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\$BATCH request in SAP GATEWAY

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Hello Guys,

I am from SAP Gateway team, this post will help you get a glimpse of what \$batch request really means in Odata .

Answers to expect from this post?

How to get the \$batch concept implemented in your existing Odata Service ?

How do I implement CHANGESET process to make the data modification process in sync with each other?

What is new in \$BATCH concept as such?

How to make read operations also in sync with one another?

Prerequisite

Basics on how to create a service in SEGW or Odata enabled CDS .

How to register the service and extract data relevant information out of it ?

What will be your take after reading this post?

\$Batch-Implementation in technical terms , just go through the post roughly so you can get a deep dive into technical information .

Explained in layman terms , to make it easier in the beginning and technical in later part.

Let's get started.

Batch processing -Enables multiple retrieval operation in a single HTTP request in parallel.

However, the CHANGESET request can be posted along with GET request but it will not be processed parallelly.

Example: If I have two GET request and one CHANGESET set request first GET request will be processed parallelly (2) and then change set will be processed.

To activate the batch processing the below configuration needs to be activated in SPRO.

Maximum no -No of batch queries that can be executed in parallel.

It is always recommendable to give the no of parallel process keeping the system performance in time-Because based on the number the existing work process will be allocated for processing the job.

Structure

The screenshot shows the SAP Customizing Implementation Guide structure. The path selected is: SAP Customizing Implementation Guide > Activate Business Functions > SAP NetWeaver > SAP Gateway > SAP Gateway Service Enablement > Backend OData Channel > Configuration Settings > Define Parallelization of Batch Queries.

Parallelization of Batch Queries

Activate Parallelization for Batch Queries

Maximum Number of Parallel Queries

Parallelization of consecutive queries in a batch request

Message No. /WBEP/CM_COS250

Diagnosis

A parallelization of consecutive queries in a batch request should be used to optimize the performance of the batch request processing.

Configuration Parameters

The following parameters are valid for the current SAP client:

- "Activate Parallelization for Batch Queries": Mark or unmark this option to enable or disable the parallelization.
- "Maximum Number of Parallel Queries": Specify the maximum number to limit the amount of parallel processing queries to save system resources. This number will be ignored if it is greater than the maximum number of dialog work processes available at parallelization time which is based on system settings (transaction RZ11, profile parameters rdisp/rfc*). Zero (0) means it only depends on current system resources. Default: 0.

Performance Optimization

In case of serialization the duration of the consecutive queries is the sum of all query processing times. Contrary to this, the total duration in parallel mode is just the maximum duration of these query processing times and a minimal overhead for parallelization.

Example: Say I have 3 Get Request , 2 Post Request, 1 Change request, 1 delete request.

For configuration of 3 as above depicted.

1st step: 3 Get Request

2nd step: 1 post request,

3rd step: 1 post request,

4th Step: 1 Change request

5th Step: 1 delete request.

But this number of maximum parallel processing request will be voided if the available work process in system is low for parallel processing.

But this configuration can be disabled for particular service if required with transaction

Transaction: /IWBEPE/REG_SERVICE

Maintain Service

Delete Service

Technical Service Name

Service Version

Display Change Create

Display->Configuration

Enable Deactivation from the below check box .

Change Configuration

Service Information

Technical Service Name

Service Version

Service Settings

Deactivate Soft-State based Query Result Cache

Deactivate Parallelization of Batch Requests

Define Cache Request Processing (CRP) Usage

Only the GET requests will be executed in parallel.

Pre-requisite:

It is always must to have HTTP header 'Content-Type' for batch request with value 'multipart/mixed;boundary='.

The below

| HTTP Request Header | |
|---------------------|---------------------------------|
| Header Name | Content-Type |
| Value | multipart/mixed; boundary=batch |

Batch request:

The body of a batch request is made up of an ordered series of retrieve operations and/or change sets.

A change set is an atomic unit of work that is made up of an unordered group of one or more of the insert, update or delete operations.

Change sets cannot contain retrieve requests and cannot be nested, that is, a change set cannot contain a change set.

The batch boundary in HTTP header – “Content-Type” specified in the GW client is valid only for retrieve operations.

For Update/Delete/Create request the boundary needs to be specified again the “Changeset” exclusively apart from “Content Type” in HTTP header.

Basic Rule before firing a Gateway Batch call:

After GET, PUT, POST, DELETE statement before the input of “Batch” or “Changeset” statement line there should be two-line space as depicted below, if not it will result in error.

GET Statement in line 5, batch close call in line 8.

Example of batch request -Only read entity

Request URI: /sap/opu/odata/SAP/ZRM_BATCH_LEARNING_SRV/\$batch
 Protocol: HTTP
 Test Group: ZRM_TESTCASE
 Test Case: Response in Browser

| Header Name | Value |
|--------------|---|
| Content-Type | multipart/mixed;boundary=batch_005056A5-09B1-1ED1-BF82-4... |
| X-CSRF-Token | 30V4_kzMCAkH1h2As72CaQ== |

HTTP Request:

```

1 --batch_005056A5-09B1-1ED1-BF82-409B26A80700
2 Content-Type: application/http
3 Content-Transfer-Encoding: binary
4
5 GET ZEMPLOYEE_DETAILSet(EmpId='0000000001') HTTP/1.1
6
7
8 --batch_005056A5-09B1-1ED1-BF82-409B26A80700
  
```

HTTP Response - Processor:

```

1 --D6B9A444A570ED0745F67
2 Content-Type: applicati
3 Content-Length: 1100
4 content-transfer-encodi
5
6 HTTP/1.1 200 OK
7 Content-Type: applicati
8 Content-Length: 988
9 dataserviceversion: 2.0
10
11
  
```

Some basic framework for execution of \$Batch request.

- Before the GET statement or POST/DELETE/PUT request we will always have the below headers by default

Content-Type: application/http

Content-Transfer-Encoding: binary

- Within a batch request to segregate each request separately for every new action (GET/CHANGEST) we have to use the prefix "Boundary value"

HTTP Method: POST
 Request URI: /sap/opu/odata/SAP/ZRM_BATCH_LEARNING_SRV/\$batch
 Protocol: HTTP
 Test Group: ZRM_TESTCASE
 Test Case: Response in Browser

| Header Name | Value |
|--------------|--------------------------------------|
| Content-Type | multipart/mixed;boundary=batch_00567 |
| X-CSRF-Token | uEzjmAE-ZKr-ZKXHeZ22Bg== |

HTTP Request:

```

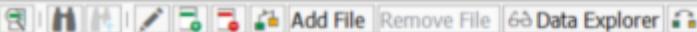
1  --batch 00567
2  Content-Type: application/http
3  Content-Transfer-Encoding: binary
4
5  GET ZEMPLOYEE_DETAILSet(EmpId='0000000001') HTTP/1.1
6
7
8  --batch 00567
9  Content-Type: application/http
10 Content-Transfer-Encoding: binary
11
12 GET ZEMPLOYEE_DETAILSet(EmpId='0000000002') HTTP/1.1
13
14
15  --batch 00567
16  Content-Type: multipart/mixed; boundary=changeset
17
18  --changeset
19  Content-Type: application/http
20  Content-Transfer-Encoding: binary
21
22  DELETE ZEMPLOYEE_DETAILSet(EmpId='0000000002') HTTP/1.1
23
24
25  --changeset
26  Content-Type: application/http
27  Content-Transfer-Encoding: binary
28
29  PUT ZEMPLOYEE_DETAILSet(EmpId='0000000001') HTTP/1.1
30  CONTENT-Type: application/json
31
32  {
33      "EmpId" : "0000000001",
34      "Name" : "DONALD",
35      "Dept" : "DS ABAP",
36      "Designation" : "ASE",
37      "Skillset" : "ABAP",
38      "Experience" : "000002"
39  }
40
41  --changeset
42
43  --batch_00567--

```

And again, within a “Changeset” to segregate each action we need to use boundary value defined for “Changeset” which is passed with begin of content type to segregate “Changeset”

SAP will process the operations such as CREATE/UPDATE/DELETE as it is in the same order, which is defined in the input time. So it is business responsibility to take care of sequence in which batch “Changeset” calls would be defined.

Request URI /sap/opu/odata/SAP/ZRM_BATCH_LEARNING_SRV/\$batch
Protocol HTTP HTTPS Test Group ZRM_TESTCASE Test



HTTP Request

| Header Name | Value |
|--------------|--------------------------------------|
| Content-Type | multipart/mixed;boundary=batch_00567 |
| X-CSRF-Token | uEzjmAE-ZKr-ZKXHeZ22Bg== |

**FOR BATCH START
CONTENT TYPE HEADER**

```

1 --batch_00567
2 Content-Type: application/http
3 Content-Transfer-Encoding: binary
4
5 GET ZEMPLOYEE_DETAILSet(EmpId='0000000001') HTTP/1.1
6
7
8 --batch_00567
9 Content-Type: application/http
10 Content-Transfer-Encoding: binary
11
12 GET ZEMPLOYEE_DETAILSet(EmpId='0000000002') HTTP/1.1
13
14
15 --batch 00567
16 Content-Type: multipart/mixed; boundary=changeset
17
18 --changeset
19 Content-Type: application/http
20 Content-Transfer-Encoding: binary
21
22 DELETE ZEMPLOYEE_DETAILSet(EmpId='0000000002') HTTP/1.1
23
24
25 --changeset
26 Content-Type: application/http
27 Content-Transfer-Encoding: binary
28
29 PUT ZEMPLOYEE_DETAILSet(EmpId='0000000001') HTTP/1.1
30 CONTENT-Type: application/json
31
32 {
33     "EmpId" : "0000000001",
34     "Name" : "DONALD",
35     "Dept" : "DS ABAP",
36     "Designation" : "ASE",
37     "Skillset" : "ABAP",
38     "Experience" : "000002"
39 }
40
41 --changeset
42
43 --batch_00567--

```

**FOR CHANGESET
CONTENT TYPE HEADER**

The response of a batch request will exactly correspond to the order of retrieval / change operation in the batch request.

Each response includes a Content-Type header with a value of application/http, and a Content-Transfer-Encoding MIME header with a value of binary.

We can use **one or more Update/delete/insert operation within a “Changeset”** but when you use such template we need to make sure there is no “Commit work” statement within any one UPDATE/CREATE/DELETE entity.

If it exists, the **system will dump the request** and no further processing will happen.

Each Changeset process will be single LUW (logical unit of work) so ideally no Commit Work statement would be required.

So, each “Changeset” will be either fully processed or complete failure.

So why do I use batch processing in that why for Update/delete/create I must use Changeset?

Performance Improvement -the main reason behind batch processing.

The screenshot shows a SAP trace log interface with various icons at the top for filtering and viewing logs. The main title is "Client 099 User SUPPORT Status OK". Below the title is a table of log entries:

| Line No | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|---------|----------|-------|------------|-------------------------------|--------------------------------|---------------|---------------|
| 1 | 1 | 1 | Hub System | /IWFND/CL_SODATA_HTTP_HANDLER | HANDLE_REQUEST | 18609 | 42 |
| 2 | | | | >Request Payload Size | 353 Bytes | | |
| 3 | | | | >Response Payload Size | 77505 Bytes | | |
| 4 | 8 | 2 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 18567 | 13919 |
| 5 | | 3 | Hub System | /IWFND/CL_MED_MDL_PROVIDER | GET_SERVICE_GROUP | 1 | 1 |
| 6 | 1 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 2197 | 2194 |
| 7 | 1 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 3 | 3 |
| 8 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | | |
| 9 | 1 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 2352 | 2349 |
| 10 | 1 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 3 | 3 |
| 11 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | | |
| 12 | 1 | 3 | Hub System | /IWFND/CL_MGW_REQUEST_MANAGER | Call BEP System - TRUSTING@CRT | 80 | 51 |
| 13 | 1 | 4 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/CL_MGW_HANDLE_REQUEST | 29 | 2 |
| 14 | | | | >RFC Request Size | 5614 Bytes | | |
| 15 | | | | >RFC Response Size | 30432 Bytes | | |
| 16 | 1 | 5 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | PROCESS_BATCH | 27 | |

| | | | | | | | |
|----|---|----|------------|----------------------------------|--------------------------------|----|----|
| 17 | Z | 6 | Backend | /IWBEPEP/CL_MGW_QUERY_SCHEDULER | PARALLELIZE_BATCH_QUERIES | 27 | 1 |
| 18 | | 7 | Backend | >Parallelization Info | Queries=2 | | |
| 19 | | 7 | Backend | >Parallelization Info | ConfigTasks=0, UsedTasks=2 | | |
| 20 | | 7 | Backend | >Parallelization Info | WaitRes=0ms, pRfcEnd=24ms | | |
| 21 | | 7 | Backend | >Parallelization Info | AppTime=9ms, AppSum=18ms | | |
| 22 | | 7 | Backend | >Parallelization Info | NonGWTime=0ms | | |
| 23 | 1 | 7 | Backend | /IWBEPEP/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 26 | 9 |
| 24 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPEP/FM_MGW_HANDLE_REQUEST | 17 | 2 |
| 25 | 4 | 9 | Backend | /IWBEPEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_SET | 15 | 4 |
| 26 | | 10 | Backend | /IWBEPEP/CL_MGW_RUNT_REMOTE_UTIL | AUTHORITY_CHECK_TECH | | |
| 27 | | 10 | Backend | /IWBEPEP/CL_MGW_MED_PROVIDER | GET_LAST_MODIFIED | | |
| 28 | | 10 | Backend | /IWBEPEP/CL_MGW_RT_SFLIGHT | GET_ENTITYSET | 9 | 9 |
| 29 | | 10 | Backend | /IWBEPEP/CL_MGW_DATA_HELPER | CONVERT_ENTITYSET_OUTB | 2 | 2 |
| 30 | 1 | 7 | Backend | /IWBEPEP/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 25 | 9 |
| 31 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPEP/FM_MGW_HANDLE_REQUEST | 16 | 2 |
| 32 | 3 | 9 | Backend | /IWBEPEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_SET | 14 | 3 |
| 33 | 1 | 10 | Backend | /IWBEPEP/CL_MGW_RUNT_REMOTE_UTIL | AUTHORITY_CHECK_TECH | | |
| 34 | | 11 | Backend | /IWBEPEP/CL_MGW_MED_PROVIDER | GET_LAST_MODIFIED | | |
| 35 | | 10 | Backend | /IWBEPEP/CL_MGW_RT_SFLIGHT | GET_ENTITYSET | 9 | 9 |
| 36 | | 10 | Backend | /IWBEPEP/CL_MGW_DATA_HELPER | CONVERT_ENTITYSET_OUTB | 2 | 2 |
| 37 | | 3 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_FEED_DATA | 13 | 13 |

This parallel query process will be executed only for Local and frontend system which has only one registered backend system.

When you use Multi Origin Composition with multiple backend system , the parallel query process will not be triggered each and every request will be processed separately.

| Line No | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|---------|----------|-------|------------|--------------------------------|-------------------------------|---------------|---------------|
| 1 | 1 | 1 | Hub System | /IWFND/CL_SODATA_HTTP_HANDLER | HANDLE_REQUEST | 560117 | 21 |
| 2 | | | | >Request Payload Size | 345 Bytes | | |
| 3 | | | | >Response Payload Size | 2584 Bytes | | |
| 4 | 3 | 2 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 560096 | 8 |
| 5 | | 3 | Hub System | /IWFND/CL_MED_MDL_PROVIDER | GET_SERVICE_GROUP | 2 | 2 |
| 6 | 2 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 296817 | 5 |
| 7 | 3 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 296812 | 208917 |
| 8 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | 1 | 1 |
| 9 | 1 | 5 | Hub System | /IWFND/CL_MGW_RUNT_RCLNT_PRXY | Call Backend - G4YCLNT000_T | 87891 | 36037 |
| 10 | 1 | 6 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_READ_ENTITY | 51854 | 77 |
| 11 | | | | >RFC Request Size | 3505 Bytes | | |
| 12 | | | | >RFC Response Size | 1303 Bytes | | |
| 13 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | 51777 | 51777 |
| 14 | | 5 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 3 | 3 |
| 15 | | 4 | Hub System | /IWFND/CL_SODATA_PROC_DISPTCHR | Lib Serialization - write_to | | |
| 16 | 2 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 263269 | 3 |
| 17 | 3 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 263266 | 17126 |
| 18 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | | |
| 19 | 1 | 5 | Hub System | /IWFND/CL_MGW_RUNT_RCLNT_PRXY | Call Backend - G4YCLNT000_T | 246139 | 237075 |
| 20 | 1 | 6 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_READ_ENTITY | 9064 | 63 |
| 21 | | | | >RFC Request Size | 3505 Bytes | | |
| 22 | | | | >RFC Response Size | 1305 Bytes | | |
| 23 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | 9001 | 9001 |
| 24 | | 5 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 1 | 1 |
| 25 | | 4 | Hub System | /IWFND/CL_SODATA_PROC_DISPTCHR | Lib Serialization - write_to | | |

Because in class /IWFND/CL_TRANSACTION_HANDLER under method SET_IS_MDC is set as abap_true.

In /IWFND/CL_MGW_RUNT_RCLNT_PRXY under method /IWFND/IF_MGW_CORE_RUNTIME~READ_ENTITY check is made whether it's a multi origin composition request which was set under transaction handler if yes, in method CHECK_USE_CENTRAL_RFC of class /IWFND/CL_MGW_RUNT_RCLNT_PRXY a check is made and single processing of each and every request is processed separately.

CHECK_USE_CENTRAL_RFC

```
□ METHOD check_use_central_rfc.  
| IF mv_is_mdc = abap_true OR mv_icf_root_node = 'sdata'.  
|   rv_use_central_rfc = abap_false.  
| ELSE.  
|   rv_use_central_rfc = abap_true.  
| ENDIF.  
  
ENDMETHOD.
```

Class Builder: Class /IWFND/CL_MGW_RUNT_RCLNT_PRXY Display



Method

/IWFND/IF_MGW_CORE_RUNTIME~READ_ENTITY

Active

```
90
91
92     * ****
93     * Use Central RFC to Backend *
94     * ****
95     IF check_use_central_rfc( ls_system_alias_info-gwbep_version ) = abap_true OR
96         mv_process_mode = /iwfnd/if_mgw_core_types->gcs_process_mode-co_deployed_only.
97         mo_request_manager->read_entity(
98             EXPORTING
99                 iv_destination      = lv_destination
100                is_system_alias_info = ls_system_alias_info
101                io_logger           = lo_logger
102                iv_log_msg_handle   = mv_msg_handle
103                iv_entity_name      = iv_entity_name
104                iv_entity_set_name  = iv_entity_set_name
105                is_request_details  = is_request_details
106                it_parameter        = it_parameter
107                iv_inlines          = lv_inlines
108            IMPORTING
109                et_custom_header    = ct_headers
110                er_entity           = cr_entity
111                es_response_context = cs_response_context
112                et_expand_skiptoken = ct_expand_skiptoken
113                et_inline_info       = ct_inline_info
114            ).
115            cv_is_target_format = abap_false.
116            RETURN.
117        ENDIF.
118
```

When using Multi Origin Composition separately for an Entity Set parallelization will be enabled automatically in each of the system alias.

| Line No | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|---------|----------|-------|------------|--------------------------------|-------------------------------|---------------|---------------|
| 1 | 1 | 1 | Hub System | /IWFND/CL_SODATA_HTTP_HANDLER | HANDLE_REQUEST | 243 | 22 |
| 2 | | | | >Request Payload Size | 0 Bytes | | |
| 3 | | | | >Response Payload Size | 28258 Bytes | | |
| 4 | 3 | 2 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 221 | 5 |
| 5 | | 3 | Hub System | /IWFND/CL_MED_MDL_PROVIDER | GET_SERVICE_GROUP | 1 | 1 |
| 6 | 3 | 3 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 215 | 6 |
| 7 | | 4 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | 1 | 1 |
| 8 | 1 | 4 | Hub System | /IWFND/CL_MGW_MDC_DATA | READ_ENTITYSET | 204 | |
| 9 | 2 | 5 | Hub System | /IWFND/CL_MGW_MDC_DATA | Parallelize Read EntitySet | 204 | 38 |
| 10 | 1 | 6 | Hub System | /IWFND/CL_MGW_MDC_DISPATCHER | Call Backend - G4YCLNT000_T | 46 | 33 |
| 11 | | 7 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/CL_MGW_HANDLE_REQUEST | 13 | 13 |
| 12 | | | | >RFC Request Size | 3452 Bytes | | |
| 13 | | | | >RFC Response Size | 6466 Bytes | | |
| 14 | 1 | 6 | Hub System | /IWFND/CL_MGW_MDC_DISPATCHER | Call Backend - NONE | 166 | 35 |
| 15 | 2 | 7 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/CL_MGW_HANDLE_REQUEST | 131 | 8 |
| 16 | | | | >RFC Request Size | 3437 Bytes | | |
| 17 | | | | >RFC Response Size | 2292 Bytes | | |
| 18 | 1 | 8 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_SET | 10 | 6 |
| 19 | | 9 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITYSET | 4 | 4 |
| 20 | | 8 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_SET | 129 | 129 |
| 21 | | 4 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_FEED_DATA | 4 | 4 |
| 22 | | 3 | Hub System | /IWFND/CL_SODATA_PROC_DISPTCHR | Lib Serialization - write_to | | |

The other way of calling batch request with multi origin request if you want the data to be retrieved from single backend only we can use Origin option in the URI.

Example: /sap/opu/odata/SAP/ZRM_BATCH_LEARNING_SRV;o=GXX_000/\$batch

This will enable parallelization if the required configuration is done in backend.

| | Line No | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|--|---------|----------|-------|------------|--------------------------------|--------------------------------|---------------|---------------|
| | 4 | 8 | 2 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 126 | 10 |
| | 5 | | 3 | Hub System | /IWFND/CL_MED_MDL_PROVIDER | GET_SERVICE_GROUP | 1 | 1 |
| | 6 | 1 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 6 | 3 |
| | 7 | 1 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 3 | 3 |
| | 8 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | | |
| | 9 | 1 | 3 | Hub System | /IWFND/CL_SODATA_ROOT_HANDLER | DISPATCH | 3 | 2 |
| | 10 | 1 | 4 | Hub System | /IWFND/CL_SODATA_PROCESSOR | READ | 1 | 1 |
| | 11 | | 5 | Hub System | /IWFND/CL_MGW_PROV_DELEGATOR | GET_DATA_PROVIDER | | |
| | 12 | 1 | 3 | Hub System | /IWFND/CL_MGW_REQUEST_MANAGER | Call BEP System - G4YCLNT000_T | 103 | 13 |
| | 13 | 1 | 4 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_HANDLE_REQUEST | 90 | 3 |
| | 14 | | | | >RFC Request Size | 6583 Bytes | | |
| | 15 | | | | >RFC Response Size | 6444 Bytes | | |
| | 16 | 1 | 5 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | PROCESS_BATCH | 87 | |
| | 17 | 2 | 6 | Backend | /IWBEPM/CL_MGW_QUERY_SCHEDULER | PARALLELIZE_BATCH_QUERIES | 87 | 2 |
| | 18 | | 7 | Backend | >Parallelization Info | Queries=2 | | |
| | 19 | | 7 | Backend | >Parallelization Info | ConfigTasks=7, UsedTasks=2 | | |
| | 20 | | 7 | Backend | >Parallelization Info | WaitRes=0ms, pRfcEnd=11ms | | |
| | 21 | | 7 | Backend | >Parallelization Info | AppTime=0ms, AppSum=0ms | | |
| | 22 | | 7 | Backend | >Parallelization Info | NonGWTime=0ms | | |
| | 23 | 1 | 7 | Backend | /IWBEPM/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 83 | 8 |
| | 24 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_HANDLE_REQUEST | 75 | 3 |
| | 25 | 1 | 9 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 72 | 72 |
| | 26 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| | 27 | 1 | 7 | Backend | /IWBEPM/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 85 | 11 |
| | 28 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_HANDLE_REQUEST | 74 | 3 |
| | 29 | 1 | 9 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 71 | 71 |
| | 30 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| | 31 | | 3 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 2 | 2 |
| | 32 | | 3 | Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write_to | | |
| | 33 | | 3 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 1 | 1 |
| | 34 | | 3 | Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write_to | | |

From SAP 740 SP09 Batch processing, performance has been improved by introducing new API for Changeset processing in defer mode.

The interface /IWBEPM/IF_MGW_APPL_SRV_RUNTIME and the method CHANGESET_BEGIN,CHANGESET_PROCESS,CHANGESET_END will be implemented in each DPC_EXT class

/IWBEPM/IF_MGW_APPL_SRV_RUNTIME~CHANGESET_BEGIN, /IWBEPM/IF_MGW_APPL_SRV_RUNTIME~CHANGESET_PROCESS, /IWBEPM/IF_MGW_APPL_SRV_RUNTIMECHANGESET_END.

Deferred mode: For Performance improvement

Each change set processing can also be improved if the data provider can handle the whole change set at once.

That means the provider must implement the new API for change set handling to process all change set operations within the new API **CHANGESET_PROCESS**.

In this case a data provider must return the result of all operations back to the gateway framework.

The below difference in call stack can be seen clearly.

Average Times (in milliseconds)

| No. of Requests | Processing Time | SAP GW Hub Sy... | RFC and Networ... | SAP GW Backen... | Application | Non-GW |
|-----------------|-----------------|------------------|-------------------|------------------|-------------|--------|
| 1 | 129 | 67 | 16 | 42 | 3 | 1 |

With DEFER mode enabled

| Line No | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|---------|----------|-------|----------|--------------------------------|-------------------------------|---------------|---------------|
| 34 | | 7 | Backend | >Parallelization Info | NonGWTime=0ms | | |
| 35 | 1 | 7 | Backend | /IWBEPE/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 21 | 12 |
| 36 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPE/FM_MGW_HANDLE_REQUEST | 9 | 3 |
| 37 | 1 | 9 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 6 | 6 |
| 38 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| 39 | 1 | 7 | Backend | /IWBEPE/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 17 | 8 |
| 40 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPE/FM_MGW_HANDLE_REQUEST | 9 | 3 |
| 41 | 1 | 9 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 6 | 6 |
| 42 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| 43 | 1 | 6 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 6 | 6 |
| 44 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESET_BEGIN | | |
| 45 | 2 | 6 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 4 | 2 |
| 46 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESET_PROCESS | 2 | 2 |
| 47 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESFT_FND | | |
| 48 | 1 | 6 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 1 | 1 |
| 49 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESET_BEGIN | | |
| 50 | 2 | 6 | Backend | /IWBEPE/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 4 | 3 |
| 51 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESET_PROCESS | 1 | 1 |
| 52 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESET_END | | |

Average Times (in milliseconds)

Without Defer Mode

| No. of Requests | Processing Time | SAP GW Hub Sy... | RFC and Networ... | SAP GW Backen... | Application | Non-GW |
|-----------------|-----------------|------------------|-------------------|------------------|-------------|--------|
| 1 | 131 | 70 | 16 | 39 | 5 | 1 |

| Line No. | Subcalls | Level | Location | Class | Method | Duration (ms) | Net Time (ms) |
|----------|----------|-------|----------|--------------------------------|-------------------------------|---------------|---------------|
| 36 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_HANDLE_REQUEST | 10 | 3 |
| 37 | 1 | 9 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 7 | 7 |
| 38 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| 39 | 1 | 7 | Backend | /IWBEPM/CL_MGW_QUERY_SCHEDULER | Call Parallel Query | 19 | 11 |
| 40 | 1 | 8 | Backend | REMOTE_FUNCTION_MODULE | /IWBEPM/IF_MGW_HANDLE_REQUEST | 8 | 3 |
| 41 | 1 | 9 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 5 | 5 |
| 42 | | 10 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | GET_ENTITY | | |
| 43 | 2 | 6 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 7 | 6 |
| 44 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESSET_BEGIN | | |
| 45 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CREATE_ENTITY | 1 | 1 |
| 46 | 2 | 6 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 3 | 1 |
| 47 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CREATE_ENTITY | 2 | 2 |
| 48 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESSET_END | | |
| 49 | 2 | 6 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 2 | 1 |
| 50 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESSET_BEGIN | | |
| 51 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CREATE_ENTITY | 1 | 1 |
| 52 | 2 | 6 | Backend | /IWBEPM/CL_MGW_REMOTE_HANDLER | CREATE_ENTITY_TYPE | 2 | 1 |
| 53 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CREATE_ENTITY | 1 | 1 |
| 54 | | 7 | Backend | ZCL_ZRM_BATCH_CONCEPT_DPC_EXT | CHANGESSET_END | | |

When we intend to use DEFER mode its must to redefine /IWBEPM/IF_MGW_APPL_SRV_RUNTIME~CHANGESSET_BEGIN of the service, this is where we need to set CV_DEFER_MODE = ABAP_TRUE.

There is an option if you want to disable defer mode for certain Entity type, Operation Information so it will follow normal process, instead of hitting CHANGESSET_PROCESS.

CHANGESSET_BEGIN method has importing parameter IT_OPERATION_INFO which has ENTITY_TYPE, ENTITY_SET, OPERATION_TYPE, CONTENT_ID, CONTENT_ID_REF fields which gives us a chance to decide if we want to switch CV_DEFER_MODE on or off.

In simple the response structure for all the entities will be set together in case of DEFER Mode with changing parameter table CT_CHANGESSET_RESPONSE.

Either full response or no response.

Properties

Interfaces

Friends

Attributes

Methods

Events

Types

Aliases

| Method | Level | Visibility | M... | Description |
|---|----------|------------|------|---|
| /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CHANGESSET_BEGIN | Instance | Public | | Begin of a changeset |
| /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CHANGESSET_PROCESS | Instance | Public | | Process all changeset operations at once |
| ZEMPLOYEE_DETAIL_CREATE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_DETAILSet |
| ZEMPLOYEE_DETAIL_DELETE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_DETAILSet |
| ZEMPLOYEE_DETAIL_GET_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_DETAILSet |
| ZEMPLOYEE_DETAIL_GET_ENTITYSET | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_DETAILSet |
| ZEMPLOYEE_DETAIL_UPDATE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_DETAILSet |
| ZEMPLOYEE_SALARY_CREATE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_SALARYSet |
| ZEMPLOYEE_SALARY_DELETE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_SALARYSet |
| ZEMPLOYEE_SALARY_GET_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_SALARYSet |
| ZEMPLOYEE_SALARY_GET_ENTITYSET | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_SALARYSet |
| ZEMPLOYEE_SALARY_UPDATE_ENTITY | Instance | Protected | | Related EntitySet Name: ZEMPLOYEE_SALARYSet |

In /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CHANGESSET_PROCESS we have importing parameter IT_CHANGESET_REQUEST.

In the internal table, IT_CHANGESET_REQUEST we have a field called 'REQUEST_CONTEXT' which bears entity specific details this must be down casted to a class '/IWBEP/IF_MGW_REQ_ENTITY_C' method 'GET_ENTITY_TYPE_NAME' to have only Entity Type specific information so that we can retrieve the Entity Type and do the required action as per field "OPERATION_TYPE".

The field "ENTRY_PROVIDER" in internal table has the data related to 'Entity'. This field has reference to interface class '/IWBEP/IF_MGW_ENTRY_PROVIDER' the method 'READ_ENTRY_DATA' will get the data in result structure as per entity structure dynamically.

The Changeset request-operation number should be set to field Changeset response-operation number structure because the operation number is a unique field which maps to the output request order as per input request order.

```
BEGIN OF ty_s_changeset_request,
  operation_type  TYPE /iwbep/mgw_operation_type,      " See GCS_OPERATION_TYPE
  operation_no    TYPE i,
  media_resource  TYPE ty_s_media_resource,   " CREATE_STREAM and UPDATE_STREAM only
  slug           TYPE string,                  " CREATE_STREAM only
  request_headers TYPE tihttpnvp,
  request_context TYPE REF TO object,
  entry_provider  TYPE REF TO /iwbep/if_mgw|entry_provider,
  expand_node     TYPE REF TO /iwbep/if_mgw_odata_expand,
  msg_container   TYPE REF TO /iwbep/if_message_container,
  content_id      TYPE string,    " Content ID
  content_id_ref  TYPE string,    " Content ID Reference
END OF ty_s_changeset_request .

types:
  ty_t_changeset_request TYPE STANDARD TABLE OF ty_s_changeset_request WITH KEY operation_no .
types:
BEGIN OF ty_s_changeset_response,
  operation_no  TYPE i,
  entity_data   TYPE REF TO data,
  headers       TYPE tihttpnvp,
END OF ty_s_changeset_response .
types:
  ty_t_changeset_response TYPE SORTED TABLE OF ty_s_changeset_response WITH UNIQUE KEY operation_no
```

| Ty. | Parameter | Type spec. | Description |
|-----|--------------------------------|--|---------------------|
| ► | IT_CHANGESET_REQUEST | TYPE /IWBEPEP/IF_MGW_APPL_TYPES=>TY_T_CHANGESET_REQUEST | |
| ► | CT_CHANGESET_RESPONSE | TYPE /IWBEPEP/IF_MGW_APPL_TYPES=>TY_T_CHANGESET_RESPONSE | |
| ⚡ | /IWBEPEP/CX_MGW_BUSI_EXCEPTION | | Business Exception |
| ⚡ | /IWBEPEP/CX_MGW_TECH_EXCEPTION | | Technical Exception |

Method /IWBEPEP/IF_MGW_APPL_SRV_RUNTIME~CHANGESET_PROCESS Active

```

1  METHOD /iwbepep/if_mgw_appl_srv_runtime~changeset_process.
2  DATA:
3      ls_changeset_request  TYPE /iwbepep/if_mgw_appl_types=>ty_s_changeset_request,
4      ls_changeset_response  TYPE /iwbepep/if_mgw_appl_types=>ty_s_changeset_response,
5      lv_entity_type         TYPE string,
6      lo_create_context      TYPE REF TO /iwbepep/if_mgw_req_entity_c,
7      ls_salary               TYPE zemployee_salary,
8      ls_employee             TYPE zemployee_detail.
9
10 *     BREAK-POINT.
11
12 "Here I am segregating the request for each Delete, Create,Update operation separately for easier understanding.
13 LOOP AT it_changeset_request INTO ls_changeset_request WHERE operation_type = 'DE'.    "delete entity
14
15     lo_create_context ?= ls_changeset_request-request_context. "downcasting -from more general source to specific target
16     lv_entity_type = lo_create_context->get_entity_type_name( ).
17
18     CASE lv_entity_type.
19
20     WHEN 'ZEMPLOYEE_SALARY'.
21         ls_changeset_request-entry_provider->read_entry_data( IMPORTING es_data = ls_salary ). "extract information from the request
22
23         SELECT SINGLE *
24             FROM zemployee_salary
25             INTO ls_salary
26             WHERE empid = ls_salary-empid.
27
28         IF sy-subrc EQ 0.
29             DELETE FROM zemployee_salary WHERE empid = ls_salary-empid. "delete from DB table
30         ENDIF.
31         IF sy-subrc = 0.    "feed the response to GW CLIENT if the request is sucessful
32
33         copy_data_to_ref(
34             EXPORTING
35                 is_data = ls_salary
36             CHANGING
37                 cr_data = ls_changeset_response-entity_data ).
38         ENDIF.
39         ls_changeset_response-operation_no = ls_changeset_request-operation_no. "this is must because to map as per operation # defined in request,otherwise dump
40         APPEND ls_changeset_response TO ct_changeset_response. "Accumulate the response for GW CLIENT

```

The best use for “Defer Mode” is for ‘CREATE’ request in case of \$batch request, the use can be identified by using a ‘CONTENT_ID’ and ‘CONTENT_ID_REF’ of ‘IT_CHANGESET_REQUEST’ parameter in ‘CHANGESET_PROCESS’:

If a hierarchical CREATE request is to be done, via batch processing in a single Changeset we can use this ‘CONTENT_ID’ concept.

Example: I have CHANGESSET request where I must create 'Sales Order Header' entity 'Sales Order Item' entity.

In this case I either want to create both sales order header and item entity using the REQUEST information or nothing at all.

In this case I can use **CHANGESSET_BEGIN** and **CHANGESSET_PROCESS** method to ensure my success.

The \$BATCH navigation and framework expand works like non-batch process.

Frame work expand: This will expand both the principal entity and dependent entity in URI.

Two entity results will be displayed

/sap/opu/odata/SAP/ZRM_BATCH_LEARNING_SRV/ZEMPLOYEE_DETAILSet(EmplId='0000000004')?\$expand=ZEMPLOYEE_SALARY

Navigation: This will expand only the depend entity based on key field from principal entity.

Data-Provider Expand: This will work like Frame work expand but here we can alter the return entity structure such that both the principal and dependent entity will be under one result structure (ER_ENTITY)

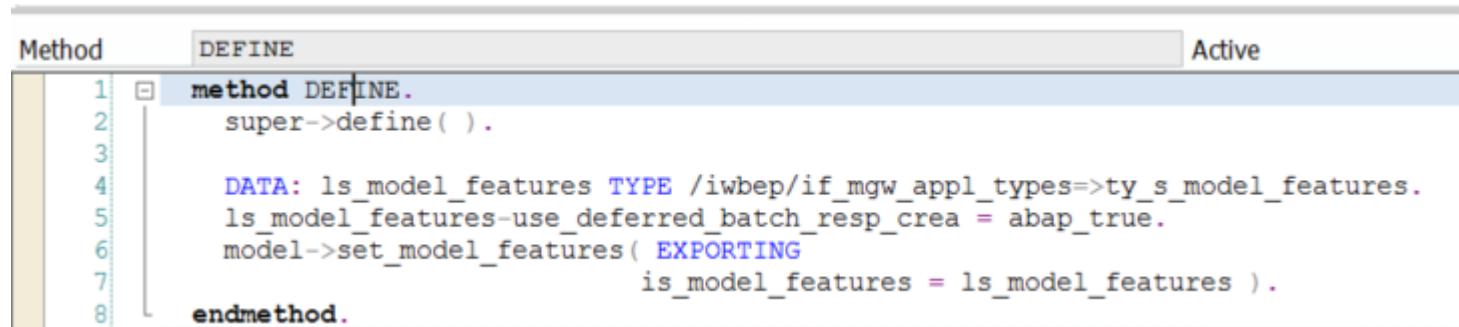
Deferred response Creation for Batch -Only GET requests

It will **deactivate** BATCH parallelization and CRP handling.

Attribute: MV_BATCH_DEFERRED_RESP_CREA

This feature has to be enabled in MPC_EXT class of a service .

Sample implementation:



The screenshot shows a code editor with an ABAP code snippet. The code is part of a method named 'DEFINE'. It starts with 'method DEFINE.' and ends with 'endmethod.'. Inside the method, it calls 'super->define()'. Then it declares a local variable 'ls_model_features' of type 'ty_s_model_features'. It sets the 'use_deferred_batch_resp_crea' attribute of 'ls_model_features' to 'abap_true'. Finally, it calls 'model->set_model_features()' with an EXPORTING parameter 'is_model_features' set to 'ls_model_features'. The code is numbered from 1 to 8 on the left.

```
Method DEFINE
  Active
1  method DEFINE.
2    super->define( ).
3
4    DATA: ls_model_features TYPE /iwbp/if_mgw_appl_types=>ty_s_model_features.
5    ls_model_features-use_deferred_batch_resp_crea = abap_true.
6    model->set_model_features( EXPORTING
                                is_model_features = ls_model_features ).
7
8  endmethod.
```

Class/Interface /IWBEPC/CL_MGW_ABS_MODEL Implemented / Active

| | | | | | | | |
|------------|------------|---------|-------------------|---------|--------|-------|---------|
| Properties | Interfaces | Friends | Attributes | Methods | Events | Types | Aliases |
|------------|------------|---------|-------------------|---------|--------|-------|---------|

| Properties | | | | | | | | | | | | | | | Filter |
|------------|--|--------------------|------------|------|-------------|----------------------------|--|--|--|--|--|--|--|--|--------|
| Attribute | | Level | Visibility | R... | Typing | Associated Type | | | | | | | | | |
| MODEL | | Instance Attribute | Public | | Type Ref To | /IWBEPC/IF_MGW_ODATA_MODEL | | | | | | | | | |

Interface /IWBEPC/IF_MGW_ODATA_MODEL Implemented / Active

| | | | | | | |
|------------|------------|------------|----------------|--------|-------|---------|
| Properties | Interfaces | Attributes | Methods | Events | Types | Aliases |
|------------|------------|------------|----------------|--------|-------|---------|

Parameters of Method SET_MODEL_FEATURES

| | | | | | | | | |
|-------------------|--------------|------------|------|---------------|---------------------------------|---------|--|--|
| ← Methods | ⚡ Exceptions | Properties | | | | | | |
| Parameter | Type | P... | O... | Typing Method | Associated Type | Default | | |
| IS_MODEL_FEATURES | Importing | | | Type | /IWBEPC/IF_MGW_APPL_TYPES=>TY_S | | | |
| | | | | Type | | | | |

```
types:
BEGIN OF ty_s_model_features,
  use_cache_handshake_busi_req TYPE abap_bool, " Activates the cache handshake for business requests
  use_long_label_for_property TYPE abap_bool, " Label for properties based on DDIC elements will be taken from long description
  use_edm_type_mapping_sp10 TYPE abap_bool, " Use the EDM type mapping as developed in SP10
  use_edm_type_mapping_v15 TYPE abap_bool, " Use all RAW16 based domains as Edm.Guid (use_edm_type_mapping_sp10 will be set automatically)
  use_shorttext_for_exceptions TYPE abap_bool, " For T100 Exception texts always use the shorttext and not the longtext
  use_crp_by_default TYPE abap_bool, " All entity sets of this service supports "Cache Request Processing" (CRP) by
  " default. Can be overwritten via /IWBEPC/IF_MGW_ODATA_ENTITY_SET->set_use_crp
  use_auto_uppercase_conv TYPE abap_bool, " Automatically determine uppercase properties and translate to uppercase during inbound processing
  renounce_anno_use_in_dpc TYPE abap_bool, " The DPC doesn't read the annotations
  use_deferred_batch_resp_crea TYPE abap_bool, " Use deferred batch response creation (disables CRP and parallelization in Sbatch)
  use_strict_decimal_check TYPE abap_bool, " Perform on deserialization of Edm.Decimal typed properties facet checking, i.e. check precision, scale
END OF ty_s_model_features .
```

There are two main methods introduced in DPC generator class

/IWBEPC/CL_MGW_ABS_DATA.
/IWBEPC/IF_MGW_CORE_SRV_RUNTIME~BATCH_BEGIN
/IWBEPC/IF_MGW_CORE_SRV_RUNTIME~BATCH_END

The logic in above BATCH_BEGIN method will check if there any request other than READ request .

It will allow only GET_ENTITY
GET_ENTITYSET
EXPAND_ENTITY

```
EXPAND_ENTITYSET  
GET_ENTITYSET_DELTA.
```

If any other operations (Changeset) are present, the **Deferred response creation** mode will be disabled.

The implementation to enable **Deferred response creation** must be done in method /IWBEPEP/IF_MGW_APPL_SRV_RUNTIME~BATCH_BEGIN.

When a batch request is executed in case of Hubway and Gateway /IWBEPEP/CL_MGW_REMOTE_HANDLER will be executed PROCESS_BATCH, in case of co-deployed /IWBEPEP/CL_MGW_LOCAL_HANDLER and same method name PROCESS_BATCH.

The **BATCH_BEGIN** and **BATCH_END** if once implemented for a service, **IT_REQUEST_HEADER** will have value 'SAP-IW-BATCH_DEF_RESP_CREA'.

So when the class /IWBEPEP/CL_MGW_REMOTE_HANDLER or /IWBEPEP/CL_MGW_LOCAL_HANDLER calls PROCESS_BATCH method, if the above request header is set .

The flag for **Deferred response creation** will be set.

Class Builder: Class /IWBEPEP/CL_MGW_REMOTE_HANDLER Display

| Ty. | Parameter | Type spec. | Description |
|-----|--------------------|----------------|-----------------|
| ►□ | IV_REQUEST_DATA | TYPE XSTRING | Request Data |
| ►□ | IT_REQUEST_HEADER | TYPE TIHTTPNVP | Request Header |
| □□ | EV_RESPONSE_DATA | TYPE XSTRING | Response Data |
| □□ | ET_RESPONSE_HEADER | TYPE TIHTTPNVP | Response Header |

Method PROCESS_BATCH Active

```
75 READ TABLE it_request_header INTO ls_request_header
76   WITH TABLE KEY name = /iwbepep/cl_mgw_remote_handler=>co_header_batch_def_resp_crea.
77   IF sy-subrc EQ 0 AND ls_request_header-value EQ abap_true.
78     lv_use_deferred_resp_crea = abap_true.
79   ENDIF.
o
```

The execution will be done based on no of operations (CRUD) operations in \$batch request.

Class: /IWBEPEP/CL_MGW_REMOTE_HANDLER or /IWBEPEP/CL_MGW_LOCAL_HANDLER

Method: PROCESS_BATCH

When processing the batch request first check will be made for each if its if its 'Query' ('GET')request or CHANGESSET (Modify operations) request.

Query: LS_BATCH_PACKET-PACKET = 'Q'

Changeset: LS_BATCH_PACKET-PACKET = 'C'

Batch request will be processed in packets of information-so first let's see how query request will be categorized further.

Only One 'GET' Request in \$batch request:

If **only one** request/Operation is present in the received **BATCH** request, it will be direct call for processing the request without using batch parallelization concept.

This will be done in method '**PROCESS_SINGLE_BATCH_QUERY**' the logic.

Based on function code value in structure '**IS_BATCH_INFO_REQUEST-FUNCTION_CODE**' whether its Entity Type, Entity Set, Update entity, Create Entity, Delete Entity and some other operations based on the request received.

/IWBEP/CL_MGW_REMOTE_HANDLER== / /IWBEP/CL_MGW_REMOTE_HANDLER== / 168 SY-

METHOD / PROCESS_BATCH (/IWBEP/CL_MGW_REMOTE_HANDLER) SY-

Desktop 1 Desktop 2 Desktop 3 Standard Structures Tables Objects Detail Data

Structures Fld.list

Struct. LS_BATCH_INFO

Struc. Type Structure: deep(92)

| Exp. | Component | Val... | Val. | Ch... | Technical Type | Hexade |
|------|-----------------|--------|---------------------|-------|----------------|--------|
| | PACKET_NO | | 1 | | I(4) | 010000 |
| | OPERATION_NO | | 1 | | I(4) | 010000 |
| | CHANGESSET | | | | CString{0} | |
| | FUNCTION_CODE | | ET | | CString{2} | 450054 |
| | XML_OFFSET | | 6 | | I(4) | 060000 |
| | XML_SIZE | | 3271 | | I(4) | C70C00 |
| | CONTENT_TYPE | | xml | | CString{3} | 78006D |
| | ENTITY_SET | | ZEMPLOYEE_DETAILSet | | CString{19} | 5A0045 |
| | ENTITY_TYPE | | ZEMPLOYEE_DETAIL | | CString{16} | 5A0045 |
| | ACTION_NAME | | | | CString{0} | |
| | OPERATION_STATE | | | | C(1) | 2000 |
| | IS_STREAM | | - | | C(1) | 2D00 |
| | IS DEEP INSERT | | - | | C(1) | 2D00 |

```

16 * Set Request Data
17 lv_op_request_data = iv_request_data+is_batch_info_request-xml_offset(is_ba
18
19 * Set Request Header
20 ls_op_request_header-name = co_header_fcode.
21 ls_op_request_header-value = is_batch_info_request-function_code.
22 INSERT ls_op_request_header INTO TABLE lt_op_request_header.
23
24 * set soft-state mode
25 |CLEAR: ls_op_request_header.
26 ls_op_request_header-name = co_header_soft_state.
27 ls_op_request_header-value = is_batch_info_request-is_soft_state.
28 INSERT ls_op_request_header INTO TABLE lt_op_request_header.

```

Variables 1 Variables 2 Locals Globals Auto Memory Analysis

| St... | Variable | V... | Val. |
|-------|-----------------------|-------------------|------|
| | LS_BATCH_PACKET-PACK | | |
| | IS_BATCH_INFO_REQUEST | ET | |
| | CO HEADER FCODE | sap-iw-bep-method | |
| | LS_BATCH_INFO | | |

The method **PROCESS_REQUEST** will process the request related to retrieval of data.

The export structure **IT_REQUEST** header will have the function code value.

```
38  * Process Query
39  |process_request(
40    EXPORTING
41      iv_request_data      = lv_op_request_data
42      it_request_header    = lt_op_request_header
43    IMPORTING
44      ev_response_data    = lv_op_response_data
45      et_response_header  = lt_op_response_header
46  ).
```

Multiple GET request in \$batch request: A check will be made if the service is enabled for 'Parallelization' with below class and method

Class/Method: /IWBEPECL_SUTIL_RUNTIME-> GET_BATCH_CONFIG.

This will check in Global configuration /N/IWBEPEGLOBAL_CONFIG give maximum no. of parallel processing request and if batch parallelization is enabled for service.

This will in turn check for that service if parallelization is disabled with the below class.

Class/Method: /IWBEPECL_SCO_MANAGER=>IS_BATCH_PARAL_DISABLED

The class which will parallelize the incoming request with below class

Class/Method: /IWBEPECL_MGW_QUERY_SCHEDULER=>PARALLELIZE_BATCH_QUERIES

Class/Method: /IWBEPECL_MGW_REMOTE_HANDLER / PROCESS_READ_PACKAGE

Variable: LV_USE_DEFERRED_RESP_CREA

will be used if BATCH deferred response creation is used and implemented using BEGIN_BATCH method.

So, this way even for GET request we can use Deferred response either all or none (results)

The each individual request will be processed first in

Method: **PROCESS_REQUEST_INT**, for entity read, delete, update, create entity , metadata, vocabulary text retrieval request

The response is built using this

| Method | PROCESS_READ_PACKAGE | Active |
|--------|--|--------|
| 220 | IF sy-subrc EQ 0. | |
| 221 | build_response_data(| |
| 222 | EXPORTING | |
| 223 | is_batch_response = ls_batch_response | |
| 224 | io_read_package_info = lo_read_package_info | |
| 225 | is_batch_perf_data = <ls_batch_perf_data> | |
| 226 | IMPORTING | |
| 227 | ev_response_data = lv_op_response_data | |
| 228 | CHANGING | |
| 229 | cs_batch_response_info = ls_batch_info_response). | |
| 230 | ELSE . | |
| 231 | build_response_data(| |
| 232 | EXPORTING | |
| 233 | is_batch_response = ls_batch_response | |
| 234 | io_read_package_info = lo_read_package_info | |
| 235 | IMPORTING | |
| 236 | ev_response_data = lv_op_response_data | |
| 237 | CHANGING | |
| 238 | cs_batch_response_info = ls_batch_info_response). | |
| 239 | ENDIF . | |
| 240 | | |
| 241 | INSERT ls_batch_info_response INTO TABLE ct_batch_info_response. | |
| 242 | | |
| 243 | CONCATENATE cv_response_data | |
| 244 | lv_op_response_data | |
| 245 | INTO cv_response_data IN BYTE MODE . | |

Error handling:

Either display all or nothing even for GET requests similar to CHANGESSET request.

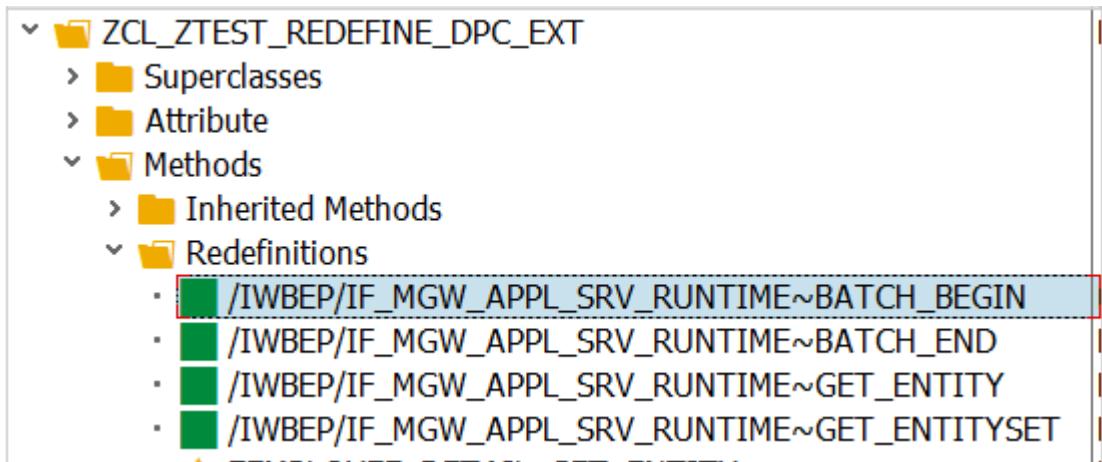
PROCESS_READ_PACKAGE

Active

```
mv_io_type = 1.  
ENDIF.  
  
process_request_int(  
  EXPORTING  
    it_request_header      = lt_op_request_header  
    io_read_package_info  = lo_read_package_info  
  IMPORTING  
    ev_batch_error         = ev_batch_error  
    ev_response_data      = lv_op_response_data  
    et_response_header    = lt_op_response_header ).  
  
mv_io_type = mv_io_type_main.  
  
IF ev_batch_error EQ abap_true.  
  " ends complete batch processing  
  " method returns current exception response only  
  
  cv_response_data = lv_op_response_data.
```

Implementation example for Batch -Deferred mode response creation

Redefinition has to be done for below methods



Additionally, if required for your use case it has to be done for below methods(business case)

/IWBEP/IF_MGW_APPL_SRV_RUNTIME~EXPAND_ENTITY
 /IWBEP/IF_MGW_APPL_SRV_RUNTIME~EXPAND_ENTITYSET
 /IWBEP/IF_MGW_APPL_SRV_RUNTIME~GET_ENTITYSET_DELTA

Sample implementation:

Step1:

First to enable Batch deferred response mode enable it in MPC_EXT model features as explained previously.

| Method | DEFINE | Active |
|--------|---|--------|
| 1 | <code>method DEFINE.</code> | |
| 2 | <code>super->define().</code> | |
| 3 | | |
| 4 | <code>DATA: ls_model_features TYPE /iwbep/if_mgw_appl_types=>ty_s_model_features.</code> | |
| 5 | <code>ls_model_features-use_deferred_batch_resp_crea = abap_true.</code> | |
| 6 | <code>model->set_model_features(EXPORTING</code> | |
| 7 | <code>is_model_features = ls_model_features).</code> | |
| 8 | <code>endmethod.</code> | |

Step2:

Redefine method and set the flag as Deferred response creation as ABAP_TRUE.

Method /IWBEPEP/IF_MGW_APPL_SRV_RUNTIME~BATCH_BEGIN

```

1 | method /IWBEPEP/IF_MGW_APPL_SRV_RUNTIME~BATCH_BEGIN.
2 |   EV_DEFERRED_RESPONSE_CREATION = abap_true.
3 | endmethod.
```

Step3:

Introduce a new table attribute in DPC_EXT class.

This is to consolidate the response from GET ,EXPANDED (entity, entity set) and use it in BATCH_END class to display the response in one time.

Example:

| Class/Interface | | ZCL_ZTEST_REDEFINE_DPC_EXT | Implemented / Active | | | | | | | |
|-----------------|------------|----------------------------|----------------------|------------|---------|------------|---------|--------|-------|---------|
| | | | Properties | Interfaces | Friends | Attributes | Methods | Events | Types | Aliases |
| | Properties | | | | | | | | | |
| | | | | | | | | | | |

| Attribute | Level | Visibility | R... | Typing | Associated Type |
|-----------------------|--------------------|------------|-------------------------------|--------|---|
| MT_BATCH_GET_RESPONSE | Instance Attribute | Private | <input type="checkbox"/> Type | | /IWBEPEP/IF_MGW_APPL_TYPES=>TY_T_BATCH_RESPONSE |

Step4: Now you must redefine GET, EXPANDED (entity, entity set) as below for interface /IWBEPEP/IF_MGW_APPL_SRV_RUNTIME.

This is required to consolidate the response and display in one shot in BATCH_END method.

Method

/IWBEPE/IF_MGW_APPL_SRV_RUNTIME~GET_ENTITY

Active

```
11  CASE lv_entityset_name.
12  *-----*
13  *          EntitySet -  ZEMPLOYEE_SALARYSet
14  *-----*
15  WHEN 'ZEMPLOYEE_SALARYSet'.
16  *      Call the entity set generated method
17  zemployee_salary_get_entity(
18      EXPORTING iv_entity_name      = iv_entity_name
19                      iv_entity_set_name = iv_entity_set_name
20                      iv_source_name    = iv_source_name
21                      it_key_tab        = it_key_tab
22                      it_navigation_path = it_navigation_path
23                      io_tech_request_context = io_tech_request_context
24      IMPORTING er_entity           = zemployee_salary_get_entity
25                      es_response_context = es_response_context
26  ) .
27
28  IF zemployee_salary_get_entity IS NOT INITIAL.
29  *      Send specific entity data to the caller interface
30  copy_data_to_ref(
31      EXPORTING
32          is_data = zemployee_salary_get_entity
33      CHANGING
34          cr_data = er_entity
35  ) .
36
37  DATA ls_batch_at_once_simulate TYPE /iwbepe/if_mgw_appl_types=>ty_s_batch_response.
38  clear ls_batch_at_once_simulate.
39  io_tech_request_context->get_batch_operation_id(
40      IMPORTING
41          ev_batch_operation_id      = ls_batch_at_once_simulate-operation_id ).
42  ls_batch_at_once_simulate-response data = er_entity.
43  INSERT ls_batch_at_once_simulate INTO TABLE mt_batch_get_repsonse.
44
45  ELSE.
46  *      In case of initial values - unbind the entity reference
47  er_entity = lr_entity.
ENDIF.
```

Step5:

Consolidate and display the result as below in BATCH_END method.

Method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~BATCH_END

```

1 | method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~BATCH_END.
2 |
3 |   IF mt_batch_get_repsonse[] IS NOT INITIAL.
4 |     ct_batch_response[] = mt_batch_get_repsonse[] .
5 |   ENDIF.
6 | endmethod.

```

Call Stack: With Deferred response creation enabled

| | | | | | | | |
|----|---|---|------------|--------------------------------|-------------------------------|----|---|
| 19 | 1 | 4 | Backend | REMOTE_FUNCTION_MODULE | /IWBEP/IF_MGW_HANDLE_REQUEST | 27 | 3 |
| 20 | | | | >RFC Request Size | 13689 Bytes | | |
| 21 | | | | >RFC Response Size | 9143 Bytes | | |
| 22 | 1 | 5 | Backend | /IWBEP/CL_MGW_REMOTE_HANDLER | PROCESS_BATCH | 24 | 9 |
| 23 | 4 | 6 | Backend | /IWBEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 15 | 8 |
| 24 | 1 | 7 | Backend | /IWBEP/CL_MGW_RUNT_REMOTE_UTIL | AUTHORITY_CHECK_TECH | 1 | 1 |
| 25 | | 8 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | BATCH_BEGIN | | |
| 26 | 1 | 7 | Backend | /IWBEP/CL_MGW_MED_PROVIDER | GET_LAST_MODIFIED | 1 | |
| 27 | | 8 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 |
| 28 | 2 | 7 | Backend | /IWBEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 1 | 1 |
| 29 | | 8 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 |
| 30 | 1 | 8 | Backend | /IWBEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 1 | |
| 31 | | 9 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 |
| 32 | 1 | 7 | Backend | /IWBEP/CL_MGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 4 | 3 |
| 33 | 1 | 8 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 |
| 34 | | 9 | Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | BATCH_END | | |
| 35 | | 3 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 3 | 3 |
| 36 | | 3 | Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write_to | | |
| 37 | | 3 | Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 1 | 1 |
| 38 | | 3 | Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write_to | | |

With Deferred response creation disabled.

The call stack is different

| | | | | | | | | |
|---|----|--------------|----------------------------|---|---|---------------------------|---|--|
| | 19 | 1 | 4 Backend | REMOTE_FUNCTION_MODULE >RFC Request Size >RFC Response Size | /IWBEPMGW_HANDLE_REQUEST 13689 Bytes 8787 Bytes | 19 | 2 | |
| Assigned tags | 20 | | | | | | | |
| NW ABAP Gateway (OData) | 22 | 1 | 5 Backend | /IWBEPMGW_REMOTE_HANDLER | PROCESS_BATCH | 17 | 8 | |
| | 23 | 4 Backend | | SAP_ABAP_Gateway_MGW_REMOTE_HANDLER_APPL | GET_ENTITY_TYPE CHANGESET_PROCESS | \$batch changeset process | 2 | |
| View more... | 24 | 1 | 7 Backend | /IWBEPMGW_RUNT_REMOTE_UTIL | AUTHORITY_CHECK_TECH | 1 | 1 | |
| Related Blog Posts | 25 | | 8 Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | BATCH_BEGIN | | | |
| | 26 | 1 | 7 Backend | /IWBEPMGW_MED_PROVIDER | GET_LAST_MODIFIED | 2 | 1 | |
| We are sorry but we are currently unable to retrieve related content. | 27 | 8 Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 | | |
| | 28 | 2 | 7 Backend | /IWBEPMGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 2 | 1 | |
| Related Questions | 29 | 8 Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 | | |
| | 30 | 1 | 8 Backend | /IWBEPMGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 2 | 1 | |
| | 31 | 9 Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 | | |
| | 32 | 1 | 1 Backend | /IWBEPMGW_REMOTE_HANDLER | GET_ENTITY_TYPE | 2 | 1 | |
| | 33 | 8 Backend | ZCL_ZTEST_REDEFINE_DPC_EXT | GET_ENTITY | 1 | 1 | | |
| | 34 | 3 Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 3 | 3 | | |
| | 35 | 3 Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write_to | | | | |
| | 36 | 3 Hub System | /IWFND/CL_SODATA_MAPPER | GET_ENTITY_PROV_BY_ENTRY_DATA | 1 | 1 | | |
| | | 3 Hub System | /IWFND/CL_SODATA_PROCESSOR | Lib Serialization - write to | | | | |

OData \$batch request from WebIDE fails

By Mio Yasutake , Oct 21, 2019

CORS Add Allowed Origin in SAP Gateway Backend for OAuth TToken Request

By Lexus Mans , Sep 10, 2020

Post a table/multiple lines to SAP via SAP Gateway from external server

By Former Member , Feb 22, 2018

27 Comments

You must be [Logged on](#) to comment or reply to a post.



Syam Babu

May 6, 2018 at 6:00 am

Hi Mani,

Indeed Blog for GW developers on BATCH processing in nowadays.

Thanks,

Syam

Like(0)



[Manikandan Rajasekaran](#) | Post author

May 7, 2018 at 8:43 am

Thanks Syam □

Like(0)



[Bilen Cekic](#)

May 6, 2018 at 7:41 am

Is there any difference between using batch or sending 2 parallel process from UI5 side ? (for GET method).

Like(0)



[Manikandan Rajasekaran](#) | Post author

May 7, 2018 at 8:54 am

Hi Bilen,

Conceptual wise both are same, but \$batch request is Gateway framework induced to improve the response time, by parallel processing of the READ requests and it gives you flexibility to make synchronous read (Either All the request should be processed successfully or none -with BATCH_BEGIN).

Like(1)



Alexander K

May 8, 2018 at 2:18 am

Thanks for blog, [Manikandan Rajasekaran](#)

Can you help me with my question?

I have creating ListReport with AnalyticalTable and user in ListReport setting panel selet some field for grouping

Can I get group fields(fields for group by) from parameter IO_TECH_REQUEST_CONTEXT of method Z_*_DPC_EXT->Z_*_GET_ENTITYSET ?

I see 3 requests in network panel of browser.

For items, for groups and for totals. How can I find out request for groups ?

Like(0)



Manikandan Rajasekaran | Post author

May 11, 2018 at 5:51 am

The parameter, IO_TECH_REQUEST_CONTEXT has two parameters

1.MR_REQUEST will contain information related to the service, service version being called , by which user etc.

2.There is another parameter MO_MODEL which has complete details of Model related information -Entities, association, mapping related information.

Like(0)



Alexander K

May 14, 2018 at 1:29 am

Thanks, [Manikandan Rajasekaran](#).

I am trying to find in MO_MODEL.

Like(0)



Ashwin Bhaskar

May 11, 2018 at 2:19 am

Excellent Share. Thanks

Like(1)



Manikandan Rajasekaran | Post author

May 11, 2018 at 6:10 am

Thanks □

Like(0)



Alexander K

May 14, 2018 at 1:36 am

Thanks again. I have another question.

Can I change filter in parameter, IO_TECH_REQUEST_CONTEXT ? I need to clear one filter from odata service.

Like(0)



Manikandan Rajasekaran | Post author

May 14, 2018 at 9:44 am

Yeah, you will have the Filter parameters in attribute MR_REQUEST.

Like(0)



Srinivas Rao

June 17, 2018 at 4:38 pm

Hi Manikandan,

Thanks for the wonderful blog. I came across this blog while searching for possibility of using batch for GET media streams in succession. Could you please let me know if that is possible and how to put each request in batch for the GET stream ? Could you please explain this with an example ?

Thanks & Regards

Srinivas Rao.

Like(0)



Manikandan Rajasekaran | Post author

August 6, 2018 at 10:11 am

Hi Srinivas,

If my understanding is clear you want to retrieve the GET media request if the earlier one is success else it should not ? If yes, you can search for Variable: LV_USE_DEFERRED_RESP_CREA in my blog which will give insight with an example.

Like(0)



Rajesh Paruchuru

October 23, 2018 at 11:29 am

Hello Manikandan

some of the features explained in the blog are not available in our backend system but are available in our hub system, for ex: the attribute "use_deferred_batch_resp_crea" in /IWBEPMGW_APPL_TYPES=>TY_S_MODEL_FEATURES and the methods BATCH_BEGIN and BATCH_END are not available in our back end system but are available in our hub system, with this kind of set up, is there any way that we can implement deferred processing for GET only requests in batch mode?

Thanks

Rajesh

Like(0)



Manikandan Rajasekaran | Post author

December 27, 2018 at 12:14 pm

Sorry Rajesh, I think you can't

Like(0)



Asif Pasha Shaik

February 11, 2019 at 7:52 pm

Dear Manikandan,

First of all thank you very much for sharing this post.

I have a question.

I am creating Multiple document numbers using BAPI_DOCUMENT_CREATE2 in DEEP entity creation.

And I have implemented CHANGESSET BEGIN and CHANGESSET ends methods.

As I cannot use Commit statement in the function module, tables data for the document numbers are not getting updated(Classifications)

Example :

let say I have created 3 documents using function module, the only third value is getting updated at the end. First two values are not getting updated because there is no COMMIT statement.

Could you kindly help with this scenario?

Thank you,

Like(1)



Prabaharan Asokan

April 18, 2019 at 10:03 am

Hi [Manikandan Rajasekar](#)

Thanks for the detailed sharing. I tried to experiment the same in the hub system which is connected to backend system(CRM). But none of the \$batch requests are getting executed in the system and receiving error like 'The server has not found any resource matching the Data Services

Request URI'. I have put this question in a new thread <https://answers.sap.com/questions/12664759/weird-error-occurred-when-using-batch-request.html> Could you please shed some lights there ?

Thanks & Regards

Prabaharan Asokan

Like(0)



Hitesh Arora

September 17, 2019 at 12:39 pm

Dear [Manikandan Rajasekar](#)

Really insightful blog!

I am facing a strange issue when I am trying to include 3 changesets in one batch request.I get empty response with response code 202 for 3 changesets in payload but same service with 2 changesets in payload works fine and i get response in body. Am I missing something?

Like(0)



bala krishna

October 12, 2019 at 1:09 pm

hi manikandan,

what will be the response if i have 3 change set requests in batch request if one of the change sets is failed.does it fail all the change sets requests or that particular request gets failed?

Like(0)



Manikandan Rajasekaran | Post author

December 19, 2019 at 10:25 am

Please check for error tolerance concept in gateway , this will help. Ideally out of 3 changeset if all are independent operation expectation is only 3 should fail others should yield result.

Like(0)



Atanu Mallik

April 19, 2020 at 5:54 pm

Very nice blog [Manikandan Rajasekaran](#)

Like(0)



Soumya Renukamurthy

May 6, 2020 at 7:03 am

Hi,

its very informal blog.

i am testing multiple delete request from gateway. but its failing at parse_batch_Request and no proper error exception. can you give a example with how http request should look for the same operation?

the exception is invalid http request.

Regards,

Soumya

Like(0)



Soumya Renukamurthy

May 6, 2020 at 7:11 am

Hi,

can it possible for multiple delete in a batch request?

how to achieve it when 3 delete operation come from table view in fiori UI ?

Regards,

Soumya

Like(0)



Lead Choon Siew

September 12, 2020 at 7:25 am

Hi,

Could you advise how can i handle Patch in Batch's customized changeset?

Where can i get the passed in fields from the request?

Thanks

Siew

Like(0)



Megha Haware

November 30, 2020 at 8:16 am

I have a service with single GET but with 'use Batch' True in Manifest I get error 'No data found' while it works with value False. Any idea why? Or should we have to set this field False for simple reads.

Like(0)



Santhosh Kadiyala

March 18, 2021 at 5:10 am

Hi [Manikandan Rajasekar](#)

May i know whether we can Create multiple Sales Order Items of a Sales Order in a Batch?

i dont want to create Header + Items at one go, instead want to create header first and then items in bulk after the creation of Order Header.

tried different approaches but ended up creating multiple post calls in the same Changeset as shown below:

```
--changeset  
Content-Type: application/http  
Content-Transfer-Encoding: binary
```

```
POST A_SalesOrder('AA')/to_Item HTTP/1.1  
sap-context-accept: header  
Content-Type: application/json  
Accept: application/json
```

{

SalesOrder" : "AA",
"SalesOrderItem" : "10",
"HigherLevelItem" : "0",
"SalesOrderItemCategory" : "XX",
"SalesOrderItemText" : "XXX",
"PurchaseOrderByCustomer" : "XX",
"Material" : "XX",
"MaterialByCustomer" : "",
"PricingDate" : "XXXX",
"RequestedQuantity" : "1",
"RequestedQuantityUnit" : "XX",
"ItemGrossWeight" : "1.000",
"ItemNetWeight" : "1.000",
"ItemWeightUnit" : "XX",
"ItemVolume" : "0.000",
"ItemVolumeUnit" : "",
"TransactionCurrency" : "XXX",
"NetAmount" : "XXX",
"MaterialGroup" : "",
"MaterialPricingGroup" : "",
"Batch" : "",
"ProductionPlant" : "XXXX",
"StorageLocation" : "",
"DeliveryGroup" : "0",
"ShippingPoint" : "XXXX",
"ShippingType" : "",
"DeliveryPriority" : "0",
"IncotermsClassification" : "XXX",
"IncotermsTransferLocation" : "",
"IncotermsLocation1" : "",
"IncotermsLocation2" : "",
"CustomerPaymentTerms" : "",
"SalesDocumentRjcnReason" : "",
"ItemBillingBlockReason" : "",
"WBSElement" : "",
"ProfitCenter" : "",
"ReferenceSDDocument" : "",

```
"ReferenceSDDocumentItem" : "X",
"SDProcessStatus" : "X",
"DeliveryStatus" : "X",
"OrderRelatedBillingStatus" : "",
"RequirementSegment" : ""

}
```

--changeset
Content-Type: application/http
Content-Transfer-Encoding: binary

POST A_SalesOrder('AA')/to_Item HTTP/1.1
sap-context-accept: header
Content-Type: application/json
Accept: application/json

```
{
  "SalesOrder" : "AA",
  "SalesOrderItem" : "20",
  "HigherLevelItem" : "0",
  "SalesOrderItemCategory" : "XX",
  "SalesOrderItemText" : "XXX",
  "PurchaseOrderByCustomer" : "XX",
  "Material" : "XX",
  "MaterialByCustomer" : "",
  "PricingDate" : "XXXX",
  "RequestedQuantity" : "1",
  "RequestedQuantityUnit" : "XX",
  "ItemGrossWeight" : "1.000",
  "ItemNetWeight" : "1.000",
  "ItemWeightUnit" : "XX",
  "ItemVolume" : "0.000",
  "ItemVolumeUnit" : "",
  "TransactionCurrency" : "XXX",
  "NetAmount" : "XXX",
  "MaterialGroup" : "",
  "MaterialPricingGroup" : "",
  "Batch" : ""}
```

```
"ProductionPlant" : "XXXX",
"StorageLocation" : "",
"DeliveryGroup" : "0",
"ShippingPoint" : "XXXX",
"ShippingType" : "",
"DeliveryPriority" : "0",
"IncotermsClassification" : "XXX",
"IncotermsTransferLocation" : "",
"IncotermsLocation1" : "",
"IncotermsLocation2" : "",
"CustomerPaymentTerms" : "",
"SalesDocumentRjcnReason" : "",
"ItemBillingBlockReason" : "",
"WBSElement" : "",
"ProfitCenter" : "",
"ReferenceSDDocument" : "",
"ReferenceSDDocumentItem" : "X",
"SDProcessStatus" : "X",
"DeliveryStatus" : "X",
"OrderRelatedBillingStatus" : "",
"RequirementSegment" : ""
```

```
}
```

--changeset--

--batch--

its creating two items 10, 20 for the order AA without any issues. but it obviously takes two Create Entity type calls

1st one with Changeset begin + Create Entity

2nd one with Create Entity + Changeset End

In case we have 10 items -

1st one with Changeset begin + Create Entity

2nd one for create Entity

3rd one for Create Entity

.

10th one with Create Entity + Changeset End

My question is - do we have an approach where we can eliminate the need to call all these multiple calls and have one call to create all the items in one go ?

any help is appreciated.

thanks

Like(0)



Mohit .

March 19, 2021 at 7:17 am

Hi Santhosh,

Could you plz tell me how can we make a post call/ some sample payload of post call.

Here in your example you are posting the Item data thru the header:

POST A_SalesOrder('AA')/to_Item HTTP/1.1

But we have a single entity and we need to do a batch post call for that. like:

POST entity_name

{

payload

}

Also we have the 'guid' as the key, so in creation, we are generating the guid in the method implementation.

But if we are not passing the guid in the batch post-call payload, then it is showing some move corresponding error. (error 400) and when we tried to give any guid value or empty guid value, it is showing **value for this property is invalid at offset xyz**.

Like(0)

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