange	MUST NOT be used.
Ewr_InvalidParameterOperationNotAllowed	MUST NOT be used.

Value	Meaning
Ewr_ParameterInvalid	MUST NOT be used.
Ewr_ParameterLimitExceeded	MUST NOT be used.
Ewr_ParameterDoesNotExist	MUST NOT be used.
Ewr_SetParameterFailure	MUST NOT be used.
Ewr_SetParameterFailureOnOpen	MUST NOT be used.
Ewr_ParameterReadFromDocPropsError	MUST NOT be used.
Ewr_FormulaEditingNotEnabled	MUST NOT be used.
Ewr_InvalidVisibleItem	MUST NOT be used.
Ewr_EditSaveAsOverCurrentWorkbook	MUST NOT be used.
Ewr_RequestTimedOut	MUST NOT be used.
Ewr_ServerCommunicationError	MUST NOT be used.
Ewr_ServerAuthenticationError	MUST NOT be used.
Ewr_Top10InvalidValue	MUST NOT be used.
Ewr_Top10InvalidValue_Float	MUST NOT be used.
Mewa_PageStateInitFailed	MUST NOT be used.
Mewa_CriticalParameterMissing	MUST NOT be used.
Mewa_GridViewRenderingFailed	MUST NOT be used.
Mewa_FeatureNotActive	MUST NOT be used.
OperationNotSupportedInViewOnly	MUST NOT be used.
OperationOnInvalidState	MUST NOT be used.
InvalidOrTimedOutSession	MUST NOT be used.
InvalidOrTimedOutSessionPageRefresh	MUST NOT be used.
ScratchPadChangesLost	MUST NOT be used.
MaxSessionsPerUserExceeded	MUST NOT be used.
OperationCanceled	MUST NOT be used.
MaxRequestDurationExceeded	MUST NOT be used.
NoOccurrencesFound	MUST NOT be used.
EcsInvalidNamedObject	MUST NOT be used.
NoPublishedItems	MUST NOT be used.
RetryError	MUST NOT be used.

Value	Meaning
StopOpenOnRefreshFailure	MUST NOT be used.
ProductExpired	MUST NOT be used.
SortActionInvalid	MUST NOT be used.
SortActionNotSupportedWithPivot	MUST NOT be used.
CircularReferencesFound	MUST NOT be used.
SessionNotFound	MUST NOT be used.
NewWorkbookSessionTimeout	MUST NOT be used.
EditXLSFile	MUST NOT be used.
UnsupportedFeatureEditWarning	MUST NOT be used.
EditModeSessionExists	MUST NOT be used.
NewerWorkbookExists	MUST NOT be used.
ExternalDataOfficeLive	MUST NOT be used.
LostAuthentication	MUST NOT be used.
ListEntryNotFound_1	MUST NOT be used.
ListEntryNotFound_2	MUST NOT be used.
ListEntryAlreadyExists_1	MUST NOT be used.
ListEntryAlreadyExists_2	MUST NOT be used.
InvalidArgumentValue	MUST NOT be used.
MissingArgumentName	MUST NOT be used.
InvalidArgumentName	MUST NOT be used.
ArgumentBadInRemove	MUST NOT be used.
ManagementUIListEntryAlreadyExists	MUST NOT be used.
ManagementUIListEntryNotFound	MUST NOT be used.
ManagementUIInternalError	MUST NOT be used.
UnsupportedUICulture	MUST NOT be used.
UnsupportedDataCulture	MUST NOT be used.
SpecifiedItemNotFound	MUST NOT be used.
EcsSnapshotAccessDenied	MUST NOT be used.
SaveFailed	MUST NOT be used.
WrongEcs	MUST NOT be used.

Value	Meaning
PasteDataLimitHit	MUST NOT be used.
UndoStackEmpty	MUST NOT be used.
RedoStackEmpty	MUST NOT be used.
UndoRedoCollabFail	MUST NOT be used.
HyperlinkLocationRequired	MUST NOT be used.
CollabLocaleMismatch	MUST NOT be used.
LocaleRestored	MUST NOT be used.
InvalidEditSession	MUST NOT be used.
InvalidEditSessionPageRefresh	MUST NOT be used.
InvalidEditSessionId	MUST NOT be used.
UnableToLoadEditSession	MUST NOT be used.
SavingWorkbookFailed	MUST NOT be used.
RefreshLockFailed	MUST NOT be used.
InvalidChartName	MUST NOT be used.
RetryOutOfSync	MUST NOT be used.
OperationFailed	MUST NOT be used.
OpenInExcelActiveXError	MUST NOT be used.
OpenInExcelClientIntegrationDisabled	MUST NOT be used.
ProcessingUserChangesFileDownloadIgnored	MUST NOT be used.
PhoneticDataLossWarning	MUST NOT be used.
Count	MUST NOT be used.

2.2.5.8 ExcelServerMessageSeverity

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:simpleType name="ExcelServerMessageSeverity">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Error"/>
    <xs:enumeration value="Warning"/>
    <xs:enumeration value="Information"/>
    <xs:enumeration value="Progress"/>
    <xs:enumeration value="GettingStarted"/>
  </xs:restriction>
</xs:simpleType>
```

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

The following table specifies the allowable values for ExcelServerMessageSeverity:

Value	Meaning
Error	MUST NOT be used.
Warning	MUST NOT be used.
Information	MUST NOT be used.
Progress	MUST NOT be used.
GettingStarted	MUST NOT be used.

2.2.5.9 ExcelServerMessageType

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

MUST NOT be used.

```
<xs:simpleType name="ExcelServerMessageType">  
  <xs:restriction base="xs:string">  
    <xs:enumeration value="Alert"/>  
    <xs:enumeration value="Status"/>  
    <xs:enumeration value="Confirmation"/>  
  </xs:restriction>  
</xs:simpleType>
```

The following table specifies the allowable values for ExcelServerMessageType:

Value	Meaning
Alert	MUST NOT be used.
Status	MUST NOT be used.
Confirmation	MUST NOT be used.

2.2.5.10 guid

Namespace: <http://microsoft.com/wsdl/types/>

Specifies a GUID value as specified in [\[RFC4122\]](#).

```
<xs:simpleType name="guid">  
  <xs:restriction base="xs:string">  
    <xs:pattern value="[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}"/>  
  </xs:restriction>  
</xs:simpleType>
```

2.2.5.11 ServerStateFlags

Namespace: <http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server>

Specifies the state of the protocol server.

```
<xs:simpleType name="ServerStateFlags">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="Probation"/>
        <xs:enumeration value="ShuttingDown"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for ServerStateFlags:

Value	Meaning
None	MUST NOT be used.
Probation	MUST NOT be used.
ShuttingDown	The protocol server is shutting down.

2.2.5.12 ServerStateFlags

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

An enumeration specifying the state of the protocol server.

```
<xs:simpleType name="ServerStateFlags">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="ShuttingDown"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for ServerStateFlags:

Value	Meaning
ShuttingDown	The protocol server is shutting down.

2.2.5.13 SessionIdentifier

Namespace:

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/

The **SessionIdentifier** string is used to uniquely identify a session (2) on the protocol server, and to contain information about the session (2).

The **SessionIdentifier** MUST have the following layout:

(Numeric values in parts 1, 3, 5, 6, 8, 10, 12, and 14 MUST follow the xs:integer type representation)

Part 1: MUST be the value 1, followed by a '.'.

Part 2: MUST be 'V'.

Part 3: The number of characters in part 4, followed by a '.'.

Part 4: A unique string. MUST be greater than or equal to 20 and less than or equal to 32647 characters long.

Part 5: The sum of number of characters in parts 6-11, followed by a '.'.

Part 6: The number of characters in part 7, followed by a '.'.

Part 7: The UI culture of the session (2). A language tag, as specified in [\[RFC1766\]](#), Section 2.

Part 8: The number of characters in part 9, followed by a '.'.

Part 9: The data culture of the session (2). A language tag, as specified in [\[RFC1766\]](#), Section 2.

Part 10: The number of characters in part 11, followed by a '.'.

Part 11: The **time zone** of the session (2) as specified in **CultureCommandParameter** complex type (section [3.1.4.11](#)).

Part 12: The number of characters in part 13, followed by a '.'.

Part 13: MUST be equal to the value of **RequestSiteId** passed in **parameter**, in the **OpenSession** operation (section [3.1.4.11.2.1](#)).

Part 14: MUST be the value 1, followed by a '.'.

Part 15: MUST be 'U'.

```
<xs:simpleType name="SessionIdentifier">
  <xs:restriction base="xs:string"/>
</xs:simpleType>
```

2.2.6 Attributes

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

2.2.7 Groups

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

2.2.8 Attribute Groups

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

2.2.9 Faults

In the event of an application error the protocol server returns a SOAP fault as a response to the operation, as specified in [\[SOAP1.1\]](#), section 4.4.

- The protocol client MUST ignore all elements of the soap fault, except for the **SOAP fault detail** element.
- The soap fault detail element MUST contain the protocol server alert as specified in AccessServerMessage (section [2.2.4.1](#)).

2.2.9.1 Common Fault Identifiers

List of fault identifiers as specified in section [2.2.5.2](#) returned by operations as specified in section [3.1.4](#).

Id
NotMemberOfRole
MaxSessionsPerUserExceeded
SiteCollectionCpuQuotaExceeded
SessionMemoryQuotaExceeded
SiteCollectionMemoryQuotaExceeded
RetryError
MaxRequestDurationExceeded
ProductExpired
NewWorkbookSessionTimeout
InvalidArgument
InternalError

2.2.9.2 Query Fault Identifiers

List of fault identifiers as specified in section [2.2.5.2](#) returned by operations as specified in section [3.1.4.4](#) and section [3.1.4.10](#).

Id
QueryException
QueryExceptionWithExpression
QueryThrottleMaxSourcesExceeded

Id
QueryThrottleMaxOutputsExceeded
QueryThrottleMaxRowsExceeded
QueryThrottleMaxRowsPerSourceExceeded
QueryThrottleMaxOutputCalculatedColumnsExceeded
QueryThrottleMaxOrderByColumnsExceeded
QueryThrottleOuterJoinsDisabled
QueryThrottleRemotableQueriesDisabled

3 Protocol Details

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 protocol 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**, **present**, and **not null**.

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.

3.1 Server Details

3.1.1 Abstract Data Model

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

Session: An entity which gives context to operations done against application data. A session (2) is associated with one or more result sets, which can be modified by **state changing** operations.

Request: An entity which represents a running request on the protocol server.

Ad Hoc Query: A **CT_Query** element as specified in [\[MS-AXL\]](#) section 2.2.3.20 and with the **Name** attribute omitted.

Named Query: An entity stored in the content database representing a **CT_Query** element as specified in [\[MS-AXL\]](#) section 2.2.3.20 and with the **Name** attribute specified.

Source: A list or a named query in the content database. One or more sources MUST be referenced in a **CT_Query** element as specified in [\[MS-AXL\]](#) section 2.2.3.20.

Data Source: A source or an ad hoc query.

Updatable List: The list in a data source against which insert, update, and delete data operations are applied. A source MUST contain zero or one such lists as follows:

For a data source based on a single list, that list is the updatable list.

For queries with more than one source, the sources in the query must be connected by joins. Each join is specified by a **CT_Join** element (see [\[MS-AXL\]](#) section 2.2.3.12). Call the source specified in the **Left** attribute S_L , the source specified in the **Right** attribute S_R , the property specified in the **LeftProperty** attribute P_L , the property specified in the **RightProperty** attribute P_R , and the join type specified in the **Type** attribute T .

If a graph is defined by considering each source as a node, and each **CT_Join** as an edge between its sources S_L and S_R , then the graph:

- MUST be fully connected.

- MUST be acyclic.
- MUST not have more than one edge between two given nodes.

For each **CT_Join**, S_L is said to be updatable in relation to S_R if all of the following conditions hold:

- T is "Inner" or "Left Outer."
- P_R is a primary key field.
- P_L is not a primary key field.

S_R is said to be updatable in relation to S_L if all of the following conditions hold:

- T is "Inner" or "Right Outer."
- P_L is a primary key field.
- P_R is not a primary key field.

Otherwise, S_R is not updatable in relation to S_L and S_L is not updatable in relation to S_R .

In a given query, the updatable source is the source that is updatable in relation to all of the sources that it is connected to in the graph. Because the graph is fully connected and acyclic, there is at most one of these updatable sources.

If the updatable source in a query is a list, then that list is the updatable list for the query.

If the updatable source in a query (Q_1) is another query (Q_2), then the updatable list is the updatable list for that query (Q_2).

Result Set: A set of rows that results from running a query specified by either a source or an ad hoc query. Rows are said to be visible if they satisfy the filter criteria. Rows are said to be hidden if they do not satisfy the filter criteria. If no filter criteria are specified, all rows are visible. Only visible rows are available for data operations.

A protocol client requests a subset of the rows in a result set by specifying a starting index and a maximum row count to return. The row indices are consecutive integer values starting at 0 and ending at one less than the total number visible rows.

Sort, filter, and aggregate data operations MUST remain applied for the lifetime of the result set, or until they are changed or cleared by another data operation.

Data Macro: A set of built-in activities which act upon list items as specified in the CT_DataMacro element specified in [\[MS-AXL\]](#) section 2.2.3.49. A protocol client can trigger a data macro indirectly through **InsertData** (section [3.1.4.8](#)), **UpdateData** (section [3.1.4.14](#)), or **DeleteData** (section [3.1.4.2](#)), or explicitly by calling **RunDataMacro** (section [3.1.4.12](#)). The status of a data macro instance is obtained by calling **GetMacroState** (section [3.1.4.7](#)).

3.1.2 Timers

3.1.2.1 Session Timeout

The **Session Timeout** timer measures the time it take for a session (2) to time out.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

The specifications of the Access Services Data Server Protocol operations.

This specification includes the following **WSDL operations**:

WSDL Operation	Description
CloseSession	This operation closes a session (2) on the protocol server.
DeleteData	This operation deletes a list item from a list in the content database and also deletes the row from the result set unless this behavior is overridden by the autoResync flag.
FixupRow	This operation returns the results of performing a hypothetical update on the result set.
GetData	This operation performs sort, filter, and synchronization operations on the rows in a result set, and then returns a subset of those rows.
GetDistinctValues	This operation returns a single column from a result set with duplicate values removed.
GetHealthScore	This operation returns information about the health of the protocol server.
GetMacroState	This operation is used to get the state of a data macro instance.
InsertData	This operation inserts a list item into a list in the content database and also inserts a row into the result set.
KeepAlive	This operation extends the time a session (2) has remaining before it times out.
OpenResultSet	This operation opens a result set for the given source and returns a subset of rows from the result set.
OpenSession	This operation creates a new session (2).
RunDataMacro	This operation triggers a data macro.
UpdateCache	This operation updates a row in the result set.
UpdateData	This operation updates a list item in a list in the content database and also updates the row in the result set.

3.1.4.1 CloseSession

This operation closes a session (2) on the protocol server.

```
<wsdl:operation name="CloseSession">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/CloseSession"
    message="tns:AccessServiceSoap_CloseSession_InputMessage"/>
```

```

    <wsdl:output
      wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/CloseSessionResponse"
      message="tns:AccessServiceSoap_CloseSession_OutputMessage"/>
    <wsdl:fault
      wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/CloseSessionAccessServerMessageFault"
      name="AccessServerMessageFault"
      message="tns:AccessServiceSoap_CloseSession_AccessServerMessageFault_FaultMessage"/>
  </wsdl:operation>

```

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

- Protocol Server closes the session (2) specified in the **WorkbookId** of the **CommandParameter**.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#))

3.1.4.1.1 Messages

The following **WSDL message** definitions are specific to this operation.

3.1.4.1.1.1 AccessServiceSoap_CloseSession_InputMessage

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

The **SOAP action** value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/CloseSession

```

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

3.1.4.1.1.2 AccessServiceSoap_CloseSession_OutputMessage

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

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

3.1.4.1.2 Elements

The following **XML Schema** element definitions are specific to this operation.

3.1.4.1.2.1 CloseSession

The input data for the **CloseSession** WSDL operation.

```

<xs:element name="CloseSession">
  <xs:complexType>
    <xs:sequence>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="parameter"
      xmlns:q12="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
      rvice/" type="q12:CommandParameter"/>
    <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
      xmlns:q13="http://microsoft.com/wsdl/types/" type="q13:guid"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

correlationId: An identifier for the operation.

3.1.4.1.2.2 CloseSessionResponse

The result data for the **CloseSession** WSDL operation.

```

<xs:element name="CloseSessionResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="CloseSessionResult"
        xmlns:q14="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
        rvice/" type="q14:CommandResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

CloseSessionResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

3.1.4.1.3 Complex Types

None.

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 DeleteData

This operation deletes a list item from a list in the content database and also deletes the row from the result set unless this behavior is overridden by the **autoResync** flag.

```

<wsdl:operation name="DeleteData">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/DeleteData"
    message="tns:AccessServiceSoap_DeleteData_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/DeleteDataResponse"
    message="tns:AccessServiceSoap_DeleteData_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/DeleteDataAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_DeleteData_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>

```

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

- The protocol server deletes from the updatable list (see section [3.1.1](#)) the list item which has a primary key equal to the **Key** element of the first **KeyValuePair** in the **keys** element.
- If the result set was opened by an **OpenResultSet** operation with the **autoResync** element (see section [3.1.4.10.2.1](#)) set to true, and the list item was successfully deleted, then the protocol server deletes from the result set the row with a primary key equal to the primary key of the deleted list item. If **autoResync** was false, the protocol server MUST NOT delete the **row**.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)) or one of the following values.

Id	Description
WriteRecordsPermissionsFailure	See section 2.2.5.2 .
DataException_ValidationFailed	See section 2.2.5.2 .
DataException_DataOperationFailed	See section 2.2.5.2 .

3.1.4.2.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.2.1.1 AccessServiceSoap_DeleteData_InputMessage

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

The SOAP action value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/DeleteData

```

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

3.1.4.2.1.2 AccessServiceSoap_DeleteData_OutputMessage

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

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

3.1.4.2.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.2.2.1 DeleteData

The input data for the **DeleteData** WSDL operation.

```
<xs:element name="DeleteData">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q33="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvices/" type="q33:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="keys" type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="0" maxOccurs="1" name="oldValues"
type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q34="http://microsoft.com/wsdl/types/" type="q34:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the **site** containing the application. MUST be present.

moniker: The identifier for a result set. MUST be present. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

listName: The data source (1) for the result set as specified for the **source** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)). MUST be present.

keys: Specifies the list item to delete.

- MUST be present, and MUST contain exactly one **KeyValuePair** (see section [2.2.4.14](#)).
- The **Key** element of the **KeyValuePair** MUST be of type `xs:int` and MUST be a primary key for a row in the result set.
- The **Value** element of the **KeyValuePair** MUST be ignored.

oldValues: MUST be present and MUST contain at least one **KeyValuePair** (see section [2.2.4.14](#)).

correlationId: An identifier for the operation.

3.1.4.2.2 DeleteDataResponse

The result data for the **DeleteData** WSDL operation.

```
<xs:element name="DeleteDataResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="DeleteDataResult"
        xmlns:q35="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q35:CommandResult"/>
      <xs:element minOccurs="1" maxOccurs="1" name="recordsDeleted" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

DeleteDataResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

recordsDeleted: MUST be 1.

dataMacroId: If the operation triggers a data macro, then the protocol server MUST return the identifier of the instance of the data macro in this element. Otherwise, this element MUST NOT be present.

3.1.4.2.3 Complex Types

None.

3.1.4.2.4 Simple Types

None.

3.1.4.2.5 Attributes

None.

3.1.4.2.6 Groups

None.

3.1.4.2.7 Attribute Groups

None.

3.1.4.3 FixupRow

This operation returns the results of performing a hypothetical update on the result set.

```
<wsdl:operation name="FixupRow">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/FixupRow" message="tns:AccessServiceSoap_FixupRow_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/FixupRowResponse"
    message="tns:AccessServiceSoap_FixupRow_OutputMessage"/>
</wsdl:operation>
```

```

    <wsdl:fault
      wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/FixupRowAccessServerMessageFault" name="AccessServerMessageFault"
      message="tns:AccessServiceSoap_FixupRow_AccessServerMessageFault_FaultMessage"/>
  </wsdl:operation>

```

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

- The protocol server fetches a copy of a row from the result set using the given **key**, and updates the columns specified in **values** in the copy. The result set itself is not modified. If the update succeeds, the protocol server returns the updated values of all columns in the row.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)), one of the values specified in Query Fault Identifiers (section [2.2.9.2](#)).

3.1.4.3.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.3.1.1 AccessServiceSoap_FixupRow_InputMessage

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

The SOAP action value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/FixupRow

```

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

3.1.4.3.1.2 AccessServiceSoap_FixupRow_OutputMessage

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

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

3.1.4.3.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.3.2.1 FixupRow

The input data for the **FixupRow** WSDL operation.

```

<xs:element name="FixupRow">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
        xmlns:q30="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q30:CommandParameter"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="keys" type="tns:ArrayOfKeyValuePair"/>
    <xs:element minOccurs="0" maxOccurs="1" name="values" type="tns:ArrayOfKeyValuePair"/>
    <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q31="http://microsoft.com/wsdl/types/" type="q31:guid"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site containing the application. MUST be present.

moniker: The identifier for a result set. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

keys: Specifies the row to operate on.

- MUST be present, and MUST contain exactly one **KeyValuePair** (see section [2.2.4.14](#)).

The **Key** element of the **KeyValuePair** MUST contain a primary key value for a row in the result set.

values: An array of key and value pairs where each **Key** element specifies the name of a column in the result set, and the corresponding **Value** element contains the data for that column in the row.

- MUST be present.
- MUST contain at least one **KeyValuePair** (see section [2.2.4.14](#)).
- For each **KeyValuePair**
 - The **Value** element MUST be the correct **data type** for the column in the result set.
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **xs:boolean**
 - **xs:dateTime**
 - **xs:double**
 - **xs:string**
 - **xs:int**

correlationId: An identifier for the operation.

3.1.4.3.2.2 FixupRowResponse

The result data for the **FixupRow** WSDL operation.

```
<xs:element name="FixupRowResponse">
```

```

<xs:complexType>
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="FixupRowResult"
xmlns:q32="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" type="q32:CommandResult"/>
    <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
type="tns:ArrayOfAnyType"/>
    <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

FixupRowResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

tableXml: **XML** containing the content of the returned row, as specified for the **tableXml** element of the **OpenResultSetResponse** element (see section [3.1.4.10.2.2](#)).

aggregateValues: MUST NOT be present.

totalRowCount: MUST be 1.

3.1.4.3.3 Complex Types

None.

3.1.4.3.4 Simple Types

None.

3.1.4.3.5 Attributes

None.

3.1.4.3.6 Groups

None.

3.1.4.3.7 Attribute Groups

None.

3.1.4.4 GetData

This operation performs sort, filter, and synchronization operations on the rows in a result set, and then returns a subset of those rows.

```

<wsdl:operation name="GetData">
  <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetData" message="tns:AccessServiceSoap_GetData_InputMessage"/>
  <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDataResponse"
message="tns:AccessServiceSoap_GetData_OutputMessage"/>

```

```

<wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetDataAccessServerMessageFault" name="AccessServerMessageFault"
message="tns:AccessServiceSoap_GetData_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>

```

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

- The protocol server first executes any actions specified by the **cacheCommands** element. Next the protocol server returns a subset of the visible rows in the result set, as specified by the **startRowIndex** and **maximumRows** elements.
- The subset of rows returned is specified by **startRowIndex** and **maximumRows** as follows:
 - If the **maximumRows** element is set to 0 the protocol server returns all visible rows in the result set starting with 0 (overriding the value specified in **startRowIndex**).
 - If the **maximumRows** element is greater than 0 and **startRowIndex** + **maximumRows** exceeds the number of visible rows in the result set, then the protocol server returns all visible rows in the result set with indices greater than or equal to **startRowIndex**.
 - Otherwise the protocol server returns all visible rows in the result set with indices starting at **startRowIndex** and ending at **startRowIndex** + **maximumRows** - 1.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)), one of the values specified in Query Fault Identifiers (section [2.2.9.2](#)), or one of the following values.

Id	Description
GetRecordsPermissionsFailure	See section 2.2.5.2 .
OrderingException_InvalidSpecification	See section 2.2.5.2 .
OrderingException_InvalidColumnName	See section 2.2.5.2 .
InvalidFilterExpression	See section 2.2.5.2 .

3.1.4.4.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.4.1.1 AccessServiceSoap_GetData_InputMessage

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

The SOAP action value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetData

```

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

3.1.4.4.1.2 AccessServiceSoap_GetData_OutputMessage

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

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

3.1.4.4.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.4.2.1 GetData

The input data for the **GetData** WSDL operation.

```
<xs:element name="GetData">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q21="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvices/" type="q21:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="startRowIndex" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="cacheCommands" type="tns:CacheCommands"/>
      <xs:element minOccurs="0" maxOccurs="1" name="sortExpression" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="filter" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q22="http://microsoft.com/wsdl/types/" type="q22:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site containing the application. MUST be present.

moniker: The identifier for a result set. MUST be present. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

startRowIndex: Specifies the index of the first visible row to return from the result set.

- MUST be nonnegative.
- MUST be less than the number of visible rows in the result set.

maximumRows: Specifies the maximum number of rows to return.

- If **cacheCommands** contains RefreshData, MUST be 1.
- If **cacheCommands** does not contain RefreshData, MUST be nonnegative.

cacheCommands: A list of actions as specified in section [3.1.4.4.4.1](#) to perform on the result set. If both ApplyFilter and ClearFilter are specified, the protocol server MUST return a SOAP fault as specified in section [3.1.4.4](#).

sortExpression: Specifies the sort order to apply to the result set. If **cacheCommands** contains ApplySort:

- MUST be present.
- MUST contain a **CT_AdHocOrdering** as specified in [\[MS-AXL\]](#) section 2.2.3.7.

The protocol server MUST ignore this element if **cacheCommands** does not contain ApplySort.

filter: Specifies the **filter** criteria to apply to the result set. If present, MUST be an **expression** as specified in [\[MS-AXL\]](#) section 2.5.2 and MUST only reference columns present in the result set.

The protocol server MUST ignore this element if **cacheCommands** does not contain ApplyFilter.

correlationId: An identifier for the operation.

3.1.4.4.2 GetDataResponse

The result data for the **GetData** WSDL operation.

```
<xs:element name="GetDataResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetDataResult"
        xmlns:q23="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q23:CommandResult"/>
      <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
        type="tns:ArrayOfAnyType"/>
      <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetDataResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

tableXml: XML containing the content of the returned rows, as specified for the **tableXml** element of the **OpenResultSetResponse** element (see section [3.1.4.10.2.2](#)). MUST be present.

aggregateValues: An array of values containing the results of evaluating the expressions specified in the **aggregateExpressions** element (see section [3.1.4.10.2.1](#)) used as an input to an **OpenResultSet** operation previously during the session (2).

- The index of each evaluated result in the **aggregateValues** array MUST match the index of the corresponding expression in the **aggregateExpressions** array.
- The aggregate values MUST result from evaluating the expression over all visible rows in the result set.

totalRowCount: Specifies the number of rows in the result set view.

3.1.4.4.3 Complex Types

None.

3.1.4.4.4 Simple Types

The following XML Schema simple type definitions are specific to this operation.

3.1.4.4.4.1 CacheCommands

Namespace:

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/

The **CacheCommands** type is a list of enumeration values specifying operations to perform on the result set. If multiple values are specified, then all of the specified operations **MUST** be performed, except for combinations prohibited by the following table.

```
<xs:simpleType name="CacheCommands">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="RefreshData"/>
        <xs:enumeration value="ApplyFilter"/>
        <xs:enumeration value="ClearFilter"/>
        <xs:enumeration value="ApplySort"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table specifies the allowable values for CacheCommands:

Value	Meaning
RefreshData	Refresh the row specified by the startRowIndex element from the data source (1) specified in the source element for the OpenResultSet operation (see section 3.1.4.10.2.1) that created the result set.
ApplyFilter	Filter the result set as specified in the filter element (see section 3.1.4.4.2.1). MUST NOT be present if ClearFilter is present.
ClearFilter	Remove any filtering applied to the result set. MUST NOT be present if ApplyFilter is present.
ApplySort	Sort the result set as specified by the sortExpression element (see section 3.1.4.4.2.1).

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 GetDistinctValues

This operation returns a single column from a result set with duplicate values removed.

```
<wsdl:operation name="GetDistinctValues">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetDistinctValues"
    message="tns:AccessServiceSoap_GetDistinctValues_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetDistinctValuesResponse"
    message="tns:AccessServiceSoap_GetDistinctValues_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetDistinctValuesAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_GetDistinctValues_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

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

- The protocol server returns a table consisting of a single column. Each row of the table contains a distinct value from the column specified by **columnName** in the result set specified by **moniker**.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.5.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.5.1.1 AccessServiceSoap_GetDistinctValues_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetDistinctValues
```

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

3.1.4.5.1.2 AccessServiceSoap_GetDistinctValues_OutputMessage

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

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

3.1.4.5.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.5.2.1 GetDistinctValues

The input data for the **GetDistinctValues** WSDL operation.

```
<xs:element name="GetDistinctValues">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
        xmlns:q39="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
        rvice/" type="q39:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="columnName" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
        xmlns:q40="http://microsoft.com/wsdl/types/" type="q40:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

moniker: The identifier for a result set. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

columnName: The name of the column to return values from. MUST be present. MUST be the name of a column in the result set.

maximumRows: The maximum number of values to return. Zero means that there is no limit on the number of values to return. MUST NOT be less than zero.

correlationId: An identifier for the operation.

3.1.4.5.2.2 GetDistinctValuesResponse

The result data for the **GetDistinctValues** WSDL operation.

```
<xs:element name="GetDistinctValuesResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetDistinctValuesResult"
        xmlns:q41="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
        rvice/" type="q41:CommandResult"/>
      <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetDistinctValuesResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

tableXml: XML containing the content of the returned rows, as specified for the **tableXml** element of the **OpenResultSetResponse** element (see section [3.1.4.10.2.2](#)).

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 GetHealthScore

This operation returns information about the health of the protocol server.

```
<wsdl:operation name="GetHealthScore">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetHealthScore"
    message="tns:AccessServiceSoap_GetHealthScore_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetHealthScoreResponse"
    message="tns:AccessServiceSoap_GetHealthScore_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetHealthScoreAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_GetHealthScore_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

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

- In the event of an application error on the protocol server during this operation, the protocol server MUST return a SOAP fault response. The SOAP fault detail MUST contain an **AccessServerMessage** as specified in section [2.2.4.1](#), whose **Id** element MUST be **InternalError** (see section [2.2.5.2](#)).

3.1.4.6.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.6.1.1 AccessServiceSoap_GetHealthScore_InputMessage

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

The SOAP action value is:

`http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetHealthScore`

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

3.1.4.6.1.2 AccessServiceSoap_GetHealthScore_OutputMessage

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

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

3.1.4.6.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.6.2.1 GetHealthScore

The input data for the **GetHealthScore** WSDL operation.

```
<xs:element name="GetHealthScore">
  <xs:complexType/>
</xs:element>
```

3.1.4.6.2.2 GetHealthScoreResponse

The result data for the **GetHealthScore** WSDL operation.

```
<xs:element name="GetHealthScoreResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetHealthScoreResult"
        xmlns:q1="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q1:CommandResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetHealthScoreResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.
The **HealthInformation** element of the **CommandResult** MUST be present.

3.1.4.6.3 Complex Types

None.

3.1.4.6.4 Simple Types

None.

3.1.4.6.5 Attributes

None.

3.1.4.6.6 Groups

None.

3.1.4.6.7 Attribute Groups

None.

3.1.4.7 GetMacroState

This operation is used to get the state of a data macro instance.

```
<wsdl:operation name="GetMacroState">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetMacroState"
    message="tns:AccessServiceSoap_GetMacroState_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetMacroStateResponse"
    message="tns:AccessServiceSoap_GetMacroState_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetMacroStateAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_GetMacroState_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

The protocol client sends an **AccessServiceSoap_GetMacroState_InputMessage** request message and the protocol server responds with an

AccessServiceSoap_GetMacroState_OutputMessage response message as follows:

- The protocol server retrieves the state information for the data macro instance specified in the **macroInstanceId** element of the request message for the session (2) identified by the **WorkbookId** element of the **parameter** element in the request message.
- The state information is returned to the protocol client in the **instance** element of the response message.
- If the **State** element of the **instance** element in the response message is **Complete** or **Error** then the protocol client MUST NOT call this operation again with the same value for the **macroInstanceId** element of the request message within the same session (2).
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.7.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.7.1.1 AccessServiceSoap_GetMacroState_InputMessage

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

The SOAP action value is:

<http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/GetMacroState>

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

3.1.4.7.1.2 AccessServiceSoap_GetMacroState_OutputMessage

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

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

3.1.4.7.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.7.2.1 GetMacroState

The input data for the **GetMacroState** WSDL operation.

```
<xs:element name="GetMacroState">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
        xmlns:q2="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q2:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="macroInstanceId" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
        xmlns:q3="http://microsoft.com/wsdl/types/" type="q3:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

macroInstanceId: The identifier of a data macro instance for which to obtain state information.

- MUST be present.
- MUST specify a value obtained in one of the following ways:
 - MUST be the value specified in the **macroInstanceId** element of a previous call to **RunDataMacro** (section [3.1.4.12.2.1](#)).
 - MUST be the value specified in the **dataMacroId** element of the response message from a previous call to **InsertData** (section [3.1.4.8](#)), **UpdateData** (section [3.1.4.14](#)), or **DeleteData** (section [3.1.4.2](#)).

correlationId: An identifier for the operation.

3.1.4.7.2.2 GetMacroStateResponse

The result data for the **GetMacroState** WSDL operation.

```
<xs:element name="GetMacroStateResponse">
  <xs:complexType>
```

```

    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetMacroStateResult"
        xmlns:q4="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q4:CommandResult"/>
      <xs:element minOccurs="0" maxOccurs="1" name="instance"
        type="tns:DataMacroInstanceState"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

GetMacroStateResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

instance: The current state of the data macro instance as specified in section [3.1.4.7.3.1](#).

3.1.4.7.3 Complex Types

The following XML Schema complex type definitions are specific to this operation.

3.1.4.7.3.1 DataMacroInstanceState

Namespace:

<http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/>

The **DataMacroInstanceState** complex type provides information about a data macro instance.

```

<xs:complexType name="DataMacroInstanceState">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="State" type="tns:DataMacroState"/>
    <xs:element minOccurs="1" maxOccurs="1" name="ErrorNumber" type="xs:int"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ErrorDescription" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="ReturnVars"
      type="tns:ArrayOfKeyValuePair"/>
  </xs:sequence>
</xs:complexType>

```

State: The state of the data macro instance as specified in section [3.1.4.7.4.1](#).

ErrorNumber: The error number returned by the data macro. See [\[MS-AXL\]](#) section 2.2.5.1.14.

ErrorDescription: The error description returned by the data macro. See [\[MS-AXL\]](#) section 2.2.5.1.14.

ReturnVars: Specifies the return variables, as specified in [\[MS-AXL\]](#) section 2.1.3.3.3, of the data macro. This MUST be an **ArrayOfKeyValuePair** as specified by section [2.2.4.4](#) that MUST contain a **KeyValuePair** for each return variable returned from the data macro, and the **Key** of the **KeyValuePair** MUST be the same as the name of the return variable it is representing.

3.1.4.7.4 Simple Types

The following XML Schema simple type definitions are specific to this operation.

3.1.4.7.4.1 DataMacroState

Namespace:

<http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/>

Specifies the state of a data macro instance.

```
<xs:simpleType name="DataMacroState">  
  <xs:restriction base="xs:string">  
    <xs:enumeration value="Error"/>  
    <xs:enumeration value="Running"/>  
    <xs:enumeration value="Complete"/>  
  </xs:restriction>  
</xs:simpleType>
```

The following table specifies the allowable values for DataMacroState:

Value	Meaning
Error	An error occurred during run of the data macro instance.
Running	The data macro instance is still executing.
Complete	The data macro instance has finished.

3.1.4.7.5 Attributes

None.

3.1.4.7.6 Groups

None.

3.1.4.7.7 Attribute Groups

None.

3.1.4.8 InsertData

This operation inserts a list item into a list in the content database and also inserts a row into the result set.

```
<wsdl:operation name="InsertData">  
  <wsdl:input  
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern  
alService/AccessServiceSoap/InsertData"  
    message="tns:AccessServiceSoap_InsertData_InputMessage"/>  
  <wsdl:output  
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern  
alService/AccessServiceSoap/InsertDataResponse"  
    message="tns:AccessServiceSoap_InsertData_OutputMessage"/>  
  <wsdl:fault  
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern  
alService/AccessServiceSoap/InsertDataAccessServerMessageFault"  
    name="AccessServerMessageFault"  
    message="tns:AccessServiceSoap_InsertData_AccessServerMessageFault_FaultMessage"/>  
</wsdl:operation>
```

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

- The protocol server adds a new list item into the updatable list (see section [3.1.1](#)) with the **fields (2)** of the list item filled in as specified by the **values** element (see section [3.1.4.8.2.1](#)).
- If the list item was successfully inserted, then the protocol server adds a row to the result set with a primary key equal to the primary key of the list item, and with its columns filled in as specified by the **values** element.
- If the list item and row were successfully added, and the result set was opened by an **OpenResultSet** operation with the **autoResync** element (see section [3.1.4.10.2.1](#)) set to true, then the protocol server retrieves the current values of all columns in the row.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)) or one of the following values.

Id	Description
WriteRecordsPermissionsFailure	See section 2.2.5.2 .
DataException_ValidationFailed	See section 2.2.5.2 .
DataException_DataOperationFailed	See section 2.2.5.2 .
DataException_MaxRecordsInTableExceeded	See section 2.2.5.2 .

3.1.4.8.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.8.1.1 AccessServiceSoap_InsertData_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/InsertData
```

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

3.1.4.8.1.2 AccessServiceSoap_InsertData_OutputMessage

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

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

3.1.4.8.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.8.2.1 InsertData

The input data for the **InsertData** WSDL operation.

```
<xs:element name="InsertData">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
        xmlns:q24="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q24:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="values" type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
        xmlns:q25="http://microsoft.com/wsdl/types/" type="q25:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site containing the application. MUST be present.

moniker: The identifier for a result set. MUST be present. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

listName: The data source (1) for the result set as specified for the **source** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)). MUST be present.

values: An array of key and value pairs where each **key** element specifies the name of a column in the result set, and the corresponding **value** element contains the data for that column in the new row.

- MUST be present.
- MUST contain at least one **KeyValuePair** (see section [2.2.4.14](#)).
- For each **KeyValuePair**:
 - The **Key** element MUST equal the name of a column in the result set.
 - The **Value** element MUST be the correct data type for the column in the result set.
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **x:boolean**
 - **x:dateTime**
 - **x:double**
 - **x:string**
 - **x:int**

correlationId: An identifier for the operation.

3.1.4.8.2.2 InsertDataResponse

The result data for the **InsertData** WSDL operation.

```
<xs:element name="InsertDataResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="InsertDataResult"
xmlns:q26="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" type="q26:CommandResult"/>
      <xs:element minOccurs="1" maxOccurs="1" name="recordsInserted" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

InsertDataResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

recordsInserted: MUST be 1.

dataMacroId: If the operation triggers a data macro, then the protocol server MUST return the identifier of the instance of the data macro in this element. Otherwise, this element MUST NOT be present.

3.1.4.8.3 Complex Types

None.

3.1.4.8.4 Simple Types

None.

3.1.4.8.5 Attributes

None.

3.1.4.8.6 Groups

None.

3.1.4.8.7 Attribute Groups

None.

3.1.4.9 KeepAlive

This operation extends the time a session (2) has remaining before it times out.

```
<wsdl:operation name="KeepAlive">
  <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAlive"
message="tns:AccessServiceSoap_KeepAlive_InputMessage"/>
```

```

    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAliveResponse"
message="tns:AccessServiceSoap_KeepAlive_OutputMessage"/>
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAliveAccessServerMessageFault"
name="AccessServerMessageFault"
message="tns:AccessServiceSoap_KeepAlive_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>

```

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

- The protocol server resets the time remaining for the session (2) specified in the **WorkbookId** of the **CommandParameter** to its original timeout value.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.9.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.9.1.1 AccessServiceSoap_KeepAlive_InputMessage

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

The SOAP action value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/Acc
essServiceSoap/KeepAlive

```

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

3.1.4.9.1.2 AccessServiceSoap_KeepAlive_OutputMessage

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

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

3.1.4.9.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.9.2.1 KeepAlive

The input data for the **KeepAlive** WSDL operation.

```

<xs:element name="KeepAlive">
  <xs:complexType>
    <xs:sequence>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="parameter"
      xmlns:q15="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
      rvice/" type="q15:CommandParameter"/>
    <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
      xmlns:q16="http://microsoft.com/wsdl/types/" type="q16:guid"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

correlationId: An identifier for the operation.

3.1.4.9.2.2 KeepAliveResponse

The result data for the **KeepAlive** WSDL operation.

```

<xs:element name="KeepAliveResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="KeepAliveResult"
        xmlns:q17="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
        rvice/" type="q17:CommandResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

KeepAliveResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

3.1.4.9.3 Complex Types

None.

3.1.4.9.4 Simple Types

None.

3.1.4.9.5 Attributes

None.

3.1.4.9.6 Groups

None.

3.1.4.9.7 Attribute Groups

None.

3.1.4.10 OpenResultSet

This operation opens a result set for the given **source** and returns a subset of rows from the result set.

```

<wsdl:operation name="OpenResultSet">
  <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSet"
message="tns:AccessServiceSoap_OpenResultSet_InputMessage"/>
  <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSetResponse"
message="tns:AccessServiceSoap_OpenResultSet_OutputMessage"/>
  <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSetAccessServerMessageFault"
name="AccessServerMessageFault"
message="tns:AccessServiceSoap_OpenResultSet_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>

```

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

- The protocol server retrieves data from the content database using the given **source** and **restriction**.
- The protocol server stores the data in a result set identified by the **moniker** within the session (2) identified by the **WorkbookId** element of the **parameter** element in the request message. The protocol server also stores expressions defined by **sortExpression**, **filterExpression**, and **aggregateExpressions** elements in the result set.
- The protocol server returns a subset of rows specified by **startRowIndex** and **maximumRows** as follows:
 - If the **maximumRows** element is set to 0 the protocol server returns all visible rows from the result set starting with 0 (overriding the value specified in **startRowIndex**).
 - If the **maximumRows** element is greater than 0 and **startRowIndex** + **maximumRows** exceeds the number of visible rows in the result set, then the protocol server returns all visible rows in the result set with indices greater than or equal to **startRowIndex**.
 - Otherwise the protocol server returns all visible rows from the result set with indices starting at **startRowIndex** and ending at **startRowIndex** + **maximumRows** - 1.
- The functions defined in **aggregateExpressions** are evaluated only against visible rows in the result set.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)), one of the values specified in Query Fault Identifiers (section [2.2.9.2](#)), or one of the following values.

Id	Description
GetRecordsPermissionsFailure	See section 2.2.5.2 .
OrderingException_InvalidSpecification	See section 2.2.5.2 .
OrderingException_InvalidColumnName	See section 2.2.5.2 .

Id	Description
InvalidFilterExpression	See section 2.2.5.2 .
InvalidAggregateExpression	See section 2.2.5.2 .

3.1.4.10.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.10.1.1 AccessServiceSoap_OpenResultSet_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/OpenResultSet
```

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

3.1.4.10.1.2 AccessServiceSoap_OpenResultSet_OutputMessage

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

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

3.1.4.10.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.10.2.1 OpenResultSet

The input data for the **OpenResultSet** WSDL operation.

```
<xs:element name="OpenResultSet">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q18="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q18:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="source" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="restriction" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="queryParameters"
type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="0" maxOccurs="1" name="sortExpression" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="filterExpression" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="aggregateExpressions"
type="tns:ArrayOfString"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="startRowIndex" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="autoResync" type="xs:boolean"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q19="http://microsoft.com/wsdl/types/" type="q19:guid"/>
    
```



```

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

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site (2) containing the application. MUST be present.

source: The data source (1) for a result set. MUST be present. It MUST be one of the following:

- The **title** (see [\[MS-ASWS\]](#) section 3.1.1.1.1.2) of an object in the content database. The **type** (see [\[MS-ASWS\]](#) section 3.1.1.1.1.4) of this object MUST be either 0 or 1.
- An **AXL** fragment containing a **CT_Query** element as specified in [\[MS-AXL\]](#) section 2.2.3.20.

restriction: A **CT_Expression** as specified in [\[MS-AXL\]](#) section 2.2.3.1. Only rows in the source which return true for this restriction expression will be included in the result set.

queryParameters: Specifies the value of each parameter (see [\[MS-AXL\]](#) section 2.2.3.17) required in the **source**. MUST be present for every parameter defined in the **source**.

- The **Key** element is the name of the parameter.
- The **Value** element is the value of the parameter in the correct data type.

sortExpression: Specifies the sort order to apply to the result set. If present and not empty, MUST contain an Ordering element as specified in [\[MS-AXL\]](#) section 2.2.1.3.

filterExpression: Specifies the filter criteria to apply to the result set. If present and not empty, MUST contain an expression as specified in [\[MS-AXL\]](#) section 2.5.5.

aggregateExpressions: An array of strings, each contains an aggregate expression for the result set. MUST follow the syntax rule of **CT_Expression** (see [\[MS-AXL\]](#) section 2.2.3.1). Each expression MUST contain exactly one function with exactly one column as an argument. Details of all supported aggregate functions are specified in the following table:

Function Name	Result	Result Type
Sum	Sum of all values in column, all of which MUST be convertible to type double . If the one or more of values in the column cannot be converted to type double , the protocol server MUST return a SOAP fault, as specified in Faults (section 2.2.9).	Double as specified in [XMLSCHEMA2] section 3.2.5
Average	Average of all values in column, all of which MUST be convertible to type double . If the one or more of values in the column cannot be converted to type double , the protocol server MUST return a SOAP fault, as specified in Faults (section 2.2.9).	Double as specified in [XMLSCHEMA2] section 3.2.5
Counta	Total number of rows for which the value of column is not NULL.	Int as specified in [XMLSCHEMA2] section 3.2.17

moniker: A unique identifier for the result set within a session (2). MUST be present. If the moniker exists in the session (2), the protocol server replaces the old result set with the result set defined in this operation.

startRowIndex: Specifies the index of the first row to return from the result set.

- MUST be nonnegative.
- MUST be zero to specify the first row.
- If no filter is applied to the result set, MUST be less than the number of rows in the result set.
- If a filter is applied to the result set, MUST be less than the number of rows in the filtered result set

maximumRows: The maximum number of rows to return. MUST be non-negative. If set to 0, the protocol server MUST return all rows in the result set.

autoResync: Specifies the synchronization behavior of the result set. If set to true, the protocol server will refresh the row after a list item is inserted, updated, or deleted. The refresh behavior for each operation is specified in section [3.1.1](#).

correlationId: An identifier for the operation.

3.1.4.10.2.2 OpenResultSetResponse

The result data for the **OpenResultSet** WSDL operation.

```
<xs:element name="OpenResultSetResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="OpenResultSetResult"
        xmlns:q20="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q20:CommandResult"/>
      <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
        type="tns:ArrayOfAnyType"/>
      <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

OpenResultSetResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

tableXml: XML containing the returned rows.

- MUST be present.
- MUST be a DiffGram as specified in [\[MS-DSDIFFGRAM\]](#).
- The **root element** MUST be named **DataTable**.
- Each child of the **DocumentElement** child of the **diffgram** child of the **DataTable** element MUST be named **Data**.

aggregateValues: An array of values containing the results of the expressions specified in the **aggregateExpressions** element. The index of each value in the **aggregateValues** array MUST match the index of the corresponding expression in the **aggregateExpressions** array.

totalRowCount: If no filter is applied to the result set, specifies the number of rows in the result set. If a filter is applied to the result set, specifies the number of rows in the filtered result set.

3.1.4.10.3 Complex Types

The following XML Schema complex type definitions are specific to this operation.

3.1.4.10.3.1 ArrayOfString

Namespace:

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/

The **ArrayOfString** complex type is used to specify an array of strings.

```
<xs:complexType name="ArrayOfString">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

string: A string value.

3.1.4.10.4 Simple Types

None.

3.1.4.10.5 Attributes

None.

3.1.4.10.6 Groups

None.

3.1.4.10.7 Attribute Groups

None.

3.1.4.11 OpenSession

This operation creates a new session (2).

```
<wsdl:operation name="OpenSession">
  <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenSession"
message="tns:AccessServiceSoap_OpenSession_InputMessage"/>
  <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
```

```

alService/AccessServiceSoap/OpenSessionResponse"
message="tns:AccessServiceSoap_OpenSession_OutputMessage"/>
  <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenSessionAccessServerMessageFault"
name="AccessServerMessageFault"
message="tns:AccessServiceSoap_OpenSession_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>

```

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

- If the operation succeeds, the protocol server MUST return the **SessionIdentifier** (section [2.2.5.13](#)) for the newly created session in the response message to be used in any future operations against the newly created session. This **SessionIdentifier** MUST be returned in the **sessionId** element of the **OpenSessionResponse** element.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.11.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.11.1.1 AccessServiceSoap_OpenSession_InputMessage

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

The SOAP action value is:

```

http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/OpenSession

```

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

3.1.4.11.1.2 AccessServiceSoap_OpenSession_OutputMessage

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

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

3.1.4.11.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.11.2.1 OpenSession

The input data for the **OpenSession** WSDL operation.

```

<xs:element name="OpenSession">
  <xs:complexType>
    <xs:sequence>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="parameter"
      xmlns:q8="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q8:CommandParameter"/>
    <xs:element minOccurs="0" maxOccurs="1" name="cultureParameter"
      xmlns:q9="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q9:CultureCommandParameter"/>
    <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
      xmlns:q10="http://microsoft.com/wsdl/types/" type="q10:guid"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#) MUST be present.

- **CommandParameter.WorkbookId** MUST NOT be present

cultureParameter: A **CultureCommandParameter** as specified in section [3.1.4.11.3.1](#). MUST be present.

correlationId: An identifier for the operation.

3.1.4.11.2.2 OpenSessionResponse

The result data for the **OpenSession** WSDL operation.

```

<xs:element name="OpenSessionResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="OpenSessionResult"
        xmlns:q11="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q11:CommandResult"/>
      <xs:element minOccurs="0" maxOccurs="1" name="sessionId" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

OpenSessionResult: The result as specified in [2.2.4.11](#). MUST be present.

sessionId: The session identifier (2) of the newly created session. MUST be present.

3.1.4.11.3 Complex Types

The following XML Schema complex type definitions are specific to this operation.

3.1.4.11.3.1 CultureCommandParameter

Namespace:

<http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/>

The **CultureCommandParameter** is used to specify UI culture, data culture and **host data language** related information when creating a new session (2).

```

<xs:complexType name="CultureCommandParameter">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="UICultureName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="DataCultureName" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="SharePointDataCultureName"
type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="TimeZoneSerialization" type="xs:string"/>
  </xs:sequence>
</xs:complexType>

```

UICultureName: A language tag as specified in [\[RFC1766\]](#), section 2. Specifies the UI culture.

- MUST be present.
- MUST NOT be empty.
- MUST NOT be longer than 32768 characters.
- If the language represented by **UICultureName** is unsupported on the protocol server, the protocol server SHOULD [<1>](#) fall back to some other supported language.

DataCultureName: A language tag as specified in [\[RFC1766\]](#), section 2. Specifies the data culture.

- MUST be present.
- MUST NOT be empty.
- MUST NOT be longer than 32768 characters.
- The protocol server uses **SharePointDataCultureName** as a **fallback data culture** if **DataCultureName** is not supported.

SharePointDataCultureName: A language tag as specified in [\[RFC1766\]](#), section 2. Specifies the host data language.

- MUST be present.
- MUST NOT be longer than 32768 characters.

TimeZoneSerialization: The time zone of the session (2).

- MUST be present.
- MUST be exactly 73 characters long.
- MUST have the following layout, which is specified using **ABNF**, as specified in [\[RFC2234\]](#):

TimeZone	=	Bias "#" StandardDate "#" StandardBias "#" DaylightDate "#" DaylightBias
Bias	=	"+"\"-" 4DIGIT
StandardDate	=	Date %d84 Time
StandardBias	=	"+"\"-" 4DIGIT
DaylightDate	=	Date %d84 Time
DaylightBias	=	"+"\"-" 4DIGIT
Date	=	Year "-" Month "-" DayOfWeek "-" Day

TimeZone	=	Bias "#" StandardDate "#" StandardBias "#" DaylightDate "#" DaylightBias
Time	=	Hour ":" Minute ":" Second ":" Millisecond
Year	=	4DIGIT
Month	=	2DIGIT ; 01-12
DayOfWeek	=	2DIGIT ; 00-06 (Sunday-Saturday)
Day	=	2DIGIT ; 01-31
Hour	=	2DIGIT ; 00-23
Minute	=	2DIGIT ; 00-59
Second	=	2DIGIT ; 00-59
Millisecond	=	4DIGIT

The following restrictions MUST apply on the **TimeZoneSerialization**:

1. Bias MUST be the **time zone bias**.
2. StandardDate MUST be the **time zone standard date**.
3. StandardBias MUST be the **time zone standard bias**.
4. DaylightDate MUST be the **time zone daylight date**.
5. DaylightBias MUST be the **time zone daylight bias**.
6. The following restrictions are specified in [\[RFC3339\]](#):
 1. Month MUST be date-month.
 2. Day MUST be date-mday.
 3. Hour MUST be time-hour.
 4. Minute MUST time-minute.
 5. Second MUST be time-second.
7. DayOfWeek MUST have one of the following values:

Value	Meaning
00	Sunday
01	Monday
02	Tuesday
03	Wednesday
04	Thursday
05	Friday

Value	Meaning
06	Saturday

3.1.4.11.4 Simple Types

None.

3.1.4.11.5 Attributes

None.

3.1.4.11.6 Groups

None.

3.1.4.11.7 Attribute Groups

None.

3.1.4.12 RunDataMacro

This operation triggers a data macro.

```
<wsdl:operation name="RunDataMacro">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/RunDataMacro"
    message="tns:AccessServiceSoap_RunDataMacro_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/RunDataMacroResponse"
    message="tns:AccessServiceSoap_RunDataMacro_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/RunDataMacroAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_RunDataMacro_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

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

- The protocol server triggers a new data macro instance.
- If **macroName** is "AfterInsert", "AfterUpdate", or "AfterDelete", then the protocol server triggers the data macro having an **Event** attribute as specified in **CT_DataMacro** (see [\[MS-AXL\]](#) section 2.2.3.49) equal to **macroName**.
- Otherwise the protocol server triggers the data macro having a **Name** attribute as specified in **CT_DataMacro** (see [\[MS-AXL\]](#) section 2.2.3.49) equal to **macroName**.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.12.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.12.1.1 AccessServiceSoap_RunDataMacro_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/RunDataMacro
```

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

3.1.4.12.1.2 AccessServiceSoap_RunDataMacro_OutputMessage

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

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

3.1.4.12.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.12.2.1 RunDataMacro

The input data for the **RunDataMacro** WSDL operation.

```
<xs:element name="RunDataMacro">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q5="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q5:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="macroName" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="itemID" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="oldItemFields"
type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="0" maxOccurs="1" name="NewItemFields"
type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="0" maxOccurs="1" name="macroParameters"
type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="0" maxOccurs="1" name="macroInstanceId" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q6="http://schemas.microsoft.com/wsdl/types/" type="q6:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site (2) containing the application. MUST be present.

listName: MUST be the title of the list (1) associated with the data macro to be triggered. MUST be present. MUST be the title of a list (1) contained in the site (2) specified by **webUrl**.

macroName: MUST be present. MUST contain the name of a data macro as specified for the **Name** element of a **CT_DataMacro** (see [\[MS-AXL\]](#) section 2.2.3.49) or one of the following values:

- "AfterInsert"
- "AfterUpdate"
- "AfterDelete"

itemID: If **macroName** is "AfterInsert", "AfterUpdate", or "AfterDelete" then this MUST be the primary key for a list item in the list (1) specified by the **listName** element. Otherwise, MUST be 1.

oldItemFields: If **macroName** is "AfterUpdate" or "AfterDelete" then:

- MUST be present.
- MUST be an array of key and value pairs where each **Key** element specifies the internal name of a field (2) in the list item, and the corresponding **Value** element contains the data for that field (2) prior to the update or delete operation on the list item.
- For each **KeyValuePair**:
 - The **Value** element MUST be the correct data type for the field (2).
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **xs:boolean**
 - **xs:dateTime**
 - **xs:double**
 - **xs:string**
 - **xs:int**

Otherwise, MUST NOT be present.

newItemFields: If **macroName** is "AfterInsert" or "AfterUpdate" then:

- MUST be present.
- MUST be an array of key and value pairs where each **Key** element specifies the internal name of a field (2) in the list item, and the corresponding **Value** element contains the data for that field (2) after the insert or update operation on the list item.
- For each **KeyValuePair**:
 - The **Value** element MUST be the correct data type for the field (2).
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **xs:boolean**

- **xs:dateTime**
- **xs:double**
- **xs:string**
- **xs:int**

Otherwise, MUST NOT be present.

macroParameters: Specifies the parameters for the data macro. MUST be present if the data macro requires parameters as specified in the **Parameters** element of a **CT_DataMacro** (see [\[MS-AXL\]](#) section 2.2.3.49). Comparisons between the **Key** in a **KeyValuePair** and the parameters in a data macro MUST be case insensitive. If a parameter is specified in more than one **KeyValuePair**, the protocol server MUST use the last **Value**. If any **Key** in **KeyValuePair** does not match a parameter in the data macro, it MUST be ignored.

macroInstanceId: An identifier for the data macro instance triggered by this operation.

correlationId: An identifier for the operation.

3.1.4.12.2 RunDataMacroResponse

The result data for the **RunDataMacro** WSDL operation.

```
<xs:element name="RunDataMacroResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="RunDataMacroResult"
        xmlns:q7="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q7:CommandResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

RunDataMacroResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

3.1.4.12.3 Complex Types

None.

3.1.4.12.4 Simple Types

None.

3.1.4.12.5 Attributes

None.

3.1.4.12.6 Groups

None.

3.1.4.12.7 Attribute Groups

None.

3.1.4.13 UpdateCache

This operation updates a row in the result set.

```
<wsdl:operation name="UpdateCache">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateCache"
    message="tns:AccessServiceSoap_UpdateCache_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateCacheResponse"
    message="tns:AccessServiceSoap_UpdateCache_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateCacheAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_UpdateCache_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

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

- The protocol server fetches a row from the result set using the given **key** and updates the columns specified in **values**. If the operation fails, no columns in the row are updated.
- In the event of an application error on the protocol server during this operation, a SOAP fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)).

3.1.4.13.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.13.1.1 AccessServiceSoap_UpdateCache_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateCache
```

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

3.1.4.13.1.2 AccessServiceSoap_UpdateCache_OutputMessage

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

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

3.1.4.13.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.13.2.1 UpdateCache

The input data for the **UpdateCache** WSDL operation.

```
<xs:element name="UpdateCache">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q36="http://schemas.microsoft.com/office/Excel/Server/Webservices/ExcelServerInternalSe
rvice/" type="q36:CommandParameter"/>
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="key" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="values" type="tns:ArrayOfKeyValuePair"/>
      <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q37="http://microsoft.com/wsdl/types/" type="q37:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site (2) containing the application. MUST be present.

moniker: The identifier for a result set. MUST be present. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

key: The primary key of the row in the result set to update.

values: An array of **KeyValuePair** elements as specified in section [2.2.4.14](#). MUST be present. For each **KeyValuePair**,

- **Key** element MUST be the name of a column in the result set.
- **Value** element MUST contain data of the correct data type for the column.

correlationId: An identifier for the operation.

3.1.4.13.2.2 UpdateCacheResponse

The result data for the **UpdateCache** WSDL operation.

```
<xs:element name="UpdateCacheResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="UpdateCacheResult"
xmlns:q38="http://schemas.microsoft.com/office/Excel/Server/Webservices/ExcelServerInternalSe
rvice/" type="q38:CommandResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

UpdateCacheResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

3.1.4.13.3 Complex Types

None.

3.1.4.13.4 Simple Types

None.

3.1.4.13.5 Attributes

None.

3.1.4.13.6 Groups

None.

3.1.4.13.7 Attribute Groups

None.

3.1.4.14 UpdateData

This operation updates a list item in a list in the content database and also updates the row in the result set.

```
<wsdl:operation name="UpdateData">
  <wsdl:input
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateData"
    message="tns:AccessServiceSoap_UpdateData_InputMessage"/>
  <wsdl:output
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateDataResponse"
    message="tns:AccessServiceSoap_UpdateData_OutputMessage"/>
  <wsdl:fault
    wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateDataAccessServerMessageFault"
    name="AccessServerMessageFault"
    message="tns:AccessServiceSoap_UpdateData_AccessServerMessageFault_FaultMessage"/>
</wsdl:operation>
```

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

- The protocol server attempts to update the list item in the updatable list (see section [3.1.1](#)) which has a primary key equal to the **Key** element of the first **KeyValuePair** of the **keys** element.
- If the columns in the result set specified by the **Key** elements of the **KeyValuePair** elements of the **oldValues** element contain data different from what is specified by the respective **Value** elements of the **KeyValuePair** elements of the **oldValues**, a SOAP fault MUST be returned.
- If the list item was successfully updated, then the protocol server updates the row in the result set with a primary key equal to the primary key of the updated list item.

- If the list item and row were successfully updated, and the result set was opened by an **OpenResultSet** operation with the **autoResync** element (see section [3.1.4.10.2.1](#)) set to true, then the protocol server retrieves the current values of all columns in the row.
- In the event of an application error on the protocol server during this operation, a soap fault is returned, as specified in Faults (section [2.2.9](#)). The **Id** element of the **AccessServerMessage** MUST be one of the values specified in Common Fault Identifiers (section [2.2.9.1](#)) or one of the following values.

Id	Description
WriteRecordsPermissionsFailure	See section 2.2.5.2 .
DataException_ValidationFailed	See section 2.2.5.2 .
DataException_DataOperationFailed	See section 2.2.5.2 .
DeleteConflict	See section 2.2.5.2 .
UpdateConflict	See section 2.2.5.2 .

3.1.4.14.1 Messages

The following WSDL message definitions are specific to this operation.

3.1.4.14.1.1 AccessServiceSoap_UpdateData_InputMessage

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

The SOAP action value is:

```
http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/AccessServiceSoap/UpdateData
```

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

3.1.4.14.1.2 AccessServiceSoap_UpdateData_OutputMessage

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

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

3.1.4.14.2 Elements

The following XML Schema element definitions are specific to this operation.

3.1.4.14.2.1 UpdateData

The input data for the **UpdateData** WSDL operation.

```
<xs:element name="UpdateData">
  <xs:complexType>
    <xs:sequence>
```

```

    <xs:element minOccurs="0" maxOccurs="1" name="parameter"
xmlns:q27="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" type="q27:CommandParameter"/>
    <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string"/>
    <xs:element minOccurs="0" maxOccurs="1" name="keys" type="tns:ArrayOfKeyValuePair"/>
    <xs:element minOccurs="0" maxOccurs="1" name="values" type="tns:ArrayOfKeyValuePair"/>
    <xs:element minOccurs="0" maxOccurs="1" name="oldValues"
type="tns:ArrayOfKeyValuePair"/>
    <xs:element minOccurs="1" maxOccurs="1" name="correlationId"
xmlns:q28="http://microsoft.com/wsdl/types/" type="q28:guid"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

parameter: A **CommandParameter** as specified in section [2.2.4.10](#). MUST be present.

webUrl: An absolute URL specifying the location of the site (2) containing the application. MUST be present.

moniker: The identifier for a result set. MUST be present. MUST contain an identifier that was previously supplied during the session (2) as the **moniker** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)).

listName: The data source (1) for the result set as specified for the **source** element for the input to an **OpenResultSet** operation (see section [3.1.4.10.2.1](#)). MUST be present.

keys: Specifies the row to update.

- MUST be present, and MUST contain exactly one **KeyValuePair** (see section [2.2.4.14](#)).
- The **Key** element of the **KeyValuePair** MUST contain a primary key value for a row in the result set.

values: An array of key and value pairs where each **Key** element specifies the name of a column in the result set, and the corresponding **Value** element contains the data for that column in the row.

- MUST be present.
- MUST contain at least one **KeyValuePair** (see section [2.2.4.14](#)).
- For each **KeyValuePair**
 - The **Value** element MUST be the correct data type for the column in the result set.
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **xs:boolean**
 - **xs:dateTime**
 - **xs:double**
 - **xs:string**
 - **xs:int**

oldValues: An array of key and value pairs where each **key** element specifies the name of a column in the result set, and the corresponding value element contains the values of the column in the row prior to the update operation.

- MUST be present.
- MUST contain at least one **KeyValuePair** (see section [2.2.4.14](#)).
- For each **KeyValuePair**
 - The **Value** element MUST be the correct data type for the column specified by **Key**.
 - The **Value** element MUST either be empty and with the **xsi:nil** attribute set to true or have the **xsi:type** attribute set to one of the following:
 - **xs:boolean**
 - **xs:dateTime**
 - **xs:double**
 - **xs:string**
 - **xsd:int**

correlationId: An identifier for the operation.

3.1.4.14.2.2 UpdateDataResponse

The result data for the **UpdateData** WSDL operation.

```
<xs:element name="UpdateDataResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="UpdateDataResult"
        xmlns:q29="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" type="q29:CommandResult"/>
      <xs:element minOccurs="1" maxOccurs="1" name="recordsUpdated" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

UpdateDataResult: A **CommandResult** as specified in section [2.2.4.11](#). MUST be present.

recordsUpdated: MUST be 1.

dataMacroId: If the operation triggers a data macro, then the protocol server MUST return the identifier of the instance of the data macro in this element. Otherwise, this element MUST NOT be present.

3.1.4.14.3 Complex Types

None.

3.1.4.14.4 Simple Types

None.

3.1.4.14.5 Attributes

None.

3.1.4.14.6 Groups

None.

3.1.4.14.7 Attribute Groups

None.

3.1.5 Timer Events

3.1.5.1 Session Timeout

The **Session Timeout** event completes a request for a timed out session (2) with a SOAP fault, as specified in [Faults](#), with the value of the **Id** element of the **AccessServerMessage** (section [2.2.4.1](#)) set to **NewWorkbookSessionTimeout**.

3.1.6 Other Local Events

None.

4 Protocol Examples

This example shows how to use methods described in this protocol for data operations between the protocol server and the protocol client.

The following information flow shows the sequence of actions:

1. The protocol client issues a request to open a new session.
2. The protocol server responds with a session identifier.
3. The protocol client requests data from a list stored on the protocol server.
4. The protocol server responds with a table of data from the result set.
5. The protocol client issues a request to update a row in the list.
6. The protocol server responds with the confirmation of the update.

To simplify the example, the value of the **userToken** element has been omitted.

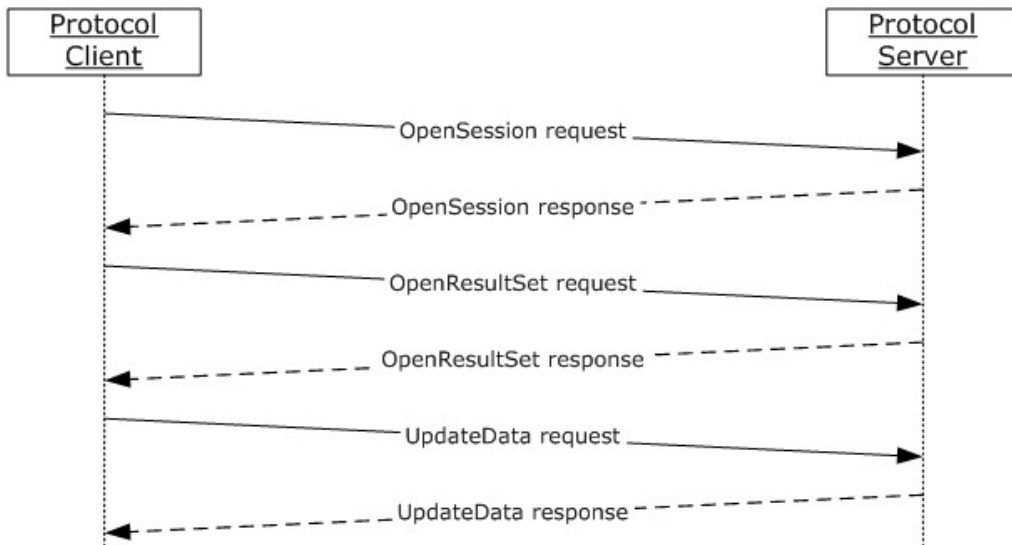


Figure 2: Information flow for data operation between protocol client and protocol server

The protocol client requests a new session by sending the following message to the protocol server:

```
<s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <OpenSession
xmlns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/">
    <parameter>
      <StateId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">-1</StateId>
      <Confirmation
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">Blank</Confirmation>
```

```

    <ConfirmationChoice
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">false</ConfirmationChoice>
    <UserFriendlyDisplayName>Andrew Cencini</UserFriendlyDisplayName>
    <RequestSiteId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">beb895a-f22a-49d5-b8b0-f65d01d0a399</RequestSiteId>
    <CompleteResponseTimeout
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">0</CompleteResponseTimeout>
    <Flags
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/"></Flags>
  </parameter>
  <cultureParameter>
    <UICultureName
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">en-US</UICultureName>
    <DataCultureName
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">en-US</DataCultureName>
    <SharePointDataCultureName
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/"></SharePointDataCultureName>
    <TimeZoneSerialization
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">+0480#0000-11-00-01T02:00:00#0000#0000-03-00-02T02:00:00:0000#-0060</TimeZoneSerialization>
  </cultureParameter>
  <correlationId>A5F45088-7FA4-4e72-B1D6-1BD1A4B33FA1</correlationId>
</OpenSession>
</s:Body>

```

In the **cultureParameter** element of this request, the **UICultureName** and **DataCultureName** both have the value "en-US", specifying the UI culture and Data culture of this session. The value of the **TimeZoneSerialization** element is the time zone information for the session.

The protocol server responds with the following message, indicating the session has been successfully opened:

```

<s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <OpenSessionResponse
xmlns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/">
    <OpenSessionResult>
      <StateId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">1</StateId>
      <HealthInformation
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">
        <StateFlags></StateFlags>
        <HealthScore>0</HealthScore>
      </HealthInformation>
      <SecondsBeforeNextPoll
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">0</SecondsBeforeNextPoll>

```

```

    <EditSessionIsDirty
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">false</EditSessionIsDirty>
    <EditSessionHasMultipleUsers
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">false</EditSessionHasMultipleUsers>
    </OpenSessionResult>
    <sessionId>1.V22.21DwFJM2813YcOKcHqqjWp90.5.en-US5.en-US73.+0480#0000-11-00-01T02:00:00:0000#+0000#0000-03-00-02T02:00:00:0000#-006036.00000000-0000-0000-0000-0000000000001.U</sessionId>
    </OpenSessionResponse>
</s:Body>

```

The **sessionId** element in this response indicates the identifier of this session.

After the session is set up, the protocol client requests data from a list named "NumbersAndLetters" in the content database by sending the following message to the protocol server:

```

<s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <OpenResultSet
xmlns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/">
    <parameter>
      <WorkbookId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">1.V22.21DwFJM2813YcOKcHqqjWp90.5.en-US5.en-US73.+0480#0000-11-00-01T02:00:00:0000#+0000#0000-03-00-02T02:00:00:0000#-006036.00000000-0000-0000-0000-0000000000001.U</WorkbookId>
      <StateId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">-1</StateId>
      <Confirmation
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">Blank</Confirmation>
      <ConfirmationChoice
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">false</ConfirmationChoice>
      <UserFriendlyDisplayName>Andrew Cencini</UserFriendlyDisplayName>
      <RequestSiteId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">beb895a-f22a-49d5-b8b0-f65d01d0a399</RequestSiteId>
      <CompleteResponseTimeout
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">0</CompleteResponseTimeout>
      <Flags
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/"></Flags>
    </parameter>
    <webUrl>http://www.microsoft.com/widgets</webUrl>
    <source>NumbersAndLetters</source>
    <sortExpression></sortExpression>
    <moniker>Default</moniker>
    <startRowIndex>0</startRowIndex>
    <maximumRows>3</maximumRows>
    <autoResync>true</autoResync>
    <correlationId>A5F45088-7FA4-4e72-B1D6-1BD1A4B33FA1</correlationId>
  </OpenResultSet>
</s:Body>

```

In the request, the **WorkbookID** element has the same value as the value of the **sessionID** element in the **OpenSession** response the protocol client received for the current session. The **UserSid** element has the same value as the value of the **UserSid** element in the **OpenSession** request the protocol client sent when requesting to open the current session.

The **source** element has the value "NumbersAndLetters", indicating the data source for the result set. In this example, it is the NumbersAndLetters list in the content database.

The **webUrl** element has the value "http://www.microsoft.com/widgets". This is the absolute URL for the location of the application.

The protocol server responds with the following message:

```
<s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <OpenResultSetResponse
xmlns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalService/">
    <OpenResultSetResult>
      <StateId
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">0</StateId>
      <HealthInformation
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">
        <StateFlags></StateFlags>
        <HealthScore>0</HealthScore>
      </HealthInformation>
      <SecondsBeforeNextPoll
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">0</SecondsBeforeNextPoll>
      <EditSessionIsDirty
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">>false</EditSessionIsDirty>
      <EditSessionHasMultipleUsers
xmlns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/">>false</EditSessionHasMultipleUsers>
    </OpenResultSetResult>
    <table>
      <xs:schema id="NewDataSet" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns=""
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
        <xs:element name="NewDataSet" msdata:IsDataSet="true" msdata:MainDataTable="Data"
msdata:UseCurrentLocale="true">
          <xs:complexType>
            <xs:choice minOccurs="0" maxOccurs="unbounded">
              <xs:element name="Data">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="ID" type="xs:int"></xs:element>
                    <xs:element name="Number" type="xs:double" minOccurs="0"></xs:element>
                    <xs:element name="Letter" type="xs:string" minOccurs="0"></xs:element>
                    <xs:element name="Item_x0020_Child_x0020_Count" type="xs:int"
minOccurs="0"></xs:element>
                    <xs:element name="Folder_x0020_Child_x0020_Count" type="xs:int"
minOccurs="0"></xs:element>
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:choice>
          </xs:complexType>
        </xs:schema>
      </table>
  </OpenResultSetResponse>
</s:Body>
```

```

    <xs:unique name="Constraint1" msdata:PrimaryKey="true">
      <xs:selector xpath="//Data"></xs:selector>
      <xs:field xpath="ID"></xs:field>
    </xs:unique>
  </xs:element>
</xs:schema>
<diffgr:diffgram xmlns:diffgr="urn:schemas-microsoft-com:xml-diffgram-v1"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
  <DocumentElement xmlns="">
    <Data diffgr:id="Data1" msdata:rowOrder="0" diffgr:hasChanges="inserted">
      <ID>1</ID>
      <Number>1</Number>
      <Letter>A</Letter>
      <Item_x0020_Child_x0020_Count>1</Item_x0020_Child_x0020_Count>
      <Folder_x0020_Child_x0020_Count>1</Folder_x0020_Child_x0020_Count>
    </Data>
    <Data diffgr:id="Data2" msdata:rowOrder="1" diffgr:hasChanges="inserted">
      <ID>2</ID>
      <Number>2</Number>
      <Letter>B</Letter>
      <Item_x0020_Child_x0020_Count>2</Item_x0020_Child_x0020_Count>
      <Folder_x0020_Child_x0020_Count>2</Folder_x0020_Child_x0020_Count>
    </Data>
    <Data diffgr:id="Data3" msdata:rowOrder="2" diffgr:hasChanges="inserted">
      <ID>3</ID>
      <Number>3</Number>
      <Letter>C</Letter>
      <Item_x0020_Child_x0020_Count>3</Item_x0020_Child_x0020_Count>
      <Folder_x0020_Child_x0020_Count>3</Folder_x0020_Child_x0020_Count>
    </Data>
  </DocumentElement>
</diffgr:diffgram>
</table>
<totalRowCount>200</totalRowCount>
</OpenResultSetResponse>
</s:Body>

```

The **table** element specifies a table containing the content of the returned rows. In this example, the table has 3 columns, "ID", "Number" and "Letter". The data returned can be seen in the following table.

ID	Number	Letter
1	1	A
2	2	B
3	3	C

The value of the **totalRowCount** element is "200", meaning the data table opened on the protocol server has 200 records, although only 3 are returned in this response to the protocol client according to the **maximumRows** element in the **OpenResultSet** request.

5 Security

5.1 Security Considerations for Implementers

In addition to the security considerations applicable to the underlying protocols, there are security risks associated with exposing session identifiers (2). If the session identifier is exposed, then it is possible for an attacker to read information from, or modify data in, a session on the protocol server. An implementer of this protocol needs to consider keeping session identifiers protected. There could be some cases where it is desirable to expose the session identifier, however, an implementer is to use caution in how they expose session identifiers and consider the security risks.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided in the following code:

```
<?xml version="1.0" encoding="utf-8"?>
<wSDL:definitions
  xmlns:tns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternal
  Service/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
  xmlns:i0="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternalS
  ervice/" name="AccessServiceSoap"
  targetNamespace="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIn
  ternalService/" xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/">
  <wSDL:types>
    <xs:schema
      xmlns:tns="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerInternal
      Service/" attributeFormDefault="unqualified" elementFormDefault="qualified"
      targetNamespace="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIn
      ternalService/" xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:import
        namespace="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
        rvice/" />
      <xs:import namespace="http://microsoft.com/wsdl/types/" />
      <xs:element name="GetHealthScore">
        <xs:complexType />
      </xs:element>
      <xs:element name="GetHealthScoreResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element
              xmlns:q1="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSer
              vice/" minOccurs="0" maxOccurs="1" name="GetHealthScoreResult" type="q1:CommandResult" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="GetMacroState">
        <xs:complexType>
          <xs:sequence>
            <xs:element
              xmlns:q2="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSer
              vice/" minOccurs="0" maxOccurs="1" name="parameter" type="q2:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="macroInstanceId" type="xs:string"
              />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="GetMacroStateResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element
              xmlns:q3="http://microsoft.com/wsdl/types/" minOccurs="1"
              maxOccurs="1" name="correlationId" type="q3:guid" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="GetMacroStateResult">
        <xs:complexType>
          <xs:sequence>
            <xs:element
              xmlns:q4="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSer
              vice/" minOccurs="0" maxOccurs="1" name="instance"
              type="i0:DataMacroInstanceState" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </wSDL:types>
</wSDL:definitions>
```

```

<xs:complexType name="DataMacroInstanceState">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="State" type="i0:DataMacroState" />
    <xs:element minOccurs="1" maxOccurs="1" name="ErrorNumber" type="xs:int" />
    <xs:element minOccurs="0" maxOccurs="1" name="ErrorDescription" type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="ReturnVars"
type="i0:ArrayOfKeyValuePair" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="DataMacroState">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Error" />
    <xs:enumeration value="Running" />
    <xs:enumeration value="Complete" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="ArrayOfKeyValuePair">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="KeyValuePair"
type="i0:KeyValuePair" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="KeyValuePair">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="Key" />
    <xs:element minOccurs="1" maxOccurs="1" name="Value" nillable="true" />
  </xs:sequence>
</xs:complexType>
<xs:element name="RunDataMacro">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:q5="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSer
vice/" minOccurs="0" maxOccurs="1" name="parameter" type="q5:CommandParameter" />
      <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
      <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string" />
      <xs:element minOccurs="0" maxOccurs="1" name="macroName" type="xs:string" />
      <xs:element minOccurs="1" maxOccurs="1" name="itemID" type="xs:int" />
      <xs:element minOccurs="0" maxOccurs="1" name="oldItemFields"
type="i0:ArrayOfKeyValuePair" />
      <xs:element minOccurs="0" maxOccurs="1" name="newItemFields"
type="i0:ArrayOfKeyValuePair" />
      <xs:element minOccurs="0" maxOccurs="1" name="macroParameters"
type="i0:ArrayOfKeyValuePair" />
      <xs:element minOccurs="0" maxOccurs="1" name="macroInstanceId" type="xs:string"
/>
      <xs:element xmlns:q6="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q6:guid" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="RunDataMacroResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element
xmlns:q7="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSer
vice/" minOccurs="0" maxOccurs="1" name="RunDataMacroResult" type="q7:CommandResult" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

    <xs:element name="OpenSession">
      <xs:complexType>
        <xs:sequence>
          <xs:element
            xmlns:q8="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="parameter" type="q8:CommandParameter" />
          <xs:element
            xmlns:q9="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="cultureParameter" type="q9:CultureCommandParameter" />
          <xs:element xmlns:q10="http://microsoft.com/wsdl/types/" minOccurs="1" maxOccurs="1" name="correlationId" type="q10:guid" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="OpenSessionResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element
            xmlns:q11="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="OpenSessionResult" type="q11:CommandResult" />
          <xs:element minOccurs="0" maxOccurs="1" name="sessionId" type="xs:string" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="CloseSession">
      <xs:complexType>
        <xs:sequence>
          <xs:element
            xmlns:q12="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="parameter" type="q12:CommandParameter" />
          <xs:element xmlns:q13="http://microsoft.com/wsdl/types/" minOccurs="1" maxOccurs="1" name="correlationId" type="q13:guid" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="CloseSessionResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element
            xmlns:q14="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="CloseSessionResult" type="q14:CommandResult" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="KeepAlive">
      <xs:complexType>
        <xs:sequence>
          <xs:element
            xmlns:q15="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="parameter" type="q15:CommandParameter" />
          <xs:element xmlns:q16="http://microsoft.com/wsdl/types/" minOccurs="1" maxOccurs="1" name="correlationId" type="q16:guid" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="KeepAliveResponse">
      <xs:complexType>
        <xs:sequence>

```

```

        <xs:element
xmlns:q17="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="KeepAliveResult" type="q17:CommandResult" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="OpenResultSet">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q18="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="parameter" type="q18:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="source" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="restriction" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="queryParameters"
type="i0:ArrayOfKeyValuePair" />
            <xs:element minOccurs="0" maxOccurs="1" name="sortExpression" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="filterExpression" type="xs:string"
/>
            <xs:element minOccurs="0" maxOccurs="1" name="aggregateExpressions"
type="i0:ArrayOfString" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="1" maxOccurs="1" name="startRowIndex" type="xs:int" />
            <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int" />
            <xs:element minOccurs="1" maxOccurs="1" name="autoResync" type="xs:boolean" />
            <xs:element xmlns:q19="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q19:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:complexType name="ArrayOfString">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="ArrayOfAnyType">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="anyType" nillable="true" />
    </xs:sequence>
</xs:complexType>
<xs:element name="OpenResultSetResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q20="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="OpenResultSetResult" type="q20:CommandResult" />
            <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
type="i0:ArrayOfAnyType" />
            <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="GetData">
    <xs:complexType>
        <xs:sequence>

```

```

        <xs:element
xmlns:q21="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvices/" minOccurs="0" maxOccurs="1" name="parameter" type="q21:CommandParameter" />
        <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
        <xs:element minOccurs="1" maxOccurs="1" name="startRowIndex" type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="cacheCommands"
type="i0:CacheCommands" />
        <xs:element minOccurs="0" maxOccurs="1" name="sortExpression" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="filter" type="xs:string" />
        <xs:element xmlns:q22="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q22:guid" />
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:simpleType name="CacheCommands">
    <xs:list>
        <xs:simpleType>
            <xs:restriction base="xs:string">
                <xs:enumeration value="RefreshData" />
                <xs:enumeration value="ApplyFilter" />
                <xs:enumeration value="ClearFilter" />
                <xs:enumeration value="ApplySort" />
            </xs:restriction>
        </xs:simpleType>
    </xs:list>
</xs:simpleType>
<xs:element name="GetDataResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q23="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvices/" minOccurs="0" maxOccurs="1" name="GetDataResult" type="q23:CommandResult" />
            <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
type="i0:ArrayOfAnyType" />
            <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="InsertData">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q24="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvices/" minOccurs="0" maxOccurs="1" name="parameter" type="q24:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="values"
type="i0:ArrayOfKeyValuePair" />
            <xs:element xmlns:q25="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q25:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="InsertDataResponse">
    <xs:complexType>
        <xs:sequence>

```

```

        <xs:element
xmlns:q26="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="InsertDataResult" type="q26:CommandResult" />
        <xs:element minOccurs="1" maxOccurs="1" name="recordsInserted" type="xs:int" />
        <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string" />
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="UpdateData">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q27="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="parameter" type="q27:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="keys" type="i0:ArrayOfKeyValuePair"
/>
            <xs:element minOccurs="0" maxOccurs="1" name="values"
type="i0:ArrayOfKeyValuePair" />
            <xs:element minOccurs="0" maxOccurs="1" name="oldValues"
type="i0:ArrayOfKeyValuePair" />
            <xs:element xmlns:q28="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q28:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="UpdateDataResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q29="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="UpdateDataResult" type="q29:CommandResult" />
            <xs:element minOccurs="1" maxOccurs="1" name="recordsUpdated" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="FixupRow">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q30="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="parameter" type="q30:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="keys" type="i0:ArrayOfKeyValuePair"
/>
            <xs:element minOccurs="0" maxOccurs="1" name="values"
type="i0:ArrayOfKeyValuePair" />
            <xs:element xmlns:q31="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q31:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="FixupRowResponse">
    <xs:complexType>
        <xs:sequence>

```

```

        <xs:element
xmlns:q32="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="FixupRowResult" type="q32:CommandResult" />
        <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="aggregateValues"
type="i0:ArrayOfAnyType" />
        <xs:element minOccurs="1" maxOccurs="1" name="totalRowCount" type="xs:int" />
    </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="DeleteData">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q33="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="parameter" type="q33:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="listName" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="keys" type="i0:ArrayOfKeyValuePair"
/>
            <xs:element minOccurs="0" maxOccurs="1" name="oldValues"
type="i0:ArrayOfKeyValuePair" />
            <xs:element xmlns:q34="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q34:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="DeleteDataResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q35="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="DeleteDataResult" type="q35:CommandResult" />
            <xs:element minOccurs="1" maxOccurs="1" name="recordsDeleted" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1" name="dataMacroId" type="xs:string" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="UpdateCache">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q36="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalSe
rvice/" minOccurs="0" maxOccurs="1" name="parameter" type="q36:CommandParameter" />
            <xs:element minOccurs="0" maxOccurs="1" name="webUrl" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
            <xs:element minOccurs="1" maxOccurs="1" name="key" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1" name="values"
type="i0:ArrayOfKeyValuePair" />
            <xs:element xmlns:q37="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q37:guid" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="UpdateCacheResponse">
    <xs:complexType>
        <xs:sequence>

```

```

        <xs:element
xmlns:q38="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="UpdateCacheResult" type="q38:CommandResult" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="GetDistinctValues">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q39="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="parameter" type="q39:CommandParameter" />
                <xs:element minOccurs="0" maxOccurs="1" name="moniker" type="xs:string" />
                <xs:element minOccurs="0" maxOccurs="1" name="columnName" type="xs:string" />
                <xs:element minOccurs="1" maxOccurs="1" name="maximumRows" type="xs:int" />
                <xs:element xmlns:q40="http://microsoft.com/wsdl/types/" minOccurs="1"
maxOccurs="1" name="correlationId" type="q40:guid" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:element name="GetDistinctValuesResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element
xmlns:q41="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" minOccurs="0" maxOccurs="1" name="GetDistinctValuesResult" type="q41:CommandResult" />
                <xs:element minOccurs="0" maxOccurs="1" name="tableXml" type="xs:string" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
<xs:simpleType name="SessionIdentifier">
    <xs:restriction base="xs:string" />
</xs:simpleType>
</xs:schema>
<xs:schema
xmlns:tns="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/office/Excel/Server/WebServices/ExcelServerInternalService/" xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://microsoft.com/wsdl/types/" />
    <xs:complexType name="CommandResult">
        <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="1" name="TransientEditSessionToken"
type="xs:string" />
            <xs:element minOccurs="1" maxOccurs="1" name="StateId" type="xs:int" />
            <xs:element minOccurs="0" maxOccurs="1" name="SpreadsheetData" type="xs:string" />
            <xs:element minOccurs="0" maxOccurs="1" name="ExtendedInfo"
type="tns:CommandResultExtendedInfo" />
            <xs:element minOccurs="0" maxOccurs="1" name="PeriodicRefreshInfo"
type="tns:PeriodicRefreshInfo" />
            <xs:element minOccurs="0" maxOccurs="1" name="HealthInformation"
type="tns:ServerHealthInformation" />
            <xs:element minOccurs="1" maxOccurs="1" name="SecondsBeforeNextPoll" type="xs:int" />
        </xs:sequence>
    </xs:complexType>
    <xs:element minOccurs="1" maxOccurs="1" name="EditSessionIsDirty" type="xs:boolean" />
    <xs:element minOccurs="1" maxOccurs="1"
name="EditSessionHasMultipleCollaborationUsers" type="xs:boolean" />
    <xs:element minOccurs="0" maxOccurs="1" name="RequestId" type="xs:string" />

```



```

        <xs:element minOccurs="0" maxOccurs="1" name="CollaborationResult"
type="tns:CollaborationResult" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="CommandResultExtendedInfo">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="1" name="Messages"
type="tns:ArrayOfExcelServerMessage" />
        <xs:element minOccurs="1" maxOccurs="1" name="WarnOnManualDataRefresh"
type="xs:boolean" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="ArrayOfExcelServerMessage">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="ExcelServerMessage"
nillable="true" type="tns:ExcelServerMessage" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="ExcelServerMessage">
    <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1" name="HasOpenItemPermission"
type="xs:boolean" />
        <xs:element minOccurs="1" maxOccurs="1" name="Id" type="tns:ExcelServerMessageId"
/>
        <xs:element minOccurs="1" maxOccurs="1" name="Severity"
type="tns:ExcelServerMessageSeverity" />
        <xs:element minOccurs="1" maxOccurs="1" name="Type"
type="tns:ExcelServerMessageType" />
        <xs:element minOccurs="1" maxOccurs="1" name="Appearance"
type="tns:ExcelServerMessageAppearance" />
        <xs:element minOccurs="0" maxOccurs="1" name="Description" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="ExtendedDescription" type="xs:string"
/>
        <xs:element minOccurs="0" maxOccurs="1" name="Caption" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="HelpTopicId" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="HelpDisplayText" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="HealthInformation"
type="tns:ServerHealthInformation" />
        <xs:element minOccurs="0" maxOccurs="1" name="WrongEcsServerId" type="xs:string" />
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="ExcelServerMessageId">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Blank" />
        <xs:enumeration value="InternalError" />
        <xs:enumeration value="NotMemberOfRole" />
        <xs:enumeration value="EncryptionTooLow" />
        <xs:enumeration value="ConfirmDataRefresh" />
        <xs:enumeration value="ExternalDataRefreshFailed" />
        <xs:enumeration value="ExternalDataRefreshFailedReal" />
        <xs:enumeration value="ExternalDataRefreshFailedReadOrViewOnly" />
        <xs:enumeration value="NoAccessToOdcReadOrViewOnly" />
        <xs:enumeration value="ErrorConnectingToDataSourceReadOrViewOnly" />
        <xs:enumeration value="InvalidUserNameOrPasswordReadOrViewOnly" />
        <xs:enumeration value="InvalidUserNameOrPassword" />
        <xs:enumeration value="ExternalDataNotAllowedOnTL" />
        <xs:enumeration value="InvalidUriOrLocalConnectionPath" />
        <xs:enumeration value="DclNotTrusted" />
        <xs:enumeration value="OdcFileDoesNotExist" />
        <xs:enumeration value="ErrorAccessingSsoFromEcs" />
    </xs:restriction>
</xs:simpleType>

```

```

<xs:enumeration value="SsoError" />
<xs:enumeration value="ErrorConnectingToDataSource" />
<xs:enumeration value="UnattendedAccountNotConfigured" />
<xs:enumeration value="IncorrectAuthUsed" />
<xs:enumeration value="ExternalDataRefreshFailed_Details" />
<xs:enumeration value="PivotNoOverlapAllowed" />
<xs:enumeration value="PivotOverlapList" />
<xs:enumeration value="PivotCubeNotUnique" />
<xs:enumeration value="NoDataItemsOlap" />
<xs:enumeration value="OlapSchemaFail" />
<xs:enumeration value="InvalidPivot" />
<xs:enumeration value="OlapNoMoreDetail" />
<xs:enumeration value="DrillActionInvalid" />
<xs:enumeration value="DriverNotOlap" />
<xs:enumeration value="CubeMissing" />
<xs:enumeration value="SkipLine" />
<xs:enumeration value="CDimMismatch" />
<xs:enumeration value="DataSetAxisTooBig" />
<xs:enumeration value="CubeIntegrityError" />
<xs:enumeration value="PivotNotExpandedtoProtectCellContents" />
<xs:enumeration value="PivotTruncatedSheetEdge" />
<xs:enumeration value="DdlGrpNotSup" />
<xs:enumeration value="PivotFormulasCollided" />
<xs:enumeration value="NoRetItems" />
<xs:enumeration value="OlapConnectVisualModeProvider" />
<xs:enumeration value="PivotNoSourceData" />
<xs:enumeration value="PivotFilteringError" />
<xs:enumeration value="PivotTableIncorrectDateFormat" />
<xs:enumeration value="PivotTableEndingLargerThanStarting" />
<xs:enumeration value="PivotTableIncorrectNumberFormat" />
<xs:enumeration value="PivotTableOutOfRange" />
<xs:enumeration value="MergedCellOverlap" />
<xs:enumeration value="PivotSourceNotAvailable" />
<xs:enumeration value="UnexpectedPivotError" />
<xs:enumeration value="EditModeCannotAcquireLockUnknownReason" />
<xs:enumeration value="EditModeCannotAcquireLock" />
<xs:enumeration value="EditModeCannotAcquireLockUnknownUser" />
<xs:enumeration value="EditModeWorkbookCheckedOutRequired" />
<xs:enumeration value="EditModeWorkbookCheckedOutToLocalDrafts" />
<xs:enumeration value="SiteTooBusy" />
<xs:enumeration value="SiteCollectionMemoryQuotaExceeded" />
<xs:enumeration value="SessionMemoryQuotaExceeded" />
<xs:enumeration value="SiteCollectionChartQuotaExceeded" />
<xs:enumeration value="RequestLimitsExceeded" />
<xs:enumeration value="SavingUnsupportedInViewMode" />
<xs:enumeration value="SavingWorkbookNoWorkbookName" />
<xs:enumeration value="FileSaveGeneric" />
<xs:enumeration value="SavingWorkbookInvalidPermissions" />
<xs:enumeration value="SavingWorkbookLockedOrCheckedOut" />
<xs:enumeration value="SavingWorkbookNotCheckedOut" />
<xs:enumeration value="SavingWorkbookAccessDenied" />
<xs:enumeration value="SavingWorkbookInvalidFileType" />
<xs:enumeration value="SavingWorkbookFileNameExists" />
<xs:enumeration value="HostedSavingWorkbookFileNameExists" />
<xs:enumeration value="HostedSavingWorkbookInvalidFileName" />
<xs:enumeration value="SavingWorkbookNotTrustedLocation" />
<xs:enumeration value="SavingWorkbookInvalidLocation" />
<xs:enumeration value="SavingWorkbookInvalidFileName" />
<xs:enumeration value="SavingWorkbookTrustedLocationSettingWarning" />

```

```

<xs:enumeration value="SavingWorkbookAlmostTooLarge" />
<xs:enumeration value="SavingWorkbookTooLarge" />
<xs:enumeration value="NewWorkbookInvalidLocation" />
<xs:enumeration value="FileOpenSecuritySettings" />
<xs:enumeration value="FileOpenNotFound" />
<xs:enumeration value="FileOpenAccessDenied" />
<xs:enumeration value="FileCorrupt" />
<xs:enumeration value="OpenWorkbookTooLarge" />
<xs:enumeration value="OpenWorkbookLocationNotTrusted" />
<xs:enumeration value="OpenWorkbookAccessDenied" />
<xs:enumeration value="WorkbookNotSupported" />
<xs:enumeration value="WorkbookNotSupportedViewRight" />
<xs:enumeration value="UnsupportedFeatureViewWarning" />
<xs:enumeration value="UnsupportedFeatureSaveCopyWarning" />
<xs:enumeration value="ExternalWorkbookLinksDisabled" />
<xs:enumeration value="WorkbookLockedRead" />
<xs:enumeration value="EditModeCannotEditNonSharePointWorkbook" />
<xs:enumeration value="EditModeAccessDenied" />
<xs:enumeration value="GenericFileOpenError" />
<xs:enumeration value="IRMedWorkbook" />
<xs:enumeration value="ParameterInvalid" />
<xs:enumeration value="ParameterLimitExceeded" />
<xs:enumeration value="WorkbookInternalLimit" />
<xs:enumeration value="OldFormatConversionFailed" />
<xs:enumeration value="EditModeWorkbookExternalData" />
<xs:enumeration value="FormulaEditingNotEnabled" />
<xs:enumeration value="DimensionMismatch" />
<xs:enumeration value="SetRangeFailure" />
<xs:enumeration value="ObjectTypeNotSupported" />
<xs:enumeration value="ParameterDoesNotExist" />
<xs:enumeration value="FormulaParseFailed" />
<xs:enumeration value="SetParameterFailure" />
<xs:enumeration value="CannotEditPivotTable" />
<xs:enumeration value="InsDelCellsNonblankCells" />
<xs:enumeration value="InsDelCellsArrayFmla" />
<xs:enumeration value="InsDelCellsPivotTable" />
<xs:enumeration value="InsDelCellsTable" />
<xs:enumeration value="InsDelCellsMergedCells" />
<xs:enumeration value="InsDelCellsDatatable" />
<xs:enumeration value="InsDelCellsRowsForWholeColumn" />
<xs:enumeration value="InsDelCellsColumnsForWholeRow" />
<xs:enumeration value="InvalidSheetName" />
<xs:enumeration value="RangeParseError" />
<xs:enumeration value="SpecifiedRangeNotFound" />
<xs:enumeration value="RangeDefinitionError" />
<xs:enumeration value="DiscontiguousRangeNotSupported" />
<xs:enumeration value="RangeRequestAreaExceeded" />
<xs:enumeration value="SheetRangeMismatch" />
<xs:enumeration value="ImageGenFailed" />
<xs:enumeration value="ApiInvalidArgument" />
<xs:enumeration value="ApiInvalidCoordinate" />
<xs:enumeration value="ConfirmationUnsupported" />
<xs:enumeration value="ApiInvalidDimensionReturned" />
<xs:enumeration value="ApiMissingSiteContext" />
<xs:enumeration value="Ewr_IllegalPageSize" />
<xs:enumeration value="Ewr_WorkbookNotSpecified" />
<xs:enumeration value="Ewr_LoadProgress" />
<xs:enumeration value="Ewr_FileCorrupt" />
<xs:enumeration value="Ewr_WorkbookNotSupported" />

```

```

<xs:enumeration value="Ewr_GenericFileOpenError" />
<xs:enumeration value="Ewr_InvalidParameterGeneric" />
<xs:enumeration value="Ewr_InvalidParameterMandatoryMissing" />
<xs:enumeration value="Ewr_InvalidParameterUnexpectedFormat" />
<xs:enumeration value="Ewr_InvalidParameterOutOfRange" />
<xs:enumeration value="Ewr_InvalidParameterOperationNotAllowed" />
<xs:enumeration value="Ewr_ParameterInvalid" />
<xs:enumeration value="Ewr_ParameterLimitExceeded" />
<xs:enumeration value="Ewr_ParameterDoesNotExist" />
<xs:enumeration value="Ewr_SetParameterFailure" />
<xs:enumeration value="Ewr_SetParameterFailureOnOpen" />
<xs:enumeration value="Ewr_ParameterReadFromDocPropsError" />
<xs:enumeration value="Ewr_FormulaEditingNotEnabled" />
<xs:enumeration value="Ewr_InvalidVisibleItem" />
<xs:enumeration value="Ewr_EditSaveAsOverCurrentWorkbook" />
<xs:enumeration value="Ewr_RequestTimedOut" />
<xs:enumeration value="Ewr_ServerCommunicationError" />
<xs:enumeration value="Ewr_ServerAuthenticationError" />
<xs:enumeration value="Ewr_Top10InvalidValue" />
<xs:enumeration value="Ewr_Top10InvalidValue_Float" />
<xs:enumeration value="Mewa_PageStateInitFailed" />
<xs:enumeration value="Mewa_CriticalParameterMissing" />
<xs:enumeration value="Mewa_GridViewRenderingFailed" />
<xs:enumeration value="Mewa_FeatureNotActive" />
<xs:enumeration value="OperationNotSupportedInViewOnly" />
<xs:enumeration value="OperationOnInvalidState" />
<xs:enumeration value="InvalidOrTimedOutSession" />
<xs:enumeration value="InvalidOrTimedOutSessionPageRefresh" />
<xs:enumeration value="ScratchPadChangesLost" />
<xs:enumeration value="MaxSessionsPerUserExceeded" />
<xs:enumeration value="OperationCanceled" />
<xs:enumeration value="MaxRequestDurationExceeded" />
<xs:enumeration value="NoOccurrencesFound" />
<xs:enumeration value="EcsInvalidNamedObject" />
<xs:enumeration value="NoPublishedItems" />
<xs:enumeration value="RetryError" />
<xs:enumeration value="StopOpenOnRefreshFailure" />
<xs:enumeration value="ProductExpired" />
<xs:enumeration value="SortActionInvalid" />
<xs:enumeration value="SortActionNotSupportedWithPivot" />
<xs:enumeration value="CircularReferencesFound" />
<xs:enumeration value="SessionNotFound" />
<xs:enumeration value="NewWorkbookSessionTimeout" />
<xs:enumeration value="EditXLSFile" />
<xs:enumeration value="UnsupportedFeatureEditWarning" />
<xs:enumeration value="EditModeSessionExists" />
<xs:enumeration value="NewerWorkbookExists" />
<xs:enumeration value="ExternalDataOfficeLive" />
<xs:enumeration value="LostAuthentication" />
<xs:enumeration value="ListEntryNotFound_1" />
<xs:enumeration value="ListEntryNotFound_2" />
<xs:enumeration value="ListEntryAlreadyExists_1" />
<xs:enumeration value="ListEntryAlreadyExists_2" />
<xs:enumeration value="InvalidArgumentValue" />
<xs:enumeration value="MissingArgumentName" />
<xs:enumeration value="InvalidArgumentName" />
<xs:enumeration value="ArgumentBadInRemove" />
<xs:enumeration value="ManagementUIListEntryAlreadyExists" />
<xs:enumeration value="ManagementUIListEntryNotFound" />

```

```

    <xs:enumeration value="ManagementUIInternalError" />
    <xs:enumeration value="UnsupportedUICulture" />
    <xs:enumeration value="UnsupportedDataCulture" />
    <xs:enumeration value="SpecifiedItemNotFound" />
    <xs:enumeration value="EcsSnapshotAccessDenied" />
    <xs:enumeration value="SaveFailed" />
    <xs:enumeration value="WrongEcs" />
    <xs:enumeration value="PasteDataLimitHit" />
    <xs:enumeration value="UndoStackEmpty" />
    <xs:enumeration value="RedoStackEmpty" />
    <xs:enumeration value="UndoRedoCollabFail" />
    <xs:enumeration value="HyperlinkLocationRequired" />
    <xs:enumeration value="CollabLocaleMismatch" />
    <xs:enumeration value="LocaleRestored" />
    <xs:enumeration value="InvalidEditSession" />
    <xs:enumeration value="InvalidEditSessionPageRefresh" />
    <xs:enumeration value="InvalidEditSessionId" />
    <xs:enumeration value="UnableToLoadEditSession" />
    <xs:enumeration value="SavingWorkbookFailed" />
    <xs:enumeration value="RefreshLockFailed" />
    <xs:enumeration value="InvalidChartName" />
    <xs:enumeration value="RetryOutOfSync" />
    <xs:enumeration value="OperationFailed" />
    <xs:enumeration value="OpenInExcelActiveXError" />
    <xs:enumeration value="OpenInExcelClientIntegrationDisabled" />
    <xs:enumeration value="ProcessingUserChangesFileDownloadIgnored" />
    <xs:enumeration value="PhoneticDataLossWarning" />
    <xs:enumeration value="Count" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ExcelServerMessageSeverity">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Error" />
    <xs:enumeration value="Warning" />
    <xs:enumeration value="Information" />
    <xs:enumeration value="Progress" />
    <xs:enumeration value="GettingStarted" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ExcelServerMessageType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Alert" />
    <xs:enumeration value="Status" />
    <xs:enumeration value="Confirmation" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ExcelServerMessageAppearance">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None" />
        <xs:enumeration value="OK" />
        <xs:enumeration value="Cancel" />
        <xs:enumeration value="Yes" />
        <xs:enumeration value="No" />
        <xs:enumeration value="Notification" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>

```

```

</xs:simpleType>
<xs:complexType name="ServerHealthInformation">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="StateFlags"
type="tns:ServerStateFlags" />
    <xs:element minOccurs="1" maxOccurs="1" name="HealthScore" type="xs:float" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="ServerStateFlags">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="ShuttingDown" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:complexType name="PeriodicRefreshInfo">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="ExpirationTime" type="xs:int" />
    <xs:element minOccurs="0" maxOccurs="1" name="ConnectionNames"
type="tns:ArrayOfString" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ArrayOfString">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="CollaborationResult">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationState"
type="tns:CollaborationState" />
    <xs:element minOccurs="0" maxOccurs="1" name="Users"
type="tns:ArrayOfPresenceUserInfo" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="CollaborationState">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="UserListVersion" type="xs:int" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ArrayOfPresenceUserInfo">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PresenceUserInfo"
nillable="true" type="tns:PresenceUserInfo" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="PresenceUserInfo">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="User" type="tns:PresenceUserId" />
    <xs:element minOccurs="0" maxOccurs="1" name="UserColor" type="xs:string" />
    <xs:element minOccurs="1" maxOccurs="1" name="NumberOfTimesInSession" type="xs:int"
/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="PresenceUserId">
  <xs:sequence>

```

```

        <xs:element minOccurs="0" maxOccurs="1" name="UserName" type="xs:string" />
        <xs:element minOccurs="1" maxOccurs="1" name="IsApiUser" type="xs:boolean" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="CommandParameter">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="1" name="WorkbookId" type="xs:string" />
        <xs:element minOccurs="1" maxOccurs="1" name="StateId" type="xs:int" />
        <xs:element minOccurs="0" maxOccurs="1" name="VisibleSheetRangeRequest"
type="tns:VisibleSheetRange" />
        <xs:element minOccurs="0" maxOccurs="1" name="WorkOnBehalfRequest"
type="tns:WorkOnBehalf" />
        <xs:element minOccurs="1" maxOccurs="1" name="Confirmation"
type="tns:ExcelServerMessageId" />
        <xs:element minOccurs="1" maxOccurs="1" name="ConfirmationChoice" type="xs:boolean"
/>
        <xs:element minOccurs="0" maxOccurs="1" name="ProtocolClientId" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="UserFriendlyDisplayName"
type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="Zone" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="PreviousOwnerId" type="xs:string" />
        <xs:element xmlns:ql="http://microsoft.com/wsdl/types/" minOccurs="1" maxOccurs="1"
name="RequestSiteId" type="ql:guid" />
        <xs:element minOccurs="0" maxOccurs="1" name="RequestId" type="xs:string" />
        <xs:element minOccurs="1" maxOccurs="1" name="CompleteResponseTimeout"
type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="Flags"
type="tns:CommandParameterFlags" />
        <xs:element minOccurs="0" maxOccurs="1" name="RequestLimits"
type="tns:RequestLimits" />
        <xs:element minOccurs="0" maxOccurs="1" name="CollaborationParameter"
type="tns:CollaborationParameter" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="VisibleSheetRange">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="1" name="SheetName" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="ObjectName" type="xs:string" />
        <xs:element minOccurs="0" maxOccurs="1" name="ExcelRange" type="xs:string" />
        <xs:element minOccurs="1" maxOccurs="1" name="FirstRow" type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="VisibleRowsRequested" type="xs:int"
/>
        <xs:element minOccurs="1" maxOccurs="1" name="FirstColumn" type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="VisibleColumnsRequested"
type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="VisibleFirstRowOffset" type="xs:int"
/>
        <xs:element minOccurs="1" maxOccurs="1" name="VisibleFirstColumnOffset"
type="xs:int" />
        <xs:element minOccurs="1" maxOccurs="1" name="NoAutoAdjustToPublishedUsedRange"
type="xs:boolean" />
        <xs:element minOccurs="1" maxOccurs="1" name="CalculateVisibleOffsetFromOrigin"
type="xs:boolean" />
        <xs:element minOccurs="1" maxOccurs="1" name="NeedAllBorderValues"
type="xs:boolean" />
        <xs:element minOccurs="1" maxOccurs="1" name="ChartsOnly" type="xs:boolean" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="WorkOnBehalf">
    <xs:sequence>

```

```

    <xs:element minOccurs="0" maxOccurs="1" name="UserName" type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="UserSid" type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="UserToken" type="xs:base64Binary" />
    <xs:element minOccurs="1" maxOccurs="1" name="UserTokenTtl" type="xs:int" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="CommandParameterFlags">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="ForceOneTimeRecalc" />
        <xs:enumeration value="SuppressOneTimeRecalc" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:complexType name="RequestLimits">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="CellCount" nillable="true"
type="xs:long" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="CollaborationParameter">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="CollaborationState"
type="tns:CollaborationState" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="CultureCommandParameter">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="UICultureName" type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="DataCultureName" type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="SharePointDataCultureName"
type="xs:string" />
    <xs:element minOccurs="0" maxOccurs="1" name="TimeZoneSerialization"
type="xs:string" />
  </xs:sequence>
</xs:complexType>
</xs:schema>
<xs:schema xmlns:tns="http://microsoft.com/wsdl/types/" elementFormDefault="qualified"
targetNamespace="http://microsoft.com/wsdl/types/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="guid">
    <xs:restriction base="xs:string">
      <xs:pattern value="[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-
9a-fA-F]{12}" />
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
<xs:schema
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server" />
  <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
  <xs:complexType name="AccessServerMessage">
    <xs:sequence>
      <xs:element minOccurs="0" name="Buttons" type="tns:AccessServerMessageButtons" />

```



```

    <xs:element minOccurs="0" name="Caption" nillable="true" type="xs:string" />
    <xs:element minOccurs="0" name="Description" nillable="true" type="xs:string" />
    <xs:element minOccurs="0" name="ErrorNumber" nillable="true" type="xs:int" />
    <xs:element minOccurs="0" name="ExtendedDescription" nillable="true"
type="xs:string" />
    <xs:element
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server"
minOccurs="0" name="HealthInformation" nillable="true" type="q1:ServerHealthInformation" />
    <xs:element minOccurs="0" name="HelpDisplayText" nillable="true" type="xs:string"
/>

    <xs:element minOccurs="0" name="HelpTopicId" nillable="true" type="xs:string" />
    <xs:element minOccurs="0" name="Id" type="tns:AccessServerMessageId" />
    <xs:element minOccurs="0" name="Severity" type="tns:AccessServerMessageSeverity" />
    <xs:element minOccurs="0" name="Type" type="tns:AccessServerMessageType" />
  </xs:sequence>
</xs:complexType>
<xs:element name="AccessServerMessage" nillable="true" type="tns:AccessServerMessage"
/>

<xs:simpleType name="AccessServerMessageButtons">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None" />
        <xs:enumeration value="OK" />
        <xs:enumeration value="Cancel" />
        <xs:enumeration value="Yes" />
        <xs:enumeration value="No" />
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:element name="AccessServerMessageButtons" nillable="true"
type="tns:AccessServerMessageButtons" />
<xs:simpleType name="AccessServerMessageId">
  <xs:restriction base="xs:string">
    <xs:enumeration value="InternalError" />
    <xs:enumeration value="ManagementUIInternalError" />
    <xs:enumeration value="GetRecordsPermissionsFailure" />
    <xs:enumeration value="WriteRecordsPermissionsFailure" />
    <xs:enumeration value="EditValueListPermissionsFailure" />
    <xs:enumeration value="NotMemberOfRole" />
    <xs:enumeration value="MaxSessionsPerUserExceeded" />
    <xs:enumeration value="SiteCollectionCpuQuotaExceeded" />
    <xs:enumeration value="SessionMemoryQuotaExceeded" />
    <xs:enumeration value="SiteCollectionMemoryQuotaExceeded" />
    <xs:enumeration value="RetryError" />
    <xs:enumeration value="MaxRequestDurationExceeded" />
    <xs:enumeration value="ProductExpired" />
    <xs:enumeration value="NewWorkbookSessionTimeout" />
    <xs:enumeration value="DataException_DataOperationFailed" />
    <xs:enumeration value="DataException_CacheOperationInvalid" />
    <xs:enumeration value="DataException_ValidationFailed" />
    <xs:enumeration value="DataException_MaxRecordsInTableExceeded" />
    <xs:enumeration value="DataException_InvalidPageNumber" />
    <xs:enumeration value="DataException_DataMacroNotFound" />
    <xs:enumeration value="InvalidFilterExpression" />
    <xs:enumeration value="InvalidAggregateExpression" />
    <xs:enumeration value="InvalidArgument" />
    <xs:enumeration value="NullArgument" />
  </xs:restriction>
</xs:simpleType>

```

```

<xs:enumeration value="WebServiceUpdateIdConflict" />
<xs:enumeration value="QueryException_AmbiguousValuesProvided" />
<xs:enumeration value="QueryException_InvalidCompiledQueryVersion" />
<xs:enumeration value="QueryException_InvalidSourceUsageWithoutJoin" />
<xs:enumeration value="QueryException_InvalidExpression" />
<xs:enumeration value="QueryException_InvalidLikeArgumentsExpression" />
<xs:enumeration value="QueryException_InvalidLikeFieldTypeInExpression" />
<xs:enumeration value="QueryException_InvalidInArgumentsExpression" />
<xs:enumeration value="QueryException_InvalidAxlEncoding" />
<xs:enumeration value="QueryException_InvalidOrderPropertyName" />
<xs:enumeration value="QueryException_InvalidOrderSourceName" />
<xs:enumeration value="QueryException_InvalidJoinLeftSourceName" />
<xs:enumeration value="QueryException_InvalidJoinRightSourceName" />
<xs:enumeration value="QueryException_InvalidJoinLeftPropertyName" />
<xs:enumeration value="QueryException_InvalidJoinRightPropertyName" />
<xs:enumeration value="QueryException_InvalidJoinType" />
<xs:enumeration value="QueryException_InvalidJoinPropertyType" />
<xs:enumeration value="QueryException_InvalidPropertyElement" />
<xs:enumeration value="QueryException_InvalidResultPropertySource" />
<xs:enumeration value="QueryException_InvalidResultPropertyName" />
<xs:enumeration value="QueryException_InvalidResultPropertyAlias" />
<xs:enumeration value="QueryException_InvalidResultExpression" />
<xs:enumeration value="QueryException_DuplicateResultAliases" />
<xs:enumeration value="QueryException_InvalidParameterName" />
<xs:enumeration value="QueryException_InvalidParameterType" />
<xs:enumeration value="QueryException_InvalidReferenceSourceName" />
<xs:enumeration value="QueryException_InvalidReferenceSourceType" />
<xs:enumeration value="QueryException_InvalidRestrictionExpression" />
<xs:enumeration value="QueryException_InvalidReferenceInExpression" />
<xs:enumeration value="QueryException_InvalidReferenceInExpression_OutsideOfQuery"
/>

<xs:enumeration value="QueryException_AmbiguousReferenceInExpression" />
<xs:enumeration value="QueryException_FailedFilterOperation" />
<xs:enumeration value="QueryException_FailedFilterEvaluation_CalcLibGeneral" />
<xs:enumeration value="QueryException_FailedFilterEvaluation_DivZero" />
<xs:enumeration value="QueryException_FailedSortOrFilterOperation" />
<xs:enumeration value="QueryException_QueryNotCompiled" />
<xs:enumeration value="QueryException_InvalidCompiledQueryFormat" />
<xs:enumeration value="QueryException_InvalidJoinUsage" />
<xs:enumeration value="QueryException_InvalidExecutionState" />
<xs:enumeration value="QueryException_FailedFetchListData" />
<xs:enumeration value="QueryException_FailedCalculatedFieldEvaluation" />
<xs:enumeration value="QueryException_RequiredParameterNotSupplied" />
<xs:enumeration value="QueryException_InvalidListOrQueryReference" />
<xs:enumeration value="QueryException_BulkUpdatesNotSupported" />
<xs:enumeration value="QueryException_MissingKeyColumn" />
<xs:enumeration value="QueryException_CannotSetKeyColumn" />
<xs:enumeration value="QueryException_CannotUpdateNonUpdatableColumn" />
<xs:enumeration value="QueryException_MultiTableUpdatesNotSupported" />
<xs:enumeration value="QueryException_RequiredFieldNotSupplied" />
<xs:enumeration value="QueryException_QueryCompiling" />
<xs:enumeration value="QueryException_QueryCompilationFailure" />
<xs:enumeration value="QueryException_InvalidCircularExpressionReference" />
<xs:enumeration value="QueryException_LicenseExpired" />
<xs:enumeration value="QueryException_ServerUpgraded" />
<xs:enumeration value="QueryThrottleMaxSourcesExceeded" />
<xs:enumeration value="QueryThrottleMaxOutputsExceeded" />
<xs:enumeration value="QueryThrottleMaxRowsExceeded" />
<xs:enumeration value="QueryThrottleMaxRowsPerSourceExceeded" />

```

```

<xs:enumeration value="QueryThrottleMaxOutputCalculatedColumnsExceeded" />
<xs:enumeration value="QueryThrottleMaxOrderByColumnsExceeded" />
<xs:enumeration value="QueryThrottleOuterJoinsDisabled" />
<xs:enumeration value="QueryThrottleRemotableQueriesDisabled" />
<xs:enumeration value="OrderingException_InvalidSpecification" />
<xs:enumeration value="OrderingException_InvalidColumnName" />
<xs:enumeration value="InvalidMetroFile" />
<xs:enumeration value="InvalidAccessVersion" />
<xs:enumeration value="InvalidTemplateVersion" />
<xs:enumeration value="TemplateNotWebCompatible" />
<xs:enumeration value="TemplateMaxSizeExceeded" />
<xs:enumeration value="UpdateConflict" />
<xs:enumeration value="DeleteConflict" />
<xs:enumeration value="FieldSchemaChange_UpdateConflict" />
<xs:enumeration value="FieldSchemaChange_ListNotFoundInMSysASO" />
<xs:enumeration value="FieldSchemaChange_CompilationFailed" />
<xs:enumeration value="ObjectCompilation_ObjectCompilationFailed" />
<xs:enumeration value="ObjectCompilation_ListNotFound" />
<xs:enumeration value="MacroCompilationException_InvalidAx1" />
<xs:enumeration value="MacroCompilationException_UnexpectedAx1Element" />
<xs:enumeration value="MacroCompilationException_InvalidAction" />
<xs:enumeration value="MacroCompilationException_InvalidEventName" />
<xs:enumeration value="MacroCompilationException_RequiredArgumentMissing" />
<xs:enumeration value="MacroCompilationException_ArgumentValueNotSpecified" />
<xs:enumeration value="MacroCompilationException_InvalidActionArgument" />
<xs:enumeration value="MacroCompilationException_InvalidActionArgumentCount" />
<xs:enumeration value="MacroCompilationException_InvalidParameter" />
<xs:enumeration value="MacroCompilationException_MacroParameterLimitExceeded" />
<xs:enumeration value="MacroCompilationException_MacroActionsLimitExceeded" />
<xs:enumeration value="MacroCompilationException_MacroCallStackDepthExceeded" />
<xs:enumeration value="MacroCompilationException_MacroSaveFailed" />
<xs:enumeration value="MacroCompilationException_MacroAssociationFailed" />
<xs:enumeration value="MacroCompilationException_InvalidControlName" />
<xs:enumeration value="MacroCompilationException_Recursion" />
<xs:enumeration value="MacroExecutionException_FailedToEvaluateExpression" />
<xs:enumeration value="MacroExecutionException_MissingParameterToDataMacro" />
<xs:enumeration value="MacroExecutionError_InvalidParameterName" />
<xs:enumeration value="MacroExecutionException_FailedToResolveExpression" />
<xs:enumeration value="MacroExecutionException_WrongExpressionVariableFormat" />
<xs:enumeration value="MacroExecutionException_VariableNotFound" />
<xs:enumeration value="MacroExecutionException_NoDataContext" />
<xs:enumeration value="MacroExecutionException_KnownExpressionEvaluationErrorCode" />
/>

<xs:enumeration value="MacroExecutionException_FailedToExecuteQuery" />
<xs:enumeration value="MacroExecutionException_FailedMoveToNextItem" />
<xs:enumeration value="MacroExecutionException_FailedToSetField" />
<xs:enumeration value="MacroExecutionException_FailedToCancelRecordChange" />
<xs:enumeration value="MacroExecutionException_FailedToDeleteRecord" />
<xs:enumeration value="MacroExecutionException_ChangeConflict" />
<xs:enumeration value="MacroExecutionException_FailedToSetLocalVar" />
<xs:enumeration value="MacroExecutionException_FailedToSetReturnVar" />
<xs:enumeration value="MacroExecutionException_TooManyReturnVars" />
<xs:enumeration value="MacroExecutionException_ReturnVarTooLong" />
<xs:enumeration value="MacroExecutionException_InvalidReturnVarName" />
<xs:enumeration value="MacroExecutionException_FailedToSaveItem" />
<xs:enumeration value="MacroExecutionException_FailedToFindItemWithID" />
<xs:enumeration value="MacroExecutionException_FailedToAddItem" />
<xs:enumeration value="MacroExecutionException_FailedToDeleteListItem" />
<xs:enumeration value="MacroExecutionException_FailedToUpdateListItem" />

```

```

<xs:enumeration value="MacroExecutionException_FailedToSetFieldToValue" />
<xs:enumeration value="MacroExecutionException_CannotFindField" />
<xs:enumeration value="MacroExecutionException_CannotResolveIdentifier" />
<xs:enumeration value="MacroExecutionException_CannotFindVariableOrParam" />
<xs:enumeration value="MacroExecutionException_CannotReferenceMVOrAttachmentFields"
/>

<xs:enumeration value="MacroExecutionException_ComplexFieldInUpdatedFunc" />
<xs:enumeration value="MacroExecutionException_CannotFindItemWithAlias" />
<xs:enumeration value="MacroExecutionException_CannotUpdateReadOnlyItem" />
<xs:enumeration value="MacroExecutionException_FailedToConfigureSendEmail" />
<xs:enumeration value="MacroExecutionException_OutboundEmailNotConfigured" />
<xs:enumeration value="MacroExecutionException_FailedToEnumerateList" />
<xs:enumeration value="MacroExecutionException_FailedToStartMacro" />
<xs:enumeration value="MacroExecutionException_TypeMismatch" />
<xs:enumeration value="MacroExecutionException_CannotStartEventMacro" />
<xs:enumeration value="MacroExecutionException_FailedToStopMacro" />
<xs:enumeration value="MacroExecutionException_FailedToStopAllMacros" />
<xs:enumeration value="MacroExecutionException_ExecutionFailed" />
<xs:enumeration value="MacroExecutionException_FailedToRaiseError" />
<xs:enumeration value="MacroExecutionException_FailedToLogEvent" />
<xs:enumeration value="MacroExecutionException_MacroRecursionLimitExceeded" />
<xs:enumeration value="MacroExecutionException_MacroLimitExceeded" />
<xs:enumeration value="MacroExecutionException_InvalidUpdatedFunction" />
<xs:enumeration value="MacroExecutionException_IntegerExpressionExpected" />
<xs:enumeration value="MacroExecutionException_FailedToStartEditRecord" />
<xs:enumeration value="MacroExecutionException_FailedToExecuteEditRecord" />
<xs:enumeration
value="MacroExecutionException_OperationNotAllowedInEditRecordBlock" />
<xs:enumeration value="MacroExecutionException_OperationMustBeInEditRecordBlock" />
<xs:enumeration value="MacroExecutionException_InvalidOperationOnItem" />
<xs:enumeration value="MacroExecutionException_InvalidObject" />
<xs:enumeration value="MacroExecutionException_FieldCannotBeUpdated" />
<xs:enumeration value="MacroExecutionError_FailedToSetOnErrorBehavior" />
<xs:enumeration value="MacroExecutionException_InsertRecordFailed" />
<xs:enumeration value="MacroExecutionException_CannotQueryIDInCreateRecord" />
<xs:enumeration value="MacroExecutionException_InvalidEditInForEachRecord" />
<xs:enumeration value="MacroExecutionException_InvalidCreateRecordInForEachRecord"
/>

<xs:enumeration value="MacroExecutionException_InvalidCalcColumnReference" />
<xs:enumeration value="MacroExecutionException_ListItemNotFound" />
<xs:enumeration value="FormRenderFailure" />
<xs:enumeration value="FormCompilationFailure" />
<xs:enumeration value="SettingValidationFailed" />
<xs:enumeration value="SettingApplicationNameNotFound" />
<xs:enumeration value="SettingApplicationIdNotFound" />
<xs:enumeration value="SettingApplicationProxyNameNotFound" />
<xs:enumeration value="FailedToRetrieveAccessServiceApplication" />
<xs:enumeration value="CompilationInProgress" />
<xs:enumeration value="CompilationFailed" />
</xs:restriction>
</xs:simpleType>
<xs:element name="AccessServerMessageId" nillable="true"
type="tns:AccessServerMessageId" />
<xs:simpleType name="AccessServerMessageSeverity">
<xs:restriction base="xs:string">
<xs:enumeration value="Error" />
<xs:enumeration value="Warning" />
<xs:enumeration value="Information" />
<xs:enumeration value="Progress" />

```

```

        <xs:enumeration value="GettingStarted" />
    </xs:restriction>
</xs:simpleType>
<xs:element name="AccessServerMessageSeverity" nillable="true"
type="tns:AccessServerMessageSeverity" />
<xs:simpleType name="AccessServerMessageType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Alert" />
        <xs:enumeration value="Status" />
        <xs:enumeration value="Confirmation" />
    </xs:restriction>
</xs:simpleType>
<xs:element name="AccessServerMessageType" nillable="true"
type="tns:AccessServerMessageType" />
</xs:schema>
<xs:schema
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Excel.Server"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
    <xs:complexType name="ServerHealthInformation">
        <xs:sequence>
            <xs:element minOccurs="0" name="HealthScore" type="xs:float" />
            <xs:element minOccurs="0" name="StateFlags" type="tns:ServerStateFlags" />
        </xs:sequence>
    </xs:complexType>
    <xs:element name="ServerHealthInformation" nillable="true"
type="tns:ServerHealthInformation" />
    <xs:simpleType name="ServerStateFlags">
        <xs:list>
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="None" />
                    <xs:enumeration value="Probation" />
                    <xs:enumeration value="ShuttingDown" />
                </xs:restriction>
            </xs:simpleType>
        </xs:list>
    </xs:simpleType>
    <xs:element name="ServerStateFlags" nillable="true" type="tns:ServerStateFlags" />
</xs:schema>
<xs:schema xmlns:tns="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="tns:char" />
<xs:simpleType name="char">
  <xs:restriction base="xs:int" />
</xs:simpleType>
<xs:element name="duration" nillable="true" type="tns: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="tns: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>
</wsdl:types>
<wsdl:message name="AccessServiceSoap_GetHealthScore_InputMessage">
  <wsdl:part name="parameters" element="i0:GetHealthScore" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_GetHealthScore_OutputMessage">
  <wsdl:part name="parameters" element="i0:GetHealthScoreResponse" />
</wsdl:message>
<wsdl:message
name="AccessServiceSoap_GetHealthScore_AccessServerMessageFault_FaultMessage">
  <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q1:AccessServerMessage" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_GetMacroState_InputMessage">
  <wsdl:part name="parameters" element="i0:GetMacroState" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_GetMacroState_OutputMessage">
  <wsdl:part name="parameters" element="i0:GetMacroStateResponse" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_GetMacroState_AccessServerMessageFault_FaultMessage">
  <wsdl:part
xmlns:q2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q2:AccessServerMessage" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_RunDataMacro_InputMessage">
  <wsdl:part name="parameters" element="i0:RunDataMacro" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_RunDataMacro_OutputMessage">
  <wsdl:part name="parameters" element="i0:RunDataMacroResponse" />
</wsdl:message>
<wsdl:message name="AccessServiceSoap_RunDataMacro_AccessServerMessageFault_FaultMessage">

```

```

    <wsdl:part
xmlns:q3="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q3:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenSession_InputMessage">
    <wsdl:part name="parameters" element="i0:OpenSession" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenSession_OutputMessage">
    <wsdl:part name="parameters" element="i0:OpenSessionResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenSession_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q4="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q4:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_CloseSession_InputMessage">
    <wsdl:part name="parameters" element="i0:CloseSession" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_CloseSession_OutputMessage">
    <wsdl:part name="parameters" element="i0:CloseSessionResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_CloseSession_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q5="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q5:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_KeepAlive_InputMessage">
    <wsdl:part name="parameters" element="i0:KeepAlive" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_KeepAlive_OutputMessage">
    <wsdl:part name="parameters" element="i0:KeepAliveResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_KeepAlive_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q6="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q6:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenResultSet_InputMessage">
    <wsdl:part name="parameters" element="i0:OpenResultSet" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenResultSet_OutputMessage">
    <wsdl:part name="parameters" element="i0:OpenResultSetResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_OpenResultSet_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q7="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q7:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_GetData_InputMessage">
    <wsdl:part name="parameters" element="i0:GetData" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_GetData_OutputMessage">
    <wsdl:part name="parameters" element="i0:GetDataResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_GetData_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q8="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q8:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_InsertData_InputMessage">

```

```

    <wsdl:part name="parameters" element="i0:InsertData" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_InsertData_OutputMessage">
    <wsdl:part name="parameters" element="i0:InsertDataResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_InsertData_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q9="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q9:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateData_InputMessage">
    <wsdl:part name="parameters" element="i0:UpdateData" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateData_OutputMessage">
    <wsdl:part name="parameters" element="i0:UpdateDataResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateData_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q10="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q10:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_FixupRow_InputMessage">
    <wsdl:part name="parameters" element="i0:FixupRow" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_FixupRow_OutputMessage">
    <wsdl:part name="parameters" element="i0:FixupRowResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_FixupRow_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q11="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q11:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_DeleteData_InputMessage">
    <wsdl:part name="parameters" element="i0>DeleteData" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_DeleteData_OutputMessage">
    <wsdl:part name="parameters" element="i0>DeleteDataResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_DeleteData_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q12="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q12:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateCache_InputMessage">
    <wsdl:part name="parameters" element="i0:UpdateCache" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateCache_OutputMessage">
    <wsdl:part name="parameters" element="i0:UpdateCacheResponse" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_UpdateCache_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q13="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q13:AccessServerMessage" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_GetDistinctValues_InputMessage">
    <wsdl:part name="parameters" element="i0:GetDistinctValues" />
  </wsdl:message>
  <wsdl:message name="AccessServiceSoap_GetDistinctValues_OutputMessage">
    <wsdl:part name="parameters" element="i0:GetDistinctValuesResponse" />
  </wsdl:message>

```



```

    <wsdl:message
name="AccessServiceSoap_GetDistinctValues_AccessServerMessageFault_FaultMessage">
    <wsdl:part
xmlns:q14="http://schemas.datacontract.org/2004/07/Microsoft.Office.Access.Server"
name="detail" element="q14:AccessServerMessage" />
    </wsdl:message>
    <wsdl:portType name="AccessServiceSoap">
    <wsdl:operation name="GetHealthScore">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetHealthScore"
message="i0:AccessServiceSoap_GetHealthScore_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetHealthScoreResponse"
message="i0:AccessServiceSoap_GetHealthScore_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetHealthScoreAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_GetHealthScore_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="GetMacroState">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetMacroState"
message="i0:AccessServiceSoap_GetMacroState_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetMacroStateResponse"
message="i0:AccessServiceSoap_GetMacroState_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetMacroStateAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_GetMacroState_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="RunDataMacro">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/RunDataMacro"
message="i0:AccessServiceSoap_RunDataMacro_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/RunDataMacroResponse"
message="i0:AccessServiceSoap_RunDataMacro_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/RunDataMacroAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_RunDataMacro_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="OpenSession">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenSession"
message="i0:AccessServiceSoap_OpenSession_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenSessionResponse"
message="i0:AccessServiceSoap_OpenSession_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern

```

```

alService/AccessServiceSoap/OpenSessionAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_OpenSession_AccessServerMessageFault_FaultMessage" />
  </wsdl:operation>
  <wsdl:operation name="CloseSession">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/CloseSession"
message="i0:AccessServiceSoap_CloseSession_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/CloseSessionResponse"
message="i0:AccessServiceSoap_CloseSession_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/CloseSessionAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_CloseSession_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="KeepAlive">
      <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAlive" message="i0:AccessServiceSoap_KeepAlive_InputMessage"
/>
      <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAliveResponse"
message="i0:AccessServiceSoap_KeepAlive_OutputMessage" />
      <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAliveAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_KeepAlive_AccessServerMessageFault_FaultMessage" />
      </wsdl:operation>
      <wsdl:operation name="OpenResultSet">
        <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSet"
message="i0:AccessServiceSoap_OpenResultSet_InputMessage" />
        <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSetResponse"
message="i0:AccessServiceSoap_OpenResultSet_OutputMessage" />
        <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSetAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_OpenResultSet_AccessServerMessageFault_FaultMessage" />
        </wsdl:operation>
        <wsdl:operation name="GetData">
          <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetData" message="i0:AccessServiceSoap_GetData_InputMessage" />
          <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDataResponse"
message="i0:AccessServiceSoap_GetData_OutputMessage" />
          <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDataAccessServerMessageFault" name="AccessServerMessageFault"
message="i0:AccessServiceSoap_GetData_AccessServerMessageFault_FaultMessage" />
          </wsdl:operation>
          <wsdl:operation name="InsertData">

```

```

    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/InsertData"
message="i0:AccessServiceSoap_InsertData_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/InsertDataResponse"
message="i0:AccessServiceSoap_InsertData_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/InsertDataAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_InsertData_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="UpdateData">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateData"
message="i0:AccessServiceSoap_UpdateData_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateDataResponse"
message="i0:AccessServiceSoap_UpdateData_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateDataAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_UpdateData_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="FixupRow">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/FixupRow" message="i0:AccessServiceSoap_FixupRow_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/FixupRowResponse"
message="i0:AccessServiceSoap_FixupRow_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/FixupRowAccessServerMessageFault" name="AccessServerMessageFault"
message="i0:AccessServiceSoap_FixupRow_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="DeleteData">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/DeleteData"
message="i0:AccessServiceSoap_DeleteData_InputMessage" />
    <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/DeleteDataResponse"
message="i0:AccessServiceSoap_DeleteData_OutputMessage" />
    <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/DeleteDataAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_DeleteData_AccessServerMessageFault_FaultMessage" />
    </wsdl:operation>
    <wsdl:operation name="UpdateCache">
    <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateCache"
message="i0:AccessServiceSoap_UpdateCache_InputMessage" />

```

```

        <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateCacheResponse"
message="i0:AccessServiceSoap_UpdateCache_OutputMessage" />
        <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateCacheAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_UpdateCache_AccessServerMessageFault_FaultMessage" />
        </wsdl:operation>
        <wsdl:operation name="GetDistinctValues">
        <wsdl:input
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDistinctValues"
message="i0:AccessServiceSoap_GetDistinctValues_InputMessage" />
        <wsdl:output
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDistinctValuesResponse"
message="i0:AccessServiceSoap_GetDistinctValues_OutputMessage" />
        <wsdl:fault
wsam:Action="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDistinctValuesAccessServerMessageFault"
name="AccessServerMessageFault"
message="i0:AccessServiceSoap_GetDistinctValues_AccessServerMessageFault_FaultMessage" />
        </wsdl:operation>
</wsdl:portType>
        <wsdl:binding name="CustomBinding_AccessServiceSoap" type="i0:AccessServiceSoap">
        <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
        <wsdl:operation name="GetHealthScore">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetHealthScore" style="document" />
        <wsdl:input>
        <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
        <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
        </wsdl:operation>
        <wsdl:operation name="GetMacroState">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetMacroState" style="document" />
        <wsdl:input>
        <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
        <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
        </wsdl:operation>
        <wsdl:operation name="RunDataMacro">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/RunDataMacro" style="document" />
        <wsdl:input>

```

```

        <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal" />
    </wsdl:output>
    <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="OpenSession">
    <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenSession" style="document" />
    <wsdl:input>
        <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal" />
    </wsdl:output>
    <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="CloseSession">
    <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/CloseSession" style="document" />
    <wsdl:input>
        <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal" />
    </wsdl:output>
    <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="KeepAlive">
    <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/KeepAlive" style="document" />
    <wsdl:input>
        <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal" />
    </wsdl:output>
    <wsdl:fault name="AccessServerMessageFault">
        <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="OpenResultSet">
    <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/OpenResultSet" style="document" />
    <wsdl:input>
        <soap:body use="literal" />
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal" />
    </wsdl:output>

```

```

        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
            <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="GetData">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetData" style="document" />
        <wsdl:input>
            <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
            <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
            <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="InsertData">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/InsertData" style="document" />
        <wsdl:input>
            <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
            <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
            <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="UpdateData">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateData" style="document" />
        <wsdl:input>
            <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
            <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
            <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="FixupRow">
        <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/FixupRow" style="document" />
        <wsdl:input>
            <soap:body use="literal" />
        </wsdl:input>
        <wsdl:output>
            <soap:body use="literal" />
        </wsdl:output>
        <wsdl:fault name="AccessServerMessageFault">
            <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
        </wsdl:fault>
    </wsdl:operation>

```

```

</wsdl:operation>
<wsdl:operation name="DeleteData">
  <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/DeleteData" style="document" />
  <wsdl:input>
    <soap:body use="literal" />
  </wsdl:input>
  <wsdl:output>
    <soap:body use="literal" />
  </wsdl:output>
  <wsdl:fault name="AccessServerMessageFault">
    <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="UpdateCache">
  <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/UpdateCache" style="document" />
  <wsdl:input>
    <soap:body use="literal" />
  </wsdl:input>
  <wsdl:output>
    <soap:body use="literal" />
  </wsdl:output>
  <wsdl:fault name="AccessServerMessageFault">
    <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetDistinctValues">
  <soap:operation
soapAction="http://schemas.microsoft.com/office/Access/Server/WebServices/AccessServerIntern
alService/AccessServiceSoap/GetDistinctValues" style="document" />
  <wsdl:input>
    <soap:body use="literal" />
  </wsdl:input>
  <wsdl:output>
    <soap:body use="literal" />
  </wsdl:output>
  <wsdl:fault name="AccessServerMessageFault">
    <soap:fault use="literal" name="AccessServerMessageFault" namespace="" />
  </wsdl:fault>
</wsdl:operation>
</wsdl:binding>
</wsdl:definitions>

```

7 Appendix B: Product Behavior

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

- Microsoft® SharePoint® Server 2010

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

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

[<1> Section 3.1.4.11.3.1](#): Access Services will attempt to fallback to a **fallback UI culture** when an unsupported UI culture is requested.

8 Change Tracking

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

9 Index

A

Abstract data model
[server](#) 59
[AccessServerMessage complex type](#) 16
[AccessServerMessageButtons simple type](#) 28
[AccessServerMessageId simple type](#) 28
[AccessServerMessageSeverity simple type](#) 40
[AccessServerMessageType simple type](#) 40
[Applicability](#) 11
[ArrayOfAnyType complex type](#) 17
[ArrayOfExcelServerMessage complex type](#) 17
[ArrayOfKeyValuePair complex type](#) 17
[ArrayOfPresenceUserInfo complex type](#) 18
[ArrayOfString complex type](#) 18
[Attribute groups](#) 57
[Attributes](#) 56

C

[Capability negotiation](#) 12
[Change tracking](#) 145
Client
[overview](#) 59
[CollaborationParameter complex type](#) 18
[CollaborationResult complex type](#) 19
[CollaborationState complex type](#) 19
[CommandParameter complex type](#) 19
[CommandParameterFlags simple type](#) 41
[CommandResult complex type](#) 20
[CommandResultExtendedInfo complex type](#) 21
[Common fault identifiers](#) 57
[Complex types](#) 14
[AccessServerMessage](#) 16
[ArrayOfAnyType](#) 17
[ArrayOfExcelServerMessage](#) 17
[ArrayOfKeyValuePair](#) 17
[ArrayOfPresenceUserInfo](#) 18
[ArrayOfString](#) 18
[CollaborationParameter](#) 18
[CollaborationResult](#) 19
[CollaborationState](#) 19
[CommandParameter](#) 19
[CommandResult](#) 20
[CommandResultExtendedInfo](#) 21
[ExcelServerMessage](#) 22
[KeyValuePair](#) 23
[PeriodicRefreshInfo](#) 23
[PresenceUserId](#) 23
[PresenceUserInfo](#) 24
[RequestLimits](#) 24
ServerHealthInformation ([section 2.2.4.19](#) 24,
[section 2.2.4.20](#) 25)
[VisibleSheetRange](#) 25
[WorkOnBehalf](#) 26

D

Data model - abstract

[server](#) 59

E

Events
[local - server](#) 106
Examples
[overview](#) 107
[ExcelServerMessage complex type](#) 22
[ExcelServerMessageAppearance simple type](#) 41
[ExcelServerMessageId simple type](#) 42
[ExcelServerMessageSeverity simple type](#) 53
[ExcelServerMessageType simple type](#) 54

F

[Faults](#) 57
[common fault identifiers](#) 57
[query fault identifiers](#) 57
[Fields - vendor-extensible](#) 12
[Full WSDL](#) 113

G

[Glossary](#) 8
[Groups](#) 56
[guid simple type](#) 54

I

[Implementer - security considerations](#) 112
[Index of security parameters](#) 112
[Informative references](#) 10
Initialization
[server](#) 61
[Introduction](#) 8

K

[KeyValuePair complex type](#) 23

L

Local events
[server](#) 106

M

Message processing
[server](#) 61
Messages
[AccessServerMessage complex type](#) 16
[AccessServerMessageButtons simple type](#) 28
[AccessServerMessageId simple type](#) 28
[AccessServerMessageSeverity simple type](#) 40
[AccessServerMessageType simple type](#) 40
[ArrayOfAnyType complex type](#) 17
[ArrayOfExcelServerMessage complex type](#) 17
[ArrayOfKeyValuePair complex type](#) 17

- [ArrayOfPresenceUserInfo complex type](#) 18
- [ArrayOfString complex type](#) 18
- [attribute groups](#) 57
- [attributes](#) 56
- [CollaborationParameter complex type](#) 18
- [CollaborationResult complex type](#) 19
- [CollaborationState complex type](#) 19
- [CommandParameter complex type](#) 19
- [CommandParameterFlags simple type](#) 41
- [CommandResult complex type](#) 20
- [CommandResultExtendedInfo complex type](#) 21
- [common fault identifiers](#) 57
- [complex types](#) 14
- [elements](#) 14
- [enumerated](#) 14
- [ExcelServerMessage complex type](#) 22
- [ExcelServerMessageAppearance simple type](#) 41
- [ExcelServerMessageId simple type](#) 42
- [ExcelServerMessageSeverity simple type](#) 53
- [ExcelServerMessageType simple type](#) 54
- [faults](#) 57
- [groups](#) 56
- [guid simple type](#) 54
- [KeyValuePair complex type](#) 23
- [namespaces](#) 13
- [PeriodicRefreshInfo complex type](#) 23
- [PresenceUserId complex type](#) 23
- [PresenceUserInfo complex type](#) 24
- [query fault identifiers](#) 57
- [RequestLimits complex type](#) 24
- ServerHealthInformation complex type ([section 2.2.4.19](#) 24, [section 2.2.4.20](#) 25)
- ServerStateFlags simple type ([section 2.2.5.11](#) 55, [section 2.2.5.12](#) 55)
- [SessionIdentifier simple type](#) 56
- [simple types](#) 27
- [syntax](#) 13
- [transport](#) 13
- [VisibleSheetRange complex type](#) 25
- [WorkOnBehalf complex type](#) 26
- [Messages overview](#) 13

N

- [Namespaces](#) 13
- [Normative references](#) 9

O

Operations

- [CloseSession](#) 61
- [DeleteData](#) 63
- [FixupRow](#) 66
- [GetData](#) 69
- [GetDistinctValues](#) 74
- [GetHealthScore](#) 76
- [GetMacroState](#) 78
- [InsertData](#) 81
- [KeepAlive](#) 84
- [OpenResultSet](#) 86
- [OpenSession](#) 91
- [RunDataMacro](#) 96

- [UpdateCache](#) 100
- [UpdateData](#) 102
- [Overview \(synopsis\)](#) 10

P

- [Parameters - security index](#) 112
- [PeriodicRefreshInfo complex type](#) 23
- [Preconditions](#) 11
- [Prerequisites](#) 11
- [PresenceUserId complex type](#) 23
- [PresenceUserInfo complex type](#) 24
- [Product behavior](#) 144
- [Protocol operations](#) 10

Q

- [Query fault identifiers](#) 57

R

References

- [informative](#) 10
- [normative](#) 9
- [Relationship to other protocols](#) 11
- [RequestLimits complex type](#) 24

S

Security

- [implementer considerations](#) 112
- [parameter index](#) 112

Sequencing rules

- [server](#) 61

Server

- [abstract data model](#) 59
- [CloseSession operation](#) 61
- [DeleteData operation](#) 63
- [FixupRow operation](#) 66
- [GetData operation](#) 69
- [GetDistinctValues operation](#) 74
- [GetHealthScore operation](#) 76
- [GetMacroState operation](#) 78
- [initialization](#) 61
- [InsertData operation](#) 81
- [KeepAlive operation](#) 84
- [local events](#) 106
- [message processing](#) 61
- [OpenResultSet operation](#) 86
- [OpenSession operation](#) 91
- [overview](#) 59
- [RunDataMacro operation](#) 96
- [sequencing rules](#) 61
- [session timeout - timer events](#) 106
- [session timeout - timers](#) 60
- [UpdateCache operation](#) 100
- [UpdateData operation](#) 102

- ServerHealthInformation complex type ([section 2.2.4.19](#) 24, [section 2.2.4.20](#) 25)

- ServerStateFlags simple type ([section 2.2.5.11](#) 55, [section 2.2.5.12](#) 55)

- Session timeout - server

- [timer events](#) 106
- [timers](#) 60
- [Session-based protocol](#) 10
- [SessionIdentifier simple type](#) 56
- [Simple types](#) 27
 - [AccessServerMessageButtons](#) 28
 - [AccessServerMessageId](#) 28
 - [AccessServerMessageSeverity](#) 40
 - [AccessServerMessageType](#) 40
 - [CommandParameterFlags](#) 41
 - [ExcelServerMessageAppearance](#) 41
 - [ExcelServerMessageId](#) 42
 - [ExcelServerMessageSeverity](#) 53
 - [ExcelServerMessageType](#) 54
 - [guid](#) 54
 - ServerStateFlags ([section 2.2.5.11](#) 55, [section 2.2.5.12](#) 55)
 - [SessionIdentifier](#) 56
- [Standards assignments](#) 12
- Syntax
 - [messages - overview](#) 13

T

- [Tracking changes](#) 145
- [Transport](#) 13
- Types
 - [complex](#) 14
 - [simple](#) 27

V

- [Vendor-extensible fields](#) 12
- [Versioning](#) 12
- [VisibleSheetRange complex type](#) 25

W

- [WorkOnBehalf complex type](#) 26
- [WSDL](#) 113