

[MS-MAR]: Microsoft Office SharePoint Server (MOSS) Analytics Reporting Protocol

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1 Introduction

This document specifies the Microsoft Office SharePoint Server (MOSS) Analytics Reporting Protocol. This protocol enables a protocol client to log specific events related to web-traffic, search and inventory about various entities in the **farm**, and then retrieve analytical reports about web-traffic, searches and inventory of such entities in the farm. As defined in the glossary that follows, a farm is a group of computers that work together as a single system to help ensure that applications and resources are available.

Sections 1.8, 2, and 3 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. Sections 1.5 and 1.9 are also normative but cannot contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

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

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

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

best bet
content type
endpoint
farm
list
list template
query text
regional settings
search scope
service application
Simple Object Access Protocol (SOAP)
site
site collection
site template
SOAP action
SOAP body
SOAP fault
tenant
time zone
Uniform Resource Identifier (URI)
Uniform Resource Locator (URL)
web application
Web Services Description Language (WSDL)
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

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

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

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

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

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

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

[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>

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

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

[XMLSCHEMA1] Thompson, H.S., Beech, D., Maloney, M., Eds., 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., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/>

1.2.2 Informative References

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)".

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

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

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

1.3 Protocol Overview (Synopsis)

This protocol enables a protocol client to retrieve three categories of analytical data about how the farm is being used or utilized. These three categories are:

1. Traffic data – This data is about web-traffic. Examples are top visited web-pages and trends about web-page visits, top visitors and trends about number of unique visitors.
2. Search reports – This data is about search queries and search results. Examples are top queries, failed queries and number of queries.
3. Inventory reports – This data is about utilization of various entities such as storage, libraries and templates.

Such analytical data can be retrieved for various entities at various levels in the farm, such as **site (2)**, **site collection** and **Web application (1)**.

To retrieve such analytical data, a client logs specific events about an entity to the system using this protocol. For example, a client logs all the pages visited on a particular site to the system. The protocol enables a client to retrieve a report about the traffic volume per day for that particular site, the top pages visited for that site and the top visitors for that particular site. These are some examples of the kind of reports available via the protocol. If the client logs hierarchical relationships between the various entities such as a particular site collection is a parent of a particular site (2), then the protocol enables roll-up reports for the parent as well.

1.4 Relationship to Other Protocols

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

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

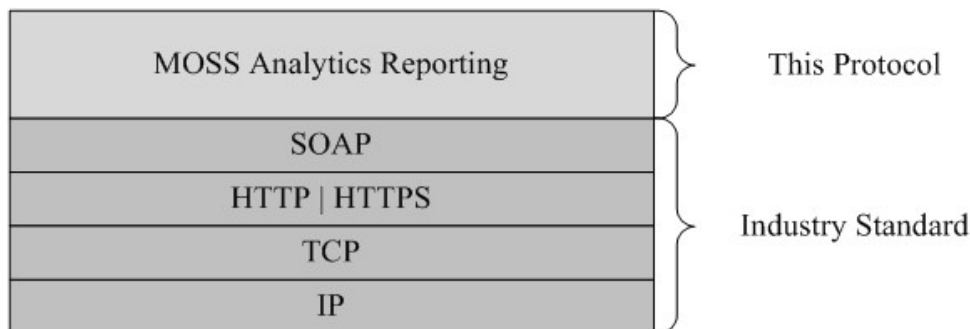


Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

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

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

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

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

1.6 Applicability Statement

This protocol is designed to provide analytical data about the usage and inventory of various entities in a farm.

1.7 Versioning and Capability Negotiation

This protocol uses multiple transports with SOAP as specified in section [2.1](#).

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

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

2.1 Transport

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

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

2.2 Common Message Syntax

This section contains common structures used by this protocol. The syntax of the structures uses XML Schema as defined in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and WSDL as defined in [\[WSDL\]](#).

2.2.1 Namespaces

This protocol specifies and references **XML namespaces** using the mechanisms specified in [\[XMLNS\]](#). Although this document associates an XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific.

| Prefix | Namespace URI | Reference |
|--------|---|--|
| tns3 | http://schemas.microsoft.com/2003/10/Serialization/Arrays | |
| xsd | http://www.w3.org/2001/XMLSchema | [XMLSCHEM A1] [XMLSCHEM A2] |
| tns2 | http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever | |
| ser | http://schemas.microsoft.com/2003/10/Serialization/ | |
| wsa10 | http://www.w3.org/2005/08/addressing | |
| tns | http://tempuri.org/ | |
| wsap | http://schemas.xmlsoap.org/ws/2004/08/addressing/policy | |
| xs | http://www.w3.org/2001/XMLSchema | [XMLSCHEM A1] [XMLSCHEM A2] |
| msc | http://schemas.microsoft.com/ws/2005/12/wsd/contract | |

| Prefix | Namespace URI | Reference |
|---------|---|--|
| wsam | http://www.w3.org/2007/05/addressing/metadata | |
| tns5 | http://schemas.datacontract.org/2004/07/System.Data | |
| soap | http://schemas.xmlsoap.org/wsdl/soap/ | [SOAP1.1] |
| soap12 | http://schemas.xmlsoap.org/wsdl/soap12/ | [SOAP1.2/1] [SOAP1.2/2] |
| soapenc | http://schemas.xmlsoap.org/soap/encoding/ | |
| wsa | http://schemas.xmlsoap.org/ws/2004/08/addressing | |
| wsaw | http://www.w3.org/2006/05/addressing/wsdl | |
| tns1 | http://schemas.microsoft.com/2003/10/Serialization/ | |
| wsdl | http://schemas.xmlsoap.org/wsdl/ | [WSDL] |
| tns7 | http://tempuri.org/Imports | |
| wsx | http://schemas.xmlsoap.org/ws/2004/09/mex | |
| tns6 | http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging | |
| wsu | http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd | |
| tns4 | http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Administration | |
| wsp | http://www.w3.org/ns/ws-policy | |

2.2.2 Messages

None.

2.2.3 Elements

None.

2.2.4 Complex Types

The following XML Schema complex type definitions are specific to the operation of retrieving data from the backend.

2.2.4.1 AggregationContext (from namespace

http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever)

This complex type defines the properties of the user requesting the data and the entity for which data is being requested.

```

<xs:complexType name="AggregationContext">
  <xs:sequence>
    <xs:element minOccurs="0" name="_isUserFarmAdmin" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_isUserServiceApplicationAdmin" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_isUserSiteCollectionAdmin" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_isUserTenantAdmin" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_isWindowsAccount" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_userHasVUDPermisson" type="xs:boolean"/>
    <xs:element minOccurs="0" name="_userLogOnName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="aggregationId" type="ser:guid"/>
    <xs:element minOccurs="0" name="aggregationLevel" type="tns:AggregationLevel"/>
  </xs:sequence>
</xs:complexType>

```

_isUserFarmAdmin: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies whether the user is a farm administrator. This is required to be true in the following values of aggregationLevel to retrieve data.

Farm: True when **_userHasVUDPermisson** is false. True or false if **_userHasVUDPermisson** is true.

ServiceApplication: True if **_isUserServiceApplicationAdmin** is false. True or false when **_isUserServiceApplicationAdmin** is true.

_isUserServiceApplicationAdmin: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the user is a **service application** administrator. This is required to be true in the following values of aggregationLevel to retrieve data.

ServiceApplication: True if **_isUserFarmAdmin** is false. True or false when **_isUserFarmAdmin** is true.

_isUserSiteCollectionAdmin: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the user is a site collection administrator. This is required to be true in the following values of aggregationLevel to retrieve data.

SiteCollection: True when **_userHasVUDPermisson** is false. True or false if **_userHasVUDPermisson** is true.

_isUserTenantAdmin: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the user is a **tenant** administrator. This flag can be set to either true or false.

_isWindowsAccount: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the user account is a Windows account.

_userHasVUDPermisson: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the user has permission. This is required to be true in the following values of aggregationLevel to retrieve data.

Farm: True when **_isUserFarmAdmin** is false. True or false if **_isUserFarmAdmin** is true.

SiteCollection: True when **_isUserSiteCollectionAdmin** is false. True or false if **_isUserSiteCollectionAdmin** is true.

_userLogOnName: An xs:string ([\[XMLSCHEMA2\]](#) section 3.2.1) element that MUST be set to user login name.

aggregationId: GUID value specifying the identifier of the entity for which data is requested. The value is a MD5 hash of different GUIDs depending on the aggregationLevel.

Site: Site (2) identifier, Site Collection identifier

SiteCollection: Site Collection identifier

WebApplication: Web application (1) identifier

ServiceApplication: Service application identifier

Farm: Farm identifier

aggregationLevel: An [AggregationLevel](#) element that specifies the level for which analyzed data is being requested.

2.2.4.2 AndCondition (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [LogicalCondition](#) element that specifies an operation to combine two [Condition](#) elements by using a logical AND operator. The resultant element MUST be a Condition element.

```
<xs:complexType name="AndCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:LogicalCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.3 ComparisonCondition (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [Condition](#) type that specifies the value on which to perform a comparison.

```
<xs:complexType name="ComparisonCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:Condition">
      <xs:sequence>
        <xs:element name="viewPropertyValue" nillable="true" type="tns:ViewPropertyValue"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

viewPropertyValue: This element MUST be set to a [ViewPropertyValue](#) element.

2.2.4.4 Condition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type specifies the condition to be applied when retrieving data using operation [GetData](#).

```
<xs:complexType name="Condition">
  <xs:sequence/>
</xs:complexType>
```

2.2.4.5 DataRetrieverFailure (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type specifies information about an error that occurred during retrieving data for an entity.

```
<xs:complexType name="DataRetrieverFailure">
  <xs:sequence>
    <xs:element minOccurs="0" name="ErrorCode" type="tns:DataRetrieverErrorCode"/>
    <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

ErrorCode: This [DataRetrieverErrorCode](#) element specifies the error code of the failure.

Message: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element MUST be set to error message.

2.2.4.6 EqualCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational equality operator.

```
<xs:complexType name="EqualCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.7 GreaterThanCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational greater-than-inequality operator.

```
<xs:complexType name="GreaterThanCondition">
```

```

<xs:complexContent mixed="false">
  <xs:extension base="tns:ComparisonCondition">
    <xs:sequence/>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

2.2.4.8 GreaterThanEqualCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational greater-than-or-equal-to operator.

```

<xs:complexType name="GreaterThanEqualCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

2.2.4.9 LessThanCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational less-than-inequality operator.

```

<xs:complexType name="LessThanCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

2.2.4.10 LessThanEqualCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational less-than-or-equal-to operator.

```

<xs:complexType name="LessThanEqualCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```


2.2.4.11 LikeCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational LIKE operator. The behavior of the LIKE operator is similar to that in T-SQL.

```
<xs:complexType name="LikeCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.12 LogicalCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [Condition](#) type that specifies that the two operands should be combined using a Logical operator. The resultant type is a Condition type.

```
<xs:complexType name="LogicalCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:Condition">
      <xs:sequence>
        <xs:element name="left" nillable="true" type="tns:Condition"/>
        <xs:element name="right" nillable="true" type="tns:Condition"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

left: This element MUST be a Condition element that specifies the left operand.

right: This element MUST be a Condition element that specifies the right operand.

2.2.4.13 NotEqualCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational not-equal-to operator.

```
<xs:complexType name="NotEqualCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.14 NotLikeCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [ComparisonCondition](#) element where the comparison being performed is to be done with the relational NOT LIKE operator. The behavior of the NOT LIKE operator is similar to that in T-SQL.

```
<xs:complexType name="NotLikeCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:ComparisonCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.15 OrCondition (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type is a [LogicalCondition](#) element that specifies an operation to combine two [Condition](#) elements by using a logical OR operator. The resultant element is a Condition element.

```
<xs:complexType name="OrCondition">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:LogicalCondition">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

2.2.4.16 ViewPropertyValue (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type specifies the operands to be used in a [ComparisonCondition](#).

```
<xs:complexType name="ViewPropertyValue">
  <xs:sequence>
    <xs:element name="propertyName" nillable="true" type="xs:string"/>
    <xs:element name="propertyValue" nillable="true" type="xs:anyType"/>
    <xs:element name="viewName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

propertyName: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element MUST be set to a name of a property which is a column in a data table. The value of this property (column) is used as the left-hand-side operand in the ComparisonCondition. If this is set to null then the web service call will fail.

propertyValue: An element of type xs:anyType [\[XMLSCHEMA1\]](#) section 3.4.7 MUST be set to the value of a property to be used as the right-hand-side operand in the ComparisonCondition.

viewName: Reserved. MUST be NULL.

2.2.4.17 SOAPFaultDetails

The **SOAPFaultDetails** complex type specifies the details of a SOAP fault. This complex type is defined as follows:

```
<s:schema xmlns:s="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/sharepoint/soap">
  <s:complexType name="SOAPFaultDetails">
    <s:sequence>
      <s:element name="errorstring" type="s:string" />
      <s:element name="errorcode" type="s:string" minOccurs="0" />
    </s:sequence>
  </s:complexType>
</s:schema>
```

errorString: A human-readable text string explaining the application-level fault.

errorCode: The hexadecimal representation of a 4-byte result code.

2.2.5 Simple Types

The following XML Schema simple type definitions are specific to the operation of getting information from the webservice.

2.2.5.1 AggregationLevel (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This simple type specifies the level for which analyzed data is being requested.

```
<xs:simpleType name="AggregationLevel">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ServiceApplication"/>
    <xs:enumeration value="WebApplication"/>
    <xs:enumeration value="SiteCollection"/>
    <xs:enumeration value="Site"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for AggregationLevel:

| Value | Meaning |
|--------------------|---|
| ServiceApplication | Analyzed data is being requested for a service application. |
| WebApplication | Analyzed data is being requested for a Web application (1). |
| SiteCollection | Analyzed data is being requested for a site collection. |
| Site | Analyzed data is being requested for a site (2). |

2.2.5.2 DataRetrieverErrorCode (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This simple type specifies the error codes that MAY occur when requesting data using [GetData](#)

```
<xs:simpleType name="DataRetrieverErrorCode">
  <xs:restriction base="xs:string">
    <xs:enumeration value="NoMatchingWarehouseSubscription"/>
    <xs:enumeration value="Security"/>
    <xs:enumeration value="SqlBackend"/>
    <xs:enumeration value="QueryValidation"/>
    <xs:enumeration value="ServiceNotProvisioned"/>
    <xs:enumeration value="Unknown"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for DataRetrieverErrorCode:

| Value | Meaning |
|---------------------------------|--|
| NoMatchingWarehouseSubscription | The entity for which the data is being requested could not be found. |
| Security | The call failed because of a security check. |
| SqlBackend | There was a general database exception. |
| QueryValidation | The requested data does not exist. |
| ServiceNotProvisioned | The service is not provisioned |
| Unknown | An unknown error occurred. |

2.2.5.3 char (from namespace <http://schemas.microsoft.com/2003/10/Serialization/>)

Reserved. MUST be ignored.

```
<xs:simpleType name="char">
  <xs:restriction base="xs:int"/>
</xs:simpleType>
```

2.2.5.4 duration (from namespace <http://schemas.microsoft.com/2003/10/Serialization/>)

Reserved. MUST be ignored.

```
<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>
```

2.2.5.5 guid (from namespace <http://schemas.microsoft.com/2003/10/Serialization/>)

Reserved. MUST be ignored.

```
<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>
```

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.

3 Protocol Details

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

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

Except where specified, protocol clients SHOULD interpret HTTP Status Codes returned by the protocol server as specified in [\[RFC2616\]](#), |Status Code Definitions (section 10).

This protocol allows protocol servers to notify protocol clients of application-level faults using SOAP faults. This protocol allows protocol servers to provide additional details for SOAP faults by including a **detail** element as specified either in [\[SOAP1.1\]](#), SOAP Fault (section 4.4) or [\[SOAP1.2/1\]](#), SOAP Fault (section 5.4) that conforms to the **XML schema** of the **SOAPFaultDetails** complex type specified in [SOAPFaultDetails](#). Except where specified, these SOAP faults are not significant for interoperability, and protocol clients can interpret them in an implementation-specific manner.

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

3.1 Server Details

The following diagram describes the communication between the protocol client and the protocol server:

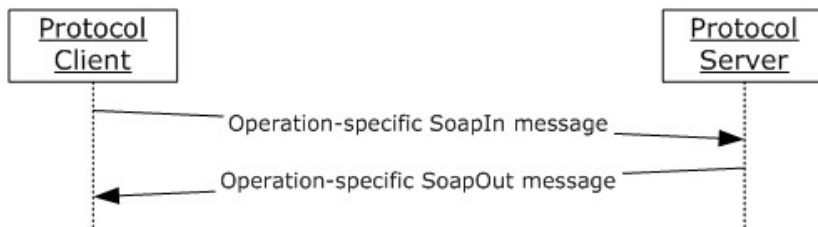


Figure 2: Message exchange between client and server

3.1.1 Abstract Data Model

The data model is based on the events that are captured. The events are; an item was clicked, an item was rated, a search query was issued, number of items and the hierarchy of the items in the farm.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

This is specification of the Microsoft Office SharePoint Server (MOSS) Analytics Reporting Protocol operations.

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

| WSDL Operation | Description |
|---------------------|--|
| GetData | The operation returns data of a particular type as specified by the viewName parameter, for a particular entity as specified by the aggregationContext parameter. |
| GetLoggingBatchSize | The operation is used to return the maximum number of elements that MUST be present in the list feedback when calling operation LogFeedback . |
| GetServerTimeZoneId | Type a brief description of the web method. |
| LogBestBetAction | This operation is used by the protocol to record the actions taken on a best bet recommendation. Best bet recommendations are returned when GetData is called with the parameter <code>fn_WA_GetBestBetSuggestions</code> . The actions taken are retrieved next time GetData is called with parameter <code>fn_WA_GetBestBetSuggestions</code> . |
| LogFeedback | This operation is used to log specific events to the protocol for analysis. Analyzed data SHOULD be retrieved by calling operation GetData .<2> |

3.1.4.1 GetData

The operation returns data of a particular type as specified by the **viewName** parameter, for a particular entity as specified by the **aggregationContext** parameter.

```
<wsdl:operation name="GetData">
  <wsdl:input wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetData"
  message="tns:IWebAnalyticsWebServiceApplication_GetData_InputMessage"/>
  <wsdl:output
  wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetDataResponse"
  message="tns:IWebAnalyticsWebServiceApplication_GetData_OutputMessage"/>
  <wsdl:fault
  wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetDataDataRetrieverFailureFault"
  name="DataRetrieverFailureFault"
  message="tns:IWebAnalyticsWebServiceApplication_GetData_DataRetrieverFailureFault_FaultMessage"/>
</wsdl:operation>
```

The protocol client sends an **IWebAnalyticsWebServiceApplication_GetData_InputMessage** request message, and the protocol server responds with a [DataRetrieverFailureFault](#) if there is a failure IWebAnalyticsWebServiceApplication_GetData_OutputMessage response message as follows:

3.1.4.1.1 Messages

3.1.4.1.1.1 IWebAnalyticsWebServiceApplication_GetData_InputMessage

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

The **SOAP action** value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetData
```

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

3.1.4.1.1.2 IWebAnalyticsWebServiceApplication_GetData_OutputMessage

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

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetDataResponse
```

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

3.1.4.1.2 Elements

3.1.4.1.2.1 GetData

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

```
<xs:element name="GetData">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="aggregationContext" nillable="true"
        xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" type="q1:AggregationContext"/>
      <xs:element minOccurs="0" name="dataContext" nillable="true"
        xmlns:q2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" type="q2:DataContext"/>
      <xs:element minOccurs="0" name="options" nillable="true"
        xmlns:q3="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" type="q3:GetDataOptions"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

aggregationContext: An [AggregationContext](#) element that specifies the properties of the user requesting data and the entity for which data is being requested. This element **MUST** be present.

dataContext: A [DataContext](#) element that specifies the properties of the data being requested. This element **MUST** be present.

options: A [GetDataOptions](#) element that specifies additional options for the data being requested. This element **MUST** be present.

3.1.4.1.2.2 GetDataResponse

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

```
<xs:element name="GetDataResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetDataResult" nillable="true"
        xmlns:q4="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Admini
        stration" type="q4:DataPacket"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetDataResult: A DataTable object that specifies the result of this operation. The data table columns for each view name are defined in the following table.

| viewName | Columns |
|-------------------------------------|--|
| fn_WA_GetBestBetSuggestions | This table returns the query and URL best bets recommended by the protocol and contains the following columns: String: <i>QueryText, PageId, PageTitle</i> . DateTime: <i>Status, CreationDateTime, ActionDateTime</i> |
| fn_WA_GetBestBetUsage | This table returns the Best bet queries, query frequency, best bet URL , best bet URL click frequency and percentage of clicks of best bet URL vs. overall clicks, and contains the following columns: String: <i>QueryText, PageId, PageTitle, Status</i> Integer: <i>QueryFrequency, ClickFrequency</i> Float: <i>ClickPercentage</i> DateTime: <i>ActionDateTime</i> |
| fn_WA_GetClickthroughChanges | This table returns the pages most visited along with their previous rank and current and previous frequency and contains the following columns: String: <i>PageId, PageTitle</i> . Integer: <i>CurrentFrequency, PreviousFrequency, PreviousRank</i> |
| fn_WA_GetInventory | This table returns top site templates , product versions, languages, list templates and contains the following columns: String: <i>DimensionName</i> , Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetInventoryPerDay | This table returns the number of sites (2), site collections, lists (1) , libraries and storage size per day and contains the following columns: Integer: <i>DateId, Sites, Webs, StorageSize, MaxStorage</i> |

| viewName | Columns |
|---|--|
| fn_WA_GetLast24HourClickthroughChanges | This table returns the pages most visited in the last 24 hours along with their previous rank and current and previous frequency and contains the following columns: String: <i>PageId, PageTitle</i> Integer: <i>CurrentFrequency, PreviousFrequency, PreviousRank</i> |
| fn_WA_GetLast24HourSearchQueryChanges | This table returns the search queries most issued in the last 24 hours along with their previous rank and current and previous frequency and contains the following columns: String: <i>QueryText</i> , Integer: <i>CurrentFrequency, PreviousFrequency, PreviousRank</i> |
| fn_WA_GetLast24HourUserDepartments | This table returns user departments logged in the last 24 hours and contains the following columns: String: <i>UserDepartment</i> |
| fn_WA_GetLast24HourUserTitles | This table returns the user titles logged in the last 24 hours and contains the following columns String: <i>UserTitle</i> |
| fn_WA_GetNumberOfClickthroughs | This table returns the total number of page views grouped per day or grouped by URL and contains the following columns: Integer: <i>DateId, Frequency</i> String: <i>PageId, PageTitle</i> |
| fn_WA_GetNumberOfFailedSearchQueriesPerDay | This table returns the total number of queries per day that didn't give satisfactory results. A query gives unsatisfactory results when it gives no results or the results it returns get little or no clicks. It contains the following columns: Integer: <i>DateId, TotalFrequency, AbandonedFrequency, ZeroResultFrequency</i> |
| fn_WA_GetNumberOfSearchQueries | This table returns the total number of search queries grouped per day or grouped by search query and contains the following columns: Integer: <i>DateId, Frequency</i> String: <i>QueryText</i> |
| fn_WA_GetNumberOfSearchQueriesPerDay | This table returns the total number of search queries per day and contains the following columns: Integer: <i>DateId, Frequency</i> |
| fn_WA_GetSearchQueryChanges | This table returns the search queries most issued along with their current and previous frequency and previous rank and contains the following columns: |

| viewName | Columns |
|--|--|
| | String: <i>QueryText</i> Integer: <i>CurrentFrequency, PreviousFrequency, PreviousRank, FrequencyChanges</i> |
| fn_WA_GetSummary | This table returns the summary report for the entity comprising of Traffic, Search and Inventory Data and contains the following columns: String: <i>PropertyName</i> Integer: <i>CurrentValue, PreviousValue, PercentageChange</i> |
| fn_WA_GetTopBrowsers | This table returns the top browsers and contains the following columns: String: <i>BrowserName</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetTopDestinations | This table returns top URLs that are outside the entity for which data is being requested and are referred by the entity for which data is being requested. The source and destination entities are the site (2)/ site collection / Web application (1). For example this refers to the scenario when the URLs from a site (2) point to the destination site (2). It contains the following columns: String: <i>PageId</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetTopFailedSearchQueries | This table returns the search queries most issued that didn't give satisfactory results. A query gives unsatisfactory results when it gives no results or the results it returns get little or no clicks. It contains the following columns: String: <i>QueryText</i> Integer: <i>TotalFrequency, AbandonedFrequency</i> Float: <i>AbandonedPercentage, ZeroResultPercentage</i> |
| fn_WA_GetTopPages | This table returns the pages most visited and contains the following columns: String: <i>PageId, PageTitle.</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetTopReferrers | This table returns the top URLs that are outside the entity for which data is being requested and refer the entity for which data is being requested and contains the following columns: String: <i>ReferrerId</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |

| viewName | Columns |
|-------------------------------------|--|
| fn_WA_GetTopSearchQueries | This table returns the top search queries most issued and contains the following columns: String: <i>QueryText</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetTopVisitors | This table returns the top visitors and contains the following columns: String: <i>UserName</i> Integer: <i>Frequency</i> Float: <i>Percentage</i> |
| fn_WA_GetTotalTrafficVolume | This table returns the total number of page views and contains the following columns: Integer: <i>Frequency</i> |
| fn_WA_GetTrafficVolumePerDay | This table returns the page views per day and contains the following columns: Integer: <i>DateId, Frequency</i> |
| fn_WA_GetUserDepartments | This table returns the user department names and contains the following columns: String: <i>UserDepartment</i> |
| fn_WA_GetUserTitles | This table returns the user titles and contains the following columns: String: <i>UserTitle</i> |

3.1.4.1.3 Complex Types

3.1.4.1.3.1 DataContext (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies the properties of the data being requested.

```
<xs:complexType name="DataContext">
  <xs:sequence>
    <xs:element minOccurs="0" name="rowCount" type="xs:int"/>
    <xs:element minOccurs="0" name="rowIndex" type="xs:int"/>
    <xs:element minOccurs="0" name="sortOrder" nillable="true" type="tns:ArrayOfSortOrder"/>
    <xs:element minOccurs="0" name="viewName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="viewParameters" nillable="true"
type="tns:ArrayOfViewParameterValue"/>
    <xs:element minOccurs="0" name="viewProperties" nillable="true"
xmlns:q1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
type="q1:ArrayOfstring"/>
    <xs:element minOccurs="0" name="whereCondition" nillable="true" type="tns:Condition"/>
  </xs:sequence>
</xs:complexType>
```

rowCount: An xs:int [\[XMLSCHEMA2\]](#) section 3.3.17 element that specifies the number of rows of data to return.

rowIndex: An xs:int [\[XMLSCHEMA2\]](#) section 3.3.17 element that specifies the first index of the rows of data to return. The index begins with 1.

sortOrder: An section [ArrayOfSortOrder](#) element that specifies an ordered list of columns to sort the resultant data.

viewName: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element that specifies the type of data to retrieve. The element MUST be set to one of the following:

| viewName | Meaning |
|---|---|
| fn_WA_GetBestBetSuggestions | Query and URL best bets recommended by the protocol |
| fn_WA_GetBestBetUsage | Best bet queries, query frequency, best bet URL, best bet URL click frequency and percentage of clicks of best bet URL vs. overall clicks. |
| fn_WA_GetClickthroughChanges | Pages most visited along with their previous rank and current and previous frequency |
| fn_WA_GetInventory | Top site templates, product versions, languages, list templates |
| fn_WA_GetInventoryPerDay | Number of sites (2), site collections, lists(1), libraries and storage size per day |
| fn_WA_GetLast24HourClickthroughChanges | Pages most visited in the last 24 hours along with their previous rank and current and previous frequency |
| fn_WA_GetLast24HourSearchQueryChanges | Search queries most issued in the last 24 hours along with their previous rank and current and previous frequency |
| fn_WA_GetLast24HourUserDepartments | User departments logged in the last 24 hours. User department is the organizational department information of a user as stored in profile database of profile service. |
| fn_WA_GetLast24HourUserTitles | User titles logged in the last 24 hours. User title is the organizational title information of a user as stored in profile database of profile service. |
| fn_WA_GetNumberOfClickthroughs | Total number of page views grouped per day or grouped by URL |
| fn_WA_GetNumberOfFailedSearchQueriesPerDay | Total number of queries per day that didn't give satisfactory results. A query gives unsatisfactory results when it gives no results or the results it returns get little or no clicks. |
| fn_WA_GetNumberOfSearchQueries | Total number of search queries grouped per day or grouped by search query |
| fn_WA_GetNumberOfSearchQueriesPerDay | Total number of search queries per day |

| viewName | Meaning |
|--|--|
| fn_WA_GetSearchQueryChanges | Search queries most issued along with their current and previous frequency and previous rank |
| fn_WA_GetSummary | Summary report for the entity comprising of Traffic, Search and Inventory Data |
| fn_WA_GetTopBrowsers | Top browsers |
| fn_WA_GetTopDestinations | Top URLs that are outside the entity for which data is being requested and are referred by the entity for which data is being requested. The source and destination entities are the site (2)/ site collection / Web application (1). For example this refers to the scenario when the URLs from a site (2) point to the destination site (2). |
| fn_WA_GetTopFailedSearchQueries | Search queries most issued that didn't give satisfactory results. A query gives unsatisfactory results when it gives no results or the results it returns get little or no clicks. |
| fn_WA_GetTopPages | Pages most visited |
| fn_WA_GetTopReferrers | Top URLs that are outside the entity for which data is being requested and refer the entity for which data is being requested |
| fn_WA_GetTopSearchQueries | Search queries most issued |
| fn_WA_GetTopVisitors | Top visitors |
| fn_WA_GetTotalTrafficVolume | Total number of page views |
| fn_WA_GetTrafficVolumePerDay | Page views per day |
| fn_WA_GetUserDepartments | User department names. User department is the organizational department information of a user as stored in profile database of profile service. |
| fn_WA_GetUserTitles | User titles. User title is the organizational title information of a user as stored in profile database of profile service. |

viewParameters: An [ArrayOfViewParameterValue](#) element that specifies the list of [ViewParameterValue](#) elements that are used in conjunction with the **viewName** parameter to return the requested data. Each **parameterName** element in the ViewParameterValue element MUST be one of the following:

| parameterName | value | Applies to viewName(s) |
|--------------------|--|--|
| StartDateId | The start date of the data being requested. The type of value MUST be xs:int [XMLSCHEMA2] section 3.3.17. The value MUST be | fn_WA_GetBestBetUsage fn_WA_GetInventoryPerDay fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfFailedSearchQueriesPerDay fn_WA_GetNumberOfSearchQueries |

| parameterName | value | Applies to viewName(s) |
|------------------------|---|--|
| | <p>calculated as the following:</p> <pre>value = ((year*100) + month)*100 + day)</pre> <p>where year, month and day are the 4-digit year, 2-digit month and 2-digit day of the date respectively. This parameter is required.</p> | fn_WA_GetNumberOfSearchQueriesPerDay fn_WA_GetScopeNames fn_WA_GetTopBrowsers fn_WA_GetTopDestinations fn_WA_GetTopFailedSearchQueries fn_WA_GetTopPages fn_WA_GetTopReferrers fn_WA_GetTopSearchQueries fn_WA_GetTopVisitors fn_WA_GetTotalTrafficVolume fn_WA_GetTrafficVolumePerDay fn_WA_GetUserDepartments fn_WA_GetUserTitles |
| EndDateId | <p>The end date for the data being requested. The type of value MUST be xs:int [XMLSCHEMA2] section 3.3.17. The value MUST be calculated as the following:</p> <pre>value = ((year*100) + month)*100 + day)</pre> <p>where year, month and day are the 4-digit year, 2-digit month and 2-digit day of the date respectively. This parameter is required.</p> | fn_WA_GetBestBetUsage fn_WA_GetInventoryPerDay fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfFailedSearchQueriesPerDay fn_WA_GetNumberOfSearchQueries fn_WA_GetNumberOfSearchQueriesPerDay fn_WA_GetScopeNames fn_WA_GetTopBrowsers fn_WA_GetTopDestinations fn_WA_GetTopFailedSearchQueries fn_WA_GetTopPages fn_WA_GetTopReferrers fn_WA_GetTopSearchQueries fn_WA_GetTopVisitors fn_WA_GetTotalTrafficVolume fn_WA_GetTrafficVolumePerDay fn_WA_GetUserDepartments fn_WA_GetUserTitles |
| AggregationId | <p>GUID of entity for which data is being requested. The type of value MUST be xs:string [XMLSCHEMA2] section 3.2.1. This parameter is required.</p> | Applies to all viewNames . |
| IncludeSubSites | <p>An xs:boolean [XMLSCHEMA2] section 3.2.2 value that specifies if the data being requested should include child objects of the site (2) specified by</p> | fn_WA_GetClickthroughChanges fn_WA_GetInventory fn_WA_GetInventoryPerDay fn_WA_GetLast24HourClickthroughChanges fn_WA_GetLast24HourSearchQueryChanges fn_WA_GetLast24HourUserDepartments |

| parameterName | value | Applies to viewName(s) |
|---------------------------|---|---|
| | ComponentId. This parameter is optional. | fn_WA_GetLast24HourUserTitles fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfFailedSearchQueriesPerDay fn_WA_GetNumberOfSearchQueries fn_WA_GetNumberOfSearchQueriesPerDay fn_WA_GetSearchQueryChanges fn_WA_GetSummary fn_WA_GetTopBrowsers fn_WA_GetTopDestinations fn_WA_GetTopFailedSearchQueries fn_WA_GetTopPages fn_WA_GetTopReferrers fn_WA_GetTopSearchQueries fn_WA_GetTopVisitors fn_WA_GetTotalTrafficVolume fn_WA_GetTrafficVolumePerDay |
| ScopeName | An xs:string [XMLSCHEMA2] section 3.2.1 that specifies the name of the search scope specified for the search query. This parameter is optional. | fn_WA_GetLast24HourClickthroughChanges fn_WA_GetLast24HourSearchQueryChanges fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfSearchQueries fn_WA_GetNumberOfSearchQueriesPerDay fn_WA_GetSearchQueryChanges fn_WA_GetTopFailedSearchQueries fn_WA_GetTopSearchQueries |
| UserTitle | An xs:string [XMLSCHEMA2] section 3.2.1 value that specifies that the data should be scoped to the specified user title. This parameter is optional. | fn_WA_GetClickthroughChanges fn_WA_GetLast24HourClickthroughChanges fn_WA_GetLast24HourSearchQueryChanges fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfSearchQueries fn_WA_GetSearchQueryChanges |
| UserDepartment | An xs:string [XMLSCHEMA2] section 3.2.1 value that specifies that the data should be scoped to the specified user department. This parameter is optional. | fn_WA_GetClickthroughChanges fn_WA_GetLast24HourClickthroughChanges fn_WA_GetLast24HourSearchQueryChanges fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfSearchQueries fn_WA_GetSearchQueryChanges |
| CurrentStartDateId | The start date of the current date range. The type of value MUST be xs:int [XMLSCHEMA2] section 3.3.17. The value MUST be calculated as the | fn_WA_GetClickthroughChanges fn_WA_GetSearchQueryChanges fn_WA_GetSummary |

| parameterName | value | Applies to viewName(s) |
|----------------------------|---|---|
| | <p>following:</p> <pre>value = ((year*100) + month)*100 + day)</pre> <p>where year, month and day are the 4-digit year, 2-digit month and 2-digit day of the date respectively.</p> <p>This parameter is required.</p> | |
| PreviousStartDateId | <p>The start date of the past date range. The type of value MUST be xs:int [XMLSCHEMA2] section 3.3.17. The value MUST be calculated as the following:</p> <pre>value = ((year*100) + month)*100 + day)</pre> <p>where year, month and day are the 4-digit year, 2-digit month and 2-digit day of the date respectively. This parameter is required. If current start date is s1 and previous start date is p1 where p1 is earlier than s1 then the data is compared for time periods (p1 to s1-1) and (s1 + (s1 - p1)). For example is the p1 is July 1 and s1 is August 1 then the data is compared for the periods (07/01 - 07/ 31) and (08/01 - 08/31)</p> | <p>fn_WA_GetClickthroughChanges fn_WA_GetSearchQueryChanges fn_WA_GetSummary</p> |
| Duration | <p>The duration of the date range in number of days. The type of value MUST be xs:int [XMLSCHEMA2] section 3.3.17. This parameter is required.</p> | <p>fn_WA_GetClickthroughChanges fn_WA_GetSearchQueryChanges fn_WA_GetSummary</p> |

| parameterName | value | Applies to viewName(s) |
|-------------------------|---|--|
| GroupByDate | An xs:boolean [XMLSCHEMA2] section 3.2.2 value that specifies if the data being requested should be grouped by date. This parameter is optional. | fn_WA_GetNumberOfClickthroughs fn_WA_GetNumberOfSearchQueries |
| GroupByQueryText | An xs:boolean [XMLSCHEMA2] section 3.2.2 value that specifies if the data being requested should be grouped by search query text. This parameter is optional. | fn_WA_GetNumberOfSearchQueries |
| GroupByPageId | An xs:boolean [XMLSCHEMA2] section 3.2.2 value that specifies if the data being requested should be grouped by URL. This parameter is optional. | fn_WA_GetNumberOfClickthroughs |
| MetricType | An xs:int [XMLSCHEMA2] section 3.3.17 value that specifies the type of metric to return. The value MUST be one of the MetricType values logged via LogFeedback . This parameter is required. | fn_WA_GetInventory fn_WA_GetTrafficVolumePerDay fn_WA_GetTotalTrafficVolume |
| DimensionType | An xs:int [XMLSCHEMA2] section 3.3.17 value that specifies the type of inventory to return. The value MUST be one of the DimensionType values logged via LogFeedback . This parameter is required. | fn_WA_GetInventory |

viewProperties: Reserved. MUST be NULL.

whereCondition: A [Condition](#) element that is used to filter the data to return.

3.1.4.1.3.2 ArrayOfSortOrder (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies an ordered list of [SortOrder](#) elements.

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

SortOrder: Each element MUST be set to a [SortOrder](#) element.

3.1.4.1.3.3 SortOrder (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies the order in which the resultant data should be sorted

```
<xs:complexType name="SortOrder">
  <xs:sequence>
    <xs:element name="orderType" type="tns:OrderType"/>
    <xs:element name="viewProperty" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

orderType: This MUST be set to an [OrderType](#) element.

viewProperty: An `xs:string` [\[XMLSCHEMA2\]](#) section 3.2.1 element that specifies a column name by which the resultant data MUST be sorted.

3.1.4.1.3.4 ArrayOfViewParameterValue (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies a list of [ViewParameterValue](#) elements.

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

ViewParameterValue: Each element MUST specify a [ViewParameterValue](#) element.

3.1.4.1.3.5 ViewParameterValue (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies a parameter to be used in conjunction with **viewName** for this operation.

```
<xs:complexType name="ViewParameterValue">
  <xs:sequence>
    <xs:element name="parameterName" nillable="true" type="xs:string"/>
    <xs:element name="parameterValue" nillable="true" type="xs:anyType"/>
    <xs:element name="viewName" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

parameterName: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element that MUST be one of the values specified in the table describing the parameter **viewParameters**.

parameterValue: An xs:anyType [\[XMLSCHEMA1\]](#) section 3.4.7 element that is set to a value as required by parameterName.

viewName: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element. Reserved. MUST be set to an empty string.

3.1.4.1.3.6 ArrayOfstring (from namespace <http://schemas.microsoft.com/2003/10/Serialization/Arrays>)

A complex type that specifies a list of xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 elements.

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

string: Each element MUST specify an xs:string [\[XMLSCHEMA2\]](#) section 3.2.1.

3.1.4.1.3.7 GetDataOptions (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

A complex type that specifies additional options for the data being requested.

```
<xs:complexType name="GetDataOptions">
  <xs:sequence>
    <xs:element minOccurs="0" name="bypassCache" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

bypassCache: An xs:boolean [\[XMLSCHEMA2\]](#) section 3.2.2 element that specifies if the cache should be bypassed. The behavior is for the value True: It bypasses the cache. False: It does not bypass the cache.

3.1.4.1.3.8 DataPacket (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Administration>)

A complex type that represents the data and additional properties associated with the data.

```
<xs:complexType name="DataPacket">
  <xs:sequence>
    <xs:element minOccurs="0" name="DataTable" nillable="true">
      <xs:complexType>
        <xs:annotation>
          <xs:appinfo>
            <ActualType Name="DataTable"
              Namespace="http://schemas.datacontract.org/2004/07/System.Data"
              xmlns="http://schemas.microsoft.com/2003/10/Serialization/" />
          </xs:appinfo>
        </xs:annotation>
        <xs:sequence>
          <xs:any minOccurs="0" maxOccurs="unbounded"
            namespace="http://www.w3.org/2001/XMLSchema" processContents="lax" />
          <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
            processContents="lax" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" name="LastDataUpdatedTime" type="xs:dateTime" />
  </xs:sequence>
</xs:complexType>
```

DataTable: A DataTable object that specifies the result of this operation.

LastDataUpdatedTime: A datetime timestamp to reflect the date and time when the data was last updated.

3.1.4.1.4 Simple Types

3.1.4.1.4.1 OrderType (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This simple type specifies the sort order.

```
<xs:simpleType name="OrderType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Ascending" />
    <xs:enumeration value="Descending" />
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for OrderType:

| Value | Meaning |
|-----------|-----------------------------------|
| Ascending | Sort the data in ascending order. |

| Value | Meaning |
|------------|------------------------------------|
| Descending | Sort the data in descending order. |

3.1.4.2 GetLoggingBatchSize

The operation is used to return the maximum number of elements that **MUST** be present in the list **feedback** when calling operation [LogFeedback](#).

```
<wsdl:operation name="GetLoggingBatchSize">
  <wsdl:input
    wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSize"
    message="tns:IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_InputMessage"/>
  <wsdl:output
    wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSizeResponse"
    message="tns:IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_OutputMessage"/>
</wsdl:operation>
```

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

3.1.4.2.1 Messages

3.1.4.2.1.1

IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_InputMessage

The requested WSDL message for the **GetLoggingBatchSize** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSize
```

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

3.1.4.2.1.2

IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_OutputMessage

The response WSDL message for the **GetLoggingBatchSize** method.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSizeResponse
```

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

3.1.4.2.2 Elements

3.1.4.2.2.1 GetLoggingBatchSize

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

```
<xs:element name="GetLoggingBatchSize">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

3.1.4.2.2.2 GetLoggingBatchSizeResponse

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

```
<xs:element name="GetLoggingBatchSizeResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetLoggingBatchSizeResult" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetLoggingBatchSizeResult: An xs:int [\[XMLSCHEMA2\]](#) section 3.3.17 element that specifies the result of the operation.

3.1.4.3 GetServerTimeZoneId

```
<wsdl:operation name="GetServerTimeZoneId">
  <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneId"
message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_InputMessage"/>
  <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneIdResponse"
message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_OutputMessage"/>
  <wsdl:fault
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneIdDataRetrieverFailureFault"
name="DataRetrieverFailureFault"
message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_DataRetrieverFailureFault_FaultMessage"/>
</wsdl:operation>
```

The operation is used to return the standard integer that represents the **time zone** identifier of the time zone of the server implementing the protocol.

In this implementation of the protocol, this integer time zone identifier **MUST** be converted into a time zone object by comparing the identifier with the identifiers stored in **regional settings** of the site (2).

For example:

A call to `GetServerTimeZoneId` **MAY** return a time zone identifier 2.

The regional settings on that site (2) **MAY** have the following information stored about time zones.

| Time Zone Identifier | Time Zone |
|----------------------|-----------------------------|
| 1 | Indian Standard Time (IST) |
| 2 | Greenwich Median Time (GMT) |

Then this information in the regional settings is used to convert time zone identifier to a time zone.

The protocol client sends an **IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_InputMessage** request message, and the protocol server responds with a [DataRetrieverFailureFault](#) if there is a failure **IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_OutputMessage** response message as follows:

3.1.4.3.1 Messages

3.1.4.3.1.1

IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_InputMessage

The requested WSDL message for the **GetServerTimeZoneId** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneId
```

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

3.1.4.3.1.2

IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_OutputMessage

The response WSDL message for the **GetServerTimeZoneId** method.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneIdResponse
```

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

3.1.4.3.2 Elements

3.1.4.3.2.1 **GetServerTimeZoneId**

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

```
<xs:element name="GetServerTimeZoneId">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```


3.1.4.3.2 GetServerTimeZoneIdResponse

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

```
<xs:element name="GetServerTimeZoneIdResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetServerTimeZoneIdResult" type="xs:unsignedShort"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetServerTimeZoneIdResult: An xs:string [\[XMLSCHEMA2\]](#) section 3.2.1 element that specifies the result of the operation.

3.1.4.4 LogBestBetAction

This operation is used by the protocol to record the actions taken on a best bet recommendation. Best bet recommendations are returned when GetData is called with the parameter fn_WA_GetBestBetSuggestions. The actions taken are retrieved next time GetData is called with parameter fn_WA_GetBestBetSuggestions.

```
<wsdl:operation name="LogBestBetAction">
  <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetAction"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_InputMessage"/>
  <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetActionResponse"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_OutputMessage"/>
  <wsdl:fault
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetActionDataRetrieverFailureFault" name="DataRetrieverFailureFault"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_DataRetrieverFailureFault_FaultMessage"/>
</wsdl:operation>
```

The protocol client sends an **IWebAnalyticsWebServiceApplication_LogBestBetAction_InputMessage** request message, and the protocol server responds with a [DataRetrieverFailureFault](#) if there is a failure **IWebAnalyticsWebServiceApplication_LogBestBetAction_OutputMessage** response message as follows.

3.1.4.4.1 Messages

3.1.4.4.1.1

IWebAnalyticsWebServiceApplication_LogBestBetAction_InputMessage

The requested WSDL message for the **LogBestBetAction** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetAction
```

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

3.1.4.4.1.2

IWebAnalyticsWebServiceApplication_LogBestBetAction_OutputMessage

The response WSDL message for the **LogBestBetAction** method.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetActionResponse
```

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

3.1.4.4.2 Elements

3.1.4.4.2.1 LogBestBetAction

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

```
<xs:element name="LogBestBetAction">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="aggregationContext" nillable="true"
        xmlns:q5="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" type="q5:AggregationContext"/>
      <xs:element minOccurs="0" name="recommendation" nillable="true"
        xmlns:q6="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" type="q6:BestBetRecommendation"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

aggregationContext: An [AggregationContext](#) element that specifies the properties of the user requesting the operation and the entity for which operation is requested. This element **MUST** be present.

recommendation: A [BestBetRecommendation](#) element that specifies the action that is required to be logged for a particular best bet.

3.1.4.4.2.2 LogBestBetActionResponse

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

```
<xs:element name="LogBestBetActionResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

3.1.4.4.3 Complex Types

3.1.4.4.3.1 BestBetRecommendation (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This complex type specifies the action that is required to be recorded for a best bet.

```
<xs:complexType name="BestBetRecommendation">
  <xs:sequence>
    <xs:element minOccurs="0" name="action" type="tns:BestBetAction"/>
    <xs:element minOccurs="0" name="assetId" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="queryText" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

action: A [BestBetAction](#) element that specifies the action. This element MUST be present.

assetId: A string ([\[XMLSCHEMA2\]](#) section 3.2.1) element MUST be set to a URL that is a best bet.

queryText: A string ([\[XMLSCHEMA2\]](#) section 3.2.1) element MUST be set to **query text**.

3.1.4.4.4 Simple Types

3.1.4.4.4.1 BestBetAction (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever>)

This simple type is used to specify the action that is required to be recorded for a best bet.

```
<xs:simpleType name="BestBetAction">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Accept"/>
    <xs:enumeration value="Reject"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for BestBetAction:

| Value | Meaning |
|--------|--|
| Accept | The best bet recommendation is accepted. |
| Reject | The best bet recommendation is rejected. |

3.1.4.5 LogFeedback

This operation is used to log specific events to the protocol for analysis. Analyzed data SHOULD be retrieved by calling operation [GetData.<3>](#)

```
<wsdl:operation name="LogFeedback">
  <wsdl:input wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedback"
    message="tns:IWebAnalyticsWebServiceApplication_LogFeedback_InputMessage"/>
```

```
<wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedbackResponse"
message="tns:IWebAnalyticsWebServiceApplication_LogFeedback_OutputMessage"/>
</wsdl:operation>
```

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

3.1.4.5.1 Messages

3.1.4.5.1.1 IWebAnalyticsWebServiceApplication_LogFeedback_InputMessage

The requested WSDL message for the **LogFeedback** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedback
```

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

3.1.4.5.1.2 IWebAnalyticsWebServiceApplication_LogFeedback_OutputMessage

The response WSDL message for the **LogFeedback** method.

The SOAP action value is:

```
http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedbackResponse
```

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

3.1.4.5.2 Elements

3.1.4.5.2.1 LogFeedback

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

```
<xs:element name="LogFeedback">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="feedback" nillable="true"
xmlns:q7="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Loginn
g" type="q7:ArrayOfFeedback"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

feedback: An [ArrayOfFeedback](#) element that specify the events to be logged for analysis.

3.1.4.5.2.2 LogFeedbackResponse

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

```
<xs:element name="LogFeedbackResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

3.1.4.5.3 Complex Types

3.1.4.5.3.1 ArrayOfFeedback (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging>)

A complex type that specifies a list of [Feedback](#) elements.

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

Feedback: Each element MUST specify a Feedback element.

3.1.4.5.3.2 Feedback (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging>)

A complex type that specifies an event to be logged for analysis.

```
<xs:complexType name="Feedback">
  <xs:sequence>
    <xs:element minOccurs="0" name="FeedbackFunction" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="FeedbackParameters" nillable="true"
      type="tns:ArrayOfFeedbackParameter"/>
    <xs:element minOccurs="0" name="SessionId" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

FeedbackFunction: An xs:string [\[XMLSCHEMA2\]](#) element that specifies the type of event being logged. The element MUST be one of the following:

| Value | Meaning |
|-------------------------------|----------------------------|
| WAClickthroughFeedback | An item was clicked. |
| WAQueryFeedback | A search query was issued. |
| WARatingFeedback | An item was rated. |

| Value | Meaning |
|-------------------------|--|
| WASiteInventorySnapshot | The current number of items in a site (2). |
| WASiteHierarchySnapshot | The current hierarchy of the farm. |

FeedbackParameters: An [ArrayOfFeedbackParameter](#) element that specifies the properties of the event being logged. Each [FeedbackParameter](#) element in the list MUST be one of the following:

| FeedbackFunction | FeedbackParameter | |
|---|---------------------------|--|
| | ParameterName | ParameterValue |
| WAClickthroughFeedback | ClickedAssetContentType | A value that specifies the content type associated with the click event. The implementation logs this field only when clickType is PageView and to SPContext.ContentType.Id.ToString() ;. This field is not accessed by the views so its value is not relevant. |
| WAClickthroughFeedback | ClickedAssetId | A value that specifies the URL associated with the click event. |
| WAClickthroughFeedback | ClickedAssetAggregationId | A value that specifies the unique identifier of the site (2) of the URL specified in ClickedAssetId . |
| WAClickthroughFeedback | ClickedTitle | A value that specifies the title of the URL specified in ParameterName ClickedAssetId . |
| WAClickthroughFeedback | ClickTime | A value that specifies the time of the event. It is in the ISO format yyyy-MM-ddTHH:mm:ss.fff example: 2009-12-23 06:15:57.000. |
| WAClickthroughFeedback | ClickType | A value that specifies the type of the click event. The value MUST be one of the following: <ol style="list-style-type: none"> Search: The click event is associated with a search. PageView: The click event denotes a page was viewed. |
| WAClickthroughFeedback, WAQueryFeedback, WARatingFeedback | CustomData | A value that specifies any custom data associated with the event. This can be any string associated with the event. There are no restrictions on what it should be. It is completely defined by the user. |
| WAClickthroughFeedback | IsBestBetResult | A value that specifies the URL being clicked is a best bet. ClickType MUST be present and its value MUST be Search . |

| FeedbackFunction | FeedbackParameter | |
|---|----------------------------|---|
| WAClickthroughFeedback | OriginAggregationId | A value that specifies the unique identifier of the site (2) where the event occurred. |
| WAClickthroughFeedback | ResultPosition | A value that specifies a position of the ClickedAssetWebId in a list of search results. ClickType MUST be present and its value MUST be Search . |
| WAClickthroughFeedback, WAQueryFeedback, WARatingFeedback | UserDepartment | A value that specifies the department of the user associated with the event. |
| WAClickthroughFeedback, WAQueryFeedback, WARatingFeedback | UserId | A value that specifies a unique identifier of the user associated with the event. |
| WAClickthroughFeedback, WAQueryFeedback, WARatingFeedback | UserTitle | A value that specifies the title of the user associated with the event. |
| WAQueryFeedback | BrowserCulture | A value that specifies the culture of the browser where the event happened. |
| WAClickthroughFeedback, WAQueryFeedback, WARatingFeedback, | BrowserSessionId | A value that specifies the unique identifier of the browser session where the event happened. |
| WAQueryFeedback | NumBestBets | A value that specifies the number of best bets returned in the result set of the search query. |
| WAQueryFeedback | QueryId | A value that specifies the unique identifier of the search query. |
| WAQueryFeedback | QueryString | A value that specifies the text of the search query. |
| WAQueryFeedback | QueryTime | A value that specifies the time when the user issued the search query. It is in the ISO format yyyy-MM-ddTHH:mm:ss.fff example: 2009-12-23 06:15:57.000. |
| WAQueryFeedback | ScopeName | A value that specifies the scope name of the search scope specified for the search query. |
| WAQueryFeedback | TotalResults | A value that specifies the total number of results returned for the search query. |
| WAQueryFeedback | AggregationId | A value that specifies the unique identifier of the site where the search query was issued. |
| WARatingFeedback | FeedbackIdentifier | A value that specifies the unique |

| FeedbackFunction | FeedbackParameter | |
|--------------------------------|--|---|
| | | identifier of the rating event. |
| WARatingFeedback | FeedbackAnswerNumericEquivalent | A value that specifies the rating given in the event. The rating MUST be normalized to a scale of {0:100}. |
| WARatingFeedback | FeedbackTime | A value that specifies the time when the rating was issued. It is in the ISO format yyyy-MM-ddTHH:mm:ss.fff example: 2009-12-23 06:15:57.000. |
| WARatingFeedback | FeedbackControlCulture | A value that specifies the culture of the rating control. |
| WARatingFeedback | FeedbackQuestionId | A value that specifies unique identifier of a question provided in the rating control. |
| WARatingFeedback | RatedAssetAggregationId | A value that specifies the URL of the item being rated. |
| WARatingFeedback | RatedAssetWebId | A value that specifies the unique identifier of the site (2) of the item being rated. |
| WARatingFeedback | RatedAssetTitle | A value that specifies the title of the item being rated. |
| WASiteInventorySnapshot | ComponentId | A value that specifies the unique identifier of the site (2) or site collection for which inventory data is being collected. |
| WASiteInventorySnapshot | DateId | A value that specifies the date on which the inventory data is being collected. The format is YYYYMMDD. Example: 20091224. |
| WASiteInventorySnapshot | DimensionType | A value that specifies the type of inventory being logged. The inventory can be of type site template, site collection template, product version, language, storage size. The DimensionType along with the MetricType together determine the inventory type. The value of DimensionType and MetricType for different types of inventory are: Site Template: DimensionType: 0 MetricType: 1 Product Version: DimensionType: 1 MetricType: 1 Language: DimensionType: 2 MetricType: 1 Site Collection Template: |

| FeedbackFunction | FeedbackParameter | |
|--------------------------------|------------------------------------|--|
| | | DimensionType: 0 MetricType: 0 Storage Size: DimensionType: 0 MetricType: 7 |
| WASiteInventorySnapshot | DimensionName | A value that specifies the name of the inventory being logged. |
| WASiteInventorySnapshot | MetricType | A value that specifies the type of metric being logged. |
| WASiteInventorySnapshot | Frequency | A value that specifies the number of instances of the MetricType being logged. The DimensionType along with the MetricType together determine the inventory type. The value of DimensionType and MetricType for different types of inventory are: Site Template: DimensionType: 0 MetricType: 1 Product Version: DimensionType: 1 MetricType: 1 Language: DimensionType: 2 MetricType: 1 Site Collection Template: DimensionType: 0 MetricType: 0 Storage Size: DimensionType: 0 MetricType: 7 |
| WASiteHierarchySnapshot | DateId | A value that specifies the date on which hierarchy data is being collected. The format is YYYYMMDD. Example: 20091224. |
| WASiteHierarchySnapshot | FarmAggregationId | A value that specifies the unique identifier of the farm. |
| WASiteHierarchySnapshot | ParentWebAggregationId | A value that specifies the unique identifier of the parent site (2). |
| WASiteHierarchySnapshot | ParentWebUrl | A value that specifies the URL of the parent site (2). |
| WASiteHierarchySnapshot | SiteAggregationId | A value that specifies the unique identifier of the site collection. |
| WASiteHierarchySnapshot | SiteUrl | A value that specifies the URL of the site collection. |
| WASiteHierarchySnapshot | WebApplicationAggregationId | A value that specifies the unique identifier of the Web application(1). |
| WASiteHierarchySnapshot | WebApplicationUrl | A value that specifies the URL of the Web application (1). |

| FeedbackFunction | FeedbackParameter | |
|-------------------------|-------------------|--|
| WASiteHierarchySnapshot | WebAggregationId | A value that specifies the unique identifier of the site(2). |
| WASiteHierarchySnapshot | WebUrl | A value that specifies the URL of the site(2). |

SessionId: An xs:string [\[XMLSCHEMA2\]](#) element that specifies the unique identifier of the browser session where the event occurred. If the event DID NOT occur within a browser, this element MUST be NULL.

3.1.4.5.3.3 ArrayOfFeedbackParameter (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging>)

A complex type that specifies a list of [FeedbackParameter](#) elements.

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

FeedbackParameter: Each element MUST specify a FeedbackParameter element.

3.1.4.5.3.4 FeedbackParameter (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging>)

A complex type that specifies one property of the event being logged.

```
<xs:complexType name="FeedbackParameter">
  <xs:sequence>
    <xs:element minOccurs="0" name="ParameterName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ParameterValue" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

ParameterName: An xs:string [\[XMLSCHEMA2\]](#) element that specifies the name of the property.

ParameterValue: An xs:string [\[XMLSCHEMA2\]](#) element that specifies the value of the property.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

The following examples contain a sample interaction between the protocol client and the protocol server.

4.1 Obtaining Information about the web traffic volume in the last 30 days

The protocol client can request information about the web traffic volume in the last 30 days. The following shows the request that can be sent to the protocol server:

```
<?xml version="1.0" encoding="utf-8"?>
  <s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
    xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
    open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
    <s:Body>
      <GetData xmlns="http://tempuri.org/">
        <aggregationContext
          xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
          edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
          <b:_isUserFarmAdmin>true</b:_isUserFarmAdmin>
          <b:_isUserServiceApplicationAdmin>false</b:_isUserServiceApplicationAdmin>
          <b:_isUserSiteCollectionAdmin>true</b:_isUserSiteCollectionAdmin>
          <b:_isUserTenantAdmin>false</b:_isUserTenantAdmin>
          <b:_isWindowsAccount>true</b:_isWindowsAccount>
          <b:_userHasVUDPermisson>true</b:_userHasVUDPermisson>
          <b:_userLoginName>JOE_user</b:_userLoginName>
          <b:aggregationLevel>SiteCollection</b:aggregationLevel>
          <b:componentId>19dda115-1550-3943-729a-df3828df9352</b:componentId>
        </aggregationContext>
        <viewProperties xmlns:b="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
          <b:string></b:string>
        </viewProperties>
        <viewName>fn_WA_GetTrafficVolumePerDay</viewName>
        <viewParameters
          xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
          edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
          <b:ViewParameterValue>
            <b:parameterName>EndDateId</b:parameterName>
            <b:value i:type="c:int"
              xmlns:c="http://www.w3.org/2001/XMLSchema">20090602</b:value>
            <b:viewName></b:viewName>
          </b:ViewParameterValue>
          <b:ViewParameterValue>
            <b:parameterName>StartDateId</b:parameterName>
            <b:value i:type="c:int"
              xmlns:c="http://www.w3.org/2001/XMLSchema">20090504</b:value>
            <b:viewName></b:viewName>
          </b:ViewParameterValue>
          <b:ViewParameterValue>
            <b:parameterName>ComponentId</b:parameterName>
            <b:value i:type="c:guid"
              xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/">19dda115-1550-3943-729a-
              df3828df9352</b:value>
            <b:viewName></b:viewName>
          </b:ViewParameterValue>
          <b:ViewParameterValue>
            <b:parameterName>MetricType</b:parameterName>
            <b:value i:type="c:int" xmlns:c="http://www.w3.org/2001/XMLSchema">1</b:value>
          </b:ViewParameterValue>
        </viewParameters>
      </GetData>
    </s:Body>
  </s:Envelope>
```

```

        <b:viewName></b:viewName>
    </b:ViewParameterValue>
</viewParameters>
<whereCondition i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance"></whereCondition>
    <sortOrder
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:SortOrder>
            <b:orderType>Ascending</b:orderType>
            <b:viewProperty>DateId</b:viewProperty>
        </b:SortOrder>
    </sortOrder>
    <rowIndex>1</rowIndex>
    <rowCount>2000</rowCount>
    <bypassCache>>false</bypassCache>
</GetData>
</s:Body>
</s:Envelope>

```

The protocol server can respond with the following message:

```

<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
    <s:Body>
        <GetDataResponse xmlns="http://tempuri.org/">
            <GetDataResult>
                <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="fn_wa_gettrafficvolumeperday" msdata:Locale="">
                        <xs:complexType>
                            <xs:choice minOccurs="0" maxOccurs="unbounded">
                                <xs:element name="fn_wa_gettrafficvolumeperday" msdata:Locale="">
                                    <xs:complexType>
                                        <xs:sequence>
                                            <xs:element name="DateId" type="xs:int" minOccurs="0"></xs:element>
                                            <xs:element name="Frequency" type="xs:long" minOccurs="0"></xs:element>
                                        </xs:sequence>
                                    </xs:complexType>
                                </xs:element>
                            </xs:choice>
                        </xs:complexType>
                    </xs:element>
                </xs:schema>
                <diffgr:diffgram xmlns:diffgr="urn:schemas-microsoft-com:xml-diffgram-v1"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
                    <DocumentElement xmlns="">
                        <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday1"
msdata:rowOrder="0">
                            <DateId>20090519</DateId>
                            <Frequency>2</Frequency>
                        </fn_wa_gettrafficvolumeperday>
                        <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday2"
msdata:rowOrder="1">
                            <DateId>20090520</DateId>

```

```

        <Frequency>9</Frequency>
    </fn_wa_gettrafficvolumeperday>
    <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday3"
msdata:rowOrder="2">
        <DateId>20090525</DateId>
        <Frequency>5</Frequency>
    </fn_wa_gettrafficvolumeperday>
    <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday4"
msdata:rowOrder="3">
        <DateId>20090529</DateId>
        <Frequency>1</Frequency>
    </fn_wa_gettrafficvolumeperday>
    <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday5"
msdata:rowOrder="4">
        <DateId>20090530</DateId>
        <Frequency>1</Frequency>
    </fn_wa_gettrafficvolumeperday>
    <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday6"
msdata:rowOrder="5">
        <DateId>20090601</DateId>
        <Frequency>5</Frequency>
    </fn_wa_gettrafficvolumeperday>
    <fn_wa_gettrafficvolumeperday diffgr:id="fn_wa_gettrafficvolumeperday7"
msdata:rowOrder="6">
        <DateId>20090602</DateId>
        <Frequency>24</Frequency>
    </fn_wa_gettrafficvolumeperday>
</DocumentElement>
</diffgr:diffgram>
</GetDataResult>
</GetDataResponse>
</s:Body>
</s:Envelope>

```

4.2 Obtaining Information about the top pages visited in the last 30 days

The protocol client can request information about the top pages visited in the last 30 days. The following shows the request that can be sent to the protocol server:

```

<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Body>
    <GetData xmlns="http://tempuri.org/">
      <aggregationContext
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:_isUserFarmAdmin>true</b:_isUserFarmAdmin>
        <b:_isUserServiceApplicationAdmin>false</b:_isUserServiceApplicationAdmin>
        <b:_isUserSiteCollectionAdmin>true</b:_isUserSiteCollectionAdmin>
        <b:_isUserTenantAdmin>false</b:_isUserTenantAdmin>
        <b:_isWindowsAccount>true</b:_isWindowsAccount>
        <b:_userHasVUDPermisson>true</b:_userHasVUDPermisson>
        <b:_userLoginName>JOE_user</b:_userLoginName>
        <b:aggregationLevel>SiteCollection</b:aggregationLevel>
        <b:componentId>19dda115-1550-3943-729a-df3828df9352</b:componentId>
      </aggregationContext>
    </GetData>
  </s:Body>
</s:Envelope>

```

```

    <viewProperties xmlns:b="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <b:string></b:string>
    </viewProperties>
    <viewName>fn_WA_GetTopPages</viewName>
    <viewParameters
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <b:ViewParameterValue>
        <b:parameterName>StartDateId</b:parameterName>
        <b:value i:type="c:int"
xmlns:c="http://www.w3.org/2001/XMLSchema">20090504</b:value>
        <b:viewName></b:viewName>
      </b:ViewParameterValue>
      <b:ViewParameterValue>
        <b:parameterName>EndDateId</b:parameterName>
        <b:value i:type="c:int"
xmlns:c="http://www.w3.org/2001/XMLSchema">20090602</b:value>
        <b:viewName></b:viewName>
      </b:ViewParameterValue>
      <b:ViewParameterValue>
        <b:parameterName>ComponentId</b:parameterName>
        <b:value i:type="c:guid"
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/">19dda115-1550-3943-729a-
df3828df9352</b:value>
        <b:viewName></b:viewName>
      </b:ViewParameterValue>
    </viewParameters>
    <whereCondition i:nil="true"
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance"></whereCondition>
    <sortOrder
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
      <b:SortOrder>
        <b:orderType>Descending</b:orderType>
        <b:viewProperty>Frequency</b:viewProperty>
      </b:SortOrder>
    </sortOrder>
    <rowIndex>1</rowIndex>
    <rowCount>2000</rowCount>
    <bypassCache>>false</bypassCache>
  </GetData>
</s:Body>
</s:Envelope>

```

The protocol server can respond with the following message:

```

<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Body>
    <GetDataResponse xmlns="http://tempuri.org/">
      <GetDataResult>
        <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="fn_wa_gettoppages" msdata:Locale="">

```

```

<xs:complexType>
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="fn_wa_gettoppages" msdata:Locale="">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="PageId" type="xs:string" minOccurs="0"/></xs:element>
          <xs:element name="Frequency" type="xs:long" minOccurs="0"/></xs:element>
          <xs:element name="Percentage" type="xs:float"
minOccurs="0"/></xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:choice>
</xs:complexType>
</xs:element>
</xs:schema>
<diffgr:diffgram xmlns:diffgr="urn:schemas-microsoft-com:xml-diffgram-v1"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
  <DocumentElement xmlns="">
    <fn_wa_gettoppages diffgr:id="fn_wa_gettoppages1" msdata:rowOrder="0">
      <PageId>http://www.contoso.com/homepage.aspx</PageId>
      <Frequency>35</Frequency>
      <Percentage>74.46809</Percentage>
    </fn_wa_gettoppages>
    <fn_wa_gettoppages diffgr:id="fn_wa_gettoppages2" msdata:rowOrder="1">
      <PageId> http://www.contoso.com/pages/default.aspx</PageId>
      <Frequency>9</Frequency>
      <Percentage>19.1489353</Percentage>
    </fn_wa_gettoppages>
    <fn_wa_gettoppages diffgr:id="fn_wa_gettoppages3" msdata:rowOrder="2">
      <PageId> http://www.contoso.com/reports/pages/default.aspx</PageId>
      <Frequency>1</Frequency>
      <Percentage>2.12765956</Percentage>
    </fn_wa_gettoppages>
    <fn_wa_gettoppages diffgr:id="fn_wa_gettoppages4" msdata:rowOrder="3">
      <PageId> http://www.contoso.com/pages/newpage0601-1356.aspx</PageId>
      <Frequency>1</Frequency>
      <Percentage>2.12765956</Percentage>
    </fn_wa_gettoppages>
    <fn_wa_gettoppages diffgr:id="fn_wa_gettoppages5" msdata:rowOrder="4">
      <PageId> http://www.contoso.com/docs/default.aspx</PageId>
      <Frequency>1</Frequency>
      <Percentage>2.12765956</Percentage>
    </fn_wa_gettoppages>
  </DocumentElement>
</diffgr:diffgram>
</GetDataResult>
</GetDataResponse>
</s:Body>
</s:Envelope>

```

4.3 Obtaining Information about the top visitors in the last 30 days

The protocol client can request information about the top visitors in the last 30 days. The following shows the request that can be sent to the protocol server:

```
<?xml version="1.0" encoding="utf-8"?>
```

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Body>
    <GetData xmlns="http://tempuri.org/">
      <aggregationContext
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:_isUserFarmAdmin>true</b:_isUserFarmAdmin>
        <b:_isUserServiceApplicationAdmin>false</b:_isUserServiceApplicationAdmin>
        <b:_isUserSiteCollectionAdmin>true</b:_isUserSiteCollectionAdmin>
        <b:_isUserTenantAdmin>false</b:_isUserTenantAdmin>
        <b:_isWindowsAccount>true</b:_isWindowsAccount>
        <b:_userHasVUDPermisson>true</b:_userHasVUDPermisson>
        <b:_userLoginName>JOE_user</b:_userLoginName>
        <b:aggregationLevel>SiteCollection</b:aggregationLevel>
        <b:componentId>19dda115-1550-3943-729a-df3828df9352</b:componentId>
      </aggregationContext>
      <viewProperties xmlns:b="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:string></b:string>
      </viewProperties>
      <viewName>fn_WA_GetTopVisitors</viewName>
      <viewParameters
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:ViewParameterValue>
          <b:parameterName>StartDateId</b:parameterName>
          <b:value i:type="c:int"
xmlns:c="http://www.w3.org/2001/XMLSchema">20090504</b:value>
          <b:viewName></b:viewName>
        </b:ViewParameterValue>
        <b:ViewParameterValue>
          <b:parameterName>EndDateId</b:parameterName>
          <b:value i:type="c:int"
xmlns:c="http://www.w3.org/2001/XMLSchema">20090602</b:value>
          <b:viewName></b:viewName>
        </b:ViewParameterValue>
        <b:ViewParameterValue>
          <b:parameterName>ComponentId</b:parameterName>
          <b:value i:type="c:guid"
xmlns:c="http://schemas.microsoft.com/2003/10/Serialization/">19dda115-1550-3943-729a-
df3828df9352</b:value>
          <b:viewName></b:viewName>
        </b:ViewParameterValue>
      </viewParameters>
      <whereCondition i:type="b:GreaterThanCondition"
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:viewPropertyValue>
          <b:propertyName>Frequency</b:propertyName>
          <b:value i:type="c:int" xmlns:c="http://www.w3.org/2001/XMLSchema">0</b:value>
          <b:viewName></b:viewName>
        </b:viewPropertyValue>
      </whereCondition>
      <sortOrder
xmlns:b="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Process
edDataRetriever" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:SortOrder>
          <b:orderType>Descending</b:orderType>
        </b:SortOrder>
      </sortOrder>
    </GetData>
  </s:Body>
</s:Envelope>

```



```

        <b:viewProperty>Frequency</b:viewProperty>
    </b:SortOrder>
</sortOrder>
<rowIndex>1</rowIndex>
<rowCount>2000</rowCount>
<bypassCache>>false</bypassCache>
</GetData>
</s:Body>
</s:Envelope>

```

The protocol server can respond with the following message:

```

<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing" xmlns:u="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <s:Body>
    <GetDataResponse xmlns="http://tempuri.org/">
      <GetDataResult>
        <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="fn_wa_gettopvisitors" msdata:Locale="">
            <xs:complexType>
              <xs:choice minOccurs="0" maxOccurs="unbounded">
                <xs:element name="fn_wa_gettopvisitors" msdata:Locale="">
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element name="UserName" type="xs:string"
minOccurs="0"></xs:element>
                      <xs:element name="Frequency" type="xs:long" minOccurs="0"></xs:element>
                      <xs:element name="Percentage" type="xs:float"
minOccurs="0"></xs:element>
                    </xs:sequence>
                  </xs:complexType>
                </xs:element>
              </xs:choice>
            </xs:complexType>
          </xs:element>
        </xs:schema>
        <diffgr:diffgram xmlns:diffgr="urn:schemas-microsoft-com:xml-diffgram-v1"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
          <DocumentElement xmlns="">
            <fn_wa_gettopvisitors diffgr:id="fn_wa_gettopvisitors1" msdata:rowOrder="0">
              <UserName>JOE_user</UserName>
              <Frequency>34</Frequency>
              <Percentage>72.34042</Percentage>
            </fn_wa_gettopvisitors>
            <fn_wa_gettopvisitors diffgr:id="fn_wa_gettopvisitors2" msdata:rowOrder="1">
              <UserName>JOHN_user</UserName>
              <Frequency>8</Frequency>
              <Percentage>17.0212765</Percentage>
            </fn_wa_gettopvisitors>
            <fn_wa_gettopvisitors diffgr:id="fn_wa_gettopvisitors3" msdata:rowOrder="2">
              <UserName>JACK_user</UserName>
              <Frequency>5</Frequency>
              <Percentage>10.638298</Percentage>
            </fn_wa_gettopvisitors>
          </DocumentElement>
        </diffgr:diffgram>
      </GetDataResult>
    </GetDataResponse>
  </s:Body>
</s:Envelope>

```

```
        </DocumentElement>
      </diffgr:diffgram>
    </GetDataResult>
  </GetDataResponse>
</s:Body>
</s:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

This protocol introduces no additional security considerations beyond those applicable to its underlying protocols.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided below:

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:tns="http://tempuri.org/"
xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" targetNamespace="http://tempuri.org/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <xs:schema elementFormDefault="qualified" targetNamespace="http://tempuri.org/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Proces
ssedDataRetriever" />
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Admini
stration" />
      <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Loggi
ng" />
      <xs:element name="GetData">
        <xs:complexType>
          <xs:sequence>
            <xs:element
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Proces
sedDataRetriever" minOccurs="0" name="aggregationContext" nillable="true"
type="q1:AggregationContext" />
            <xs:element
xmlns:q2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Proces
sedDataRetriever" minOccurs="0" name="dataContext" nillable="true" type="q2:DataContext" />
            <xs:element
xmlns:q3="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Proces
sedDataRetriever" minOccurs="0" name="options" nillable="true" type="q3:GetDataOptions" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="GetDataResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element
xmlns:q4="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Admini
stration" minOccurs="0" name="GetDataResult" nillable="true" type="q4:DataPacket" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="GetServerTimeZoneId">
        <xs:complexType>
          <xs:sequence />
        </xs:complexType>
      </xs:element>
      <xs:element name="GetServerTimeZoneIdResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="0" name="GetServerTimeZoneIdResult"
type="xs:unsignedShort" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="LogBestBetAction">
```

```

        <xs:complexType>
            <xs:sequence>
                <xs:element
xmlns:q5="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" minOccurs="0" name="aggregationContext" nillable="true"
type="q5:AggregationContext" />
                <xs:element
xmlns:q6="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" minOccurs="0" name="recommendation" nillable="true"
type="q6:BestBetRecommendation" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="LogBestBetActionResponse">
        <xs:complexType>
            <xs:sequence />
        </xs:complexType>
    </xs:element>
    <xs:element name="LogFeedback">
        <xs:complexType>
            <xs:sequence>
                <xs:element
xmlns:q7="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging" minOccurs="0" name="feedback" nillable="true" type="q7:ArrayOfFeedback" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="LogFeedbackResponse">
        <xs:complexType>
            <xs:sequence />
        </xs:complexType>
    </xs:element>
    <xs:element name="GetLoggingBatchSize">
        <xs:complexType>
            <xs:sequence />
        </xs:complexType>
    </xs:element>
    <xs:element name="GetLoggingBatchSizeResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="GetLoggingBatchSizeResult" type="xs:int" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>
<xs:schema
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays" />
    <xs:complexType name="AggregationContext">
        <xs:sequence>
            <xs:element minOccurs="0" name="_isUserFarmAdmin" type="xs:boolean" />
            <xs:element minOccurs="0" name="_isUserServiceApplicationAdmin" type="xs:boolean" />
        </xs:sequence>
    </xs:complexType>
    <xs:element minOccurs="0" name="_isUserSiteCollectionAdmin" type="xs:boolean" />
    <xs:element minOccurs="0" name="_isUserTenantAdmin" type="xs:boolean" />
</xs:schema>

```

```

    <xs:element minOccurs="0" name="_isWindowsAccount" type="xs:boolean" />
    <xs:element minOccurs="0" name="_userHasVUDPermisson" type="xs:boolean" />
    <xs:element minOccurs="0" name="_userLogOnName" nillable="true" type="xs:string" />
    <xs:element minOccurs="0" name="aggregationId" type="ser:guid" />
    <xs:element minOccurs="0" name="aggregationLevel" type="tns:AggregationLevel" />
  </xs:sequence>
</xs:complexType>
<xs:element name="AggregationContext" nillable="true" type="tns:AggregationContext" />
<xs:simpleType name="AggregationLevel">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ServiceApplication" />
    <xs:enumeration value="WebApplication" />
    <xs:enumeration value="SiteCollection" />
    <xs:enumeration value="Site" />
  </xs:restriction>
</xs:simpleType>
<xs:element name="AggregationLevel" nillable="true" type="tns:AggregationLevel" />
<xs:complexType name="DataContext">
  <xs:sequence>
    <xs:element minOccurs="0" name="rowCount" type="xs:int" />
    <xs:element minOccurs="0" name="rowIndex" type="xs:int" />
    <xs:element minOccurs="0" name="sortOrder" nillable="true"
type="tns:ArrayOfSortOrder" />
    <xs:element minOccurs="0" name="viewName" nillable="true" type="xs:string" />
    <xs:element minOccurs="0" name="viewParameters" nillable="true"
type="tns:ArrayOfViewParameterValue" />
    <xs:element xmlns:ql="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="viewProperties" nillable="true" type="ql:ArrayOfstring" />
    <xs:element minOccurs="0" name="whereCondition" nillable="true"
type="tns:Condition" />
  </xs:sequence>
</xs:complexType>
<xs:element name="DataContext" nillable="true" type="tns:DataContext" />
<xs:complexType name="ArrayOfSortOrder">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="SortOrder" nillable="true"
type="tns:SortOrder" />
  </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfSortOrder" nillable="true" type="tns:ArrayOfSortOrder" />
<xs:complexType name="SortOrder">
  <xs:sequence>
    <xs:element name="orderType" type="tns:OrderType" />
    <xs:element name="viewProperty" nillable="true" type="xs:string" />
  </xs:sequence>
</xs:complexType>
<xs:element name="SortOrder" nillable="true" type="tns:SortOrder" />
<xs:simpleType name="OrderType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Ascending" />
    <xs:enumeration value="Descending" />
  </xs:restriction>
</xs:simpleType>
<xs:element name="OrderType" nillable="true" type="tns:OrderType" />
<xs:complexType name="ArrayOfViewParameterValue">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="ViewParameterValue"
nillable="true" type="tns:ViewParameterValue" />
  </xs:sequence>
</xs:complexType>

```

```

    </xs:complexType>
    <xs:element name="ArrayOfViewParameterValue" nillable="true"
type="tns:ArrayOfViewParameterValue" />
    <xs:complexType name="ViewParameterValue">
      <xs:sequence>
        <xs:element name="parameterName" nillable="true" type="xs:string" />
        <xs:element name="parameterValue" nillable="true" type="xs:anyType" />
        <xs:element name="viewName" nillable="true" type="xs:string" />
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ViewParameterValue" nillable="true" type="tns:ViewParameterValue" />
    <xs:complexType name="Condition">
      <xs:sequence />
    </xs:complexType>
    <xs:element name="Condition" nillable="true" type="tns:Condition" />
    <xs:complexType name="EqualCondition">
      <xs:complexContent mixed="false">
        <xs:extension base="tns:ComparisonCondition">
          <xs:sequence />
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
    <xs:element name="EqualCondition" nillable="true" type="tns:EqualCondition" />
    <xs:complexType name="ComparisonCondition">
      <xs:complexContent mixed="false">
        <xs:extension base="tns:Condition">
          <xs:sequence>
            <xs:element name="viewPropertyValue" nillable="true"
type="tns:ViewPropertyValue" />
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
    <xs:element name="ComparisonCondition" nillable="true" type="tns:ComparisonCondition"
/>
    <xs:complexType name="ViewPropertyValue">
      <xs:sequence>
        <xs:element name="propertyName" nillable="true" type="xs:string" />
        <xs:element name="propertyValue" nillable="true" type="xs:anyType" />
        <xs:element name="viewName" nillable="true" type="xs:string" />
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ViewPropertyValue" nillable="true" type="tns:ViewPropertyValue" />
    <xs:complexType name="LessThanEqualCondition">
      <xs:complexContent mixed="false">
        <xs:extension base="tns:ComparisonCondition">
          <xs:sequence />
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
    <xs:element name="LessThanEqualCondition" nillable="true"
type="tns:LessThanEqualCondition" />
    <xs:complexType name="GreaterThanCondition">
      <xs:complexContent mixed="false">
        <xs:extension base="tns:ComparisonCondition">
          <xs:sequence />
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>

```

```

    <xs:element name="GreaterThanCondition" nillable="true" type="tns:GreaterThanCondition"
  />
  <xs:complexType name="GreaterThanEqualCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:ComparisonCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GreaterThanEqualCondition" nillable="true"
type="tns:GreaterThanEqualCondition" />
  <xs:complexType name="LikeCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:ComparisonCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="LikeCondition" nillable="true" type="tns:LikeCondition" />
  <xs:complexType name="NotLikeCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:ComparisonCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="NotLikeCondition" nillable="true" type="tns:NotLikeCondition" />
  <xs:complexType name="AndCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:LogicalCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="AndCondition" nillable="true" type="tns:AndCondition" />
  <xs:complexType name="LogicalCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:Condition">
        <xs:sequence>
          <xs:element name="left" nillable="true" type="tns:Condition" />
          <xs:element name="right" nillable="true" type="tns:Condition" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="LogicalCondition" nillable="true" type="tns:LogicalCondition" />
  <xs:complexType name="OrCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:LogicalCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="OrCondition" nillable="true" type="tns:OrCondition" />
  <xs:complexType name="NotEqualCondition">
    <xs:complexContent mixed="false">
      <xs:extension base="tns:ComparisonCondition">
        <xs:sequence />
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

```



```

        </xs:complexContent>
    </xs:complexType>
    <xs:element name="NotEqualCondition" nillable="true" type="tns:NotEqualCondition" />
    <xs:complexType name="LessThanCondition">
        <xs:complexContent mixed="false">
            <xs:extension base="tns:ComparisonCondition">
                <xs:sequence />
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:element name="LessThanCondition" nillable="true" type="tns:LessThanCondition" />
    <xs:complexType name="GetDataOptions">
        <xs:sequence>
            <xs:element minOccurs="0" name="bypassCache" type="xs:boolean" />
        </xs:sequence>
    </xs:complexType>
    <xs:element name="GetDataOptions" nillable="true" type="tns:GetDataOptions" />
    <xs:complexType name="DataRetrieverFailure">
        <xs:sequence>
            <xs:element minOccurs="0" name="ErrorCode" type="tns:DataRetrieverErrorCode" />
            <xs:element minOccurs="0" name="Message" nillable="true" type="xs:string" />
        </xs:sequence>
    </xs:complexType>
    <xs:element name="DataRetrieverFailure" nillable="true" type="tns:DataRetrieverFailure" />
</>
<xs:simpleType name="DataRetrieverErrorCode">
    <xs:restriction base="xs:string">
        <xs:enumeration value="NoMatchingWarehouseSubscription" />
        <xs:enumeration value="Security" />
        <xs:enumeration value="SqlBackend" />
        <xs:enumeration value="QueryValidation" />
        <xs:enumeration value="ServiceNotProvisioned" />
        <xs:enumeration value="Unknown" />
    </xs:restriction>
</xs:simpleType>
<xs:element name="DataRetrieverErrorCode" nillable="true"
type="tns:DataRetrieverErrorCode" />
<xs:complexType name="BestBetRecommendation">
    <xs:sequence>
        <xs:element minOccurs="0" name="action" type="tns:BestBetAction" />
        <xs:element minOccurs="0" name="assetId" nillable="true" type="xs:string" />
        <xs:element minOccurs="0" name="queryText" nillable="true" type="xs:string" />
    </xs:sequence>
</xs:complexType>
<xs:element name="BestBetRecommendation" nillable="true"
type="tns:BestBetRecommendation" />
<xs:simpleType name="BestBetAction">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Accept" />
        <xs:enumeration value="Reject" />
    </xs:restriction>
</xs:simpleType>
<xs:element name="BestBetAction" nillable="true" type="tns:BestBetAction" />
</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>
<xs:schema xmlns:tns="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfstring">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfstring" nillable="true" type="tns:ArrayOfstring" />
</xs:schema>
<xs:schema
  xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Admin
istration" elementFormDefault="qualified"
  targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics
.Administration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="DataPacket">
    <xs:sequence>
      <xs:element minOccurs="0" name="DataTable" nillable="true">

```

```

        <xs:complexType>
          <xs:annotation>
            <xs:appinfo>
              <ActualType Name="DataTable"
Namespace="http://schemas.datacontract.org/2004/07/System.Data"
xmlns="http://schemas.microsoft.com/2003/10/Serialization/" />
            </xs:appinfo>
          </xs:annotation>
          <xs:sequence>
            <xs:any minOccurs="0" maxOccurs="unbounded"
namespace="http://www.w3.org/2001/XMLSchema" processContents="lax" />
            <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
processContents="lax" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element minOccurs="0" name="LastDataUpdatedTime" type="xs:dateTime" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="DataPacket" nillable="true" type="tns:DataPacket" />
</xs:schema>
<xs:schema
xmlns:tns="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.Logging"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics
.Logging"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfFeedback">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="Feedback" nillable="true"
type="tns:Feedback" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfFeedback" nillable="true" type="tns:ArrayOfFeedback" />
  <xs:complexType name="Feedback">
    <xs:sequence>
      <xs:element minOccurs="0" name="FeedbackFunction" nillable="true" type="xs:string"
/>
      <xs:element minOccurs="0" name="FeedbackParameters" nillable="true"
type="tns:ArrayOfFeedbackParameter" />
      <xs:element minOccurs="0" name="SessionId" nillable="true" type="xs:string" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="Feedback" nillable="true" type="tns:Feedback" />
  <xs:complexType name="ArrayOfFeedbackParameter">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="FeedbackParameter"
nillable="true" type="tns:FeedbackParameter" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfFeedbackParameter" nillable="true"
type="tns:ArrayOfFeedbackParameter" />
  <xs:complexType name="FeedbackParameter">
    <xs:sequence>
      <xs:element minOccurs="0" name="ParameterName" nillable="true" type="xs:string" />
      <xs:element minOccurs="0" name="ParameterValue" nillable="true" type="xs:string" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FeedbackParameter" nillable="true" type="tns:FeedbackParameter" />
</xs:schema>

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```

    <xs:schema xmlns:tns="http://schemas.datacontract.org/2004/07/System.Data"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/System.Data"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:element name="DataTable" nillable="true">
        <xs:complexType>
            <xs:sequence>
                <xs:any minOccurs="0" maxOccurs="unbounded"
namespace="http://www.w3.org/2001/XMLSchema" processContents="lax" />
                <xs:any minOccurs="1" namespace="urn:schemas-microsoft-com:xml-diffgram-v1"
processContents="lax" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>
</wsdl:types>
<wsdl:message name="IWebAnalyticsWebServiceApplication_GetData_InputMessage">
    <wsdl:part name="parameters" element="tns:GetData" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_GetData_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetDataResponse" />
</wsdl:message>
<wsdl:message
name="IWebAnalyticsWebServiceApplication_GetData_DataRetrieverFailureFault_FaultMessage">
    <wsdl:part
xmlns:q1="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" name="detail" element="q1:DataRetrieverFailure" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_InputMessage">
    <wsdl:part name="parameters" element="tns:GetServerTimeZoneId" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetServerTimeZoneIdResponse" />
</wsdl:message>
<wsdl:message
name="IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_DataRetrieverFailureFault_FaultM
essage">
    <wsdl:part
xmlns:q2="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" name="detail" element="q2:DataRetrieverFailure" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_LogBestBetAction_InputMessage">
    <wsdl:part name="parameters" element="tns:LogBestBetAction" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_LogBestBetAction_OutputMessage">
    <wsdl:part name="parameters" element="tns:LogBestBetActionResponse" />
</wsdl:message>
<wsdl:message
name="IWebAnalyticsWebServiceApplication_LogBestBetAction_DataRetrieverFailureFault_FaultMess
age">
    <wsdl:part
xmlns:q3="http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever" name="detail" element="q3:DataRetrieverFailure" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_LogFeedback_InputMessage">
    <wsdl:part name="parameters" element="tns:LogFeedback" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_LogFeedback_OutputMessage">
    <wsdl:part name="parameters" element="tns:LogFeedbackResponse" />
</wsdl:message>

```

```

<wsdl:message name="IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_InputMessage">
  <wsdl:part name="parameters" element="tns:GetLoggingBatchSize" />
</wsdl:message>
<wsdl:message name="IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_OutputMessage">
  <wsdl:part name="parameters" element="tns:GetLoggingBatchSizeResponse" />
</wsdl:message>
<wsdl:portType name="IWebAnalyticsWebServiceApplication">
  <wsdl:operation name="GetData">
    <wsdl:input wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetData"
message="tns:IWebAnalyticsWebServiceApplication_GetData_InputMessage" />
    <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetDataResponse"
message="tns:IWebAnalyticsWebServiceApplication_GetData_OutputMessage" />
    <wsdl:fault
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetDataDataRetrieverFailur
eFault" name="DataRetrieverFailureFault"
message="tns:IWebAnalyticsWebServiceApplication_GetData_DataRetrieverFailureFault_FaultMessag
e" />
    </wsdl:operation>
    <wsdl:operation name="GetServerTimeZoneId">
      <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneId"
message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_InputMessage" />
      <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneIdRespons
e" message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_OutputMessage" />
      <wsdl:fault
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetServerTimeZoneIdDataRet
rieverFailureFault" name="DataRetrieverFailureFault"
message="tns:IWebAnalyticsWebServiceApplication_GetServerTimeZoneId_DataRetrieverFailureFault
_FaultMessage" />
      </wsdl:operation>
      <wsdl:operation name="LogBestBetAction">
        <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetAction"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_InputMessage" />
        <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetActionResponse"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_OutputMessage" />
        <wsdl:fault
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogBestBetActionDataRetrie
verFailureFault" name="DataRetrieverFailureFault"
message="tns:IWebAnalyticsWebServiceApplication_LogBestBetAction_DataRetrieverFailureFault_Fa
ultMessage" />
        </wsdl:operation>
        <wsdl:operation name="LogFeedback">
          <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedback"
message="tns:IWebAnalyticsWebServiceApplication_LogFeedback_InputMessage" />
          <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/LogFeedbackResponse"
message="tns:IWebAnalyticsWebServiceApplication_LogFeedback_OutputMessage" />
          </wsdl:operation>
          <wsdl:operation name="GetLoggingBatchSize">
            <wsdl:input
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSize"
message="tns:IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_InputMessage" />
            <wsdl:output
wsam:Action="http://tempuri.org/IWebAnalyticsWebServiceApplication/GetLoggingBatchSizeRespons
e" message="tns:IWebAnalyticsWebServiceApplication_GetLoggingBatchSize_OutputMessage" />
            </wsdl:operation>
          </wsdl:portType>

```

</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 FAST Search Server 2010
- 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 2.1:](#) This protocol is built upon the Windows Communication Foundation (WCF).

[<2> Section 3.1.4:](#) Processing of the logged data is a two-step process. The data is batched every 10 minutes and aggregated once every day.

[<3> Section 3.1.4.5:](#) Processing of the logged data is a two-step process. The data is batched every 10 minutes and aggregated once every day.

8 Change Tracking

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

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[AggregationLevel \(from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever\)](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever) simple type 19
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[ComparisonCondition \(from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever\)](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever) complex type 14
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[DataRetrieverErrorCode \(from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever\)](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever) simple type 20
[DataRetrieverFailure \(from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever\)](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever) complex type 15
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[GreaterThanCondition \(from namespace http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever\)](http://schemas.datacontract.org/2004/07/Microsoft.Office.Server.WebAnalytics.ProcessedDataRetriever) complex type 15
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