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Simple Step-by-Step SAP-Gateway Service Guide

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Hi All,

Finally thought of writing blog after struggling to create simple o-data service to perform basic operations including media and deep entities.

So I don't want you all to struggle and waste your time...

This is for Beginners not for Experts 😊 ,

Create your simple gateway service by following provided steps.

Service is all about Employee Information System.

Tables Used.

1. Employee Details table[Principle data]Or[Header Information]

Transp. Table

ZXX_EMP_DET

Active

Short Description

Employee details


Attributes


Delivery and Maintenance


Fields

Entry help/check

Currency/Quantity Fields







Srch Help

Predefined Type

1 / 9

Field	Key	Ini...	Data element	Data Type	Length	Deci...	Short Description	Group
EMP_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CHAR30	CHAR	30		030 Characters	
NAME	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		030 Characters	
ADDRESS	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		030 Characters	
SALARY	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		030 Characters	
.INCLUDE	<input type="checkbox"/>	<input type="checkbox"/>	ZEMP_ADDR_DET...	STRU	0		0 Address details	
STREET1	<input type="checkbox"/>	<input type="checkbox"/>		STRING	0	0		
STREET2	<input type="checkbox"/>	<input type="checkbox"/>		STRING	0	0		
CITY	<input type="checkbox"/>	<input type="checkbox"/>		STRING	0	0		
COUNTRY	<input type="checkbox"/>	<input type="checkbox"/>		STRING	0	0		
				</				

2. Employee Contact details(Ph no on working days and on leave) [Line Item]

Transp. Table ZOT_CONT_DET Active

Short Description Employee Contact Details

Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

1 / 5

Field	Key	Ini...	Data element	Data Type	Length	Deci...	Short Description	Group
EMP_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	
MOB_ON_WD	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	
LNDLN_ON_WD	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	
MOB_ON_LV	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	
LNDLN_ON_LV	<input type="checkbox"/>	<input type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	

3. Employee Photo Details.

Transp. Table ZEMP_PHOTOS Active

Short Description Employee Photos for Test.

Attributes Delivery and Maintenance Fields Entry help/check Currency/Quantity Fields

1 / 5

Field	Key	Ini...	Data element	Data Type	Length	Deci...	Short Description	Group
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3		0 Client	
EMP_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CHAR30	CHAR	30		0 30 Characters	
MIMETYPE	<input type="checkbox"/>	<input type="checkbox"/>	CHAR100	CHAR	100		0 Character 100	
FILENAME	<input type="checkbox"/>	<input type="checkbox"/>	CHAR100	CHAR	100		0 Character 100	
CONTENT	<input type="checkbox"/>	<input type="checkbox"/>		RAWSTRING	0	0		

[But U can directly use Database tables to include structure to create Data types]

1. Employee Details.

Structure: ZSEMP_DET Active
Short Description: Employee Details

Attributes Components Entry help/check Currency/quantity fields

Predefined Type 1 / 5

Component	Typing Method	Component Type	Data Type	Length	Deci...	Short Description	Group
EMP_ID	Types	CHAR30	CHAR	30	0	30 Characters	
NAME	Types	CHAR30	CHAR	30	0	30 Characters	
ADDRESS	Types	CHAR30	CHAR	30	0	30 Characters	
SALARY	Types	CHAR30	CHAR	30	0	30 Characters	
DETAILS	Types	ZSEMP_ADDR_DETAI...		0	0	Address details	

2. Employee Address Info[Include structure in Emp Details table].

Structure: ZSEMP_ADDR_DETAILS Active
Short Description: Address details

Attributes Components Entry help/check Currency/quantity fields

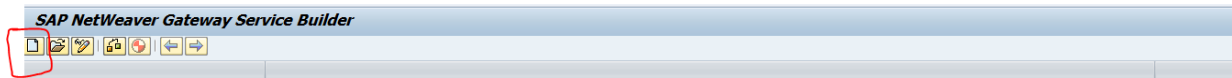
Predefined Type 1 / 4

Component	Typing Method	Component Type	Data Type	Length	Deci...	Short Description	Group
STREET1	Types		STRING	0	0		
STREET2	Types		STRING	0	0		
CITY	Types		STRING	0	0		
COUNTRY	Types		STRING	0	0		

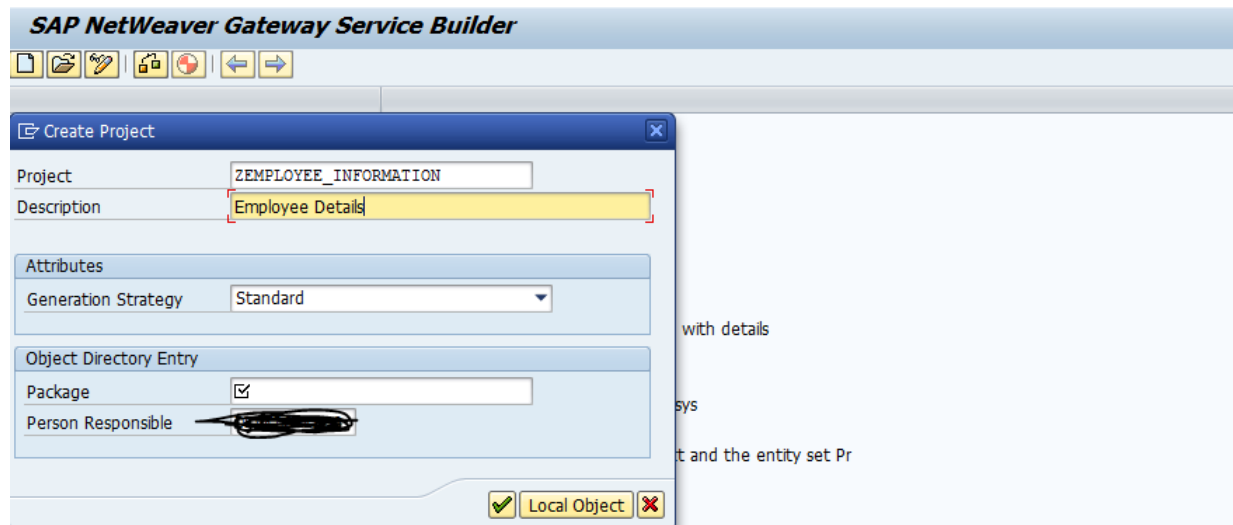
3. Employee Contact details(Info like Contact no during working days and on leave).

3. The SAP NetWeaver Gateway Service Builder opens.

4. Create a new project.



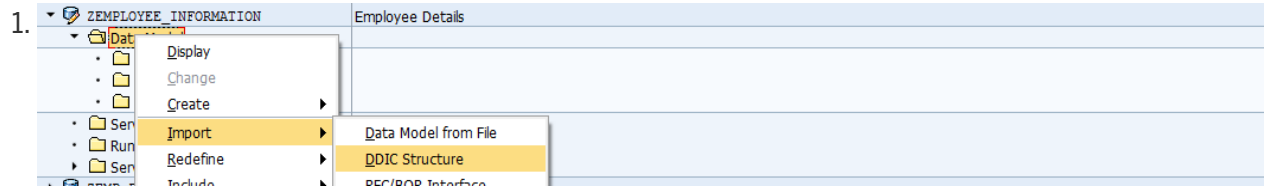
5. Enter project name and meaningful description.



Your project is created,

Entity Type

6. Right click on the Data Model folder and select Import DDIC Structure .



7. Following window will appear, In ABAP Structure field

You can import the following DDIC structures

into the Service Builder:

- Views
- Database tables
- Structures

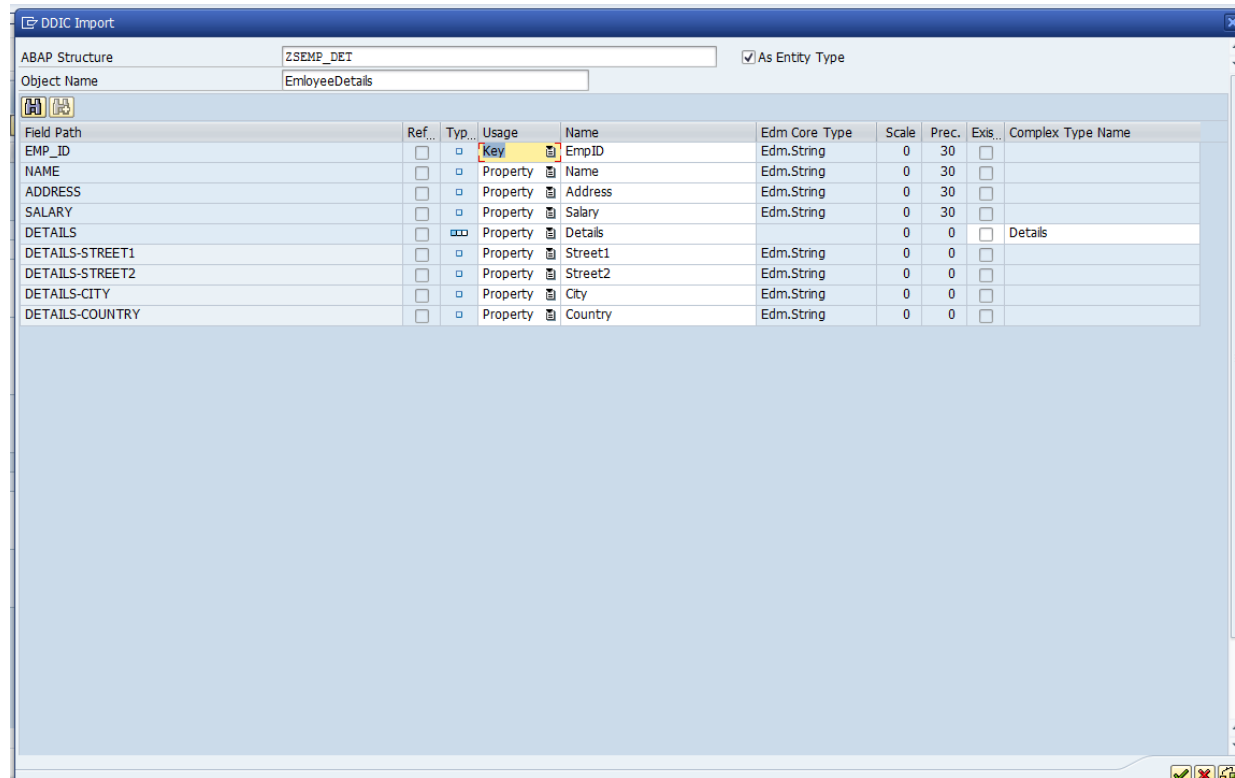
8. Press enter below window will appear,

9. Select at-least one key or more than one keys according to requirement

in Usage column.

10. You can directly create complex types by adding

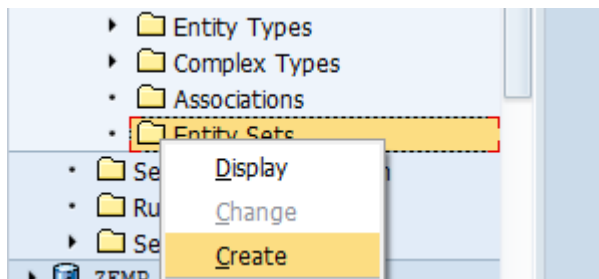
Deep structure (Structure within structure).



Entity Set

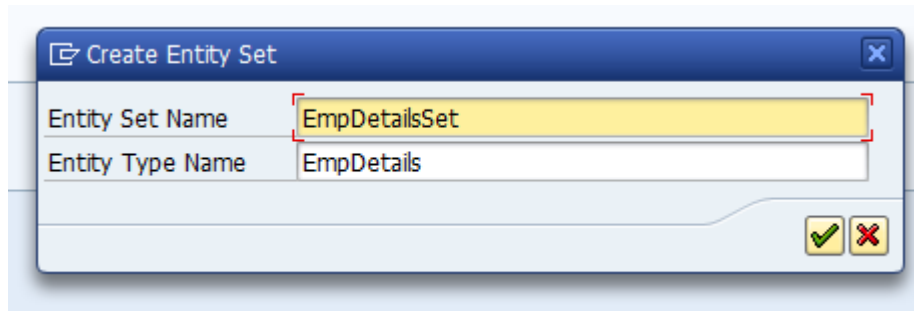
11. Create Entity set for each Entity type.

Right click on Entity sets->select create



12. Press F4 on Entity type field and select entity type,

Enter Entity Set name click okay,



13. Create Entity Sets for each entity type.

Association.

14. If you have Header Entity[Principal or Parent]

and LineItem Entity[Dependent Information]

Or

If you want to create Relationship between 2 entities

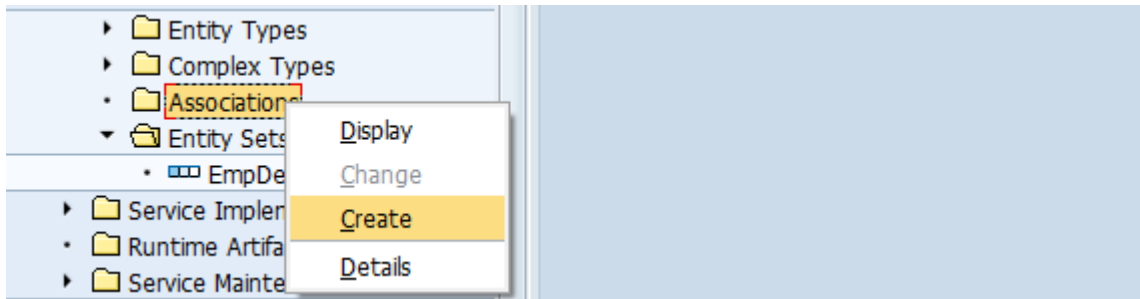
Ex: Purchase Order header and Line Items.

Or

Ex: Employee Details[Main] like id and name and Employee

Contatct details[Dependent] many.

15. Right click on Association->create



16. Enter the Association name,

17. Press F4 on Entity Type name and select Parent[Header Info]

Entity type.

18. Specify proper cardinality between entity types.

19. Specify Navigation Property name[This will be used in URL to navigate from parent to child and child to parent, In our case its only from parent to child] .

Wizard Step 1 of 3: Association wizard

Create Association

Association Name: EmployeeContDetailsAssoc

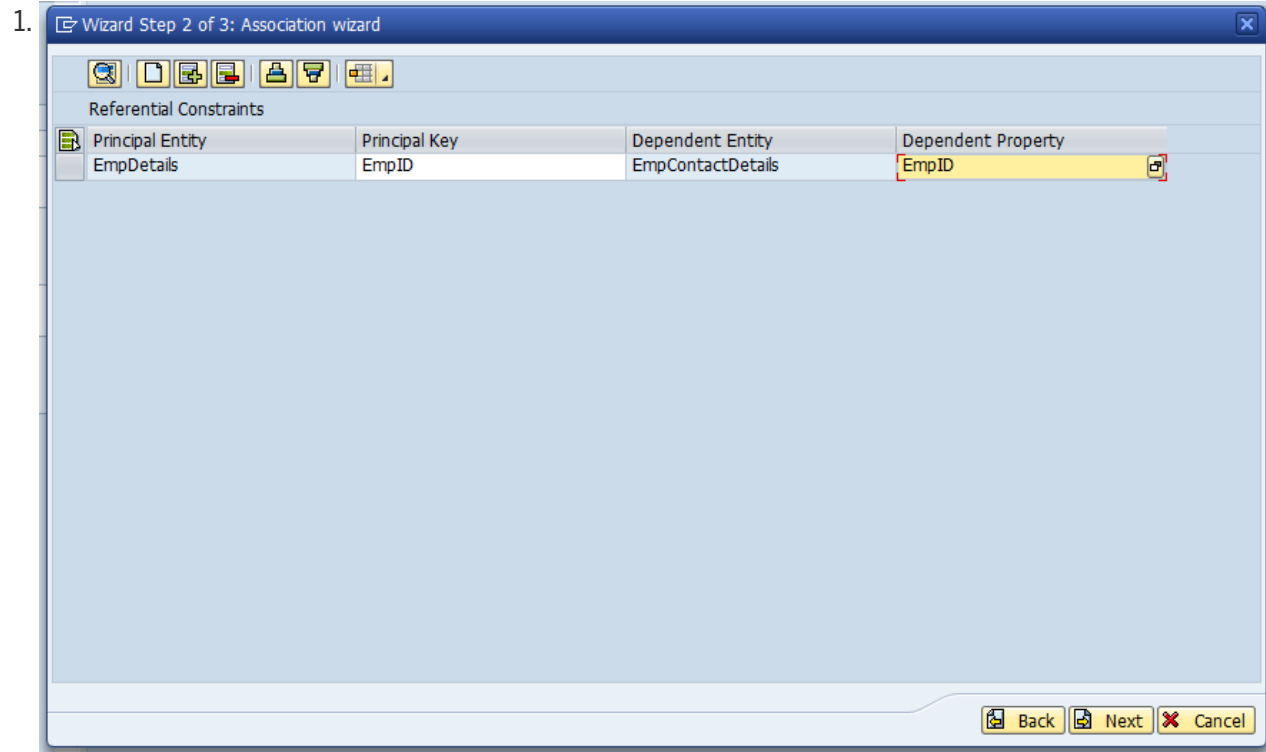
Principal Entity	Dependent Entity
Entity Type Name: EmpDetails	Entity Type Name: EmpContactDetails
Cardinality: 1	Cardinality: N 1..n
<input checked="" type="checkbox"/> Create related Navigation Property	<input type="checkbox"/> Create related Navigation Property
Navigation Property: EmpContDetailsNavig	Navigation Property:

Next Cancel

20. Click next.

21. Press F4 on Dependent property select the key field which is
common among both.

22. Click next.



23. Check Entries are proper.

24. Click Finish,

Wizard Step 3 of 3: Association wizard

Create Association Set

Association Set Name

Principal Entity	Dependent Entity
Entity Set Name <input type="text" value="EmpDetailsSet"/>	Entity Set Name <input type="text" value="EmpContactDetailsSet"/>

Back Finish Cancel

Once after creating Entity Types, Entity Sets, Associations, Navigation Properties.

Your Project View look like this.

Project Details

▼ ZEMPLOYEE_INFO	Employee Management System
▼ Data Model	
▼ Entity Types	
▼ EmpContactDetails	
▼ Properties	
<ul style="list-style-type: none"> EMP_ID MOB_ON_WD LNDLN_ON_WD MOB_ON_LV LNDLN_ON_LV 	
▼ Navigation Properties	
▼ EmpDetails	
▼ Properties	
<ul style="list-style-type: none"> EMP_ID NAME ADDRESS SALARY DETAILS 	
▼ Navigation Properties	
<ul style="list-style-type: none"> EmpContDetailsNavig EmpPhotoNavig 	
▼ EmpPhoto	
▼ Properties	
<ul style="list-style-type: none"> EMP_ID FILENAME MIMETYPE CONTENT 	
▼ Navigation Properties	

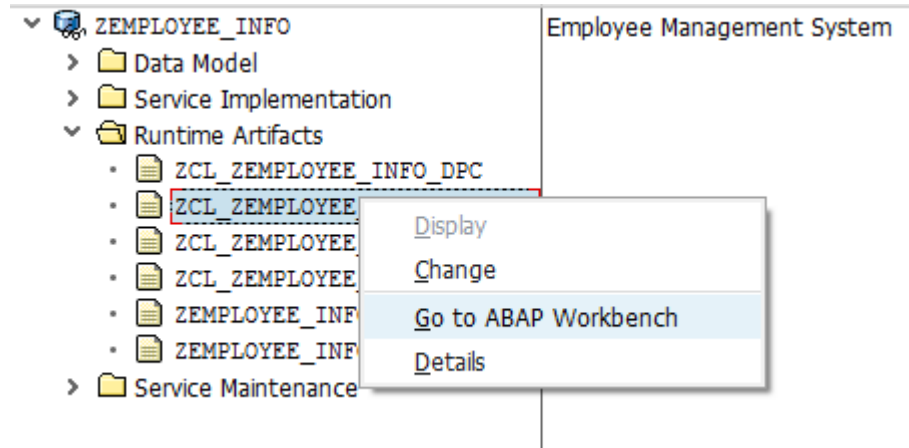
▼ Complex Types	
▼ Details	
▼ Properties	
<ul style="list-style-type: none"> Street1 Street2 City Country 	
▼ Associations	
<ul style="list-style-type: none"> EmployeeContDetailsAssoc EmployeePhotoAssoc 	
▼ Entity Sets	
<ul style="list-style-type: none"> EmpContactDetailsSet EmpDetailsSet EmpPhotoSet 	
▼ Association Sets	
<ul style="list-style-type: none"> EmployeeContDetailsAssocSet EmployeePhotoAssocSet 	
▼ Service Implementation	
▼ Runtime Artifacts	
▼ Service Maintenance	
<ul style="list-style-type: none"> 	

1. Click on Generate Runtime objects.



2. Expand Runtime artifacts.

3. Right click on Class which ends with DPC_EXT and select Go to ABAP Workbench.



4. Redefine the methods which mentioned below.
5. Paste the code[Put break-point if u want to check behavior of methods called based on URL].
6. Expand Service maintenance.
7. Right click on system in which you created these objects.
8. Click on Register and select proper System in RFC System alias.
9. Right click again on Selected system and click maintain.
10. Pop up will appear asking for redirection Click Yes.
11. Click on Gateway Client.

Activate and Maintain Services

Service Catalog

Type	Technical Service Name	Service Description	External Service Name	Namespace
BEP	ZEMPLOYEE_INFO_SRV	1 ZCL_ZEMPLOYEE_INFO_DPC_EXT	ZEMPLOYEE_INFO_SRV	S

ICF Nodes

Status	ICF Node	Description
OCO	SDATA	Compatibility Mode for SP 02
OCO	ODATA	Standard Mode

System Aliases

SAP System Alias	Description	User Role
	System alias for	

12. Click Execute to test.

13. Status 200 shows service is created correctly.

14. Paste URL in Requested URI field and Click Execute. Check respective methods by keeping breakpoints as given below.

SAP NetWeaver Gateway Client

Execute Select Save Maintain Service Service Implementation

HTTP Method ☒ GET ☐ POST ☐ PUT ☐ PATCH ☐ DELETE ☐ HEAD ☐ OPTIONS

Request URI Add URI Option

Test Group Test Case

HTTP Request

Header Name	Value

HTTP Response

Header Name	Value

XML Ln 1 Col 1

15. Click Execute to test.

Status 200 shows service is created correctly.

16.Paste URL in Requested URI field and Click Execute.

17.Check respective methods by keeping breakpoints as given below.

READ.

URL:

To get single record.

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet(EMP_ID='1')

```
METHOD empdetailsset_get_entity.
```

```
DATA: ls_key_tab TYPE /iwbsp/s_mgw_name_value_pair,
```

```
ls_emp_tab TYPE zxx_emp_det.
```

```
READ TABLE it_key_tab INTO ls_key_tab WITH KEY name = 'EMP_ID'.
```

```
SELECT SINGLE * FROM zxx_emp_det INTO ls_emp_tab WHERE emp_id = ls_key_tab-value.
```

```
IF sy-subrc = 0.
```

```
MOVE-CORRESPONDING ls_emp_tab TO er_entity.
```

```
MOVE-CORRESPONDING ls_emp_tab TO er_entity-details.
```

```
ENDIF.
```

```
ENDMETHOD.
```

SUCCESS CODE : 200

URL:

To get all records from table respect to EntitySet.

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet

To get records based on where condition.

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet?\$filter=EMP_ID eq '1'

We can add more conditions using & Operator in between fields.

```
METHOD empdetailsset_get_entityset.
```

```
DATA: lt_emp_tab      TYPE TABLE OF zxx_emp_det,  
ls_emp_tab      TYPE      zxx_emp_det,  
es_entityset    TYPE      zcl_zemployee_info_mpc=>ts_empdetails.
```

```
SELECT * FROM zxx_emp_det INTO TABLE lt_emp_tab WHERE (iv_filter_string).  
IF sy-subrc = 0.  
LOOP AT lt_emp_tab INTO ls_emp_tab.  
MOVE-CORRESPONDING ls_emp_tab TO es_entityset.  
MOVE-CORRESPONDING ls_emp_tab TO es_entityset-details.  
APPEND es_entityset TO et_entityset.  
CLEAR ls_emp_tab.  
ENDLOOP.  
ENDIF.  
ENDMETHOD.
```

SUCCESS CODE : 200

CREATE

Steps :

1. 1.Get any record from GET_ENTITY ..
2. 2.After getting click on Use as request.
3. 3.Change details what you want to create in left window.
4. 4.Check POST method of HTTP.
5. 5.Use URL..

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet

```
method ZEMPDETSTRSET_CREATE_ENTITY.  
DATA: ls_emp_details TYPE zxx_emp_det.  
"Get the created entity here  
io_data_provider->read_entry_data( IMPORTING es_data = er_entity ).  
MOVE-CORRESPONDING er_entity TO ls_emp_details.  
MOVE-CORRESPONDING er_entity-details TO ls_emp_details.  
INSERT zxx_emp_det FROM ls_emp_details  
endmethod.
```

SUCCESS CODE : 201

UPDATE

To Update the Record.

Follow same steps as for CREATE_ENTITY.

Just Change URL and Check HTTP PUT Method.

A. URL.

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet(EMP_ID='1')

But on response body nothing will be displayed..

For that we need to call get entity internally.

```
method EMPDETAILSSET_UPDATE_ENTITY.  
DATA: ls_emp_details TYPE zxx_emp_det.
```

```
"Get the created entity here  
io_data_provider->read_entry_data( IMPORTING es_data = er_entity ).  
MOVE-CORRESPONDING er_entity TO ls_emp_details.  
MOVE-CORRESPONDING er_entity-details TO ls_emp_details.  
MODIFY zxx_emp_det FROM ls_emp_details.
```

```
endmethod.
```

SUCCESS CODE : 204

DELETE

To delete record Follow same steps for create.

Check http method DELETE.

URL .

-----/sap/ZEMPLOYEE_INFO_SRV/EmpDetailsSet(EMP_ID='1')

```
method EMPDETAILSSET_DELETE_ENTITY.  
DATA: ls_key_tab TYPE /iwbsp/s_mgw_name_value_pair,  
ls_emp_details TYPE zxx_emp_det.  
  
READ TABLE it_key_tab INTO ls_key_tab WITH KEY name = 'EMP_ID'.  
IF sy-subrc = 0.  
ls_emp_details-emp_id = ls_key_tab-value.  
DELETE zxx_emp_det FROM ls_emp_details.  
ENDIF.  
endmethod.
```

SUCCESS CODE : 204

DEEP READ

To get data of dependent with parent entity[Header with Line Items]

A. URL.

-----ZEMPLOYEE_INFO_SRV/EmpDetailsSet(EMP_ID='1')/?\$expand=EmpContDetailsNavig

```
METHOD /iwbsp/if_mgw_appl_srv_runtime~get_expanded_entity.
```

```
DATA:   ls_key_tab           TYPE /iwbsp/s_mgw_name_value_pair,
```

```
ls_emp_tab           TYPE zxx_emp_det,
```

```
ls_empadd_tab        TYPE zot_cont_det,
```

```
ls_empadd            TYPE zot_cont_det.
```

```
DATA: ls_expand_tech_clauses LIKE LINE OF et_expanded_tech_clauses.
```

```
DATA: BEGIN OF ls_expand.
```

```
INCLUDE TYPE zcl_zemployee_info_mpc=>ts_empdetails.
```

```
DATA: empcontdetailsnavig TYPE STANDARD TABLE OF zcl_zemployee_info_mpc=>ts_empcontactdetails WITH DEFAULT KEY.
```

```
DATA: END OF ls_expand.
```

```
READ TABLE it_key_tab INTO ls_key_tab WITH KEY name = 'EMP_ID'.
```

```
SELECT SINGLE * FROM zxx_emp_det INTO ls_emp_tab WHERE emp_id = ls_key_tab-value.
```

```
SELECT SINGLE * FROM zot_cont_det INTO ls_empadd_tab WHERE emp_id = ls_key_tab-value.
```

```
MOVE-CORRESPONDING ls_emp_tab TO ls_expand.
```

```
MOVE-CORRESPONDING ls_empadd_tab TO ls_empadd.
```

```
APPEND ls_empadd TO ls_expand-empcontdetailsnavig.
```

```
"Assign the navigation properties
```

```
ls_expand_tech_clauses = 'empcontdetailsnavig'.
```

```
APPEND ls_expand_tech_clauses TO et_expanded_tech_clauses.
```

```
copy_data_to_ref(  
    EXPORTING  
    is_data = ls_expand  
    CHANGING  
    cr_data = er_entity ).
```

```
ENDMETHOD.
```

SUCCESS CODE : 200

DEEP INSERT

To create deep entity.[Parent data with child][Header with Line Items]

Steps :

- 1.1.Read data from GET_EXPANDED_ENTITY
2. 2.Made HTTP method as POST.
3. 3.Click User as Request and Edit values You want to Insert.
4. 4.url

-----ZEMPLOYEE_INFO_SRV/EmpDetailsSet

1. 5.Execute.

```
method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CREATE_DEEP_ENTITY.
```

```
TYPES : ty_t_empadd TYPE STANDARD TABLE OF ZCL_ZEMPLOYEE_INFO_MPC=>TS_EMPCONTACTDETAILS WITH DEFAULT KEY.
```

```
TYPES: BEGIN OF ty_expand.
```

```
INCLUDE TYPE ZCL_ZEMPLOYEE_INFO_MPC=>TS_EMPDETAILS.
```

```
TYPES :      EmpContDetailsNavig TYPE ty_t_empadd,
```

```
END OF ty_expand.
```

```
DATA :
```

```
*&---> Local structures.
```

```
ls_deep_emp_details TYPE ty_expand,
```

```
ls_emp_cont_det     TYPE ZOT_CONT_DET,
```

```
ls_emp_details      TYPE zxx_emp_det,
```

```
*&---> Local Itabs.
```

```
lt_emp_cont_det     TYPE TABLE OF ZOT_CONT_DET.
```

```
io_data_provider->read_entry_data( IMPORTING es_data = ls_deep_emp_details ).
```

```
copy_data_to_ref( EXPORTING is_data = ls_deep_emp_details
```

```
CHANGING cr_data = er_deep_entity ).
```

```
MOVE-CORRESPONDING ls_deep_emp_details TO ls_emp_details.
```

```
MOVE-CORRESPONDING ls_deep_emp_details-details TO ls_emp_details.
```

```
INSERT INTO zxx_emp_det VALUES ls_emp_details.
```

```
LOOP AT ls_deep_emp_details-empcontdetailsnavig INTO ls_emp_cont_det.
```

```
APPEND ls_emp_cont_det TO lt_emp_cont_det.
```

```
ENDLOOP.
```

```
MODIFY zot_cont_det FROM TABLE lt_emp_cont_det.
```

```
IF sy-subrc EQ 4.
```

```
ENDIF.
```

```
endmethod.
```


SUCCESS CODE : 201

CREATE MEDIA

1. 1.Redefine the **DEFINE** METHOD OF **MPC_EXT** CLASS
2. 2.Paste code.
3. 3.We need to get key values in SLUG Parameter Of http.
4. URL.

-----ZEMP_PRO_SRV/EmpDetailsSet('1')/EmpPhotoNavig

1. 4.Click on add file select image.
2. 5.Check Post method of HTTP.
3. 5.Execute.

```
method DEFINE.  
super->DEFINE( ).  
DATA:  
lo_entity    type REF TO /IWBEP/IF_MGW_ODATA_ENTITY_TYP,  
lo_property  type REF TO /IWBEP/IF_MGW_ODATA_PROPERTY.  
lo_entity = model->GET_ENTITY_TYPE( IV_ENTITY_NAME = 'EmpPhoto' ).  
  
IF lo_entity is BOUND.  
lo_property = lo_entity->GET_PROPERTY( IV_PROPERTY_NAME = 'MIMETYPE' ).  
lo_property->SET_AS_CONTENT_TYPE( ).
```

```
ENDIF.  
endmethod.
```

```
method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CREATE_STREAM.
```

```
DATA: ls_key_tab          TYPE /iwbep/s_mgw_name_value_pair,
```

```
      lt_key_tab          TYPE /iwbep/t_mgw_name_value_pair,
```

```
      ls_photo            TYPE zemp_photos,
```

```
      lv_email            TYPE char100.
```

```
CASE iv_entity_name.
```

```
  WHEN 'EmpPhoto'.
```

```
    READ TABLE it_key_tab WITH KEY name = 'EMP_ID' INTO ls_key_tab.
```

```
    IF SY-SUBRC EQ 0.
```

```
      ls_photo-emp_id = ls_key_tab-value.
```

```
    ENDIF.
```

```
    ls_photo-mimetype = is_media_resource-mime_type.
```

```
    ls_photo-filename = iv_slug.
```

```
    ls_photo-content = is_media_resource-value.
```

```
    DELETE FROM zemp_photos WHERE emp_id = ls_photo-emp_id.
```

```
INSERT INTO zemp_photos VALUES ls_photo.
```

```
empphotoset_get_entity(
```

```
EXPORTING
```

```
iv_entity_name    = iv_entity_name
```

```
iv_entity_set_name = iv_entity_set_name
```

```
iv_source_name    = iv_source_name
```

```
it_key_tab        = it_key_tab
```

```
it_navigation_path = it_navigation_path
```

```
IMPORTING
```

```
er_entity          = ls_photo ).
```

```
copy_data_to_ref( EXPORTING is_data = ls_photo
```

```
CHANGING cr_data = er_entity ).
```

```
ENDCASE.
```

```
endmethod.
```

READ MEDIA

Steps:

URL:

-----/ZEMPLOYEE_INFO_SRV/EmpPhotoSet('1')/\$value

1. 1.Redefine GET_STREAM Method Paste code.
2. 2.Select GET Method of HTTP.
3. 3.Execute.

```
method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~GET_STREAM.
```

```
DATA: ls_key          TYPE /iwbep/s_mgw_name_value_pair,  
lv_email             TYPE char100,  
ls_photo             TYPE ZEMP_PHOTOS,  
ls_lheader           TYPE ihttpnvp,  
ls_stream             TYPE ty_s_media_resource,  
lv_filename           TYPE w3conttype.
```

```
CASE iv_entity_name.  
WHEN 'EmpPhoto'.
```

```
READ TABLE it_key_tab WITH KEY name = 'EMP_ID' INTO ls_key.  
lv_email = ls_key-value.
```

```
SELECT SINGLE * FROM ZEMP_PHOTOS INTO CORRESPONDING FIELDS OF ls_photo WHERE EMP_ID = lv_email.  
ls_stream-value = ls_photo-content.  
ls_stream-mime_type = ls_photo-mimetype.
```

```
lv_filename = ls_photo-filename.  
* lv_filename = escape( val = lv_filename
```

```

*          format = cl_abap_format=>e_url ).
*  ls_lheader-name = 'Content-Disposition'.
*  ls_lheader-value = |inline; filename="{ lv_filename }"| .
*  set_header( is_header = ls_lheader ).

```

```

ls_stream-value = ls_photo-content.
ls_stream-mime_type = lv_filename.

```

```

copy_data_to_ref( EXPORTING is_data = ls_stream
CHANGING cr_data = er_stream ).

```

```

*  copy_data_to_ref( EXPORTING is_data = ls_stream
*                    CHANGING cr_data = er_stream ).
ENDCASE.

```

```

***** SOME DUMMY REFERENCE CODE FOR SAME METHOD [CAN BE USEFUL] *****

```

```

**TRY.
**CALL METHOD SUPER->/IWBEP/IF_MGW_APPL_SRV_RUNTIME~GET_STREAM
* EXPORTING
*   IV_ENTITY_NAME      =
*   IV_ENTITY_SET_NAME  =
*   IV_SOURCE_NAME      =
*   IT_KEY_TAB          =
*   IT_NAVIGATION_PATH  =
**   io_tech_request_context =
** IMPORTING
**   er_stream          =
*   .
** CATCH /iwbep/cx_mgw_busi_exception .

```

```
** CATCH /iwbep/cx_mgw_tech_exception .
```

```
**ENDTRY.
```

```
*DATA: ls_stream  TYPE      ty_s_media_resource
```

```
*   ,lo_api  TYPE REF TO if_mr_api
```

```
*   ,lv_entity_name TYPE  /IWBEPMGW_Tech_NAME
```

```
*   ,er_entity type REF TO DATA
```

```
*   ,lr_entity TYPE REF TO DATA
```

```
*   ,empphotoset_get_entity TYPE ZCL_ZEMP_PRO_MPC=>TS_EMPPHOTO
```

```
*   ,ls_content type table of TBL1024 initial size 0
```

```
*   ,ls_xstring type xstring
```

```
*   ,lt_messg type table of BAPIRET2 initial SIZE 0
```

```
*   ,lv_pernr(8) TYPE n
```

```
*   ,t_photo type table of TBL1024
```

```
*   ,l_photo type XSTRING
```

```
*   ,l_line type string
```

```
*   ,l_photo1 type string
```

```
*   ,ls_ret type BAPIRET2
```

```
*   ,ls_photo type ZEMP_PHOTOS
```

```
*   ,t_msg type table of BAPIRET2.
```

```
*
```

```
*lv_entity_name = io_tech_request_context->GET_ENTITY_TYPE_NAME( ).
```

```
*
```

```
*CASE lv_entity_name.
```

```
*
```

```
*   WHEN 'ZsempDet'.
```

```
*   WHEN 'EmpPhoto'.
```

```
*
```

```
*   empphotoset_get_entity(
```

```
*       EXPORTING iv_entity_name  = iv_entity_name
```

```
*       iv_entity_set_name = iv_entity_set_name
```

```
*       iv_source_name  = iv_source_name
```

```
*       it_key_tab      = it_key_tab
```

```
*       it_navigation_path = it_navigation_path
```

```
*       io_tech_request_context = io_tech_request_context
```

```

*      IMPORTING er_entity      = empphotoset_get_entity
*
*      ).
*
*      IF empphotoset_get_entity IS NOT INITIAL.
**      Send specific entity data to the caller interface
*      copy_data_to_ref(
*          EXPORTING
*              is_data = empphotoset_get_entity
*          CHANGING
*              cr_data = er_entity
*          ).
*      ELSE.
**      In case of initial values – unbind the entity reference
*      er_entity = lr_entity.
*      ENDIF.
*
*      lv_pernr = empphotoset_get_entity-emp_id.
*
*      CALL FUNCTION 'PAD_PHOTO_UPDATE_GET_DETAIL'
*      EXPORTING
*          IV_EMPLOYEE_NUMBER      = lv_pernr
*
*      TABLES
*          T_PHOTO_ARCHIVE_OUT     = t_photo
*          T_MESSAGES_OUT          = t_msg
*      .
*
**      LOOP AT t_photo into ls_photo.
**          l_line = ls_photo-line.
**          concatenate l_photo1 l_line into l_photo1.
**      ENDLOOP.
*
*      ls_stream-value = l_photo = l_photo1.
*      ls_stream-mime_type = 'image/jpeg'.
*

```

```
*      copy_data_to_ref( EXPORTING is_data = ls_stream
*                          CHANGING cr_data = er_stream ).
*
*  WHEN OTHERS.
```

```
*ENDCASE.
```

```
endmethod.
```

Entity Types.

https://help.sap.com/saphelp_nw74/helpdata/en/bb/dc22512c312314e10000000a44176d/content.htm

Entity Sets.

https://help.sap.com/saphelp_nw74/helpdata/en/b6/dc22512c312314e10000000a44176d/content.htm

A. Associations.

https://help.sap.com/saphelp_nw74/helpdata/en/07/dc22512c312314e10000000a44176d/content.htm

Navigation Properties.

http://help.sap.com/saphelp_nw74/helpdata/en/3f/dd22512c312314e10000000a44176d/content.htm

Guys,

Alert Moderator

If you observe here we are processing only one entity at a time, But in real time scenario we may have to process multiple entities in an instance.

so for multiple entity processing we need batch processing, Please refer this blog [Simple steps to perform Batch Operations in SAP Gateway Services](#).
Assigned tags

SAP Gateway |

Related Blog Posts

[Upgrading Gateway to SP007 – Step-by-step](#)

Thanks,

By **Former Member** , Sep 16, 2013

[How to transport Fiori like applications using SAP Solution Managers Quality Gate Management](#)

By **Andre Fischer** , Jul 07, 2014

[Steps to access the gateway service from one system to another system.](#)

By **Arshad Shaikh** —  **Former Member** , Nov 04, 2014

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48 Comments

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Former Member

[November 3, 2014 at 8:39 am](#)

nice one arshad

Like (0)



Amarnath Prasad

[November 3, 2014 at 12:14 pm](#)

Nice blog....but no need of structure, you can use same table for importing DDIC Structure.

Like (0)



ARSHAD SHAIKH | Post author

[November 3, 2014 at 12:35 pm](#)

Yeah, We can..But I included address details structures to achieve Complex type concept,

If we don't want some fields then we can eliminate at the time of adding Entity Type.

Like (0)



Former Member

[November 4, 2014 at 8:52 am](#)

Very helpful document!!!Thanks

Like (0)



Irfan Gokak

November 4, 2014 at 10:49 am

Hi Arshad,

Very helpful info.. thankssss

Like (0)



Former Member

November 4, 2014 at 10:57 am

awesome blog.

Like (0)



Ganesh Rangopanth

November 5, 2014 at 6:22 am

Nice blog,

It helped me a lot ☐ .

Like (0)



Former Member

[November 5, 2014 at 6:26 am](#)

good resource very helpful.

Like (0)



Former Member

[November 10, 2014 at 9:54 am](#)

Its really great blog for beginners, thanks for sharing..I was finding blog to start development on oData. this is very nice.

Like (0)



[ARSHAD SHAIKH](#) | Post author

[December 8, 2014 at 8:57 am](#)

Thank you, Adhimoolam...

Like (0)



[Rama Sudhakar](#)

[November 14, 2014 at 7:35 am](#)

Hi Arshad,

Nice work it was really help full document, thank for sharing the doc..

Please keep on posting any need full documents

Regards

Sudhakar

Like (0)



ARSHAD SHAIKH | Post author

[December 8, 2014 at 8:56 am](#)

Thank you for your support,

I'll keep posting.

Like (0)



Former Member

[December 1, 2014 at 3:02 am](#)

Wonderful work Arshad, really very useful

Like (0)



ARSHAD SHAIKH | Post author

[December 8, 2014 at 8:54 am](#)

Thank you

Like (0)



Former Member

December 7, 2014 at 8:02 pm

I am unable to see the employee table structure i mean there is no such employee table should i create it by myself or am i doing something wrong.

Like (0)



ARSHAD SHAIKH | Post author

December 8, 2014 at 8:52 am

Hi Sibtain,

In **Tables Used**. first table is

1. Employee Details table[Principle data]Or[Header Information]

Yes, U need to create custom table,U can find fields and details in above Image.

Regards,

Arshad Shaikh.

Like (0)





abhijeet kankani

December 12, 2014 at 9:25 am

Keep sharing your knowledge!!!

Like (0)



Nandish m

December 17, 2014 at 10:48 am

Nice blog... for beginners ..☐

Like (0)



ARSHAD SHAIKH | Post author

January 19, 2015 at 8:19 am

Thank You Nandish ☐

Like (0)



Christian Weiß

January 13, 2015 at 2:58 pm

Hi Arshad,

very helpful, thank you for sharing...

Regards

Christian

Like (0)



ARSHAD SHAIKH | Post author

January 19, 2015 at 8:19 am

Thank You Christian ☐

Like (0)



Siva prasad Ramani

January 28, 2015 at 7:25 am

Hi Arshad thanks for sharing valuable info..

Moderator comments:

Comments trimmed.

Like (0)



Krishna Kishor Kammaje

January 28, 2015 at 7:44 am

Shiva, Make use of forums for asking questions.

Like (0)



Former Member

February 5, 2015 at 3:23 pm

@ Krishna Kishore .. Agree

Like (0)



Former Member

February 5, 2015 at 3:21 pm

Thank you Siva prasad Ramani..

Please let me know if you have any questions regarding this blog.. ☐

Regards,

Arshad

Like (0)



Siva prasad Ramani

February 6, 2015 at 4:27 am

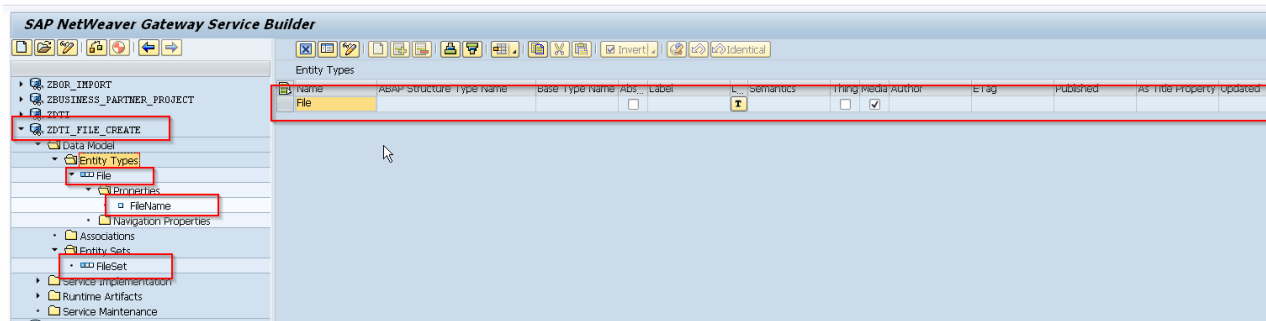
Hi Arshad,

Thank you for sharing valuable info..

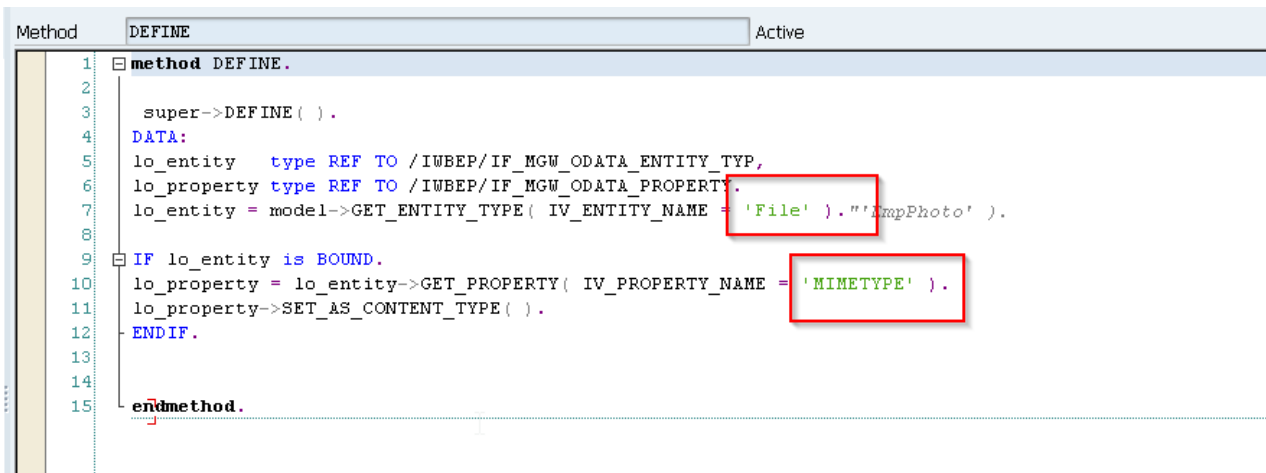
I'm struggling when create file in service.

Please check it once.

This is my Entity type and Entity set in my service.



This is my DEFINE method.

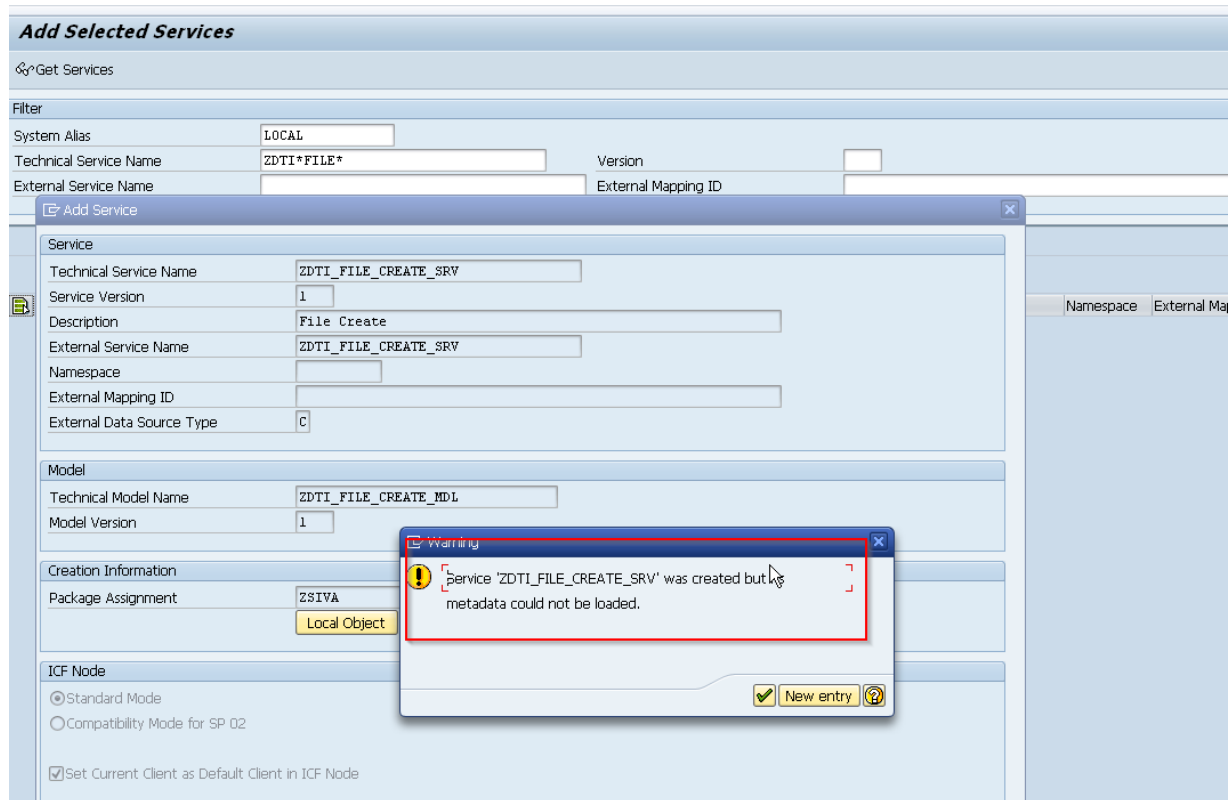


And here is my create_stream method.

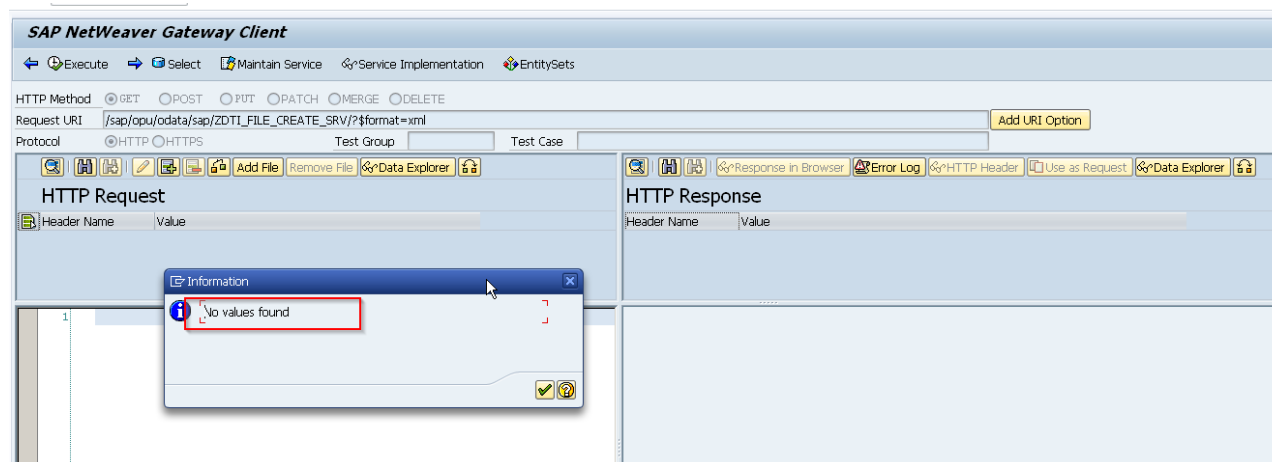
Method	
/IWBEP/IF_MGW_APPL_SRV_RUNTIME~CREATE_STREAM	Active

```
1  method /IWBEP/IF_MGW_APPL_SRV_RUNTIME~CREATE_STREAM.
2
3      DATA: lw_file TYPE zzupload.
4      *DATA: lw_file TYPE ZCL_ZDTI_PHOTO_CREATE_MPC=>TS_FILE.
5
6      DATA : lv_var TYPE string,
7              lt_key_tab TYPE /iwbsp/t_mgw_name_value_pair.
8      *READ TABLE it_key_tab ASSIGNING FIELD-SYMBOL(<fs_key>) INDEX 1.
9      FIELD-SYMBOLS: <fs_key> TYPE /IWBEP/S_MGW_NAME_VALUE_PAIR.
10
11
12  CASE iv_entity_name.
13  WHEN 'File'.
14      READ TABLE it_key_tab ASSIGNING <fs_key> INDEX 1.
15  WHEN '123s.jpg'.
16      *IV_SLUG = lv_var.
17      *lw_file-file_id = <fs_key>-value.
18      lw_file-filename = IV_SLUG.<fs_key>-value.
19      *lw_file-filename = <fs_key>-value.
20      lw_file-value = is_media_resource-value.
21      lw_file-mimetype = is_media_resource-mime_type.
22      lw_file-sydate = sy-datum.
23      lw_file-sytime = sy-uzeit.
24  *MODIFY zzupload FROM lw_file.
25  *INSERT INTO zzupload VALUES lw_file.
26      DELETE FROM zzupload WHERE filename = lw_file-filename.
27      INSERT zzupload FROM lw_file.
28  ENDCASE.
29
30  endmethod.
```

So when i add selected service I'm getting this warning.



And when click on EntitySets, displays this information message.



If i use Define method getting warning "Service was created but meta data could not be loaded" when add service.

Problem there is in DEFINE method i guess.

How can i resolve it.?

Thanks,

Siva R.

Like (0)



Former Member

February 6, 2015 at 5:02 am

Hi Shiva,

Problem is with your metadata and I can see only one attribute in your Entity Type but To fetch data from Request side of Gateway client.Entity should contain type of rawstring .. as for i see there is no raw string in your entity.. **check the structure which i used for Media Entity Type.**

you can check..

Service 'ZABC' was created but metadata could not be loaded

Thanks,

Arshad

Like (0)



Siva prasad Ramani

February 6, 2015 at 9:10 am

Hi Arshad.

I have a urgent requirement on this scenario.

I have taken Entity as you said above.Again I'm facing same issue.

Check here is my screen shorts.

Name	Key	Edm Core Type	Prec.	Scale	Max.	Unit	Property Name	Crea	Upd	Sort	Null	Flt.	Label	L	Comp. Type	ABAP Field Name	A	Semantics
Mandt	<input checked="" type="checkbox"/>	Edm.String	0	0	3			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Client	<input checked="" type="checkbox"/>		MANDT	<input type="checkbox"/>	
Filename	<input checked="" type="checkbox"/>	Edm.String	0	0	200			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Text (200 char)	<input checked="" type="checkbox"/>		FILENAME	<input type="checkbox"/>	
Sydate	<input checked="" type="checkbox"/>	Edm.DateTime	7	0	0			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Time Stamp	<input checked="" type="checkbox"/>		SYDATE	<input type="checkbox"/>	
Sytime	<input checked="" type="checkbox"/>	Edm.Time	0	0	0			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Time	<input checked="" type="checkbox"/>		SYTIME	<input type="checkbox"/>	
Value	<input checked="" type="checkbox"/>	Edm.Binary	0	0	0			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Binary String	<input checked="" type="checkbox"/>		VALUE	<input type="checkbox"/>	
Mimetype	<input checked="" type="checkbox"/>	Edm.String	0	0	100			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Character 100	<input checked="" type="checkbox"/>		MIMETYPE	<input type="checkbox"/>	

Taken Entity as a media type.

Name	ABAP Structure	Type Name	Base Type Name	Abs...	Label	L	Semantics	Thing	Media Author	Etag	Published	As Title Property	Updated
photo	ZZUPLOAD_ST			<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Imported Dictionary structure.

Dictionary: Change Structure

Structure: ZZUPLOAD_ST Active

Short Description: ZZUPLOAD_ST

Attributes Components Entry help/check Currency/quantity fields

Predefined Type 1 / 6

Component	Typing Method	Component Type	Data Type	Length	Dedi...	Short Description
MANDT	Types	MANDT	CLNT	3	0	Client
FILENAME	Types	CHAR200	CHAR	200	0	Text field length 200
SYDATE	Types	TIMESTAMPL	DATE	21	7	UTC Time Stamp in Long Form (YYYYMMDDhhmmssmmuuun
SYTIME	Types	SYUZEIT	TIMS	6	0	Current Time of Application Server
VALUE	Types	XSTRINGVAL	RAWSTRING	0	0	XString
MIMETYPE	Types	CHAR100	CHAR	100	0	Character 100

Still getting same warning when add service.

Technical Service Name: ZSIVA* Version:
External Service Name: External Mapping ID:

Add Service

Service

Technical Service Name: ZSIVA_FILE_CREATE_SRV
Service Version: 1
Description: file_create
External Service Name: ZSIVA_FILE_CREATE_SRV
Namespace:
External Mapping ID:
External Data Source Type: C

Model

Technical Model Name: ZSIVA_FILE_CREATE_MDL
Model Version: 1

Creation Information

Package Assignment: ZSIVA

ICF Node

☒ Standard Mode
☐ Compatibility Mode for SP 02
☒ Set Current Client as Default Client in ICF Node

Warning

Service 'ZSIVA_FILE_CREATE_SRV' was created but its metadata could not be loaded.

☒ New entry

Regards,

Siva R.

Like (0)



Kedar Tingikar

February 5, 2015 at 5:09 pm

Awesome blog Arshad. I like the lucid explanation for every step.

Got more clarity on the Association part.

Regards,

Kedar

Like (0)



Former Member

February 6, 2015 at 3:29 am

Hi Kedar,

Thank you. ☐

Like (0)



Nandakumar S Nair

February 6, 2015 at 5:35 am

Hi Arshad,

Thanks for sharing. Very good document for beginners.

Keep posting.

Thanks & regards,

Nandakumar S

Like (0)



Former Member

February 6, 2015 at 5:43 am

Hi Nandakumar,

Thank you ☐.

Let me know if you have any questions..

Like (0)



Former Member

March 3, 2015 at 7:00 am

Hi Arshad,

First,.. Thanks for Sharing, this is very helpful for beginners like me. ☐

Actually im facing a Problem by implementing it like this. When i try to send an picture via Post i always get an Error. (415 : Unsupported Media Type)

this is my Request:

HTTP-Request	
Header-Name	Wert
Content-Type	image/jpeg
SLUG	IMG_0123.jpeg
X-CSRF-Token	QjKOBjYhXuwhyEG8hWuxzg==

and this is the Response:

HTTP-Response	
Header-Name	Wert
~status_code	415
~status_reason	Unsupported Media Type
~server_protocol	HTTP/1.0
set-cookie	SAP_SESSIONID_E01_825=-M1Wa6Zqle-q7nBJ3Y7k5ZLXCLPBchHkgMAAFV0ByAA%3d; path=/ content-type
content-type	application/xml
content-length	825

```
<?xml version="1.0" encoding="UTF-8"?>
- <error xmlns="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
  <code>005056A509B11EE3AEB5819C07C69E2F</code>
  <message xml:lang="de">Der Server lehnt die Verarbeitung der Anforderung ab, da die Entität ein nicht unterstütztes
    Format besitzt</message>
- <innererror xmlns="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
  <transactionid>A771C1E4D8C0F16980C000155D01C800</transactionid>
  <timestamp>20150303065741.0910000</timestamp>
  - <Error_Resolution>
    <SAP_Transaction>Run transaction /IWFND/ERROR_LOG on SAP NW Gateway hub system and search for entries
      with the timestamp above for more details</SAP_Transaction>
    <SAP_Note>See SAP Note 1797736 for error analysis (https://service.sap.com/sap/support/notes/1797736)
    </SAP_Note>
  </Error_Resolution>
</innererror>
</error>
```

what i have to do to make it work?

Regards!

Sascha

Like (0)



ARSHAD SHAIKH | Post author

March 3, 2015 at 5:02 pm

Hi Sascha,

Problem is in your request, You may have entered wrong URI, request body or request header.

check once.

FYI check [Code 415: Unsupported media type](#)

Thanks,

Arshad

Like (0)



Vishnu Pankajakshan

April 9, 2015 at 10:28 am

Hi Arshad,

Thanks for sharing this wonderful document,i wud like to try all these operations from UI5.

Regards,

Vishnu

Like (0)



Tasnim Ara

March 10, 2016 at 9:53 am

Hi Arshad,

Nice Blog Arshad !!!!!!!!!!!!!!!!!!! Keep Updating New Operation in Gateway !!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Like (0)



Prabhu Pole

April 13, 2016 at 8:59 am

Arshad,

It's really helpful for beginners thanks alot

Like (0)



Former Member

May 10, 2016 at 5:31 pm

Thank you ..very helpful

Like (0)



Timothy Muchena

June 3, 2016 at 2:38 pm

You are officially a Rock-Star!

Thank you

Like (0)



Timothy Muchena

June 6, 2016 at 9:51 am

Is it possible to have Details structure as a table type to cater for scenarios where you have more than one detail records for an employee?

Like (0)



UMAKANT PATIL

June 25, 2016 at 6:19 am

Hello sir ,

while uploading media you are passing navigation name , but you have not created navigation,

`ZEMP_PRO_SRV/EmpDetailsSet('1')/EmpPhotoNavig`

i tried by creating navigation but still its not redirecting to to create stream method

please suggest how i can do that.....

Like (0)



Amarnath Prasad

July 4, 2016 at 6:53 am

No need to create navigation for uploading document. Create Entity(Check Media Type) and redefine the method define(mpc_ext).

Use following URL for uploading document from gateway client(/iwfnd/gw_client):-

`‘/sap/opu...../ServiceName/EntitySet’` and select method as **post**.

Step for Redefining ‘Define’ method:-

Click On Runtime Artifacts->zcl_service_name.._mpc_ext->Right Click->Go to ABAP ->Workbench ->Redefine ‘Define’ method having code below-

super->define().

DATA:

lo_entity TYPE REF TO /iwbep/if_mgw_odata_entity_typ,

lo_property TYPE REF TO /iwbep/if_mgw_odata_property.

“Attachment is your media type entity name

lo_entity = model->get_entity_type(iv_entity_name = ‘**Attachment**’).

“MimeType is a property of Attachment Entity

IF lo_entity IS BOUND.

lo_property = lo_entity->get_property(iv_property_name = ‘**MimeType**’).

lo_property->set_as_content_type().

ENDIF.

Like (0)



Gaurav Kashinath Pednekar

September 23, 2016 at 5:16 pm

is there anything to Deep Update? Like we are changing item level data for Sales order or Purchase Order and then we are saving it . How to go about it ?

Like (0)



Gaurav Kashinath Pednekar

September 23, 2016 at 5:16 pm

Please need your help on this

Like (0)



Former Member

September 28, 2016 at 5:06 am

Hi Arshad,

You are so kind to share such a helpful tutorial. There is saying that sharing is caring.

You did a fantastic job!! I will go through your instruction in details.

Thanks for your efforts. ☐

Like (0)



HIMANSHU GUPTA

April 2, 2017 at 1:37 pm

Hi Arshad,

Very Nice document to share.

Many thanks / Himanshu Gupta

Like (0)



Adam Krawczyk

December 21, 2017 at 8:05 am

Nice blog with core features described.

Few additional hints to solutions:

- When using generic methods like **create_deep_entity** we should check what is context entity name (**io_tech_request_context->get_entity_type_name**).
- By doing this we can support creation of many complex types etc. It will work without it if we use only one complex entity type for creation, but as a good practice it is worth to do check.
- **get_expanded_entity** can be redefined for performance reasons if we want to control single logic for loading many expanded entities.
- For simple purpose we can just redefine method **get_entity_set** of all subsequent entities (**EmpContactDetails** in your example), check what is the parent (**io_request->get_soruce_entity_type_name**) and get keys for selection (**io_request->get_converted_soruce_keys**). If parent is empty it means that direct filter search is used on entity without expand.

Regards,

Adam

Like (0)



David Raven

January 31, 2018 at 7:55 am

Hi,

Can I use the media part that you describe to download PDF or DOCX?

Thanks.

Like (0)

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