DBPLUS

DBPLUS Data Replicator REST API

Last modified: 2019-10-04
API Version: 1

Introduction

DBPLUS Data Replicator provides an API based on REST architecture, which features a number of basic operations on replications. The API has been designed with for use in scripts. XML is used to encode messages. The default port is 5221.

REST Service is *disabled* by default. You will find information about how to enable it in the User's Manual.

If the service is to be called from remote machines it will be necessary to add appropriate rules in your firewall. To check whether the service is up and running, you may type this in your internet browser:

http://replicatormachine:5221/ReplicatorManagerRest.svc/Version

If everything has been set up correctly and the DBPLUS Data Replicator Manager service is running the following text will be displayed:

```
<VersionInformation>
  <ProductVersion>2019.3.3</ProductVersion>
  <ProductBuildNumber>379</ProductBuildNumber>
  <UiServiceContractVersion>38</UiServiceContractVersion>
  <RestApiContractVersion>1</RestApiContractVersion>
</VersionInformation>
```

Keep in mind the following:

1. Full address of an operation should be used:
   http://replicatormachine:5221/ReplicatorManagerRest.svc/Replications/ExampleReplication
2. Function parameters (see below, e.g. [REPLICATION_NAME]) should be entered without square brackets,
3. In case of an error (e.g. invalid parameters, replication does not exist, operation cannot be executed) operation will return exception using HTTP protocol capabilities. The HTTP header will contain error code and the body the error content.

Value formatting

SCN	Number in decimal
LSN	0x00000000:00000000:0000 using hexadecimal
Timestamp	ISO 8601 format
Logical value	true or false

For SCN and LSN supplied as parameters in PUT and POST operations you may use:

- Number in decimal
- Number in hexadecimal prefixed with x or 0x, colon sign : may appear inside the sequence of digit (colons are ignored)

Operations

Version

HTTP method	GET
Address	/Version
Use	Gets version information for DBPLUS Data Replicator.

Output:
VersionInformation

ProductBuildNumber	Product build number.
ProductVersion	Product version (year, quarter, sequence number).
UiServiceContractVersion	Version of the protocol used by the GUI client (determines compatibility between client and server).
RestApiContractVersion	REST API protocol version.

Example:
```xml
<VersionInformation>
  <ProductVersion>2019.3.3</ProductVersion>
  <ProductBuildNumber>379</ProductBuildNumber>
  <UiServiceContractVersion>38</UiServiceContractVersion>
  <RestApiContractVersion>1</RestApiContractVersion>
</VersionInformation>
```

Getting information about replications

HTTP method	GET
Address	/Replications
Use	Gets list of names of all replications configured on given machine.

Output:

Replications	List of replication names.
Name	Replication name.

Example:
```xml
<Replications>
  <Name>Prod</Name>
  <Name>Test</Name>
  <Name>OracleToSql</Name>
</Replications>
```

HTTP method	GET
Address	/Replications/[REPLICATION_NAME]
Use	Gets information about a given replication.

Output:
Replication

Name	Replication name.
SourceDatabaseName	Name of the source database (specified by user or build from connection parameters).

TargetDatabaseName	Name of the target database (specified by user or build from connection parameters).
ServiceStatus	Replication service status: • Stopped • StartPending • StopPending • Running • ContinuePending • PausePending • Paused
CurrentReplicatedTables	List of actual tables selected for replication.
CurrentReplicatedTable	Table selected for replication.
Schema	Schema name (in the source database)
Name	Table name (in the source database)
Status	Table replication status: • InitialLoad : During initial data load or awaiting initial data load. • StartPointScheduled : Replication on hold until replication process reaches certain point. • Replicated: Table is being replicated.
InitialLoadErrorMessage	Message of an error that occurred during initial data load error or nil, if no such error occurred.
ConfiguredReplicatedTables	List of tables and group of tables configured for replication.
ConfiguredReplicatedTable	Table or group of tables configured for replication.
SourceSchema	Schema name in the source database, may contain special characters: * and ?
SourceName	Table name in the source database, may contain special characters: * and ?
TargetSchema	Schema name in the target database if schema name in the target database is different than in the source database, nil otherwise.
TargetName	Table name in the target database if table name in the target database is different than in the source database, nil otherwise.
Included	Boolean (true or false). true: Table or group of tables is included in replication. false: Table or group of tables is excluded from replication, e.g. if all tables in the given schema are included (entry with SourceSchema = Some schema, SourceTable = *), some specific tables in the schema may be excluded.
HasActiveAlerts	Boolean (true or false). True if there are any active alerts (irrespective of their severity level), false otherwise.
StartPoint	Start point specified in the configuration. This field contains change number (SCN or LSN) if the start point has been selected manually, or one of two values: • CurrentOnReplicationStart: start point will be determined when the replication is first started as the current change number in the source database, • Import: start point will be determined in cooperation with the mechanism of data import.

EffectiveStartPoint	Change number (SCN or LSN) which is the actual replication start point determined during the first start of the replication. This field will be nil if the replication has not started yet.
EndPoint	Change numer (SCN or LSN) configured as replication end point or nil, if end point has not been specified.
CurrentReplicaPointChange Number	The moment in the source database which is represented by the current state of the replica, specified as change number (SCN or LSN).
CurrentReplicaTimePoint	The moment in the source database which is represented by the current state of the replica, specified as timestamp.
Statistics	Current replication statistics, nil if the replication service is not running.
ReaderSpeed	Transaction log reading speed, calculated as number of transaction log lines per second.
ReadTimestamp	Timestamp of the last line read from the transaction log.
ReadChangeNumber	Change number (SCN or LSN) of the last line read from the transaction log.
ReadLatencySeconds	Latency of the transaction log reading process in seconds.
ApplierSpeed	Speed at which changes on the target database are applied, calculated as number of transaction log lines per second.
ApplyTimestamp	Timestamp of the last change applied on the target database.
ApplyChangeNumber	Change number (SCN or LSN) from the source database of the last change applied on the target database.
ApplyLatencySeconds	Latency of the process of applying changes on the target database in relation to the current state of the source database, expressed in seconds.

Example:

```xml
<Replication>
  <Name>MyReplication</Name>
  <SourceDatabaseName>SOURCE</SourceDatabaseName>
  <TargetDatabaseName>TARGET</TargetDatabaseName>
  <ServiceStatus>Running</ServiceStatus>
  <CurrentReplicatedTables>
    <CurrentReplicatedTable>
      <Schema>FIN</Schema>
      <Name>CUSTOMERS</Name>
      <Status>Replicating</Status>
      <InitialLoadErrorMessage i:nil="true"/>
    </CurrentReplicatedTable>
  <ConfiguredReplicatedTables>
    <ConfiguredReplicatedTable>
      <SourceSchema>FIN</SourceSchema>
      <SourceName>*</SourceName>
      <TargetSchema i:nil="true"/>
      <TargetName i:nil="true"/>
      <Included>true</Included>
    </ConfiguredReplicatedTable>
  </ConfiguredReplicatedTables>
  <HasActiveAlerts>false</HasActiveAlerts>
  <StartPoint>37140945</StartPoint>
  <EffectiveStartPoint>37140945</EffectiveStartPoint>
  <EndPoint i:nil="true"/>
  <CurrentReplicaPointChangeNumber>37141204</CurrentReplicaPointChangeNumber>
```

```
   <CurrentReplicaTimePoint>2019-09-19T15:58:40</CurrentReplicaTimePoint>
   <Statistics>
     <ReaderSpeed>738</ReaderSpeed>
     <ReadTimestamp>2019-09-30T14:33:50.757</ReadTimestamp>
     <ReadChangeNumber>39257857</ReadChangeNumber>
     <ReadLatencySeconds>92</ReadLatencySeconds>
     <ApplierSpeed>2909</ApplierSpeed>
     <ApplyTimestamp>2019-09-19T15:58:40</ApplyTimestamp>
     <ApplyChangeNumber>37141204</ApplyChangeNumber>
     <ApplyLatencySeconds>92</ApplyLatencySeconds>
   </Statistics>
</Replication>
```

HTTP method	GET
Address	/Replications/[REPLICATION_NAME]/CurrentReplicatedTables
Use	Gets list of actual tables selected for replication in a given replication.
Structure of the output is identical to that of the CurrentReplicatedTables section of the XML structure presented above.	
HTTP method	GET
Address	/Replications/[REPLICATION_NAME]/ConfiguredReplicatedTables
Use	Gets list of tables and group of tables configured for replication in a given replication.
Structure of the output is identical to that of the ConfiguredReplicatedTables section of the XML structure presented above.	
HTTP method	GET
Address	/Replications/[REPLICATION_NAME]/Statistics
Use	Gets statistics of a given replication.
Structure of the output is identical to that of the Statistics section of the XML structure presented above. If replication service is not running empty text will be returned.	
HTTP method	GET
Address	/Replications/[REPLICATION_NAME]/StartPoint
Use	Gets the configured start point of a given replication.
Value is returned as plain text (Content-Type: text/plain). If start point has not been specified empty text will be returned.	
HTTP method	GET
Address	/Replications/[REPLICATION_NAME]/EndPoint
Use	Gets the end point of a given replication.
Value is returned as plain text (Content-Type: text/plain). If end point has not been specified empty text will be returned.	

Replication service control

HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/Start
Use	Attempts to start a given replication service if the service is stopped or paused.
Input: none. Output: true if after execution the service status is Running, false otherwise.	
HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/Stop
Use	Attempts to stop a given replication service.

Input: none.	
Output: true if after execution the service status is Stopped, false otherwise.	
HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/Pause
Use	Attempts to pause a given replication service.
Input: none.	
Output: true if after execution the service status is Paused, false otherwise.	

Changing replication Configuration and settings

Note: executing each of the operations described in this section results in *restarting the replication service*, if the replication service is running. If more than one change is to be performed the suggested way of doing it is to stop the service first, then execute the changes, and finally start the service.

HTTP method	POST
Address	/Replications/[REPLICATION_NAME]/ConfiguredReplicatedTables/Include/ [SOURCE_SCHEMA_NAME]/[SOURCE_TABLE_NAME]
Use	Adds table to replication.
An entry which *includes* a given table in replication will be added to the configuration. Configuration must not already contain an entry with the same combination of schema name/table name. Schema name and target name must not contain special characters: * and ?.	
HTTP method	POST
Address	/Replications/[REPLICATION_NAME]/ConfiguredReplicatedTables/Include /[SOURCE_SCHEMA_NAME]/[SOURCE_TABLE_NAME] /[TARGET_SCHEMA_NAME]/[TARGET_TABLE_NAME]
Use	Adds table to replication and specifies modified schema and name in the target database.
An entry which *includes* a given table in replication will be added to the configuration, target schema and table name will be set. Configuration must not already contain an entry with the same combination of schema name/table name. Schema name and target name must not contain special characters: * and ?. Both target schema name and target table name must be specified.	
HTTP method	POST
Address	/Replications/[REPLICATION_NAME]/ConfiguredReplicatedTables/Exclude /[SOURCE_SCHEMA_NAME]/[SOURCE_TABLE_NAME]
Use	Excludes table from replication.
An entry which *excludes* a given table from replication will be added to the configuration. Configuration must not already contain an entry with the same combination of schema name/table name. Schema name and target name must not contain special characters: * and ?.	
HTTP method	DELETE
Address	/Replications/[REPLICATION_NAME]/ConfiguredReplicatedTables /[SOURCE_SCHEMA_NAME]/[SOURCE_TABLE_NAME]
Use	Removes an entry concerning a given table from the replication configuration.
An entry for the specified schema name and table name will be *removed* from the configuration. Schema name and target name must not contain special characters: * and ?.	

Jeśli wskazana pozycja nie istnieje w konfiguracji wywołanie nie będzie miało skutku.

HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/StartPoint/[START_POINT]
Use	Sets new replication start point.

New replication start point will be set in the replication configuration. This means that replication state will be reset and replication process will start with a clean slate. Depending on the configuration initial data will be loaded automatically on the target database, or preparing start point on the target database will be necessary.

Start point can be specified as one of the following:

- Change number (SCN or LSN),
- CurrentOnReplicationStart: start point will be determined when the replication is first started as the current change number in the source database,
- Import: start point will be determined in cooperation with the mechanism of data import.

HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/StartPoint/[START_POINT] /[LOG_READING_START_SCN]
Use	Sets new replication start point and sets start point for reading from transaction log.

New replication start point will be set in the replication configuration. This means that replication state will be reset and replication process will start with a clean slate. Depending on the configuration initial data will be loaded automatically on the target database, or preparing start point on the target database will be necessary.

If this method of setting start point is used, start point must be specified as change number (SCN or LSN).

Setting start point for reading from transaction log is only useful for replications where the source database is running on Oracle RDBMS. Setting transaction log reading start point greater than replication start point minus UNDO RETENTION allows to save time when replication starts for the first time.

HTTP method	PUT
Address	/Replications/[REPLICATION_NAME]/EndPoint/[END_POINT]
Use	Sets replication end point.

Replication process will transfer transactions with COMMIT change number less or equal the change number specified as end point, and then it will stop.

HTTP method	DELETE
Address	/Replications/[REPLICATION_NAME]/EndPoint
Use	Removes replication end point.

If replication has reached the previously set end point, removing the end point will lead to replication resuming its work.