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Tejas Chouhan
July 11, 2014   3 minute read

Getting Data from 2 ERP systems using Multi Origin

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Take a scenario where you need to create a service where we need to fetch data from multiple backend system.

We will just see the high level design for fulfilling this requirement :

Prerequisite :

1. Gateway System is connected to all the back end system from which the data is to be fetched.

2. System alias for all the back end system is maintained

3. Parallelization node is maintained for better performance : Open the SAP Reference IMG in transaction `SPRO` and navigate to SAP NetWeaver Gateway OData Channel Administration General Settings Define Parallelization for Multiple Origin Composition .

Say :

GWS : Gateway System
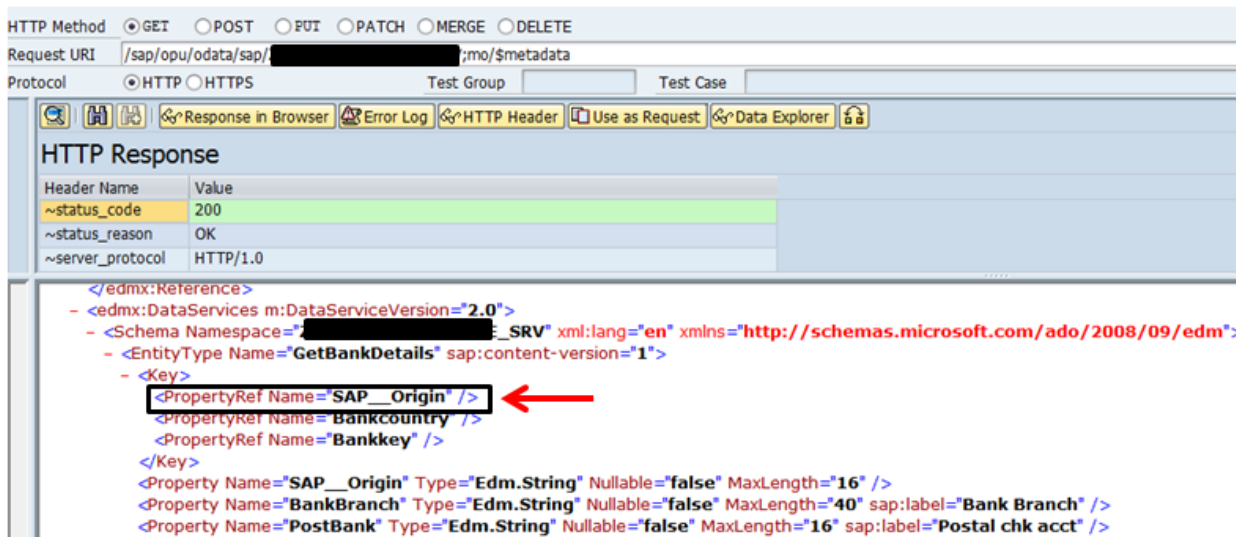
SAP_ERP1 : Backend system alias 1

SAP_ERP 2 : Backend system alias 2

- To define a service with multiorigin, we use **;mo** with the service name . For eg : **sap/opu/odata/sap/ZSERVICE;*mo*/$metadata**
- With the addition of ;mo, a new key property "SAP__Origin" is added in the response
- SAP_Origin will specify the system alias to be used to get the data from different ERP systems.

Creation of Service :

1. First we need to create a Gateway service using RFC or Structure.
2. For using RFC we make sure that same RFC is present in all the ERP systems, with Import and Export parameters and the same Structure should be available in all the ERP systems, with the ABAP fields being the same.
3. Create a GW project on all the backend system with same name : say ZSERVICE
4. Once the service is created, add one of the service using one of the system alias say SAP_ERP1
5. You dont need to add all the service as the names are same. Only one should do.
6. Now you need to add all the system alias in /IWFND/MAINT_SERVICE for the ZSERVICE
7. SAP_ERP1, SAP_ERP2, SAP_ERP3....etc

Execution from Gateway Client alternatively : *Gateway client (/iwfnd/gw_client) :*

You can execute GET, PUT, POST operations to read, update , create data.

Get_Entity can be used as :

- /sap/opu/odata/sap/ZTEST_SRV;mo/GetBankDetailsSet(SAP_Origin='ECC1',Bankcountry='',Bankkey='0001')

Get_EntitySet can be used as :

- /sap/opu/odata/sap/ZTEST_SRV;mo/GetBankDetailsSet?$filter=SAP_Origin eq 'SAP_ERP1' and Bankkey eq '0001' and Bankcountry eq 'Country'
- /sap/opu/odata/sap/ZTEST_SRV;mo/GetBankDetailsSet?$filter=SAP_Origin eq 'SAP_ERP2' and Bankkey eq '0004' and Bankcountry eq 'Country'

POST :

/sap/opu/odata/sap/ZTEST_SRV;mo/CreateBankNo

XML :

```xml
<?xml version="1.0" encoding="utf-8"?>
<entry xml:base="http://mytestdomain.com/sap/opu/odata/sap/ZSERVICE_SRV/" xmlns="http://www.w3.org/2005/Atom"
xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
<category term="ZSERVICE_SRV/CreateBankNo" scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"/>
<content type="application/xml">
<m:properties>
<d:SAP__Origin>SAP_ERP1</d:SAP__Origin>
<d:BankData>Test</d:BankData>
<d:BankArea>TestArea</d:BankArea>
<d:BankCode>00001</d:BankCode>
</m:properties>
</content>
</entry>
```

Let me know if this article is useful for custom Fiori like application and to get the details from different systems. 🙂 :

Thanks. Appreciate your responses 🙂

Cheers!!

Tejas

Alert Moderator

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Former Member

Hi Teja ,

  Nice Document .. keep it up .

I have the same scenario .Followed the   above concept but getting error . Please do needful .

URL : /sap/opu/odata/sap/ZXXX_TEST_SRV;mo/Add_MatnrSet?$filter=SAP__Origin eq 'LOCAL' and IWerks eq 'XX01'

Error :

<message xml:lang="**en**">Internal error occurred, contact your system administrator.</message

Thanks in advance

Spandana

Like (0)

Tejas Chouhan | Post author

Hi Spandana,

Please confirm below points :

1. Your architecture of the landscape is Embedded or Central Hub (GW and Backend in same system or separate)

2. If Gw and backend is in different system and LOCAL is the system alias of your gateway system ? I guess you are trying here to get the data from your gw system. Where the data won't exist.

Scenario above explains getting data from 2 backend systems, using a gateway system.

Regards,

Tejas

Like (0)

Former Member

September 15, 2014 at 2:40 pm

Hi Teja,

SAP GW and SAP Backend are two different systems and i have 2 system alias like KLD_400 local (another RFC connection) .

Like (0)

Tejas Chouhan | Post author

September 15, 2014 at 6:48 pm

Spandana,

If Local is system alias for your gw system, you cant get any data. You have to give KLD_400.

Regards,

Tejas

Like (0)

Former Member

Hi Teja,

Really nice blog, it just solves my problem 🙂

Like (0)

Tejas Chouhan | Post author

Great Ying ZHOU 🙂

Regards,

Tejas

Like (0)

Former Member

Hi Tejas, I would like to know if I can use this on a SAP standard Fiori app, i.e. we don't want to do any Z-development. We also don't need to access multiple back-ends at the same time, only one at a time. But we want it to access the correct back-end depending on which tile was pressed. (Using authorizations

works great if each employee must have access to one back-end only, but in our case we want one employee to be able to access each back-end according to his choice at the time)

Like (0)

Tejas Chouhan | Post author

December 1, 2014 at 9:45 am

HI Duncan Aird

Ideally it should work, Just say : you have 1 Gateway system and 3 backend system and 3 different apps.

When user id : user01 logs in to launchpad and finds 3 applications.

when he goes to 1st application, it should get data from 1st backend and respectively.

You just have to enable Trusted RFC connection between gateway system and 3 ECC system.

1st app -> System alias : SAP_ECC1

2nd app -> System alias : SAP ECC2

3rd app -> System alias : SAP ECC3

In transaction : /iwfnd/maint_Service, you have to configure 1st app service's system alias as SAP_ECC1, then it will show you the data from 1st backend.

Role will be same for all the 3 apps. Only system alias will change.

This will work. 🙂

Regards,

Tejas

Like (0)

Deva L

Hi Duncan,

I have the same requirement. Were you able to achieve this for standard apps?. Depending on the tile press, the user should navigate to the corresponding client.

thanks,

Dev

Like (0)

Michael Appleby

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Thanks, Mike (Moderator)

SAP Technology RIG

Like (0)

Former Member

February 2, 2015 at 7:40 am

Hi Tejas,

Its very useful information. Thank you for sharing with us. I am also working on MOC support. Get_entity and Get_entityset are working fine with MOC. But Create_entity method is not working with MOC. It is giving an error message like "Inline component is not defined or not allowed (HTTP PUT)". But when I remove ";mo" string from service URL, I am able to create the entity. Could you please help me in this??

Thank You

Seshu

Like (0)

Tejas Chouhan | Post author

February 6, 2015 at 5:57 am

Are you creating "create service" in both systems ?

Regards,

tejas

Like (0)

Former Member

February 9, 2015 at 12:08 pm

Yes, We are implementing create service in both systems.

Regards,
Seshu

Former Member

August 13, 2015 at 7:01 am

Dear Tejas Chouhan ,

i am new to ODATA.I created ODATA in development server of SAP Net weaver Gateway Hub system and accessing RFC Remotley from other sap back end system. now i have to deploy my ODATA service to Quality server of SAP Net weaver Gateway Hub system.how can i register my service in Quality server.As i registered in developement with my developement server details of Net weaver Gateway Hub system.

so kindly look in to the same and revet me the same.

thanks in advance.

Former Member

July 26, 2016 at 12:29 pm

Lets say i have to create a deep entityset and i have enhanced the dpc_ext with an rfc then how do i need to proceed.

Michael Appleby

July 26, 2016 at 6:05 pm

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Thanks, Mike (Moderator)

SAP Technology RIG

Like (0)

Matías Denker

December 26, 2017 at 2:08 pm

Is it correct to say that another implied prerequisite of this solution is that all systems should have gateway activated?, that is, there should be a gateway hub, but also every backend should have installed and active it's own gateway. This solution does not appear to work when hub development is used, and only a gateway is active in the hub and it is connected to backends only thru RFCs, right? Thanks.

Like (0)

Tejas Chouhan | Post author

December 27, 2017 at 11:47 am

Hi Matias,

This can be the case when there are multiple backends connecting to 1 GW system, and the services which are developed in the backends are registered in the Gateway, and GW is connected to backend via rfc.

Regards,
Tejas

Former Member

Hi Tejas,

How can we add the SAP_ORIGIN parameter for standard apps?

I have Approve PR and Approve PO apps on the gateway with 2 system aliases.

When the user tries to open the app from the Launchpad, they get an error for authorization for one of the backend systems.

I have configured roles for one of the system alias and user with that role only can access from that system.

But the other system has no role and default system.

I understand the SAP ORIGIN parameter can be added for custom services. I do not find any option for standard services.

Also,is there a way to access the Fiori Launchpad URL only for a specific backend?

Alexander K

March 2, 2018 at 5:02 am

Hello Tejas.

Can i get sap_origin without adding ";mo" to odata URL?

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