WO Data API Guide

WO DATA API VERSION 4.2.1

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Introduction

This guide walks you through various steps to access and manage Data API requests. Upon completion, you will have a basic understanding of how to do the following tasks:

- Authenticate connection.
- Error handling.
- Create a DAPI request.
- Monitor Data API request.

Basics

WO Data API is a web service that provides access to *WO Network, WO Traffic, or WO Omni* data in a unified version agnostic manner.

It is REST based and allows for information in CSV/TSV, JSON, RAW, or XML formats.

DAPI uses the closed authentication model, where client authentication and usage patterns are managed by **WideOrbit**.

> **NOTE:** If you have questions on how to use the API, need new request types, or are considering delivery format types, please contact WideOrbit Support.

Authentication

WO Data API uses HTTP request header information to authorize requests and authenticate users. Users are authenticated using the following header keys: "partner-id", "api-key", and "agreement-key".

Each combination uniquely identifies the area of *WO Network, WO Traffic, or WO Omni* data to be accessed and the API client requesting access.

If no valid combination is found, the system returns the unauthorized response code:

```
Status Code: 401 (Unauthorized)
Response Content:
{ "Error": "Unauthorized access" }
```

Detecting and Handling Request Errors

When an unhandled error is detected, the server returns the following response:

```
Status Code: 500 (Internal Server Error)
Response Content:
{ "Message": "Error Message"
```

NOTE: It is recommended that the client application has code to log and preserve error messages for further assistance.

Choosing Export Format Type

When selecting the data export format type between CSV, JSON, RAW, and XML, consider the following:

- Capability of client to process data.
- Amount of data returned for processing.
- Delivery Type (FTP, HTTP, email).

Depending on the software solution used to process data, CSV may be the most supported, but would not allow for data validation, while JSON could be easily processed from JavaScript based applications.

Delivered data could consist of just one row/cell or multiple rows and columns.

JSON, and XML serialization is not customizable and would simply reflect the structure of the original data set.

RAW format does not make any data transformation and just returns query result as pure text. (this format is intended to be used with the FOR XML AUTO statement).

Data Limits, Performance & Chunk Size Recommendations

The system allows data to be delivered as a continuous stream or in "chunks" allowing reduction of time for each data response and to avoid request time outs as well as optimizing system performance.

The **ChunkRowsCount** parameter specifies how many records will be sent to the destination service (Web/FTP) in one "packet".

The recommended value depends on the following:

- **Row size read from Database** – If the row's data size is significant, it is recommended to reduce the number of rows returned in one chunk. Also, you are required to implement logic to "stitch" data back into one continuous dataset.
- **Export format: XML, JSON, CSV, RAW** - Export formats have their own size overhead due to markup "verbosity" in an increasing order: CSV<JSON<XML.

> **NOTE:** Servers which support live gzipping of workloads would be less affected by redundant information in XML due to internal algorithms addressing the issue.

- **Target system: Web, FTP, Email** – The Web system can have more requests handled comparably to FTP. FTP can be set to larger values in the **ChunkRowsCount** parameter.

> **NOTE:** With large chunk sizes, the server max request size limit can be reached, and the request will be aborted by the target server.

GZip Support

Only HTTP delivery supports GZip compression for the target server.

To trigger GZip support in the response, add the following header tag in the original request sent to **Data API**:

```
Accept-Encoding: gzip
```

Header, and data will be transferred to the final endpoint in the corresponding format.

> **NOTE:** The HTTP receiver must support GZip processing to decompress the incoming data packet.

API Methods

The system accepts GET and POST requests depending on the request type. Refer to the appropriate HTTP Method below.

> **NOTE:** Please contact your support or account contact to obtain Authentication tokens and API endpoint URI {root} information.

Request Stations List (Deprecated)

Item	Description
URI	`{root}/api/Stations/GetAllowedStations`
HTTP Method	GET
Description	Submits a Station List request, returns stations array that are available for current Agreement or all Broadcaster stations when "Include all stations" is allowed by contract.

Request Header	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Response	`[{`
	`"TrafficStationInt":1,`
	`"TrafficStationId":"8456a7cf-8a48-4d8e-b484-ce23205e29d1",`
	`"BroadcasterInt":6,`
	`"StationId": null,`
	`"StationInt": 0,`
	`"StationCallLetters": null,`
	`"StationName":"SUNNETWORKS",`
	`"StationMainPhone":"9841899425"`
	`}]`

Response Schema

Field	Data Type	Notes
TrafficStationInt	int	
TrafficStationId	GUID	
BroadcasterInt	int	
StationId	GUID	null
StationInt	int	0
StationCallLetters	string	null
StationName	string	
StationMainPhone	String	

Request Traffic Stations List

Item	Description
HTTP Method	GET
Description	Submits a Traffic Station List request, returns stations array that are available for current Agreement or all Broadcaster stations when "Include all stations" is allowed by contract.

Request Header	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Response


```
[{
  "BroadcasterInt":6,
  "StationId":"4597c0f0-0ba7-4116-ec23-54da8c208314",
  "StationInt":2,
  "StationCallLetters":"SUNNETWORKS",
  "StationName":"SUNNETWORKS",
  "StationMainPhone":"9841899425"
}]
```


Response Schema

Field	Data Type	Notes
BroadcasterInt	int	
StationId	GUID	
StationInt	int	
StationCallLetters	string	
StationName	string	
StationMainPhone	String	

Request Data

Item	Description
URI	{root}/api/RequestData/GetData
HTTP Method	POST

Description	Submits a Data Export request for delivery to HTTP endpoint. If target request has input parameters, they need to be included. Data is returned asynchronously to target URL. Request returns Request Id or error info. **NOTE:** We do recommend, always use HTTPS secure endpoint.

Request Header	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
  "RequestType":"General.Orders",
  "DataExportFormat":"JSON",
  "TargetUrl":"https://yoursite.com/ProcessData",
  "ChunkRowsCount":"50",
  "GenerateInValidFormat":"true",
  "Parameters":[{
    "Name":"@station_int",
    "DbType":"Int",
    "Value":"2"
  },{
    "Name":"@start_date",
    "DbType":"VarChar",
    "Value":"2000-1-1"
  },{
    "Name":"@end_date",
    "DbType":"VarChar",
    "Value":"2020-1-1"
  },{
    "Name":"@options",
    "DbType":"Int",
    "Value":"1"
  }
 ],
"TargetHeaders": [
    {
      "Key": "key1",
      "Value": "value1"
    },
    {
      "Key": "key2",
      "Value": "value2"
    }
  ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken from Vendor System > SQL Script page in WO Data API and provided by WO Admins. After implementation of namespaces concept, the value becomes concatenation of Request Group with Request Type, separated by point, or just the request type, when the namespace is global. For example: “General.Orders" or "Orders".
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options: • JSON • XML • CSV • RAW
TargetUrl	String	The URL in Data API that will receive exported data from *WO Network*, *WO Traffic*, or *WO Omni*.
UseProxy	bool	**Optional** parameter. If set to **true,** then data is sent to the client from the Data API server. Otherwise, the data is sent directly from the BAS. Default is **False.**
ChunkRowsCount	Int	Number of rows read from the database to be sent in one chunk. The range is 10 - 9999.

GenerateInValidFormat	bool	If set to **true**, then each file (new, or final appended result) will have valid format and corresponding extension. If set to **false**, then all the files will have .txt extension.
SuppressCsvHeaders	bool	**Optional** parameter. If set to **true**, then headers in resulting files will be suppressed.
CustomCsvDelimiter	string	**Optional** parameter. It gives the ability to create custom delimiters in CSV files. For example, it could be semicolon instead of whitespace.
QuoteText	bool	**Optional** parameter. Specifies whether to wrap text cells into double quotes or not.
ExpectResponseCode100	bool	**Optional** parameter. Specifies whether to add "*Expect: 100-continue*" HTTP header or not. The default value is **true**.
Parameters	JSON Array	SQL Query Parameters Array.
Name	String	SQL Query Parameter Name.
DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.
Value	String	Value of query parameter.

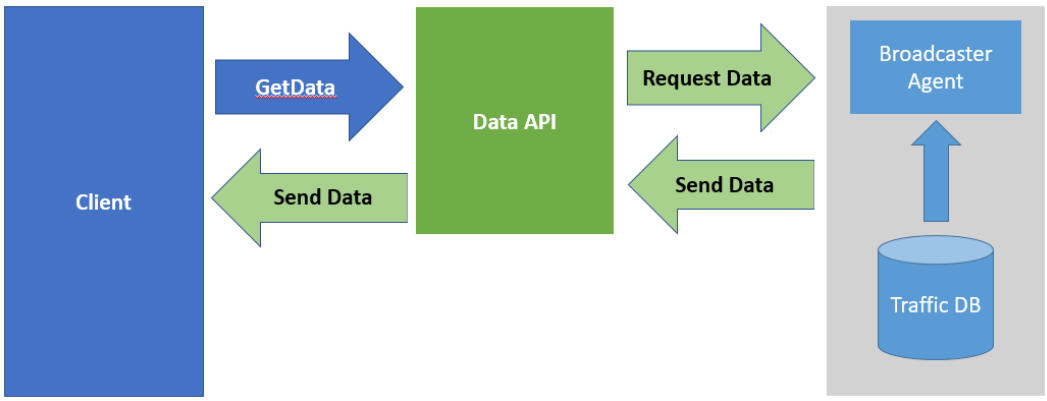
	TargetHeaders	JSON Array	**Optional** parameter. Url headers Array. • **Key** – String – Header key. • **Value** – String – Header value.
JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID GUID value is returned and can later be used to monitor status of the requests through GetRequestStatus method.		

Data Response

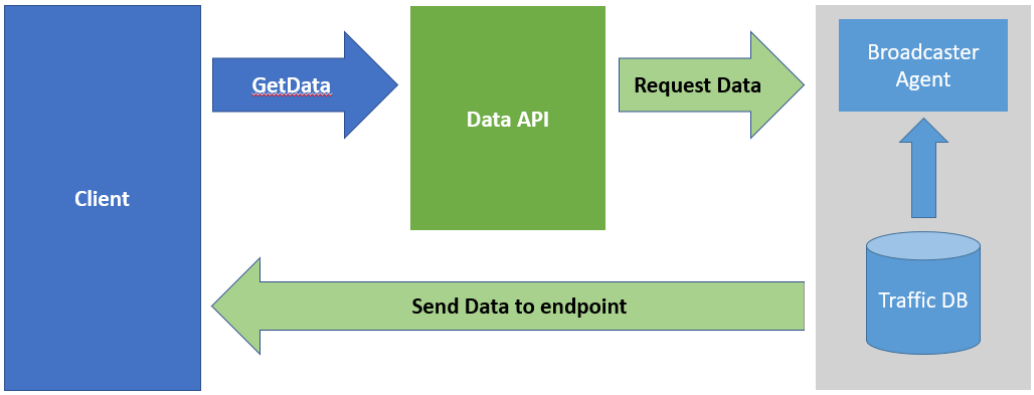
Data Receiving on Data API Side

After submitting Data API request for data export to HTTP endpoint the following workflow applies.

UseProxy = true



UseProxy = false



> **NOTE:** If the Broadcaster has firewall rules in place to prevent outbound communication, the HTTP endpoint would have to be whitelisted.

Data Response Format

Receiving side need to implement handler to unpack data from following JSON-RPC packet.

Name	Data Type	Notes
requestId	String	The identifier to track requests that are currently uploading to Data API system. This value is the result of GetData API method.
chunkId	Int	Chunk Id that identifies current block of information that was sent from *WO Traffic*, *WO Network*, or *WO Omni*. The last Chunk Id is defined as negative total chunks count value.
resultSet	Int	Shows from which result set we are getting our data. This parameter varies only for multiple results datasets, for single result queries - it always equals 1.

data	String	Data formatted in requested format: JSON, XML, RAW or CSV.
		`Empty data response:`
		`JSON: '[]'`
		`XML: '<data></data>'`
		`RAW: ''`
		`CSV: ''`
		If the result set contains the column of SQL binary array type, then it will be encoded as Base64 for security purposes.

errorMessage	String	Error message if something goes wrong during data reading process.

Merging Results

When data is exported in chunks during the *WO Network, WO Traffic, or WO Omni* database reading process the following applies:

- Data is read from SQL server sequentially row by row and placed in the buffer.
- When the read buffer is full, the chunk is sent to client.
- When all the data has been processed, the last **chunkId** is set to total chunks count as negative value to indicate that there will be no more chunks to receive, and client can mark process as completed.

Sample Code

Included below is the ASP.NET MVC sample to save data as files and merge all result files when all data is received.

> **NOTE:** The code below takes in consideration if gzip is enabled (GZipStream type requires inclusion of System.IO.Compression assembly).

```
[HttpPost]
[System.Web.Mvc.ValidateInput(false)]
public ActionResult ProcessData(string requestId, string data,
int? resultSet = null, int? chunkId = null, string
errorMessage = "") {
    if (!_allowTestAction) {
        Response.Clear();
        Response.Write("AllowTestActionExecution is not
enabled in configuration");
        Response.TrySkipIisCustomErrors = true;
        return new
```

```
HttpStatusCodeResult(HttpStatusCode.Forbidden);
    }
    if (HttpContext.Request.Headers["Content-Encoding"] !=
null && HttpContext.Request.Headers["Content-Encoding"] ==
"gzip") {
        var inputStream = HttpContext.Request.InputStream;
        var inputStreamLength = inputStream.Length;
        var decompressedBytes = new byte[inputStreamLength];
        using (var decompressionStream = new
GZipStream(inputStream, CompressionMode.Decompress)) {
            decompressionStream.Read(decompressedBytes, 0,
(int)inputStreamLength);
        }
        var decompressedString =
Encoding.UTF8.GetString(decompressedBytes);
        var keys =
HttpUtility.ParseQueryString(decompressedString);
        requestId = keys["requestId"];
        data = keys["data"];
        resultSet = Int32.Parse(keys["resultSet"]);
        chunkId = Int32.Parse(keys["chunkId"]);
           errorMessage = Int32.Parse(keys["errorMessage "]);
    }


    var path = Server.MapPath(@"~/App_Data");
    var dir = Path.Combine(path, requestId);
    if (!Directory.Exists(dir)) {
        Directory.CreateDirectory(dir);
    }

    string fileChunkName;
    if (chunkId < 0) {
        fileChunkName = Path.Combine(dir,
String.Format("{1:D2}.Last.total({0}).txt", -chunkId,
resultSet));
    } else {        fileChunkName = Path.Combine(dir,
String.Format("{1:D2}.{0:D4}.txt", chunkId, resultSet));
    }
    System.IO.File.WriteAllText(fileChunkName, data);
    if (chunkId < 0) {
        var fileName = MergeAllFiles(dir);
    }
    return new HttpStatusCodeResult(HttpStatusCode.OK);
}
private static string MergeAllFiles(string dir) {
    var files = Directory.GetFiles(dir);
    var resFilePath = Path.Combine(dir, "resFile.txt");
```

```
    var fileCounter = 0;
    foreach (var file in files) {
        var txt = System.IO.File.ReadAllText(file);
        System.IO.File.AppendAllText(resFilePath, txt);
        fileCounter++;
    }
    return resFilePath;
}
```

Request Data for FTP

Item	Description
URI	`{root}/api/RequestData/GetDataFtp`
HTTP Method	POST
Description	Submits a Data Export request. Returns Request Id.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
   "RequestType":"Orders",
   "DataExportFormat":"JSON",
   "EnableCompression":"false",
   "GenerateInValidFormat":"true",
   "ChunkRowsCount":"500",
   "FtpUrl":"ftp://ftp.domain.com",
   "FtpLogin":"ftp_login"
   "FtpPassword":"ftp_password"
   "UsePassiveMode":"true"
   "FtpProtocol":"FTP",
   "FtpProccessingOption":"Append",
   "Port":"567"
   "MaxOpenConnections":"50",
   "Parameters":[{
         "Name":"@station_int",
         "DbType":"Int",
         "Value":"2"
      },{
         "Name":"@start_date",
         "DbType":"VarChar",
         "Value":"2000-1-1"
      },{
         "Name":"@end_date",
         "DbType":"VarChar",
         "Value":"2020-1-1"
      },{
         "Name":"@options",
         "DbType":"Int",
         "Value":"1"
      }
   ]
}
```

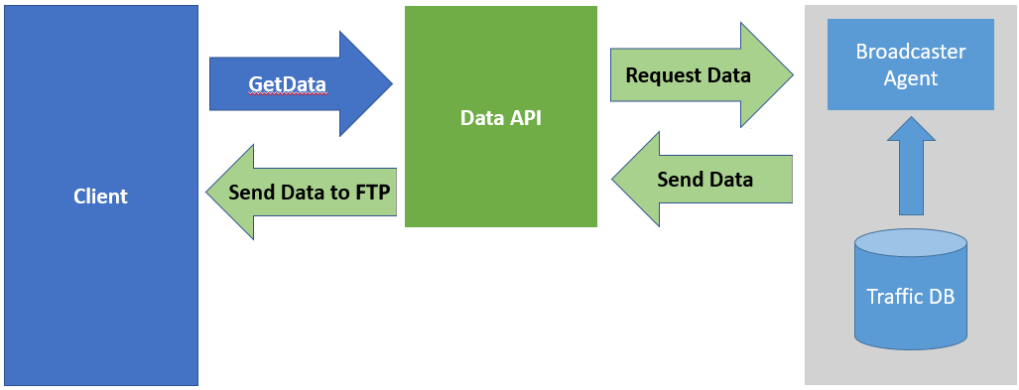
	Field	Data Type	Notes
Request Schema	RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. After implementation of namespaces concept, the value becomes concatenation of Request Group with Request Type, separated by point, or just the request type, when the namespace is global. For example: "General.Orders" or "Orders".
	DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options are: • JSON • XML • CSV • RAW
	RawCustomExtension	string	**Optional** parameter. Custom file extension for RAW DataExportFormat for Append mode only.
	UseProxy	bool	**Optional** parameter. **True** by default. If set to **true,** then data is sent to client from the Data API server. Otherwise, the data is sent directly from the BAS.
	ChunkRowsCount	Int	Number of rows read from database to be sent in one chunk. Range 10-10000.
	FtpUrl	String	Target FTP location for exported data.

Port	Int?	**Optional** parameter. Port number.
FtpLogin	String	FTP User.
FtpPassword	String	FTP Password.
UsePassiveMode	String	FTP mode.
FtpProtocol	String	FTP Protocol –Can be any of: FTP, FTP_SSL or FTP_SSH.
FtpProccessingOption	String	Determines how the data will be processed on FTP server. There are two options available: "NewFile" or "Append".
MaxOpenConnections	Int	Number of FTP connections that can be opened at once. This parameter is optional, and has the default value 30.
EnableCompression	bool	If set to **true**, then each file will be saved as Zip archive to optimize disc storage. Compression is allowed only for **"NewFile"** mode. When both "Append" and "Enable compression" modes are selected, the error message "*Compression allowed only for NewFile processing option*" will be shown to user.
GenerateInValidFormat	bool	If set to **true**, then each file (new, or final appended result) will have valid format and corresponding extension. If set to **false**, then all the files will have the .txt extension.
SuppressCsvHeaders	bool?	**Optional** parameter. If set to **true,** then headers in resulting files will be suppressed.

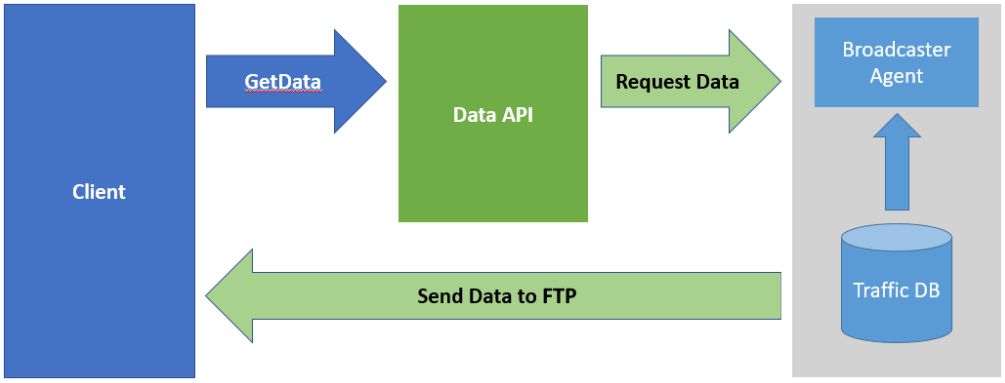
	CustomCsvDelimiter	string	**Optional** parameter. It gives ability to create custom delimiters in CSV files. For example, it could be semicolon instead of whitespace.
	QuoteText	bool	**Optional** parameter. Specifies whether to wrap text cells into double quotes or not.
	RawCustomExtension	String	**Optional** parameter. It gives ability to use custom file extension for RAW data export format and Append processing mode.
	Parameters	JSON Array	SQL Query Parameters Array.
	Name	String	SQL Query Parameter Name.
	DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.
	Value	String	Value of Query Parameter.
JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID Guid value.		

Data Receiving on FTP Side

UseProxy = true



UseProxy = false



> **NOTE:** If the Broadcaster has firewall rules in place to prevent outbound communication, the WideOrbit DAPI Server endpoint must be whitelisted.

To successfully receive exported data the FTP server should have write permission enabled. The data is exported in chunks and Append method is selected, APPE command should be allowed by the FTP Server. File name is result set and request ID divided by point, plus ".txt" extension.

Get Request Status

Item	Description
URI	`{root}/api/RequestStats/GetRequestStatus`
HTTP Method	POST

Description	Submits a request for Status info of currently executing or completed Request. Returns JSON-RPC data.
Request Headers	"partner-id":"PrtnID123" "api-key":"ApiKey123" "agreement-key": "Ydg4eFbl"

JSON Request	{
	"RequestId":"d8222969-5e63-4117-bad5-bc1f652f3add"
	}

Request Schema	**Field** | **Data Type** | **Notes** RequestId | String | Request ID that was returned by GetData or GetDataFTP API methods.

JSON Response


```
{
  "BroadcasterExternalSystemName":"Broadcaster1",
  "RequestId":"d8222969-5e63-4117-bad5-bc1f652f3add",
  "CreateDate":"2015-05-18T09:03:15.157",
  "CompleteDate":"2015-05-18T09:03:49.573",
  "RequestStatus":"Complete",
  "ErrorMessage":null,
  "RequestDuration":"00:00:34.4160000",
  "BroadcasterRequestsQueueDuration":"00:00:05.35",
  "SqlQueryExecutionDuration":"00:00:25.65",
  "FtpUploadDuration":"00:00:04.416",
  "Destination":"https://cs50.salesforce.com"
}
```


Status	Description
Pending	Assigned to the request when it's waiting in Broadcaster Agent Requests Queue on WO Data API side.
Inactive	Returned when BAS is in Inactive state and could not accept or process requests.
PostedToBa	When request is posted to Broadcaster Agent and moved to *WO Central* database.
In_Progress	When request is retrieved from *WO Central* database by Broadcaster Agent and execution started.
Complete	Request completed without errors.
Failed	Some errors occurred while executing request.
Deleted	Service status, can be used manually when you do not want to show requests on WO Data Web UI, but you need them to exist in database.
PartiallyCompleted	Added to support integration with Salesforce, to identify when not all the data were successfully transferred.

Canceling	Assigned when user sent WO Data API request for canceling or did it via WO Data Web UI.
Canceled	Request is actually canceled, and its execution terminated.
Abandoned	Assigned to all requests in In_Progress status when Broadcaster Agent is inactive, connection is stale (no requests are processed in reasonable time) or on Broadcaster Agent restart. The Abandoned state will also be assigned to the requests, that expired while waiting in Data API's or Central's queues.

Response Schema

Field	Data Type	Notes
BroadcasterExternalSystemName	String	Name of target Broadcaster.
RequestId	String	Request ID being checked.
CreateDate	DateTime	Request Start Date (UTC).
CompleteDate	DateTime	Request End Date (UTC).
RequestStatus	String	Status of Request.
ErrorMessage	String	Error message, if any.
RequestDuration	String	Request execution duration in format of HH:MM:SS.MS.
BroadcasterRequestsQueueDuration	String	Time spent on Data API Broadcaster Requests queue in format of HH:MM:SS.MS.
SqlQueryExecutionDuration	String	SQL query execution duration in format of HH:MM:SS.MS.
FtpUploadDuration	String	Duration of data upload to FTP server in format of HH:MM:SS.MS.
Destination	String	Depending on the destination type (URL, FTP, SF or Local Storage) returns the destination point, where result data have been uploaded.

Canceling Requests

Cancel Single Request

After submitting a Data API request, you can cancel pending requests.

When you send a CancelRequest to Data API, the request status will be set to "Canceling", and after the request is canceled, the request status will be set to "Canceled".

Item	Description
Uri	`{root}/api/RequestStats/CancelRequest/{request_id}`
HTTP Method	GET
Description	Submits request to cancel Data API request in progress where {request_id} is pending request id. Returns JSON data.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Response	`{`
	`  "CanceledRequestsCount":"1",`
	`  "Message":"Request succesfully canceled"`
	`}`

Response Schema

Field	Data Type	Notes
CanceledRequestsCount	Int	Informs the user about the number of requests canceled, for this type of request could be "1" or "0".
Message	String	Error message if any, success message, or in case that Data API request is already processed: "There are no requests with request id {your id} in progress".

Cancel all Requests

Item	Description
Uri	`{root}/api/RequestStats/CancelRequestsPerAgreement`
HTTP Method	GET
Description	Submits request for canceling all pending Data API requests per connection.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Response	`{`
	`  "CanceledRequestsCount":"10",`
	`  "Message":"Requests successfully canceled"`
	`}`

Field	Data Type	Notes
CanceledRequestsCount	Int	Informs the user about the number of requests canceled.
Message	String	Error message if any, success message, or in case that Data API request is already processed: "*There are no requests in progress for current agreement*".

Request Data for Local Storage

Item	Description
URI	`{root}/api/RequestData/GetDataLocalStorage`
HTTP Method	POST
Description	Submits a Local Storage Data Export request, returns Request Id Internal to WideOrbit network.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
  "RequestType":"General.Stations",
  "DataExportFormat":"JSON",
  "ChunkRowsCount":"100",
  "EnableCompression":"true",
  "GenerateInValidFormat":"true",
  "ProccessingOption":"Append",
  "Parameters":[{
         "Name":"@station_int",
         "DbType":"Int",
         "Value":"2"
      },{
         "Name":"@start_date",
         "DbType":"VarChar",
         "Value":"2000-1-1"
      },{
         "Name":"@end_date",
         "DbType":"VarChar",
         "Value":"2020-1-1"
      },{
         "Name":"@options",
         "DbType":"Int",
         "Value":"1"
      }
   ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. After implementation of namespaces concept, the value becomes concatenation of Request Group with Request Type, separated by point, or just the request type, when the namespace is global. For example: "General.Orders" or "Orders".
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options are: • JSON • XML • CSV • RAW
RawCustomExtension	string	Optional parameter. Custom file extension for RAW DataExportFormat for Append mode only.
ChunkRowsCount	Int	Number of rows read from the database to be sent in one chunk. The range is 10-10000.
EnableCompression	bool	If set to true, then each file will be saved as Zip archive to optimize disc storage. Compression is allowed only for "NewFile" mode. When both "Append" and "Enable compression" modes are selected, the error message "*Compression allowed only for NewFile processing option*" will be shown to user.

GenerateInValidFormat	bool	If set to true, then each file (new, or final appended result) will have valid format and corresponding extension. If set to false, then all the files will have .txt extension.
ProccessingOption	String	Determines how the data will be processed. Options: "NewFile" or "Append".
SuppressCsvHeaders	bool?	Optional parameter. If set to true, then headers in resulting files will be suppressed.
CustomCsvDelimiter	string	Optional parameter. It gives ability to create custom delimiters in CSV files. For example, it could be semicolon instead of whitespace.
QuoteText	bool	Optional parameter. Specifies whether to wrap text cells into double quotes or not.
RawCustomExtension	String	Optional parameter. It gives the ability to use custom file extension for RAW data export format and Append processing mode.
Parameters	JSON Array	SQL Query Parameters Array.
Name	String	SQL Query Parameter Name.
DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.
Value	String	Value of Query Parameter.

JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID GUID value.

Request Data for E-mail

Item	Description
URI	`{root}/api/RequestData/GetDataEmail`
HTTP Method	POST
Description	Submits the E-mail Data Export request, returns Request Id.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
  "RequestType":"General.Stations",
  "DataExportFormat":"JSON",
  "EmailTitle":"Your e-mail title",
  "EmailBodyText":"Your e-mail body text",
  "EnableCompression":"false",
  "ChunkRowsCount":"50",
  "EmbeddedResult":"true",
  "SuppressEmptyResultSets":"true",
  "ReceiversEmails":[
        "receiveremail1@mail.com",
        "receiveremail2@mail.com",
        "receivermail3@mail.com"
    ],
  "Parameters":[{
        "Name":"@station_int",
        "DbType":"Int",
        "Value":"2"
     },{
        "Name":"@start_date",
        "DbType":"VarChar",
        "Value":"2000-1-1"
     }
   ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. After implementation of namespaces concept, the value becomes concatenation of Request Group with Request Type, separated by point, or just the request type, when the namespace is global. For example: "General.Orders" or "Orders".
AttachmentsFormat	String	(obsolete, use DataExportFormat)
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options: • JSON • XML • CSV • RAW
EmailTitle	String	Specifies the title of the mail message.
EmailBodyText	String	Text that will be shown in the mail message body.
EnableAttachmentsCompression	bool	(obsolete, use EnableCompression)

EnableCompression	bool	If set to true, then each file will be saved as Zip archive.
EmbeddedResult	bool?	Optional parameter. If set to true, then returned result will be inserted directly to the e-mail body serialized as CSV, JSON or XML. (depends on DataExportFormat)
SuppressEmptyResultSets	bool?	Optional parameter. If set to true, then empty result sets will be suppressed and not sent to the receiver.
AttachmentSizeLimit	int	(obsolete, use ChunkRowsCount)
ChunkRowsCount	int	Number of rows read from database to be sent in one e-mail attachment. The range is 10-10000.
QuoteText	bool	Optional parameter. Specifies whether to wrap text cells into double quotes or not.
ReceiversEmails	String Array	E-mail addresses that data must be delivered to.
Parameters	JSON Array	SQL Query Parameters Array.
Name	String	SQL Query Parameter Name.
DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.

	Value	String	Value of Query Parameter.
JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID GUID value		

Request Data for AWS S3

Item	Description
URI	`{root}/api/RequestData/GetDataAWSS3`
HTTP Method	POST
Description	Submits a Data Export request. Returns Request Id.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
   "RequestType":"Default.Orders",
   "DataExportFormat":"JSON",
   "EnableCompression":"false",
   "GenerateInValidFormat":"true",
   "ChunkRowsCount":"500",
   "AccessKeyId": "KJHKJGHGJGJHGJHGJHG",
   "SecretAccessKey":
"xldsdkfjsvncsnvlksrioeorrfoijflsjldfj",
   "BucketName": "dataapiextract",
   "BucketRegionSystemName": "us-west-2",
   "RootPath": "data",
   "MaxOpenConnections":"50",
   "SuppressCsvHeaders": false,
   "QuoteText": true,
   "CustomCsvDelimiter": "",
   "UseProxy": false,
   "Retry": "0",
   "Parameters":[{
         "Name":"@station_int",
         "DbType":"Int",
         "Value":"2"
      },{
         "Name":"@start_date",
         "DbType":"VarChar",
         "Value":"2000-1-1"
      },{
         "Name":"@end_date",
         "DbType":"VarChar",
         "Value":"2020-1-1"
      },{
         "Name":"@options",
         "DbType":"Int",
         "Value":"1"
      }
   ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. Example: "General.Orders" or "Orders"
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options are: JSON, XML, CSV or RAW
UseProxy	bool	Optional parameter. True by default. If set to true, then data is sent to client from the Data API server. Otherwise the data is sent directly from the BAS.
UseIAM	bool	Optional parameter. If set to true, then uses IAM Entrustment when BAS located on AWS server.
ChunkRowsCount	Int	Number of rows read from the database to be sent in one chunk. The range is 10-10000.
AccessKeyId	String	Amazon Access Key Id.
SecretAccessKey	String	Amazon Secret Access Key.
BucketName	String	Bucket name for uploaded data.
BucketRegionSystemName	String	Region system name.

RootPath	String	Optional parameter. Path to data location inside of bucket For example: /data/orders.
Retry	Int?	Optional parameter. Retry number for failed connection. If absent, then uses Amazon default value.
MaxOpenConnections	Int	Number of FTP connections that can be opened at once. This parameter is optional and has the default value of 30.
EnableCompression	bool	If set to true, then each file will be saved as Zip archive to optimize disc storage. Compression is allowed only for "NewFile" mode. When both "Append" and "Enable compression" modes are selected, the error message "*Compression allowed only for NewFile processing option*" will be shown to the user.
GenerateInValidFormat	bool	If set to true, then each file (new, or final appended result) will have valid format and corresponding extension. If set to false, then all the files will have .txt extension.
SuppressCsvHeaders	bool?	Optional parameter. If set to true, then headers in resulting files will be suppressed.
CustomCsvDelimiter	string	Optional parameter. It gives the ability to create custom delimiters in CSV files. For example, it could be a semicolon instead of whitespace.

	QuoteText	bool	Optional parameter. Specifies whether to wrap text cells into double quotes or not.
	Parameters	JSON Array	SQL Query Parameters Array.
	Name	String	SQL Query Parameter Name.
	DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.
	Value	String	Value of Query Parameter.
JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID Guid value.		

Request Data for GCP

Item	Description
URI	`{root}/api/RequestData/GetDataGCP`
HTTP Method	POST
Description	Submits a Data Export request. Returns Request Id.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
   "RequestType":"Default.Orders",
   "DataExportFormat":"JSON",
   "EnableCompression":"false",
   "GenerateInValidFormat":"true",
   "ChunkRowsCount":"500",
   "ServiceAccountKey": "{"type": "service_account"....}",
   "BucketName": "dataapiextract",
   "RootPath": "data",
   "MaxOpenConnections":"50",
   "SuppressCsvHeaders": false,
   "QuoteText": true,
   "CustomCsvDelimiter": "",
   "UseProxy": true,
   "Parameters":[{
         "Name":"@station_int",
         "DbType":"Int",
         "Value":"2"
      },{
         "Name":"@start_date",
         "DbType":"VarChar",
         "Value":"2000-1-1"
      },{
         "Name":"@end_date",
         "DbType":"VarChar",
         "Value":"2020-1-1"
      },{
         "Name":"@options",
         "DbType":"Int",
         "Value":"1"
      }
   ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. For example: "General.Orders" or "Orders".
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options are: • JSON • XML • CSV • RAW
UseProxy	bool	Optional parameter. True by default. If set to true, then data is sent to client from the Data API server. Otherwise, the data is sent directly from the BAS. (Direct data sending is not implemented yet).
ChunkRowsCount	Int	Number of rows read from the database to be sent in one chunk. The range is 10-10000.
ServiceAccountKey	String	Google Cloud Service Account Key in JSON format.
BucketName	String	Bucket name for uploaded data.
RootPath	String	Optional parameter. Path to data location inside of bucket. For example: /data/orders.

MaxOpenConnections	Int	Number of FTP connections that can be opened at once. This parameter is optional and has the default value of 30.
EnableCompression	bool	If set to true, then each file will be saved as Zip archive to optimize disc storage. Compression is allowed only for "NewFile" mode. When both "Append" and "Enable compression" modes are selected, the error message "*Compression allowed only for NewFile processing option*" will be shown to the user.
GenerateInValidFormat	bool	If set to true, then each file (new, or final appended result) will have valid format and corresponding extension. If set to false, then all the files will have .txt extension.
SuppressCsvHeaders	bool?	Optional parameter. If set to true, then headers in resulting files will be suppressed.
CustomCsvDelimiter	string	Optional parameter. It gives ability to create custom delimiters in CSV files. For example, it could be semicolon instead of whitespace.
QuoteText	bool	Optional parameter. Specifies whether to wrap text cells into double quotes or not.
Parameters	JSON Array	SQL Query Parameters Array.
Name	String	SQL Query Parameter Name.
DbType	String	Possible values: “Int”, “VarChar” etc.

	Value	String	Value of Query Parameter.
JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID Guid value		

Request Data for Kafka

Item	Description
URI	`{root}/api/RequestData/GetDataKafka`
HTTP Method	POST
Description	Submits a Data Export request. Returns Request Id.

Request Headers	`"partner-id":"PrtnID123"`
	`"api-key":"ApiKey123"`
	`"agreement-key": "Ydg4eFbl"`

JSON Request

```
{
   "RequestType":"Default.Orders",
   "DataExportFormat":"JSON",
   "EnableCompression":"false",
   "GenerateInValidFormat":"true",
   "ChunkRowsCount":"500",
   "Key": "12345",
   "Secret": "98765",
   "Topic": "Test",
   "MaxOpenConnections":"50",
   "SuppressCsvHeaders": false,
   "QuoteText": true,
   "CustomCsvDelimiter": "",
   "UseProxy": true,
   "Parameters":[{
         "Name":"@station_int",
         "DbType":"Int",
         "Value":"2"
      },{
         "Name":"@start_date",
         "DbType":"VarChar",
         "Value":"2000-1-1"
      },{
         "Name":"@end_date",
         "DbType":"VarChar",
         "Value":"2020-1-1"
      },{
         "Name":"@options",
         "DbType":"Int",
         "Value":"1"
      }
   ]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. For example: "General.Orders" or "Orders".
DataExportFormat	String	Value that specifies desired data format to be exported to. Valid options are: • JSON • XML • CSV • RAW
UseProxy	bool	Optional parameter. True by default. If set to true, then data is sent to client from the Data API server. Otherwise, the data is sent directly from the BAS. (Direct data sending is not implemented yet)
ChunkRowsCount	Int	Number of rows read from the database to be sent in one chunk. The range is 10-10000.
Server	String	Comma separated list of endpoints.
Key	String	Account key value.
Secret	String	Account secret value.
Topic	String	Topic name for messages.

MaxOpenConnections	Int	Number of FTP connections that can be opened at once. This parameter is optional and has the default value of 30.
EnableCompression	bool	If set to true, then us the Kafka service compression to store messages.
GenerateInValidFormat	bool	If set to true, then each file (new, or final appended result) will have valid format and corresponding extension. If set to false, then all the files will have .txt extension.
SuppressCsvHeaders	bool?	Optional parameter. If set to true, then headers in resulting files will be suppressed.
CustomCsvDelimiter	string	Optional parameter. It gives ability to create custom delimiters in CSV files. For example, it could be semicolon instead of whitespace.
QuoteText	bool	Optional parameter. Specifies whether to wrap text cells into double quotes or not.
Parameters	JSON Array	SQL Query Parameters Array.
Name	String	SQL Query Parameter Name.
DbType	String	Possible values: “Int”, “VarChar” etc. For the full list of possible values refer to the **SqlDbTypes** section.
Value	String	Value of Query Parameter.

JSON Response	`"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"` RequestID Guid value.

Import Data Request

Item	Description
URI	`{root}/api/ImportData`
HTTP Method	POST
Description	Submits Import Data request, returns Request Id.

Request Headers	`"partner-id" : "PrtnID123"`
	`"api-key" : "ApiKey123"`
	`"agreement-key" : "Ydg4eFbl"`
	`"Content-Encoding" : "gzip"`
	`"Content-Type" : "application/json"`

JSON Request

```
{
  "RequestType" : "RPE.Impressions",
  // for Staging Table mode
  "Data" : "1,573,598,1,2017-01-
12,39600000,40499000,W,153304,1732,1660,1186,841,672,168,119
0,1345,1377,1308"
  // for Stored Procedure mode
  "Parameters":[{
     "Name":"@station_int",
     "DbType":"Int",
     "Value":"2"
  },{
     "Name":"@start_date",
     "DbType":"VarChar",
     "Value":"2000-1-1"
  },{
     "Name":"@end_date",
     "DbType":"VarChar",
     "Value":"2020-1-1"
  },{
     "Name":"@options",
     "DbType":"Int",
     "Value":"1"
  }]
}
```

Request Schema

Field	Data Type	Notes
RequestType	String	The value should be taken form Vendor System > SQL Script page in WO Data API and provided by WO Admins. After implementation of namespaces concept, the value becomes concatenation of Request Group with Request Type, separated by point, or just the request type, when the namespace is global. For example: "General.Orders" or "Orders".
Data	String	TSV formatted file (column headers are optional) (for Staging Table mode only).
Parameters	JSON Array	SQL Query Parameters Array (for Stored Procedure mode only).
Name	String	SQL Query Parameter Name (for Stored Procedure mode only).
DbType	String	Possible values: “Int”, “VarChar” etc. (for Stored Procedure mode only) For the full list of possible values refer to the **SqlDbTypes** section
Value	String	Value of Query Parameter (for Stored Procedure mode only).

JSON Response

```
"dbb0c7d0-7a7a-467b-979a-7a5478c0d93d"
```

> **NOTE:** Returned RequestID Guid can be later used to track requests to Data API server data handler.

Callback Request

Item	Description
URI	`receiver URI`
HTTP Method	POST
Description	Posts scheduled request finalization status for each covered agreement. For external clients Reduced format would be used.

Request Headers	`"partner-id" : "236C8668-23D2-4D38-904F-04B257DFCFCB"`
	`"api-key" : "ABD3C411-D835-42E8-BB35-85C8C1C1F196"`
	`"authorization": "AAAAAAAA-D835-42E8-BB35-85C8C1C1F196"`
	`"Content-Type" : "application/json"`

JSON Request	<pre>{
	"RequestType":"DubList",
	"Requestid":"fdbef825-d32e-401d-9c58-063e4cdb1634",
	"Path":"c:\\Data",
	"BroadcasterId":6,
	"AgreementId":1,
	"BroadcasterExternalSystemName":"SUN Networks 5.2",
	"CreateDate":"2017-10-05T08:20:13.173",
	"CompleteDate":"2017-10-05T08:20:15.147",
	"RequestStatus":"Complete",
	"ErrorMessage":null,
	"RequestDuration":19740000,
	"BroadcasterRequestsQueueDuration":18340000,
	"SqlQueryExecutionDuration":1400000,
	"FtpUploadDuration":0,
	"LoadStatus":null,
	"LoadFlag":0,
	"RowsExtracted":14,
	"ScheduledTaskInt":1,
	"TrackingField":"CREATE_DATE",
	"TrackingEnabled":true
	}</pre>

Request Schema

Field	Data Type	Reduced	Full	Notes
RequestType	String	*	*	
Requestid	Guid	*	*	
Path	String	*	*	If applicable
BroadcasterId	Integer		*	
AgreementId	Integer		*	
BroadcasterExternalSystemName	String	*	*	
CreateDate	Date	*	*	
CompleteDate	Date	*	*	
RequestStatus	String	*	*	
ErrorMessage	String	*	*	
RequestDuration	Integer	*	*	
BroadcasterRequestsQueueDuration	Integer	*	*	
SqlQueryExecutionDuration	Integer	*	*	
FtpUploadDuration	Integer	*	*	
LoadStatus	String		*	
LoadFlag	Integer		*	

	RowsExtracted	Integer	*	*	
	ScheduledTaskInt	Integer		*	
	TrackingField	String	*	*	If applicable
	TrackingEnabled	Bool	*	*	If applicable
Response	Empty response with status code OK				

Callback Response

Item	Description
URI	`{root}/api/Requests/Update/{requestId}`
HTTP Method	POST
Description	Submits processed callback request.

Request Headers	`"partner-id" : "236C8668-23D2-4D38-904F-04B257DFCFCB"`
	`"api-key" : "ABD3C411-D835-42E8-BB35-85C8C1C1F196"`
	`"Content-Type" : "application/json"`

JSON Request	`{`
	`"IsValidated":true,`
	`"TrackingFieldValue":"2014-02-05 00:00:00.000"`
	`}`

Request Schema	**Field**	**Data Type**	**Notes**
	IsValidated	Bool	Request successfully handled.
	TrackingFieldValue	Var	Tracking field value. Empty value if tacking field is not used.
Response	Empty response with status code OK.		

Diagnostic Broadcasters Status Check Request

Item	Description
URI	`{root}/api/Diagnostic/status_check[?full=true]`
HTTP Method	GET
Description	Get current broadcasters status.
Request Headers	`"DiagnosticSecurityKey": "38A539B7-EAF9-4871-A7A1-E7A113BFFF95"` `"Content-Type" : "application/json"`
GET Parameters	"full=true" - Returns full list of failing connections. Otherwise returns changed only since last call.

JSON Response Failed	<pre>{
	  "alert_needed": "yes",
	  "details": [{
	  "connection_name": "DataApiTest3",
	  "last_status": "inactive",
	  "last_status_change": "2018-08-06T15:02:09.3",
	  "last_check": "2018-08-06T15:03:59.34"
	  }]
	}</pre>

JSON Response OK	{
	"alert_needed": "no",
	"details": null
	}

Serialization

DAPI supports various serialization methods while producing universally understandable data representations.

Original Sample Request

```
SELECT
    0 AS FLD_INT
  , 0.00 AS FLD_DOUBLE
  , 'ABC, ASDS, &, <TD>
  SADSADAS' AS FLD_STR,
  GETDATE() AS FLD_DATE
```

SQL Server FOR XML PATH('Sample')

```
<Sample>
  <FLD_INT>0</FLD_INT>
  <FLD_DOUBLE>0.00</FLD_DOUBLE>
  <FLD_STR>ABC, ASDS, &amp;, &lt;TD&gt;&#x0D;
  SADSADAS</FLD_STR>
  <FLD_DATE>2018-04-14T14:05:26.963</FLD_DATE>
</Sample>
```

with Data API Serialization

TSV (CSV tab separated)

```
FLD_INT FLD_DOUBLE  FLD_STR FLD_DATE
0 0.00  "ABC, ASDS, &, <TD>  SADSADAS"  2018-04-14T17:47:00.47
```

XML

```
<data>
  <record>
    <FLD_INT>0</FLD_INT>
    <FLD_DOUBLE>0.00</FLD_DOUBLE>
    <FLD_STR>ABC, ASDS, &amp;, &lt;TD&gt;
  SADSADAS</FLD_STR>
    <FLD_DATE>2018-04-14T17:49:47.45</FLD_DATE>
  </record>
</data>
```

JSON

```
[{"FLD_INT":"0","FLD_DOUBLE":"0.00","FLD_STR":"ABC, ASDS, &,
<TD> SADSADAS","FLD_DATE":"2018-04-14T17:51:23.08"}]
```

RAW

```
00.00ABC, ASDS, &, <TD>
  SADSADAS4/14/2018 5:53:53 PM
```

RAW with SQL Serializer

```
<Sample>
  <FLD_INT>0</FLD_INT>
  <FLD_DOUBLE>0.00</FLD_DOUBLE>
  <FLD_STR>ABC,
 ASDS, &amp;, &lt;TD&gt;
SADSADAS</FLD_STR>
  <FLD_DATE>2018-04-14T17:56:39.560</FLD_DATE>
</Sample>
```

Appendix

SqlDbTypes for Query Parameters

- BigInt
- Binary
- Bit
- Char
- DateTime
- Decimal
- Float
- Image
- Int
- Money
- NChar
- NText
- NVarChar
- Real
- UniqueIdentifier
- SmallDateTime
- SmallInt
- SmallMoney
- Text
- Timestamp
- TinyInt
- VarBinary
- VarChar
- Variant
- Xml
- Udt
- Structured
- Date
- Time
- DateTime2
- DateTimeOffset

Additional Resources

General information can be found in Help (from within ***WO Network*** *or* ***WO Traffic***, click **Help** from the top menu). Additional questions can be directed to WideOrbit Support at wonetworksupport@wideorbit.com or wonetworksupport@wideorbit.com.

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