

CDA                      ZCL\_CRM\_BOR\_PROXY                      Release 740                      System

Class: ZCL\_CRM\_BOR\_PROXY  
Status: Active

#### Attributes

Description: BOR Proxy  
Instantiation: Abstract  
Not final  
Not released  
Fixed pt.arithmetic  
Program status: Customer Production Program  
Category: General Object Type  
Package: ZCRM  
Original lang.: EN  
Created by: P000520  
Created on: 11.12.2014  
Last changed by: P000520  
Last changed on: 22.12.2014

#### Attributes

##### Public attributes

Attrib.	Cat	Description	Ref. Type
Init. value			
AV_TYPE	Inst (read only)	Object Type	TYPE SWO_OBJTYP
AV_OBJID	Inst (read only)	Object key	TYPE
SWO_TYPEID			

#### Protected attribute

Attrib.	Cat	Description	Ref. Type	Init. value
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AV_OBJECT	Inst	Number of runtime object	TYPE
SWO_OBJHND			

#### Methods

##### Public methods

CONSTRUCTOR  
Description: CONSTRUCTOR  
Instance mthd

```

Importing parameter
    P_KEY TYPE SWO_TYPEID    OPTIONAL    (Object key)

METHOD constructor.
    IF p_key IS SUPPLIED.
        me->av_objid = p_key.
    ENDIF.
ENDMETHOD.

SET_ATTRIBUTES
Description: Sets control attributes of objects og this class.
Instance mthd

```

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```

Exceptions
CX_BAPI_ERROR    (BAPI Error Exception: Migrated Error Messages
Type "E")
METHOD set_attributes.
  DATA: lo_api    TYPE REF TO lcl_api,
         lx_error TYPE REF TO cx_bapi_error.
  lo_api ?= me->get_api( ).
  TRY .
    lo_api->get_bor_instance( EXPORTING
                              p_type = me->av_type
                              p_key  = me->av_objid
                              RECEIVING
                              r_object = me->av_object ).
  CATCH cx_bapi_error INTO lx_error.
    RAISE EXCEPTION lx_error.
  ENDTRY.
  FREE lo_api.
ENDMETHOD.

```

```
GET_PLAIN_ATTRIBUTE
Description: Returns the value of a plain attribute.
Instance mthd
```

```

Importing parameter
  P_NAME TYPE SWO_VERB  (Object type component)
Returning parameter
  VALUE(R VALUE) TYPE SWC VALUE  (Character value)

```

```
Exceptions
CX_BAPI_ERROR (BAPI Error Exception: Migrated Error Messages
Type "E")
METHOD get_plain_attribute.
DATA: lo_api TYPE REF TO lcl_api,
      lx_error TYPE REF TO cx_bapi_error.
IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
TRY .
    me->set_attributes( ).
    CATCH cx_bapi_error INTO lx_error.
    RAISE EXCEPTION lx_error.
ENDTRY.
ENDIF.
lo_api ?= me->get_api( ).
TRY .
    lo_api->get_plain_attribute( EXPORTING
                                p_object = me->av_object
                                p_name   = p_name
                                RECEIVING
                                r_value = r_value ).
    CATCH cx_bapi_error INTO lx_error.
    FREE lo_api.
    RAISE EXCEPTION lx_error.
ENDTRY.
FREE lo_api.
ENDMETHOD.
```

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```
CALL_METHOD_PLAIN_RESULT
Description: Returns the result of a method that returns a plain
value.
Instance mthd

Importing parameter
P_NAME TYPE SWO_VERB (Object type component)
Returning parameter
VALUE(R_VALUE) TYPE SWC_VALUE (Character value)

Exceptions
CX_BAPI_ERROR (BAPI Error Exception: Migrated Error Messages
Type "E")
```

```

METHOD call_method_plain_result.
  DATA: lo_api    TYPE REF TO lcl_api,
         lx_error  TYPE REF TO cx_bapi_error.
  IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
    TRY .
      me->set_attributes( ).
      CATCH cx_bapi_error INTO lx_error.
        RAISE EXCEPTION lx_error.
    ENDTRY.
  ENDIF.
  lo_api ?= me->get_api( ).
  TRY .
    lo_api->call_method_plain_result( EXPORTING
                                     p_object = me-
                                     p_name    = p_name
                                     RECEIVING
                                     r_value  = r_value ).
    CATCH cx_bapi_error INTO lx_error.
      FREE lo_api.
      RAISE EXCEPTION lx_error.
    ENDTRY.
    FREE lo_api.
  ENDMETHOD.

```

GET\_MULTILINE\_ATTRIBUTE  
 Description: Returns the value of a table attribute.  
 Instance mthd

Importing parameter  
 P\_NAME TYPE SWO\_VERB (Object type component)

Returning parameter  
 VALUE(RT\_VALUES) TYPE SWFTVALUE (Workflow: Table Type for XML  
 Character Stream)

Exceptions  
 CX\_BAPI\_ERROR (BAPI Error Exception: Migrated Error Messages  
 Type "E")

```

METHOD get_multiline_attribute.
  DATA: lo_api    TYPE REF TO lcl_api,
         lx_error  TYPE REF TO cx_bapi_error.
  IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
    TRY .
      me->set_attributes( ).
      CATCH cx_bapi_error INTO lx_error.

```

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```

        RAISE EXCEPTION lx_error.
    ENDTRY.
ENDIF.
lo_api ?= me->get_api( ).
TRY .
    lo_api->get_multiline_attribute( EXPORTING
                                p_object = me-
                                p_name   = p_name
                                RECEIVING
                                rt_values = rt_values
                                ).
    CATCH cx_bapi_error INTO lx_error.
        FREE lo_api.
        RAISE EXCEPTION lx_error.
    ENDTRY.
    FREE lo_api.
ENDMETHOD.

CMTD_PARM_NORESULT
Description: Calls a method that requires parameters and returns
nothing.
Instance mthd

Importing parameter
P_NAME TYPE SWO_VERB (Object type component)
PT_PARMS TYPE SWCONTTAB (Container Table)
Exceptions
CX_BAPI_ERROR (BAPI Error Exception: Migrated Error Messages
Type "E")

METHOD cmt_d_parm_noresult.
    DATA: lo_api TYPE REF TO lcl_api,
           lx_error TYPE REF TO cx_bapi_error.
    IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
        TRY .
            me->set_attributes( ).
            CATCH cx_bapi_error INTO lx_error.
                RAISE EXCEPTION lx_error.
            ENDTRY.
        ENDIF.
        lo_api ?= me->get_api( ).
        TRY .
            lo_api->cmt_d_parm_noresult( EXPORTING
                                    p_object = me->av_object
                                    p_name   = p_name
                                    pt_parms = pt_parms ).
            CATCH cx_bapi_error INTO lx_error.
                FREE lo_api.
                RAISE EXCEPTION lx_error.
            ENDTRY.
            FREE lo_api.
        ENDTRY.
    ENDTRY.

CALL_STATIC_METHOD
Description: Calls a static method and returns a container table
Instance mthd

```

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```

Importing parameter
  P_NAME TYPE SWO_VERB  (Object type component)
  PT_CONTAINER TYPE SWCONTTAB  (Container Table)
Returning parameter
  VALUE(RT_CONTAINER) TYPE SWCONTTAB  (Container Table)

Exceptions
  CX_BAPI_ERROR  (BAPI Error Exception: Migrated Error Messages
Type "E")
METHOD call_static_method.
  DATA: lo_api  TYPE REF TO lcl_api,
         lx_error TYPE REF TO cx_bapi_error.
  IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
    TRY .
      me->set_attributes( ).
      CATCH cx_bapi_error INTO lx_error.
        RAISE EXCEPTION lx_error.
    ENDTRY.
  ENDIF.
  lo_api ?= me->get_api( ).
  TRY .
    lo_api->call_static_method( EXPORTING
                                p_type      = me->av_type
                                p_name      = p_name
                                pt_parms   = pt_container
                                RECEIVING
                                rt_results = rt_container
                                ).
    CATCH cx_bapi_error INTO lx_error.
      FREE lo_api.
      RAISE EXCEPTION lx_error.
    ENDTRY.
  FREE lo_api.
ENDMETHOD.

```

ADD\_ENTRY\_TO\_CONTAINER\_TABLE  
Description: Adds an entry to a container table.  
Instance mthd

```

Importing parameter
  P_ELEMENT TYPE ANY  (Table name)

```

```

P_FIELD TYPE ANY    (Table field)
CHANGING parameter
CT_CONTAINER TYPE SWCONTTAB  (Container Table)

```

#### Exceptions

CX\_BAPI\_ERROR (BAPI Error Exception: Migrated Error Messages  
Type "E")

```

METHOD add_entry_to_container_table.
  DATA: lw_return      TYPE bapiret2,
         lt_return      TYPE bapiret2_t,
         lt_container TYPE swconttab.
  swc_set_element ct_container p_element p_field.
  IF sy-subrc <> 0.
    lw_return-type      = sy-msgty.
    lw_return-id        = sy-msgid.

```

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```

    lw_return-number      = sy-msgno.
    lw_return-message_v1 = sy-msgv1.
    lw_return-message_v2 = sy-msgv2.
    lw_return-message_v3 = sy-msgv3.
    lw_return-message_v4 = sy-msgv4.
    APPEND lw_return TO lt_return.
    RAISE EXCEPTION TYPE cx_bapi_error
      EXPORTING
        status = lt_return.
  ENDIF.
ENDMETHOD.

```

#### FREE

Description: Frees this object.  
Instance mthd

#### Exceptions

CX\_BAPI\_ERROR (BAPI Error Exception: Migrated Error Messages  
Type "E")

```

METHOD free.
  DATA: lo_api  TYPE REF TO lcl_api,
         lx_error TYPE REF TO cx_bapi_error.
  IF me->av_object IS INITIAL.
    RETURN.
  ENDIF.
  IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.

```

```

    TRY .
        me->set_attributes( ).
        CATCH cx_bapi_error INTO lx_error.
            RAISE EXCEPTION lx_error.
        ENDTRY.
    ENDIF.
    lo_api ?= me->get_api( ).
    TRY .
        lo_api->free( me->av_object ).
        CATCH cx_bapi_error INTO lx_error.
            FREE lo_api.
            RAISE EXCEPTION lx_error.
        ENDTRY.
    FREE lo_api.
ENDMETHOD.

COMMIT
Description: Performs a commit.
Instance mthd

METHOD commit.
    DATA: lo_api    TYPE REF TO lcl_api,
           lx_error TYPE REF TO cx_bapi_error.
    lo_api ?= me->get_api( ).
    lo_api->commit( ).
    FREE lo_api.
ENDMETHOD.
```

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```

SET_INSTANCE_BY_ID
Description: Returns an instance of object related to the id
provided.
Instance mthd

Importing parameter
    P_ID TYPE RSOBJS_NODE_ID  (Object Services: Node ID for
Transfer Table)
Exceptions
    CX_BAPI_ERROR  (BAPI Error Exception: Migrated Error Messages
Type "E")
```



GET\_OBJECT\_PLAIN\_ATTRIBUTE  
 Description: Returns the value of a plain attribute of an obj.  
 attribute.  
 Instance mthd  
 Importing parameter  
   P\_OBJECT TYPE SWO\_VERB (Object type component)  
   P\_ATTRIB TYPE SWO\_VERB (Object type component)  
  
 Returning parameter  
   VALUE(R\_VALUE) TYPE SWC\_VALUE (Character value)  
 Exceptions  
   CX\_BAPI\_ERROR (BAPI Error Exception: Migrated Error Messages  
 Type "E")

```

METHOD get_object_plain_attribute.
  DATA: lo_api    TYPE REF TO lcl_api,
         lx_error TYPE REF TO cx_bapi_error.
  IF me->av_object IS INITIAL.
    TRY .
      me->set_attributes( ).
      CATCH cx_bapi_error INTO lx_error.
        RAISE EXCEPTION lx_error.
    ENDTRY.
  ENDIF.
  lo_api ?= get_api( ).
  lo_api->get_object_plain_attribute(
    EXPORTING
      p_handle = me->av_object
      p_object = p_object
      p_attrib = p_attrib
    RECEIVING
      r_value = r_value
  ).
ENDMETHOD.

```

CALL\_METHOD\_WITH\_CONTAINER  
 Description: Calls an instance method using container.  
 Instance mthd

Importing parameter  
   P\_NAME TYPE SWO\_VERB (Object type component)  
   PT\_CONTAINER TYPE SWCONTTAB (Container Table)  
 Returning parameter  
   VALUE(RT\_CONTAINER) TYPE SWCONTTAB (Container Table)

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```

Exceptions
CX_BAPI_ERROR (BAPI Error Exception: Migrated Error Messages
Type "E")
METHOD call_method_with_container.
DATA: lo_api TYPE REF TO lcl_api,
      lx_error TYPE REF TO cx_bapi_error.
IF me->av_object IS INITIAL AND me->av_objid IS NOT INITIAL.
TRY .
    me->set_attributes( ).
    CATCH cx_bapi_error INTO lx_error.
    RAISE EXCEPTION lx_error.
ENDTRY.
ENDIF.
lo_api ?= me->get_api( ).
TRY .
    lo_api->call_method_with_container(
        EXPORTING
            p_object = me->av_object
            p_type = me->av_type
            p_name = p_name
            pt_parms = pt_container
        RECEIVING
            rt_results = rt_container ).
    CATCH cx_bapi_error INTO lx_error.
    FREE lo_api.
    RAISE EXCEPTION lx_error.
ENDTRY.
FREE lo_api.
ENDMETHOD.

```

#### Private methods

##### GET\_API

Description: Returns a API calls mediator.

Instance mthd

##### Returning parameter

VALUE(RO\_API) TYPE REF TO OBJECT (API calls mediator instance.)

```

METHOD get_api.
DATA lo_api TYPE REF TO lcl_api.
lo_api = NEW lcl_api( ).
IF lo_api IS BOUND.
    ro_api = lo_api.
ENDIF.
FREE lo_api.
ENDMETHOD.

```

#### Redefined Methods

#### Local Types

\*\*\* use this source file for any type of declarations (class

\*\*\* definitions, interfaces or type declarations) you need for  
 \*\*\* components in the private section

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```

Local class definitions
*** use this source file for the definition and implementation of
*** local helper classes, interface definitions and type
*** declarations
INCLUDE <cntn03>.
*-----*
----*
* Class LCL_API
* OVERVIEW: Objects of this class mediates API calls. It aims to
*           isolate this development from external dependencies,
as
*           might be desirable in tests.
*           The instances of this object is provided by the
private
*           method GET_API of the main class
*           (ZCL_CRM_BOR_PROXY). By redefining the
*           method GET_API one can provide appropriated stubs,
which
*           must redefine the desired methods of LCL_API,
instead of
*           accessing the real APIs.
*-----*
----*
CLASS lcl_api DEFINITION.
  PUBLIC SECTION.
    METHODS: get_bor_instance IMPORTING p_type          TYPE
swo_objtyp
                                p_key          TYPE
swo_typeid
                                RETURNING VALUE(r_object) TYPE
swo_objhnd
                                RAISING    cx_bapi_error,
*-----*
----*
* Method GET_BOR_INSTANCE
*-----*
----*
* REQUIRES: The BOR type and key must be provided.
* EFFECTS.: If the API SWO_CREATE returns an error, this method

```

```
*          returns exception type CX_BAPI_ERROR, otherwise
returns
*          the Number of runtime object.
*-----*
* ->      P_TYPE          Object Type.
* ->      P_KEY           Object key.
* <-      R_OBJECT        Number of runtime object.
*-----*
*          get_plain_attribute IMPORTING p_object          TYPE
swo_objhnd
*          p_name          TYPE swo_verb
*          RETURNING VALUE(r_value) TYPE swc_value
*          RAISING    cx_bapi_error,
*-----*
* Method GET_PLAIN_ATTRIBUTE
*-----*
* REQUIRES: The Number of runtime object and the attribute name
must
*          be provided.
* EFFECTS.: If the API SWO_INVOKE returns an error, this method
*          returns exception type CX_BAPI_ERROR, otherwise
returns
*          the value of the attribute.
*-----*
* ->      P_OBJECT        Number of runtime object.
* ->      P_NAME          Object type component (attribute name).
* <-      R_VALUE         Component value.
*-----*
*          call_method_plain_result IMPORTING p_object      TYPE
swo_objhnd
```

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	p_name	TYPE
swo_verb		
	RETURNING VALUE(r_value)	TYPE
swc_value		
	RAISING    cx_bapi_error,	

```

*-----*
----*
* Method CALL_METHOD_PLAIN_RESULT
*-----*
----*
* REQUIRES: The Number of runtime object and the method name must
*           be provided.
* EFFECTS.: If the API SWO_INVOKE returns an error, this method
*           returns exception type CX_BAPI_ERROR, otherwise
returns
*           the value returned by the method.
*-----*
----*
* ->    P_OBJECT      Number of runtime object.
* ->    P_NAME        Object type component (method name).
* <-    R_VALUE       Component value.
*-----*
----*
      get_multiline_attribute IMPORTING p_object      TYPE
swo_objhnd
                                p_name              TYPE
swo_verb
                                RETURNING VALUE(rt_values) TYPE
swftvalue
                                RAISING    cx_bapi_error,
*-----*
----*
* Method GET_MULTILINE_ATTRIBUTE
*-----*
----*
* REQUIRES: The Number of runtime object and the attribute name
must
*           be provided.
* EFFECTS.: If the API SWO_INVOKE returns an error, this method
*           returns exception type CX_BAPI_ERROR, otherwise
returns
*           a table holding the values of the multiline
attribute.
*-----*
----*
* ->    P_OBJECT      Number of runtime object.
* ->    P_NAME        Object type component (method name).
* <-    R_VALUE       Component value.
*-----*
----*
      cmdt_parm_noresult IMPORTING p_object TYPE swo_objhnd
                                p_name   TYPE swo_verb
                                pt_parms TYPE swconttab
                                RAISING  cx_bapi_error,
*-----*
----*
* Method CMDT_PARM_NORESULT
*-----*
----*
* REQUIRES: The Number of runtime object, the attribute name and
the
*           arguments list must be provided.
* EFFECTS.: If the API SWO_INVOKE returns an error, this method
*           returns exception type CX_BAPI_ERROR.

```

```

*-----*
----*
* ->    P_OBJECT      Number of runtime object.
* ->    P_NAME        Object type component (method name).
* ->    PT_PARMS      Container Table.
*-----*
----*
                call_static_method IMPORTING p_type              TYPE
swo_objtyp
                                p_name              TYPE
swo_verb
                                pt_parms            TYPE
swconttab
                                RETURNING VALUE(rt_results) TYPE
swconttab
                                RAISING    cx_bapi_error,

```

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```

*-----*
----*
* Method CALL_STATIC_METHOD
*-----*
----*
* EFFECTS.: If the API SWO_INVOKE_PERSISTENT returns an error
this
*           method returns exception type CX_BAPI_ERROR,
otherwise it
*           returns the results of the processing.
*-----*
----*
* ->    P_TYPE        Object Type.
* ->    P_NAME        Object type component (method name).
* ->    PT_PARMS      Container table holding the arguments.
* <-    RT_RESULTS    Container table holding the results.
*-----*
----*
                call_method_with_container IMPORTING p_object      TYPE
swo_objhnd
                                p_type              TYPE
swo_objtyp
                                p_name              TYPE
swo_verb
                                pt_parms            TYPE
swconttab

```

```

                                RETURNING VALUE(rt_results) TYPE
swconttab
                                RAISING    cx_bapi_error,
*-----*
* Method CALL_METHOD_WITH_CONTAINER
*-----*
* EFFECTS.: If the API SWO_INVOKE returns an error, this method
*           returns exception type CX_BAPI_ERROR, otherwise it
*           returns the results of the processing.
*-----*
* ->    P_OBJECT      Number of runtime object.
* ->    P_TYPE        Object Type.
* ->    P_NAME        Object type component (method name).
* ->    PT_PARMs      Container table holding the arguments.
* <-    RT_RESULTS    Container table holding the results.
*-----*
                                swc_element_set IMPORTING p_element      TYPE swc_elem
                                                p_field        TYPE string
                                                CHANGING    ct_container TYPE swconttab
                                                RAISING    cx_bapi_error,
*-----*
* Method SWC_ELEMENT_SET
*-----*
* REQUIRES: The element name and the name of the field to be
filled
*           must be provided.
* MODIFIES: If the API SWO_INVOKE_PERSISTENT returns an error
this
*           method returns exception type CX_BAPI_ERROR,
otherwise it
*           adds up an new line to the container table related to
the
*           field provided.
*-----*
* ->    P_ELEMENT      Element.
* ->    P_FIELD        Field name.
* <->    CT_CONTAINER  Container table.
*-----*
                                free IMPORTING p_object TYPE swo_objhnd
                                    RAISING    cx_bapi_error,
*-----*
* Method FREE
*-----*

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* REQUIRES: The object handler must be provided.
* MODIFIES: If the API SWO_FREE returns an error this method
returns
*           exception type CX_BAPI_ERROR, otherwise it frees the
*           related BOR.
*-----*
----*
* ->    P_ELEMENT      Element.
* ->    P_FIELD        Field name.
* <->   CT_CONTAINER   Container table.
*-----*
----*
*           commit,
*-----*
----*
* Method COMMIT
*-----*
----*
* MODIFIES: Commits database changes by calling API
*           BAPI_TRANSACTION_COMMIT.
*-----*
----*
*           get_object_plain_attribute IMPORTING p_handle      TYPE
swo_objhnd                                     p_object      TYPE
swo_verb                                     p_attrib      TYPE
swo_verb                                     RETURNING VALUE(r_value) TYPE
swc_value.
*-----*
----*
* Method GET_OBJECT_PLAIN_ATTRIBUTE
*-----*
----*
* REQUIRES: Current object handle, object attribute name and the
*           name of the attribute must be provided.
* EFFECTS.: Returns the result provided by API SWO_INVOKE.
*-----*
----*
* ->    P_HANDLE      Number of runtime object.
* ->    P_OBJECT      Object name.
* ->    P_ATTRIB      Attribute name.
* <-    R_VALUE      Attribute value.
*-----*
----*
ENDCLASS.                                "LCL_api DEFINITION
CLASS lcl_api IMPLEMENTATION.
    METHOD get_bor_instance.

```



```

DATA: lw_swo_return TYPE swotreturn,
      lw_return      TYPE bapiret2,
      lt_return      TYPE bapiret2_t,
      lvc_dummy(1)   TYPE c.
CALL FUNCTION 'SWO_CREATE'
  EXPORTING
    objtype      = p_type
    objkey       = p_key
  IMPORTING
    object       = r_object
    return       = lw_swo_return
  EXCEPTIONS
    no_remote_objects = 1
    OTHERS           = 2.
IF lw_swo_return IS NOT INITIAL.
  m_raise_exception.
ENDIF.
ENDMETHOD.
METHOD get_plain_attribute.

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DATA: lt_container TYPE swconttab,
      lw_swo_return TYPE swotreturn,
      lw_return      TYPE bapiret2,
      lt_return      TYPE bapiret2_t,
      lvc_dummy(1)   TYPE c.
FIELD-SYMBOLS <lw_container> TYPE swcont.
CALL FUNCTION 'SWO_INVOKE'
  EXPORTING
    access      = 'G'
    object      = p_object
    verb        = p_name
  IMPORTING
    return      = lw_swo_return
  TABLES
    container = lt_container.
IF lw_swo_return IS NOT INITIAL.
  m_raise_exception.
ELSE.
  LOOP AT lt_container ASSIGNING <lw_container>.
    r_value = <lw_container>-value.
  ENDLOOP.
ENDIF.
ENDMETHOD.

```

```

METHOD call_method_plain_result.
  DATA: lt_container TYPE swconttab,
        lw_swo_return TYPE swotreturn,
        lw_return     TYPE bapiret2,
        lt_return     TYPE bapiret2_t,
        lvc_dummy(1)  TYPE c.
  FIELD-SYMBOLS <lw_container> TYPE swcont.
  CALL FUNCTION 'SWO_INVOKE'
    EXPORTING
      access      = 'C'
      object      = p_object
      verb        = p_name
    IMPORTING
      return      = lw_swo_return
    TABLES
      container = lt_container.
  IF lw_swo_return IS NOT INITIAL.
    m_raise_exception.
  ELSE.
    LOOP AT lt_container ASSIGNING <lw_container>.
      r_value = <lw_container>-value.
    ENDLOOP.
  ENDIF.
ENDMETHOD.
METHOD get_multiline_attribute.
  DATA: lt_container TYPE swconttab,
        lw_swo_return TYPE swotreturn,
        lw_return     TYPE bapiret2,
        lt_return     TYPE bapiret2_t,
        lvc_dummy(1)  TYPE c.
  FIELD-SYMBOLS <lw_container> TYPE swcont.

```

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```

CALL FUNCTION 'SWO_INVOKE'
  EXPORTING
    access      = 'G'
    object      = p_object
    verb        = p_name
  IMPORTING
    return      = lw_swo_return
  TABLES
    container = lt_container.
  IF lw_swo_return IS NOT INITIAL.
    m_raise_exception.

```

```

ELSE.
    LOOP AT lt_container ASSIGNING <lw_container>.
        APPEND <lw_container>-value TO rt_values.
    ENDLOOP.
ENDIF.
ENDMETHOD.
METHOD cmdt_parm_noresult.
    DATA: lw_swo_return TYPE swotreturn,
           lw_return     TYPE bapiret2,
           lt_return     TYPE bapiret2_t,
           lvc_dummy(1)  TYPE c.
    CALL FUNCTION 'SWO_INVOKE'
        EXPORTING
            access      = 'C'
            object      = p_object
            verb        = p_name
        IMPORTING
            return      = lw_swo_return
        TABLES
            container   = pt_params.
    IF lw_swo_return IS NOT INITIAL.
        m_raise_exception.
    ENDIF.
ENDMETHOD.
METHOD call_static_method.
    DATA: lw_oref_static TYPE swotobjid,
           lw_swo_return  TYPE swotreturn,
           lw_return      TYPE bapiret2,
           lt_return      TYPE bapiret2_t,
           lvc_dummy(1)   TYPE c,
           lt_container   TYPE swconttab.
    lw_oref_static-objtype = p_type.
    lt_container = pt_params.
    CALL FUNCTION 'SWO_INVOKE_PERSISTENT'
        EXPORTING
            object      = lw_oref_static
            verb        = p_name
        IMPORTING
            return      = lw_swo_return
        TABLES
            container   = lt_container.
    IF lw_swo_return IS NOT INITIAL.
        m_raise_exception.

```

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```

ENDIF.
rt_results = lt_container.
ENDMETHOD.
METHOD call_method_with_container.
DATA: lw_swo_return TYPE swotreturn,
      lw_return      TYPE bapiret2,
      lt_return      TYPE bapiret2_t,
      lvc_dummy(1)   TYPE c,
      lt_container   TYPE swconttab.
lt_container = pt_parms.
CALL FUNCTION 'SWO_INVOKE'
EXPORTING
  access      = 'C'
  object      = p_object
  verb        = p_name
IMPORTING
  return      = lw_swo_return
TABLES
  container   = lt_container.
IF lw_swo_return IS NOT INITIAL.
  m_raise_exception.
ENDIF.
rt_results = lt_container.
ENDMETHOD.
METHOD swc_element_set.
DATA: lw_return TYPE bapiret2,
      lt_return TYPE bapiret2_t.
CALL FUNCTION 'SWC_ELEMENT_SET'
EXPORTING
  element      = p_element
  field        = p_field
TABLES
  container     = ct_container
EXCEPTIONS
  type_conflict = 1
  OTHERS        = 2.
IF sy-subrc <> 0.
  m_regular_raise_exception.
ENDIF.
ENDMETHOD.
METHOD free.
TYPES: BEGIN OF ly_object,
       handle TYPE swo_objhnd,
       END OF ly_object.
DATA: lw_object TYPE ly_object,
      lw_return TYPE bapiret2,
      lt_return TYPE bapiret2_t.
lw_object-handle = p_object.
swc_free_object lw_object.
IF sy-subrc <> 0.
  m_regular_raise_exception.
ENDIF.
ENDMETHOD.
METHOD commit.

```

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```

        CALL FUNCTION 'BAPI_TRANSACTION_COMMIT'
          EXPORTING
            wait = 'X'.
        ENDMETHOD.
    METHOD get_object_plain_attribute.
      DATA: lw_mobject TYPE swc_object,
            lw_aobject TYPE swc_object.
      lw_mobject-handle = p_handle.
      swc_get_property: lw_mobject p_object lw_aobject,
                       lw_aobject p_attr r_value.
    ENDMETHOD.
  ENDClass.

  Macros
  *** use this source file for any macro definitions you need
  *** in the implementation part of the class
  INCLUDE <cntn02>.
  DEFINE m_raise_exception.
    message id lw_swo_return-workarea
      type 'E'
      number lw_swo_return-message
      with lw_swo_return-variable1 lw_swo_return-variable2
          lw_swo_return-variable3 lw_swo_return-variable4
      into lvc_dummy.
    lw_return-type      = sy-msgty.
    lw_return-id        = sy-msgid.
    lw_return-number    = sy-msgno.
    lw_return-message_v1 = sy-msgv1.
    lw_return-message_v2 = sy-msgv2.
    lw_return-message_v3 = sy-msgv3.
    lw_return-message_v4 = sy-msgv4.
    lw_return-message    = lw_swo_return-text.
    append lw_return to lt_return.
    raise exception type cx_bapi_error
      exporting
        status = lt_return.
  END-OF-DEFINITION.
  DEFINE m_regular_raise_exception.
    lw_return-type      = sy-msgty.
    lw_return-id        = sy-msgid.
    lw_return-number    = sy-msgno.
    lw_return-message_v1 = sy-msgv1.
    lw_return-message_v2 = sy-msgv2.
    lw_return-message_v3 = sy-msgv3.
    lw_return-message_v4 = sy-msgv4.
    APPEND lw_return TO lt_return.
    RAISE EXCEPTION TYPE cx_bapi_error

```

```
EXPORTING
    status = lt_return.
END-OF-DEFINITION.
```

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COMMIT

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SET\_INSTANCE\_BY\_ID

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GET\_OBJECT\_PLAIN\_ATTRIBUTE

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CALL\_METHOD\_WITH\_CONTAINER

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Private methods

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GET\_API

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Redefined Methods

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Local Types

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Local class definitions

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Macros