

[MS-PLA]: Performance Logs and Alerts Protocol Specification

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1 Introduction

The Performance Logs and Alerts Protocol is a set of Distributed Component Object Model (DCOM) interfaces (as specified in [\[MS-DCOM\]](#)) for logging **diagnosis data** on a remote computer.

The PLA Protocol allows users to:

- Specify the diagnostic data to be collected and logged.
- Specify the data retention and reporting policies for the logged data.
- Specify alert conditions.
- Start, stop, or schedule the collection.

1.1 Glossary

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

Client
Disk
Dynamic Endpoint
File
Folder
Fully Qualified Domain Name (FQDN)
Globally Unique Identifier (GUID)
Interface Definition Language (IDL)
Opnum
Path
Remote Procedure Call (RPC)
Server
UncPath
Universally Unique Identifier (UUID)
Well-Known Endpoint

The following terms are specific to this document:

Data Collector: An **object** entity that defines data collection, including a list of performance and **diagnosis data** to be collected and a log file name.

Data Collector Set: An **object** entity that represents a group of **data collectors**, including scheduling information, stop conditions, and a directory for log **files**.

Data Management: The ability to set a data retention policy against logged data and define post-actions of the collection (for example, delete largest log **file**, compress log **file**).

Diagnosis Data: Data that indicates the health status or performance of a system. The types of diagnosis data collected by this protocol include **performance counter** data, event tracing data, registry key data, Windows Management Instrumentation (WMI), network adapters data, and API tracing data and **files**.

Event Tracing for Windows (ETW): Event instrumentation library in Windows.

Performance Logs and Alerts Unique Identifier (PLA-UID): A 128-bit unique identifier. Although the behavior of MS-PLA does not depend on particular values of this PLA-UID, in

order to avoid conflict between PLA-UIDs, the PLA-UID SHOULD be generated as specified in [\[RFC4122\]](#).

Object: In COM, an instance of an object class. Each object implements one or more interfaces that may be obtained from each other by using the IUnknown interface.

Performance Counter: A numeric measurement of a computing resource's performance. Bandwidth, throughputs, and availability are examples of performance counters.

Performance Data Helper (PDH): Performance data query library in Windows.

Segmentation: A process of creating new log **files** or stopping **data collector set** based on conditions (for example, duration, **file** size).

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

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

[C706] The Open Group, "DCE 1.1: Remote Procedure Call", C706, August 1997, <http://www.opengroup.org/public/pubs/catalog/c706.htm>

[MS-DCOM] Microsoft Corporation, "[Distributed Component Object Model \(DCOM\) Remote Protocol Specification](#)", March 2007.

[MS-DTYP] Microsoft Corporation, "[Windows Data Types](#)", January 2007.

[MS-ERREF] Microsoft Corporation, "[Windows Error Codes](#)", January 2007.

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

[MS-OAUT] Microsoft Corporation, "[OLE Automation Protocol Specification](#)", March 2007.

[MS-RPCE] Microsoft Corporation, "[Remote Procedure Call Protocol Extensions](#)", January 2007.

[MS-RRP] Microsoft Corporation, "[Windows Remote Registry Protocol Specification](#)", August 2007.

[MS-SECO] Microsoft Corporation, "[Windows Security Overview](#)", January 2007.

[MS-TSCH] Microsoft Corporation, "[AT Service Remote Protocol Specification](#)", July 2007.

[MS-WMI] Microsoft Corporation, "[Windows Management Instrumentation Remote Protocol Specification](#)", September 2007.

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

[RFC4122] Leach, P., Mealling, M., and Salz, R., "A Universally Unique Identifier (UUID) URN Namespace", RFC 4122, July 2005, <http://www.ietf.org/rfc/rfc4122.txt>

[XPATh] Clark, J. and DeRose, S., "XML Path Language (XPath), Version 1.0", W3C Recommendation, November 1999, <http://www.w3.org/TR/xpath>

1.2.2 Informative References

[LAVY-MEGGITT] Lavy, M. and Meggitt, A., "Windows Management Instrumentation (WMI)", Sams, 2001, ISBN: 1578702607.

If you have any trouble finding [LAVY-MEGGITT], please check [here](#).

[MSDN-AUTHLEV] Microsoft Corporation, "RPC_C_AUTHN_LEVEL_xxx", <http://msdn2.microsoft.com/en-us/library/ms678435.aspx>

[MSDN-COUNT] Microsoft Corporation, "Performance Counters", <http://msdn2.microsoft.com/en-us/library/aa373083.aspx>

[MSDN-EVENT_TRACE_PROPERTIES] Microsoft Corporation, "EVENT_TRACE_PROPERTIES", <http://msdn2.microsoft.com/en-us/library/aa363784.aspx>

[MSDN-IMPLVL] Microsoft Corporation, "RPC_C_IMP_LEVEL_xxx", <http://msdn2.microsoft.com/en-gb/library/ms693790.aspx>

[MSDN-LMC] Microsoft Corporation, "Logging Mode Constants", <http://msdn2.microsoft.com/en-us/library/aa364080.aspx>

[MSDN-LUACCESS] Microsoft Corporation, "Limited User Access Support", <http://msdn2.microsoft.com/en-gb/library/aa372183.aspx>

[MSDN-SECURITY_INFORMATION] Microsoft Corporation, "SECURITY_INFORMATION", <http://msdn2.microsoft.com/en-us/library/aa379573.aspx>

[MSDN-WINEV] Microsoft Corporation, "Windows Events", <http://msdn2.microsoft.com/en-us/library/aa964766.aspx>

1.3 Protocol Overview (Synopsis)

Software components can be designed to assist in serviceability, manageability, supportability, and diagnostic ability. For instance, **performance counters** are a simple way of exposing state information that can be sampled or polled. Event-based instrumentation typically generates a state change notification. Alerts are a simple way of turning a sampled counter into an event notification, based on a threshold value.

System administrators often want to collect diagnosis data on a remote system in a periodic or ongoing basis to better support and diagnose problems on the systems. Furthermore, the collected data can be processed by tools for in-depth problem analysis.

The Performance Logs and Alerts Protocol provides a set of DCOM interfaces to control data collection on a remote system. The control includes creating, starting, stopping, scheduling, and configuring **data collector objects** and the creation of alerts.

The capabilities of the Performance Logs and Alerts Protocol are summarized as follows:

- Performance Counter Logging (section [3.2.4.6](#)): The Performance Logs and Alerts Protocol allows users to log performance counters' data of resources on a remote system. A resource can be hardware (for example, CPU, memory) or software (for example, application, process). The logged performance counter data is often useful for the analysis of performance trends and bottlenecks. The PLA Protocol also supports logging performance counter data in a SQL database

format (section [3.2.4.6](#)). This option defines the name of an existing SQL database and log set within the database where the performance counter data will be read or written. This **file** format is useful when collecting and analyzing performance counter data at an enterprise level rather than on a per-computer basis.

- Event Trace Logging (section [3.2.4.9](#)): The Performance Logs and Alerts Protocol allows users to log event tracing data of resources on a remote system. The event provider is software that can create event notifications and generate events when certain activities, such as a **disk** I/O operation or a page fault, occur. The application that uses the Performance Logs and Alerts Protocol can enable or disable event providers and selectively log the events of interest into a file.
- API Trace Logging (section [3.2.4.10](#)): The Performance Logs and Alerts Protocol allows users to log the API call activity of an executable on a remote system. Observing API call activity is useful for the diagnosis of various executable issues (for example, detecting unnecessary API calls.)
- Configuration Data Logging (section [3.2.4.7](#)): The Performance Logs and Alerts Protocol allows users to log the computer configuration information on a remote system. Readjustment of an incorrect setting is one of the common diagnosis root causes.
- Alerts (section [3.2.4.8](#)): The Performance Logs and Alerts Protocol allows users to create alerts based on performance counter values on a remote system. An alert can trigger running a program, logging the alert as an event, or starting another data collection.
- Data Collector Set (section [3.2.4.1](#)): The Performance Logs and Alerts Protocol allows users to group multiple logging entities' data collectors and apply operations to them at once. The operations include start (section [3.2.4.1.56](#)), stop (section [3.2.4.1.57](#)), schedule (section [3.2.4.1.20](#)), and configure (section [3.2.4.1](#)).
- Data Management (section [3.2.4.2](#)): The Performance Logs and Alerts Protocol allows users to set a data retention policy against logged data and define post-actions of the collection. The post-actions, such as delete largest log file and compress log file, can be defined with the Performance Logs and Alerts Protocol interfaces.

1.4 Relationship to Other Protocols

The Performance Logs and Alerts Protocol relies on [\[MS-DCOM\]](#), which uses **RPC** as its transport.

1.5 Prerequisites/Preconditions

This protocol is implemented over DCOM and RPC, and, as a result, has the prerequisites specified in [\[MS-DCOM\]](#) and [\[MS-RPCE\]](#) as being common to DCOM and RPC interfaces.

It is assumed that a **client** has obtained the **FQDN** name of a remote computer that supports the Performance Logs and Alerts Protocol before the protocol is invoked.

It is assumed that the **server** can delegate the rights of a user to a process when given the correct username and password of the user, both specified as BSTRs. This is required to support the [IDataCollectorSet::SetCredentials](#) method, which allows a user to save his or her credentials (a username/password pair) in a data collector set and to have that data collector set run with his or her rights when it is started.

1.6 Applicability Statement

This protocol is appropriate for managing the collection and logging of diagnosis data on a local or remote computer, as well as managing and reporting on the collected data. This protocol is not appropriate for diagnosing or monitoring diagnosis data in real time. [<1>](#)

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- Security and Authentication methods: As specified in [\[MS-DCOM\]](#) and [\[MS-RPCE\]](#), and section [2.1](#).
- Capability Negotiation: This protocol does not enforce any version negotiation.

1.8 Vendor-Extensible Fields

This protocol uses HRESULT values, as specified in [\[MS-ERREF\]](#) section 2. Vendors are free to choose their own values for this field, as long as the C bit (0x20000000) is set, indicating it is a customer code.

1.9 Standards Assignments

No standards assignments have been received for this protocol. All values used in these extensions are in private ranges. The following table contains the RPC Interface **UUIDs** for all the interfaces that are part of the Performance Logs and Alerts Protocol object model.

Parameter	Value	Reference
RPC Interface UUID for IDataCollectorSet	03837520-098b-11d8-9414-505054503030	As specified in 3.2.4.1
RPC Interface UUID for IDataManager	03837541-098b-11d8-9414-505054503030	As specified in 3.2.4.2
RPC Interface UUID for IFolderAction	03837543-098b-11d8-9414-505054503030	As specified in 3.2.4.3
RPC Interface UUID for IFolderActionCollection	03837544-098b-11d8-9414-505054503030	As specified in 3.2.4.4
RPC Interface UUID for IDataCollector	038374ff-098b-11d8-9414-505054503030	As specified in 3.2.4.5
RPC Interface UUID for IPerformanceCounterDataCollector	03837506-098b-11d8-9414-505054503030	As specified in 3.2.4.6
RPC Interface UUID for IConfigurationDataCollector	03837514-098b-11d8-9414-505054503030	As specified in 3.2.4.7
RPC Interface UUID for IAlertDataCollector	03837516-098b-11d8-9414-505054503030	As specified in 3.2.4.8
RPC Interface UUID for ITraceDataCollector	0383750b-098b-11d8-9414-505054503030	As specified in 3.2.4.9
RPC Interface UUID for IApiTracingDataCollector	0383751a-098b-11d8-9414-505054503030	As specified in 3.2.4.10
RPC Interface UUID for ITraceDataProvider	03837512-098b-11d8-9414-505054503030	As specified in 3.2.4.11
RPC Interface UUID for ISchedule	0383753a-098b-11d8-9414-505054503030	As specified in 3.2.4.12

Parameter	Value	Reference
RPC Interface UUID for ITraceDataProviderCollection	03837510-098b-11d8-9414-505054503030	As specified in 3.2.4.13
RPC Interface UUID for IScheduleCollection	0383753d-098b-11d8-9414-505054503030	As specified in 3.2.4.14
RPC Interface UUID for IDataCollectorCollection	03837502-098b-11d8-9414-505054503030	As specified in 3.2.4.15
RPC Interface UUID for IDataCollectorSetCollection	03837524-098b-11d8-9414-505054503030	As specified in 3.2.4.16
RPC Interface UUID for IValueMapItem	03837533-098b-11d8-9414-505054503030	As specified in 3.2.4.17
RPC Interface UUID for IValueMap	03837534-098b-11d8-9414-505054503030	As specified in 3.2.4.18

2 Messages

The following sections specify how Performance Logs and Alerts Protocol messages are transported and common data types.

2.1 Transport

The Performance Logs and Alerts Protocol uses [\[MS-DCOM\]](#) as its transport. To access an interface, the client MUST request an [MS-DCOM] connection to its **well-known endpoint** object **UUID** on the server, as specified in section [1.9](#).

This protocol uses RPC **dynamic endpoints**, as specified in [\[C706\]](#) part [4.<2><3>](#)

2.2 Common Data Types

This section defines a number of fields containing flags that MAY be combined by using a logical OR operation. Except where otherwise specified, all undefined flags MUST be set to zero and ignored on receipt.

In addition to RPC base types and definitions specified in [\[C706\]](#) and [\[MS-DTYP\]](#), data types are defined in the following sections.

For all methods that have an array as an output parameter, or any output argument of which type is not a primitive type, the memory for the array is allocated by the server and freed by the client. Details on DCOM memory allocation mechanisms are specified in [\[MS-DCOM\]](#).

This protocol MUST indicate to the RPC runtime that it is to associate the size in bytes specified by the `byte_count` parameter with the memory indicated by the pointer, as specified in [\[MS-RPCE\]](#) section 3.

2.2.1 HRESULT Return Codes

The following HRESULT return codes are defined by the PLA Protocol, and together with the HRESULTs defined by [\[MS-ERREF\]](#), they MAY be returned by the server to indicate additional information about the result of a method call or the reason a call failed. If the result is an error rather than simple status information, the most significant bit of the HRESULT is set, as specified by [MS-ERREF].

Value	Description
PLA_E_DCS_NOT_FOUND (0x80300002L)	The data collector set was not found.
PLA_E_DCS_IN_USE (0x803000AAL)	The data collector set or one of its dependencies is already in use.
PLA_E_TOO_MANY_FOLDERS (0x80300045L)	Unable to start the data collector set because there are too many folders.
PLA_E_NO_MIN_DISK (0x80300070L)	Not enough free disk space to start the data collector set.
PLA_E_DCS_ALREADY_EXISTS (0x803000B7L)	The data collector set already exists.
PLA_S_PROPERTY_IGNORED (0x00300100L)	Property value will be ignored.

Value	Description
PLA_E_PROPERTY_CONFLICT (0x80300101L)	Property value conflict.
PLA_E_DCS_SINGLETON_REQUIRED (0x80300102L)	The current configuration for this data collector set requires that it contain exactly one data collector.
PLA_E_CREDENTIALS_REQUIRED (0x80300103L)	A user account is required to commit the current data collector set properties.
PLA_E_DCS_NOT_RUNNING (0x80300104L)	The data collector set is not running.
PLA_E_CONFLICT_INCL_EXCL_API (0x80300105L)	A conflict was detected in the list of include/exclude APIs. Do not specify the same API in both the include and exclude lists.
PLA_E_NETWORK_EXE_NOT_VALID (0x80300106L)	The specified executable path refers to a network share or UncPath .
PLA_E_EXE_ALREADY_CONFIGURED (0x80300107L)	The specified executable path is already configured for API tracing.
PLA_E_EXE_PATH_NOT_VALID (0x80300108L)	The specified executable path does not exist. Verify that the specified path is correct.
PLA_E_DC_ALREADY_EXISTS (0x80300109L)	The data collector already exists.
PLA_E_DCS_START_WAIT_TIMEOUT (0x8030010AL)	The wait for the data collector set start notification has timed out.
PLA_E_DC_START_WAIT_TIMEOUT (0x8030010BL)	The wait for the data collector to start has timed out.
PLA_E_REPORT_WAIT_TIMEOUT (0x8030010CL)	The wait for the report generation tool to finish has timed out.
PLA_E_NO_DUPLICATES (0x8030010DL)	Duplicate items are not allowed.
PLA_E_EXE_FULL_PATH_REQUIRED (0x8030010EL)	When specifying the executable file that needs to be traced, the caller MUST specify a full path to the executable file and not just a file name.
PLA_E_INVALID_SESSION_NAME (0x8030010FL)	The session name provided is invalid.
PLA_E_PLA_CHANNEL_NOT_ENABLED (0x80300110L)	The Event Log channel Microsoft-Windows-Diagnosis-PLA/Operational MUST be enabled to perform this operation.
PLA_E_TASKSCHED_CHANNEL_NOT_ENABLED (0x80300111L)	The Event Log channel Microsoft-Windows-TaskScheduler MUST be enabled to perform this operation.
PLA_E_RULES_MANAGER_FAILED (0x80300112L)	The execution of the Rules Manager failed.
PLA_E_CABAPI_FAILURE (0x80300113L)	An error occurred while attempting to compress or extract the data.
PLA_E_INVALID_ARG(0x80070057L)	The parameter is incorrect.

2.2.2 Enumerations

2.2.2.1 AutoPathFormat

The **AutoPathFormat** enumeration defines the information to be appended to the file name or subdirectory name. Any combination of the bits SHOULD be allowed. Multiple bits specify strings to be appended to the file name. When a combination specifying more than one of these bits is specified, the strings are appended in the following order: plaPattern, plaMonthDayHour, plaSerialNumber, plaYearDayOfYear, plaYearMonth, plaYearMonthDay, plaYearMonthDayHour, plaMonthDayHourMinute. Consequently, if all bits are set, the name is represented as follows: [plaComputer]base_name[plaPattern][plaMonthDayHour][plaSerialNumber][plaYearDayOfYear][plaYearMonth][plaYearMonthDay][plaYearMonthDayHour][plaMonthDayHourMinute].

```
typedef enum
{
    plaNone = 0x0000,
    plaPattern = 0x0001,
    plaComputer = 0x0002,
    plaMonthDayHour = 0x0100,
    plaSerialNumber = 0x0200,
    plaYearDayOfYear = 0x0400,
    plaYearMonth = 0x0800,
    plaYearMonthDay = 0x1000,
    plaYearMonthDayHour = 0x2000,
    plaMonthDayHourMinute = 0x4000
} AutoPathFormat;
```

plaNone: Does not append any information to the name.

plaPattern: Adds a pattern specified in IDataCollectorSet::SubdirectoryFormatPattern [3.2.4.1.32](#) or IDataCollector::FileNameFormatPattern [3.2.4.5.7](#) to the name.

plaComputer: Prefixes the name with the computer name.

plaMonthDayHour: Appends the month, day, and hour to the name in the form, MMddHH.

plaSerialNumber: Appends the serial number specified in IDataCollectorSet::SerialNumber to the subdirectory name in the form, NNNNNN.

plaYearDayOfYear: Appends the year and day of the year to the name in the form, yyyyDDD.

plaYearMonth: Appends the year and month to the name in the form, yyyyMM.

plaYearMonthDay: Appends the year, month, and day to the name in the form, yyyyMMdd.

plaYearMonthDayHour: Appends the year, month, day, and hour to the name in the form, yyyyMMddHH.

plaMonthDayHourMinute: Appends the month, day, hour, and minute to the name in the form, MMddHHmm.

2.2.2.2 ClockType

The **ClockType** enumeration defines the clock resolution to use when tracing events.

```
typedef enum
{
    plaTimeStamp = 0,
    plaPerformance = 1,
    plaSystem = 2,
    plaCycle = 3
} ClockType;
```

plaTimeStamp: Use the raw (unconverted) time stamp.

plaPerformance: Query performance counter (QPC). Provides a high-resolution (100 nanoseconds) time stamp that is more expensive to retrieve.

plaSystem: System time. Provides a low-resolution (10 milliseconds) time stamp that is less expensive to retrieve.

plaCycle: CPU cycle counter. MAY provide the highest resolution time stamp and is the least expensive to retrieve. However, the CPU counter is unreliable and SHOULD not be used.

2.2.2.3 CommitMode

The **CommitMode** enumeration defines the type of actions to be performed when the changes are committed to the data collector set. Any combination of bits SHOULD be allowed.

```
typedef enum
{
    plaCreateNew = 0x0001,
    plaModify = 0x0002,
    plaCreateOrModify = 0x0003,
    plaUpdateRunningInstance = 0x0010,
    plaFlushTrace = 0x0020,
    plaValidateOnly = 0x1000
} CommitMode;
```

plaCreateNew: For a persistent data collector set, save it to storage. The set MUST not have existed previously on storage.

plaModify: Update a previously committed data collector set.

plaCreateOrModify: For a persistent data collector set, save it to storage. If the set already exists, PLA SHOULD update it.

plaUpdateRunningInstance: If the data collector set is running, apply the updated property values to it.

plaFlushTrace: If multiple data collector sets are running, flush the event trace data collectors memory buffers to storage or real-time consumers.

plaValidateOnly: Perform validation only on the data collector set.

2.2.2.4 DataCollectorSetStatus

The **DataCollectorSetStatus** enumeration defines the running status of the data collector set.

```
typedef enum
{
    plaStopped = 0,
    plaRunning = 1,
    plaCompiling = 2,
    plaPending = 3,
    plaUndefined = 4
} DataCollectorSetStatus;
```

plaStopped: The data collector set is stopped.

plaRunning: The data collector set is running.

plaCompiling: The data collector set is performing **data management** (see section [3.2.4.2](#)). A running data collector set transitions from running to compiling if the data manager is enabled.

plaPending: Not used.

plaUndefined: Cannot determine the status but no error has occurred. Typically, this status is set for boot trace sessions.

2.2.2.5 DataCollectorType

The **DataCollectorType** enumeration defines the data collector types.

```
typedef enum
{
    plaPerformanceCounter = 0,
    plaTrace = 1,
    plaConfiguration = 2,
    plaAlert = 3,
    plaApiTrace = 4
} DataCollectorType;
```

plaPerformanceCounter: Collects performance counter data. The `IPerformanceCounterDataCollector` interface represents this data collector.

plaTrace: Collects events from an event trace session. The `ITraceDataCollector` interface represents this data collector.

plaConfiguration: Collects computer configuration information. The `IConfigurationDataCollector` interface represents this data collector.

plaAlert: Monitors performance counters and performs actions if the counter value crosses the given threshold. The `IAlertDataCollector` interface represents this data collector.

plaApiTrace: Logs API calls made by the process. The `IApiTracingDataCollector` interface represents this data collector.

2.2.2.6 DataManagerSteps

The **DataManagerSteps** enumeration defines the actions that the data manager takes when it runs. Any combination of the bits SHOULD be allowed.

```
typedef enum
{
    plaCreateReport = 0x01,
    plaRunRules = 0x02,
    plaCreateHtml = 0x04,
    plaFolderActions = 0x08,
    plaResourceFreeing = 0x10
} DataManagerSteps;
```

plaCreateReport: Creates a report if data is available. The file name SHOULD be IDataManager::RuleTargetFileName, and IDataManager::ReportSchema can be used to customize the way the report is created.[<4>](#)

plaRunRules: If a report exists, PLA SHOULD apply the rules specified in IDataManager::Rules to the report. The IDataManager::RuleTargetFileName(Get) returns the name of the file to which the rules are applied.

plaCreateHtml: Converts the XML file obtained by IDataManager::RuleTargetFileName(Get) to HTML format. The HTML format is written to the file specified in IDataManager::ReportFileName.

plaFolderActions: Apply the **folder** actions obtained by IDataManager::FolderActions(Get) to all folders defined in the collection.

plaResourceFreeing: If IDataManager::MaxFolderCount, IDataManager::MaxSize, or MinFreeDisk exceeds its limit, PLA SHOULD apply the resource policy specified in IDataManager::ResourcePolicy.

2.2.2.7 FileFormat

The **FileFormat** enumeration defines the format of the data in the log file.

```
typedef enum
{
    plaCommaSeparated = 0,
    plaTabSeparated = 1,
    plaSql = 2,
    plaBinary = 3
} FileFormat;
```

plaCommaSeparated: Comma-separated log file. The first line in the text file contains column headers followed by comma-separated data in the remaining lines of the log file.

plaTabSeparated: Tab-separated log file. The first line in the text file contains column headers followed by tab-separated data in the remaining lines of the log file.

plaSql: The data is saved into a SQL database, instead of to a file. The SQL database contains three tables: CounterData, CounterDetails, and DisplayToId. All three tables are specified below.

The CounterData table contains a row for each counter that is collected at a particular time. There will be a large number of these rows.

The CounterData table defines the following fields:

- GUID(uniqueidentifier, NOT NULL): GUID for this data set. Use this key to join with the DisplayToID table [<5>](#).
- CounterID(int, NOT NULL): Identifies the counter. Use this key to join with the CounterDetails table.
- RecordIndex(int, NOT NULL): The sample index for a specific counter identifier and collection **PLA-UID**. The value increases for each successive sample in this log file.
- CounterDateTime(char(24), NOT NULL): The time the collection was started, in UTC time.
- CounterValue(float, NOT NULL): The formatted value of the counter. This value may be zero for the first record if the counter requires two samples to compute a displayable value.
- FirstValueA(int): Combine this 32-bit value with the value of FirstValueB to create the FirstValue member of PDH_RAW_COUNTER. FirstValueA contains the low-order bits.
- FirstValueB(int): Combine this 32-bit value with the value of FirstValueA to create the FirstValue member of PDH_RAW_COUNTER. FirstValueB contains the high-order bits.
- SecondValueA(int): Combine this 32-bit value with the value of SecondValueB to create the SecondValue member of PDH_RAW_COUNTER. SecondValueA contains the low-order bits.
- SecondValueB(int): Combine this 32-bit value with the value of SecondValueA to create the SecondValue member of PDH_RAW_COUNTER. SecondValueB contains the high order bits. The GUID, CounterID, and RecordIndex fields make up the primary key for this table [<6>](#).

The CounterDetails table describes a specific counter on a particular computer. The CounterDetails table defines the following fields:

- CounterID(int, IDENTITY PRIMARY KEY): A unique identifier in the database that maps to a specific counter name text string. This field is the primary key of this table.
- MachineName(varchar(1024), NOT NULL): The name of the computer that logged this data set.
- ObjectName(varchar(1024), NOT NULL): The name of the performance object.
- CounterName(varchar(1024), NOT NULL): The name of the counter.
- CounterType(int, NOT NULL): The counter type.
- DefaultScale(int, NOT NULL): The default scaling to be applied to the raw performance counter data.
- InstanceName(varchar(1024)): The name of the counter instance.
- InstanceIndex(int): The index number of the counter instance.
- ParentName(varchar(1024)): Some counters are logically associated with others, and are referred to as parents. For example, the parent of a thread is a process and the parent of a logical disk driver is a physical drive. This field contains the name of the parent. Either the value in this field or the ParentObjectID field identifies a specific parent instance. If the value in this field is NULL, the value in the ParentObjectID field must be checked to identify the parent. If the values in both fields are NULL, the counter does not have a parent.

- **ParentObjectID(int)**: The unique identifier of the parent. The value in either this field or the **ParentName** field identifies a specific parent instance. If the value in this field is NULL, the value in the **ParentName** field must be checked to identify the parent.

The **DisplayToID** table relates the user-friendly string displayed by the System Monitor to the PLA-UID stored in the other tables. The **DisplayToID** table defines the following fields:

- **GUID(uniqueidentifier, NOT NULL PRIMARY KEY)**: Unique identifier generated for a log<7>. This field is the primary key of this table. Note that these do not correspond to the values in: HKEY_LOCAL_MACHINE \SYSTEM \CurrentControlSet \Services \SysmonLog \Log Queries\
- **RunID(int)**: Reserved for internal use.
- **DisplayString(varchar(1024), NOT NULL UNIQUE)**: Name of the log file as displayed in the System Monitor.
- **LogStartTime(char(24))**: Time the logging process started in yyyy-mm-dd hh:mm:ss:nnn format.
- **LogStopTime(char(24))**: Time the logging process stopped in yyyy-mm-dd hh:mm:ss:nnn format. Multiple log files with the same **DisplayString** value can be differentiated by using the value in this and the **LogStartTime** fields. The values in the **LogStartTime** and **LogStopTime** fields also allows the total collection time to be accessed quickly.
- **NumberOfRecords(int)**: Number of samples stored in the table for each log collection.
- **MinutesToUTC(int)**: Value used to convert the row data stored in UTC time to local time.
- **TimeZoneName(char(32))**: Name of the time zone where the data was collected. If collecting or analyzing relogged data from a file collected on systems in the user's time zone, this field will state the location.

plaBinary: Binary log file.

2.2.2.8 FolderActionSteps

The **FolderActionSteps** enumeration defines the action that the data manager takes when both the age and size limits are met. Any combination of the bits SHOULD be allowed.

```
typedef enum
{
    plaCreateCab = 0x01,
    plaDeleteData = 0x02,
    plaSendCab = 0x04,
    plaDeleteCab = 0x08,
    plaDeleteReport = 0x10
} FolderActionSteps;
```

plaCreateCab: Creates a cabinet file. The name of the cabinet file is <name of the subfolder>.cab. For example, if the name of the subfolder was "MyFolder", the cab file would be named "MyFolder.cab". The name of the subfolder is specified by the combination of the **Subdirectory**, **SubdirectoryFormat**, and **SubdirectoryFormatPattern** properties of the [IDataCollectorSet](#). The **Subdirectory** property provides the base name for the Subfolder, the **SubdirectoryFormat** property specifies the suffix and prefix that will be appended and prepended to the base name, and the **SubdirectoryFormatPattern** specifies the pattern that

will be used in the suffix. The SubdirectoryFormat is specified in section [2.2.2.1](#). The SubdirectoryFormatPattern is specified in section [2.2.3.1](#).

plaDeleteData: Deletes all files in the folder, except the report and cabinet file.

plaSendCab: Sends the cabinet file to the location specified in the IFolderAction::SendCabTo property.

plaDeleteCab: Deletes the cabinet file.

plaDeleteReport: Deletes the report file.

2.2.2.9 ResourcePolicy

The **ResourcePolicy** enumeration defines the order in which folders are deleted when one of the disk resource limits is exceeded.

```
typedef enum
{
    plaDeleteLargest = 0,
    plaDeleteOldest = 1
} ResourcePolicy;
```

plaDeleteLargest: Deletes the largest folders first.

plaDeleteOldest: Deletes the oldest folders first.

2.2.2.10 StreamMode

The **StreamMode** enumeration defines where the trace events are delivered.

```
typedef enum
{
    plaFile = 0x0001,
    plaRealTime = 0x0002,
    plaBoth = 0x0003,
    plaBuffering = 0x0004
} StreamMode;
```

plaFile: Writes the trace events to a log file.

plaRealTime: Delivers the trace events to a real time consumer.

plaBoth: Writes the trace events to a log file and delivers them to a real-time consumer.

plaBuffering: Keeps events in a circular buffer in memory only. For more information, see the EVENT_TRACE_BUFFERING_MODE logging mode in [\[MSDN-LMC\]](#).

2.2.2.11 ValueMapType

The **ValueMapType** enumeration defines a value map type. A value map defines a named-value pair. A value map can be used in different ways. A value map type defines which way the value map is to be used; each type has a different way of evaluating the "value" of the "value map" based on the "values" of each individual "value map item".

```
typedef enum
{
    plaIndex = 1,
    plaFlag = 2,
    plaFlagArray = 3,
    plaValidation = 4
} ValueMapType;
```

plaIndex: Only one item in the collection can be enabled. The enabled item is the value of `IValueMap::Value`. If more than one is enabled, the first enabled item SHOULD be used as the value.

plaFlag: One or more items in the collection can be enabled. An item in the collection represents a single bit flag. The enabled items in the collection are combined together by using the bitwise OR operation to become the value of `IValueMap::Value`.

plaFlagArray: One or more items in the collection can be enabled. An item in the collection represents a 32-bit unsigned value (ULONG). The enabled items are not combined together as they are for the `plaFlag` type, but rather each item can be retrieved separately. <8>

plaValidation: The collection contains a list of HRESULT values that are returned by the validation process. The validation process occurs when [IDataCollectorSet::Commit](#) is called. In the validation process, PLA analyzes the values of all the properties in the `IDataCollectorSet`, including the values of the `IDataCollectors` contained in the `IDataCollectorSet` and inserts a [ValueMapItem](#) into the [ValueMap](#) for any property that is problematic. The `ValueMapItem` holds the name of the property and the HRESULT describing why it is problematic. The following codes can be set in a validation `ValueMap`:

Name/Value	Description
PLA_E_PROPERTY_IGNORED/(0x00300100L)	This value is returned anytime the value of a property is being ignored by this implementation of the protocol. This code must not represent an error and the call to <code>IDataCollectorSet::Commit</code> must not fail because of this code. The code is intended to inform the caller when a property is not needed or supported by an implementation.
PLA_E_PROPERTY_CONFLICT/(0x80300101L)	<p>This value is returned anytime two properties are in conflict. This code should represent an error and the call to <code>IDataCollectorSet::Commit</code> should fail because of this code. This code is returned for the following properties under the following conditions:</p> <ul style="list-style-type: none"> <code>IApiTracingDataCollector::ExePath</code>: Returned when <code>ExePath</code> is equal to the empty string. <code>IDataCollector::FileNameFormatPattern</code>: Returned when <code>IDataCollectorSet::FileNameFormat</code> is equal to <code>plaPattern</code> and <code>FileNameFormatPattern</code> is equal to the empty string. <code>IDataCollector::LogCircular</code>: Returned when <code>IDataCollector::SegmentMaxSize</code> is equal to 0 and <code>LogCircular</code> is equal to true.

Name/Value	Description
	<ul style="list-style-type: none"> ▪ <code>IDataCollector::LogAppend</code>: Returned when <code>IDataCollector::LogCircular</code> is true or <code>IDataCollector::LogOverwrite</code> is true and <code>LogAppend</code> is true ▪ <code>IPerformanceCounterDataCollector::DataSourceName</code>: Returned when <code>DataSourceName</code> is equal to the empty string. ▪ <code>ITraceDataCollector::MaximumBuffers</code>: Returned when <code>MaximumBuffers</code> is less than <code>ITraceDataCollector::MinimumBuffers</code>.
<code>PLA_E_EXE_FULL_PATH_REQUIRED/(0x8030010EL)</code>	<p>This value is returned anytime a relative path to a file is provided when a full path is required. This code should represent an error and the call to <code>IDataCollectorSet::Commit</code> should fail because of this code. This code is returned for the following properties under the following conditions:</p> <ul style="list-style-type: none"> ▪ <code>IApiTracingDataCollector::ExePath</code>: Returned when the provided path is relative instead of absolute
<code>PLA_E_CONFLICT_INCL_EXCL_API/(0x80300105L)</code>	<p>This value is returned when an API is listed under both the <code>IncludeApis</code> list and <code>ExcludeApis</code> list for an <code>IApiTracingDataCollector</code>. This code should represent an error and the call to <code>IDataCollectorSet::Commit</code> should fail because of this code. This code is returned for the following properties under the following conditions:</p> <ul style="list-style-type: none"> ▪ <code>IApiTracingDataCollector::IncludeApis</code>: Returned when the <code>IncludeApis</code> array includes an API that is also included in the <code>ExcludeApis</code> array. ▪ <code>IApiTracingDataCollector::ExcludeApis</code>: Returned when the <code>IncludeApis</code> array includes an API that is also included in the <code>ExcludeApis</code> array.
<code>PLA_E_EXE_PATH_NOT_VALID/(0x80300108L)</code>	<p>This value is returned when the executable referenced by the <code>ExePath</code> property for an <code>IApiTracingDataCollector</code> does not exist. This code should represent an error and the call to <code>IDataCollectorSet::Commit</code> should fail because of this code. This code is returned for the following properties under the following conditions:</p> <ul style="list-style-type: none"> ▪ <code>IApiTracingDataCollector::ExePath</code>: Returned when the executable referenced by the <code>ExePath</code> property does not exist
<code>PLA_E_NETWORK_EXE_NOT_VALID/(0x80300106L)</code>	<p>This value is returned when the executable referenced by the <code>ExePath</code> is on a remote machine. This code should represent an error and the call to <code>IDataCollectorSet::Commit</code></p>

Name/Value	Description
	<p>should fail because of this code. This code is returned for the following properties under the following conditions:</p> <ul style="list-style-type: none"> ▪ IApiTracingDataCollector::ExePath: Returned when the executable referenced by the ExePath is on a remote machine.

2.2.2.12 WeekDays

The **WeekDays** enumeration defines the days of the week on which to run the data collector set. Any combination of the bits SHOULD be allowed.

```
typedef enum
{
    plaRunOnce = 0x00,
    plaSunday = 0x01,
    plaMonday = 0x02,
    plaTuesday = 0x04,
    plaWednesday = 0x08,
    plaThursday = 0x10,
    plaFriday = 0x20,
    plaSaturday = 0x40,
    plaEveryday = 0x7F
} WeekDays;
```

plaRunOnce: Run only once on the given start date and time.

plaSunday: Run on Sunday.

plaMonday: Run on Monday.

plaTuesday: Run on Tuesday.

plaWednesday: Run on Wednesday.

plaThursday: Run on Thursday.

plaFriday: Run on Friday.

plaSaturday: Run on Saturday.

plaEveryday: Run every day of the week.

2.2.3 Formatting Rules

2.2.3.1 File and Subdirectory Name Formatting

If the plaPattern bit is set in the [AutoPathFormat](#), the Performance Logs and Alerts Protocol MUST append a pattern to the file name or subdirectory name. The following table details the meaning of each pattern.

Pattern	Description
D	Day of the year.
DDD	Day of the year with leading zeros, if applicable.
d	Day of the month.
dd	Day of the month with a leading zero, if applicable.
ddd	The abbreviated name of the weekday, for example, "Tue" for Tuesday.
dddd	Full name of the weekday.
M	Month.
MM	Month with leading zero, if applicable.
MMM	The abbreviated name of the month, for example, "Jan" for January.
MMMM	Full name of the month.
y	Year without the century.
yy	Year without the century but with a leading zero, if applicable.
yyyy	Year with the century.
h	Hour in a 12-hour clock.
hh	Hour in a 12-hour clock with a leading zero, if applicable.
H	Hour in a 24-hour clock.
HH	Hour in a 24-hour clock with a leading zero, if applicable.
m	Minute.
mm	Minute with a leading zero, if applicable.
S	Second.
Ss	Second with a leading zero, if applicable.
T	The first character of the AM/PM designator.
Tt	The AM/PM designator.
Z	Time zone offset.
Zz	Time zone offset with a leading zero, if applicable.
N	Serial number. The number of leading zeros is defined by the number of characters; for example, if the serial number is 32 and the pattern is NNN, the serial number used is 032.
\c	Escaped character where "c" is any character. Unrecognized characters that are not "escaped", excluding white space, will result in an error.

For example, the pattern "MMMM d, yyyy \a\t h:mmTt" SHOULD yield "January 31, 2005 at 4:20AM". If the file name is MyFile, the decorated file name would be "MyFile January 31, 2005 at 4:20AM".

2.2.3.2 API Name Formatting

The format of an executable file and module names is as follows:

[Directory]\[Executable file/module name], for example, c:\windows\notepad.exe, c:\windows\system32\advapi32.dll

The format of API name is as follows:

[Module name]![API name], for example, advapi32!RegQueryValueExW

2.2.3.3 Report Schema Formatting

This section contains the XSD for the IDataManager ReportSchema property.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="http://schemas.microsoft.com/diagnostics/2007/02/tracerpt"
  elementFormDefault="qualified"
  xmlns:man="http://schemas.microsoft.com/diagnostics/2007/02/tracerpt"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="GUIDType">
    <xs:restriction base="xs:string">
      <xs:pattern value="\{[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}\}" />
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="Report">
    <xs:annotation>
      <xs:documentation>Contains the specification of the report schema as well as
        localization information.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:sequence minOccurs="1" maxOccurs="1">
        <xs:element ref="man:Import" minOccurs="0" maxOccurs="unbounded" />
        <xs:element name="Sections" minOccurs="0" maxOccurs="1">
          <xs:annotation>
            <xs:documentation>Starting tag for &lt;Section&gt;, which is the logical
              category for tables. Tables from different providers can be grouped
              under one section. For example, a TCP/IP table belongs to
              &quot;Network&quot; section and &quot;UDP/IP&quot; table also belongs
              to &quot;Network&quot; section. There are one more &lt;Section&gt;
              under &lt;Sections&gt;.</xs:documentation>
          </xs:annotation>
          <xs:complexType>
            <xs:sequence minOccurs="1" maxOccurs="1">
              <xs:element name="Section" minOccurs="1" maxOccurs="unbounded">
                <xs:annotation>
                  <xs:documentation>Logical category for tables in
                    the report.</xs:documentation>
                </xs:annotation>
                <xs:complexType>
                  <xs:sequence minOccurs="1" maxOccurs="unbounded">
                    <xs:choice minOccurs="1" maxOccurs="1">
                      <xs:element ref="man:EventTable" />
                      <xs:element ref="man:CounterTable" />
                    </xs:choice>
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```

```

        <xs:attribute name="name" type="xs:string" use="required">
          <xs:annotation>
            <xs:documentation>Section title (localizable).</xs:documentation>
          </xs:annotation>
        </xs:attribute>
        <xs:attribute name="key" type="xs:nonNegativeInteger" use="required">
          <xs:annotation>
            <xs:documentation>Used to sort the sections.</xs:documentation>
          </xs:annotation>
        </xs:attribute>
        <xs:attribute name="note" type="xs:string" use="optional">
          <xs:annotation>
            <xs:documentation>Note text (localizable).</xs:documentation>
          </xs:annotation>
        </xs:attribute>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="StringTable" minOccurs="0" maxOccurs="1">
  <xs:annotation>
    <xs:documentation>
      Defines the localized strings. This tag is optional under
      &lt;Report&gt;.
      All localizable strings in the manifest serves as a string ID
      corresponding to the string in the string table. If there is no matching
      string in the string table, the localizable string won't be translated,
      but shows the original content instead.
    </xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="unbounded" name="String">
        <xs:annotation>
          <xs:documentation>
            Defines each localized string. This tag is required
            under &lt;StringTable&gt;.</xs:documentation>
          </xs:annotation>
          <xs:complexType>
            <xs:simpleContent>
              <xs:extension base="xs:string">
                <xs:attribute name="ID" type="xs:string" use="required">
                  <xs:annotation>
                    <xs:documentation>The ID of the localized string.
                      Referenced by the name attribute of the Report, EventTable,
                      CounterTable and Column elements.
                    </xs:documentation>
                  </xs:annotation>
                </xs:attribute>
                <xs:attribute name="loc.comment" type="xs:string" use="optional">
                  <xs:annotation>
                    <xs:documentation>Comment used to inform the person
                      localizing this string as to how this string is
                      used.</xs:documentation>
                  </xs:annotation>
                </xs:attribute>
              </xs:extension>
            </xs:simpleContent>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>

```

```

<xs:attribute name="version" type="xs:unsignedByte" use="required">
  <xs:annotation>
    <xs:documentation>Report version.</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="name" type="xs:string" use="required">
  <xs:annotation>
    <xs:documentation>Report title (localizable).</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="threshold" type="xs:nonNegativeInteger" use="optional">
  <xs:annotation>
    <xs:documentation>Number of rows to display. By default it is
      25.</xs:documentation>
  </xs:annotation>
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="Import">
  <xs:annotation>
    <xs:documentation>This is used to avoid repeating definitions if the report is
      already defined in other files. There will be multiple <Report>;
      defining the report attributes with this feature; however, only the
      <Report>;attribute in the file will be used. Other <Report>;
      attributes written in other imported files will simply be
      ignored.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:attribute name="file" type="xs:string" use="required">
      <xs:annotation>
        <xs:documentation>File path (absolute or relative) to other report
          file</xs:documentation>
      </xs:annotation>
    </xs:attribute>
  </xs:complexType>
</xs:element>
<xs:element name="EqualJoin">
  <xs:annotation>
    <xs:documentation>
      Specifies the relationship between two different data sources.
      Event data source is identified by (providerID, payloadID, version).
      The idea is similar to SQL table equal join.
      Note that we only allow two providers in a join operation and thus fields under
      <EqualJoin>; must come from two different data sources.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence minOccurs="2" maxOccurs="2">
      <xs:element name="EventJoinField" minOccurs="1" maxOccurs="1">
        <xs:annotation>
          <xs:documentation>
            Specifies the data source from an event provider for join operation.
            It is a subset of <EventField>;.
            In addition, it cannot use a composite field</xs:documentation>
          </xs:annotation>
          <xs:complexType>
            <xs:complexContent>
              <xs:extension base="man:BaseEventField">
            </xs:extension>
          </xs:complexContent>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="SubTable">

```



```

<xs:annotation>
  <xs:documentation>
    Defines the child table of a parent table.
    A child table can be used to display more detailed information than its
    parent table.
    The report does not expand the child table, but shows a &quot;+&quot; sign.
    Users can choose to read the child table by clicking the &quot;+&quot; sign.
    This tag is optional under <table>;
    <Column> is required under <SubTable>;.
    <Column> fields must come from the same provider(s) as <table> has.
    The <Column> under <SubTable> is almost the same as <Column>
    under <EventTable>;, except groupby and aggregate cannot apply to subtable
    columns.</xs:documentation>
  </xs:annotation>
</xs:complexType>
<xs:sequence>
  <xs:element ref="man:Column" minOccurs="1" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="Column">
  <xs:annotation>
    <xs:documentation>Defines each column of the table. This tag is required under
      <EventTable> and <SubTable>.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence minOccurs="1" maxOccurs="1">
      <xs:element name="EventField" minOccurs="1" maxOccurs="1">
        <xs:annotation>
          <xs:documentation>Specifies the data source from an event
            provider.</xs:documentation>
        </xs:annotation>
        <xs:complexType>
          <xs:complexContent>
            <xs:extension base="man:BaseEventField">
              <xs:attribute name="aggregate" use="optional">
                <xs:annotation>
                  <xs:documentation>
                    Count the column values and show the calculation in the bucket.
                    A field with aggregate attribute is defined as an aggregation
                    field.
                    This aggregate attribute also only applies to numeric fields.
                    Aggregate functions perform a calculation on a set of values
                    and return a single value.
                    Aggregation must be used with the groupby column, which is
                    defined with the groupby attribute value is true.
                    We put the following restrictions on the use of aggregation:
                    This groupby column cannot have an aggregation field.
                    A table with group by column(s) MUST has other columns with
                    aggregation fields.
                    Aggregation can only apply to numeric fields.
                    We define such a table as an aggregation table: groupby
                    column(s) and one or more aggregation columns.
                    Note that not all numeric fields can be aggregated in a
                    meaningful way, for example, aggregation on error code or disk
                    ID does not make sense in a report.
                    As described in <Column> section, aggregate attribute in
                    <EventField> cannot apply to <EventField> under
                    <SubTable>, either
                  </xs:documentation>
                </xs:annotation>
              </xs:attribute>
            </xs:extension>
          </xs:complexContent>
        </xs:complexType>
      </xs:sequence>
    </xs:complexType>
    <xs:restriction base="xs:token">
      <xs:enumeration value="total">
        <xs:annotation>

```

```

        <xs:documentation>The sum of the column
            values.</xs:documentation>
    </xs:annotation>
</xs:enumeration>
<xs:enumeration value="average">
    <xs:annotation>
        <xs:documentation>The sum divided by the number of
            events.</xs:documentation>
    </xs:annotation>
</xs:enumeration>
<xs:enumeration value="rate">
    <xs:annotation>
        <xs:documentation>The sum divided by the trace
duration.</xs:documentation>
    </xs:annotation>
</xs:enumeration>
</xs:restriction>
</xs:simpleType>
</xs:attribute>
<xs:attribute name="note" type="xs:string" use="optional">
    <xs:annotation>
        <xs:documentation>Note text (localizable).</xs:documentation>
    </xs:annotation>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute name="name" type="xs:string" use="required">
    <xs:annotation>
        <xs:documentation>The title of the column (localizable, unique in
            the table)</xs:documentation>
    </xs:annotation>
</xs:attribute>
<xs:attribute name="align" use="optional">
    <xs:annotation>
        <xs:documentation>Alignment of the column value. The default is
            right.</xs:documentation>
    </xs:annotation>
<xs:simpleType>
    <xs:restriction base="xs:token">
        <xs:enumeration value="left" />
        <xs:enumeration value="right" />
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
<xs:attribute name="format" type="xs:string" use="optional">
    <xs:annotation>
        <xs:documentation>An XSLT number format mask.</xs:documentation>
    </xs:annotation>
</xs:attribute>
<xs:attribute name="sort" use="optional">
    <xs:annotation>
        <xs:documentation>Primary or secondary sorting column.</xs:documentation>
    </xs:annotation>
<xs:simpleType>
    <xs:restriction base="xs:token">
        <xs:enumeration value="primary" />
        <xs:enumeration value="secondary" />
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
<xs:attribute name="order" use="optional">
    <xs:annotation>

```

and

```

    <xs:documentation>Defines the order of rows shown in the table.
    The default is descending. There should be at most one primary sort column
    one secondary sort column.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:token">
      <xs:enumeration value="ascending">
        <xs:annotation>
          <xs:documentation>Small to big A-Z or 0-9.</xs:documentation>
        </xs:annotation>
      </xs:enumeration>
      <xs:enumeration value="descending">
        <xs:annotation>
          <xs:documentation>Big to small Z-A or 9-0</xs:documentation>
        </xs:annotation>
      </xs:enumeration>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
<xs:attribute name="outType" type="xs:string" use="optional">
  <xs:annotation>
    <xs:documentation>An XSD type descriptor.</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="visible" type="xs:boolean" use="optional">
  <xs:annotation>
    <xs:documentation>Describe whether this column is visible in the rendered
    view of the table. Default is true.</xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="summary" use="optional">
  <xs:annotation>
    <xs:documentation>Put table footer for all the column values. The possible
    value of summary attribute is total and average. Note that this attribute
    only applies to the numeric fields.</xs:documentation>
  </xs:annotation>
  <xs:simpleType>
    <xs:restriction base="xs:token">
      <xs:enumeration value="total">
        <xs:annotation>
          <xs:documentation>Sum up the rows of the column.</xs:documentation>
        </xs:annotation>
      </xs:enumeration>
      <xs:enumeration value="average">
        <xs:annotation>
          <xs:documentation>Calculate the average of the rows of the
          column.</xs:documentation>
        </xs:annotation>
      </xs:enumeration>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
<xs:attribute name="groupby" type="xs:boolean" use="optional">
  <xs:annotation>
    <xs:documentation>Related to aggregation function of the <EventField>
    element.
    It can only apply to <Column> under <EventTable>;
    They are not applicable to <Column> under <SubTable>;
  </xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="note" type="xs:string" use="optional">
  <xs:annotation>
    <xs:documentation>Note text (localizable).</xs:documentation>
  </xs:annotation>

```

```

        </xs:annotation>
    </xs:attribute>
</xs:complexType>
</xs:element>
<xs:element name="CounterTable">
    <xs:annotation>
        <xs:documentation>
            Defines the basic building block, the table, in a report for counter data
source.
            Every attribute is the same as <EventTable>, except an additional
            attribute, object, is added.
            Every counter table will have four or five columns: counter, instance, mean,
min,
            and max.
            If the object has instances, instance column will be added to the table.
            Otherwise, instance column is not shown.</xs:documentation>
        </xs:annotation>
    <xs:complexType>
        <xs:sequence minOccurs="0" maxOccurs="unbounded">
            <xs:choice minOccurs="1" maxOccurs="1">
                <xs:element ref="man:Exclude" minOccurs="1" maxOccurs="1" />
                <xs:element ref="man:Include" minOccurs="1" maxOccurs="1" />
            </xs:choice>
        </xs:sequence>
        <xs:attribute name="name" type="xs:string" use="required">
            <xs:annotation>
                <xs:documentation>Table title (localizable).</xs:documentation>
            </xs:annotation>
        </xs:attribute>
        <xs:attribute name="topic" type="xs:string" use="required">
            <xs:annotation>
                <xs:documentation>Topic title (localizable).</xs:documentation>
            </xs:annotation>
        </xs:attribute>
        <xs:attribute name="object" type="xs:string" use="required">
            <xs:annotation>
                <xs:documentation>Counter object name.</xs:documentation>
            </xs:annotation>
        </xs:attribute>
        <xs:attribute name="level" use="optional">
            <xs:annotation>
                <xs:documentation>
                    Range 1 to 5. Used to control whether this table should be generated or not.
                    If the level of the table is less than or equal to the tracerpt system
level,
                    this table will be generated.
                    By setting system level in tracerpt by a command-line switch, only those
                    tables with proper level will be generated.
                    The table level and tracerpt system level are 1 by default.
                </xs:documentation>
            </xs:annotation>
        <xs:simpleType>
            <xs:restriction base="xs:integer">
                <xs:minInclusive value="1"/>
                <xs:maxInclusive value="5"/>
            </xs:restriction>
        </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="key" type="xs:positiveInteger" use="optional">
            <xs:annotation>
                <xs:documentation>Used to sort the tables.</xs:documentation>
            </xs:annotation>
        </xs:attribute>
        <xs:attribute name="note" type="xs:string" use="optional">
            <xs:annotation>

```

```

        <xs:documentation>Note text (localizable).</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="threshold" type="xs:positiveInteger" use="optional">
      <xs:annotation>
        <xs:documentation>Number of rows in the table.</xs:documentation>
      </xs:annotation>
    </xs:attribute>
  </xs:complexType>
</xs:element>
<xs:element name="Exclude">
  <xs:annotation>
    <xs:documentation>
      Specifies the exclusive counter name pattern string.
      The object counter table will not include these counters in the rows.
      For example, <lt;Exclude counter="i/avg"/> will exclude those
      counter names with the pattern:
      starting with string <quot;avg<quot; (case-insensitive comparison).
    </xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:attribute name="counter" type="xs:string" use="optional">
      <xs:annotation>
        <xs:documentation>The counter name pattern string.
          Pattern Modifiers:
          i - Case-insensitive.
          Pattern Matches:
          / - Starting and ending sequence.
          ? - Any one character.
          * - Zero or more characters.
          \ - Escape character.
        </xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="column" type="xs:string" use="optional">
      <xs:annotation>
        <xs:documentation>The name of the column to exclude. Options are:
          machine, min, max, or mean.</xs:documentation>
      </xs:annotation>
    </xs:attribute>
  </xs:complexType>
</xs:element>
<xs:element name="Include">
  <xs:annotation>
    <xs:documentation>
      Specifies the inclusive instance name pattern string.
      The object counter table will only include these counters in the rows.
      For example, <lt;Include instance="i/cmd"/> will only include
      those counters with the instance pattern string:
      starting with string <quot;cmd<quot; (case-insensitive comparison).
    </xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:attribute name="instance" type="xs:string" use="required">
      <xs:annotation>
        <xs:documentation>The instance name pattern string.
          Pattern Modifiers:
          i - Case-insensitive.
          Pattern Matches:
          / - Starting and ending sequence.
          ? - Any one character.
          * - Zero or more characters.
          \ - Escape character.
        </xs:documentation>
      </xs:annotation>
    </xs:attribute>
  </xs:complexType>
</xs:element>

```

```

    </xs:attribute>
  </xs:complexType>
</xs:element>
<xs:element name="EventTable">
  <xs:annotation>
    <xs:documentation>The basic building block in a report for an event data
      source.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="man:Column" minOccurs="1" maxOccurs="unbounded" />
      <xs:element ref="man:EqualJoin" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="man:SubTable" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
    <xs:attribute name="name" type="xs:string" use="required">
      <xs:annotation>
        <xs:documentation>Table title (localizable).</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="topic" type="xs:string" use="optional">
      <xs:annotation>
        <xs:documentation>Topic title (localizable). A conceptual subsection under
          section to group tables</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="level" use="optional" >
      <xs:annotation>
        <xs:documentation>Range 1 to 5. Used to control if this table should be
          generated or not.
          If the level of the table is less than or equal to the tracerpt system
level,
          this table will be generated.
          By setting system level in tracerpt by a command-line switch, only those
          tables with proper level will be generated.
          The table level and tracerpt system level are 1 by
default.</xs:documentation>
      </xs:annotation>
      <xs:simpleType>
        <xs:restriction base="xs:integer">
          <xs:minInclusive value="1"/>
          <xs:maxInclusive value="5"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="key" type="xs:string" use="optional">
      <xs:annotation>
        <xs:documentation>Used to sort the tables.</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="note" type="xs:string" use="optional">
      <xs:annotation>
        <xs:documentation>Note text (localizable).</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="threshold" type="xs:positiveInteger" use="optional">
      <xs:annotation>
        <xs:documentation>The number of rows shown in the table when the report XML
          file is rendered in Internet Explorer.
          However, the real number of rows could be greater than the threshold value.
        </xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="rowcount" type="xs:positiveInteger" use="optional">
      <xs:annotation>
        <xs:documentation>

```

The number of rows in the report file and it can be used to control the report file size.

```

    </xs:documentation>
  </xs:annotation>
</xs:attribute>
<xs:attribute name="transaction" type="xs:boolean" use="optional">
  <xs:annotation>
    <xs:documentation>
      Boolean attribute to indicate if this table is about transaction statistics.
      A transaction is defined as an activity in the same provider between an
event
      with opcode START/DC START/DEQUEUE, called start event, and an event with
      opcode STOP/DC STOP/CHECKPOINT, called end event, with the same thread ID.
      There are a few restrictions on a transactional table:
      There is no <EqualJoin> allowed for a transactional table.
      Fields "sys:CPUPercent" and "sys:ResponseTime" are only
      allowed in a transactional table.
      Maximum number of event field sources is still two
      (see <EventField> for definition of event field source).
    </xs:documentation>
  </xs:annotation>
</xs:attribute>
</xs:complexType>
</xs:element>
<xs:complexType name="BaseEventField">
  <xs:attribute name="field" type="xs:string" use="required">
    <xs:annotation>
      <xs:documentation>
        The name of the field. The name of the property in the event payload.
        Note that not only event payload property can be counted and reported, but
        also the event header fields.
        To differentiate the normal event properties from the event header fields,
        a prefix "sys:" is used for those event header fields.
        In addition, there are several useful values to show in the table.
        They are not in the event payload or in the event header.
        They are calculated from the event header fields.
        The fields include CPU Utilization, Response Time, and Request Rate.
        A transaction is defined as an activity between an event with opcode start,
        called start event, and an event with opcode end, called end event with the
        same thread ID.
        Response time is that the time difference between the time stamp of a start
        event and the time stamp of an end event.
        CPU utilization is that the CPU time consumed by the same thread in a
        transaction divided by the response time.
        Request rate is that the number of events divided by the event trace
duration.
        Note that users can specify task (optional attribute) for these three system
        fields such that its calculations is on per-task per-provider basis.
Otherwise,
        the three system fields are calculated on per-provider basis.
        System Fields:
        sys:Opcode - The opcode (type) of the event.
        sys:Task - The task of the event.
        sys:ProviderName - The name of the event provider.
        sys:TID -The Thread ID of the event.
        sys:PID - The Process ID of the event.
        sys:Timestamp - The time stamp of the event (in units of 100ns).
        sys:KCPU - The kernel-mode CPU time (in units of ms).
        sys:UCPU - The user-mode CPU time (in units of ms).
        sys:CPUPercent - The CPU utilization in units of percentage.
        sys:ResponseTime - The transaction response time (in unitd of ms).
        sys:RequestRate - The event rate (in units of request per second).
        sys:ActivityId - The event activity ID.
      </xs:documentation>
    </xs:annotation>
  
```

```

    </xs:attribute>
    <xs:attribute name="payloadGuid" type="man:GUIDType" use="required">
      <xs:annotation>
        <xs:documentation>A GUID in the event header. The provider GUID in XML event
          manifest and event GUID in the WBEM MOF schema.</xs:documentation>
      </xs:annotation>
    </xs:attribute>
    <xs:attribute name="payloadId" type="xs:string" use="required">
      <xs:annotation>
        <xs:documentation>Refers to payloadId in the XML event manifest and type in
the
          WBEM MOF schema.
          PayloadId plus version can identify an event payload within an event
provider.
      </xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="version" type="xs:string" use="optional">
    <xs:annotation>
      <xs:documentation>Event version.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
</xs:schema>

```

The following tables refer to elements that are specified above in the XSD as well as the semantic meaning of the attributes that are associated with those elements.

The Report element is the outermost element in the report schema and defines certain properties about the report. The Report element contains within it an optional StringTable section which contains the localization information; the Report element can also have either one Sections element or multiple Import elements as child elements.

```

<Report>
  <Import>...</Import>
  <Sections>...</Sections>
  <StringTable>...</StringTable>
</Report>

```

Attributes	Required/Optional	Description
name	Required	This is the name of the report that is being generated, and can be a localizable name.
version	Required	This is the version of the report that is being generated.
threshold	Optional	The number of rows to display in the table that is generated. If this value is not specified, then a default of 25 rows is used.

The Import element can be used to link to reports that may be defined in other XML files; this will not make duplicate definitions necessary.

Attributes	Required/Optional	Description
File	Required	The path to the XML file that includes the report definition to be included. This path can an absolute or relative path.

The Sections element is used to indicate the beginning of a sequent of Section elements, where each Section refers to a logical entity or category that would be of interest in the report. There can be one or more Section elements within a Sections element:

```
<Sections>
  <Sections>...</Sections>
</Sections>
```

There are no attributes for this element; it is only used to indicate that one or more Section elements will follow.

Each Section element describes a category, and within this category, there can be a grouping of either performance counters or events. For example, all performance counters and events related to TCP/IP can be under a "Networking" Section element. The performance counters and events that are organized into a Section are described using EventTable and CounterTable elements, respectively. There can be one or more EventTable and CounterTable elements within a Section. The following is the layout of the Section part of the XML:

```
<Section>
  <EventTable>...</EventTable>
  <CounterTable>...</CounterTable>
</Section>
```

Attributes	Required/Optional	Description
name	Required	The title of the Section; this string can be localized.
Key	Required	This is a non-negative number that is used to indicate in what position in the report the section should be displayed; the sections are displayed in ascending order.
Note	Optional	This is an optional description of the section; the string can be localized.

Each Section can have one or more EventTable elements. Each EventTable element is used to define a table that will include event information, possibly from different event providers. The EventTable will consist of one or more columns, which will be used to display information about the event. In addition, it may be necessary to join two types of events from different event providers, much like a SQL join: this is done using the EqualJoin element. Finally, the EventTable can also have a SubTable, one that contains extra information that is not shown by default; the user can expand it to see more information.

The following is the XML definition of the EventTable:

```

<EventTable>
  <Column>...</Column>
  <EqualJoin>...</EqualJoin>
  <SubTable>...</SubTable>
</EventTable>

```

There can be one or more columns in the EventTable, but there can only be one EqualJoin and one SubTable; the elements must be in the order specified above.

Attributes	Required /Optional	Description
Name	Required	The title of the section; this string can be localized.
Topic	Required	This is the category of the events that are described in the table.
Level	Optional	Level at which to generate this table; acceptable values are from 1 to 5. If not specified, then each table is assigned a default level of 1. Tools that use this report SHOULD allow the user to specify a level (this is similar to verbosity). Only tables that have a level less than or equal to what the user specifies will be generated. If the user does not specify a level, then the default of 1 is used.
Key	Optional	This key is a non-negative number used to indicate in what order the event tables will be generated within the Section; they are displayed in ascending order, followed by tables with no key.
Note	Optional	This is a description about the event table; it can be localized.
Threshold	Optional	This value indicates the number of rows to display in the table by default. Tools that display the report SHOULD allow the user to page through the table if there are more rows in the table and the threshold is set below the total number of rows.
Rowcount	Optional	This value indicates the total number of rows that should be in the table. This value is used to restrain the table size; if not specified, then all possible rows will be included.
Transaction	Optional	A Boolean value which indicates whether the events in the table correspond to a transaction. Events can only correspond to a transaction if there are events of type "start" and type "stop" to indicate the beginning and ending of a transaction, respectively. If this is TRUE, then there cannot be an EqualJoin element.

The EventTable consists of one or more columns. Each column is used to display a property of the event; this can either be a part of the event header or the event payload that indicates the context in which the event was raised. There can be at most one field of an event that is displayed in a single column. The order that the columns are defined in the report is important because columns can be used to group by certain data fields when aggregation is performed on other data fields; this bucketizes the result of aggregation operations. For example, it is possible to group by process ID in one column, and then have a second following column which aggregates the event that is raised when a disk write takes place, with the event payload containing the number of bytes being written; in this way, the process which has been writing the most number of bytes to the disk can be determined. In order for this to happen correctly, the process ID column must be defined before the

column that issues the disk write event. All the events that are defined in a table must be from one event provider; the EqualJoin element is used to combine events from two event providers in a single table.

Each column contains one field from an event. The XML definition is:

```
<Column>
  <EventField>...</EventField>
</Column>
```

Attributes	Required/Optional	Description
Name	Required	This is the name of the column; this can be localizable and MUST be unique within the column.
Align	Optional	This indicates how the values of the column should be aligned. The value of this attribute can either be "left" or "right". The default is "right".
Format	Optional	This is an XSLT format number which indicates how numeric values should be displayed.
Visible	Optional	This attribute indicates whether the tool displaying the report should show the column. The possible values are "true" or "false"; the default is "true".
Summary	Optional	If this attribute is specified, the result either a "total" or "average" operation will be added to the footer of the table. The "total" operation sums the values of the rows in the column, while "average" will calculate the average of all the row values. This is only valid for columns that have numeric values.
GroupBy	Optional	This indicates that the values of the event field that is displayed in the row should be grouped by unique values. This is often specified when an aggregation is being performed in another column. Thus, there will be as many rows as there are unique values in the column. The possible values are "true" or "false"; when not specified, the default is "false".
Sort	Optional	When multiple columns are specified, a column can serve as a primary sorter for the table or a secondary sorter. If it is designated as a primary sorter by setting the attribute to "primary", then when the table is created, the values in the column will be sorted in the manner specified in the "order" attribute. If it is designated as a secondary sorter by setting the attribute value to "secondary", then the primary column will be sorted first, and then this will be sorted in the manner specified in the "order" attribute, and within the constraints of the primary column; this is only valid when the column that is serving as the primary sorter has the groupby attribute specified.
Order	Optional	When a column is being sorted, the values can either be sorted from smallest to largest or from largest to smallest. To sort in the format of the former, the attribute must be set to "ascending", and in the format of the latter, it must be set to "descending".

Attributes	Required/Optional	Description
outType	Optional	The format of the data values of the column when they are displayed to the user. See below for possible outTypes.

When the data in a column is displayed to the user, the values in the column can be formatted to a particular type; this is specified using the "outType" attribute of the column definition. The following outTypes can be specified:

xs:string: XML string data type.
 xs:dateTime: XML date time data type.
 xs:byte: XML signed byte data type. (1 byte)
 xs:unsignedByte: XML unsigned byte data type. (1 byte)
 xs:short: XML signed short integer data type. (2 bytes)
 xs:unsignedShort: XML unsigned short integer data type. (2 bytes)
 xs:int: XML signed integer data type. (4 bytes)
 xs:unsignedInt: XML unsigned integer data type. (4 bytes)
 xs:long: XML signed long integer data type. (8 bytes)
 xs:unsignedLong: XML unsigned long integer data type. (8 bytes)
 xs:float: XML single-precision 32-bit floating point type.
 xs:double: XML double-precision 64-bit floating point type.
 xs:boolean: XML Boolean data type. (true, false, 1, 0)
 xs:GUID: A PLA-UID.
 xs:hexBinary: Contains a sequence of hexadecimal digits.
 win:HexInt8: A hexadecimal number preceded by "0x".
 win:HexInt16: A hexadecimal number preceded by "0x".
 win:HexInt32: A hexadecimal number preceded by "0x".
 win:HexInt64: A hexadecimal number preceded by "0x".
 win:PID: Same as xs:int, represents a process ID.
 win:TID: Same as xs:int, represents a thread ID.
 win:Port: Same as xs:int, represents an IP address port.
 win:IPv4: Dot separated IP address, valid for UInt32 or any string (in which case it is in the dotted string form).
 win:IPv6: IPv6 string format for 128-bit binary or any string (in which case it is in string form).
 win:SocketAddress: A 128-bit binary value that is displayed with the IP address followed by the port number; the port and IP address are separated by a dot.
 win:CIMDateTime: Valid for any string, represents CIM date/time.
 win:Xml: Valid for any string, represents any valid XML.
 win:ErrorCode: Valid for win:UInt32 and represents a standard Windows error code.

When a column is defined, the rows in the column must contain some value; the value to pull from the event is specified by the EventField element. The EventField element can refer to either a header field in an **ETW** event or a payload field. Moreover, an aggregation method can be performed on the data field, assuming that there is a column that has been defined before the column with the aggregate values that indicates how the aggregation should be grouped (specified using the "groupby" attribute of the column).

As mentioned above, the column row can either be a property from the header of an ETW event or a payload field. The ETW event header fields that can be used is specified in a table below; the field name must be prefixed with a "sys:".

The attributes of the EventField element are as follows:

Attributes	Required/ Optional	Description
field	Required	The name of the field of the event. This field can either be a header field (see the table below), or the name of the payload field
payloadGuid	Required	This is the PLA-UID that was logged with the event. This can either refer to the event PLA-UID or the PLA-UID or the ETW provider that logged the event. This PLA-UID is used in conjunction with the payloadId to use the right event in the column, as well as find the right field name since different event definitions might have the same payload field name.
payloadId	Required	This is the Id of the event whose field indicated by the attribute fieldName will be used to populate the column; this is used in conjunction with the value of the payloadGuid attribute.
version	Optional	This is the version of the event, and can be used in conjunction with the payloadGuid and payloadId attributes to find the event whose field specified by the attribute fieldName will be used to populate the column. If this is not specified, then it is set to a default value of 0.
aggregate	Optional	This attribute indicates whether any operations should be performed on the field pointed to by the fieldName attribute; this is used when there is another column that indicates how the results of the aggregation should be grouped. This attribute can take three values: total, average and rate.
note	Optional	A description for the field that is used to populate the rows of the column; this string can be localized

Generally, the fieldName attribute will point to a field in the payload of the event, which is uniquely defined by the values of the payloadGuid and payloadId attributes. However, a system field of that event can be used; only certain ETW event header fields can be used. They are as follows:

"Sys:Opcode": This is the opcode, or type, of the event.

"sys:ProviderName": This is the name of the ETW provider that logged the event.

"sys:TID": This is the ID of the thread from which the event was logged.

"sys:PID": This is the ID of the process from which the event was logged.

"sys:Timestamp": This is the time at which the event was logged, in units of 100 nanoseconds.

"sys:KCPU": This is the kernel CPU time of the thread, or the amount of time the process executed privileged instructions, at the time the event was logged, specified in units of milliseconds.

"sys:UCPU": This is the user CPU time of the thread, or the amount of time the process executed unprivileged instructions, at the time the event was logged, specified in units of milliseconds.

"sys:CPUPercent": This is not a standard ETW header field, but rather is valid only when the transaction attribute is set to TRUE for the EventTable. This is calculated by taking the sum of the KCPU and UCPU values of a thread and dividing that value by the difference between a "stop" event and "start" event type (denoting the ending and beginning of a transaction, respectively) on that same thread, and then normalizing to a percentage.

"sys:ResponseTime": This is not a standard ETW header field, but rather is valid only when the transaction attribute is set to TRUE for the EventTable. This is the time difference between a "stop" type event and a "start" type event (denoting the ending and beginning of a transaction, respectively) on the same thread.

"sys:RequestRate": This is not a standard ETW header field. This value is calculated by taking the total number of events and then dividing that value by the total duration of time when event collection was enabled.

"sys:AggregateCount": The total number of rows in a sub-table after an aggregation is performed

As specified in the attribute table above, there are three possible aggregation operations that can be performed: "total", "average" and "rate". These aggregation operations must be specified only when a previous column has a "groupby" attribute set to TRUE. Then, for each unique row in the column that has "groupby" set to TRUE, the aggregation operation will be performed for all events that fall under the bucket (indicated by one row in column with the groupby set to TRUE). If there are multiple columns with the "groupby" set to TRUE, then the grouping is processed from the first column definition moving to the next column definition and so on. The column that has "groupby" set to TRUE MUST NOT have an EventField element that has an "aggregate" attribute specified. The aggregation operations that can be performed are:

"Total": For each unique bucket that is defined by the columns where "groupby" is set to TRUE, the values of the field indicated by the "fieldName" attribute are summed together. This is only valid for numeric fields.

"Average": For each unique bucket that is defined by the columns where "groupby" is set to TRUE, the values of the field indicated by the "fieldName" attribute are averaged; the values will be summed and then divided by the number of events that fit that bucket. This is only valid for numeric fields.

"Rate": For each unique bucket that is defined by the columns where "groupby" is set to TRUE, the values of the field indicated by the "fieldName" attribute are summed, and that result is then divided by the total duration of event collection. This is only valid for numeric fields.

In certain cases, it is necessary to combine the data from two event providers based on a common field, similar to the SQL Join operation. In such a case, the EqualJoin element must be specified under the EventTable element. The join can only take place on a single common field between two ETW event providers; a single provider is referenced by a EventJoinField element:

```
<EqualJoin>
  <EventJoinField>...</EventJoinField>
  <EventJoinField>...</EventJoinField>
</EqualJoin>
```

The EventJoinField element indicates what fields should be combined between the two event providers. For example, all values from the field "Field1" from event provider A can be matched to the values of the field "Field2" from event provider B. This, in turn, allows the EventTable table to contain information from two event providers instead of just one. The following describe the attributes of the EventJoinField element:

Attributes	Required/Optional	Description
Field	Required	The name of the field on which the join operation will be performed.
payloadGuid	Required	The PLA-UID of the event provider which logs the event on which the join will be performed. This is used in conjunction with the value from the payloadId attribute to find the right event that defines the field indicated by the field attribute.
payloadId	Required	The Id of the event whose field indicated by the field attribute will be used in the join operation. This is used in addition to the payloadGuid attribute to find the event.
Version	Optional	The version of the event whose field indicated by the field

Attributes	Required/Optional	Description
		attribute will be used in the join operation. If this attribute is not specified, it is set to a default value of 0.

When displaying information to the user, oftentimes it is necessary to hide details, and only display this additional information to the user when required. This is often accomplished through the "expand" operation on a field. This report schema allows for defining sub-tables, with multiple columns, that can contain detailed information that SHOULD NOT be displayed to the user automatically; the table will display only when the user asks for more detailed information.

A SubTable can contain one or more columns; this is similar to the parent EventTable element, which can contain one or more columns. However, unlike the parent EventTable element, grouping and aggregation operations cannot be performed on the columns which belong to a subtable. The subtable, of which there can only be one under a given EventTable, is defined as follows:

```
<SubTable>
  <Column>...</Column>
</SubTable>
```

For each row that is defined in the parent EventTable, there will be an associated SubTable element. The user will "expand" the row to uncover the SubTable and it's columns. The data in the SubTable will only correspond to the single row in the parent table that is being expanded.

Under the Section element, there can be either an EventTable element, which addresses events, or a CounterTable element, which address performance counter data. There can be one or more CounterTable elements under a Section element. The CounterTable defines which performance counters to include in the report, and which performance counters to exclude in the report. The following define the elements under the CounterTable element:

```
<CounterTable>
  <Exclude>...</Exclude>
  <Include>...</Include>
</CounterTable>
```

The following are the attributes for the CounterTable:

Attributes	Required /Optional	Description
Name	Required	The title of the table; this string is localizable.
Topic	Required	The category or topic of the table; this string is localizable.
Object	Required	The name of the counter object which contains the counter.
Level	Optional	Level at which to generate this table; acceptable values are from 1 to 5. If not specified, then each table is assigned a default level of 1. Tools that use this report SHOULD allow the user to specify a level (this is similar to "verbosity"). Only tables that have a level less than or equal to what the

Attributes	Required /Optional	Description
		user specifies will be generated. If the user does not specify a level, then the default of 1 is used.
Key	Optional	This is a non-negative value used to indicate in what order the event tables will be generated within the Section; they are displayed in ascending order, followed by tables with no keys.
Note	Optional	An optional string which describes the table; this string is localizable.
Threshold	Optional	This value indicates the number of rows to display in the table by default. Tools that display the report SHOULD allow the user to page through the table if there are more rows in the table and the threshold is set below the total number of rows.

When the CounterTable is generated, not all counters need to be included. Hence, the elements Include and Exclude allow specifying which particular counters should be included or excluded from the table, respectively.

The Exclude element specifies which counters belonging to the counter object specified in the object attribute of the CounterTable should not be included when the table is generated, or which columns should be excluded if a column name is specified.

Attributes	Required/Optional	Description
Counter	Optional	<p>This is the name pattern string of the counter that should be excluded. If the attribute has the letter "i", then the counter name matching must be case-insensitive. Characters that indicate pattern matching are as follows:</p> <ul style="list-style-type: none"> ▪ "/" followed by a sequence of characters means that counter names with either begin or end with that sequence of characters must be excluded. ▪ "?" followed by a sequence of characters means that any counters names with any of those characters should be excluded. ▪ "*" represents zero or more characters. ▪ "\" represents an escape character, and is used to escape the above three characters. <p>For example, setting this to "i/avg*" will exclude all counters beginning with "avg" by using a case-insensitive comparison.</p>
Column	Optional	This attribute indicates if certain columns should not be generated in the column table. The possible values are: "counter", "instance", "machine", "mean", "min" and "max".

The Include element specifies which counters belonging to the counter object specified in the object attribute of the CounterTable should be included when the table is generated.

Attributes	Required /Optional	Description
instance	Required	<p>This is the name pattern string of the counter that should be included. If the attribute has the letter "i", then the counter name matching must be case-insensitive. Characters that indicate pattern matching are as follows:</p> <p>"/" followed by a sequence of characters means that counter names with either begin or end with that sequence of characters must be included.</p> <p>"?" followed by a sequence of characters means that any counters names with any of those characters should be included.</p> <p>"*" represents zero or more characters.</p> <p>"\" represents an escape character, and is used to escape the above three characters.</p> <p>For example, setting this to "i/avg*" will include counters beginning with "avg" by using a case-insensitive comparison.</p>

When the CounterTable is generated, the table will have predefined columns that have not been explicitly excluded using the Exclude element. This will include the counter name, machine name, instance name, mean value ("mean"), maximum value ("max") and minimum value ("min"). The instance column will only display if the counter object that is specified in the object attribute of the CounterTable element actually has multiple instances. If there is only a single instance of that counter object, then the column SHOULD NOT be displayed.

All localizable strings in the manifest must be placed in a StringTable section of the report. All localizable strings, such as table names, will be identified with a string ID; the StringTable is what will match the StringId to the correct localized string. The StringTable element can contain one or more String elements, with each String element corresponding to a localized string:

```
<StringTable>
  <String>...</String>
</StringTable>
```

The <String> element describes a single localized string; the localized string is matched by using the StringId attribute:

Attributes	Required/Optional	Description
ID	Required	The ID of the localized string. This ID is specified for all fields that can contain a localized string, such as the table names. That ID is then matched with this ID in the string table, where the element value is the localized string to display.

2.2.3.4 Rules Schema Formatting

This section describes the XML format of the IDataManager Rules property. PLA provides an XML language of rules for defining well-known patterns in data as well as a means for adding content to the final report, which alerts the user to the presence of these patterns. After the Data Manager runs during the Report phase, control is passed to the PLA Rules Manager. The PLA Rules Manager loads the document specified by the RuleTargetFileName property of the Data Manager, or, if absent, the file_report.xml applies a set of rules that inspect the data collected for patterns. When these patterns are found, certain actions can be taken, including raising an ETW event or injecting

XML into the report that display as warnings when the XML is rendered as HTML. The set of rules applied by the PLA Rules Manager is specified by an XML document. This XML document is stored as a property of the Data Manager.

The Rules node denotes the beginning of the XML document that is passed to the PLA Rules Manager. The Logging element is used to enable PLA Rules Manager debug logging. By default, the logging level is 0, which provides no debug logging. The logging level is controlled by the level attribute of the Logging element. The file attribute of the Logging element sets the name of the file where the debug information is written. By default, the file name is rules.log.

By default, the output of the PLA Rules Manager is an HTML file called report.html. This name can be controlled by the ReportFileName property of the Data Manager. After the PLA Rules Manager executes, PLA applies an XSLT transformation on the XML output to convert it to HTML. The content of this rule target file is HTML regardless of the extension of the file specified by ReportFileName. Also, the .html extension will not be added to the file, if absent.

Below, the root Rules node of the rules XML is a series of rule Group elements paired with StringTable elements. The StringTable element is defined in a similar manner as the StringTable element from the Report Schema, as specified in section [2.2.3.3](#). The following XML snippet focuses on the syntax of the Group element.

```
<Group name="$ (GroupDisk) " enabled="true|false">
  <Rule>...</Rule>
</Group>
```

The following table describes the Group attributes.

Name	Required or Optional	Description
name	Required	Group name as seen in the debug logging. It is localized based on the matching StringTable entry if the \$(*) syntax is used. If no matching entry is found, the Group is skipped by the PLA Rules Manager.
enabled	Optional	true false Denotes if the PLA Rules Manager should execute the rules in this group. By default, the Group is enabled.

Each Group may define one or more Rule child elements. The following XML snippet illustrates the generic syntax of the Rule element.

```
<Rule name="$ (RuleCheckQueueLength) " enabled="true|false">
  <Step>...</Step>
</Rule>
```

The following table describes the Rule attributes.

Name	Required or Optional	Description
name	Required	Rule name as seen in the debug logging. It is localized based on the matching

Name	Required or Optional	Description
		StringTable entry if the \$(*) syntax is used. If no matching entry is found, the Rule is skipped by the PLA Rules Manager.
enabled	Optional	true false Denotes if the PLA Rules Manager should execute the rule. By default, the Rule is enabled.

Each Rule defines one or more Step child elements. The following XML snippet illustrates the generic syntax of the Step element.

```
<Step select="XPath expression" fatal="true|false" sortType="all|min|max|first"
sortDataType="string|number" sortNode="XPath expression" enabled="true|false">
  <Variable>...</Variable>
  <Exists>
    <When></When>
    <Otherwise></Otherwise>
  </Exists>
  <Otherwise>...</Otherwise>
</Step>
```

The following table describes the Step attributes.

Name	Required or Optional	Description
select	Required	The XPath expression used to create a context for evaluating When/Otherwise expressions and setting variables.
fatal	Optional	true false If set to true, and the Step fails, the entire rule execution stops, and the Rules Manager moves on to the next Rule or, if no more Rules exist in the current Group, to the next Group.
sortType	Optional	all min max first If set to all, all nodes matching the select XPath expression are used to set the context for XPath expressions used in sub elements. If set to max, the sortNode attribute is used to sort the nodes returned by the XPath expression, and the one with the maximum value according to the sortDataType attribute is used to set the context for XPath expressions used in sub elements. If set to min, the sortNode attribute is used to sort the nodes returned by the XPath expression, and the one with the minimum value according to the sortDataType attribute is used to set the context for XPath expressions used in sub elements. If set to first, or if the attribute is not present, the first node in the XPath expression result set is used to set the context for XPath expressions used in sub elements.
sortDataType sortNode	Optional	string number If the sortType is min or max, this is used to determine how the sortNode is interpreted for sorting purposes.

Name	Required or Optional	Description
sortNode	Optional	If the sortType is min or max, this XPath expression is evaluated on each XML node returned by the Select XPath expression. The result of this expression is used to sort the result set based on the sortDataType.
enabled	Optional	true false Denotes if the PLA Rules Manager should execute the step. By default, the Step is enabled.

The purpose of a Step is to set a context for evaluating expressions that look for patterns in the collected data. The context is specified by the select attribute that is an XPath expression. If the context the Step is selecting exists, the flow of control enters the Exists block. If the context does not exist, the flow of control enters the Otherwise block. Both the Exists and Otherwise elements are optional children of the Step element.

The context created by the Step element can either be a single XML node or a set of nodes. This depends on the use of the sortType attribute and the related sortDataType/sortNode attributes. The semantics of these attributes are described in the table above.

After selecting the context for the Step, and prior to executing the Exists or Otherwise block, one can use the Variable action to set a variable. See the definition of the Variable element.

If no XML block is evaluated after the Step context is created, the step is said to have failed. This includes failing to find an Otherwise block when all the When conditions evaluate to false. If a step declared as fatal fails, the execution of the whole rule is aborted at this point.

The primary child elements of the Step element consists of the Exists/Otherwise block. The following XML snippet illustrates the generic syntax of this set of elements.

```
<Exists>
  <When expression="XPath expression" >
    <!-- Action -->
  </When>
  <Otherwise>
    <!-- Action -->
  </Otherwise>
</Exists>
<Otherwise>
  <!-- Action -->
</Otherwise>
```

The following table describes the attributes of the When element.

Name	Required or Optional	Description
expression	Required	XPath expression that is evaluated to determine if the content of this XML element will be evaluated. The XPath expression is expected to return a Boolean value.

The When/Otherwise block within the Exists element acts like a giant case statement. Each When element defines a condition under which its child elements is evaluated. The child elements are

considered to be Actions. The actions useful to most content developers are: Set Variable, Insert Node, Insert Attribute, Delete, and Insert Warning. Each is described in turn in the following sections.

2.2.4 Set Variable Action

The most common and useful action is to set a PLA Variable. This is because the value of this variable can be referenced in XPath expressions specified in When elements. It can be referenced in any XPath expression used after it is defined. It can also be used to populate XML that is inserted into the final report or to set other PLA Variables. The following XML snippet demonstrates two ways to set a variable.

```
<Variable name="variable name" expression="XPath expression" />
<Variable name="variable name">text or string table reference</Variable>
```

The following table describes the attributes of the Variable element.

Name	Required or Optional	Description
name	Required	The identifier by which this PLA variable will be referenced in the future. To reference this PLA variable one must surround the name with curly braces (i.e. {variable name}). Variable names should have no spaces and use lowercase letters and numbers.
expression	Optional	XPath expression that is evaluated when setting the PLA variable. If this attribute is not present, the contents of the XML element are used to set the variable.

As mentioned previously, there are two ways to set a variable. One technique is to use the expression attribute, which represents an XPath expression. The XPath expression can select a node or evaluate a Boolean XPath expression, and can even reference other PLA variables using the { } syntax. The variable is set to the result of the XPath Expression. A second technique to set a variable is to omit the expression attribute and fill the contents of the Variable element with the value. This is typically done when setting the variable to a text string or a StringTable reference. To refer to an entry in the StringTable, surround the String ID with \$(). Examples of these usage patterns can be found in [PLA Examples \(section 4\)](#).

2.2.5 Insert Node Action

Another action is to insert an XML node into the final report. This can be used to inject into the final report a formatted message about a pattern discovered in the data or data collected, which is stored in an XML file. Referencing a file as the source of the XML to inject is the way one inserts data collected by a ConfigurationDataCollector into the final report. The following XML snippet provides generic examples of the two ways to use the Insert Node syntax.

```
<Insert select="XPath expression">
  <Node document="file name" axis="child|following-sibling|preceding-sibling"
  select="XPath Expression" />
</Insert>
<Insert select="XPath expression">
  <Node axis="child|following-sibling|preceding-sibling">
    <XmlNode>...</XmlNode>
  </Node>
```

</Insert>

The select attribute of the Insert element defines an insertion point for the node using an XPath expression. This XPath is evaluated using the current context (that is, the node(s) returned by the Step element) and is assumed to be relative to this context. This can be circumvented by using an absolute XPath, that is, one that begins with "\". If it is not specified, then the current context is used. The following table describes the attributes of the Node element:

Name	Required or Optional	Description
axis	Required	child following-sibling preceding-sibling Defines the relationship between the XML node specified by the select attribute of the surrounding Insert element and the XML node to be inserted.
document	Optional	The file name of the document to use as the source for selecting the XML node to insert.
select	Optional	The XPath expression that is evaluated to determine if the contents of this XML element will be evaluated. The XPath expression is expected to return a Boolean value.

When the document and select attributes of the Node element are omitted, the contents of the Node element are used as the source of the XML injected into the final report.

2.2.6 Insert Attribute Action

An action that is similar to inserting an XML node into the final report is inserting an attribute on a node in the final report. The following XML snippet provides a generic example of how to use the Insert element along with the Attribute element.

```
<Insert select="XPath expression">  
  <Attribute name="attribute name" value="attribute value" />  
</Insert>
```

The select attribute of the Insert element defines an insertion point for the node using an XPath expression. This XPath is evaluated using the current context (that is, the nodes returned by the Step element) and is assumed to be relative to this context. This can be circumvented by using an absolute XPath, that is, one that begins with "\". If it is not specified then the current context is used.

The following table describes the attributes of the Attribute element.

Name	Required or Optional	Description
name	Required	The name of the attribute to insert on the Node selected by the XPath expression contained in the Insert element's select attribute. It should follow the XML attribute naming conventions.

Name	Required or Optional	Description
value	Required	The value of the attribute to insert. This can reference a PLA variable using the {} syntax.

Multiple attributes can be inserted at once by using multiple Attribute elements within one Insert element.

2.2.7 Delete Action

As a parallel to inserting XML into the final report, the Delete action can be used to remove XML from the final report. This can be useful as a way to remove irrelevant or sensitive information from the report. The following XML snippet provides a generic example of the Delete element.

```
<Delete select="XPath expression" />
```

The following table describes the <Delete> element's attribute:

Name	Required or Optional	Description
select	Required	The XPath expression used to select the nodes or attributes that will be deleted from the final report.

2.2.8 Insert Warning Action

The Warning element is the last action. This is similar to the Insert element, except it is used to generate XML nodes in the final report, which highlight patterns found in the data. Not only does the Warning element specify the edit point and the XML to insert into the final report, but it also allows the user to call out a Data or Table node in the report that the Warning should reference. The following XML snippet provides a generic example of the Warning element.

```
<Warning select="XPath Expression" table="XPath Expression" tag="label">
  <Item>
    <Data name="symptom" img="warning" message="label"
      link="label">text and/or variable</Data>
    <Data name="cause"
      message="label">text and/or variable</Data>
    <Data name="details"
      message="label">text and/or variable</Data>
    <Data name="resolution"
      message="label">text and/or variable</Data>
  </Item>
</Warning>
```

The following table describes the Warning element's attributes:

Name	Required or Optional	Description
select	Required	The XPath expression used to select the Data or Table node in the report that

Name	Required or Optional	Description
		contains more information about the Warning.
table	Required	The XPath expression used to select the Table node where this warning message will be inserted. It is expected that this Table exists prior to executing this Action.
tag	Required	The id/label used to connect the Warning with a Data or Table node in the report.

The value of the tag attribute of the Warning element is important to call out. This value is repeated in the XML within the Warning element as the value of the link attribute of the "symptom" Data element. This creates an HTML anchor link in the final report from the text of the "symptom" Data element and the node selected by the XPath expression found in the select attribute of the Warning element. The tag attribute is also referenced by the message attribute found on all Data elements within the Warning element. This is used to create a tooltip-like message when one hovers over the element in the HTML report, which corresponds to the node selected by the XPath expression found in the select attribute of the Warning element.

2.2.9 ExtendedModes

ExtendedModes is a subset of the LogFileMode constants, for more information see [\[MSDN-EVENT_TRACE_PROPERTIES\]](#). The following values are valid for ExtendedModes.

Constant/value	Description
EVENT_TRACE_PRIVATE_IN_PROC 0x00020000	Use in conjunction with EVENT_TRACE_PRIVATE_LOGGER_MODE to start a private session. This mode eliminates the context switch to kernel mode and enforces that only the process that registered the provider PLA-UID can start the logger session with that PLA-UID. If you do not use this mode, a separate process can start a session in another process. For example, if Process A registered PLA-UID 1, Process B could pass PLA-UID 1 to StartTrace and start the logger session in Process A. You can create up to three in-process private sessions per process.
EVENT_TRACE_USE_GLOBAL_SEQUENCE 0x00004000	Uses sequence numbers that are unique across event tracing sessions.
EVENT_TRACE_USE_LOCAL_SEQUENCE 0x00008000	Uses sequence numbers that are unique only for an individual event tracing session
EVENT_TRACE_USE_PAGED_MEMORY 0x01000000	Uses paged memory. This setting is recommended so that events do not use up the nonpaged memory. Nonpaged buffers use expensive nonpaged memory for buffer space. Because nonpaged buffers are never paged out, a logging session performs well. Using pageable buffers is less costly. Tracing sessions that are to receive events from kernel mode components at an interrupt request level (IRQL) higher than passive level cannot use paged pool buffers.

EVENT_TRACE_USE_GLOBAL_SEQUENCE and EVENT_TRACE_USE_LOCAL_SEQUENCE are mutually exclusive.

2.2.10 Performance Counter Path

The syntax of a counter path is:

```
\\Computer\PerfObject(ParentInstance/ObjectInstance#InstanceIndex)\Counter
```

The Computer element specifies the name or IP address of the computer from which you want to query performance data. The computer name is optional if the counter is located on the local computer.

The PerfObject element specifies the performance object to query. A performance object can be a physical component, such as processors, disks, and memory, or a system object, such as processes and threads. Each system object is related to a functional element within the computer and has a set of standard counters assigned to it. Each computer may have a different set of performance objects and counters installed on it because applications can install their own performance objects and counters.

The ParentInstance, ObjectInstance, and InstanceIndex are included in the path if multiple instances of the object can exist. For example, processes and threads are multiple instance objects because more than one process or thread can run at the same time. If an object can have more than one instance, the counter path must specify an object instance.

The format of the instance related elements depends on the object type. If the object has simple instances, then the format is only the instance name enclosed in parentheses. For example:

(Explorer) If the instance of this object also requires a parent instance name, the parent instance name must come before the object instance and be separated by a forward slash character. For example, threads belong to processes. If you query a thread object, you must also specify the process to which it belongs as shown in the following example:

(Explorer/0) If the object has multiple instances that have the same name string, they can be indexed sequentially by specifying the instance index prefixed by a pound sign. Instance indexes are 0-based. If you want to query the first instance, do not include #0—just specify the instance name. To specify the second instance, use #1; to specify the third instance, use #2; and so on. For example:

(Explorer/0#1) The Counter element specifies the performance counter that you want to query for the given the performance object."

The Counter is specified by appending either a '>' or '<' sign along with a value

3 Protocol Details

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

3.1 Client Role Details

3.1.1 Abstract Data Model

The Performance Logs and Alerts Protocol is presented to the client as a set of interfaces that define an object model. The client starts by instantiating one of the Performance Logs and Alerts Protocol classes and, by using the interfaces, performs the desired actions. To instantiate the Performance Logs and Alerts Protocol classes, the client MUST use [\[MS-DCOM\]](#), supplying one of the class UUIDs described in section [1.9](#).

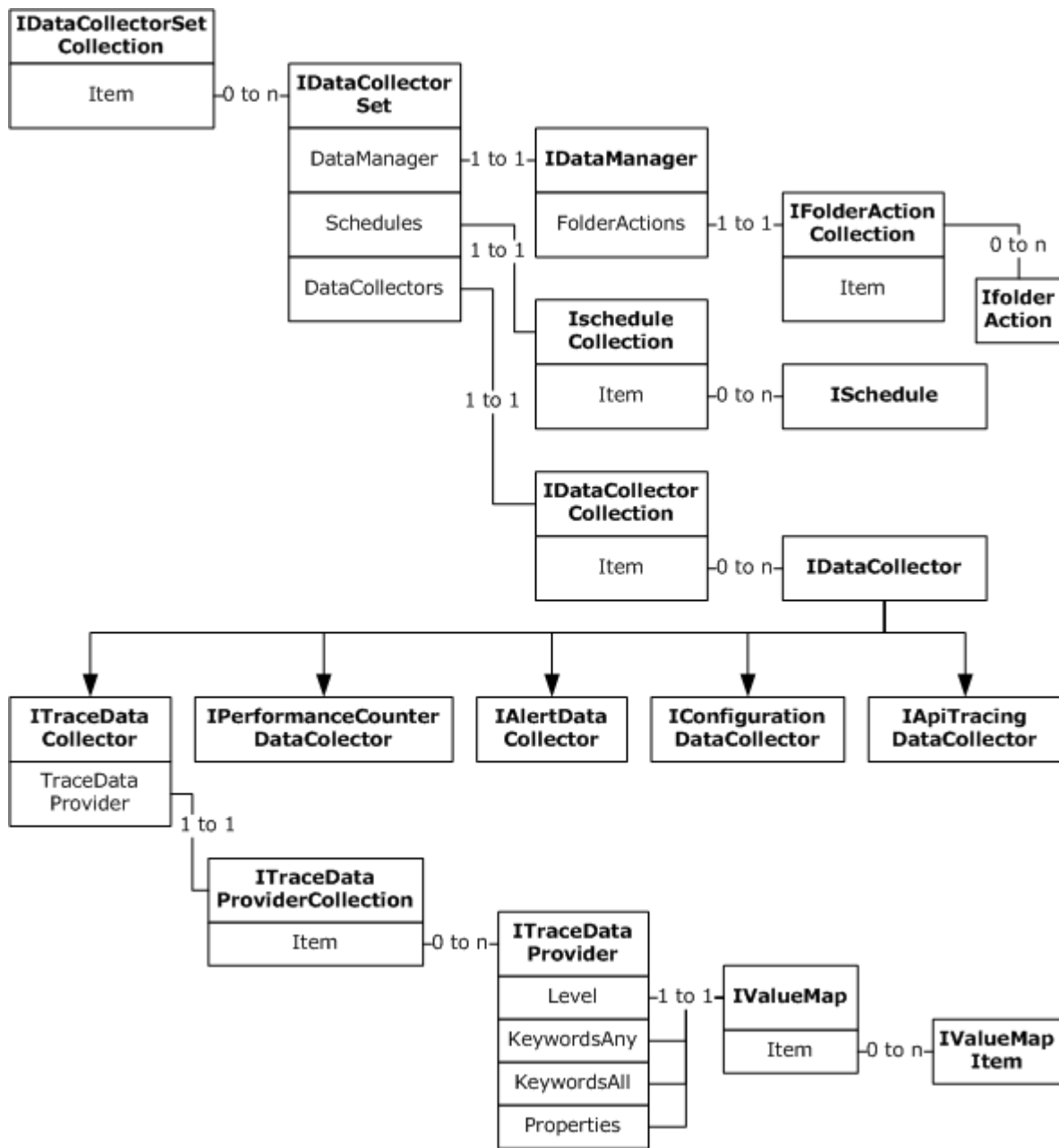


Figure 1: PLA Protocol object model

Figure 1 illustrates the relationship between the different interfaces. Each box represents a different interface and lists the properties that return other interfaces, with lines connecting the property name and the respective interface; arrows indicate inheritance (for example, **ITraceDataCollector** inherits from **IDataCollector**).

The class to be initially instantiated by the client on the remote machine depends on the task the client intends to perform. The following table contains a list of classes that can be instantiated by the client, the primary interface exposed by them and when to use them.

Class name	Primary interface	Use when
TraceSession	IDataCollectorSet	Client needs to query, update, or control a live event trace session from the server.
TraceSessionCollection	IDataCollectorSetCollection	Client needs to enumerate the live event trace sessions from the server.
BootTraceSession	IDataCollectorSet	Client needs to query or update a boot event trace session from the server.
BootTraceSessionCollection	IDataCollectorSetCollection	Client needs to enumerate the boot event trace sessions from the server.
ServerDataCollectorSet	IDataCollectorSet	Client needs to query, update, or control a "server" data collector set from the server.
ServerDataCollectorSetCollection	IDataCollectorSetCollection	Client needs to enumerate the "server" data collector sets from the server.
SystemDataCollectorSet	IDataCollectorSet	Client needs to query or control a "system" data collector set from the server.
SystemDataCollectorSetCollection	IDataCollectorSetCollection	Client needs to enumerate the "system" data collector sets from the server.
TraceDataProvider	ITraceDataProvider	Clients needs to query settings or update security descriptor of an event trace data provider from the server.
TraceDataProviderCollection	ITraceDataProviderCollection	Clients needs to enumerate the event trace data providers from the server.

The following table contains the PLA-UIDs for all of the classes that are part of the Performance Logs and Alerts Protocol object model.

Parameter	Value
TraceSession	0383751c-098b-11d8-9414-505054503030
TraceSessionCollection	03837530-098b-11d8-9414-505054503030
TraceDataProvider	03837513-098b-11d8-9414-505054503030
TraceDataProviderCollection	03837511-098b-11d8-9414-505054503030
ServerDataCollectorSet	03837531-098b-11d8-9414-505054503030
ServerDataCollectorSetCollection	03837532-098b-11d8-9414-505054503030
SystemDataCollectorSet	03837546-098b-11d8-9414-505054503030

Parameter	Value
SystemDataCollectorSetCollection	03837547-098b-11d8-9414-505054503030
BootTraceSession	03837538-098b-11d8-9414-505054503030
BootTraceSessionCollection	03837539-098b-11d8-9414-505054503030

3.1.2 Timers

No timer is required.

3.1.3 Initialization

No initialization is required.

3.1.4 Message Processing Events and Sequencing Rules

This protocol MUST indicate to the RPC runtime that it is to perform a strict NDR data consistency check at target level 6.0, as specified in [\[MS-RPCE\]](#) section 3.

This protocol MUST indicate to the RPC runtime that it is to reject a NULL unique or full pointer with a nonzero conformant value, as specified in [\[MS-RPCE\]](#) section 3.

A list of full interfaces is specified in section [3.2.4](#).

3.1.4.1 Processing Server Replies to Method Calls

Upon receiving a reply from the server in response to a method call, the client MUST validate the return code. Return codes from all method calls are HRESULTs. If the HRESULT indicates success, the client SHOULD assume that any output parameters are present and valid.

3.1.5 Timer Events

No particular timer event requires special processing on the client.

3.1.6 Other Local Events

No other special events require special processing on the client.

3.2 Server Role Details

3.2.1 Abstract Data Model

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

A data collector set is the basic unit that describes all aspects of data collection, management and reporting. It includes the list of data collectors, scheduling data, data management policies, and reporting configuration. Section [3.2.4](#) specifies all the interfaces.

The Performance Logs and Alerts Protocol defines four different types of data collector sets. Although they all share the same interfaces, they exist in different namespaces (that is, data collector sets of different types can have the same name and not collide with each other), have differences in behavior, and are exposed to clients by different classes:

1. **Server Data Collector Set:** Data collector sets of this class are persistent and implement all functionality exposed by the PLA object model.
2. **System Data Collector Set:** Data collector sets of this class are persistent, and implement most of the functionality exposed by the PLA object model, but are read-only. They cannot be created and their contents cannot be modified by the PLA object model, although they can be started, stopped, and queried.
3. **Event Trace Session:** Data collector sets of this class implement only event trace data collection and are not persistent; they disappear when the server is restarted or stopped. They do not support **segmentation** and data management.
4. **Boot Event Trace Session:** Data collector sets of this class implement only event trace data collection, are persistent, and cannot be started manually. Once created, they are automatically started the next time the server reboots. They do not support segmentation and data management.

In addition to the four different types of data collector sets, the Performance Logs and Alerts Protocol defines four different types of data collector set collections: one for each type of data collector set, one class for event trace data providers, and one class for event trace data provider collection.

3.2.2 Timers

No timers are required.

3.2.3 Initialization

At startup, the server registers PLA DCOM classes.

3.2.4 Message Processing Events and Sequencing Rules

For all methods listed below, the server SHOULD obtain the identity and authorization information about the client from the underlying DCOM or RPC runtime before processing the method.

This protocol MUST indicate to the RPC runtime that it is to perform a strict NDR data consistency check at target level 6.0, as specified in [\[MS-RPCE\]](#) section 3.

This protocol MUST indicate to the RPC runtime that it is to reject a NULL unique or full pointer with nonzero conformant value, as specified in [\[MS-RPCE\]](#) section 3.

The following sections describe the PLA interfaces, methods, and properties. Note that each property can be set or retrieved by put and get functions, respectively. For instance, the ExcludeApis property of IApiTracingDataCollector interface can be set and retrieved by ExcludeApis(Get) and ExcludeApis(Put), respectively. All PLA interfaces inherit from IDispatch.

3.2.4.1 IDataCollectorSet

The IDataCollectorSet interface is used to query, update, and control a data collector set.

Objects that implement this interface represent a data collector set. The following are the properties that **MUST** be implemented by objects that implement the `IDataCollectorSet` interface.

Property	Read/write	Description
DataCollectors	R	List of data collectors in this set.
DataManager	R	Object that defines the policies for data retention and report generation. An example of data retention policies include when and if to compress data to a cabinet file or delete it. Example report generation policies include the steps to take to generate the report. The <code>IDataManager</code> interface, which the <code>DataManager</code> object implements, is specified in section 3.2.4.2 .
Description	RW	The localizable description of the data collector set.
DescriptionUnresolved	R	The description of the data collector set in its raw form (prior to localization).
DisplayName	RW	The localizable display name of the data collector set.
DisplayNameUnresolved	R	The display name of the data collector set in its raw form (prior to localization).
Duration	RW	Determines how long the data collector set SHOULD run. A value of 0 indicates that it SHOULD not be stopped automatically.
Keywords	RW	List of keywords associated with the data collector sets. Keywords are metadata for describing a data collector set; they are not parsed by the data collector set. They are intended to help the end user understand the contents of the data collector set, and serve no functional purpose as to how the data collector set is executed on the server. There can be at most 256 keywords that are associated with a data collector set. The keyword string cannot be the empty string, nor can the keyword string contain the semicolon (";") character. Otherwise, the keyword can contain any printable character.
LatestOutputLocation	RW	The full path of the directory where data was stored the last time the data collector set ran.
Name	R	Name of the data collector set.
OutputLocation	R	The full path of the directory where data would be stored if the data collector set were to start now.
RootPath	RW	The full path of the directory under which the data collector set stores its files. When subdirectories are used, they are created under this root directory.
Schedules	R	List of schedules that determines when the data collector set runs automatically. Each schedule specifies a time when the data collector should be started, the first day it should be started at that time, the last day it should be started at that time, and the days of the week it should be started. Each schedule is specified by an object implementing the

Property	Read/write	Description
		ISchedule interface, specified in section 3.2.4.12 .
SchedulesEnabled	RW	Determines if the automatic start of the data collector set based on its schedules SHOULD be enabled or disabled. If enabled, the data collector set is automatically started when the conditions for one of the schedules (stored in the Schedules property) is met. If the data collector set is already running when a schedule condition is met, it is not restarted, and instead continues to run. If disabled, the data collector set can only be started manually. A data collector set is manually started by a call to Start, as specified in section 3.2.4.1.56 .
Security	RW	The security descriptor of the data collector set that determines the access rights of groups or users. The security descriptor is expressed using the Security Descriptor Description Language (SDDL), as specified in [MS-DTYP] section 2.5.1. Changing the security descriptor can impact the ability of both local and remote users to read, modify, run, and delete the data collector set.
Segment	RW	Determines whether new log files SHOULD be created or the data collector set SHOULD be stopped when one of the segmentation conditions are met.
SegmentMaxDuration	RW	Determines for how long a data collector set SHOULD run, in seconds, before a new segment SHOULD be created. A value of 0 indicates that there is no segment time limit. The default value is zero. Any unsigned long is a valid value for this property.
SegmentMaxSize	RW	Determines the maximum size, in megabytes, of a log file. When the size is reached, a new log file SHOULD be created. A value of 0 indicates that there is no segment size limit. The segment size is unlimited. The default value is zero. Any unsigned long is a valid value for this property.
SerialNumber	RW	<p>The serial number of the data collector set. Each time the data collector set runs it is assigned a serial number. The serial number for each data collector set starts at 0 and is incremented each time the data collector set runs. Each run of the data collector set has a serial number that is unique across all runs of the data collector set. Accordingly, each run of the data collector set has its own serial number and no two runs of the same data collector set have the same serial number. However, it is possible that two different runs of two different data collector sets will have the same serial number (the serial number is unique among all runs of one data collector set; it is not unique among all runs of all data collector sets). The serial number can optionally be used by an AutoPathFormat, which will cause the serial number to be appended to the name of the directory or files pertaining to each run of the data collector set. Using the serial number as an AutoPathFormat prevents possible collisions in directory or file naming.</p> <p>This property serves as a serial number across all runs of a particular data collector set on a particular machine, not</p>

Property	Read/write	Description
		across all data collector sets or all machines. Any unsigned long is a valid value for this property.
Server	R	Name of the server this data collector set belongs to.
Status	R	Status of the data collector set.
StopOnCompletion	RW	Determines whether a data collector set SHOULD stop when all data collectors complete. A data collector completes when the first segment is collected. The definition of completion depends on the data collector type, and is not generally defined as the point at which the data collector has collected all possible data. For an IConfigurationDataCollector , completion occurs when all data has been collected. For an IAlertDataCollector or IApiTracingDataCollector , completion occurs immediately (that is, no data will be collected if this property is set to true). For an IPerformanceCounterDataCollector or ITraceDataCollector , completion occurs immediately if no limit is set on the output file size or time spent writing to the output file. If there is a maximum file size per output file, or a maximum duration per output file, completion occurs when the data collector has finished writing to the current file.
Subdirectory	RW	Retrieves or sets a base subdirectory of the root path where the next instance of the data collector set will write its logs.
SubdirectoryFormat	RW	Determines what to include in the decoration the subdirectory name.
SubdirectoryFormatPattern	RW	If patterns are to be included in the decoration of subdirectory names, determines the pattern to use.
Task	RW	Name of the task that is executed when the data collector set stops or prior to switching to a new segment. The name of the task must correspond to the name of a job stored in the Task Scheduler. When a task is created, the creator of a task specifies its name as a BSTR. More information on the names of Task Scheduler jobs (referred to as paths in the Task Scheduler documentation) is specified in [MS-TSCH] section 2.3.10. This documentation describes the semantics of the task name and explains the restrictions on task names.
TaskArguments	RW	If a task is to run, this specifies what arguments SHOULD be passed to it.
TaskRunAsSelf	RW	When a Task Scheduler job is executed by the DataCollectorSet, this property determines which user it will run as. If the property is set to true, the Task Scheduler job runs as the same user that the DataCollectorSet is running as. By default, this means the Task Scheduler job will run with System credentials. Consequently, it is not advisable to set this property to true when the task to be run is not fully trusted, unless the UserAccount property for the DataCollectorSet has been carefully configured. When the

Property	Read/write	Description
		<p>property is set to false, the Task Scheduler job will run with the credentials it was created with.</p> <p>The mechanism in use here is delegation. When the creator of a data collector set sets this property to true, this task is thereby granted the same rights that the data collector set has.</p> <p>When the RunAsSelf property is set to false, no delegation occurs. The task will run only with the permissions it was created with. The credentials that the task runs with are initially created with SchRpcRegisterTask specified in [MS-TSCH] section 3.2.5.4.2 and can be updated by SAsSetAccountInformation specified in [MS-TSCH] section 3.2.5.3.4.</p>
TaskUserTextArguments	RW	If a task is to run and the arguments, as specified in section 3.2.4.1.38 , include the {usertext} variable, this property determines the value of this variable.
UserAccount	R	Determines the user account under which the data collector set will run.
Xml	R	The XML representation of the data collector set.

A data collector set can be represented as an XML file, which can be used to serialize (using `IDataCollectorSet::Xml (Get)` [3.2.4.1.46](#)) and deserialize (using `IDataCollectorSet::SetXml` [3.2.4.1.58](#)) it. The format of the XML that defines a data collector set is as follows. All the elements of the data collector set, as well as all child elements within the data collector set element, are specified in section [3.2.4.19](#):

```

<DataCollectorSet>
  <Status></Status>
  <Duration></Duration>
  <Description></Description>
  <DescriptionUnresolved></DescriptionUnresolved>
  <DisplayName></DisplayName>
  <DisplayNameUnresolved></DisplayNameUnresolved>
  <SchedulesEnabled></SchedulesEnabled>
  <Schedule>
    <StartDate/>
    <EndDate/>
    <StartTime/>
    <Days/>
  </Schedule>
  <LatestOutputLocation></LatestOutputLocation>
  <Name></Name>
  <OutputLocation></OutputLocation>
  <RootPath></RootPath>
  <Segment></Segment>
  <SegmentMaxDuration></SegmentMaxDuration>
  <SegmentMaxSize></SegmentMaxSize>
  <SerialNumber></SerialNumber>
  <Server></Server>
  <Subdirectory></Subdirectory>
  <SubdirectoryFormat></SubdirectoryFormat>
  <SubdirectoryFormatPattern></SubdirectoryFormatPattern>
  <Task></Task>
  <TaskRunAsSelf></TaskRunAsSelf>
  <TaskArguments></TaskArguments>

```

```

<TaskUserTextArguments></TaskUserTextArguments>
<UserAccount></UserAccount>
<Security></Security>
<StopOnCompletion></StopOnCompletion>
<!-- elements for different data collector types...please see respective sections -->
</DataCollectorSet:>

```

The nodes "Keyword", "Schedule", and "FolderAction" can have multiple copies—one for each keyword, schedule, or folder action, respectively. For each data collector, one node under the "DataCollectorSet" node is also added; the name of the node depends on the type of data collector, and is documented in the data collector section.

The Keywords property is a safearray, which is translated into the XML as a series of Keyword nodes. For example, if Keywords is set to {"A", "B", "C"}, there are three Keyword nodes, one for each keyword.

Similarly, Schedules is a collection of Schedule objects, which means that if the Schedules property contains three schedules, three nodes called "Schedule" are created for each schedule.

DataCollectors is not in XML for the same reason as Schedules. However, because data collectors have types, instead of having a number of "DataCollector" nodes, there are a number of typed data collector nodes. For example, "AlertDataCollector" or "PerformanceCounterDataCollector".

Methods in RPC Opnum Order

Method	Description
DataCollectors (Get)	List of data collectors in this data collector set. Opnum: 7
Duration (Get)	Retrieves the Duration property. Opnum: 8
Duration (Put)	Sets the Duration property. Opnum: 9
Description (Get)	Retrieves the Description property. Opnum: 10
Description (Put)	Sets the Description property. Opnum: 11
DescriptionUnresolved (Get)	Retrieves the DescriptionUnresolved property. Opnum: 12
DisplayName (Get)	Retrieves the display name of the data collector set . Opnum: 13
DisplayName (Put)	Sets the DisplayName property. Opnum: 14
DisplayNameUnresolved (Get)	Receives the display name of the data collector set in its original form. Opnum: 15

Method	Description
<u>Keywords (Get)</u>	Retrieves the Keywords property. Opnum: 16
<u>Keywords (Put)</u>	Sets the Keywords property. Opnum: 17
<u>LatestOutputLocation (Get)</u>	Retrieves the LatestOutputLocation property. Opnum: 18
<u>LatestOutputLocation (Put)</u>	Sets the LatestOutputLocation property. Opnum: 19
<u>Name (Get)</u>	Retrieves the Name property. Opnum: 20
<u>OutputLocation (Get)</u>	Retrieves the OutputLocation property. Opnum: 21
<u>RootPath (Get)</u>	Retrieves the RootPath property. Opnum: 22
<u>RootPath (Put)</u>	Sets the RootPath property. Opnum: 23
<u>Segment (Get)</u>	Retrieves the Segment property. Opnum: 24
<u>Segment (Put)</u>	Sets the Segment property. Opnum: 25
<u>SegmentMaxDuration (Get)</u>	Retrieves the SegmentMaxDuration property. Opnum: 26
<u>SegmentMaxDuration (Put)</u>	Sets the SegmentMaxDuration property. Opnum: 27
<u>SegmentMaxSize (Get)</u>	Retrieves the SegmentMaxSize property. Opnum: 28
<u>SegmentMaxSize (Put)</u>	Sets the SegmentMaxSize property. Opnum: 29
<u>SerialNumber (Get)</u>	Retrieves the SerialNumber property. Opnum: 30
<u>SerialNumber (Put)</u>	Sets the SerialNumber property. Opnum: 31
<u>Server (Get)</u>	Retrieves the Server property. Opnum: 32
<u>Status (Get)</u>	Retrieves the Status property.

Method	Description
	Opnum: 33
<u>Subdirectory (Get)</u>	Retrieves the Subdirectory property. Opnum: 34
<u>Subdirectory (Put)</u>	Sets the Subdirectory property. Opnum: 35
<u>SubdirectoryFormat (Get)</u>	Retrieves the SubdirectoryFormat property. Opnum: 36
<u>SubdirectoryFormat (Put)</u>	Sets the SubdirectoryFormat property. Opnum: 37
<u>SubdirectoryFormatPattern (Get)</u>	Retrieves the SubdirectoryFormatPattern property. Opnum: 38
<u>SubdirectoryFormatPattern (Put)</u>	Sets the SubdirectoryFormatPattern property. Opnum: 39
<u>Task (Get)</u>	Retrieves the Task property. Opnum: 40
<u>Task (Put)</u>	Sets the Task property. Opnum: 41
<u>TaskRunAsSelf (Get)</u>	Retrieves the TaskRunAsSelf property. Opnum: 42
<u>TaskRunAsSelf (Put)</u>	Sets the TaskRunAsSelf property. Opnum: 43
<u>TaskArguments (Get)</u>	Retrieves the TaskArguments property. Opnum: 44
<u>TaskArguments (Put)</u>	Sets the TaskArguments property. Opnum: 45
<u>TaskUserTextArguments (Get)</u>	Retrieves the TaskUserTextArguments property. Opnum: 46
<u>TaskUserTextArguments (Put)</u>	Sets the TaskUserTextArguments property. Opnum: 47
<u>Schedules (Get)</u>	Retrieves the Schedules property. Opnum: 48
<u>SchedulesEnabled (Get)</u>	Retrieves the SchedulesEnabled property. Opnum: 49
<u>SchedulesEnabled (Put)</u>	Sets the SchedulesEnabled property. Opnum: 50

Method	Description
<u>UserAccount (Get)</u>	Retrieves the UserAccount property. Opnum: 51
<u>Xml (Get)</u>	Retrieves the Xml property. Opnum: 52
<u>Security (Get)</u>	Retrieves the Security property. Opnum: 53
<u>Security (Put)</u>	Sets the Security property. Opnum: 54
<u>StopOnCompletion (Get)</u>	Retrieves the StopOnCompletion property. Opnum: 55
<u>StopOnCompletion (Put)</u>	Sets the StopOnCompletion property. Opnum: 56
<u>DataManager (Get)</u>	Retrieves the DataManager property. Opnum: 57
<u>SetCredentials</u>	Specifies the user account under which the data collector set runs. Opnum: 58
<u>Query</u>	Loads the properties of a data collector set from storage to memory. Opnum: 59
<u>Commit</u>	Updates, validates, or saves a data collector set or flushes the event trace data collectors of a data collector set. Opnum: 60
<u>Delete</u>	Removes the data collector set from storage if it is not running. Opnum: 61
<u>Start</u>	Manually starts the data collector set. Opnum: 62
<u>Stop</u>	Manually stops the data collector set. Opnum: 63
<u>SetXml</u>	Sets the property values of the data collector set based on an XML file. Opnum: 64
<u>SetValue</u>	Sets a user-defined value. Opnum: 65
<u>GetValue</u>	Retrieves a user-defined value. Opnum: 66

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.1.1 DataCollectors (Get) (Opnum 7)

The **DataCollectors (Get)** method retrieves the DataCollectors property.

```
[propget] HRESULT DataCollectors(  
    [out, retval] IDataCollectorCollection** collectors  
);
```

collectors: Receives the pointer to the data collector collection object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.2 Duration (Get) (Opnum 8)

The **Durationmethod (Get)** retrieves the Duration property.

```
[propget] HRESULT Duration(  
    [out, retval] unsigned long* seconds  
);
```

seconds: Receives the number of seconds for which the data collector set SHOULD run.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.3 Duration (Put) (Opnum 9)

The **Duration (Put)** method sets the Duration property.

```
[propput] HRESULT Duration(  
    [in] unsigned long seconds  
);
```

seconds: Supplies the number of seconds for which the data collector set SHOULD run. If zero, the data collector set SHOULD run forever. The default is zero.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.4 Description (Get) (Opnum 10)

The **Description (Get)** method retrieves the Description property.

```
[propget] HRESULT Description(  
    [out, retval] BSTR* description  
);
```

description: Receives the description of the data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.5 Description (Put) (Opnum 11)

The **Description (Put)** method sets the Description property.

```
[propput] HRESULT Description(  
    [in] BSTR description  
);
```

description: Supplies the description of the data collector set. [<9>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.6 DescriptionUnresolved (Get) (Opnum 12)

The **DescriptionUnresolved (Get)** method retrieves the DescriptionUnresolved property.

This method SHOULD return the description as originally set by the IDataCollectorSet::Description method, as specified in section [3.2.4.1.5](#).

```
[propget] HRESULT DescriptionUnresolved(  
    [out, retval] BSTR* Descr  
);
```

Descr: Receives the description of the data collector set in its raw form.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.7 DisplayName (Get) (Opnum 13)

The **DisplayName (Get)** method retrieves the display name property.

```
[propget] HRESULT DisplayName(  
    [out, retval] BSTR* DisplayName  
);
```

DisplayName: Receives the display name of the data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.8 DisplayName (Put) (Opnum 14)

The **DisplayName (Put)** method sets the DisplayName property.

```
[propput] HRESULT DisplayName(  
    [in] BSTR DisplayName  
);
```

DisplayName: Supplies the display name of the data collector set. [<10>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.9 DisplayNameUnresolved (Get) (Opnum 15)

The **DisplayNameUnresolved (Get)** method retrieves the DisplayNameUnresolved property.

```
[propget] HRESULT DisplayNameUnresolved(  
    [out, retval] BSTR* name  
);
```

name: Receives the display name of the data collector set in its original form.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.10 Keywords (Get) (Opnum 16)

The **Keywords (Get)** method retrieves the Keywords property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT Keywords(  
    [out, retval] SAFEARRAY(BSTR) * keywords  
);
```

keywords: Receives an array of BSTRs that contains the keywords of the data collector set. There can be at most 256 separate strings in the array.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.11 Keywords (Put) (Opnum 17)

The **Keywords (Put)** method sets the Keywords property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT Keywords(  
    [in] SAFEARRAY(BSTR) Keywords  
);
```

Keywords: Supplies an array of BSTRs that contains the keywords of the data collector set. There can be at most 256 separate strings in the array.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.12 LatestOutputLocation (Get) (Opnum 18)

The **LatestOutputLocation (Get)** method retrieves the LatestOutputLocation property.

```
[propget] HRESULT LatestOutputLocation(  
    [out, retval] BSTR* path  
);
```

path: Receives the folder name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.13 LatestOutputLocation (Put) (Opnum 19)

The **LatestOutputLocation (Put)** method sets the LatestOutputLocation property.

```
[propput] HRESULT LatestOutputLocation(  
    [in] BSTR path  
);
```

path: Supplies the folder name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.14 Name (Get) (Opnum 20)

The **Name (Get)** method retrieves the Name property, as specified in the property table in section [3.2.4.1](#).

```
[id(DISPID_VALUE), propget] HRESULT Name(  
    [out, retval] BSTR* name  
);
```

name: Receives the name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.15 OutputLocation (Get) (Opnum 21)

The **OutputLocation (Get)** method retrieves the OutputLocation property.

```
[propget] HRESULT OutputLocation(  
    [out, retval] BSTR* path  
);
```

path: Receives the name of folder.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.16 RootPath (Get) (Opnum 22)

The **RootPath (Get)** method retrieves the RootPath property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT RootPath(  
    [out, retval] BSTR* folder  
);
```

folder: Receives the root path.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.17 RootPath (Put) (Opnum 23)

The **RootPath (Put)** method sets the RootPath property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT RootPath(  
    [in] BSTR folder  
);
```

folder: Supplies the root path. The path can contain environment variables.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.18 Segment (Get) (Opnum 24)

The **Segment (Get)** method retrieves the Segment property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT Segment(  
    [out, retval] VARIANT_BOOL* segment  
);
```

segment: Receives a Boolean indicating whether segmentation is to be enabled or disabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.19 Segment (Put) (Opnum 25)

The **Segment (Put)** method sets the Segment property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT Segment(  
    [in] VARIANT_BOOL segment  
);
```

segment: Supplies a Boolean indicating whether segmentation is to be enabled or disabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.20 SegmentMaxDuration (Get) (Opnum 26)

The **SegmentMaxDuration (Get)** method retrieves the SegmentMaxDuration property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT SegmentMaxDuration(  
    [out, retval] unsigned long* seconds  
);
```

seconds: Receives the duration, in seconds, that the data collector set can run before it triggers a segmentation.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.21 SegmentMaxDuration (Put) (Opnum 27)

The **SegmentMaxDuration (Put)** method sets the SegmentMaxDuration property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT SegmentMaxDuration(  
    [in] unsigned long seconds  
);
```

seconds: Supplies the duration, in seconds, that the data collector set can run before it triggers a segmentation. If zero, there is no duration. The default MUST be zero.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.22 SegmentMaxSize (Get) (Opnum 28)

The **SegmentMaxSize (Get)** method retrieves the SegmentMaxSize property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT SegmentMaxSize(  
    [out, retval] unsigned long* size  
);
```

size: Receives the maximum size, in MB, of any log in the data collector set. The valid range is from 0x00000000 to 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.23 SegmentMaxSize (Put) (Opnum 29)

The **SegmentMaxSize (Put)** method sets the SegmentMaxSize property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT SegmentMaxSize(  
    [in] unsigned long size  
);
```

size: Supplies the maximum size, in MB, of all the logs in the data collector set. The valid range is from 0x00000000 to 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.24 SerialNumber (Get) (Opnum 30)

The **SerialNumber (Get)** method retrieves the SerialNumber property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT SerialNumber(
    [out, retval] unsigned long* index
);
```

index: Receives the number of times that this data collector set has been started, including segments. The valid range is from 0x00000000 to 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.25 SerialNumber (Put) (Opnum 31)

The **SerialNumber (Put)** method sets the SerialNumber property, as specified in the property table in section [3.2.4.1](#).

```
HRESULT SerialNumber(
    [in] unsigned long index
);
```

index: Supplies the number of times that this data collector set has been started, including segments. The default is zero. The valid range is from 0x00000000 to 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.26 Server (Get) (Opnum 32)

The **Server (Get)** method retrieves the Server property.

```
[propget] HRESULT Server(
    [out, retval] BSTR* server
);
```

server: Receives the name of the server where the data collector set runs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.27 Status (Get) (Opnum 33)

The **Status (Get)** method retrieves the Status property.

```
[propget] HRESULT Status(  
    [out, retval] DataCollectorSetStatus* status  
);
```

status: Receives the status of the data collector set. The status of the data collector set is defined by one of the [DataCollectorSetStatus](#) enumeration values.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.28 Subdirectory (Get) (Opnum 34)

The **Subdirectory (Get)** method retrieves the Subdirectory property.

```
[propget] HRESULT Subdirectory(  
    [out, retval] BSTR* folder  
);
```

folder: Receives the base subdirectory of the root path where the next instance of the data collector set will write its logs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.29 Subdirectory (Put) (Opnum 35)

The **Subdirectory (Put)** method sets the Subdirectory property.

```
[propput] HRESULT Subdirectory(  
    [in] BSTR folder  
);
```

folder: Supplies the base subdirectory of the root path where the next instance of the data collector set will write its logs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.30 SubdirectoryFormat (Get) (Opnum 36)

The **SubdirectoryFormat (Get)** method retrieves the SubdirectoryFormat property.

```
HRESULT SubdirectoryFormat(  
    [out, retval] AutoPathFormat* format  
);
```

format: Receives the subdirectory format that is determined by the [AutoPathFormat](#) enumeration.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.31 SubdirectoryFormat (Put) (Opnum 37)

The **SubdirectoryFormat (Put)** method sets the SubdirectoryFormat property.

```
[propput] HRESULT SubdirectoryFormat(  
    [in] AutoPathFormat format  
);
```

format: Supplies the subdirectory format which is determined by the [AutoPathFormat](#) enumeration.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.32 SubdirectoryFormatPattern (Get) (Opnum 38)

The **SubdirectoryFormatPattern** method retrieves the SubdirectoryFormatPattern property.

```
[propget] HRESULT SubdirectoryFormatPattern(  
    [out, retval] BSTR* pattern  
);
```

pattern: Receives the format pattern to use when appending the folder name. The format is specified in section [2.2.3.1](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.33 SubdirectoryFormatPattern (Put) (Opnum 39)

The **SubdirectoryFormatPattern (Put)** method sets the SubdirectoryFormatPattern property.

```
HRESULT SubdirectoryFormatPattern(  
    [in] BSTR pattern  
);
```

pattern: Supplies the format pattern to use when appending the folder name. The format is specified in section [2.2.3.1](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.34 Task (Get) (Opnum 40)

The **Task (Get)** method retrieves the Task property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT Task(  
    [out, retval] BSTR* task  
);
```

task: Receives the name of a task to be executed when data collection stops.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.35 Task (Put) (Opnum 41)

The **Task (Put)** method sets the Task property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT Task(  
    [in] BSTR task  
);
```

task: Supplies the name of a task to be executed when data collection stops.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.36 TaskRunAsSelf (Get) (Opnum 42)

The **TaskRunAsSelf (Get)** method retrieves the TaskRunAsSelf property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT TaskRunAsSelf(  
    [out, retval] VARIANT_BOOL* RunAsSelf  
);
```

RunAsSelf: Receives a Boolean indicating whether the task SHOULD run as self. If a task is to run, this property determines whether it SHOULD run as the same user as the data collector set, or as the user it was created to run as.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.37 TaskRunAsSelf (Put) (Opnum 43)

The **TaskRunAsSelf (Put)** method sets the TaskRunAsSelf property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT TaskRunAsSelf(  
    [in] VARIANT_BOOL RunAsSelf  
);
```

RunAsSelf: Supplies a Boolean indicating whether the task SHOULD run as self.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.38 TaskArguments (Get) (Opnum 44)

The **TaskArguments (Get)** method retrieves the TaskArguments property.

```
[propget] HRESULT TaskArguments(  
    [out, retval] BSTR* task  
);
```

task: Receives the command-line arguments to pass to the task. The arguments should be formatted as command-line arguments. PLA SHOULD provide the following substitution variables that can be included in the arguments string. If there are one or more of these variables included in the task arguments, PLA performs the substitution for the variables when the task is triggered.

Variable	Description
{name}	Name of the alert data collector.
{counter}	Path of the performance counter that crossed the threshold.
{date}	Time that the threshold was crossed.
{threshold}	Value of the threshold.
{value}	Value of the performance counter.
{usertext}	String from TaskUserTextArguments.
{logs}	Space-delimited list of full paths to the current data collector files.
{state}	Indicates if the set is running (1 for running, 0 for stopped).
{key}	Space-delimited list of key values that were specified using IDataCollectorSet::SetValue (to clarify, the SetValue function takes in a Key parameter and a Value parameter, and the list created here contains the Value parameters, not the Key parameters). Each individual value can be any non-empty string. The values themselves are user-provided and their use is to contain additional data that the user may want stored with the data collector set. The values are not interpreted by PLA and they are stored for the user's convenience.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.39 TaskArguments (Put) (Opnum 45)

The **TaskArguments (Put)** method sets the TaskArguments property.

```
[propput] HRESULT TaskArguments(
    [in] BSTR task
);
```

task: Supplies the command-line arguments to pass to the task. The arguments should be formatted as command-line arguments. PLA SHOULD provide the following substitution variables that can be included in the arguments string. If you include one or more of these variables in the task arguments, PLA performs the substitution for the variables when the task is triggered.

Variable	Description
{name}	Name of the alert data collector.
{counter}	Path of the performance counter that crossed the threshold.
{date}	Time that the threshold was crossed.
{threshold}	Value of the threshold.
{value}	Value of the performance counter.
{usertext}	String from TaskUserTextArguments.
{logs}	Space-delimited list of full paths to the current data collector files.
{state}	Indicates if the set is running (1 for running, 0 for stopped).
{key}	<p>Space-delimited list of key values that were specified using IDataCollectorSet::SetValue (to clarify, the SetValue function takes in a Key parameter and a Value parameter, and the list created here contains the Value parameters, not the Key parameters). Each individual value can be any non-empty string.</p> <p>The values themselves are user-provided and their use is to contain additional data that the user may want stored with the data collector set. The values are not interpreted by PLA and they are stored for the user's convenience.</p>

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

PLA SHOULD provide the following substitution variables that can be included in the arguments string. PLA provides the values for the substitution variables when the task is triggered.

Variable	Description
{logs}	Space-delimited list of full paths to the current data collector files.
{state}	Indicates if the set is running (1 for running, 0 for stopped).
{key}	Space-delimited list of key values that were specified using IDataCollectorSet::SetValue.
{usertext}	String from IDataCollectorSet:: TaskUserTextArguments.

3.2.4.1.40 TaskUserTextArguments (Get) (Opnum 46)

The **TaskUserTextArguments (Get)** method retrieves the TaskUserTextArguments property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT TaskUserTextArguments (
    [out, retval] BSTR* UserText
);
```

UserText: Receives the value of the TaskUserTextArguments property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.41 TaskUserTextArguments (Put) (Opnum 47)

The **TaskUserTextArguments (Put)** method sets the TaskUserTextArguments property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT TaskUserTextArguments(  
    [in] BSTR UserText  
);
```

UserText: Supplies the value of the TaskUserTextArguments property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.42 Schedules (Get) (Opnum 48)

The **Schedules (Get)** method retrieves the Schedules property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT Schedules(  
    [out, retval] IScheduleCollection** ppSchedules  
);
```

ppSchedules: Receives a pointer to the schedule collection object. Schedules are created with the [CreateSchedule](#) method.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.43 SchedulesEnabled (Get) (Opnum 49)

The **SchedulesEnabled (Get)** method retrieves the SchedulesEnabled property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT SchedulesEnabled(  
    [out, retval] VARIANT_BOOL* enabled
```

```
);
```

enabled: Receives a Boolean indicating whether schedules are enabled or disabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.44 SchedulesEnabled (Put) (Opnum 50)

The **SchedulesEnabled (Put)** method sets the SchedulesEnabled property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT SchedulesEnabled(  
    [in] VARIANT_BOOL enabled  
);
```

enabled: Supplies a Boolean indicating whether schedules are enabled or disabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.45 UserAccount (Get) (Opnum 51)

The **UserAccount (Get)** method retrieves the UserAccount property.

```
[propget] HRESULT UserAccount(  
    [out, retval] BSTR* user  
);
```

user: Receives the user account under which the data collector set will run. The form is domain\user or user@domain.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.46 Xml (Get) (Opnum 52)

The **Xml (Get)** method retrieves the Xml property.

```
[propget] HRESULT Xml(  

```

```
[out, retval] BSTR* xml
);
```

xml: Receives the XML representation of the data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.47 Security (Get) (Opnum 53)

The **Security (Get)** method retrieves the Security property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT Security(
    [out, retval] BSTR* pbstrSecurity
);
```

pbstrSecurity: Receives the security descriptor of the data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.48 Security (Put) (Opnum 54)

The **Security (Put)** method sets the Security property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT Security(
    [in] BSTR bstrSecurity
);
```

bstrSecurity: Supplies the security descriptor of the data collector set, using the Security Descriptor Description Language (SDDL), as specified in [\[MS-DTYP\]](#) section 2.5.1.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.49 StopOnCompletion (Get) (Opnum 55)

The **StopOnCompletion (Get)** method retrieves the StopOnCompletion property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT StopOnCompletion(  
    [out, retval] VARIANT_BOOL* Stop  
);
```

Stop: Receives a Boolean indicating whether the data collector set SHOULD stop when data collectors complete.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.1.50 StopOnCompletion (Put) (Opnum 56)

The **StopOnCompletion (Put)** method sets the StopOnCompletion property, as specified in the property table in section [3.2.4.1](#).

```
[propput] HRESULT StopOnCompletion(  
    [in] VARIANT_BOOL Stop  
);
```

Stop: Supplies a Boolean indicating whether the data collector set SHOULD stop when data collectors complete.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.51 DataManager (Get) (Opnum 57)

The **DataManager (Get)** method retrieves the DataManager property, as specified in the property table in section [3.2.4.1](#).

```
[propget] HRESULT DataManager(  
    [out, retval] IDataManager** DataManager  
);
```

DataManager: Receives a pointer to the data manager object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.52 SetCredentials (Opnum 58)

The **SetCredentials** method specifies the user account under which the data collector set runs. If both parameters are set to NULL, the Performance Logs and Alerts Protocol MUST clear the existing cached credentials. If no credentials are cached, the data collector set will run with the credentials for the 'LocalSystem' account. Changing the credentials under which the data collector set will run will impact all future runs of the data collector set, irrespective of whether they are started locally or remotely. [<11>](#)

```
HRESULT SetCredentials(  
    BSTR user,  
    BSTR password  
);
```

user: Supplies the user account under which the data collector set runs. The user name can be specified in the following forms: domain\user or user@domain.

password: Supplies the password of the user account.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2.1, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.53 Query (Opnum 59)

The **Query** method overwrites the properties of the data collector set object with the properties of another data collector set specified by the parameter 'name'. The properties of the data collector set 'name' are loaded from a file on the disk. The parameter 'name' is the name of the data collector set, not the name or path to the file containing its properties.

```
HRESULT Query(  
    [in] BSTR name,  
    [in, unique] BSTR server  
);
```

name: Supplies the name of the data collector set to retrieve. The name is not case sensitive.

server: Not used.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

PLA_E_DCS_NOT_FOUND (0x80300002)

3.2.4.1.54 Commit (Opnum 60)

The **Commit** method updates, validates, or saves a data collector set, or flushes the event trace data collectors of a data collector set.

```
HRESULT Commit(  
    [in] BSTR name,  
    [in, unique] BSTR server,  
    CommitMode mode,  
    [out, retval] IValueMap** validation  
);
```

name: Supplies a unique name used to identify a data collector set.

server: Not used.

mode: Supplies the actions to perform. See section [2.2.2.3](#) for a description of possible actions.

validation: Receives a validation value map with a list of properties that contain errors or warnings. The validation map is stored as an [IValueMap](#) which associates property names with error or warning codes. The validation map provides the caller with information about any errors in the input.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.55 Delete (Opnum 61)

The **Delete** method removes the data collector set from storage if it is not running.

```
HRESULT Delete();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.56 Start (Opnum 62)

The **Start** method manually starts the data collector set.

```
HRESULT Start(  
    [in] VARIANT_BOOL Synchronous  
);
```

Synchronous: Supplies a Boolean indicating whether the start operation SHOULD be synchronous or asynchronous. In asynchronous mode, the method returns after queuing or failing to queue the data collector set start. The HRESULT returned from the Start function only specifies whether the queuing operation failed or succeeded. If the queuing operation succeeded, (S_OK) is returned even if the data collector set did not start. The only method for detecting that the asynchronous start failed is to poll the Status property to check if the data collector set is still running. In synchronous mode, the method returns when the data collector set actually starts, and the HRESULT only returns (S_OK) if the data collector set started successfully.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.57 Stop (Opnum 63)

The **Stop** method manually stops the data collector set.

```
HRESULT Stop(  
    [in] VARIANT_BOOL Synchronous  
);
```

Synchronous: Supplies a Boolean indicating whether the stop operation SHOULD be synchronous or asynchronous. In synchronous mode, the method returns when the data collector set actually stops. In asynchronous mode, the method returns after queuing or failing to queue the data collector set stop. The HRESULT returned from the Stop function only specifies whether the queuing operation failed or succeeded. If the queuing operation succeeded, (S_OK) is returned even if the data collector set did not stop. The only method for detecting that the asynchronous stop failed is to poll the Status property to check if the data collector set is still running. In synchronous mode, the method returns when the data collector set actually stops and the HRESULT only returns (S_OK) if the data collector set stopped successfully.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.58 SetXml (Opnum 64)

The **SetXml** method sets the property values of the data collector set based on an XML file.

```
HRESULT SetXml(  
    [in] BSTR xml,  
    [out, retval] IValueMap** validation  
);
```

xml: Supplies the XML that contains the properties to set. Each data collector set property has a corresponding XML tag that can be used in this string to set the value of that property. The format of the XML to supply is given in section [3.2.4.1](#).

validation: Receives a validation map, as specified in section [2.2.2.11](#), with a list of properties that contains errors or warnings. The validation map is stored as an [IValueMap](#) which associates property names with error or warning codes. The validation map provides the caller with information about any errors in the input.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.59 SetValue (Opnum 65)

The **SetValue** method sets a user-defined value. The SetValue method takes a name and value pair as BSTRs. This pair can either be used as metadata for the data collector set, in which case it has no effect on the execution of the data collector set, or it can be used as arguments for task execution. For example, when a performance counter crosses a specified threshold, a scheduled task can run. In the event that there exists a key/value pair that matches a task argument, PLA will substitute the value as an argument to pass into the execution of that task. For more information about using the Value field as task argument, see section [3.2.4.1.39](#).

```
HRESULT SetValue(  
    BSTR key,  
    BSTR value  
);
```

key: Supplies the name of the value. The key must not be the empty BSTR, but any other BSTR is a valid value. This key is associated with, and can be used to retrieve, the value field.

value: Supplies the value associated with the key. This is any BSTR that is metadata that needs to be associated with the data collector set or be passed as an argument when a specified task executes.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.1.60 GetValue (Opnum 66)

The **GetValue** method retrieves a user-defined value. The GetValue method retrieves a name and value pair that was set using the SetValue method. This pair can either be used as metadata for the data collector set, in which case it has no effect on the execution of the data collector set, or it can be used as arguments for task execution. For example, when a performance counter crosses a specified threshold, a scheduled task can run. In the event that there exists a key/value pair that matches a task argument, PLA will substitute the value as an argument to pass into the execution of that task. For more information about using the Value field as task argument, see section [3.2.4.1.39](#).

```

HRESULT GetValue(
    BSTR key,
    [out, retval] BSTR* value
);

```

key: Supplies the key of the value to retrieve. The key must be non-null and must point to a BSTR which is not the empty BSTR. Any other BSTR is a valid value.

value: Receives the value associated with the key. The value that is returned, associated with the key that was passed as a parameter into this method, was set by calling the SetValue method.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2 IDataManager

The **IDataManager** interface is used to manage data generated by the data collectors, including report generation, data retention policy, and data transfer.

The following properties MUST be implemented by the objects that implement the **IDataManager** interface.

Property	Read/write	Description
CheckBeforeRunning	RW	Indicates whether maximum folder count and minimum free disk space thresholds SHOULD be checked before running the data collector set. If set to VARIANT_TRUE and either one of the conditions is not met, the data collector set MUST fail the start. If set to VARIANT_FALSE, the thresholds will still be used after collection to determine if the resource policy should be invoked. The ResourcePolicy property is defined below. The MaxSize threshold is never checked before running an IDataManager, irrespective of the value of this property.
Enabled	RW	Determines whether or not data management is enabled. If set to VARIANT_FALSE, all other settings of this object are ignored and no data management operations (such as creating a report) are executed; the data manager is not run. If set to VARIANT_TRUE, all other properties of this object are used and the data manager is run. These properties that are used when the data manager is run are the following: CheckBeforeRunning EventsFileName FolderAction MaxFolderCount MaxSize MinFreeDisk ReportFileName ReportSchema ResourcePolicy Rules

Property	Read/write	Description
		RulesTargetFileName
EventsFileName	RW	Specifies the name of the file that MUST be created by the Performance Logs and Alerts Protocol, during report generation. This file contains all the events that were collected, serialized to XML. This file differs from the report file because the events are not normalized, performance data is not included, and rules are not run against this file.
FolderActions	R	List of actions to be performed on the subfolders that match the criteria. The IFolderAction interface is specified in section 3.2.4.3 .
MaxFolderCount	RW	Specifies the threshold for the maximum number of subfolders under the data collector sets root path. If this threshold is violated, the action specified by the ResourcePolicy property is invoked. If this property is set to zero, there is no maximum. The default value is zero. Any unsigned long is a valid value for this property.
MaxSize	RW	Specifies the maximum size, in megabytes, of all files under the data collector set root path. If this threshold is violated, the action specified by the ResourcePolicy property is invoked. If this property is set to zero, there is no maximum. The default value is zero. Any unsigned long is a valid value for this property.
MinFreeDisk	RW	Specifies the minimum free space, in MB, that SHOULD remain available in the data collector set root path volume. If this threshold is violated, the data collector set will not start collecting data. If this property is set to zero, there is no minimum. The default value is zero. Any unsigned long is a valid value for this property.
ReportFileName	RW	Specifies the name of the HTML file that results from converting the file in RuleTargetFileName from XML to HTML.
ReportSchema	RW	Specifies the XML used to customize the report generated from the data. The XSD that defines the format of the XML is specified in section 2.2.3.3 .
ResourcePolicy	RW	Specifies the action to be performed if one of the disk resource limits is violated. The limits are the maximum folder count, the maximum size and the minimum free disk space. The possible actions are described in the ResourcePolicy enumeration in section 2.2.2.9 .
Rules	RW	The rules to be applied to the report file. The rules are specified in an XML format, which is specified in section 2.2.3.4 .
RuleTargetFileName	RW	Specifies the name of the file where the report data is stored before rules are run against it and it is converted to HTML.

Methods in RPC Opnum Order

Method	Description
Enabled (Get)	Retrieves the Enabled property. Opnum: 7

Method	Description
Enabled (Put)	Sets the Enabled property. Opnum: 8
CheckBeforeRunning (Get)	Retrieves the CheckBeforeRunning property. Opnum: 9
CheckBeforeRunning (Put)	Sets the CheckBeforeRunning property. Opnum: 10
MinFreeDisk (Get)	Retrieves the MinFreeDisk property. Opnum: 11
MinFreeDisk (Put)	Sets the MinFreeDisk property. Opnum: 12
MaxSize (Get)	Retrieves the MaxSize property. Opnum: 13
MaxSize (Put)	Sets the MaxSize property. Opnum: 14
MaxFolderCount (Get)	Retrieves the MaxFolderCount property. Opnum: 15
MaxFolderCount (Put)	Sets the MaxFolderCount property. Opnum: 16
ResourcePolicy (Get)	Retrieves the ResourcePolicy property. Opnum: 17
ResourcePolicy (Put)	Sets the ResourcePolicy property. Opnum: 18
FolderActions (Get)	Retrieves the FolderAction property. Opnum: 19
ReportSchema (Get)	Retrieves the ReportSchema property. Opnum: 20
ReportSchema (Put)	Sets the ReportSchema property. Opnum: 21
ReportFileName (Get)	Retrieves the ReportFileName property. Opnum: 22
ReportFileName (Put)	Sets the ReportFileName property. Opnum: 23
RuleTargetFileName (Get)	Retrieves the RuleTargetFileName property. Opnum: 24
RuleTargetFileName (Put)	Sets the RuleTargetFileName property.

Method	Description
	Opnum: 25
EventsFileName (Get)	Retrieves the EventsFileName property. Opnum: 26
EventsFileName (Put)	Sets the EventsFileName property. Opnum: 27
Rules (Get)	Retrieves the Rules property. Opnum: 28
Rules (Put)	Sets the Rules property. Opnum: 29
Run	Manually runs the data manager. Opnum: 30
Extract	Extracts the specified CAB file. Opnum: 31

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.2.1 Enabled (Get) (Opnum 7)

The **Enabled (Get)** method retrieves the Enabled property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT Enabled(
    [out, retval] VARIANT_BOOL* pfEnabled
);
```

pfEnabled: Receives a Boolean indicating whether the data management is enabled or disabled. All properties of the DataManager object are enabled when this property is set to VARIANT_TRUE.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.2 Enabled (Put) (Opnum 8)

The **Enabled (Put)** method sets the Enabled property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT Enabled(
    [in] VARIANT_BOOL fEnabled
);
```

fEnabled: Supplies a Boolean indicating whether the data management is enabled or disabled. All properties of the DataManager object are enabled when this property is set to VARIANT_TRUE.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.3 CheckBeforeRunning (Get) (Opnum 9)

The **CheckBeforeRunning (Get)** method retrieves the CheckBeforeRunning property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT CheckBeforeRunning(  
    [out, retval] VARIANT_BOOL* pfCheck  
);
```

pfCheck: Receives a Boolean indicating whether or not resource policy SHOULD be checked before starting a data collector set. The ResourcePolicy property is specified in the property table, rows CheckBeforeRunning and Enabled, in section [3.2.4.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.4 CheckBeforeRunning (Put) (Opnum 10)

The **CheckBeforeRunning (Put)** method sets the CheckBeforeRunning property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT CheckBeforeRunning(  
    [in] VARIANT_BOOL fCheck  
);
```

fCheck: Supplies a Boolean indicating whether or not resource policy SHOULD be checked before starting a data collector set. The ResourcePolicy property is specified in the property table, rows CheckBeforeRunning and Enabled, in section [3.2.4.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.5 MinFreeDisk (Get) (Opnum 11)

The **MinFreeDisk (Get)** method retrieves the MinFreeDisk property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT MinFreeDisk(  
    [out, retval] ULONG* MinFreeDisk  
);
```

MinFreeDisk: Receives the minimum free disk space, in MB. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.6 MinFreeDisk (Put) (Opnum 12)

The **MinFreeDisk (Put)** method sets the MinFreeDisk property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT MinFreeDisk(  
    [in] ULONG MinFreeDisk  
);
```

MinFreeDisk: Supplies the minimum free disk space, in MB. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.7 MaxSize (Get) (Opnum 13)

The **MaxSize (Get)** method retrieves the MaxSize property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT MaxSize(  
    [out, retval] ULONG* pulMaxSize  
);
```

pulMaxSize: Receives the maximum disk space, in MB. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.8 MaxSize (Put) (Opnum 14)

The **MaxSize (Put)** method sets the MaxSize property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT MaxSize(  
    [in] ULONG ulMaxSize  
);
```

ulMaxSize: Supplies the maximum disk space, in MB. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.9 MaxFolderCount (Get) (Opnum 15)

The **MaxFolderCount (Get)** method retrieves the MaxFolderCount property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT MaxFolderCount(  
    [out, retval] ULONG* pulMaxFolderCount  
);
```

pulMaxFolderCount: Receives the maximum number of folders to be used by all data collectors in the data collector set. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.10 MaxFolderCount (Put) (Opnum 16)

The **MaxFolderCount (Put)** method sets the MaxFolderCount property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT MaxFolderCount(  
    [in] ULONG ulMaxFolderCount  
);
```

ulMaxFolderCount: Supplies the maximum number of folders to be used by all data collectors in the data collector set. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.11 ResourcePolicy (Get) (Opnum 17)

The **ResourcePolicy (Get)** method retrieves the ResourcePolicy property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT ResourcePolicy(  
    [out, retval] ResourcePolicy* pPolicy  
);
```

pPolicy: Receives the action to take when resource limits are exceeded.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.12 ResourcePolicy (Put) (Opnum 18)

The **ResourcePolicy (Put)** method sets the ResourcePolicy property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT ResourcePolicy(  
    [in] ResourcePolicy Policy  
);
```

Policy: Supplies the action to take when resource limits are exceeded.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.13 FolderActions (Get) (Opnum 19)

The **FolderActions (Get)** method retrieves the FolderAction property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT FolderActions(  
    [out, retval] IFolderActionCollection** Actions  
);
```

Actions: Receives a pointer to a folder action collection object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.14 ReportSchema (Get) (Opnum 20)

The **ReportSchema (Get)** method retrieves the ReportSchema property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT ReportSchema(  
    [out, retval] BSTR* ReportSchema  
);
```

ReportSchema: Receives the XML that contains the schema used to customize the report.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.15 ReportSchema (Put) (Opnum 21)

The **ReportSchema (Put)** method sets the ReportSchema property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT ReportSchema(  
    [in] BSTR ReportSchema
```

```
);
```

ReportSchema: Supplies the XML that contains the schema used to customize the report.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.16 ReportFileName (Get) (Opnum 22)

The **ReportFileName (Get)** method retrieves the ReportFileName property.

```
[propget] HRESULT ReportFileName(  
    [out, retval] BSTR* pbstrFilename  
);
```

pbstrFilename: Receives the name of the report file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.17 ReportFileName (Put) (Opnum 23)

The **ReportFileName (Put)** method sets the ReportFileName property.

```
[propput] HRESULT ReportFileName(  
    [in] BSTR pbstrFilename  
);
```

pbstrFilename: Supplies the name of the report file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.18 RuleTargetFileName (Get) (Opnum 24)

The **RuleTargetFileName (Get)** method retrieves the RuleTargetFileName property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT RuleTargetFileName(  
    [out, retval] BSTR* Filename
```

```
);
```

Filename: Receives the name of the report file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.19 RuleTargetFileName (Put) (Opnum 25)

The **RuleTargetFileName (Put)** method sets the RuleTargetFileName property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT RuleTargetFileName(  
    [in] BSTR Filename  
);
```

Filename: Supplies the name of the report file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.20 EventsFileName (Get) (Opnum 26)

The **EventsFileName (Get)** method retrieves the EventsFileName property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT EventsFileName(  
    [out, retval] BSTR* pbstrFilename  
);
```

pbstrFilename: Receives the name of the events file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.21 EventsFileName (Put) (Opnum 27)

The **EventsFileName (Put)** method sets the EventsFileName property, as specified in the property table in section [3.2.4.2](#).


```
[propput] HRESULT EventsFileName(
    [in] BSTR bstrFilename
);
```

bstrFilename: Supplies the name of the events file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.22 Rules (Get) (Opnum 28)

The **Rules (Get)** method retrieves the Rules property, as specified in the property table in section [3.2.4.2](#).

```
[propget] HRESULT Rules(
    [out, retval] BSTR* pbstrXml
);
```

pbstrXml: Receives the XML string that contains the rules to apply to the report.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.23 Rules (Put) (Opnum 29)

The **Rules (Put)** method sets the Rules property, as specified in the property table in section [3.2.4.2](#).

```
[propput] HRESULT Rules(
    [in] BSTR bstrXml
);
```

bstrXml: Supplies the XML string that contains the rules to apply to the report.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.24 Run (Opnum 30)

The **Run** method is used to manually run the data manager. When the data manager is run, the actions specified in the Steps parameter are executed on the data stored in the folder specified by the *bstrFolder*. Actions taken can include creating an XML report from binary performance files (.blg) or event trace files (.etl), running XPath expressions against the report, transforming the report to HTML, cabbng the report and sending it to a remote server, and deleting files in the directory specified by *bstrFolder*.

```
HRESULT Run(  
    [in] DataManagerSteps Steps,  
    [in] BSTR bstrFolder,  
    [out, retval] IValueMap** Errors  
);
```

Steps: Supplies the actions to be performed by the data manager. For more information, see section [2.2.2.6](#).

bstrFolder: Supplies the name of the subfolder where the report will be generated, rules applied, and/or HTML created.

Errors: Receives a validation value map containing the list of folders where errors were encountered. The validation map is stored as an [IValueMap](#) which associates property names with error or warning codes. The validation map provides the caller with information about any errors in the input.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.2.25 Extract (Opnum 31)

The **Extract** method extracts the specified CAB file.

```
HRESULT Extract(  
    [in] BSTR CabFilename,  
    [in] BSTR DestinationPath  
);
```

CabFilename: The name of the CAB file to extract.

DestinationPath: The destination path for where to place the CAB file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3 IFolderAction

The **IFolderAction** interface is used to specify the actions that the data manager is to take on each folder under the data collector set root path if both age and size conditions are met.

The following properties MUST be implemented by the objects that implement the **IFolderAction** interface.

Property	Read/write	Description
Actions	RW	Specifies the actions that the data manager is to take if both conditions (age and size) are met.
Age	RW	The minimum age of a folder, in days, before it can be considered for these actions. The age of the folder is the number of days since the folder was created. If set to zero, no folders will be excluded because of age. The default value is zero. Any unsigned long is a valid value for this property.
SendCabTo	RW	Specifies the path for sending the CAB file, if the action includes sending the CAB file. The path should be formatted as a UncPath. If the cab cannot be sent (because the destination does not exist or the DataCollectorSet does not have write privileges to the destination), the DataManager does not fail and data management continues.
Size	RW	Specifies the minimum size, in megabytes (MB), of any folder against which the actions specified in the Actions property will be executed. If set to zero, no folders will be excluded because of size. The default value is zero. Any unsigned long is a valid value for this property.

Methods in RPC Opnum Order

Method	Description
Age (Get)	Retrieves the Age property. Opnum: 7
Age (Put)	Sets the Age property. Opnum: 8
Size (Get)	Retrieves the Size property. Opnum: 9
Size (Put)	Sets the Size property. Opnum: 10
Actions (Get)	Retrieves the Actions property. Opnum: 11
Actions (Put)	Sets the Actions property. Opnum: 12
SendCabTo (Get)	Retrieves the SendCabTo property. Opnum: 13
SendCabTo (Put)	Sets the SendCabTo property. Opnum: 14

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.3.1 Age (Get) (Opnum 7)

The **Age (Get)** method retrieves the Age property, as specified in the property table in section [3.2.4.3](#).

```
[propget] HRESULT Age(  
    [out, retval] ULONG* pulAge  
);
```

pulAge: Receives the minimum age, in days, of a folder before this action should be applied to it. If a folder is younger than the minimum age (created less than pulAge days ago) then this action is not applied to it. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.2 Age (Put) (Opnum 8)

The **Age (Put)** method sets the Age property, as specified in the property table in section [3.2.4.3](#).

```
[propput] HRESULT Age(  
    [in] ULONG ulAge  
);
```

ulAge: Supplies the minimum age, in days, of a folder before this action should be applied to it. If a folder is younger than the minimum age (created less than pulAge days ago) then this action is not applied to it. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.3 Size (Get) (Opnum 9)

The **Size (Get)** method retrieves the Size property, as specified in the property table in section [3.2.4.3](#).

```
[propget] HRESULT Size(
    [out, retval] ULONG* pulAge
);
```

pulAge: Receives the size, in MB. The valid range is from: 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.4 Size (Put) (Opnum 10)

The **Size (Put)** method sets the Size property, as specified in the property table in section [3.2.4.3](#).

```
[propput] HRESULT Size(
    [in] ULONG ulAge
);
```

ulAge: Supplies the size, in MB. The valid range is from: 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.5 Actions (Get) (Opnum 11)

The **Actions (Get)** method retrieves the Actions property.

```
[propget] HRESULT Actions(
    [out, retval] FolderActionSteps* Steps
);
```

Steps: Receives the actions, as specified in section [2.2.2.8](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.6 Actions (Put) (Opnum 12)

The **Actions (Put)** method sets the Actions property.

```
[propput] HRESULT Actions(  
    [in] FolderActionSteps Steps  
);
```

Steps: Supplies the actions, as specified in section [2.2.2.8](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.7 SendCabTo (Get) (Opnum 13)

The **SendCabTo (Get)** method retrieves the SendCabTo property, as specified in the property table in section [3.2.4.3](#).

```
[propget] HRESULT SendCabTo(  
    [out, retval] BSTR* pbstrDestination  
);
```

pbstrDestination: Receives the destination path for the CAB file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.3.8 SendCabTo (Put) (Opnum 14)

The **SendCabTo (Put)** method sets the SendCabTo property, as specified in the property table in section [3.2.4.3](#).

```
[propput] HRESULT SendCabTo(  
    [in] BSTR bstrDestination  
);
```

bstrDestination: Supplies the destination path for the CAB file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4 IFolderActionCollection

The **IFolderActionCollection** interface is used to manage a collection of FolderAction objects.

The following properties MUST be implemented by the objects that implement the IFolderActionCollection interface.

Property	Read/write	Description
<u>NewEnum</u>	R	An enumeration object of type IEnumVariant containing a snapshot of the IFolderAction in this collection. The enumeration object is specified in [MS-OAUT] section 3.3
Count	R	Number of folder actions in this collection.
Item	R	Retrieves the requested folder action from the collection.

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9
Add	Adds a folder action to the collection. Opnum: 10
Remove	Removes a folder action from the collection. Opnum: 11
Clear	Removes all folder actions from the collection. Opnum: 12
AddRange	Adds one or more folder actions to the collection. Opnum: 13
CreateFolderAction	Creates a folder action object. Opnum: 14

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.4.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[propget, id(1)] HRESULT Count(
    [out, retval] ULONG* pCount
);
```

pCount: Receives the number of folder actions in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[propget, id(DISPID_VALUE)] HRESULT Item(
    [in] VARIANT Index,
    [out, retval] IFolderAction** Action
);
```

Index: Supplies a zero-based index of the folder action to retrieve from the collection. Acceptable variant data types are VT_I4 and VT_UI4.

Action: Receives a pointer to the folder action requested.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.3 _NewEnum (Get) (Opnum 9)

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.4](#).

```
[propget, id(DISPID_NEWENUM)] HRESULT _NewEnum(
    [out, retval] IUnknown** Enum
);
```

Enum: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.4 Add (Opnum 10)

The **Add** method adds a folder action to the collection.

```
HRESULT Add(  
    IFolderAction* Action  
);
```

Action: Supplies the folder action to be added.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.5 Remove (Opnum 11)

The **Remove** method removes a folder action from the collection.

```
HRESULT Remove(  
    [in] VARIANT Index  
);
```

Index: Supplies which folder action to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the folder action to remove. If the variant type is VT_DISPATCH, it is interpreted as a pointer to the folder action to remove.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.6 Clear (Opnum 12)

The **Clear** method removes all folder actions from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.7 AddRange (Opnum 13)

The **AddRange** method adds one or more folder actions to the collection.

```
HRESULT AddRange(  
    IFolderActionCollection* Actions  
);
```

Actions: Supplies a folder action collection object whose folder actions will be added to this folder action collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.4.8 CreateFolderAction (Opnum 14)

The **CreateFolderAction** method creates a folder action object.

```
HRESULT CreateFolderAction(  
    [out, retval] IFolderAction** FolderAction  
);
```

FolderAction: Receives a pointer to a newly created folder action.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5 IDataCollector

The following are the properties that MUST be implemented by the objects that implement the IDataCollector interface.

Property	Read/write	Description
DataCollectorSet	R	The data collector set to which this data collector belongs.
DataCollectorType	R	The type of data collector.
FileName	RW	The base name of the file containing the output of the data collector.
FileNameFormat	RW	Determines how the name of the file storing the output of the data collector should be formatted. The FileName property itself (described above) is always included. The filename may optionally be decorated with other information. These possible decorations are specified by the AutoPathFormat

Property	Read/write	Description
		enumeration. This property stores an AutoPathFormat value. If the AutoPathFormat value specified by this property includes the 'plaPattern' bit, the FileNameFormatPattern (specified below) contains the pattern that should be appended to the filename. The format of the pattern is specified in section 2.2.3.1 .
FileNameFormatPattern	RW	If patterns are to be included in the decoration of file names, determines the pattern to use. Patterns are included in the decoration if the value of the FileNameFormat property (specified above) includes the 'plaPattern' bit. The format of the pattern is specified in section 2.2.3.1 .
Index	R	The index value of the data collector.
LatestOutputLocation	RW	Full path of the file where data was stored the last time the data collector ran.
LogAppend	RW	Specifies whether existing files SHOULD be appended.
LogCircular	RW	Specifies whether files SHOULD be circular.
LogOverwrite	RW	Specifies whether existing files SHOULD be overwritten.
Name	RW	Name of the data collector.
OutputLocation	R	Full path of the file where data would be stored if the data collector were to start now.
Xml	R	The XML representation of the data collector set.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it. The full XML is specified in section [3.2.4.19](#). The format of the XML that defines a data collector, and is common to all types of data collectors, is as follows:

```

<DataCollectorType/>
  <FileName/>
  <FileNameFormat/>
  <FileNameFormatPattern/>
  <Index/>
  <LatestOutputLocation/>
  <LogAppend/>
  <LogCircular/>
  <LogOverwrite/>
  <Name/>
  <OutputLocation/>

```

Opnums 8, 28 and 31 are not used across the network. These opnums are reserved and MUST NOT be reused by non-Microsoft implementations. [<12>](#)

Methods in RPC Opnum Order

Method	Description
<u>DataCollectorSet (Get)</u>	Retrieves the DataCollectorSet property. Opnum: 7
Opnum8NotUsedOnWire	Reserved for local use. Opnum: 8
<u>DataCollectorType (Get)</u>	Retrieves the DataCollectorType property. Opnum: 9
<u>FileName (Get)</u>	Retrieves the FileName property. Opnum: 10
<u>FileName (Put)</u>	Sets the FileName property. Opnum: 11
<u>FileNameFormat (Get)</u>	Retrieves the FileNameFormat property. Opnum: 12
<u>FileNameFormat (Put)</u>	Sets the FileNameFormat property. Opnum: 13
<u>FileNameFormatPattern (Get)</u>	Retrieves the FileNameFormatPattern property. Opnum: 14
<u>FileNameFormatPattern (Put)</u>	Sets the FileNameFormatPattern property. Opnum: 15
<u>LatestOutputLocation (Get)</u>	Retrieves the LatestOutputLocation property. Opnum: 16
<u>LatestOutputLocation (Put)</u>	Sets the LatestOutputLocation property. Opnum: 17
<u>LogAppend (Get)</u>	Retrieves the LogAppend property. Opnum: 18
<u>LogAppend (Put)</u>	Sets the LogAppend property. Opnum: 19
<u>LogCircular (Get)</u>	Retrieves the LogCircular property. Opnum: 20
<u>LogCircular (Put)</u>	Sets the LogCircular property. Opnum: 21
<u>LogOverwrite (Get)</u>	Retrieves the LogOverwrite property. Opnum: 22
<u>LogOverwrite (Put)</u>	Sets the LogOverwrite property. Opnum: 23
<u>Name (Get)</u>	Retrieves the Name property.

Method	Description
	Opnum: 24
Name (Put)	Sets the Name property. Opnum: 25
OutputLocation (Get)	Retrieves the OutputLocation property. Opnum: 26
Index (Get)	Retrieves the Index property. Opnum: 27
Opnum28NotUsedOnWire	Reserved for local use. Opnum: 28
Xml (Get)	Retrieves the XML property. Opnum: 29
SetXml	Sets the properties of the data collector using the values in the XML file. Opnum: 30
Opnum31NotUsedOnWire	Reserved for local use. Opnum: 31

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.5.1 DataCollectorSet (Get) (Opnum 7)

The **DataCollectorSet (Get)** method retrieves the DataCollectorSet property.

```
[propget] HRESULT DataCollectorSet(
    [out, retval] IDataCollectorSet** group
);
```

group: Receives a pointer to the data collector set to which this data collector belongs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.2 DataCollectorType (Get) (Opnum 9)

The **DataCollectorType (Get)** method retrieves the DataCollectorType property.

```
[propget] HRESULT DataCollectorType(
    [out, retval] DataCollectorType* type
);
```

type: Receives the type of this data collector. For possible types, see the DataCollectorType enumeration (section [2.2.2.5](#)).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.3 FileName (Get) (Opnum 10)

The **FileName (Get)** method retrieves the FileName property.

```
[propget] HRESULT FileName(  
    [out, retval] BSTR* name  
);
```

name: Receives the name of the file that will contain the data collector data.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.4 FileName (Put) (Opnum 11)

The **FileName (Put)** method sets the FileName property.

```
[propput] HRESULT FileName(  
    [in] BSTR name  
);
```

name: Supplies the name of the file that will contain the data collector data.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.5 FileNameFormat (Get) (Opnum 12)

The **FileNameFormat (Get)** method retrieves the FileNameFormat property, as specified in the property table in section [3.2.4.5](#).

```
[propget] HRESULT FileNameFormat(  
    [out, retval] AutoPathFormat* format  
);
```

format: Receives the file name format. If patterns are to be included in the decoration of file names, determines the pattern to use. Values are specified in [AutoPathFormat](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.6 FileNameFormat (Put) (Opnum 13)

The **FileNameFormat (Put)** method sets the FileNameFormat property, as specified in the property table in section [3.2.4.5](#).

```
[propput] HRESULT FileNameFormat(  
    [in] AutoPathFormat format  
);
```

format: Supplies the file name format. If patterns are to be included in the decoration of file names, determines the pattern to use. Values are specified in [AutoPathFormat](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.7 FileNameFormatPattern (Get) (Opnum 14)

The **FileNameFormatPattern (Get)** method retrieves the FileNameFormatPattern property.

```
[propget] HRESULT FileNameFormatPattern(  
    [out, retval] BSTR* pattern  
);
```

pattern: Receives the format pattern to use when appending the file name. The possible formats are defined in section [2.2.3.1](#). If patterns are to be included in the decoration of file names, determines the pattern to use.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.8 FileNameFormatPattern (Put) (Opnum 15)

The **FileNameFormatPattern (Put)** method sets the FileNameFormatPattern property.

```
[propput] HRESULT FileNameFormatPattern(  

```

```
[in] BSTR pattern
);
```

pattern: Supplies the format pattern to use when appending the file name. The possible formats are defined in section [2.2.3.1](#). If patterns are to be included in the decoration of file names, determines the pattern to use.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.9 LatestOutputLocation (Get) (Opnum 16)

The **LatestOutputLocation (Get)** method retrieves the LatestOutputLocation property.

```
[propget] HRESULT LatestOutputLocation(
    [out, retval] BSTR* path
);
```

path: Receives the file name that PLA used the last time it created the file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.10 LatestOutputLocation (Put) (Opnum 17)

The **LatestOutputLocation (Put)** method sets the LatestOutputLocation property.

```
[propput] HRESULT LatestOutputLocation(
    [in] BSTR Path
);
```

Path: Supplies the file name that PLA used the last time it created the file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.11 LogAppend (Get) (Opnum 18)

The **LogAppend (Get)** method retrieves the LogAppend property.


```
[propget] HRESULT LogAppend(
    [out, retval] VARIANT_BOOL* append
);
```

append: Receives a Boolean indicating whether append is enabled or disabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.12 LogAppend (Put) (Opnum 19)

The **LogAppend (Put)** method sets the LogAppend property.

```
[propput] HRESULT LogAppend(
    [in] VARIANT_BOOL append
);
```

append: Supplies a Boolean indicating whether or not append is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.13 LogCircular (Get) (Opnum 20)

The **LogCircular (Get)** method retrieves the LogCircular property.

```
[propget] HRESULT LogCircular(
    [out, retval] VARIANT_BOOL* circular
);
```

circular: Receives a Boolean indicating whether or not circular logging is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.14 LogCircular (Put) (Opnum 21)

The **LogCircular (Put)** method sets the LogCircular property.

```
[propput] HRESULT LogCircular(
```

```
[in] VARIANT_BOOL circular
);
```

circular: Supplies a Boolean indicating whether or not circular logging is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.15 LogOverwrite (Get) (Opnum 22)

The **LogOverwrite (Get)** method retrieves the LogOverwrite property.

```
[propget] HRESULT LogOverwrite(
    [out, retval] VARIANT_BOOL* overwrite
);
```

overwrite: Receives a Boolean indicating whether or not file overwriting is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.16 LogOverwrite (Put) (Opnum 23)

The **LogOverwrite (Put)** method sets the LogOverwrite property.

```
[propput] HRESULT LogOverwrite(
    [in] VARIANT_BOOL overwrite
);
```

overwrite: Supplies a Boolean indicating whether or not file overwriting is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.17 Name (Get) (Opnum 24)

The **Name (Get)** method retrieves the Name property.

```
[propget] HRESULT Name(
    [out, retval] BSTR* name
);
```

```
);
```

name: Receives the name of the data collector. The name is used to identify the data collector.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.18 Name (Put) (Opnum 25)

The **Name (Put)** method sets the Name property.

```
[propput] HRESULT Name(  
    [in] BSTR name  
);
```

name: Supplies the name of the data collector. The name is used to identify the data collector.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.19 OutputLocation (Get) (Opnum 26)

The **OutputLocation (Get)** method retrieves the OutputLocation property.

```
[propget] HRESULT OutputLocation(  
    [out, retval] BSTR* path  
);
```

path: Receives the path.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.20 Index (Get) (Opnum 27)

The **Index (Get)** method retrieves the Index property.

```
[propget] HRESULT Index(  
    [out, retval] LONG* index
```

```
);
```

index: Receives the zero-based index of the data collector within the data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.21 Xml (Get) (Opnum 29)

The **Xml (Get)** method retrieves the XML property.

```
[propput] HRESULT Xml(  
    [out, retval] BSTR* Xml  
);
```

Xml: Receives a BSTR that MUST contain an XML description of the data collector that the client had specified. Each data collector can be defined as a set of XML elements; the set of required elements are described in the section of each data collector type: PerformanceDataCollector (section [3.2.4.6](#)), ConfigurationDataCollector (section [3.2.4.7](#)), AlertDataCollector (section [3.2.4.8](#)), TraceDataCollector (section [3.2.4.9](#)) and ApiTracingDataCollector (section [3.2.4.10](#)). The XML elements are also specified in section [3.2.4.19](#), which contains the set of XML elements required to define all data collector types within a data collector set.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.5.22 SetXml (Opnum 30)

The **SetXml** method sets the properties of the data collector by using the values in the supplied XML string.

```
HRESULT SetXml(  
    [in] BSTR Xml,  
    [out, retval] IValueMap** Validation  
);
```

Xml: Supplies a BSTR that MUST contain an XML description of the data collector. Each data collector can be defined as a set of XML elements; the set of required elements are described in the section of each data collector type: PerformanceDataCollector (section [3.2.4.6](#)), ConfigurationDataCollector (section [3.2.4.7](#)), AlertDataCollector (section [3.2.4.8](#)), TraceDataCollector (section [3.2.4.9](#)) and ApiTracingDataCollector (section [3.2.4.10](#)). The XML elements are also specified in section [3.2.4.19](#), which contains the set of XML elements required to define all data collector types within a data collector set.

Validation: Receives a validation value map with a list of properties that contain errors or warnings. The validation map is stored as an [IValueMap](#) which associates property names with error or warning codes; the **IValueMap** is used to return name and value pairs. The validation map provides the caller with information about any errors in the input XML BSTR that described the data collector. For each property that the server could not set, it MUST create an IValueMap indicating the property name and the error or warning code. The server MUST return a list of objects that implement the IValueMap interface containing all the properties that were passed by the client in using this method that it could not properly set. With each property, it also returns the appropriate warning or error code that indicates why the property value was not as the server had expected. The client MAY choose to ignore any warnings or errors that are returned from the server. However, in that case the data collector may not be executed by the server as the client had expected.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in section [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6 IPerformanceCounterDataCollector

The **IPerformanceCounterDataCollector** interface is used to specify the performance counters to query and the log file to which the counter data is written.

The following properties MUST be implemented by the objects that implement the **IPerformanceCounterDataCollector** interface.

Property	Read/write	Description
DataSourceName	RW	The data source name if the log file is an SQL log file.
LogFileFormat	RW	The format in which data MUST be stored. The format is specified by the FileFormat enumeration.
PerformanceCounters	RW	List of performance counters to be collected.
SampleInterval	RW	The time, in seconds, between two consecutive samples. The default is 15 seconds. The minimum interval is 1 second. There is no maximum interval.
SegmentMaxRecords	RW	Maximum number of samples to log in a segment. If set to 0, there is no segment record limit. Any unsigned long is a valid value for this property.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it. The format of the XML that defines a performance counter data collector is as follows(the full XML specification of the data collector set XML is in section [3.2.4.19](#)):

```
<PerformanceCounterDataCollector>
  <!-- elements for DataCollectorType -->
  <DataSourceName/>
  <SampleInterval/>
  <SegmentMaxRecords/>
```

```

    <LogFileFormat/>
    <Counter/>
    <CounterDisplayName/>
</PerformanceCounterDataCollector>

```

The XML given above does not show the property elements inherited from IDataCollector that also need to be specified.

Methods in RPC Opnum Order

Method	Description
DataSourceName (Get)	Retrieves the DataSourceName property. Opnum: 32
DataSourceName (Put)	Sets the DataSourceName property. Opnum: 33
PerformanceCounters (Get)	Retrieves the PerformanceCounters property. Opnum: 34
PerformanceCounters (Put)	Sets the PerformanceCounters property. Opnum: 35
LogFileFormat (Get)	Retrieves the LogFileFormat property. Opnum: 36
LogFileFormat (Put)	Sets the LogFileFormat property. Opnum: 37
SampleInterval (Get)	Retrieves the SampleInterval property. Opnum: 38
SampleInterval (Put)	Sets the SampleInterval property. Opnum: 39
SegmentMaxRecords (Get)	Retrieves the SegmentMaxRecords property. Opnum: 40
SegmentMaxRecords (Put)	Sets the SegmentMaxRecords property. Opnum: 41

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface. Opnums 7–31 are used by IDataCollector.

3.2.4.6.1 DataSourceName (Get) (Opnum 32)

The **DataSourceName (Get)** method retrieves the DataSourceName property.

```

[propget] HRESULT DataSourceName(
    [out, retval] BSTR* dsn

```

);

dsn: Receives the data source name if the log file is a SQL log file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.2 DataSourceName (Put) (Opnum 33)

The **DataSourceName (Put)** method sets the DataSourceName property.

```
[propput] HRESULT DataSourceName(  
    [in] BSTR dsn  
);
```

dsn: Supplies the data source name if the data is stored into a SQL database. The format MUST be SQL:DSN-Name!LogsetName, where DSN-Name is the ODBC data source name and LogsetName is the user caption (the friendly name of the log file).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.3 PerformanceCounters (Get) (Opnum 34)

The **PerformanceCounters (Get)** method retrieves the PerformanceCounters property.

```
[propget] HRESULT PerformanceCounters(  
    [out, retval] SAFEARRAY(BSTR)* counters  
);
```

counters: Receives an array of performance counter names to query.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.4 PerformanceCounters (Put) (Opnum 35)

The **PerformanceCounters (Put)** method sets the PerformanceCounters property.

```
[propput] HRESULT PerformanceCounters(  

```

```
[in] SAFEARRAY(BSTR) counters
);
```

counters: Supplies an array of performance counter names to query.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.5 LogFileFormat (Get) (Opnum 36)

The **LogFileFormat (Get)** method retrieves the LogFileFormat property.

```
[propget] HRESULT LogFileFormat(
    [out, retval] FileFormat* format
);
```

format: Receives the format of the log file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.6 LogFileFormat (Put) (Opnum 37)

The **LogFileFormat (Put)** method sets the LogFileFormat property.

```
[propput] HRESULT LogFileFormat(
    [in] FileFormat format
);
```

format: Supplies the format of the log file.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.7 SampleInterval (Get) (Opnum 38)

The **SampleInterval (Get)** method retrieves the SampleInterval property, as specified in the property table in section [3.2.4.6](#).

```
[propget] HRESULT SampleInterval(
```



```
[out, retval] unsigned long* interval
);
```

interval: Receives the sample interval, in seconds. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.8 SampleInterval (Put) (Opnum 39)

The **SampleInterval (Put)** method sets the SampleInterval property, as specified in the property table in section [3.2.4.6](#).

```
[propput] HRESULT SampleInterval(
    [in] unsigned long interval
);
```

interval: Supplies the sample interval, in seconds. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. If the interval parameter is set to zero, this function will return PLA_E_INVALID_ARG, as specified in section [2.2.1](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.9 SegmentMaxRecords (Get) (Opnum 40)

The **SegmentMaxRecords (Get)** method retrieves the SegmentMaxRecords property, as specified in the property table in section [3.2.4.6](#).

```
[propget] HRESULT SegmentMaxRecords(
    [out, retval] unsigned long* records
);
```

records: Receives the maximum number of samples to log. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.6.10 SegmentMaxRecords (Put) (Opnum 41)

The **SegmentMaxRecords (Put)** method sets the SegmentMaxRecords property, as specified in the property table in section [3.2.4.6](#).

```
[propput] HRESULT SegmentMaxRecords(  
    [in] unsigned long records  
);
```

records: Supplies the maximum number of samples to log. The valid range is 0x00000000 through 0xFFFFFFFF.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7 IConfigurationDataCollector

The **IConfigurationDataCollector** is used to collect computer settings.

The following properties MUST be implemented by the objects that implement the IConfigurationDataCollector interface.

Property	Read/write	Description
FileMaxCount	RW	Specifies the maximum number of files to collect. If set to zero or not set, there is no maximum. Any unsigned long is a valid value for this property.
FileMaxRecursiveDepth	RW	Specifies the maximum depth in a file system hierarchy that a recursive file collection SHOULD attempt. If set to zero, the maximum depth is 30. Any unsigned long is a valid value for this property.
FileMaxTotalSize	RW	Specifies the maximum size, in megabytes, of all files to collect. If set to zero or not set, there is no maximum size. Any unsigned long is a valid value for this property.
Files	RW	List of paths to files which should be copied to the output directory. Any arbitrary files may be specified. Absolute, relative, and UncPaths are supported. The '*' and '?' wildcards can be used, and collection can be made recursive by using two backslashes ("\\") for the last folder delimiter. If a specified file is not found, an error is added to the output file but collection continues.
ManagementQueries	RW	List of Windows Management Instrumentation (WMI)

Property	Read/write	Description
		queries whose results MUST be collected. The syntax for specifying the queries is "namespace:WQL select statement". If a specified query cannot be executed, an error is added to the output file but collection continues. The format of ManagementQueries is specified in [MS-WMI] section 2.
QueryNetworkAdapters	RW	<p>Specifies whether network adapter information SHOULD be queried. If this value is set to true, the network adapters installed on the system are enumerated along with their IP addresses and offload capabilities.</p> <p>When the client sets this property to VARIANT_TRUE, the server MAY retrieve the network adapter information and store it locally on the server. MS-PLA has no knowledge of what information is captured by the server and written to an XML file, and neither the contents of the XML file nor whether the server was successful in writing the XML file can be retrieved by the client using MS-PLA. Only the VARIANT_BOOL, which indicates whether the server SHOULD query for network adapter information, is transferred across the wire using MS-PLA. If the client wants to read the network adapter information from the server, it must do so by other means or protocols. Whether or not the server queries for network adapter information, and what information it queries, has no impact on the behavior of MS-PLA. For more information about how VARIANT_BOOL types are transferred over the wire, please see [MS-OAUT].</p>
RegistryKeys	RW	List of registry keys to be collected. If a specified registry key cannot be queried, an error will be added to the output file but collection will continue. The Performance Logs and Alerts Protocol allows users to log Registry keys to understand the configured status of a remote system. On Windows, registry keys are used to refer to state information that is stored on the system about an application, driver or the system. For example, what default settings the user has saved for a particular application may be associated with a particular registry key; to retrieve that information, the registry key is specified. The format used for the registry keys is specified in [MS-RRP] section 3.1.1.1.
RegistryMaxRecursiveDepth	RW	Specifies the maximum depth in the registry hierarchy that a recursive registry key collection SHOULD attempt. The maximum depth is relative to the depth of the starting key, not absolute. If this value is set to 0, or is not set, then a default maximum of 50 is used. Therefore, if this value is set to 0, or is not specified, and a registry key is at a depth of 51 in the hierarchy, then it will not be collected. Any unsigned long is a valid value for this property.
SystemStateFile	RW	Specifies the name of the file where the system state will be saved. The system state is a set of kernel events generated by taking a snapshot of the Circular Kernel Context Logger. In Windows, the events of the Circular Kernel Context Logger include process events, thread

Property	Read/write	Description
		events, disk operations, and other kernel information that provide an indication of what action the operating system was performing when the event was raised. Events for the Circular Kernel Context Logger remain in the operating system memory and are only written to file when a snapshot is taken of the Circular Kernel Context Logger. This property indicates the name of the file to which the contents of the Circular Kernel Context Logger should be written; the file will reside on the local system. The file name should be a file name only and should not include the path to the file.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it (the full XML specification is available in section [3.2.4.19](#)). The format of the XML that defines a configuration data collector is as follows:

```
<ConfigurationDataCollector>
  <!-- elements for DataCollectorType -->
  <Files/>
  <FileMaxCount/>
    <FileMaxRecursiveDepth/>
    <FileMaxTotalSize/>
  <Name/>
  <ManagementQuery/>
  <QueryNetworkAdapters/>
  <RegistryKey/>
  <SystemStateFile/>
</ConfigurationDataCollector>
```

Note that the example does not show the property elements inherited from IDataCollector that the caller also needs to specify.

Methods in RPC Opnum Order

Method	Description
FileMaxCount (Get)	Retrieves the FileMaxCount property. Opnum: 32
FileMaxCount (Put)	Sets the FileMaxCount property. Opnum: 33
FileMaxRecursiveDepth (Get)	Retrieves the FileMaxRecursiveDepth property. Opnum: 34
FileMaxRecursiveDepth (Put)	Sets the FileMaxRecursiveDepth property. Opnum: 35
FileMaxTotalSize (Get)	Retrieves the FileMaxTotalSize property. Opnum: 36

Method	Description
<u>FileMaxTotalSize (Put)</u>	Sets the FileMaxTotalSize property. Opnum: 37
<u>Files (Get)</u>	Retrieves the Files property. Opnum: 38
<u>Files (Put)</u>	Sets the Files property. Opnum: 39
<u>ManagementQueries (Get)</u>	Sets the ManagementQueries property. Opnum: 40
<u>ManagementQueries (Put)</u>	Retrieves the ManagementQueries property. Opnum: 41
<u>QueryNetworkAdapters (Get)</u>	Retrieves the QueryNetworkAdapters property. Opnum: 42
<u>QueryNetworkAdapters (Put)</u>	Sets the QueryNetworkAdapters property. Opnum: 43
<u>RegistryKeys (Get)</u>	Retrieves the RegistryKeys property. Opnum: 44
<u>RegistryKeys (Put)</u>	Sets the RegistryKeys property. Opnum: 45
<u>RegistryMaxRecursiveDepth (Get)</u>	Retrieves the RegistryMaxRecursiveDepth property. Opnum: 46
<u>RegistryMaxRecursiveDepth (Put)</u>	Sets the RegistryMaxRecursiveDepth property. Opnum: 47
<u>SystemStateFile (Get)</u>	Retrieves the SystemStateFile property. Opnum: 48
<u>SystemStateFile (Put)</u>	Sets the SystemStateFile property. Opnum: 49

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface. Opnums 7–31 are used by IDataCollector.

3.2.4.7.1 FileMaxCount (Get) (Opnum 32)

The **FileMaxCount (Get)** method retrieves the FileMaxCount property.

```
[propget] HRESULT FileMaxCount(
    [out, retval] unsigned long* count
);
```

count: Receives the maximum number of files to collect. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. If set to zero or not set, there is no maximum. Refer to the property table in section [3.2.4.7](#) for the semantics of the FileMaxCount property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.2 FileMaxCount (Put) (Opnum 33)

The **FileMaxCount (Put)** method sets the FileMaxCount property.

```
[propput] HRESULT FileMaxCount(  
    [in] unsigned long count  
);
```

count: Supplies the maximum number of files to collect. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. If set to zero or not set, there is no maximum. Refer to the property table in section [3.2.4.7](#) for the semantics of the FileMaxCount property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.3 FileMaxRecursiveDepth (Get) (Opnum 34)

The **FileMaxRecursiveDepth (Get)** method retrieves the FileMaxRecursiveDepth property.

```
[propget] HRESULT FileMaxRecursiveDepth(  
    [out, retval] unsigned long* depth  
);
```

depth: Receives the maximum recursive depth. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. Refer to the property table in section [3.2.4.7](#) for the semantics of the FileMaxRecursiveDepth property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.4 FileMaxRecursiveDepth (Put) (Opnum 35)

The **FileMaxRecursiveDepth (Put)** method sets the FileMaxRecursiveDepth property.

```
[propput] HRESULT FileMaxRecursiveDepth(
    [in] unsigned long depth
);
```

depth: Supplies the maximum recursive depth. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. Refer to the property table in section [3.2.4.7](#) for the semantics of the FileMaxRecursiveDepth property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.5 FileMaxTotalSize (Get) (Opnum 36)

The **FileMaxTotalSize (Get)** method retrieves the FileMaxTotalSize property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT FileMaxTotalSize(
    [out, retval] unsigned long* size
);
```

size: Receives the maximum total file size, in megabytes. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.6 FileMaxTotalSize (Put) (Opnum 37)

The **FileMaxTotalSize (Put)** method sets the FileMaxTotalSize property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT FileMaxTotalSize(
    [in] unsigned long sSize
);
```

sSize: Supplies the maximum total file size, in megabytes. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.7 Files (Get) (Opnum 38)

The **Files (Get)** method retrieves the Files property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT Files(  
    [out, retval] SAFEARRAY(BSTR)* pFiles  
);
```

pFiles: Receives an array of BSTRs that contain the files to collect. Each element in this array can represent any arbitrary file name on the server; each file in this array represents files that are copied to the output directory. Only the file names are transferred between the client and the server; this method is used when the client wants to collect any arbitrary file that allows it to analyze the server state. For the semantics of the Files property, see the property table in section [3.2.4.7](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.8 Files (Put) (Opnum 39)

The **Files (Put)** method sets the Files property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT Files(  
    [in] SAFEARRAY(BSTR) Files  
);
```

Files: Supplies an array of BSTRs that contain the files to collect. The paths can be absolute, relative, or Universal Naming Convention (UNC). Each element in this array can represent any arbitrary file name on the server; each file in this array will be copied to the output directory. Only the file names are transferred between the client and the server; this method is used when the client wants to collect any arbitrary file that allows it to analyze the server state. For the semantics of the Files property, see the property table in section [3.2.4.7](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.9 ManagementQueries (Get) (Opnum 40)

The **ManagementQueries (Get)** method retrieves the ManagementQueries property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT ManagementQueries(  
    [out, retval] SAFEARRAY(BSTR)* Queries
```


);

Queries: Receives an array of BSTRs that contain WMI queries to run. The format of ManagementQueries is specified in [\[MS-WMI\]](#) section 2.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.10 ManagementQueries (Put) (Opnum 41)

The **ManagementQueries (Put)** method retrieves the ManagementQueries property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT ManagementQueries(  
    [in] SAFEARRAY(BSTR) Queries  
);
```

Queries: Supplies an array of BSTRs that contain WMI queries to run. The form is in a namespace:WQL select statement. The format of ManagementQueries is specified in [\[MS-WMI\]](#) section 2.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.11 QueryNetworkAdapters (Get) (Opnum 42)

The **QueryNetworkAdapters (Get)** method retrieves the QueryNetworkAdapters property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT QueryNetworkAdapters(  
    [out, retval] VARIANT_BOOL* network  
);
```

network: Receives a Boolean indicating whether or not network adapters are queried. Information about the network adapters installed on the server includes the IP address and the offload capabilities.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.12 QueryNetworkAdapters (Put) (Opnum 43)

The **QueryNetworkAdapters (Put)** method sets the QueryNetworkAdapters property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT QueryNetworkAdapters(  
    [in] VARIANT_BOOL network  
);
```

network: Supplies a Boolean indicating whether or not network adapters should be queried. Information about the network adaptors installed on the server includes the IP address and the offload capabilities.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.13 RegistryKeys (Get) (Opnum 44)

The **RegistryKeys (Get)** method retrieves the RegistryKeys property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT RegistryKeys(  
    [out, retval] SAFEARRAY(BSTR)* query  
);
```

query: Receives an array of BSTRs that contain the registry keys to collect. Each BSTR element of the array is a registry key on the server that is being collected. Please see the RegistryKeys property in section [3.2.4.7](#) for more information.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.14 RegistryKeys (Put) (Opnum 45)

The **RegistryKeys (Put)** method sets the RegistryKeys property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT RegistryKeys(  
    [in] SAFEARRAY(BSTR) query  
);
```

query: Supplies an array of BSTRs that contain the registry keys to collect. Each BSTR element of the array is a registry key on the server that should be collected. For more information, see the RegistryKeys property in section [3.2.4.7.<13>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.15 RegistryMaxRecursiveDepth (Get) (Opnum 46)

The **RegistryMaxRecursiveDepth (Get)** method retrieves the RegistryMaxRecursiveDepth property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT RegistryMaxRecursiveDepth(  
    [out, retval] unsigned long* depth  
);
```

depth: Receives the maximum recursive depth when collecting registry keys. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. If the depth is specified as 0x00000000, then the property value that is retrieved is 0x00000032.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.16 RegistryMaxRecursiveDepth (Put) (Opnum 47)

The **RegistryMaxRecursiveDepth (Put)** method sets the RegistryMaxRecursiveDepth property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT RegistryMaxRecursiveDepth(  
    [in] unsigned long depth  
);
```

depth: Supplies the maximum recursive depth when collecting registry keys. The valid range for this property is 0x00000000 through 0xFFFFFFFF inclusive. If the depth is specified as 0x00000000, then this property is set to a default value of 0x00000032.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.17 SystemStateFile (Get) (Opnum 48)

The **SystemStateFile (Get)** method retrieves the SystemStateFile property, as specified in the property table in section [3.2.4.7](#).

```
[propget] HRESULT SystemStateFile(  

```

```
[out, retval] BSTR* FileName
);
```

FileName: Receives the name of the file to use when saving the system state.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.7.18 SystemStateFile (Put) (Opnum 49)

The **SystemStateFile (Put)** method sets the SystemStateFile property, as specified in the property table in section [3.2.4.7](#).

```
[propput] HRESULT SystemStateFile(
    [in] BSTR FileName
);
```

FileName: Supplies the name of the file use to when saving the system state.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8 IAlertDataCollector

The **IAlertDataCollector** is used to monitor performance counters and to perform actions each time a counter value crosses the given threshold.

The following properties MUST be implemented by the objects that implement the IAlertDataCollector interface.

Property	Read/write	Description
AlertThresholds	RW	List of Performance Counters to monitor, along with the threshold values which are used to generate alerts. The threshold is specified by appending either a '>' or '<' sign along with a value to the Performance Counter path . This defines the threshold to be either greater than or less than the provided value, respectively.
EventLog	RW	Specifies whether or not an event MUST be written to the Windows Eventlog each time the value of any counter specified in the AlertThresholds property. If set to true and the threshold is crossed, then the event will be logged; otherwise, if set to false, and even if the threshold is crossed, the event is not logged. <14>

Property	Read/write	Description														
SampleInterval	RW	The time, in seconds, between two consecutive samples. The default value is 15 seconds. The minimum sample interval is 1 second, and there is no maximum sample interval. However, if the sample interval is set to 0xFFFFFFFF, only one sample will ever be collected.														
Task	RW	Name of the Task Scheduler job to be executed each time a Performance Counter value crosses the specified threshold.														
TaskArguments	RW	<div>If a task is to run, this specifies the arguments that are passed to it. The arguments should be formatted as command-line arguments.</div> <table><tr><th>Variable</th><th>Description</th></tr><tr><td>{name}</td><td>Name of the alert data collector.</td></tr><tr><td>{counter}</td><td>Path of the performance counter that crossed the threshold.</td></tr><tr><td>{date}</td><td>Time that the threshold was crossed.</td></tr><tr><td>{threshold}</td><td>Value of the threshold.</td></tr><tr><td>{value}</td><td>Value of the performance counter.</td></tr><tr><td>{usertext}</td><td>String from TaskUserTextArguments.</td></tr></table>	Variable	Description	{name}	Name of the alert data collector.	{counter}	Path of the performance counter that crossed the threshold.	{date}	Time that the threshold was crossed.	{threshold}	Value of the threshold.	{value}	Value of the performance counter.	{usertext}	String from TaskUserTextArguments.
Variable	Description															
{name}	Name of the alert data collector.															
{counter}	Path of the performance counter that crossed the threshold.															
{date}	Time that the threshold was crossed.															
{threshold}	Value of the threshold.															
{value}	Value of the performance counter.															
{usertext}	String from TaskUserTextArguments.															
TaskRunAsSelf	RW	<div>When a Task Scheduler job is executed by this AlertDataCollector, this property determines which user it runs as. If the property is set to true, the Task Scheduler job runs with the same user credentials as the DataCollectorSet. By default, this means the Task Scheduler job runs with System credentials. Consequently, it is inadvisable to set this property to true when the task to be run is not fully trusted unless the UserAccount property for the DataCollectorSet has been carefully configured. When the property is set to false, the Task Scheduler job runs with the credentials it was created with.</div> <div>The mechanism in use here is delegation. When the creator of a data collector set sets this property to true, he or she is granting this task the same rights that the data collector set is running with.</div> <div>When the RunAsSelf property is set to false, no delegation occurs. The task will run only with the permissions it was created with. The credentials that the task runs with are initially created with SchRpcRegisterTask specified in [MS-TSCH] section 3.2.5.4.2 and can be updated by SASetAccountInformation specified in [MS-TSCH] section 3.2.5.3.4.</div>														
TaskUserTextArguments	RW	If a task is to run and the arguments include the {usertext} variable, this property determines the value of this variable. Any BSTR is potentially a valid value for this property. For example a random string such as "ch&(26D@!k" is a valid value, as are the strings which would normally reference other														

Property	Read/write	Description
		task arguments, such as "{name}". In no case will only substring contained in the TaskUserTextArguments be expanded (so if the string includes {name}, the string will be passed to the Task with the {name}, not with the value of {name}. The put method for this property should never fail. The actual semantic validity of any particular BSTR depends on the task specified by the Task property.
TriggerDataCollectorSet	RW	Name of the data collector set to be started each time a counter value crosses the threshold.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it. The format of the XML that defines an alert data collector is as follows (the full XML specification of the data collector set is in section [3.2.4.19](#)):

```
<AlertDataCollector>
  <!-- elements for DataCollectorType -->
  <Alert/>
  <AlertDisplayName/>
  <EventLog/>
  <SampleInterval/>
  <Task />
  <TaskRunAsSelf/>
  <TaskArguments />
  <TaskUserTextArguments />
  <TriggerDataCollectorSet />
</AlertDataCollector>
```

The format of <Alert> is [performance counter] [<|>] [number]. For example: \Processor(_Total)\% Processor Time>1. See [\[MSDN-COUNT\]](#) for the performance counter path representation.

The example does not show the property elements inherited from IDataCollector that also need to be specified.

Methods in RPC Opnum Order

Method	Description
AlertThresholds (Get)	Retrieves the AlertThresholds property. Opnum: 32
AlertThresholds (Put)	Sets the AlertThresholds property. Opnum: 33
EventLog (Get)	Retrieves the EventLog property. Opnum: 34
EventLog (Put)	Sets the EventLog property. Opnum: 35

Method	Description
SampleInterval (Get)	Retrieves the SampleInterval property. Opnum: 36
SampleInterval (Put)	Sets the SampleInterval property. Opnum: 37
Task (Get)	Retrieves the Task property. Opnum: 38
Task (Put)	Sets the Task property. Opnum: 39
TaskRunAsSelf (Get)	Retrieves the TaskRunAsSelf property. Opnum: 40
TaskRunAsSelf (Put)	Sets the TaskRunAsSelf property. Opnum: 41
TaskArguments (Get)	Retrieves the TaskArguments property. Opnum: 42
TaskArguments (Put)	Sets the TaskArguments property. Opnum: 43
TaskUserTextArguments (Get)	Retrieves the TaskUserTextArguments property. Opnum: 44
TaskUserTextArguments (Put)	Retrieves the TaskUserTextArguments property. Opnum: 45
TriggerDataCollectorSet (Get)	Retrieves the TriggerDataCollectorSet property. Opnum: 46
TriggerDataCollectorSet (Put)	Sets the TriggerDataCollectorSet property. Opnum: 47

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface. Opnums 7–31 are used by IDataCollector.

3.2.4.8.1 AlertThresholds (Get) (Opnum 32)

The **AlertThresholds (Get)** method retrieves the AlertThresholds property, as specified in the property table in section [3.2.4.8](#).

```
[propget] HRESULT AlertThresholds(
    [out, retval] SAFEARRAY(BSTR)* alerts
);
```

alerts: Receives an array of BSTRs that contain [Performance Counter Paths](#) and thresholds.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.2 AlertThresholds (Put) (Opnum 33)

The **AlertThresholds (Put)** method sets the AlertThresholds property, as specified in the property table in section [3.2.4.8](#).

```
[propput] HRESULT AlertThresholds(  
    [in] SAFEARRAY(BSTR) alerts  
);
```

alerts: Supplies an array of BSTRs that contain [Performance Counter Paths](#) and thresholds.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.3 EventLog (Get) (Opnum 34)

The **EventLog (Get)** method retrieves the EventLog property, as specified in the property table in section [3.2.4.8](#).

```
[propget] HRESULT EventLog(  
    [out, retval] VARIANT_BOOL* log  
);
```

log: Receives a Boolean indicating whether or not events are being written into the Windows Eventlog when performance counter thresholds are crossed.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.4 EventLog (Put) (Opnum 35)

The **EventLog (Put)** method sets the EventLog property, as specified in the property table in section [3.2.4.8](#).

```
[propput] HRESULT EventLog(  
    [in] VARIANT_BOOL log  
);
```


log: Supplies a Boolean indicating whether or not events are being written into the Windows Eventlog when performance counter thresholds are crossed. [<15>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.5 SampleInterval (Get) (Opnum 36)

The **SampleInterval (Get)** method retrieves the SampleInterval property, as specified in the property table in section [3.2.4.8](#).

```
[propget] HRESULT SampleInterval(  
    [out, retval] unsigned long* interval  
);
```

interval: Receives the sample interval, in seconds. The valid range for this property is 0x00000001 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.6 SampleInterval (Put) (Opnum 37)

The **SampleInterval (Put)** method sets the SampleInterval property, as specified in the property table in section [3.2.4.8](#).

```
[propput] HRESULT SampleInterval(  
    [in] unsigned long interval  
);
```

interval: Supplies the sample interval, in seconds. The valid range for this property is 0x00000001 through 0xFFFFFFFF inclusive. If the interval parameter is set to zero, this function will return PLA_E_INVALID_ARG as specified in section [2.2.1](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.7 Task (Get) (Opnum 38)

The **Task (Get)** method retrieves the Task property, as specified in the property table in section [3.2.4.8](#).

```
[propget] HRESULT Task(
    [out, retval] BSTR* task
);
```

task: Receives the name of the task.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.8 Task (Put) (Opnum 39)

The **Task (Put)** method sets the Task property, as specified in the property table in section [3.2.4.8](#).

```
[propput] HRESULT Task(
    [in] BSTR task
);
```

task: The name of the task.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.9 TaskRunAsSelf (Get) (Opnum 40)

The **TaskRunAsSelf (Get)** method retrieves the TaskRunAsSelf property, as specified in the property table in section [3.2.4.8](#).

```
[propget] HRESULT TaskRunAsSelf(
    [out, retval] VARIANT_BOOL* RunAsSelf
);
```

RunAsSelf: Receives a Boolean indicating whether or not TaskRunAsSelf is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.10 TaskRunAsSelf (Put) (Opnum 41)

The **TaskRunAsSelf (Put)** method sets the TaskRunAsSelf property, as specified in the property table in section [3.2.4.8](#).

```
[propput] HRESULT TaskRunAsSelf(
    [in] VARIANT_BOOL RunAsSelf
);
```

RunAsSelf: Supplies a Boolean indicating whether or not TaskRunAsSelf is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.11 TaskArguments (Get) (Opnum 42)

The **TaskArguments (Get)** method retrieves the TaskArguments property.

```
HRESULT TaskArguments(
    [out, retval] BSTR* task
);
```

task: Receives the command-line arguments to pass to the task. The arguments should be formatted as command-line arguments. MS-PLA SHOULD provide the following substitution variables that can be included in the arguments string. If you include one or more of these variables in the task arguments, MS-PLA performs the substitution for the variables when the task is triggered.

Variable	Description
{name}	Name of the alert data collector.
{counter}	Path of the performance counter that crossed the threshold.
{date}	Time that the threshold was crossed.
{threshold}	Value of the threshold.
{value}	Value of the performance counter.
{usertext}	String from TaskUserTextArguments.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.12 TaskArguments (Put) (Opnum 43)

The **TaskArguments (Put)** method sets the TaskArguments property.

```
[propput] HRESULT TaskArguments(
```

```
[in] BSTR task
);
```

task: Supplies the command-line arguments to pass to the task. The arguments should be formatted as command-line arguments. MS-PLA SHOULD provide the following substitution variables that can be included in the arguments string. If you include one or more of these variables in the task arguments, MS-PLA performs the substitution for the variables when the task is triggered.

Variable	Description
{name}	Name of the alert data collector.
{counter}	Path of the performance counter that crossed the threshold.
{date}	Time that the threshold was crossed.
{threshold}	Value of the threshold.
{value}	Value of the performance counter.
{usertext}	String from TaskUserTextArguments.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

PLA SHOULD provide the following substitution variables that can be included in the arguments string. MS-PLA provides the values for the substitution variables when the task is triggered.

Variable	Description
{name}	Name of the alert data collector.
{counter}	Path of the performance counter that crossed the threshold.
{date}	Time that the threshold was crossed.
{threshold}	Value of the threshold.
{value}	Value of the performance counter.
{usertext}	String from IAlertDataCollector::TaskUserTextArguments.

3.2.4.8.13 TaskUserTextArguments (Get) (Opnum 44)

The **TaskUserTextArguments (Get)** methods retrieves the TaskUserTextArguments property.

```
HRESULT TaskUserTextArguments(
    [out, retval] BSTR* task
);
```

task: Receives the value of the TaskUserTextArguments property. See the property table in section [3.2.4.8](#) for the semantics of the TaskUserTextArguments property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.14 TaskUserTextArguments (Put) (Opnum 45)

The **TaskUserTextArguments (Put)** methods retrieves the TaskUserTextArguments property.

```
[propput] HRESULT TaskUserTextArguments(  
    [in] BSTR task  
);
```

task: Supplies the value of the TaskUserTextArguments property. Refer to the property table in section [3.2.4.8](#) for the semantics of the TaskUserTextArguments property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.15 TriggerDataCollectorSet (Get) (Opnum 46)

The **TriggerDataCollectorSet (Get)** method retrieves the TriggerDataCollectorSet property.

```
HRESULT TriggerDataCollectorSet(  
    [out, retval] BSTR* name  
);
```

name: Receives the name of a data collector set name. The name of a data collector set to start each time the counter value crosses the threshold.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.8.16 TriggerDataCollectorSet (Put)(Opnum 47)

The **TriggerDataCollectorSet (Put)** method sets the TriggerDataCollectorSet property.

```
[propput] HRESULT TriggerDataCollectorSet(  
    [in] BSTR name
```

);

name: Supplies the data collector set name to start each time the counter value crosses the threshold.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9 ITraceDataCollector

The **ITraceDataCollector** interface is used to collect trace events from trace data providers.

The following properties MUST be implemented by the objects that implement the ITraceDataCollector interface.

Property	Read/write	Description
BufferSize	RW	Specifies the suggested buffer size, in kilobytes (KB), for each event tracing session buffer. The minimum value of the BufferSize property is 1 kilobyte. The maximum value is 1,024 KB. The default value is 8 KB.
BuffersLost	R	If running, specifies the number of buffers that could not be written to the log file. Any unsigned long is a valid value for this property.
BuffersWritten	R	If running, specifies the number of buffers written to the log file. Any unsigned long is a valid value for this property.
ClockType	RW	Retrieves or sets the clock resolution to use when logging the time stamp for each event.
EventsLost	R	If running, specifies the number of events that were lost due to the lack of buffers to write to. Any unsigned long is a valid value for this property.
ExtendedModes	RW	Retrieves or sets the log file modes that are not already set by this or other objects. The valid values for ExtendedModes are specified in section 2.2.9 .
FlushTimer	RW	Specifies the time, in seconds, to wait before flushing buffers. If zero, the buffers are flushed as soon as they are filled. If nonzero, all buffers containing at least one event are flushed every time the number of seconds specified in this property elapse. Any unsigned long is a valid value for this property.
FreeBuffers	R	If running, specifies the number of buffers that are allocated but unused in the event tracing session's buffer pool. Any unsigned long is a valid value for the FreeBuffers property.
Guid	RW	Specifies the PLA-UID of the session. If the supplied PLA-UID maps to a Security Descriptor, the session will run using that Security Descriptor. If no PLA-UID is supplied, a PLA-UID is

Property	Read/write	Description
		generated. The PLA-UID is used for internal state tracking and does not correspond to any of the DCOM GUID subtypes. The valid range for this property is from 0000-0000-0000-0001 to FFFF-FFFF-FFFF-FFFF. Any PLA-UID other than 0000-0000-0000-0000 is a valid value for this property. <16>
IsKernelTrace	R	Specifies whether this trace data collector includes kernel event trace data providers.
MaximumBuffers	RW	Specifies the suggested maximum number of buffers to allocate for the event tracing session's buffer pool. The value of the MaximumBuffers property must be greater than or equal to the value of the MinimumBuffers property. Any unsigned long is a valid number of maximum buffers to suggest, but there is no guarantee that the suggestion will be followed. If the MaximumBuffers property is set to zero, it implies that the user is requesting that no more than zero buffers be used. As with any other possible value for the MaximumBuffers property, the suggestion may or may not be followed depending on whether the protocol implementation supports the requested value. No error will occur if the suggestion is not followed, unless MaximumBuffers was set to a lower value than MinimumBuffers, and it is not possible to detect if the suggestion is followed. The protocol does not provide any mechanism to discover the actual number of buffers being used.
MinimumBuffers	RW	Specifies the suggested minimum number of buffers to allocate for the event tracing session's buffer pool. The value of the MinimumBuffers property must be less than or equal to the value of the MaximumBuffers property. Any unsigned long is a valid number of minimum buffers to suggest, but there is no guarantee that the suggestion will be followed. If the MinimumBuffers property is set to zero, it implies that the user is requesting that as few as zero buffers be used. As with any other possible value for the MinimumBuffers property, the suggestion may or may not be followed depending on whether the protocol implementation supports the requested value. No error will occur if the suggestion is not followed and it is not possible to detect if the suggestion is followed. The protocol does not provide any mechanism to discover the actual number of buffers being used.
NumberOfBuffers	RW	Specifies the suggested number of buffers to use for logging. Any unsigned long is a valid number of buffers to suggest, though there is no guarantee that the suggestion will be followed. If the NumberOfBuffers property is set to zero, it implies that the user is requesting that zero buffers be used. As with any other possible value for the NumberOfBuffers property, the suggestion may or may not be followed depending on whether the protocol implementation supports the requested value. No error will occur if the suggestion is not followed and it is not possible to detect if the suggestion is followed. The protocol does not provide any mechanism to discover the actual number of buffers being used.
PreallocateFile	RW	Specifies whether or not PLA MUST preallocate the entire log file size before logging.
ProcessMode	RW	Specifies whether or not a process-private logger SHOULD be used when the ITraceDataCollector is executing on the server.

Property	Read/write	Description
		<p>When events are logged using ETW, they are temporarily directed to buffers before they are written to a file or delivered to a real-time monitoring application. If this property is set to TRUE, then when the ITraceDataCollector begins executing on the server, the buffers will not be allocated from kernel memory, but from process memory. If this property is set to FALSE, then the buffers will be allocated from kernel memory.</p> <p>The ITraceDataCollector specifies which providers to enable to this process-private logger. The buffers will be allocated in the process-space when the ITraceDataCollector begins executing. However, nothing will be written to these buffers unless the provider, which is also specified in the ITraceDataCollector, registers with ETW on the server and begins using the ETW API to log events. If this property is set to TRUE, and the provider registers multiple times with ETW from different processes, then there will be different trace files that are generated, one for each process. The file name is specified in the ITraceDataCollector, and to this file name is appended the extension, etl, and the process ID. If the process-private logger were running in a process with a process ID of 4, and the file name specified in the ITraceDataCollector is MyFile, then the file name that the events would be written to would be MyFile.etl.4. This is not the case if this property is set to FALSE, since the different provider instances from the different processes will all log to the buffers that are allocated in kernel memory, and these buffers are associated with a single trace file. As a result, no process ID is appended after the file extension etl.</p> <p>If a process-private logger is used, the process in which the buffers are allocated has the ability to modify the contents of the buffers. However, because the buffers are in the process, they are only visible to that process. While a process hosting a private session can edit the contents of a buffer after an event is written to it, only that process can view those buffers and consequently see those edits.</p> <p>If a process-private logger is not used, the buffers are allocated in the kernel. In this case, all processes can potentially view the contents of buffers, but no process has the ability to edit them.</p>
RealTimeBuffersLost	R	<p>If running, specifies the number of buffers that could not be delivered in real time to the consumer. RealTimeBuffers are lost when the backup file for storing events cannot be read or written to by the Event Tracing for infrastructure. In these situations, the buffers are not recoverable. It is not the case that the buffers are arriving late; instead, they are not arriving at all. Any unsigned long is a valid value for RealTimeBuffersLost.</p>
SessionId	R	<p>This property refers to the session identifier of the ETW trace session. When an ITraceDataCollector executes, it starts an ETW trace session; this session is marked with a numeric identifier. There can be up to 64 different sessions. Each of these sessions is marked by a different numeric SessionId, which is specified in this property. Therefore, this property can have the value of 0x0000000000000000 to 0x000000000000003F. The lower 2 bytes have the session IDs that are possible (0x0000 to 0x003F) while the upper 6 bytes MUST be ignored.</p>

Property	Read/write	Description
SessionName	RW	Specifies the name of the session to be created to collect event trace data.
SessionThreadId	R	If running, specifies the ID of the thread performing the logging of the session.
StreamMode	RW	Specifies the logging mode of the trace session.
TraceDataProviders	R (returned object is writable)	List of providers to be enabled for this trace session.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it. The format of the XML that defines a trace data collector is as follows (note that the full specification of the data collector set XML is in section [3.2.4.19](#)):

```
<TraceDataCollector>
<!-- elements for DataCollectorType -->
<BufferSize/>
  <BuffersLost/>
  <BuffersWritten/>
  <ClockType/>
  <EventsLost/>
  <ExtendedMode/>
  <FlushTimer/>
  <FreeBuffers/>
  <Guid/>
  <IsKernelTrace/>
  <MaximumBuffers/>
  <MinimumBuffers/>
  <PreallocateFile/>
  <ProcessMode/>
  <RealTimeBuffersLost/>
  <SessionId/>
  <SessionName/>
  <SessionThreadId/>
  <StreamMode/>
  <TraceDataProvider> <!-- Specify for each provider -->
    <AllKeywords/>
    <AnyKeywords/>
    <DisplayName/>
    <FilterData/>
    <FilterType/>
    <Guid/>
    <Level/>
    <Properties/>
  </TraceDataProvider>
</TraceDataCollector>
```

The XML given above does not show the property elements inherited from IDataCollector that also need to be specified.

Opnums 35, 37, 41, 47, 62, 64, and 68 are not used across the network. These opnums are reserved and MUST NOT be reused by non-Microsoft implementations.<17>

Methods in RPC Opnum Order

Method	Description
BufferSize (Get)	Retrieves the BufferSize property. Opnum: 32
BufferSize (Put)	Sets the BufferSize property. Opnum: 33
BuffersLost (Get)	Retrieves the BufferLost property. Opnum: 34
Opnum35NotUsedOnWire	Reserved for local use. Opnum: 35
BuffersWritten (Get)	Retrieves the BuffersWritten property. Opnum: 36
Opnum37NotUsedOnWire	Reserved for local use. Opnum: 37
ClockType (Get)	Retrieves the ClockType property. Opnum: 38
ClockType (Put)	Sets the ClockType property. Opnum: 39
EventsLost (Get)	Retrieves the EventsLost property. Opnum: 40
Opnum41NotUsedOnWire	Reserved for local use. Opnum: 41
ExtendedModes (Get)	Retrieves the ExtendedModes property. Opnum: 42
ExtendedModes (Put)	Sets the ExtendedModes property. Opnum: 43
FlushTimer (Get)	Retrieves the FlushTimer property. Opnum: 44
FlushTimer (Put)	Sets the FlushTimer property. Opnum: 45
FreeBuffers (Get)	Retrieves the FreeBuffers property. Opnum: 46
Opnum47NotUsedOnWire	Reserved for local use. Opnum: 47

Method	Description
<u>Guid (Get)</u>	Retrieves the Guid property. Opnum: 48
<u>Guid (Put)</u>	Sets the Guid property. Opnum: 49
<u>IsKernelTrace (Get)</u>	Retrieves the IsKernelTrace property. Opnum: 50
<u>MaximumBuffers (Get)</u>	Retrieves the MaximumBuffers property. Opnum: 51
<u>MaximumBuffers (Put)</u>	Sets the MaximumBuffers property. Opnum: 52
<u>MinimumBuffers (Get)</u>	Retrieves the MinimumBuffers property. Opnum: 53
<u>MinimumBuffers (Put)</u>	Sets the MinimumBuffers property. Opnum: 54
<u>NumberOfBuffers (Get)</u>	Retrieves the NumberOfBuffers property. Opnum: 55
<u>NumberOfBuffers (Put)</u>	Sets the NumberOfBuffers property. Opnum: 56
<u>PreallocateFile (Get)</u>	Retrieves the PreallocateFile property. Opnum: 57
<u>PreallocateFile (Put)</u>	Sets the PreallocateFile property. Opnum: 58
<u>ProcessMode (Get)</u>	Retrieves the ProcessMode property. Opnum: 59
<u>ProcessMode (Put)</u>	Sets the ProcessMode property. Opnum: 60
<u>RealTimeBuffersLost (Get)</u>	Retrieves the RealTimeBuffersLost property. Opnum: 61
Opnum62NotUsedOnWire	Reserved for local use. Opnum: 62
<u>SessionId (Get)</u>	Retrieves the SessionId property. Opnum: 63
Opnum64NotUsedOnWire	Reserved for local use. Opnum: 64
<u>SessionName (Get)</u>	Retrieves the SessionName.

Method	Description
	Opnum: 65
SessionName (Put)	Sets the SessionName Opnum: 66
SessionThreadId (Get)	Retrieves the SessionThreadId property. Opnum: 67
Opnum68NotUsedOnWire	Reserved for local use. Opnum: 68
StreamMode (Get)	Retrieves the StreamMode property. Opnum: 69
StreamMode (Put)	Retrieves the StreamMode property. Opnum: 70
TraceDataProviders (Get)	Retrieves the TraceDataProviders property. Opnum: 71

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface. Opnums 7–31 are used by IDataCollector.

3.2.4.9.1 BufferSize (Get) (Opnum 32)

The **BufferSize (Get)** method retrieves the BufferSize property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT BufferSize(
    [out, retval] unsigned long* size
);
```

size: Receives the amount of memory allocated for each event tracing session buffer. The amount of memory allocated is specified in kilobytes. For example, if the size parameter is set to 1, then 1 kilobyte is allocated for each event tracing session buffer. The minimum value of the BufferSize property is 1 kilobyte. The maximum value is 1024 kilobytes. For more information, see the BufferSize member in [\[MSDN-EVENT TRACE PROPERTIES\]](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.2 BufferSize (Put) (Opnum 33)

The **BufferSize (Put)** method sets the BufferSize property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT BufferSize(
    [in] unsigned long size
```

);

size: Supplies the amount of memory allocated for each event tracing session buffer. The amount of memory allocated is specified in kilobytes. For example, if the size parameter is set to 1, then 1 kilobyte is allocated for each event tracing session buffer. The minimum value of the BufferSize property is 1 kilobyte. The maximum value is 1024 kilobytes. For more information, see the BufferSize member in [\[MSDN-EVENT TRACE PROPERTIES\]](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.3 BuffersLost (Get) (Opnum 34)

The **BuffersLost (Get)** method retrieves the BufferLost property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT BuffersLost(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the number of buffers that had to be discarded. Specifies the number of buffers that could not be written to the log file. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.4 BuffersWritten (Get) (Opnum 36)

The **BuffersWritten (Get)** method retrieves the BuffersWritten property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT BuffersWritten(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the number of buffers accepted. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.5 ClockType (Get) (Opnum 38)

The **ClockType (Get)** method retrieves the ClockType property.

```
[propget] HRESULT ClockType(  
    [out, retval] ClockType* clock  
);
```

clock: Receives the clock resolution to use when logging the time stamp for each event. For valid values, see the ClockType enumeration specified in section [2.2.2.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.6 ClockType (Put) (Opnum 39)

The **ClockType (Put)** method sets the ClockType property.

```
[propput] HRESULT ClockType(  
    [in] ClockType clock  
);
```

clock: Supplies the clock resolution to use when logging the time stamp for each event. For valid values, see the ClockType enumeration specified in section [2.2.2.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.7 EventsLost (Get) (Opnum 40)

The **EventsLost (Get)** method retrieves the EventsLost property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT EventsLost(  
    [out, retval] unsigned long* events  
);
```

events: Receives the number of events that were not written to the buffer. Specifies the number of events that were lost due to the lack of buffers to write to. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.8 ExtendedModes (Get) (Opnum 42)

The **ExtendedModes (Get)** method retrieves the ExtendedModes property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT ExtendedModes(  
    [out, retval] unsigned long* mode  
);
```

mode: Receives the log file mode not already set by this object using the other properties. The valid values for ExtendedModes are specified in section [2.2.9](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.9 ExtendedModes (Put) (Opnum 43)

The **ExtendedModes (Put)** method sets the ExtendedModes property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT _ExtendedModes(  
    [in] unsigned long mode  
);
```

mode: Supplies the log file modes not already set by other methods. The valid values for ExtendedModes are specified in section [2.2.9](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.10 FlushTimer (Get) (Opnum 44)

The **FlushTimer (Get)** method retrieves the FlushTimer property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT FlushTimer(  
    [out, retval] unsigned long* seconds
```

```
);
```

seconds: Receives the time, in seconds, to wait before flushing buffers. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive. For more information, see the FlushTimer member in [\[MSDN-EVENT TRACE PROPERTIES\]](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.11 FlushTimer (Put) (Opnum 45)

The **FlushTimer (Put)** method sets the FlushTimer property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT FlushTimer(  
    [in] unsigned long seconds  
);
```

seconds: Supplies the time, in seconds, to wait before flushing buffers. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive. For more information, see the FlushTimer member in [\[MSDN-EVENT TRACE PROPERTIES\]](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.12 FreeBuffers (Get) (Opnum 46)

The **FreeBuffers (Get)** method retrieves the FreeBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT FreeBuffers(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the number of buffers that are allocated but unused in the event tracing session's buffer pool. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.13 Guid (Get) (Opnum 48)

The **Guid (Get)** method retrieves the Guid property, as specified in the property table in section [3.2.4.9<18>](#).

```
[propget] HRESULT Guid(  
    [out, retval] GUID* guid  
);
```

guid: Receives the session PLA-UID. Any PLA-UID other than the 0000-0000-0000-0000 is a valid value for this property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.14 Guid (Put) (Opnum 49)

The **Guid (Put)** method sets the Guid property, as specified in the property table in section [3.2.4.9<19>](#).

```
[propput] HRESULT Guid(  
    [in] GUID guid  
);
```

guid: Supplies the session PLA-UID. Any PLA-UID other than the 0000-0000-0000-0000 is a valid value for this property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.15 IsKernelTrace (Get) (Opnum 50)

The **IsKernelTrace (Get)** method retrieves the IsKernelTrace property.

```
[propget] HRESULT IsKernelTrace(  
    [out, retval] VARIANT_BOOL* kernel  
);
```

kernel: Receives VARIANT_TRUE if the trace contains kernel providers.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.16 MaximumBuffers (Get) (Opnum 51)

The **MaximumBuffers (Get)** method retrieves the MaximumBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT MaximumBuffers(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the maximum number of buffers allocated for the event tracing session's buffer pool. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. The server MUST NOT return a value of 0x00000000, because the event tracing session on the server MUST have a nonzero number of buffers allocated. [<20>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.17 MaximumBuffers (Put) (Opnum 52)

The **MaximumBuffers (Put)** method sets the MaximumBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT MaximumBuffers(  
    [in] unsigned long buffers  
);
```

buffers: Supplies the maximum number of buffers allocated for the event tracing session's buffer pool. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. For more information, see the MaximumBuffers member in [\[MSDN-EVENT TRACE PROPERTIES\]](#). [<21>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.18 MinimumBuffers (Get) (Opnum 53)

The **MinimumBuffers (Get)** method retrieves the MinimumBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT MinimumBuffers(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the minimum number of buffers allocated for the event tracing session's buffer pool. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. The server MUST NOT return a value of 0x00000000, because the event tracing session on the server MUST have a nonzero number of buffers allocated. <22>

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.19 MinimumBuffers (Put) (Opnum 54)

The **MinimumBuffers (Put)** method sets the MinimumBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT MinimumBuffers(  
    [in] unsigned long buffers  
);
```

buffers: Supplies the minimum number of buffers allocated for the event tracing session's buffer pool. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. For more information, see the MinimumBuffers member in [\[MSDN-EVENT TRACE PROPERTIES\]](#). <23>

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.20 NumberOfBuffers (Get) (Opnum 55)

The **NumberOfBuffers (Get)** method retrieves the NumberOfBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT NumberOfBuffers(  
    [out, retval] unsigned long* buffers  
);
```

buffers: Receives the number of buffers to use for logging. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. The server MUST NOT return a value of 0x00000000, because the event tracing session on the server MUST have a nonzero number of buffers allocated. <24>

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.21 NumberOfBuffers (Put) (Opnum 56)

The **NumberOfBuffers (Put)** method sets the NumberOfBuffers property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT NumberOfBuffers(  
    [in] unsigned long buffers  
);
```

buffers: Supplies the number of buffers to use for logging. The valid range is from 0x00000001 through 0xFFFFFFFF inclusive. [<25>](#)

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.22 PreallocateFile (Get) (Opnum 57)

The **PreallocateFile (Get)** method retrieves the PreallocateFile property.

```
[propget] HRESULT PreallocateFile(  
    [out, retval] VARIANT_BOOL* allocate  
);
```

allocate: Receives VARIANT_TRUE if the entire log file size is allocated before logging.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.23 PreallocateFile (Put) (Opnum 58)

The **PreallocateFile (Put)** method sets the PreallocateFile property.

```
[propput] HRESULT PreallocateFile(  
    [in] VARIANT_BOOL allocate  
);
```

allocate: Supplies VARIANT_TRUE if the entire log file size is allocated before logging.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.24 ProcessMode (Get) (Opnum 59)

The **ProcessMode (Get)** method retrieves the ProcessMode property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT ProcessMode(  
    [out, retval] VARIANT_BOOL* process  
);
```

process: Receives VARIANT_TRUE if the session is a private session. This VARIANT_BOOL type indicates whether the ITraceDataCollector that is running on the server is using the ETW process-private logger setting. For more information, see the ProcessMode property in section [3.2.4.9](#). No other information about the ETW process-private logger setting is transferred between the client and the server in this method call.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.25 ProcessMode (Put) (Opnum 60)

The **ProcessMode (Put)** method sets the ProcessMode property, as specified in the property table in section [3.2.4.9](#).

```
[propput] HRESULT ProcessMode(  
    [in] VARIANT_BOOL process  
);
```

process: Supplies VARIANT_TRUE if the session is a private session. This VARIANT_BOOL type specifies whether the ITraceDataCollector that will run on the server should use the ETW process-private logger setting. For more information, see the ProcessMode property in section [3.2.4.9](#). No other information about the ETW process-private logger setting is transferred between the client and the server in this method call.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.26 RealTimeBuffersLost (Get) (Opnum 61)

The **RealTimeBuffersLost (Get)** method retrieves the RealTimeBuffersLost property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT RealTimeBuffersLost(  
    [out, retval] unsigned long* buffers  
);
```

buffers: The number of buffers that could not be delivered in real-time. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.27 SessionId (Get) (Opnum 63)

The **SessionId (Get)** method retrieves the SessionId property, as specified in the property table in section [3.2.4.9](#).

```
[propget] HRESULT SessionId(  
    [out, retval] ULONG64* id  
);
```

id: Receives the session identifier. Only the lower 2 bytes of the id value are specified; therefore, the valid range of these lower 2 bytes is from 0x0000 to 0x003F. The upper 6 bytes of the id MUST be ignored.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in section [2](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.28 SessionName (Get) (Opnum 65)

The **SessionName (Get)** method retrieves the SessionName.

```
[propget] HRESULT SessionName(  
    [out, retval] BSTR* name  
);
```

name: Receives the name of the event tracing session.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.29 SessionName (Put) (Opnum 66)

The **SessionName (Put)** method sets the SessionName.

```
[propput] HRESULT SessionName(  
    [in] BSTR name
```

```
);
```

name: Supplies the name of the event tracing session.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.30 SessionThreadId (Get) (Opnum 67)

The **SessionThreadId (Get)** method retrieves the SessionThreadId property.

```
[propget] HRESULT SessionThreadId(  
    [out, retval] unsigned long* tid  
);
```

tid: Receives the current thread of the log session, if running.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.31 StreamMode (Get) (Opnum 69)

The **StreamMode (Get)** method retrieves the StreamMode property.

```
[propget] HRESULT StreamMode(  
    [out, retval] StreamMode* mode  
);
```

mode: Receives the logging mode of the trace session.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.32 StreamMode (Put) (Opnum 70)

The **StreamMode (Put)** method retrieves the StreamMode property.

```
[propput] HRESULT StreamMode(  
    [in] StreamMode mode
```

);

mode: Supplies the logging mode of the trace session. Valid values are specified in the StreamMode enumeration (section [2.2.2.10](#)).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.9.33 TraceDataProviders (Get) (Opnum 71)

The **TraceDataProviders (Get)** method retrieves the TraceDataProviders property.

```
[propget] HRESULT TraceDataProviders(  
    [out, retval] ITraceDataProviderCollection** providers  
);
```

providers: Receives a pointer to the trace data provider collection object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10 IApiTracingDataCollector

The **IApiTraceDataCollector** interface is used to specify the executables whose API calls are to be logged.

The following properties MUST be implemented by the objects that implement the IApiTracing DataCollector interface.

Property	Read/write	Description
ExcludeApis	RW	List of APIs to exclude from the log.
ExePath	RW	Specifies the full path to the executable whose API calls are to be logged.
IncludeApis	RW	List of APIs to include in the trace. All calls to these APIs that are made in the specified executable are logged, even if the modules in which the APIs are defined are not included.
IncludeModules	RW	List of modules to include in the trace. All calls to functions defined in these modules that are made in the specified executable are logged.
LogApiNamesOnly	RW	Specifies whether PLA SHOULD log only the API name or the arguments and return a value as well.

Property	Read/write	Description
LogApisRecursively	RW	Specifies whether PLA SHOULD log only calls that are imported directly by the application or all calls to the specified APIs.
LogFilePath	RW	Specifies the name of the file where data SHOULD be logged to.

A data collector can be represented as an XML file, which can be used to serialize (using Xml (Get) [3.2.4.5.21](#)) and deserialize (using SetXml [3.2.4.5.22](#)) it. The format of the XML that defines a data collector is as follows (note that the full XML specification of the data collector set is in section [3.2.4.19](#)):

```
<ApiTracingDataCollector>
  <!-- elements for DataCollectorType -->
  <LogApiNamesOnly/>
  <ExePath/>
  <LogFilePath/>
  <IncludeModule/>
  <IncludeApis/>
  <ExcludeApis/>
</ApiTracingDataCollector>
```

This does not show the property elements inherited from IDataCollector that also need to be specified.

Methods in RPC Opnum Order

Method	Description
LogApiNamesOnly (Get)	Retrieves the LogApiNamesOnly property. Opnum: 32
LogApiNamesOnly (Put)	Sets the LogApiNamesOnly property. Opnum: 33
LogApisRecursively (Get)	Retrieves the LogApisRecursively property. Opnum: 34
LogApisRecursively (Put)	Sets the LogApisRecursively property. Opnum: 35
ExePath (Get)	Retrieves the ExePath property. Opnum: 36
ExePath (Put)	Sets the ExePath property. Opnum: 37
LogFilePath (Get)	Retrieves the LogFilePath property. Opnum: 38
LogFilePath (Put)	Sets the LogFilePath property. Opnum: 39

Method	Description
IncludeModules (Get)	Retrieves the IncludeModules property. Opnum: 40
IncludeModules (Put)	Sets the IncludeModules property. Opnum: 41
IncludeApis (Get)	Retrieves the IncludeApis property. Opnum: 42
IncludeApis (Put)	Sets the IncludeApis property. Opnum: 43
ExcludeApis (Get)	Retrieves the ExcludeApis property. Opnum: 44
ExcludeApis (Put)	Sets the ExcludeApis property. Opnum: 45

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface. Opnums 7–31 are used by IDataCollector.

3.2.4.10.1 LogApiNamesOnly (Get) (Opnum 32)

The **LogApiNamesOnly (Get)** method retrieves the LogApiNamesOnly property.

```
[propget] HRESULT LogApiNamesOnly(
    [out, retval] VARIANT_BOOL* logapinames
);
```

logapinames: Receives the value of the LogApiNamesOnly property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.2 LogApiNamesOnly (Put) (Opnum 33)

The **LogApiNamesOnly (Put)** method sets the LogApiNamesOnly property.

```
[propput] HRESULT LogApiNamesOnly(
    [in] VARIANT_BOOL logapinames
);
```

logapinames: Supplies the value of the LogApiNamesOnly property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.3 LogApisRecursively (Get) (Opnum 34)

The **LogApisRecursively (Get)** method retrieves the LogApisRecursively property.

```
[propget] HRESULT LogApisRecursively(  
    [out, retval] VARIANT_BOOL* logrecursively  
);
```

logrecursively: Receives the value of the LogApisRecursively property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.4 LogApisRecursively (Put) (Opnum 35)

The **LogApisRecursively (Put)** method sets the LogApisRecursively property.

```
[propput] HRESULT LogApisRecursively(  
    [in] VARIANT_BOOL logrecursively  
);
```

logrecursively: Supplies the value of the LogApisRecursively property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.5 ExePath (Get) (Opnum 36)

The **ExePath (Get)** method retrieves the ExePath property.

```
[propget] HRESULT ExePath(  
    [out, retval] BSTR* exepath  
);
```

exepath: Receives the value of the ExePath property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.6 ExePath (Put) (Opnum 37)

The **ExePath (Put)** method sets the ExePath property. For more information on formatting, see section [2.2.3.2](#).

```
[propput] HRESULT ExePath(  
    [in] BSTR exepath  
);
```

exepath: Supplies the value of the ExePath property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.7 LogFilePath (Get) (Opnum 38)

The **LogFilePath (Get)** method retrieves the LogFilePath property.

```
[propget] HRESULT LogFilePath(  
    [out, retval] BSTR* logfilepath  
);
```

logfilepath: Receives the value of the LogFilePath property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.8 LogFilePath (Put) (Opnum 39)

The **LogFilePath (Put)** method sets the LogFilePath property.

```
[propput] HRESULT LogFilePath(  
    [in] BSTR logfilepath  
);
```

logfilepath: Supplies the value of the LogFilePath property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.10.9 IncludeModules (Get) (Opnum 40)

The **IncludeModules (Get)** method retrieves the IncludeModules property, as specified in the property table in section [3.2.4.10](#).

```
[propget] HRESULT IncludeModules(  
    [out, retval] SAFEARRAY(BSTR)* includemodules  
);
```

includemodules: Receives an array of BSTRs that contains the full paths to the modules to include in the trace.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.10.10 IncludeModules (Put) (Opnum 41)

The **IncludeModules (Put)** method sets the IncludeModules property, as specified in the property table in section [3.2.4.10](#).

```
[propput] HRESULT IncludeModules(  
    [in] SAFEARRAY(BSTR) includemodules  
);
```

includemodules: Supplies an array of BSTRs that contains the full paths to the modules to include in the trace. For formatting, see section [2.2.3.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.10.11 IncludeApis (Get) (Opnum 42)

The **IncludeApis (Get)** method retrieves the IncludeApis property, as specified in the property table in section [3.2.4.10](#).

```
[propget] HRESULT IncludeApis(  
    [out, retval] SAFEARRAY(BSTR)* includeapis  
);
```

);

includeapis: Receives an array of BSTRs that contains the functions to include in the trace. The name is specified as module name, and then function name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.10.12 IncludeApis (Put) (Opnum 43)

The **IncludeApis (Put)** method sets the IncludeApis property, as specified in the property table in section [3.2.4.10](#).

```
[propput] HRESULT IncludeApis(  
    [in] SAFEARRAY(BSTR) includeapis  
);
```

includeapis: Supplies an array of BSTRs that contains the functions to include in the trace. Specify the name as module name, and then function name. For formatting, see section [2.2.3.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.10.13 ExcludeApis (Get) (Opnum 44)

The **ExcludeApis (Get)** method retrieves the ExcludeApis property.

```
[propget] HRESULT ExcludeApis(  
    [out, retval] SAFEARRAY(BSTR)* excludeapis  
);
```

excludeapis: Receives an array of BSTRs that contain the functions to exclude from the trace. The name is specified as module name and then function name. For more information on formatting, see section [2.2.3.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.10.14 ExcludeApis (Put) (Opnum 45)

The **ExcludeApis (Put)** method sets the ExcludeApis property.

```
[propput] HRESULT ExcludeApis(  
    [in] SAFEARRAY(BSTR) excludeapis  
);
```

excludeapis: Supplies an array of BSTRs that contain the functions to exclude from the trace. The name is specified as module name and then function name. For more information on formatting, see section [2.2.3.2](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11 ITraceDataProvider

The **ITraceDataProvider** interface is used to specify the details on each provider that is to be enabled to an event trace session.

The following properties MUST be implemented by objects that implement the ITraceDataProvider interface.

Property name	Read/write	Description
DisplayName	RW	The name of the provider. The name is provided by the user and can be read by the user but is otherwise ignored by MS-PLA protocol. The field exists so that the user can attach a semantically meaningful name to the ITraceDataProvider if he or she so chooses rather than having to differentiate providers based on the Guid property, defined below <26> .
Guid	RW	The PLA-UID of the provider. On collection, this PLA-UID uniquely identifies the provider to be enabled. The value 0000-0000-0000-0000 is never a valid provider PLA-UID, and therefore the Guid property is set to 0000-0000-0000-0000 when no provider is specified <27> . The valid range for this property is from 0000-0000-0000-0001 to FFFF-FFFF-FFFF-FFFF.
Level	R	The list of levels for the provider. On collection, events from this provider are collected only if their levels are less than or equal to the value of the enabled level; this property is used in conjunction with the KeywordsAny and KeywordsAll properties to control which events are collected from a provider. The enabled level is stored in the Value property of the Level property. The level denotes the severity of event (as defined by the event provider). Windows predefines several trace levels that can be used to control tracing; there can be more trace levels that are defined in addition to these pre-defined levels. The maximum value of a level is 0x000000FF. The possible pre-defined levels are: 1. Log Always

Property name	Read/write	Description
		<p>2. Critical</p> <p>3. Error</p> <p>4. Warning</p> <p>5. Informational</p> <p>If the enabled level has the value of 3, all events with level 3, 2, or 1 will be collected. These levels semantically represent Warning, Error, and Critical events. If the enabled level has the value of 0, then events with any level will be collected. Setting the enabled level to 0 is equivalent to setting the enabled level to 0x000000FF.</p>
KeywordsAny	R	The list of keywords of the provider. The keywords determine the category of events for the provider to write; this property is used in conjunction with the Level and KeywordsAll properties. On collection, events from this provider are collected only if their keywords include at least one of the keywords in KeywordsAny. If KeywordsAny is set to zero, the provider writes all events. The Value property of the KeywordsAny property stores the bitwise-or of the keywords in the KeywordsAny property.
KeywordsAll	R	<p>The list of keywords of the provider. The keywords determine the category of events for the provider to write; this is used in conjunction with the KeywordsAny and Level properties. On collection, events from this provider are collected only if their keywords include all of the keywords in KeywordsAll. The Value property of the KeywordsAll property stores the bitwise-or of the keywords in the KeywordsAll property.</p> <p>This property is ignored if KeywordsAny is set to zero. If KeywordsAny is nonzero, the provider only writes events that include at least one of the KeywordsAny keywords in addition to all of the KeywordsAll keywords.</p>
Properties	R	The list of extra information that can be collected when events from this provider are collected. The possible properties are the user's security identifier (value 1) or the session identifier (value 2).
FilterEnabled	RW	Determines whether provider-side filtering SHOULD be enabled. If the FilterEnabled property is set to VARIANT_TRUE, the filter stored in the FilterData property (as specified in section 3.2.4.11.10) should be used to filter the provider. Otherwise, the FilterData property should be ignored.
FilterType	RW	Not used. Because the value is currently not used, any ULONG is a valid value, so validation should always succeed for the property.
FilterData	RW	When the client enables tracing for a provider on the server, it has the option of passing back data to that provider. This data is provider-specific, and the client MUST know how the provider expects this FilterData to be formatted. The FilterData property can contain any arbitrary type that is understood by the trace provider, but MUST NOT exceed more than 1 KB in total size. The Performance Logs and Alerts Protocol has no knowledge of how this FilterData is constructed and what are its possible values. This data is opaque to the protocol. It simply serves as the transport for this data between the client and the server, and the Performance Logs and Alerts Protocol only restriction on this property is that this data MUST NOT exceed 1 KB in size.

Property name	Read/write	Description
		<p>The FilterData that is specified by the client will be sent back to the server trace provider being enabled if the FilterEnabled property is set to VARIANT_TRUE. Upon receiving this FilterData, the provider SHOULD use it to control which events are logged; this property serves as a filter on the events that are logged by the provider. The Performance Logs and Alerts Protocol has no knowledge of whether or not the provider did use the FilterData to control which events it logs.</p> <p>For example, the client may specify an IP address as the value of the FilterData. When the trace provider receives this FilterData, it may only log events that have a matching IP address.</p>

Methods in RPC Opnum Order

Method	Description
DisplayName (Get)	Retrieves the DisplayName property. Opnum: 7
DisplayName (Put)	Sets the DisplayName property. Opnum: 8
Guid (Get)	Retrieves the Guid property. Opnum: 9
Guid (Put)	Sets the Guid property. Opnum: 10
Level (Get)	Retrieves the Level property. Opnum: 11
KeywordsAny (Get)	Retrieves the KeywordsAny property. Opnum: 12
KeywordsAll (Get)	Retrieves the KeywordsAll property. Opnum: 13
Properties (Get)	Retrieves the Properties property. Opnum: 14
FilterEnabled (Get)	Retrieves the FilterEnabled property. Opnum: 15
FilterEnabled (Put)	Sets the FilterEnabled property. Opnum: 16
FilterType (Get)	Retrieves the FilterType property. Opnum: 17
FilterType (Put)	Sets the FilterType property. Opnum: 18
FilterData (Get)	Retrieves the FilterData property.

Method	Description
	Opnum: 19
FilterData (Put)	Sets the FilterData property. Opnum: 20
Query	Populates the other properties based on the local repository of providers. Opnum: 21
Resolve	Used to resolve the properties. Opnum: 22
SetSecurity	Updates the system-wide security descriptor of the provider. Opnum: 23
GetSecurity	Retrieves the system-wide security descriptor of the provider. Opnum: 24
GetRegisteredProcesses	Retrieves a list of processes that have registered as an event trace data provider. Opnum: 25

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.11.1 DisplayName (Get) (Opnum 7)

The **DisplayName (Get)** method retrieves the DisplayName property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT DisplayName(
    [out, retval] BSTR* name
);
```

name: Receives the display name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.2 DisplayName (Put) (Opnum 8)

The **DisplayName (Put)** method sets the DisplayName property, as specified in the property table in section [3.2.4.11](#).

```
[propput] HRESULT DisplayName(
    [in] BSTR name
);
```

name: Supplies the display name.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.3 Guid (Get) (Opnum 9)

The **Guid (Get)** method retrieves the Guid property, as specified in the property table in section [3.2.4.11<28>](#).

```
[propget] HRESULT Guid(  
    [out, retval] GUID* guid  
);
```

guid: Receives the PLA-UID. Any PLA-UID other than the value 0000-0000-0000-0000 is potentially a valid PLA-UID for a provider. Consequently, any value other than 0000-0000-0000-0000 should be considered valid for this property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.4 Guid (Put) (Opnum 10)

The **Guid (Put)** method sets the Guid property, as specified in the property table in section [3.2.4.11<29>](#).

```
[propput] HRESULT Guid(  
    [in] GUID guid  
);
```

guid: Supplies the PLA-UID. Any PLA-UID other than value 0000-0000-0000-0000 is potentially a valid PLA-UID for a provider. Consequently, any value other than 0000-0000-0000-0000 should be considered valid for this property.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.5 Level (Get) (Opnum 11)

The **Level (Get)** method retrieves the Level property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT Level(
    [out, retval] IValueMap** ppLevel
);
```

ppLevel: Receives the level.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.6 KeywordsAny (Get) (Opnum 12)

The **KeywordsAny (Get)** method retrieves the KeywordsAny property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT KeywordsAny(
    [out, retval] IValueMap** ppKeywords
);
```

ppKeywords: Receives the keywords.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.7 KeywordsAll (Get) (Opnum 13)

The **KeywordsAll (Get)** method retrieves the KeywordsAll property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT KeywordsAll(
    [out, retval] IValueMap* ppKeywords
);
```

ppKeywords: Receives the keywords.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.8 Properties (Get) (Opnum 14)

The **Properties (Get)** method retrieves the Properties property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT Properties(  
    [out, retval] IValueMap** ppProperties  
);
```

ppProperties: Receives the properties.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.9 FilterEnabled (Get) (Opnum 15)

The **FilterEnabled (Get)** method retrieves the FilterEnabled property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT FilterEnabled(  
    [out, retval] VARIANT_BOOL* FilterEnabled  
);
```

FilterEnabled: Receives the filter enabled flag.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.10 FilterEnabled (Put) (Opnum 16)

The **FilterEnabled (Put)** method sets the FilterEnabled property, as specified in the property table in section [3.2.4.11](#).

```
[propput] HRESULT FilterEnabled(  
    [in] VARIANT_BOOL FilterEnabled  
);
```

FilterEnabled: Supplies the filter enabled flag.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.11 FilterType (Get) (Opnum 17)

The **FilterType (Get)** method retrieves the FilterType property, as specified in the property table in section [3.2.4.11](#). The FilterType property is currently not used.

```
[propget] HRESULT FilterType(  
    [out, retval] ULONG* pulType  
);
```

pulType: Supplies the filter type. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.12 FilterType (Put) (Opnum 18)

The **FilterType (Put)** method sets the FilterType property, as specified in the property table in section [3.2.4.11](#). The FilterType property is currently not used.

```
[propput] HRESULT FilterType(  
    [in] ULONG ulType  
);
```

ulType: Supplies the filter type. The valid range is from 0x00000000 through 0xFFFFFFFF inclusive.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.13 FilterData (Get) (Opnum 19)

The **FilterData (Get)** method retrieves the FilterData property, as specified in the property table in section [3.2.4.11](#).

```
[propget] HRESULT FilterData(  
    [out, retval] SAFEARRAY(BYTE)* ppData  
);
```

ppData: Receives the filter data. The FilterData is any arbitrary data, of total size that MUST NOT be greater than 1 KB, that MAY be used by the trace provider to filter which events are logged.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.14 FilterData (Put) (Opnum 20)

The **FilterData (Put)** method sets the FilterData property, as specified in the property table in section [3.2.4.11](#).

```
[propput] HRESULT FilterData(  
    [in] SAFEARRAY(BYTE) pData  
);
```

pData: Supplies the filter data. The FilterData is any arbitrary data, of total size that MUST NOT be greater than 1 KB, that MAY be used by the trace provider to filter events which are logged.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.15 Query (Opnum 21)

The **Query** method, takes the name (or PLA-UID) of an event trace data provider installed on the system and populates the state of the ITraceDataProvider with the stored settings for that event trace provider. Each event trace provider installed on the machine must have a unique PLA-UID and name which identify it so it is not possible for the name (or PLA-UID) to correspond to more than one of the event trace providers installed on the system.

The DisplayName, Guid, Level, KeywordsAny, KeywordsAll, and Properties properties of the ITraceDataProvider will be set by this method [<30>](#). See section [3.2.4.11](#). When these properties are set, any previous values will be lost.

```
HRESULT Query(  
    [in] BSTR bstrName,  
    [in, unique] BSTR bstrServer  
);
```

bstrName: Supplies the name of the registered provider or the PLA-UID of the registered provider formatted as a string.

bstrServer: Not used.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.16 Resolve (Opnum 22)

The **Resolve** method, given another event trace data provider or a collection of event trace data providers, updates the properties of the original provider with information from one of the passed-in provider(s). If only one provider is passed-in, information from that provider is used. If multiple providers are passed-in, information is used from the first provider in the collection that has the same value for the `ITraceDataProvider::Guid` property as the original `ITraceDataProvider`[<31>](#). If no provider from the passed-in collection has the same PLA-UID, the original provider is not updated. If the original provider is updated, the `DisplayName` property of the original provider is overwritten by the `DisplayName` of the passed-in provider, and the `ValueMapItems` in the `Level`, `KeywordsAny`, and `KeywordsAll` properties of the passed-in provider replace the `ValueMapItems` for the existing `Level`, `KeywordsAny`, and `KeywordsAll` properties of the original provider. However, actual value of the `Level`, `KeywordsAny`, and `KeywordsAll` properties are not overwritten. Consequently, the existing settings are not lost; that is, if the level is 5, the symbolic names of all the levels (which are stored as `ValueMapItems`) are added, but the value of the level remains as 5. For `ValueMaps`, see section [3.2.4.18](#).

Because only one provider is used to update the original provider, there is no possibility for conflicting or duplicate properties.

```
HRESULT Resolve(  
    [in] IDispatch* pFrom  
);
```

pFrom: Supplies a pointer to a provider or provider collection object that is used to resolve the properties.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.17 SetSecurity (Opnum 23)

The **SetSecurity** method updates the system-wide security descriptor of the provider. Because the security descriptor is system-wide, the update will impact the ability of all users (local or remote) to view, modify, enable, or delete the provider.

```
HRESULT SetSecurity(  
    [in] BSTR Sddl  
);
```

Sddl: Supplies a string that describes the security descriptor for the object, using the Security Descriptor Description Language (SDDL), as specified in [\[MS-DTYP\]](#) section 2.5.1.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2.1, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.18 GetSecurity (Opnum 24)

The **GetSecurity** method retrieves the system-wide security descriptor of the provider.

```
HRESULT GetSecurity(  
    [in] ULONG SecurityInfo,  
    [out, retval] BSTR* Sddl  
);
```

SecurityInfo: Identifies the object related security information, using the Security Descriptor Description Language (SDDL), as specified in [\[MS-DTYP\]](#) section 2.5.1.

Sddl: String that describes the security descriptor for the object, as specified in [\[MS-DTYP\]](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.11.19 GetRegisteredProcesses (Opnum 25)

The **GetRegisteredProcesses** method retrieves a list of processes that have registered as an event trace data provider.

```
HRESULT GetRegisteredProcesses(  
    [out] IValueMap** Processes  
);
```

Processes: Receives a value map object that contains the list of processes that have registered as event trace data providers. The Key property MUST contain the name of the binary and value MUST contain the process identifier (PID).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in Section 2 of [\[MS-ERREF\]](#), the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12 ISchedule

The **ISchedule** interface is used to specify when the data collector set runs.

The following properties MUST be implemented by the objects that implement the ISchedule interface.

Property	Read/write	Description
Days	RW	Specifies the days of the week on which the data collector set runs.
EndDate	RW	Specifies the ending date for when the schedule is valid. The value is stored in a VARIANT. Any VARIANT of type Date is a legal value for this type. The format and over-the-wire transmission of a VARIANT is specified in [MS-OAUT] section 2.2.26. The time portion of the VARIANT is ignored; only the date portion is used.
StartDate	RW	Specifies the date that the schedule becomes valid. The value is stored in a VARIANT. Any VARIANT of type Date is a legal value for this type. The format and over-the-wire transmission of a VARIANT is specified in [MS-OAUT] section 2.2.26. The time portion of the VARIANT is ignored; only the date portion is used.
StartTime	RW	Specifies the time of day when the data collector set starts. The value is stored in a VARIANT. Any VARIANT of type Date is a legal value for this type. The format and over-the-wire transmission of a VARIANT is specified in [MS-OAUT] section 2.2.26. The date portion of the VARIANT is ignored; only the time portion is used.

Methods in RPC Opnum Order

Method	Description
StartDate (Get)	Retrieves the StartDate property. Opnum: 7
StartDate (Put)	Sets the StartDate property. Opnum: 8
EndDate (Get)	Retrieves the EndDate property. Opnum: 9
EndDate (Put)	Sets the EndDate property. Opnum: 10
StartTime (Get)	Retrieves the StartTime property Opnum: 11
StartTime (Put)	Sets the StartTime property Opnum: 12
Days (Get)	Retrieves the Days property. Opnum: 13
Days (Put)	Sets the Days property. Opnum: 14

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.12.1 StartDate (Get) (Opnum 7)

The **StartDate (Get)** method retrieves the StartDate property, as specified in the property table in section [3.2.4.12](#).

```
[propget] HRESULT StartDate(  
    [out, retval] VARIANT* start  
);
```

start: Receives the date when the schedule becomes valid.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.2 StartDate (Put) (Opnum 8)

The **StartDate (Put)** method sets the StartDate property, as specified in the property table in section [3.2.4.12](#).

```
[propput] HRESULT StartDate(  
    [in] VARIANT start  
);
```

start: Supplies the date when the schedule becomes valid. The variant data type MUST be VT_DATE or VT_EMPTY to unset the date.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.3 EndDate (Get) (Opnum 9)

The **EndDate (Get)** method retrieves the EndDate property, as specified in the property table in section [3.2.4.12](#).

```
[propget] HRESULT EndDate(  
    [out, retval] VARIANT* end  
);
```

end: Receives the end date that the schedule is valid.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.4 EndDate (Put) (Opnum 10)

The **EndDate (Put)** method sets the EndDate property, as specified in the property table in section [3.2.4.12](#).

```
[propput] HRESULT EndDate(  
    [in] VARIANT end  
);
```

end: Supplies the end date that the schedule is valid. The variant data type MUST be VT_DATE or VT_EMPTY to unset the date.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.5 StartTime (Get) (Opnum 11)

The **StartTime (Get)** method retrieves the StartTime property, as specified in the property table in section [3.2.4.12](#).

```
[propget] HRESULT StartTime(  
    [out, retval] VARIANT* start  
);
```

start: Receives the time of day when the data collector set runs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.6 StartTime (Put) (Opnum 12)

The **StartTime (Put)** method sets the StartTime property, as specified in the property table in section [3.2.4.12](#).

```
[propput] HRESULT StartTime(  
    [in] VARIANT start  
);
```

start: Receives the time of day when the data collector set runs. The variant data type MUST be VT_DATE or VT_EMPTY to unset the date.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.7 Days (Get) (Opnum 13)

The **Days (Get)** method retrieves the Days property.

```
[propget] HRESULT Days(  
    [out, retval] WeekDays* days  
);
```

days: Receives the days on which to run the data collector set. For values, see the WeekDays enumeration specified in section [2.2.2.12](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.12.8 Days (Put) (Opnum 14)

The **Days (Put)** method sets the Days property.

```
[propput] HRESULT Days(  
    [in] WeekDays days  
);
```

days: Supplies the days on which to run the data collector set. For values, see the WeekDays enumeration specified in section [2.2.2.12](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13 ITraceDataProviderCollection

The **ITraceDataProviderCollection** interface is used to manage a collection of TraceDataProvider objects.

The following properties MUST be implemented by the objects that implement the ITraceDataProviderCollection interface.

Property	Read/write	Description
_NewEnum	R	An enumeration object of type IEnumVariant containing a snapshot of the ITraceDataProvider objects in this collection. The enumeration object is specified in [MS-OAUT] section 3.3.
Count	R	Number of trace data providers in this collection.
Item	R	Retrieves the requested trace data provider from the collection.

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
_NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9
Add	Adds a trace provider to the collection. Opnum: 10
Remove	Removes a trace provider from the collection. Opnum: 11
Clear	Removes all trace providers from the collection. Opnum: 12
AddRange	Adds one or more trace providers to the collection. Opnum: 13
CreateTraceDataProvider	Creates a trace data provider object. Opnum: 14
GetTraceDataProviders	Populates the collection with the registered trace providers. Opnum: 15
GetTraceDataProvidersByProcess	Populates the collection with the list of providers that were registered by the given process. Opnum: 16

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.13.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[propget, id(1)] HRESULT Count(
    [out, retval] LONG* retVal
```

```
);
```

retVal: Receives the number of trace providers in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[propget, id(DISPID_VALUE)] HRESULT Item(  
    [in] VARIANT index,  
    [out, retval] ITraceDataProvider** ppProvider  
);
```

index: Supplies a zero-based index of the trace provider to retrieve from the collection. Acceptable variant data types are VT_I4 and VT_UI4.

ppProvider: Receives a pointer to the event trace data provider requested.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.3 _NewEnum (Get) (Opnum 9)

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.13](#).

```
[propget, id(DISPID_NEWENUM)] HRESULT _NewEnum(  
    [out, retval] IUnknown** retVal  
);
```

retVal: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.4 Add (Opnum 10)

The **Add** method adds a trace provider to the collection.

```
HRESULT Add(  
    [in] ITraceDataProvider* pProvider  
);
```

pProvider: Supplies the event trace data provider to be added.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.5 Remove (Opnum 11)

The **Remove** method removes a trace provider from the collection.

```
HRESULT Remove(  
    [in] VARIANT vProvider  
);
```

vProvider: Supplies which provider to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the provider to remove. If the variant type is VT_DISPATCH, it is interpreted as a pointer to the provider to remove. VARIANT is a standard COM type and it is defined in [\[MS-OAUT\]](#) section 2.2.29.2.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.6 Clear (Opnum 12)

The **Clear** method removes all trace providers from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.7 AddRange (Opnum 13)

The **AddRange** method adds one or more trace providers to the collection.

```
HRESULT AddRange(  
    ITraceDataProviderCollection* providers  
);
```

providers: Supplies an event trace data provider collection object whose event trace data providers will be added to the event trace data provider collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.8 CreateTraceDataProvider (Opnum 14)

The **CreateTraceDataProvider** method creates a trace data provider object.

```
HRESULT CreateTraceDataProvider(  
    [out, retval] ITraceDataProvider** Provider  
);
```

Provider: Receives a pointer to a newly create event trace data provider object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.9 GetTraceDataProviders (Opnum 15)

The **GetTraceDataProviders** method populates the collection with the registered trace providers.

```
HRESULT GetTraceDataProviders(  
    [in, unique] BSTR server  
);
```

server: Not used.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.13.10 GetTraceDataProvidersByProcess (Opnum 16)

The **GetTraceDataProvidersByProcess** method populates the collection with the list of providers that were registered by the given process.

```
HRESULT GetTraceDataProvidersByProcess(  
    [in, unique] BSTR Server,  
    [in] ULONG Pid  
);
```

Server: Not used.

Pid: The Process identifier of the process that registered the providers.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14 IScheduleCollection

The **IScheduleCollection** interface is used to manage a collection of Schedule objects

The following properties MUST be implemented by the objects that implement the IScheduleCollection interface.

Property	Read/write	Description
_NewEnum	R	An enumeration object of type IEnumVariant containing a snapshot of the ISchedule objects in this collection. The enumeration object is specified in [MS-OAUT] section 3.3.
Count	R	Number of schedules in this collection.
Item	R	Retrieves the requested schedule from the collection.

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
_NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9
Add	Adds a schedule to the collection. Opnum: 10

Method	Description
Remove	Removes a schedule from the collection. Opnum: 11
Clear	Removes all schedules from the collection. Opnum: 12
AddRange	Adds one or more schedules to the collection. Opnum: 13
CreateSchedule	Creates a schedule object. Opnum: 14

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.14.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[propget, id(1)] HRESULT Count(
    [out, retval] LONG* retVal
);
```

retVal: Receives the number of schedules in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[proppget, id(DISPID_VALUE)] HRESULT Item(
    [in] VARIANT index,
    [out, retval] ISchedule** ppSchedule
);
```

index: Supplies a zero-based index of the schedule to retrieve from the collection. Acceptable variant data types are VT_I4 and VT_UI4.

ppSchedule: Receives a pointer to the schedule requested.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.3 **_NewEnum (Get) (Opnum 9)**

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.16](#).

```
[propget, id(DISPID_NEWENUM)] HRESULT _NewEnum(  
    [out, retval] IUnknown** retVal  
);
```

retVal: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.4 **Add (Opnum 10)**

The **Add** method adds a schedule to the collection.

```
HRESULT Add(  
    ISchedule* pSchedule  
);
```

pSchedule: Supplies the schedule to be added to the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.5 **Remove (Opnum 11)**

The **Remove** method removes a schedule from the collection.

```
HRESULT Remove(  
    VARIANT vSchedule  
);
```

vSchedule: Supplies which schedule to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the schedule to remove. If the variant type is VT_DISPATCH, it's interpreted as a pointer to the schedule to remove.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.6 Clear (Opnum 12)

The **Clear** method removes all schedules from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.7 AddRange (Opnum 13)

The **AddRange** method adds one or more schedules to the collection.

```
HRESULT AddRange(  
    IScheduleCollection* pSchedules  
);
```

pSchedules: Supplies a schedule collection object whose schedules will be added to this schedule collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.14.8 CreateSchedule (Opnum 14)

The **CreateSchedule** method creates a schedule object.

```
HRESULT CreateSchedule(  
    [out, retval] ISchedule** Schedule  
);
```

Schedule: Receives a pointer to a newly created schedule.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15 IDataCollectorCollection

The **IDataCollectorCollection** interface is used to manage a collection of DataCollector objects.

The following properties MUST be implemented by the objects that implement the **IDataCollectorCollection** interface.

Property	Read/write	Description
_NewEnum	R	An enumeration object of type IEnumVariant containing a snapshot of the IDataCollector objects in this collection. The enumeration object is specified in [MS-OAUT] section 3.3.
Count	R	Number of data collectors in this collection.
Item	R	Retrieves the requested data collector from the collection.

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
_NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9
Add	Adds a data collector to the collection. Opnum: 10
Remove	Removes a data collector from the collection. Opnum: 11
Clear	Removes all data collectors from the collection. Opnum: 12
AddRange	Adds one or more data collectors to the collection. Opnum: 13
CreateDataCollectorFromXml	Creates a data collector using XML. Opnum: 14
CreateDataCollector	Creates a data collector of the specified type. Opnum: 15

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.15.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[proppget, id(1)] HRESULT Count(  
    [out, retval] LONG* retVal  
);
```

retVal: Receives the number of schedules in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[proppget, id(DISPID_VALUE)] HRESULT Item(  
    [in] VARIANT index,  
    [out, retval] IDataCollector** collector  
);
```

index: Supplies a zero-based index of the data collector to retrieve from the collection. Acceptable variant data types are VT_I4 and VT_UI4.

collector: Receives a pointer to the data collector requested.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.3 _NewEnum (Get) (Opnum 9)

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.15](#).

```
[propget, id(DISPID_NEWENUM)] HRESULT _NewEnum(  
    [out, retval] IUnknown** retVal  
);
```

retVal: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.4 Add (Opnum 10)

The **Add** method adds a data collector to the collection.

```
HRESULT Add(  
    IDataCollector* collector  
);
```

collector: Supplies the data collector to add to this collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.5 Remove (Opnum 11)

The **Remove** method removes a data collector from the collection.

```
HRESULT Remove(  
    VARIANT collector  
);
```

collector: Supplies which data collector to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the data collector to remove. If the variant type is VT_DISPATCH, it's interpreted as a pointer to the data collector to remove.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.6 Clear (Opnum 12)

The **Clear** method removes all data collectors from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.7 AddRange (Opnum 13)

The **AddRange** method adds one or more data collectors to the collection.

```
HRESULT AddRange(  
    IDataCollectorCollection* collectors  
);
```

collectors: Supplies a data collectors collection object whose data collectors will be added to this data collectors collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.15.8 CreateDataCollectorFromXml (Opnum 14)

The **CreateDataCollectorFromXml** method creates a data collector using XML.

```
HRESULT CreateDataCollectorFromXml(  
    [in] BSTR bstrXml,  
    [out] IValueMap** pValidation,  
    [out, retval] IDataCollector** pCollector  
);
```

bstrXml: Supplies a string that contains the XML specifying the data collector to create. The possible data collector definitions can be as follows: *IPerformanceCounterDataCollector* (section [3.2.4.6](#)), *IConfigurationDataCollector* (section [3.2.4.7](#)), *IAlertDataCollector* (section [3.2.4.8](#)), *ITraceDataCollector* (section [3.2.4.9](#)), and *IApiTracingDataCollector* (section [3.2.4.10](#)). The XML for each of those respective data collector types is in their corresponding sections; the overall XML of the data collector set, which includes the XML for each type of data collector, specified in section 3.2.4.19. The *bStrXml* parameter value is the set of XML elements corresponding to a single type of data collector.

pValidation: Receives a validation map with a list of properties that contain errors or warnings. The validation map is stored as an *IValueMap* [3.2.4.18](#) that associates property names with error or warning codes. The validation map provides the caller with information on any errors in the input.

pCollector: Receives the newly created data collector.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors defined in section [2.2.1](#) or one of the standard Windows errors defined in [\[MS-ERREF\]](#) section 2, the most common of which is listed below.

S_OK (0x00000000)

3.2.4.15.9 CreateDataCollector (Opnum 15)

The **CreateDataCollector** method creates a data collector of the specified type.

```
HRESULT CreateDataCollector(  
    [in] DataCollectorType Type,  
    [out, retval] IDataCollector** Collector  
);
```

Type: Supplies the type of data collector to create. For possible data collector types, see the DataCollectorType enumeration in section [2.2.2.5](#).

Collector: Receives the newly created data collector.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16 IDataCollectorSetCollection

The **IDataCollectorSetCollection** interface is used to manage a collection of DataCollectorSet objects.

The following properties MUST be implemented by the objects that implement the **IDataCollectorSetCollection** interface.

Property	Read/write	Description
_NewEnum	R	An enumeration object of type IEnumVariant containing a snapshot of the IDataCollectorSet objects in this collection. The enumeration object is specified in [MS-OAUT] section 3.3.
Count	R	Number of data collector sets in this collection.
Item	R	Retrieves the requested data collector set from the collection.

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
_NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9

Method	Description
Add	Adds a data collector set to the collection. Opnum: 10
Remove	Removes a data collector set from the collection. Opnum: 11
Clear	Removes all data collector sets from the collection. Opnum: 12
AddRange	Adds one or more data collector sets to the collection. Opnum: 13
GetDataCollectorSets	Populates data collector set collection with the persisted data collector sets. Opnum: 14

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.16.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[propget, id(1)] HRESULT Count(
    [out, retval] LONG* retVal
);
```

retVal: Receives the number of data collector sets in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[propget, id(DISPID_VALUE)] HRESULT Item(
    [in] VARIANT index,
    [out, retval] IDataCollector** set
);
```

index: Supplies a zero-based index of the data collector set to retrieve from the collection. Acceptable variant data types are VT_I4 and VT_UI4.

set: Receives a pointer to the data collector set requested.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.3 **_NewEnum (Get) (Opnum 9)**

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.16](#).

```
[proppget, id(DISPID_NEWENUM)]  
    HRESULT _NewEnum(  
        [out, retval] IUnknown** retVal  
    );
```

retVal: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.4 **Add (Opnum 10)**

The **Add** method adds a data collector set to the collection.

```
HRESULT Add(  
    IDataCollectorSet* set  
);
```

set: Supplies the data collector set to be added.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.5 **Remove (Opnum 11)**

The **Remove** method removes a data collector set from the collection.

```
HRESULT Remove(  
    VARIANT set  
);
```

set: Supplies which data collector set to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the data collector set to remove. If the variant type is VT_DISPATCH, it's interpreted as a pointer to the data collector set to remove.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.6 Clear (Opnum 12)

The **Clear** method removes all data collector sets from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.7 AddRange (Opnum 13)

The **AddRange** method adds one or more data collector sets to the collection.

```
HRESULT AddRange(  
    IDataCollectorSetCollection* sets  
);
```

sets: Supplies a data collector set collection object whose data collector sets will be added to this data collector set collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.16.8 GetDataCollectorSets (Opnum 14)

The **GetDataCollectorSets** method populates data collector set collection with the persisted data collector sets. A data collector set is considered to be persisted if either of the following conditions is met:

1. The data collector set is in a running state. A data collector set is considered to be in a running state if a call to [IDataCollectorSet::getState](#) returns plaRunning. A data collector set enters a

running state by calling [IDataCollectorSet::Start](#). A data collector set can be removed from a running state by calling [IDataCollectorSet::Stop](#).

2. The data collector set is committed. A data collector set is committed after a successful call to [IDataCollectorSet::Commit](#) where the CommitMode has any value other than plaValidateOnly. A data collector set can be removed from a committed state by calling [IDataCollectorSet::Delete](#).

Semantically, a data collector set is persisted if it has been committed to a permanent store, such as the filesystem.<32>

```
HRESULT GetDataCollectorSets(  
    [in, unique] BSTR server,  
    [in, unique] BSTR filter  
);
```

server: Not used.

filter: Not used.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17 IValueMapItem

The **IValueMapItem** interface is used to define a named-value pair.

The following properties MUST be implemented by the objects that implement the **IValueMapItem** interface.

The following is an XML representation of a ValueMapItem.

```
<Key> </Key>  
<Description></Description>  
<Enabled></Enabled>  
<Value></Value>
```

Property	Read/write	Description
Description	RW	Specifies the description of the item.
Enabled	RW	Specifies whether or not the item is enabled. If an item is not enabled, its Value property should be ignored. In typical usage, a ValueMap will contain a ValueMapItem for each of the multiple possible settings of the property that the ValueMap is passed to (such as an entry for every Keyword or every Level that can be used by an ITraceDataProvider). This Enabled property indicates whether or not the ValueMapItem should be used. Essentially, the ValueMap contains a ValueMapItem for each of the multiple possible options, and the Enabled property indicates which

Property	Read/write	Description
		options are actually selected.
Key	RW	Specifies the name of the item. The name of the item can be any non-empty BSTR. The semantics of the key depend on the ValueMapType property, specified in section 3.2.4.18 , of the IValueMap to which this IValueMapItem belongs. The over-the-wire transmission of a BSTR is specified in [MS-OAUT] section 2.2.23. The Performance Logs and Alerts Protocol does not have any predefined Key values or semantic definitions. The only condition Performance Logs and Alerts Protocol places on the Key is that it cannot be an empty BSTR. <33>
Value	RW	Specifies the value of the item. The value is stored in a VARIANT. The format and over the wire transmission of a VARIANT is specified in [MS-OAUT] section 2.2.29. Any VARIANT is a legal value for this property. The ValueMapItem is a generic container and the semantics of the Value property depend on what it is being used to contain. The ValueMapType property contains information regarding how the Value property should be interpreted. <34>
ValueMapType	RW	Specifies the type of ValueMap in which the ValueMapItem should be inserted. Information on the different types of ValueMaps are specified in section 2.2.2.11 .

The following is an XML representation of a ValueMapItem; please see section [3.2.4.19](#) the XML layout of entire data collector set element.

```
<Key> </Key>
<Description></Description>
<Enabled></Enabled>
<Value></Value>
```

Methods in RPC Opnum Order

Method	Description
Description (Get)	Retrieves the Description property. Opnum: 7
Description (Put)	Sets the Description property. Opnum: 8
Enabled (Get)	Retrieves the Enabled property. Opnum: 9
Enabled (Put)	Sets the Enabled property. Opnum: 10
Key (Get)	Retrieves the Key property. Opnum: 11
Key (Put)	Sets the Key property.

Method	Description
	Opnum: 12
Value (Get)	Retrieves the Value property. Opnum: 13
Value (Put)	Sets the Value property. Opnum: 14
ValueMapType (Get)	Retrieves the ValueMapType property. Opnum: 15
ValueMapType (Put)	Sets the ValueMapType property. Opnum: 16

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.17.1 Description (Get) (Opnum 7)

The **Description (Get)** method retrieves the Description property.

```
[propget] HRESULT Description(
    [out, retval] BSTR* description
);
```

description: Receives the description of the item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.2 Description (Put) (Opnum 8)

The **Description (Put)** method sets the Description property.

```
[propput] HRESULT Description(
    [in] BSTR description
);
```

description: Supplies the description of the named-value pair item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.3 Enabled (Get) (Opnum 9)

The **Enabled (Get)** method retrieves the Enabled property, as specified in the property table in section [3.2.4.17](#).

```
[propget] HRESULT Enabled(  
    [out, retval] VARIANT_BOOL* enabled  
);
```

enabled: Receives a Boolean indicating whether the item is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.4 Enabled (Put) (Opnum 10)

The **Enabled (Put)** method sets the Enabled property, as specified in the property table in section [3.2.4.17](#).

```
[propput] HRESULT Enabled(  
    [in] VARIANT_BOOL enabled  
);
```

enabled: Supplies a Boolean indicating whether the item is enabled.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.5 Key (Get) (Opnum 11)

The **Key (Get)** method retrieves the Key property that is set in the IValueMapItem, as specified in the property table in section [3.2.4.17](#). The semantics of what the key is used for depends on the ValueMapType property of the IValueMap to which the IValueMapItem belongs. For example, if the ValueMapType property (whose possible values are specified in section [2.2.2.11](#)) is set to plaIndex, the IValueMapItems in that IValueMap may be a collection of Levels (specified as a property of the ITraceDataProvider in section [3.2.4.11](#)) since only one level can be set on an ITraceDataProvider at a time. In this example, the Key will be a string that refers to the name of the level. The key can be any BSTR other than the empty BSTR. The Performance Logs and Alerts Protocol does not have any predetermined values or semantics for this key.

```
[propget] HRESULT Key(  
    [out, retval] BSTR* key  
);
```

key: Receives the BSTR that contains the value of the key. The semantics of the key depend on the ValueMapType property of the IValueMap to which the IValueMapItem belongs.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in section [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.6 Key (Put) (Opnum 12)

The **Key (Put)** method sets the Key property in the IValueMapItem, as specified in the property table in section [3.2.4.17](#). The semantics of what the key is used for depends on the ValueMapType property of the IValueMap to which the IValueMapItem belongs. For example, if the ValueMapType property (whose possible values are specified in section [2.2.2.11](#)) is set to plaIndex, the IValueMapItems in that IValueMap may be a collection of Levels (specified as a property of the ITraceDataProvider in section [3.2.4.11](#)) since only one level can be set on an ITraceDataProvider at a time. In this example, the Key will be a string that refers to the name of the level. The key can be any BSTR other than the empty BSTR. The Performance Logs and Alerts Protocol does not have any predetermined values or semantics for this key.

```
[propput] HRESULT Key(  
    [in] BSTR key  
);
```

key: Supplies the key value, specified as a BSTR, to set in the IValueMapItem.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in section [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.7 Value (Get) (Opnum 13)

The **Value (Get)** method retrieves the Value property, as specified in the property table in section [3.2.4.17](#).

```
[propget] HRESULT Value(  
    [out, retval] VARIANT* Value  
);
```

Value: Receives a value of the item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.8 Value (Put) (Opnum 14)

The **Value (Put)** method retrieves the Value property, as specified in the property table in section [3.2.4.17](#).

```
[propput] HRESULT Value(  
    [in] VARIANT Value  
);
```

Value: Supplies a value of the item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.9 ValueMapType (Get) (Opnum 15)

The **ValueMapType (Get)** method retrieves the ValueMapType property, as specified in the property table in section [3.2.4.17](#).

```
[propget] HRESULT ValueMapType(  
    [out, retval] ValueMapType* type  
);
```

type: Receives the type of item, as specified in section [2.2.2.11](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.17.10 ValueMapType (Put) (Opnum 16)

The **ValueMapType (Put)** method sets the ValueMapType property, as specified in the property table in section [3.2.4.17](#).

```
[propput] HRESULT ValueMapType(  
    [in] ValueMapType type  
);
```

type: Supplies the type of item. For valid values, see the ValueMapType enumeration specified in section [2.2.2.11](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18 IValueMap

The **IValueMap** interface is used to manage a collection of named-value pairs.

Objects that implement this interface represent value maps. The following properties **MUST** be implemented by the objects that implement the **IValueMap** interface.

Property	Read/write	Description
_NewEnum	R	An enumeration object of type IEnumVariant containing a snapshot of the IValueMapItem objects in this collection. The enumeration object is specified in [MS-OAUT] section 3.3.
Count	R	The number of value map items in the value map.
Description	RW	Specifies the description of the value map.
Item	R	Retrieves the requested value map item from the value map.
Value	RW	Specifies the value of the value map. The value is stored in a VARIANT. Any VARIANT is a legal value for this type. The Value property can be used for several purposes. Most commonly, the APIs described in this document use the Value property to indicate which ValueMapItem is considered to be currently selected. In these cases, the ValueMapItems each represent a possible value for a ValueMap, and the Value property stores the key to the ValueMapItem that is currently selected.
ValueMapType	RW	Specifies the type of the value map. The possible types of the value map are specified in section 2.2.2.11 .

Methods in RPC Opnum Order

Method	Description
Count (Get)	Retrieves the Count property. Opnum: 7
Item (Get)	Retrieves the Item property. Opnum: 8
_NewEnum (Get)	Retrieves the NewEnum property. Opnum: 9
Description (Get)	Retrieves the Description property. Opnum: 10
Description (Put)	Sets the Description property. Opnum: 11
Value (Get)	Retrieves the Value property. Opnum: 12
Value (Put)	Sets the Value property.

Method	Description
	Opnum: 13
ValueMapType (Get)	Retrieves the ValueMapType property. Opnum: 14
ValueMapType (Put)	Sets the ValueMapType property. Opnum: 15
Add	Adds an item to the collection. Opnum: 16
Remove	Removes an item from the collection. Opnum: 17
Clear	Removes all items from the collection Opnum: 18
AddRange	Adds one or more items to the collection. Opnum: 19
CreateValueMapItem	Creates a value map item object. Opnum: 20

Opnums 0, 1, and 2 are reserved for the IUnknown interface. Opnums 3, 4, 5, and 6 are reserved for the IDispatch interface.

3.2.4.18.1 Count (Get) (Opnum 7)

The **Count (Get)** method retrieves the Count property.

```
[propget, id(1)] HRESULT Count(
    [out, retval] LONG* retVal
);
```

retVal: Receives the number of items in the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.2 Item (Get) (Opnum 8)

The **Item (Get)** method retrieves the Item property.

```
[propget, id(DISPID_VALUE)] HRESULT Item(
    [in] VARIANT index,
    [out, retval] IValueMapItem** value
);
```

index: Supplies a zero-based index of the value map item to retrieve from the value map. Acceptable variant data types are VT_I4 and VT_UI4.

value: An IValueMapItem interface of the retrieved item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.3 _NewEnum (Get) (Opnum 9)

The **_NewEnum (Get)** method retrieves the NewEnum property, as specified in the property table in section [3.2.4.18](#).

```
[propget, id(DISPID_NEWENUM)] HRESULT _NewEnum(  
    [out, retval] IUnknown** retVal  
);
```

retVal: Receives a pointer to a variant enumeration object.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.4 Description (Get) (Opnum 10)

The **Description (Get)** method retrieves the Description property.

```
[propget] HRESULT Description(  
    [out, retval] BSTR* description  
);
```

description: Receives the description of the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.5 Description (Put) (Opnum 11)

The **Description (Put)** method sets the Description property.

```
[propput] HRESULT Description(  
    [in] BSTR description
```

```
);
```

description: Supplies the description of the collection.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.6 Value (Get) (Opnum 12)

The **Value (Get)** method retrieves the Value property, as specified in the property table in section [3.2.4.18](#).

```
[propget] HRESULT Value(  
    [out, retval] VARIANT* Value  
);
```

Value: Receives the value of the collection. Value can be a VARIANT type specified in [\[MS-OAUT\]](#) section **2.2.26**.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.7 Value (Put) (Opnum 13)

The **Value (Put)** method sets the Value property, as specified in the property table in section [3.2.4.18](#).

```
[propput] HRESULT Value(  
    [in] VARIANT Value  
);
```

Value: Receives the value of the collection. Value can be a VARIANT type specified in [\[MS-OAUT\]](#) section **2.2.26**.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.8 ValueMapType (Get) (Opnum 14)

The **ValueMapType (Get)** method retrieves the ValueMapType property, as specified in the property table in section [3.2.4.18](#).

```
[propget] HRESULT ValueMapType(  
    [out, retval] ValueMapType* type  
);
```

type: Receives the type of items in the collection, as specified in the ValueMapType enumeration in section [2.2.2.11](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.9 ValueMapType (Put) (Opnum 15)

The **ValueMapType (Put)** method sets the ValueMapType property, as specified in the property table in section [3.2.4.18](#).

```
[propput] HRESULT ValueMapType(  
    [in] ValueMapType type  
);
```

type: Supplies the type of items in the collection, as specified in the ValueMapType enumeration in section [2.2.2.11](#).

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.10 Add (Opnum 16)

The **Add** method adds an item to the collection.

```
HRESULT Add(  
    VARIANT value  
);
```

value: Supplies the items to be added. If the variant type is VT_DISPATCH, then it is interpreted as a value map item to be added. If the value is an integer (the variant type is VT_I4, VT_UI4, VT_I8, or VT_UI8), then a value map item is created and added to the value map. If the value is a string (the variant type is VT_BSTR), PLA MUST attempt to convert the string to an integer. If successful, PLA MUST add an item with the given integer value. If PLA cannot

convert the string, PLA MUST search the collection for a key that matches the string. If found, PLA MUST enable the item; otherwise, the add fails.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.11 Remove (Opnum 17)

The **Remove** method removes an item from the collection.

```
HRESULT Remove(  
    VARIANT value  
);
```

value: Supplies which value map item to remove. If the variant type is VT_I4 or VT_UI4, it is interpreted as the zero-based index of the value map item to remove. If the variant type is VT_DISPATCH, it is interpreted as a pointer to the value map item to remove.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.12 Clear (Opnum 18)

The **Clear** method removes all items from the collection.

```
HRESULT Clear();
```

This method has no parameters.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.13 AddRange (Opnum 19)

The **AddRange** method adds one or more items to the collection.

```
HRESULT AddRange(  
    IValueMap* map  
);
```

map: Supplies a value map object whose value map items will be added to this value map.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.18.14 CreateValueMapItem (Opnum 20)

The **CreateValueMapItem** method creates an object implementing the [IValueMapItem](#) interface. This object can be configured and then passed to [IValueMap::Add](#). This method exists to provide a means for populating ValueMaps.

```
HRESULT CreateValueMapItem(  
    [out, retval] IValueMapItem** Item  
);
```

Item: Receives the newly created value map item.

Return Values: This method MUST return zero (S_OK) for success; otherwise, it MUST return one of the errors as defined in [2.2.1](#) or one of the standard Windows errors as defined in [\[MS-ERREF\]](#) section 2, the most common of which are listed below:

S_OK (0x00000000)

3.2.4.19 Schema

The following aggregates the information from the previous sections and notes, in XML format, the XML elements that are supported by the MS-PLA protocol. [<35>](#)

```
<DataCollectorSet>  
  <Status></Status>  
  <Keyword></Keyword>  
  <Duration></Duration>  
  <Description></Description>  
  <DescriptionUnresolved></DescriptionUnresolved>  
  <DisplayName></DisplayName>  
  <DisplayNameUnresolved></DisplayNameUnresolved>  
  <SchedulesEnabled></SchedulesEnabled>  
  <Schedule>  
    <StartDate/>  
    <EndDate/>  
    <StartTime/>  
    <Days/>  
  </Schedule>  
  <LatestOutputLocation></LatestOutputLocation>  
  <Name></Name>  
  <OutputLocation></OutputLocation>  
  <RootPath></RootPath>  
  <Segment></Segment>  
  <SegmentMaxDuration></SegmentMaxDuration>
```

```

<SegmentMaxSize></SegmentMaxSize>
<SerialNumber></SerialNumber>
<Server></Server>
<Subdirectory></Subdirectory>
<SubdirectoryFormat></SubdirectoryFormat>
<SubdirectoryFormatPattern></SubdirectoryFormatPattern>
<Task></Task>
<TaskRunAsSelf></TaskRunAsSelf>
<TaskArguments></TaskArguments>
<TaskUserTextArguments></TaskUserTextArguments>
<UserAccount></UserAccount>
<Security></Security>
<StopOnCompletion></StopOnCompletion>
<PerformanceCounterDataCollector>
  <DataCollectorType></DataCollectorType>
  <Name></Name>
  <FileName></FileName>
  <FileNameFormat></FileNameFormat>
  <FileNameFormatPattern></FileNameFormatPattern>
  <LogAppend></LogAppend>
  <LogCircular></LogCircular>
  <LogOverwrite></LogOverwrite>
  <LatestOutputLocation></LatestOutputLocation>
  <DataSourceName></DataSourceName>
  <SampleInterval></SampleInterval>
  <SegmentMaxRecords></SegmentMaxRecords>
  <LogFileFormat></LogFileFormat>
  <Counter></Counter>
  <CounterDisplayName></CounterDisplayName>
</PerformanceCounterDataCollector>
<TraceDataCollector>
  <DataCollectorType></DataCollectorType>
  <Name></Name>
  <FileName></FileName>
  <FileNameFormat></FileNameFormat>
  <FileNameFormatPattern></FileNameFormatPattern>
  <LogAppend></LogAppend>
  <LogCircular></LogCircular>
  <LogOverwrite></LogOverwrite>
  <LatestOutputLocation></LatestOutputLocation>
  <Guid></Guid>
  <BufferSize></BufferSize>
  <BuffersLost></BuffersLost>
  <BuffersWritten></BuffersWritten>
  <ClockType></ClockType>
  <EventsLost></EventsLost>
  <ExtendedModes></ExtendedModes>
  <FlushTimer></FlushTimer>
  <FreeBuffers></FreeBuffers>
  <MaximumBuffers></MaximumBuffers>
  <MinimumBuffers></MinimumBuffers>
  <NumberOfBuffers></NumberOfBuffers>
  <PreallocateFile></PreallocateFile>
  <ProcessMode></ProcessMode>
  <RealTimeBuffersLost></RealTimeBuffersLost>
  <SessionName></SessionName>
  <SessionThreadId></SessionThreadId>
  <StreamMode></StreamMode>

```

```

<TraceDataProvider>
  <DisplayName></DisplayName>
  <FilterEnabled></FilterEnabled>
  <FilterType></FilterType>
  <Level>
    <Description></Description>
    <ValueMapType></ValueMapType>
    <Value></Value>
    <ValueMapItem>
      <Key></Key>
      <Description></Description>
      <Enabled></Enabled>
      <Value></Value>
    </ValueMapItem>
  </Level>
  <KeywordsAny>
    <Description></Description>
    <ValueMapType></ValueMapType>
    <Value></Value>
    <ValueMapItem>
      <Key></Key>
      <Description></Description>
      <Enabled></Enabled>
      <Value></Value>
    </ValueMapItem>
  </KeywordsAny>
  <KeywordsAll>
    <Description></Description>
    <ValueMapType></ValueMapType>
    <Value></Value>
    <ValueMapItem>
      <Key></Key>
      <Description></Description>
      <Enabled></Enabled>
      <Value></Value>
    </ValueMapItem>
  </KeywordsAll>
  <Properties>
    <Description></Description>
    <ValueMapType></ValueMapType>
    <Value></Value>
    <ValueMapItem>
      <Key></Key>
      <Description></Description>
      <Enabled></Enabled>
      <Value>0x1</Value>
    </ValueMapItem>
  </Properties>
  <Guid></Guid>
  <FilterData></FilterData>
</TraceDataProvider>
</TraceDataCollector>
<ConfigurationDataCollector>
  <DataCollectorType></DataCollectorType>
  <Name></Name>
  <FileName></FileName>
  <FileNameFormat></FileNameFormat>
  <FileNameFormatPattern></FileNameFormatPattern>

```

```

    <LogAppend></LogAppend>
    <LogCircular></LogCircular>
    <LogOverwrite></LogOverwrite>
    <LatestOutputLocation></LatestOutputLocation>
    <QueryNetworkAdapters></QueryNetworkAdapters>
    <RegistryKey></RegistryKey>
    <File></File>
    <ManagementQuery></ManagementQuery>
    <FileMaxCount></FileMaxCount>
    <FileMaxTotalSize></FileMaxTotalSize>
    <FileMaxRecursiveDepth></FileMaxRecursiveDepth>
    <RegistryMaxRecursiveDepth></RegistryMaxRecursiveDepth>
    <SystemStateFile></SystemStateFile>
</ConfigurationDataCollector>
<AlertDataCollector>
    <DataCollectorType></DataCollectorType>
    <Name></Name>
    <Alert></Alert>
    <AlertDisplayName></AlertDisplayName>
    <EventLog></EventLog>
    <SampleInterval></SampleInterval>
    <Task></Task>
    <TaskRunAsSelf></TaskRunAsSelf>
    <TaskArguments></TaskArguments>
    <TaskUserTextArguments></TaskUserTextArguments>
    <TriggerDataCollectorSet></TriggerDataCollectorSet>
</AlertDataCollector>
<ApiTracingDataCollector>
    <LogApiNamesOnly/>
    <ExePath/>
    <LogFilePath/>
    <IncludeModule/>
    <IncludeApis/>
    <ExcludeApis/>
</ApiTracingDataCollector>
<DataManager>
    <Enabled></Enabled>
    <CheckBeforeRunning></CheckBeforeRunning>
    <MinFreeDisk></MinFreeDisk>
    <MaxSize></MaxSize>
    <MaxFolderCount></MaxFolderCount>
    <ResourcePolicy></ResourcePolicy>
    <ReportFileName></ReportFileName>
    <RuleTargetFileName></RuleTargetFileName>
    <EventsFileName></EventsFileName>
    <Rules></Rules>
    <FolderAction>
        <Size></Size>
        <Age></Age>
        <Actions></Actions>
        <SendCabTo></SendCabTo>
    </FolderAction>
</DataManager>
</DataCollectorSet>

```

The following table lists the relevant sections for each of the key elements in the XML that is noted above:

Element	Section
DataCollectorSet	3.2.4.1
PerformanceCounterDatacollector	3.2.4.6
TraceDataCollector	3.2.4.9
TraceDataProvider	3.2.4.11
ConfigurationDataCollector	3.2.4.7
AlertDataCollector	3.2.4.8
ApiTracingDataCollector	3.2.4.10
DataManager	3.2.4.2
Rules	3.2.4.4
FolderAction	3.2.4.3
ValueMapItem	3.2.4.17

There can be more than one of the same type of data collector type within a data collector set. There can also be many ValueMapItems within the Level, KeywordsAny, KeywordsAll and Properties elements.

3.2.5 Timer Events

No timers are used.

3.2.6 Other Local Events

None.

4 Protocol Examples

To manually create a data collector set with a performance counter data collector:

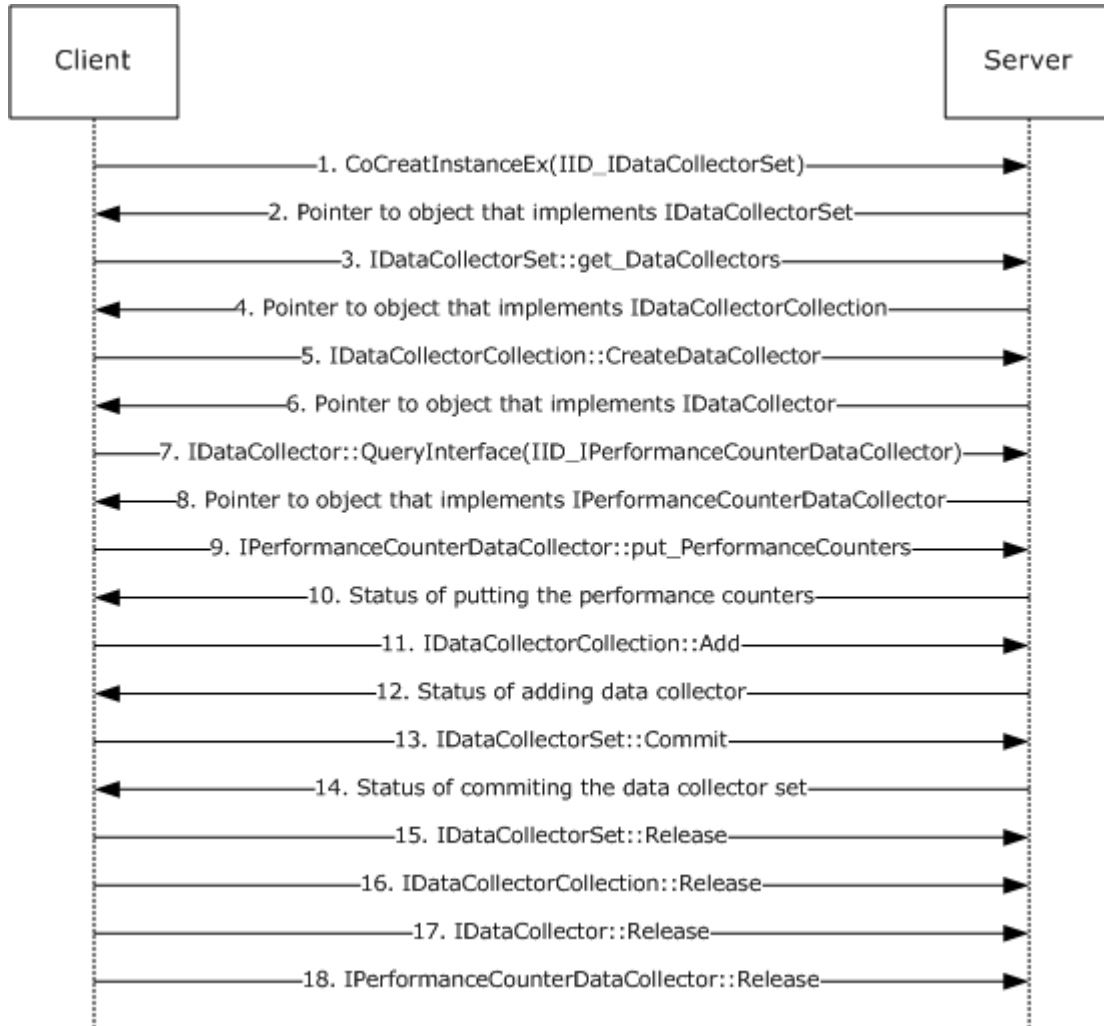


Figure 2: Manually creating a data collector set with a performance counter data collector

1. The client creates a data collector set object on the server by using CoCreateInstanceEx.
2. The server returns a pointer to the newly created object.
3. The client requests the data collector set's collection of data collector.
4. The server returns a pointer to the collection of data collectors belonging to the data collector set.
5. The client requests the creation of a Performance Counter Data Collectors.
6. The server creates a new Performance Counter Data Collector and returns a pointer to its IDataCollector interface.

7. The client requests the `IPerformanceCounterDataCollector` interface of the returned data collector.
8. The server returns a pointer to the `IPerformanceCounterDataCollector` interface of the data collector.
9. The client requests that the server update the list of performance counters to be collected.
10. The server stores that list in the Data Collector object and returns the status of the operation.
11. The client requests that the server add the performance counter data collector to the collector set collection.
12. The server adds the data collector to the collection and replies indicating whether the operation was successful.
13. The client requests that the server commit the data collector set to storage.
14. The server commits the data collector set and replies indicating whether the operation was successful.
15. The client releases a pointer to the data collector set object.
16. The client releases a pointer to the Data Collector Collection object.
17. The client releases a pointer to the data collector.
18. The client releases a pointer to the `IPerformanceCounterDataCollector` interface of the data collector.

To start a data collector set:

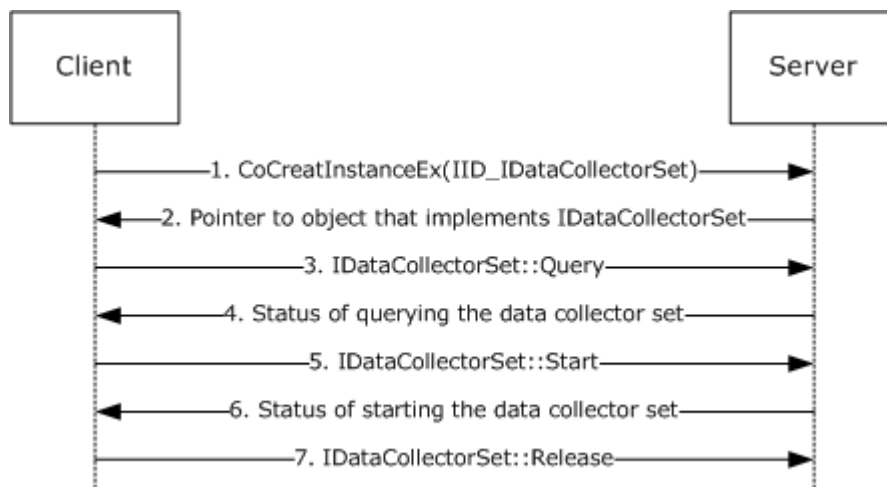


Figure 3: Starting a data collector set

1. The client creates a data collector set object on the server using `CoCreateInstanceEx`
2. The server returns a pointer to the newly created object.
3. The client requests that the settings of a previously committed data collector set be loaded into the returned data collector set object.

4. The server loads the requested data collector set from storage into memory and replies indicating whether the operation was successful.
5. The client requests that the data collector set start.
6. The server starts collecting the data described by the data collector set, and replies indicating whether the operation was successful.
7. The client releases pointer to the data collector set object.

To create a data collector set from an XML file:

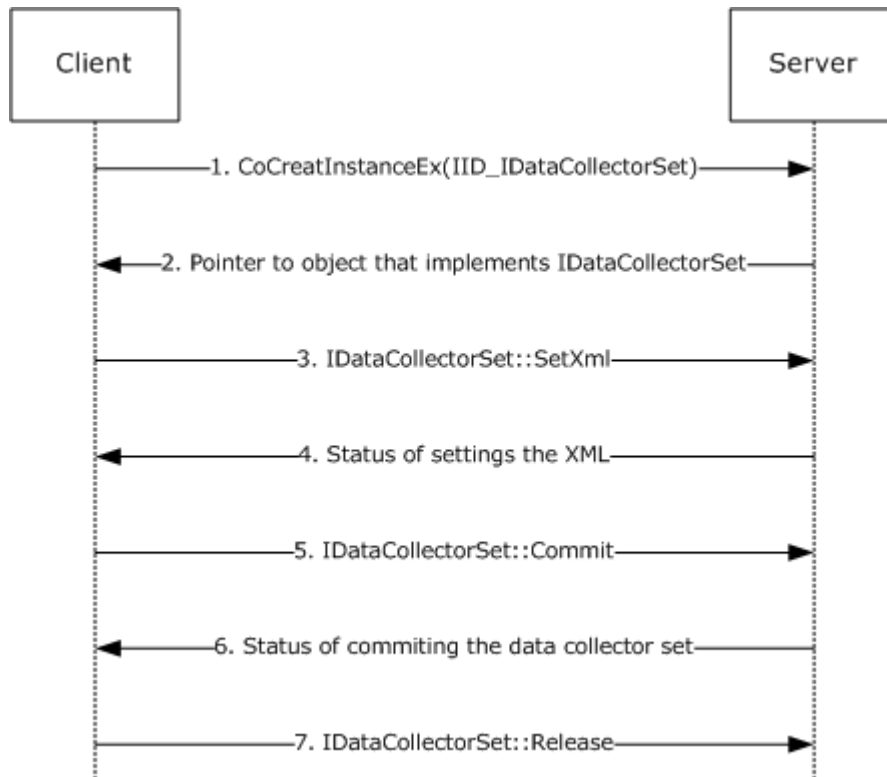


Figure 4: Creating a data collector set from an XML file

1. The client creates a data collector set object on the server using CoCreateInstanceEx.
2. The server returns a pointer to the newly created object.
3. The client requests that the settings specified in the XML be loaded into the returned data collector set object.
4. The server parses the XML, extracts the valid properties, applies valid properties to the data collector set server, and replies indicating whether the operation was successful.
5. The client requests that the server commit the data collector set to storage.
6. The server commits the data collector set and replies indicating whether operation was successful.

7. The client releases a pointer to the data collector set object.

5 Security

The following sections specify security considerations for implementers of the Performance Logs and Alerts Protocol.

5.1 Security Considerations for Implementers

This protocol introduces no additional security considerations for transmissions over the wire beyond those applicable to DCOM interfaces, as specified in [\[MS-DCOM\]](#) section 5. However, certain methods in the protocol may introduce additional security considerations locally on the server, such as permanently changing the security descriptor of a file on the filesystem. Those considerations are discussed locally to the methods with such impacts. Those methods are listed in section [5.2](#).

5.2 Index of Security Parameters

Security ParameterSection ITraceDataProvider::SetSecurity[3.2.4.11.17](#)
ITraceDataProvider::GetSecurity[3.2.4.11.18](#) ITraceDataCollector::ProcessMode[3.2.4.9](#) Property
table the row labeled ProcessMode. IDataCollectorSet::SetCredentials[3.2.4.1.52](#)
IDataCollectorSet::Security[3.2.4.1](#) Property table the row labeled Security.

6 Appendix A: Full IDL

For ease of implementation, the full **IDL** is provided below.

This IDL imports the IDL from OLE Automation Protocol Specification (see [\[MS-OAUT\]](#), Appendix A), to provide support for the VARIANT and SAFEARRAY type definitions.

```
import "ms-dtyp.idl";
import "ms-oadt.idl";
#define SAFEARRAY(item) SAFEARRAY

typedef byte BYTE;

interface IDataCollectorSet;
interface IDataManager;
interface IFolderAction;
interface IFolderActionCollection;
interface IDataCollector;
interface IPerformanceCounterDataCollector;
interface ITraceDataCollector;
interface IConfigurationDataCollector;
interface IAlertDataCollector;
interface IApiTracingDataCollector;
interface IDataCollectorCollection;
interface IDataCollectorSetCollection;
interface ITraceDataProvider;
interface ITraceDataProviderCollection;
interface ISchedule;
interface IScheduleCollection;
interface IValueMapItem;
interface IValueMap;

typedef enum{
    plaPerformanceCounter    = 0,
    plaTrace                  = 1,
    plaConfiguration         = 2,
    plaAlert                  = 3,
    plaApiTrace               = 4
} DataCollectorType;

typedef enum {
    plaCommaSeparated = 0,
    plaTabSeparated   = 1,
    plaSql             = 2,
    plaBinary          = 3,
} FileFormat;

typedef enum {
    plaNone                = 0x0000,
    plaPattern              = 0x0001,
    plaComputer             = 0x0002,
    plaMonthDayHour        = 0x0100,
    plaSerialNumber        = 0x0200,
    plaYearDayOfYear       = 0x0400,
    plaYearMonth           = 0x0800,
    plaYearMonthDay        = 0x1000,
    plaYearMonthDayHour    = 0x2000,
    plaMonthDayHourMinute  = 0x4000,
} AutoPathFormat;

typedef enum {
    plaStopped             = 0,
```

```

        plaRunning      = 1,
        plaCompiling    = 2,
        plaPending      = 3,
        plaUndefined    = 4,
    } DataCollectorSetStatus;

typedef enum {
    plaTimeStamp = 0,
    plaPerformance = 1,
    plaSystem = 2,
    plaCycle = 3,
} ClockType;

typedef enum {
    plaFile          = 0x0001,
    plaRealTime      = 0x0002,
    plaBoth          = 0x0003,
    plaBuffering     = 0x0004,
} StreamMode;

typedef enum {
    plaCreateNew              = 0x0001,
    plaModify                 = 0x0002,
    plaCreateOrModify         = 0x0003,
    plaUpdateRunningInstance = 0x0010,
    plaFlushTrace             = 0x0020,
    plaValidateOnly           = 0x1000,
} CommitMode;

typedef enum {
    plaIndex = 1,
    plaFlag = 2,
    plaFlagArray = 3,
    plaValidation = 4,
} ValueMapType;

typedef enum {
    plaRunOnce      = 0x00,
    plaSunday       = 0x01,
    plaMonday       = 0x02,
    plaTuesday      = 0x04,
    plaWednesday    = 0x08,
    plaThursday     = 0x10,
    plaFriday       = 0x20,
    plaSaturday     = 0x40,
    plaEveryday     = 0x7F,
} WeekDays;

typedef enum {
    plaDeleteLargest = 0,
    plaDeleteOldest  = 1
} ResourcePolicy;

typedef enum {
    plaCreateReport      = 0x01,
    plaRunRules          = 0x02,
    plaCreateHtml        = 0x04,
    plaFolderActions     = 0x08,
    plaResourceFreeing   = 0x10,
} DataManagerSteps;

typedef enum {
    plaCreateCab      = 0x01,
    plaDeleteData     = 0x02,
    plaSendCab        = 0x04,

```

```

        plaDeleteCab      = 0x08,
        plaDeleteReport = 0x10
    } FolderActionSteps;

    [
        object,
        uuid(03837520-098b-11d8-9414-505054503030),
        dual,
        oleautomation,
    ]
    interface IDataCollectorSet : IDispatch
    {
        [propget] HRESULT DataCollectors([out, retval]IDataCollectorCollection**
collectors);

        [propget] HRESULT Duration([out, retval]unsigned long* seconds);
        [propput] HRESULT Duration([in]unsigned long seconds);

        [propget] HRESULT Description([out, retval]BSTR* description);
        [propput] HRESULT Description([in]BSTR description);
        [propget] HRESULT DescriptionUnresolved([out, retval] BSTR *Descr);

        [propget] HRESULT DisplayName([out, retval]BSTR *DisplayName);
        [propput] HRESULT DisplayName([in]BSTR DisplayName);
        [propget] HRESULT DisplayNameUnresolved([out, retval] BSTR *name);

        [propget] HRESULT Keywords([out, retval] SAFEARRAY(BSTR) * keywords);
        [propput] HRESULT Keywords([in]SAFEARRAY(BSTR) keywords);

        [propget] HRESULT LatestOutputLocation([out, retval]BSTR* path);
        [propput] HRESULT LatestOutputLocation([in]BSTR path);

        [id(DISPID VALUE), propget] HRESULT Name([out, retval]BSTR* name);

        [propget] HRESULT OutputLocation([out, retval]BSTR* path);

        [propget] HRESULT RootPath([out, retval]BSTR* folder);
        [propput] HRESULT RootPath([in]BSTR folder);

        [propget] HRESULT Segment([out, retval]VARIANT BOOL* segment);
        [propput] HRESULT Segment([in]VARIANT BOOL segment);

        [propget] HRESULT SegmentMaxDuration([out, retval]unsigned long* seconds);
        [propput] HRESULT SegmentMaxDuration([in]unsigned long seconds);

        [propget] HRESULT SegmentMaxSize([out, retval]unsigned long* size);
        [propput] HRESULT SegmentMaxSize([in]unsigned long size);

        [propget] HRESULT SerialNumber([out, retval]unsigned long* index);
        [propput] HRESULT SerialNumber([in]unsigned long index);

        [propget] HRESULT Server([out, retval]BSTR* server);

        [propget] HRESULT Status([out, retval]DataCollectorSetStatus* status);

        [propget] HRESULT Subdirectory([out, retval]BSTR* folder);
        [propput] HRESULT Subdirectory([in]BSTR folder);

        [propget] HRESULT SubdirectoryFormat([out, retval]AutoPathFormat* format);
        [propput] HRESULT SubdirectoryFormat([in]AutoPathFormat format);

        [propget] HRESULT SubdirectoryFormatPattern([out, retval]BSTR* pattern);
        [propput] HRESULT SubdirectoryFormatPattern([in]BSTR pattern);
    }

```

```

[propget] HRESULT Task([out, retval]BSTR* task);
[propput] HRESULT Task([in]BSTR task);

[propget] HRESULT TaskRunAsSelf([out, retval]VARIANT_BOOL *RunAsSelf);
[propput] HRESULT TaskRunAsSelf([in] VARIANT_BOOL RunAsSelf);

[propget] HRESULT TaskArguments([out, retval]BSTR* task);
[propput] HRESULT TaskArguments([in]BSTR task);

[propget] HRESULT TaskUserTextArguments([out, retval]BSTR *UserText);
[propput] HRESULT TaskUserTextArguments([in]BSTR UserText);

[propget] HRESULT Schedules([out, retval]IScheduleCollection** ppSchedules);

[propget] HRESULT SchedulesEnabled([out, retval]VARIANT_BOOL* enabled);
[propput] HRESULT SchedulesEnabled([in]VARIANT_BOOL enabled);

[propget] HRESULT UserAccount([out, retval]BSTR* user);

[propget] HRESULT Xml([out, retval]BSTR* xml);

[propget] HRESULT Security([out, retval]BSTR *pbstrSecurity);
[propput] HRESULT Security([in]BSTR bstrSecurity);

[propget] HRESULT StopOnCompletion([out, retval]VARIANT_BOOL *Stop);
[propput] HRESULT StopOnCompletion([in]VARIANT_BOOL Stop);

[propget] HRESULT DataManager([out, retval] IDataManager **DataManager);

HRESULT SetCredentials(BSTR user, BSTR password);
HRESULT Query([in] BSTR name, [in, unique] BSTR server);
HRESULT Commit([in] BSTR name, [in, unique] BSTR server, CommitMode mode, [out,
retval]IValueMap** validation);
HRESULT Delete();
HRESULT Start([in] VARIANT_BOOL Synchronous);
HRESULT Stop([in] VARIANT_BOOL Synchronous);

HRESULT SetXml([in]BSTR xml, [out, retval]IValueMap** validation);

HRESULT SetValue(BSTR key, BSTR value);
HRESULT GetValue(BSTR key, [out, retval] BSTR* value);
}

[
    object,
    uuid(03837541-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
]
interface IDataManager : IDispatch
{
    [propget] HRESULT Enabled([out, retval] VARIANT_BOOL *pfEnabled);
    [propput] HRESULT Enabled([in] VARIANT_BOOL fEnabled);

    [propget] HRESULT CheckBeforeRunning([out, retval] VARIANT_BOOL *pfCheck);
    [propput] HRESULT CheckBeforeRunning([in] VARIANT_BOOL fCheck);

    [propget] HRESULT MinFreeDisk([out, retval] ULONG *MinFreeDisk);
    [propput] HRESULT MinFreeDisk([in] ULONG MinFreeDisk);

    [propget] HRESULT MaxSize([out, retval] ULONG *pulMaxSize);
    [propput] HRESULT MaxSize([in] ULONG ulMaxSize);

    [propget] HRESULT MaxFolderCount([out, retval] ULONG *pulMaxFolderCount);
    [propput] HRESULT MaxFolderCount([in] ULONG ulMaxFolderCount);
}

```

```

[propget] HRESULT ResourcePolicy([out, retval] ResourcePolicy *pPolicy);
[propput] HRESULT ResourcePolicy ([in] ResourcePolicy Policy);

[propget] HRESULT FolderActions([out, retval] IFolderActionCollection **Actions);

[propget] HRESULT ReportSchema([out, retval] BSTR *ReportSchema);
[propput] HRESULT ReportSchema([in] BSTR ReportSchema);

[propget] HRESULT ReportFileName([out, retval] BSTR *pbstrFilename);
[propput] HRESULT ReportFileName([in] BSTR pbstrFilename);

[propget] HRESULT RuleTargetFileName([out, retval] BSTR *Filename);
[propput] HRESULT RuleTargetFileName([in] BSTR Filename);

[propget] HRESULT EventsFileName([out, retval] BSTR *pbstrFilename);
[propput] HRESULT EventsFileName([in] BSTR pbstrFilename);

[propget] HRESULT Rules([out, retval] BSTR *pbstrXml);
[propput] HRESULT Rules([in] BSTR bstrXml);

HRESULT Run([in] DataManagerSteps Steps, [in] BSTR bstrFolder, [out, retval]
IValueMap **Errors);

    HRESULT Extract([in] BSTR CabFilename, [in] BSTR DestinationPath);
}

[
    object,
    uuid(03837543-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
]
interface IFolderAction : IDispatch
{
    [propget] HRESULT Age([out, retval] ULONG *pulAge);
    [propput] HRESULT Age([in] ULONG ulAge);

    [propget] HRESULT Size([out, retval] ULONG *pulAge);
    [propput] HRESULT Size([in] ULONG ulAge);

    [propget] HRESULT Actions([out, retval] FolderActionSteps *Steps);
    [propput] HRESULT Actions([in] FolderActionSteps Steps);

    [propget] HRESULT SendCabTo([out, retval] BSTR *pbstrDestination);
    [propput] HRESULT SendCabTo([in] BSTR bstrDestination);
}

[
    object,
    uuid(03837544-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
    nonextensible
]
interface IFolderActionCollection : IDispatch
{
    [propget, id(1)] HRESULT Count([out, retval] ULONG *Count);
    [propget, id(DISPID VALUE)] HRESULT Item([in] VARIANT Index, [out, retval]
IFolderAction **Action);
    [propget, id(DISPID NEWENUM)] HRESULT NewEnum([out, retval] IUnknown **Enum);

    HRESULT Add(IFolderAction *Action);
    HRESULT Remove(VARIANT Index);
    HRESULT Clear();
}

```



```

        HRESULT AddRange(IFolderActionCollection *Actions);
        HRESULT CreateFolderAction([out, retval] IFolderAction **FolderAction);
    }

    [
        object,
        uuid(038374ff-098b-11d8-9414-505054503030),
        dual
    ]
    interface IDataCollector : IDispatch
    {
        [propget] HRESULT DataCollectorSet([out, retval]IDataCollectorSet** group);
        HRESULT Opnum8NotUsedOnWire(void);

        [propget] HRESULT DataCollectorType([out, retval]DataCollectorType* type);

        [propget] HRESULT FileName([out, retval]BSTR* name);
        [propput] HRESULT FileName([in]BSTR name);

        [propget] HRESULT FileNameFormat([out, retval]AutoPathFormat* format);
        [propput] HRESULT FileNameFormat([in]AutoPathFormat format);

        [propget] HRESULT FileNameFormatPattern([out, retval]BSTR* pattern);
        [propput] HRESULT FileNameFormatPattern([in]BSTR pattern);

        [propget] HRESULT LatestOutputLocation([out, retval]BSTR* path);
        [propput] HRESULT LatestOutputLocation([in]BSTR path);

        [propget] HRESULT LogAppend([out, retval]VARIANT_BOOL* append);
        [propput] HRESULT LogAppend([in]VARIANT_BOOL append);

        [propget] HRESULT LogCircular([out, retval]VARIANT_BOOL* circular);
        [propput] HRESULT LogCircular([in]VARIANT_BOOL circular);

        [propget] HRESULT LogOverwrite([out, retval]VARIANT_BOOL* overwrite);
        [propput] HRESULT LogOverwrite([in]VARIANT_BOOL overwrite);

        [propget] HRESULT Name([out, retval]BSTR* name);
        [propput] HRESULT Name([in]BSTR name);

        [propget] HRESULT OutputLocation([out, retval]BSTR* path);

        [propget] HRESULT Index([out, retval]long* index);
        HRESULT Opnum28NotUsedOnWire(void);

        [propget] HRESULT Xml([out, retval]BSTR *Xml);

        HRESULT SetXml([in]BSTR Xml, [out, retval]IValueMap** Validation);

        HRESULT Opnum31NotUsedOnWire(void);
    };

    [
        object,
        uuid(03837506-098b-11d8-9414-505054503030),
        dual
    ]
    interface IPerformanceCounterDataCollector : IDataCollector
    {
        [propget] HRESULT DataSourceName([out, retval]BSTR* dsn);
        [propput] HRESULT DataSourceName([in]BSTR dsn);

        [propget] HRESULT PerformanceCounters([out, retval]SAFEARRAY(BSTR)* counters);
        [propput] HRESULT PerformanceCounters([in]SAFEARRAY(BSTR) counters);
    }

```

```

[propget] HRESULT LogFileFormat([out, retval]FileFormat* format);
[propput] HRESULT LogFileFormat([in]FileFormat format);

[propget] HRESULT SampleInterval([out, retval]unsigned long* interval);
[propput] HRESULT SampleInterval([in]unsigned long interval);

[propget] HRESULT SegmentMaxRecords([out, retval]unsigned long* records);
[propput] HRESULT SegmentMaxRecords([in]unsigned long records);

};

[
    object,
    uuid(03837514-098b-11d8-9414-505054503030),
    dual
]
interface IConfigurationDataCollector : IDataCollector
{
    [propget] HRESULT FileMaxCount([out, retval] unsigned long* count);
    [propput] HRESULT FileMaxCount([in] unsigned long count);

    [propget] HRESULT FileMaxRecursiveDepth([out, retval] unsigned long* depth);
    [propput] HRESULT FileMaxRecursiveDepth([in] unsigned long depth);

    [propget] HRESULT FileMaxTotalSize([out, retval] unsigned long* size);
    [propput] HRESULT FileMaxTotalSize([in] unsigned long size);

    [propget] HRESULT Files([out, retval] SAFEARRAY(BSTR) *Files);
    [propput] HRESULT Files([in] SAFEARRAY(BSTR) Files);

    [propget] HRESULT ManagementQueries([out, retval] SAFEARRAY(BSTR) *Queries);
    [propput] HRESULT ManagementQueries([in] SAFEARRAY(BSTR) Queries);

    [propget] HRESULT QueryNetworkAdapters([out, retval] VARIANT BOOL *network);
    [propput] HRESULT QueryNetworkAdapters([in] VARIANT BOOL network);

    [propget] HRESULT RegistryKeys([out, retval] SAFEARRAY(BSTR) *query);
    [propput] HRESULT RegistryKeys([in] SAFEARRAY(BSTR) query);

    [propget] HRESULT RegistryMaxRecursiveDepth([out, retval] unsigned long* depth);
    [propput] HRESULT RegistryMaxRecursiveDepth([in] unsigned long depth);

    [propget] HRESULT SystemStateFile([out, retval] BSTR *FileName);
    [propput] HRESULT SystemStateFile([in] BSTR FileName);
};

[
    object,
    uuid(03837516-098b-11d8-9414-505054503030),
    dual
]
interface IAlertDataCollector : IDataCollector
{
    [propget] HRESULT AlertThresholds([out, retval]SAFEARRAY(BSTR)* alerts);
    [propput] HRESULT AlertThresholds([in]SAFEARRAY(BSTR) alerts);

    [propget] HRESULT EventLog([out, retval]VARIANT BOOL* log);
    [propput] HRESULT EventLog([in]VARIANT BOOL log);

    [propget] HRESULT SampleInterval([out, retval]unsigned long* interval);
    [propput] HRESULT SampleInterval([in]unsigned long interval);

    [propget] HRESULT Task([out, retval]BSTR* task);
    [propput] HRESULT Task([in]BSTR task);
};

```

```

[propget] HRESULT TaskRunAsSelf([out, retval]VARIANT_BOOL *RunAsSelf);
[propput] HRESULT TaskRunAsSelf([in] VARIANT_BOOL RunAsSelf);

[propget] HRESULT TaskArguments([out, retval]BSTR* task);
[propput] HRESULT TaskArguments([in]BSTR task);

[propget] HRESULT TaskUserTextArguments([out, retval]BSTR* task);
[propput] HRESULT TaskUserTextArguments([in]BSTR task);

[propget] HRESULT TriggerDataCollectorSet([out, retval]BSTR* name);
[propput] HRESULT TriggerDataCollectorSet([in]BSTR name);
};

[
    object,
    uuid(0383750b-098b-11d8-9414-505054503030),
    dual
]
interface ITraceDataCollector : IDataCollector
{
    [propget] HRESULT BufferSize([out, retval]unsigned long* size);
    [propput] HRESULT BufferSize([in]unsigned long size);

    [propget] HRESULT BuffersLost([out, retval]unsigned long* buffers);
    HRESULT Opnum35NotUsedOnWire(void);

    [propget] HRESULT BuffersWritten([out, retval]unsigned long* buffers);
    HRESULT Opnum37NotUsedOnWire(void);

    [propget] HRESULT ClockType([out, retval]ClockType* clock);
    [propput] HRESULT ClockType([in]ClockType clock);

    [propget] HRESULT EventsLost([out, retval]unsigned long* events);
    HRESULT Opnum41NotUsedOnWire(void);

    [propget] HRESULT ExtendedModes([out, retval]unsigned long* mode);
    [propput] HRESULT ExtendedModes([in]unsigned long mode);

    [propget] HRESULT FlushTimer([out, retval]unsigned long* seconds);
    [propput] HRESULT FlushTimer([in]unsigned long seconds);

    [propget] HRESULT FreeBuffers([out, retval]unsigned long* buffers);
    HRESULT Opnum47NotUsedOnWire(void);

    [propget] HRESULT Guid([out, retval]GUID* guid);
    [propput] HRESULT Guid([in]GUID guid);

    [propget] HRESULT IsKernelTrace([out, retval]VARIANT_BOOL* kernel);

    [propget] HRESULT MaximumBuffers([out, retval]unsigned long* buffers);
    [propput] HRESULT MaximumBuffers([in]unsigned long buffers);

    [propget] HRESULT MinimumBuffers([out, retval]unsigned long* buffers);
    [propput] HRESULT MinimumBuffers([in]unsigned long buffers);

    [propget] HRESULT NumberOfBuffers([out, retval]unsigned long* buffers);
    [propput] HRESULT NumberOfBuffers([in]unsigned long buffers);

    [propget] HRESULT PreallocateFile([out, retval]VARIANT_BOOL* allocate);
    [propput] HRESULT PreallocateFile([in]VARIANT_BOOL allocate);

    [propget] HRESULT ProcessMode([out, retval]VARIANT_BOOL* process);
    [propput] HRESULT ProcessMode([in]VARIANT_BOOL process);

    [propget] HRESULT RealTimeBuffersLost([out, retval]unsigned long* buffers);

```

```

HRESULT Opnum62NotUsedOnWire(void);

[propget] HRESULT SessionId([out, retval]ULONG64* id);
HRESULT Opnum64NotUsedOnWire(void);

[propget] HRESULT SessionName([out, retval]BSTR* name);
[propput] HRESULT SessionName([in]BSTR name);

[propget] HRESULT SessionThreadId([out, retval]unsigned long* tid);
HRESULT Opnum68NotUsedOnWire(void);

[propget] HRESULT StreamMode([out, retval]StreamMode* mode);
[propput] HRESULT StreamMode([in]StreamMode mode);

[propget] HRESULT TraceDataProviders([out, retval]ITraceDataProviderCollection**
providers);
};

[
    object,
    uuid(0383751a-098b-11d8-9414-505054503030),
    dual
]
interface IApiTracingDataCollector : IDataCollector
{
    [propget] HRESULT LogApiNamesOnly([out, retval]VARIANT_BOOL* logapinames);
    [propput] HRESULT LogApiNamesOnly([in]VARIANT_BOOL logapinames);

    [propget] HRESULT LogApisRecursively([out, retval]VARIANT_BOOL* logrecursively);
    [propput] HRESULT LogApisRecursively([in]VARIANT_BOOL logrecursively);

    [propget] HRESULT ExePath([out, retval]BSTR* exepath);
    [propput] HRESULT ExePath([in]BSTR exepath);

    [propget] HRESULT LogFilePath([out, retval]BSTR* logfilepath);
    [propput] HRESULT LogFilePath([in]BSTR logfilepath);

    [propget] HRESULT IncludeModules([out, retval]SAFEARRAY(BSTR)* includemodules);
    [propput] HRESULT IncludeModules([in]SAFEARRAY(BSTR) includemodules);

    [propget] HRESULT IncludeApis([out, retval]SAFEARRAY(BSTR)* includeapis);
    [propput] HRESULT IncludeApis([in]SAFEARRAY(BSTR) includeapis);

    [propget] HRESULT ExcludeApis([out, retval]SAFEARRAY(BSTR)* excludeapis);
    [propput] HRESULT ExcludeApis([in]SAFEARRAY(BSTR) excludeapis);
};

[
    object,
    uuid(03837512-098b-11d8-9414-505054503030),
    dual
]
interface ITraceDataProvider : IDispatch
{
    [propget] HRESULT DisplayName([out, retval]BSTR* name);
    [propput] HRESULT DisplayName([in]BSTR name);

    [propget] HRESULT Guid([out, retval]GUID* guid);
    [propput] HRESULT Guid([in]GUID guid);

    [propget] HRESULT Level([out, retval] IValueMap **ppLevel);
    [propget] HRESULT KeywordsAny([out, retval] IValueMap **ppKeywords);
    [propget] HRESULT KeywordsAll([out, retval] IValueMap **ppKeywords);
    [propget] HRESULT Properties([out, retval] IValueMap **ppProperties);
};

```

```

[propget] HRESULT FilterEnabled([out, retval] VARIANT_BOOL *FilterEnabled);
[propput] HRESULT FilterEnabled([in] VARIANT_BOOL FilterEnabled);

[propget] HRESULT FilterType([out, retval] ULONG *pulType);
[propput] HRESULT FilterType([in] ULONG ulType);

[propget] HRESULT FilterData([out, retval] SAFEARRAY(BYTE)*ppData);
[propput] HRESULT FilterData([in] SAFEARRAY(BYTE) pData);

HRESULT Query([in] BSTR bstrName, [in, unique] BSTR bstrServer);
HRESULT Resolve([in] IDispatch* pFrom);

HRESULT SetSecurity([in] BSTR Sddl);
HRESULT GetSecurity([in] ULONG SecurityInfo, [out, retval] BSTR *Sddl);

HRESULT GetRegisteredProcesses([out] IValueMap **Processes);
};

[
    object,
    uuid(0383753a-098b-11d8-9414-505054503030),
    dual
]
interface ISchedule : IDispatch
{
    [propget] HRESULT StartDate([out, retval]VARIANT* start);
    [propput] HRESULT StartDate([in]VARIANT start);

    [propget] HRESULT EndDate([out, retval]VARIANT* end);
    [propput] HRESULT EndDate([in]VARIANT end);

    [propget] HRESULT StartTime([out, retval]VARIANT* start);
    [propput] HRESULT StartTime([in]VARIANT start);

    [propget] HRESULT Days([out, retval]WeekDays* days);
    [propput] HRESULT Days([in]WeekDays days );
};

[
    object,
    uuid(03837510-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
    nonextensible
]
interface ITraceDataProviderCollection : IDispatch
{
    [propget, id(1)] HRESULT Count([out, retval] long* retVal);
    [propget, id(DISPID_VALUE)] HRESULT Item([in] VARIANT index, [out, retval]
ITraceDataProvider** ppProvider);
    [propget, id(DISPID_NEWENUM)] HRESULT NewEnum([out, retval] IUnknown** retVal);

    HRESULT Add(ITraceDataProvider* pProvider);
    HRESULT Remove(VARIANT vProvider);
    HRESULT Clear();
    HRESULT AddRange(ITraceDataProviderCollection* providers);
    HRESULT CreateTraceDataProvider([out, retval] ITraceDataProvider **Provider);

    HRESULT GetTraceDataProviders([in, unique] BSTR server);
    HRESULT GetTraceDataProvidersByProcess([in, unique] BSTR Server, [in] ULONG Pid);
}

[
    object,
    uuid(0383753d-098b-11d8-9414-505054503030),

```

```

        dual,
        oleautomation,
        nonextensible
    ]
    interface IScheduleCollection : IDispatch
    {
        [propget, id(1)] HRESULT Count([out, retval] long* retVal);
        [propget, id(DISPID_VALUE)] HRESULT Item([in] VARIANT index, [out, retval]
ISchedule** ppSchedule);
        [propget, id(DISPID_NEWENUM)] HRESULT NewEnum([out, retval] IUnknown** retVal);

        HRESULT Add(ISchedule* pSchedule);
        HRESULT Remove(VARIANT vSchedule);
        HRESULT Clear();
        HRESULT AddRange(IScheduleCollection* pSchedules);
        HRESULT CreateSchedule([out, retval] ISchedule **Schedule);
    }

    [
        object,
        uuid(03837502-098b-11d8-9414-505054503030),
        dual,
        oleautomation,
        nonextensible
    ]
    interface IDataCollectorCollection : IDispatch
    {
        [propget, id(1)] HRESULT Count([out, retval] long* retVal);
        [propget, id(DISPID_VALUE)] HRESULT Item([in] VARIANT index, [out, retval]
IDataCollector** collector);
        [propget, id(DISPID_NEWENUM)] HRESULT NewEnum([out, retval] IUnknown** retVal);

        HRESULT Add(IDataCollector* collector);
        HRESULT Remove(VARIANT collector);
        HRESULT Clear();
        HRESULT AddRange(IDataCollectorCollection* collectors);

        HRESULT CreateDataCollectorFromXml([in] BSTR bstrXml, [out] IValueMap**
pValidation, [out, retval] IDataCollector **pCollector);
        HRESULT CreateDataCollector([in] DataCollectorType Type, [out,retval]
IDataCollector **Collector);
    }

    [
        object,
        uuid(03837524-098b-11d8-9414-505054503030),
        dual,
        oleautomation,
        nonextensible
    ]
    interface IDataCollectorSetCollection : IDispatch
    {
        [propget, id(1)] HRESULT Count([out, retval] long* retVal);
        [propget, id(DISPID_VALUE)] HRESULT Item([in] VARIANT index, [out, retval]
IDataCollectorSet** set);
        [propget, id(DISPID_NEWENUM)] HRESULT _NewEnum([out, retval] IUnknown** retVal);

        HRESULT Add(IDataCollectorSet* set);
        HRESULT Remove(VARIANT set);
        HRESULT Clear();
        HRESULT AddRange(IDataCollectorSetCollection* sets);

        HRESULT GetDataCollectorSets([in, unique] BSTR server, [in, unique] BSTR filter);
    }

```

```

[
    object,
    uuid(03837533-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
    nonextensible
]
interface IValueMapItem : IDispatch
{
    [propget] HRESULT Description([out, retval]BSTR* description);
    [propput] HRESULT Description([in]BSTR description);

    [propget] HRESULT Enabled([out, retval]VARIANT BOOL* enabled);
    [propput] HRESULT Enabled([in]VARIANT_BOOL enabled);

    [propget] HRESULT Key([out, retval]BSTR* key);
    [propput] HRESULT Key([in]BSTR key);

    [propget] HRESULT Value([out, retval] VARIANT *Value);
    [propput] HRESULT Value([in] VARIANT Value);

    [propget] HRESULT ValueMapType([out, retval]ValueMapType* type);
    [propput] HRESULT ValueMapType([in]ValueMapType type);
}

[
    object,
    uuid(03837534-098b-11d8-9414-505054503030),
    dual,
    oleautomation,
    nonextensible
]
interface IValueMap : IDispatch
{
    [propget, id(1)] HRESULT Count([out, retval] long* retVal);
    [propget, id(DISPID_VALUE)] HRESULT Item([in] VARIANT index, [out, retval]
IValueMapItem** value);
    [propget, id(DISPID_NEWENUM)] HRESULT _NewEnum([out, retval] IUnknown** retVal);

    [propget] HRESULT Description([out, retval]BSTR* description);
    [propput] HRESULT Description([in]BSTR description);

    [propget] HRESULT Value([out, retval] VARIANT *Value);
    [propput] HRESULT Value([in] VARIANT Value);

    [propget] HRESULT ValueMapType([out, retval]ValueMapType* type);
    [propput] HRESULT ValueMapType([in]ValueMapType type);

    HRESULT Add(VARIANT value);
    HRESULT Remove(VARIANT value);
    HRESULT Clear();
    HRESULT AddRange(IValueMap* map);
    HRESULT CreateValueMapItem([out, retval] IValueMapItem **Item);
}

```

7 Appendix B: Windows Behavior

The information in this specification is applicable to the following versions of Windows:

- Windows Server 2008
- Windows Vista

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Windows behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that Windows does not follow the prescription.

[<1> Section 1.6:](#) The interfaces of the protocol are only available in Windows Server 2008 and Windows Vista.

[<2> Section 2.1:](#) This protocol uses the following flags: `RPC_C_IMP_LEVEL_IMPERSONATE` and `RPC_C_AUTHN_LEVEL_PKT_PRIVACY`. For more information, see [\[MSDN-IMPLVL\]](#) and [\[MSDN-AUTHLEV\]](#).

[<3> Section 2.1:](#) The authorization constraints in Windows are as follows: All performance logging abilities are limited to members of the Administrators or Performance Logs User Group. For more information, see [\[MSDN-LUACCESS\]](#).

[<4> Section 2.2.2.6:](#) This value indicates the run of TraceRpt.exe by using as input all of the binary performance files (.blg) and event trace files (.etl) in the collection.

[<5> Section 2.2.2.7:](#) The GUID in this context refers to the SQL column name and does not comply with the semantics of **GUID** specified in normative reference [\[C706\]](#).

[<6> Section 2.2.2.7:](#) The GUID in this context refers to the SQL column name and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<7> Section 2.2.2.7:](#) The GUID in this context refers to the SQL column name and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<8> Section 2.2.2.11:](#) [MS-PLA] uses the `plaFlagArray` type of the `IValueMapItem` to set and retrieve extended kernel flags that are used by ETW from the server. ETW publicly documents 21 different categories of kernel categories (exposed through the `EnableFlags` property of the `EVENT_TRACE_PROPERTIES` structure described in [\[MSDN-EVENT_TRACE_PROPERTIES\]](#)) that enable specific kernel events to be logged to ETW; however, the Windows kernel internally has several more kernel events that are used for internal purposes and are not exposed publicly. These ETW extended flags are represented via eight separate `ULONG` values that are attached at the end of the `EVENT_TRACE_PROPERTIES` structure. Since these values should not be OR'd together when they are returned to the client, the `plaFlagArray` is used. The following table indicates the values of the flags that enable Windows kernel ETW events:

Flag Name	Flag Value
Registry Events	0x00020000
Hard Page Fault Events	0x00002000
Process and Thread Events	0x00000003
Process Events	0x00000001

Flag Name	Flag Value
Thread Events	0x00000002
Disk I/O Events	0x00000100
Disk I/O Events (Version 2)	0x00000400
Image Load/Unload Events	0x00000004
Page Fault Events	0x00001000
File Events	0x00000200
TCP/IP Network Events	0x00010000
ALPC Events	0x00100000
Split I/O Events	0x00200000
Process Counter Events	0x00000008
File I/O Events	0x02000000
File I/O Initialization Events	0x04000000
Print Kernel Debug Statements	0x00040000
Heap Range and Virtual Allocation Events	0x20000001
Sampling Profiler	0x20000002
Thread Context Switch Events	0x20000004
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Kernel Queue Events (not in Vista)	0x20020000
Periodic Memory List Information	0x20080000
Contiguous Page Allocation Events	0x20100000
System Call Entry/Exit Events	0x40000040

Flag Name	Flag Value
System Power Management Events	0x80008000

<9> [Section 3.2.4.1.5:](#) Localized strings can be specified in the form @binary,#id, where binary is the EXE or DLL that contains the localized resource string, and id is the string resource identifier.

If the description is set to the @binary,#id form, when retrieving the description the callers will receive the localized string. To retrieve the original description string, the client should use the IDataCollectorSet::DescriptionUnresolved method.

<10> [Section 3.2.4.1.8:](#) Localized strings can be specified in the form @binary,#id, where binary is the EXE or DLL that contains the localized resource string and id is the string resource identifier. If the display name is set to the @binary,#id form, it is returned as the localized string. The original display name string can be retrieved by calling the IDataCollectorSet::DisplayNameUnresolved method, as specified in section [3.2.4.1.9](#).

<11> [Section 3.2.4.1.52:](#) If credentials are not specified, the PLA protocol tries to run the set as LocalSystem if the current user is a member of the administrator group.

<12> [Section 3.2.4.5:](#) Gaps in the opnum numbering sequence apply to Windows as follows.

Opnum	Description
8	Only used locally by Windows, never remotely.
28	Only used locally by Windows, never remotely.
31	Only used locally by Windows, never remotely.

<13> [Section 3.2.4.7.14:](#) PLA can collect registry data from the following registry hives:

- HKEY_CLASSES_ROOT
- HKEY_CURRENT_CONFIG
- HKEY_CURRENT_USER
- HKEY_LOCAL_MACHINE
- HKEY_USERS

To collect a registry value, specify the full path to the value name, for example, \HKEY_LOCAL_MACHINE\MyKey\MyValue.

To collect all of the values under a registry key, specify the full path to the registry key, for example, \HKEY_LOCAL_MACHINE\MyKey\.

To collect all of the values under a registry key and its subkeys, use two backslashes for the last path delimiter, for example, \\computername\HKEY_LOCAL_MACHINE\MyKey\\. PLA recursively collects the registry data down to the level specified in IConfigurationDataCollector::RegistryMaxRecursiveDepth.

To collect registry information from a remote computer, include the computer name at the beginning of the registry path, for example, \\computername\HKEY_LOCAL_MACHINE\MyKey\MyValue.

[<14> Section 3.2.4.8:](#) In Windows, these events are logged to the Microsoft-Windows-Diagnosis-PLA/Operational event log channel with Event ID 2031. This channel logs operational data for the Performance, Logs, and Alerts service.

[<15> Section 3.2.4.8.4:](#) The event identifier of the event is 2031 and the channel used is Microsoft-Windows-Diagnosis-Pla/Operational.

[<16> Section 3.2.4.9:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<17> Section 3.2.4.9:](#) Gaps in the opnum numbering sequence apply to Windows as follows.

Opnum	Description
35	Only used locally by Windows, never remotely.
37	Only used locally by Windows, never remotely.
41	Only used locally by Windows, never remotely.
47	Only used locally by Windows, never remotely.
62	Only used locally by Windows, never remotely.
64	Only used locally by Windows, never remotely.
68	Only used locally by Windows, never remotely.

[<18> Section 3.2.4.9.13:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<19> Section 3.2.4.9.14:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<20> Section 3.2.4.9.16:](#) MS-PLA provides the client defined value of MaximumBuffers; however, this may not be the maximum allowed buffers on the server. Upon receiving the user-defined MaximumBuffers supplied by MS-PLA, ETW on the Windows Vista and Windows Server 2008 will first check to see whether this value is greater than the system-defined number of minimum buffers; this value is set to the number of processors on the system plus two (0x00000002). If it is NOT greater, then ETW will assign MaximumBuffers the value of the system-defined minimum number of buffers and move to the next check. If it is greater, then ETW will leave the value of MaximumBuffers that was passed in by the user and move to the next check. In this second check, ETW will make sure that the MaximumBuffers value is less than the system-defined maximum allowed buffers. This system-defined value is calculated by taking the total available memory (either paged or non-paged depending on how the ETW session was specified by the client calling MS-PLA), dividing it by 10 (the percentage of total memory at most that should be dedicated to ETW) and then dividing that intermediate result by the specified buffer size. If this system-defined value is smaller than the value of MaximumBuffers, then MaximumBuffers is assigned this system-defined value is used; otherwise, the MaximumBuffers value remains the same.

[<21> Section 3.2.4.9.17:](#) MS-PLA provides the client defined value of MaximumBuffers; however, this may not be the maximum allowed buffers on the server. Upon receiving the user-defined MaximumBuffers supplied by MS-PLA, ETW in Windows Vista and Windows Server 2008 will first check to see whether this value is greater than the system-defined number of minimum buffers; this

value is set to number of processors on the system plus two (0x00000002). If it is NOT greater, then ETW will assign MaximumBuffers the value of the system-defined minimum number of buffers and move to the next check. If it is greater, then ETW will leave the value of MaximumBuffers that was passed in by the user and move to the next check. In this second check, ETW will make sure that the MaximumBuffers value is less than the system-defined maximum allowed buffers. This system-defined value is calculated by taking the total available memory (either paged or non-paged depending on how the ETW session was specified by the client calling MS-PLA), dividing it by 10 (the percentage of total memory at most that should be dedicated to ETW) and then dividing that intermediate result by the specified buffer size. If this system-defined value is smaller than the value of MaximumBuffers, then MaximumBuffers is assigned this system-defined value is used; otherwise, the MaximumBuffers value remains the same.

<22> Section 3.2.4.9.18: The client uses the Performance Logs and Alerts Protocol to specify the value of MinimumBuffers; however, this may not be the minimum number of buffers allocated on the Windows Server. Upon receiving the user-defined MinimumBuffers supplied by the Performance Logs and Alerts Protocol, ETW on Windows Vista and Windows Server 2008 will first check to see whether this value is greater than the system-defined number of minimum buffers; this value is set to the number of processors on the system plus two (0x00000002). If it is NOT greater, then ETW will assign MinimumBuffers the value of the system-defined minimum number of buffers and move to the next check. If it is greater, then ETW will leave the value of MinimumBuffers that was passed in by the user and move to the next check. In this second check, ETW will make sure that the MinimumBuffers value is less than the system-defined maximum allowed buffers. This system-defined value is calculated by taking the total available memory (either paged or non-paged depending on how the ETW session was specified by the client calling the Performance Logs and Alerts Protocol), dividing it by 10 (the percentage of total memory at most that should be dedicated to ETW) and then dividing that intermediate result by the specified buffer size. If this system-defined value is smaller than the value of MinimumBuffers, then MinimumBuffers is assigned this system-defined value is used; otherwise, the MinimumBuffers value remains the same.

<23> Section 3.2.4.9.19: The client uses the Performance Logs and Alerts Protocol to specify the value of MinimumBuffers; however, this may not be the minimum number of buffers allocated on the Windows Server. Upon receiving the user-defined MinimumBuffers supplied by the Performance Logs and Alerts Protocol, ETW on Windows Vista and Windows Server 2008 will first check to see whether this value is greater than the system-defined number of minimum buffers; this value is set to the number of processors on the system plus two (0x00000002). If it is NOT greater, then ETW will assign MinimumBuffers the value of the system-defined minimum number of buffers and move to the next check. If it is greater, then ETW will leave the value of MinimumBuffers that was passed in by the user and move to the next check. In this second check, ETW will make sure that the MinimumBuffers value is less than the system-defined maximum allowed buffers. This system-defined value is calculated by taking the total available memory (either paged or non-paged depending on how the ETW session was specified by the client calling the Performance Logs and Alerts Protocol), dividing it by 10 (the percentage of total memory at most that should be dedicated to ETW) and then dividing that intermediate result by the specified buffer size. If this system-defined value is smaller than the value of MinimumBuffers, then MinimumBuffers is assigned this system-defined value is used; otherwise, the MinimumBuffers value remains the same.

<24> Section 3.2.4.9.20: In Windows Vista and Windows Server 2008, NumberOfBuffers is an indication of how many buffers the ETW system is using for a particular trace session. When the client sets this property, the only change that will take place is that the NumberOfBuffers property of the ITraceDataCollector will be set to the client value. If the client were then to retrieve this, it would get the same value that it had set. However, if the Query method is executed on the IDataCollectorSet, and the IDataCollectorSet contains ITraceDataCollectors, then the NumberOfBuffers will be updated to reflect the number of buffers that ETW is using for its tracing session. In this case, the value of the NumberOfBuffers may be different than what the client

originally had specified, but will be greater than or equal to the value of the MinimumBuffers property, and less than or equal to the value of the MaximumBuffers property.

[<25> Section 3.2.4.9.21:](#) In Windows Vista and Windows Server 2008, NumberOfBuffers is an indication of how many buffers the ETW system is using for a particular trace session. When the client sets this property, the only change that will take place is that the NumberOfBuffers property of the ITraceDataCollector will be set to the client value. If the client were then to retrieve this, it would get the same value that it had set. However, if the Query method is executed on the IDataCollectorSet, and the IDataCollectorSet contains ITraceDataCollectors, then the NumberOfBuffers will be updated to reflect the number of buffers that ETW is using for its tracing session. In this case, the value of the NumberOfBuffers may be different than what the client originally had specified, but will be greater than or equal to the value of the MinimumBuffers property, and less than or equal to the value of the MaximumBuffers property.

[<26> Section 3.2.4.11:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<27> Section 3.2.4.11:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<28> Section 3.2.4.11.3:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<29> Section 3.2.4.11.4:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<30> Section 3.2.4.11.15:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<31> Section 3.2.4.11.16:](#) The GUID in this context refers to the COM interface property which is used as a PLA-UID and does not comply with the semantics of GUID specified in normative reference [\[C706\]](#).

[<32> Section 3.2.4.16.8:](#) The Microsoft implementation of MS-PLA uses either the filesystem or the task schedule as a persistent store.

[<33> Section 3.2.4.17:](#) This protocol does not specify any values for key, the Microsoft implementation does have certain reserved values for key. For the Level value map, the reserved key values are listed below. They are given with respect to the property on an event, and how an ETW controller would use it:

Value	Description
win:LogAlways	Event: Events with this level must always be written to ETW. Controller: Specifies this level when interested in events of all possible levels.
win:Critical	Event: Indicates a state change that requires immediate attention. Controller: Specifies this level when only interested in events of this level.
win:Error	Event: Indicates a transition to an errors state. Controller: Specifies this level when interested in events which have the following

Value	Description
	level: win:Error and win:Critical.
win:Warning	Event: Indicates a condition which may require attention. Controller: Specifies this level when interested in events which have the following levels: win:Warning, win:Error, and win:Critical.
win:Informational	Event: Conveys information which may be of interest. Controller: Specifies this level when interested in events which have the following levels: win:Informational, win:Warning, win:Error, and win:Critical.
win:Verbose	Event: Conveys very detailed state information. Controller: Specifies this level when interested in events which have the following levels: win:Verbose, win:Informational, win:Warning, win:Error, and win:Critical.
win:ReservedLevel6	This level is reserved for use on future Windows versions.
win:ReservedLevel7	This level is reserved for use on future Windows versions.
win:ReservedLevel8	This level is reserved for use on future Windows versions.
win:ReservedLevel9	This level is reserved for use on future Windows versions.
win:ReservedLevel10	This level is reserved for use on future Windows versions.
win:ReservedLevel11	This level is reserved for use on future Windows versions.
win:ReservedLevel12	This level is reserved for use on future Windows versions.
win:ReservedLevel13	This level is reserved for use on future Windows versions.
win:ReservedLevel14	This level is reserved for use on future Windows versions.
win:ReservedLevel15	This level is reserved for use on future Windows versions.

The following table lists the values used for KeywordsAll and KeywordsAny, along with their semantic meaning:

Value	Description
win:AnyKeyword	This keyword is used when no other keyword is specified, either on an event or by the controller.
win:Reserved	This keyword is reserved for use on future Windows versions.
win:WDIContext	This keyword refers to events which are raised by the Windows Diagnostic Infrastructure.
win:WDIDiag	This keyword refers to events which are raised by the Windows Diagnostic Infrastructure.
win:SQM	This keyword refers to events which are directed to the Windows Software Quality Metric infrastructure.
win:AuditFailure	This keyword refers to events which are used for auditing purposes.
win:AuditSuccess	This keyword refers to events which are used for auditing purposes.

Value	Description
win:CorrelationHint	This keyword is used to correlate several events together.
win:EventlogClassic	This keyword refers to events which are directed to the Eventlog mechanism which existed prior to Windows Vista.
win:ReservedKeyword56	This level is reserved for use on future Windows versions.
win:ReservedKeyword57	This level is reserved for use on future Windows versions.
win:ReservedKeyword58	This level is reserved for use on future Windows versions.
win:ReservedKeyword59	This level is reserved for use on future Windows versions.
win:ReservedKeyword60	This level is reserved for use on future Windows versions.
win:ReservedKeyword61	This level is reserved for use on future Windows versions.
win:ReservedKeyword62	This level is reserved for use on future Windows versions.
win:ReservedKeyword63	This level is reserved for use on future Windows versions.

[<34> Section 3.2.4.17:](#) The following table shows the range of valid values for this property, depending on what the ValueMapItem represents:

TypeRange of Values Level 0x00 - 0xFF KeywordsAny 0x00000000 - 0xFFFFFFFF KeywordsAll 0x00000000 - 0xFFFFFFFF

[<35> Section 3.2.4.19:](#) The XML elements are displayed in table format because the Microsoft implementation of MS-PLA does not require that element placement must follow a strict XSD. The Microsoft implementation of MS-PLA, when looking for a specific element, is not concerned with where that element is specified with respect to the overall XML document. For example, when looking for the element TraceDataProvider, the Microsoft implementation of MS-PLA is not concerned with what elements may be before it or after it; it also ensures that the TraceDataProvider element is within the scope of its parent, which is the TraceDataCollector element. Therefore, there may be several elements before and/or after the TraceDataProvider element, all within the scope of the TraceDataCollector element, that would not pass the strict validation of an XSD but will be acceptable to the Microsoft implementation of MS-PLA.

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