Technical Specification: PA0006 OData Service

Development Summary

Functional Overview

The project: to build an OData service to allow the address data stored for an employee (in PA0006 ddic) to be read and changed from outside SAP.

For this particular functional specification, only Permanent employee addresses are stored in PA0006, so subtypes do not need to be utilised.

The OData service should be capable of the following operations, as service implementations:

1. Get address details for a given employee number
2. Modify the address details for a given employee number

As such, the OData service must have functionality to allow a filter by employee number.

Technical Solution Overview

An OData Service has been created to access PA0006 remotely. Its data model is created by importing the PA0006 DDIC structure and all 5 Service Implementations have been redefined to suit the functionality required. It can be queried using HTTP requests, specifying the relevant employee number.

Development Object

System	Object Type	Development Object	Description
S/4HANA	OData Service	Z_TESTING_LB	OData service to manage employee address data

Assumptions

An assumption has been made that the company using the OData service will only ever be storing primary addresses as use of subtypes is not possible as the implementations have been written. This has been detailed in the functional specification.

It has also been assumed that multiple HTTP requests will be executed. To keep records up to date, multiple requests might need to be performed for the same employee number. For instance, if creating a new record for an employee (CreateEntity), the old record will need to be delimited (DeleteEntity). This will be two separate HTTP requests. The individual using the OData service will require this functional knowledge.

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Development Requirements

OData Service

Project	Z_TESTING_LB
Description	OData service to manage employee address data
Project Type	SAP Gateway Service
Generation Strategy	SEGW

Data Model

Entity Type Name	ABAP Structure Name
PA0006	PA0006

Name	Key	Creatable	Updatable	Sortable	Nullable	Filterable	Label	ABAP Field Name	Data Element
aedtm		X	X	X		X	Changed On	AEDTM	AEDAT
histo		X	X	X		X	Historical rec.	HISTO	HISTO
mandt		X	X	X		X	Client	MANDT	MANDT
pernr	X	X	X	X		X	Personnel no.	PERNR	PERSNO
subty		X	X	X		X	Subtype	SUBTY	SUBTY
uname		X	X	X		X	Changed by	UNAME	AENAM
begda		X	X	X	X	X	Start Date	BEDGA	BEGDA
endda		X	X	X	X	X	End Date	ENDDA	ENDDA
stras		X	X	X	X	X	Street/House	STRAS	PAD_STRAS
ort01		X	X	X	X	X	City	ORT01	PAD_ORT01
pstlz		X	X	X	X	X	P.code/city	PSTLZ	PSTLZ_HR
land1		X	X	X	X	X	Country	LAND1	LAND1
telnr		X	X	X	X	X	Telephone No.	TELNR	TELNR
state		X	X	X	X	X	Region	STATE	REGIO

Entity Sets Name	Entity Type Name	Creatable	Updatable	Deletable	Pagable	Addressable	Searchable	Subscribable	Requires Filter
PA0006Set	PA0006	X	X	X		X			

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Service Implementation

Create

The READ_ENTRY_DATA method of the IO_DATA_PROVIDER interface is used to ascertain the input from the http request. The entry included in the http request is added to PA0006 using an INSERT INTO statement so that a new record is created.

Retrieve

There are two methods used to retrieve data from PA0006.

GetEntity is used to retrieve one entry from the database: the current address for a given employee. After retrieving an employee number from the http request, a SELECT statement retrieves all entries from PA0006 for that employee and places them in an internal table. The internal table is sorted by end date in descending order, so that the entry with the longest validity period is the first entry in the table. This is the entry that is returned to the user.

GetEntitySet is used to retrieve multiple entries from the database. The user must use the correct field names for the field they wish to query, as the filter string is used directly in the ABAP code. This adds additional functionality, allowing the user to filter by fields other than employee number, and to filter with relational operators other than equal to. The filter string for GetEntitySet by employee number is as follows: $filter=pernr eq '00001312'

Update

The READ_ENTRY_DATA method of the IO_DATA_PROVIDER interface is used to ascertain the input from the http request. The entry included in the http request is added to PA0006 using an UPDATE statement, so an existing entry is edited, rather than a new entry being created.

Delete

Human Resource entries are not deleted: they are delimited. Therefore, the Delete method has been redefined to enable specific entries to be delimited – where the end date is changed from a date sometime in the future to sometime in the past, meaning the validity period has ended.

Runtime Artefacts

Name	Generated Artefact Type
Z_TESTING_LB_MDL	Registered Model
Z_TESTING_LB_SRV	Registered Service
ZCL_Z_TESTING_LB_DPC	Data Provider Base Class
ZCL_Z_TESTING_LB_DPC_EXT	Data Provider Extension Class
ZCL_Z_TESTING_LB_MPC	Model Provider Base Class
ZCL_Z_TESTING_LB_MPC_EXT	Model Provider Extension Class