

# My UI5 debugging tips and experience collection – how to resolve UI5 issues through debugging by yourself | SAP Blogs

Thursday, April 19, 2018 6:09 PM

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April 30, 2016 | 7,407 Views |



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# Updated on 2017-10-13 after I am working on Cloud for Customer for three months

- [One possible cause that embedded component fails to display in UI](#)
- [Regarding C4C UI refresh logic based on response from backend](#)
- [The logic how the field list under Attributes folder is populated](#)
- [Ruby Script in C4C Oberon View](#)
- [A real example of promise usage in Cloud for customer framework](#)

Three years ago I wrote a blog [Six kinds of debugging tips to find the source code where the message is raised](#) in ABAP forum, trying to summarize my ABAP debugging experience by using a concrete example.

So far I have been working on Fiori development in SAP for 1.5 years. My belief as always is that a good developer should have the ability to resolve complex issue / bug by himself using debugging. Debugging can not only help to resolve issue but also enable developer to gain a better understanding on how UI5 framework runs. So I would like to try to summarize my JavaScript debugging skills and experience in this blog.

## Chrome development tool

All the blogs mentioned here are written based on Chrome development tool. I can hardly imagine my life without it. It is so necessary to know and master how this tool can aid we Fiori developers to debug code swiftly and efficiently. I have listed all the tips how I leverage this tool in my daily work in this blog: [Chrome Development Tool tips used in my daily work](#).

## UI5 inspector



[UI5 Inspector](#) 0.9.2

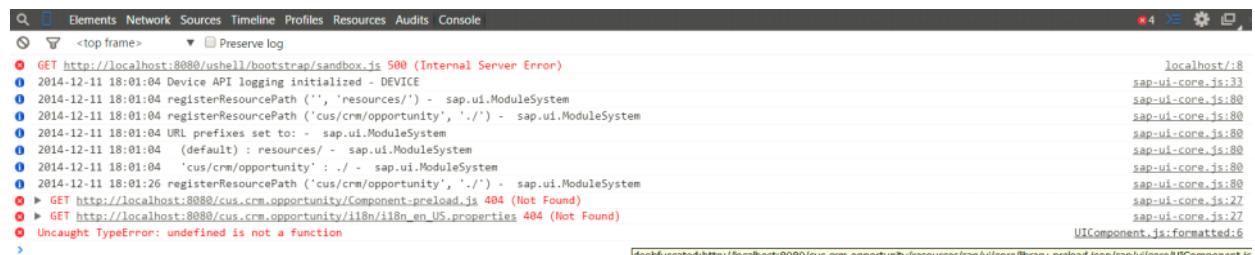
With the UI5 Inspector, you can easily debug and support your OpenUI5 or SAPUI5-based apps.

UI5 inspector is one of my favorite Chrome extension I use every day. See how to install it from this blog: [An useful Chrome extension – UI5 Inspector](#).

Deal with “blank screen issue”

In Fiori world, you may frequently meet with “blank screen” issue after you click something in Fiori UI. For example, you click some UI field in application A to navigate to application B, however nothing is displayed, you can only see a blank screen. Most of the time it is because there is something wrong in JavaScript executing. When JavaScript error occurs, the page stops to render, so you see nothing.

Normally you could find corresponding JavaScript error displayed in console. The source code location of error reported in console mostly comes from the framework library, however according to my experience, 90% of the issues are not caused by framework, but by application side. The application code, either SAP standard or customer code, has generated some wrong output or perform incorrect operations which finally makes framework cease to work.



The screenshot shows the Chrome DevTools Network tab. It lists several network requests and their responses. At the top, it says 'localhost:8080' and 'sap-ui-core.js:27'. Below that, it shows a list of requests:

- GET http://localhost:8080/ushell/bootstrap/sandbox.js 500 (Internal Server Error)
- 2014-12-11 18:01:04 Device API logging initialized - DEVICE
- 2014-12-11 18:01:04 registerResourcePath ('', 'resources') - sap.ui.ModuleSystem
- 2014-12-11 18:01:04 registerResourcePath ('cus/crm/opportunity', './') - sap.ui.ModuleSystem
- 2014-12-11 18:01:04 URL prefixed set to: - sap.ui.ModuleSystem
- 2014-12-11 18:01:04 (default) : resources - sap.ui.ModuleSystem
- 2014-12-11 18:01:04 'cus/crm/opportunity': ./ - sap.ui.ModuleSystem
- 2014-12-11 18:01:26 registerResourcePath ('cus/crm/opportunity', './') - sap.ui.ModuleSystem
- GET http://localhost:8080/cus.crm.opportunity/Component-preload.js 404 (Not Found)
- GET http://localhost:8080/cus.crm.opportunity/I18n/i18n\_en\_US.properties 404 (Not Found)
- Uncaught TypeError: undefined is not a function

At the bottom right, it says 'deobfuscated: http://localhost:8080/cus.crm.opportunity/resources/sap/ui/core/library-preload.json/sap/ui/core/UIComponent.js'.

So the essential thing is to find out the exact line of SAP application code or your own enhancement which causes the trouble, so you can report incident to SAP application or fix your own code. There is an example in this blog [My small experience about how to find the exact line position which causes “undefined is not a function” error](#) to demonstrate the trouble shooting tip.

See this blog [How to quickly locate the code error in application which causes UI stop to load](#) for another example.

## UI5 field formatter

In Fiori UI the field formatter is widely used in XML view.

```
<Text id="salesorganization_Text"
      text="{parts: [{path : 'json>/SalesOrganizationDescription'}, {path : 'json>/SalesOrganization'}],
            formatter : 'cus.crm.opportunity.util.Formatter.formatSalesOrganization')}"></Text>
```

The frequently asked questions accordingly are:

- why my field formatter is not called at all?
- why I have specified formatter, and I can also see response is back from backend in Chrome development tool, why still finally I see empty UI field?

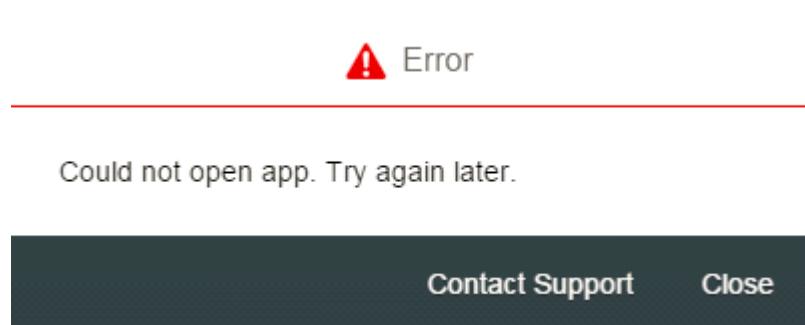
You can find answer to those questions as long as you understand how

formatter works under the hood. You can read this blog [Why my formatter does not work? A trouble shooting example to know how it works](#) to know more.

Even if you don't use any formatter, it is still useful if you understand the logic of data binding. See the explanation of data binding logic I learned via debugging from this blog [How to trouble shoot field binding issue](#).

## Negative cache

"Error: found in negative cache" – this error message found in console is always accompanied with the error dialog below.



If you know clearly about its meaning, you can then avoid it. See [Something about negative cache error](#) for detail.

## Control registration and deregistration

Junior Fiori developers define control in XML view, bind control to a given model field. In the runtime the field displays value contained in model field correctly. That's all. They know nothing about why this data binding works as expected. They know nothing about the life-cycle management of control done by UI5 framework. As a result when tricky issues emerge, they don't know how to proceed. They may complain there is no documentation to discuss about this topic.

Now, you can research this stuff by yourself via debugging. See this blog [How to monitor the control registration and deregistration](#) which contains my approach to study control life-cycle management by debugging framework code.

Another related blog: [How to find the location where control id is created in the runtime](#).

How to dynamically change UI behavior via debugging  
As a SAP developer, during my incident support life, usually I have to debug directly in customer system since the reported issue could not be reproduced in our internal system. Sometimes I find suspicious code which causes the issue, I would like to verify such as "If I chance the source code XXXX to code YYYY, the issue may be resolved". Of course I could not directly change UI code in customer system, however thanks to Chrome development tool, I can change the code loaded in Chrome development tool temporarily to finish my verification.

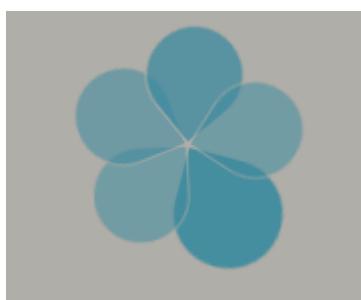
For example, I have a two DatePicker field with formatOptions set as style: long.

form:fields	
caui:DatePicker	
id	fd
value	{path: 'vm>/FromDate', type:'sap.ui.model.type.Date', formatOptions: { style: 'long'}}
change	onFromDateChanged
DateTimelInput	
	end date time fields
form:FormElement	
id	endDateFormElement
form:label	
form:fields	
caui:DatePicker	
id	td
value	{path: 'vm>/ToDate', type:'sap.ui.model.type.Date', formatOptions: { style: 'long'}}
change	onToDateChanged

I need to change it to “style: medium” for verification purpose in the customer system. See this blog [How to dynamically change the formatOption of control in the runtime via debugging](#) for detail.

## Fiori flower animation

As a Fiori developer or user you probably see this animation every day.



Have you ever thought about how it is implemented? You can read this blog [Fiori Busy Dialog – when is it opened and closed](#) to know how I find answer by debugging.

## Fiori Icon logic

When I write the following code for the first time, I am curious about how the string “sap-icon://add” can finally be converted to a “+” icon in UI. If you have the same curiosity as me, see this blog [Fiori Icon logic](#).

Find out the origin of suspicious HTTP roundtrips

This is a real question asked by one Australia customer by incident. Customer challenges SAP that why there are always three HTTP read roundtrips every time a given appointment is successfully saved.

The screenshot shows a browser developer tools Network tab with a red arrow pointing to the 'Batch' entry in the list. The text 'this is the expected batch operation to do appointment update' is overlaid in red. Another red arrow points to the three subsequent entries, with the text 'these three read operations are not expected. Where do they come from ???' overlaid in red.

Name	Status	Type	Initiator	Size	Time	Timeline
Batch	200	ETag	sap-published/300	441 B	1.68 s	
AppointmentGet/guid:0302654-CAB6-1E25-2B87-DPE5A4470EAD/sap-client=110	200	ETag	sap-published/300	876 B	250 ms	
AppointmentGet/guid:0302654-CAB6-1E25-2B87-DPE5A4470EAD/sap-client=110	200	ETag	sap-published/300	876 B	1.93 s	
AppointmentGet/guid:0302654-CAB6-1E25-2B87-DPE5A4470EAD/sap-client=110	200	ETag	sap-published/300	876 B	2.13 s	
AppointmentGet/guid:0302654-CAB6-1E25-2B87-DPE5A4470EAD/sap-client=110	200	ETag	sap-published/300	1.3 KB	3.12 s	

And this blog [why there are always multiple read operations after BATCH operation is done successfully](#) contains my reply to the customer

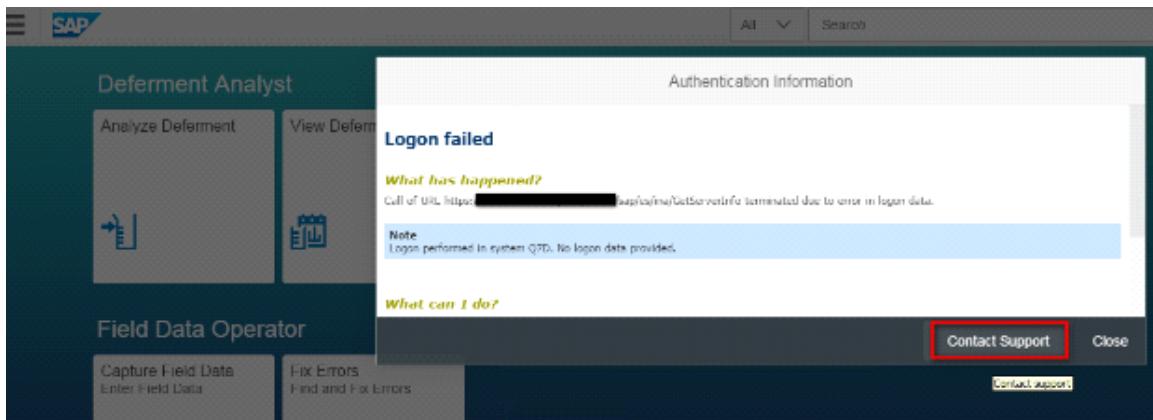
Date Picker

These blogs below are related to the UI5 control Date Picker. They are written after I have resolved some customer incidents with this control involved.

- [Regarding Edm.DateTime in Fiori application](#)
- [More details of DatePicker](#)
- [DateFormat in DatePicker control](#)
- [Language related topic for DatePicker](#)

Contact support button behavior

One day I was confused by the fact that I could see “Contact Support” in the error dialog in some system while in some other system the button is gone.



I cannot help figuring it out via debugging: [Contact Support button display logic in Fiori](#).

Two types of popup Dialog in Fiori

The appearance of popup dialog normally is a sign to end user that something wrong occurs ( error popup dialog ) or some operation has been done ( info / success dialog ). A normal use case is to find out exactly in which line the popup dialog is raised. See this blog [Two types of popup Dialog in Fiori](#).

Fiori globalization – amount display truncation logic

Have you even observed and asked yourself why 1880 USD in detail page is displayed as 2K USD in master list?

A screenshot of the SAP Fiori Opportunities application. On the left, a list of opportunities is shown: 'Opportunities (2364)', 'Fiori-opp12' (Sony World Koramangala, Closing Date: 27.09.2013, In process), and 'Tablets JMtest' (Sony World Koramangala, Closing Date: 29.09.2013, In process). The amounts '2K USD' and '10K USD' are displayed next to their respective rows. On the right, a detailed view for 'Fiori-opp12' is shown. The opportunity name is 'Fiori-opp12'. The amount '1.880,00' is displayed in a red-bordered box, with the note 'Exp. Sales Volume in USD' below it. Below the amount are icons for Info, Sales Area, Notes, Attachments, Participants, and Transaction. At the bottom, the opportunity type is listed as 'Opportunity Including Sales Methodology', with ID 3033, Start Date 17.07.2013, Closing Date 27.09.2013, and Status In process.

You are sure that it is framework which does this for you, but you don't know in which code the task is done. See this blog [An example of Fiori Globalization](#)

[implementation – the logic of amount value truncation](#) to find answer.

An example of Fiori Globalization implementation – the number format mystery

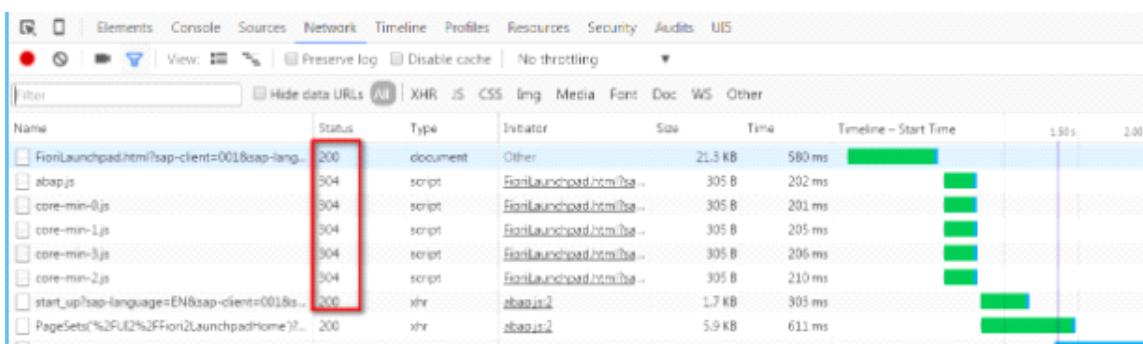
Can you explain the reason of this display format difference?

The image contains two screenshots of Fiori applications. Both screenshots show a user profile 'Fiori-opp12' and a field labeled 'Exp. Sales Volume in USD'. In the top screenshot, the value is displayed as '1.880,00'. In the bottom screenshot, the value is displayed as '1 880,00'. Both values are preceded by a red rectangular box.

If not, see this blog to find answer: [An example of Fiori Globalization implementation – the number format mystery.](#)

HTTP 200 OK and HTTP 304 Not Modified

This question is also asked by one of our customer. They have performance issue using Fiori solution and they are monitoring the resource loading performance in Chrome development tool and notice this behavior: for some resource, response is HTTP 200 while for others HTTP 304.

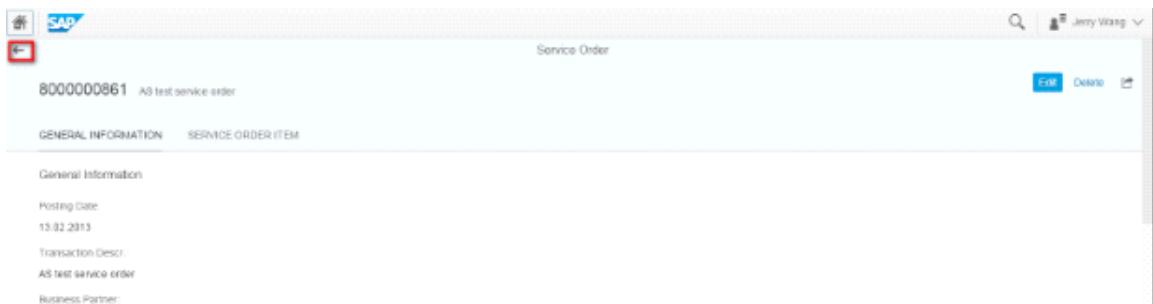


Although this blog [Do you understand the logic of HTTP 200 OK and HTTP 304 Not Modified](#) contains mostly the debugging in ABAP backend, it still contains the tips to observe HTTP request and response in Chrome development tool, which is essential part to answer customer's doubt.

An example of how to find back button implementation on Smart Template

## generated application

Suppose you want to debug the back button implementation, where you should set breakpoint? The application displayed below is automatically generated by Smart Template, so it is then not possible for you to check controller source code in application folder since the whole UI code is now owned by template. I use the approach to quickly identify the location of source code which handles click event, I call it “tentative search”: [An example of how to find back button implementation on Smart Template generated application.](#)



## FullScreenPageRoute in Component.js

In CRM Fiori application you can find the definition of fullScreenPageRoute in file Component.js. If you don't know why it is needed and how it works in the runtime, you can read this blog [An example to learn how fullScreenPageRoute works in full screen application via debugging.](#)

```
37     "components" : []
38   },/*
39   "config" : {
40     resourceBundle : "i18n/i18n.properties",
41     titleResource : "MASTER_TITLE",
42     icon : "sap-icon://fiori2/F0003",
43     favicon : "./resources/sap/ca/ui/themes/base/img/favicon/F0003_Manage_Tasks.ico",
44     "homeScreenIconPhone" : "./resources/sap/ca/ui/themes/base/img/launchicon/F0003_Manage_Tasks/57_iPhone/Desktop_Launch.png",
45     "homeScreenIconPhone@2" : "./resources/sap/ca/ui/themes/base/img/launchicon/F0003_Manage_Tasks/114_iPhone-Retina_Web_Clip",
46     "homeScreenIconTablet" : "./resources/sap/ca/ui/themes/base/img/launchicon/F0003_Manage_Tasks/72_iPad/Desktop_Launch.png",
47     "homeScreenIconTablet@2" : "./resources/sap/ca/ui/themes/base/img/launchicon/F0003_Manage_Tasks/144_iPad_Retina_Web_Clip",
48     "startupImage320x460" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-320x460.png",
49     "startupImage640x920" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-640x920.png",
50     "startupImage640x1096" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-640x1096.png",
51     "startupImage768x1004" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-768x1004.png",
52     "startupImage748x1024" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-748x1024.png",
53     "startupImage1536x2008" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-1536x2008.png",
54     "startupImage1496x2048" : "./resources/sap/ca/ui/themes/base/img/splashscreen/startup-image-1496x2048.png"
55   },
56   "viewPath" : cus.crm.mytasks.util.Util.isV2() ? "cus.crm.mytasks.view2" : "cus.crm.mytasks.view",
57   "fullScreenPageRoute": cus.crm.mytasks.util.Util.isV2() ? {
58     // fill the routes to your full screen pages in here.
59   }
60 }
```

The code editor shows the "Component.js" file. A red box highlights the line "fullScreenPageRoute": cus.crm.mytasks.util.Util.isV2() ? {".

## An easy way to find location where Unique id of UI5 control is created

Would you like to figure out how those IDs are generated? See this [blog](#) for answer.

Control Inspector Application Information

Search  Filter results(0)  Show Namespace  Show Attributes

```

<sap.ushell.ui.launchpad.AnchorItem id="__item0-anchorNavigationBar-id-1463226053360-47">
<sap.ushell.ui.launchpad.AnchorItem id="__item0-anchorNavigationBar-id-1463226053361-48">
  ▼<sap.m.Button id="__button5">
    <sap.ui.core.Icon id="__button5-img">
      ▼<sap.m.Button id="__button7">
        <sap.ui.core.Icon id="__button7-img">
          ▼<sap.ushell.ui.launchpad.DashboardGroupsContainer id="dashboardGroups">
            ...

```

More detail about Bootstrap script tag

Do you really know the detail of this tag? Can I change this id of this tag to other value like id="helloworld", does it still work? Find answer from this [blog](#).

```

<html>
  <head>
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta http-equiv='Content-Type' content='text/html; charset=UTF-8' />

    <script src="resources/sap-ui-core.js"
      id="sap-ui-bootstrap"
      data-sap-ui-libs="sap.ui.commons,sap.ui.table,sap.ui.ux3"
      data-sap-ui-theme="sap_bluecrystal">
    </script>

```

A small tip I learn from UI5 Diagnostics tool – a practice of AOP programming  
Have you even used this tool provided by UI5 activated via Ctrl+Alt+Shift+S? Have you even heard of AOP programming? Read this [blog](#) for more detail.

SAPUI5 Diagnostics - - Go

localhost:8090/2014-12-30-FioriODataTest/resources/sap/ui/d

**SAPUI5 Diagnostics**

Technical Information

JavaScript Trace

Control Tree

Debugging

Boot application with different UI5 version on next reload:  
Disabled (no custom reboot URL)

Class:  Add

Method:  placeAt Add breakpoint

sap.ui.commons.Button 1 / 204

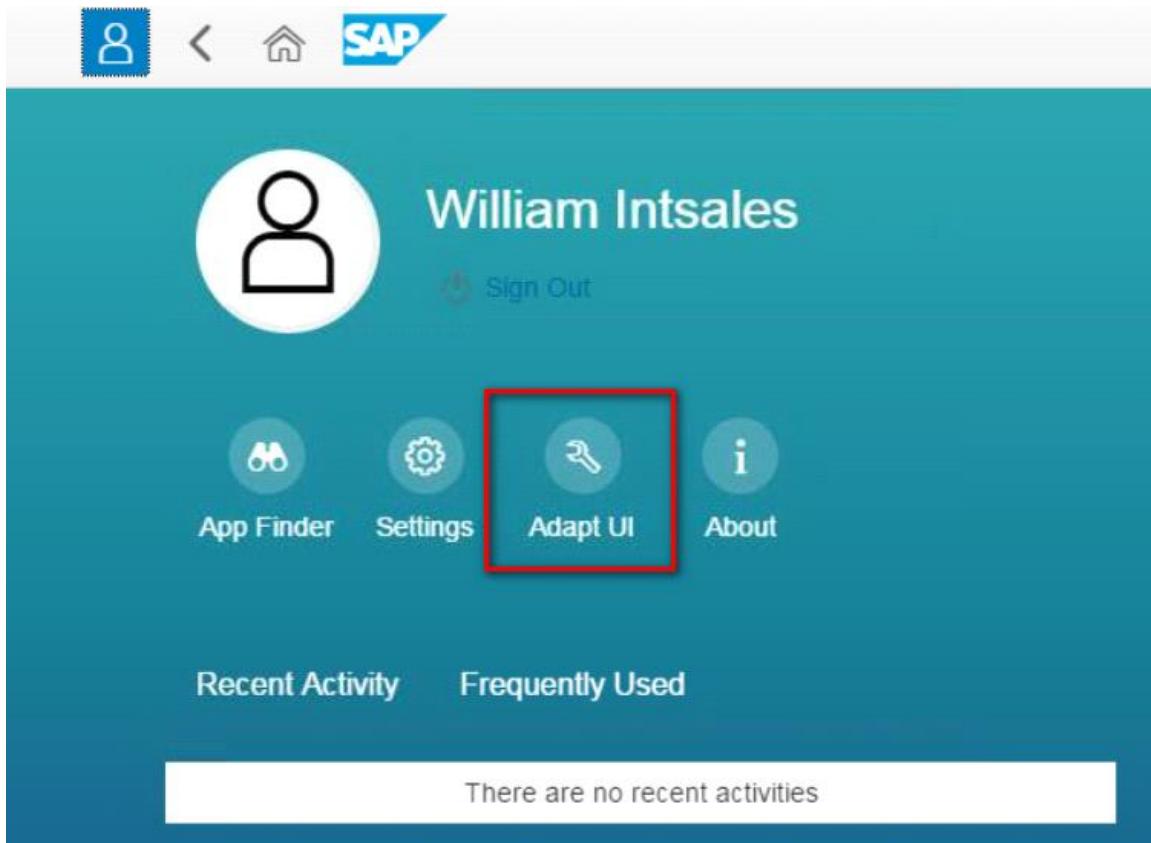
**Another reason of empty screen issue and how I analyze the issue**  
I have worked out one customer incident regarding empty screen issue of

cross application navigation. Previously my assumption is the empty screen issue is always caused by the JavaScript execution error somewhere. However this incident provides another kind of reason: the UI5 framework fails to find a matched route for target navigation. Learn more detail from this [blog](#).

## Why “Adapt UI” button is available in some system but missing in some other system

Compare the two screenshots below which are caught via the same user but in different system. Feel confused about this behavior? You can debug yourself to find out the root cause. See detail from this [blog](#).





## Open your SAP GUI transaction in Fiori launchpad

Would you like to directly open the traditional SAP GUI transaction in Fiori launchpad now? Sounds impossible? See this [blog](#) about how I find out the secret and see this [blog](#) for step by step guide.

## Why sometimes my OData request is cancelled automatically

Do you know the reason why sometimes your OData request is cancelled by UI5 framework automatically? If you would like to learn more about this cancellation logic, you can read my [blog](#) for detail.

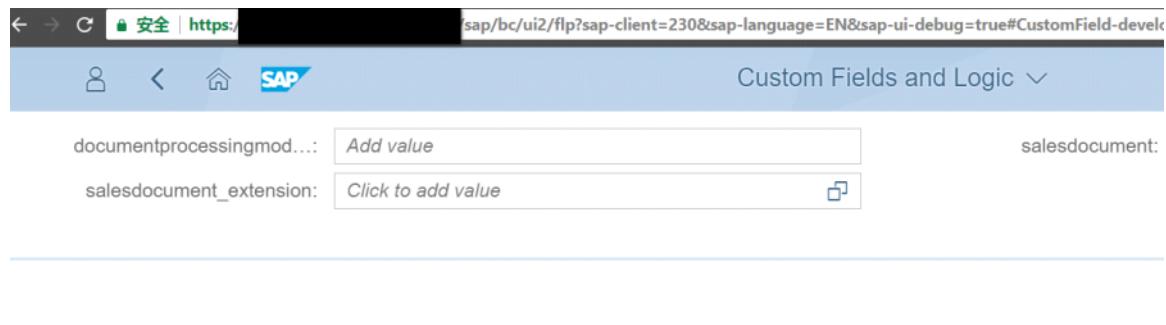
## Some of my other blogs regarding UI5

# debugging

[How to find UI element binding path which is not statically defined in XML view](#)

## How ABAP syntax highlight is implemented in “WebIDE” launched via browser

Would you like to know how ABAP syntax highlight is implemented in the browser? Try to debug to figure it out by yourself by following this [blog](#).



The screenshot shows a browser window with the SAP Fiori WebIDE interface. The URL in the address bar is `https://sap/bc/ui2/fip?sap-client=230&sap-language=EN&sap-ui-debug=true#CustomField-devel`. The page title is "Custom Fields and Logic". There are two input fields: "documentprocessingmod..." with a placeholder "Add value" and "salesdocument:" with a placeholder "Click to add value". Below these fields is a section titled "Draft Logic" containing ABAP code. The code is color-coded for syntax highlighting, with blue for keywords like DATA, CALL, FUNCTION, and EXPORTING, and pink for strings like ".png", "SAPGUI\_PROGRESS\_INDICATOR", and "COLOR COL\_NEGATIVE". The code also includes line numbers from 67 to 87.

```
*Draft Logic
67 DATA(lv_name) = lv_folder && picture_name && lv_index && '.png'.
68 DATA(lv_text) = 'Downloading file: ' && lv_name.
69 DATA(lv_process) = lv_index * 100.
70 DATA(lv_percent) = lv_process / lv_total.
71 CALL FUNCTION 'SAPGUI_PROGRESS_INDICATOR'
72 | EXPORTING
73 |   percentage = lv_index * 100 / lv_total
74 |   text      = lv_text.
75
76 DATA(binary) = zcl_crm_cm_tool->get_data_by_url( <pic> ).  

77
78 zcl_crm_cm_tool->download_locally( lv_local_path = lv_name lv_binary = binary ).  

79 lv_total_size = lv_total_size + xstrlen( binary ).  

80 ADD 1 TO lv_index.  

81 ENDOLOOP.  

82
83 WRITE: / 'totally ', lv_total, ' pictures downloaded successfully!' COLOR COL_NEGATIVE.  

84
85 DATA: ls_note TYPE crmd_prod_note.  

86
87 CALL FUNCTION 'GUID_CREATE'
```

## How does UI5 AutoGrowing list work

When you scroll down the table in S/4HANA Fiori application built by Smart Template,

The screenshot shows the SAP Fiori Product Master application. At the top, there's a search bar with dropdowns for 'Editing Status' (All), 'Product' (empty), and 'Product Description' (empty). Below the search are filters for 'GTIN', 'Product Group', and 'Product Category'. On the right, there are buttons for 'Adapt Filters (1)' and 'Go'. The main area is titled 'Products (140)'. It has a table with columns: Image, Description/ID, Group/Type, GTIN, Product Category, and Last Changed. Three items are listed:

- Spare Part - (Do Not Change) 11: Trading Materials (L001) / Trading Goods (HAWA), Product, 20.12.2017
- Auth Test Org 1710 18: Services (P001) / Services (SERV), Product, 12.12.2017
- Material for Sales Item 23: Trading Materials (L001) / Trading Goods (HAWA), 2050000000218, Product

A note at the bottom says: "the list will automatically grow: more data will be fetched from backend. Would you like to figure out how it works? See this [blog](#)".

The screenshot shows the Network tab in a browser developer tools window. The request URL is /sap/bc/ui2/fip?sap-client=219&sap-language=EN. The response body is a large JSON object representing the product list, which is mostly illegible due to its size.

# LAST BUT NOT THE LEAST – Tutorial how I do self-study on a given Fiori control and UI5 framework code behind

Normally a Fiori application consists of various controls provided by UI5 library. If you just want to use a certain control and make it work in your application, it is enough for you to just go through the control API document, play it around in UI5 demokit. But if you meet with issues with the control, or you would like to know how the control is manipulated by UI5 framework to

write a more robust and more efficient application, it is then inevitable that you need to dive into the UI5 framework source code.

Thus I write this [tutorial](#), using the more simple button control for example, to illustrate how to thoroughly understand this control, together with the involved framework code in an step-by-step way.

Another benefit of studying UI5 framework code is, since the code are written by JavaScript veterans, by being familiar with those code everyday, you can learn how to program JavaScript in a more robust, elegant, generic, and efficient way, to upgrade your JavaScript skills.

The building blocks of this tutorial:

[Part 1 UI5 module lazy load mechanism](#)

[Part 2 Control renderer](#)

[Part 3 Native html event VS UI5 semantic event](#)

[Part 4 control metadata](#)

[Part 5 control instance data](#)

[Part 6 control data binding](#)

[Part 7 Implementations for different binding mode: OneWay, TwoWay, OneTime](#)

[Part 8 Control ID](#)

[Part 9 Control internationalization support](#)

[Part 10 Button control in XML view](#)

[Part 11 Button control and its underlying DOM node](#)

*More to be added as long as I have resolved new incidents with debugging...*

Alert Moderator

[3 Replies](#)

## 3 Comments

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

1. [Srinivasan S May 26, 2016 at 11:05 am](#)

Great Blog!!!! Very Useful and saved lot a explore time.

like (0)

2. [Sergio Guerrero May 26, 2016 at 11:07 am](#)

one of the best blogs i have read – well done

like (0)

3. [Jeremy Good May 26, 2016 at 1:16 pm](#)

Jerry – excellent contributions to the community!

like (0)

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Visual Text

Paragraph

Inserted from <<https://blogs.sap.com/2016/04/30/my-ui5-debugging-tips-and-experience-collection-how-to-resolve-ui5-issues-through-debugging-by-yourself/>>

## How to check sapui5 version

Wednesday, April 18, 2018 8:58 AM

Vivek Kumar

June 27, 2017 at 2:38 am

Press Ctrl, Alt, Shift together and then press 'P'. You will get SAPUI5 version, Core version, JQuery version etc.

Like (1)

The screenshot shows a Fiori application interface with a navigation bar at the top. Below the navigation bar, there are several cards representing different roles or tasks. A central modal dialog box is open, titled "Technical Information Dialog". Inside the dialog, it displays the following information:

- SAPUI5-on-ABAP: 1.44.46 (built at {0})
- OpenUI5 Version: 1.44.42 (built at 14.08.2019 12:49:00)
  - User Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/83...
  - App URL: https://sapuxued.tcc.etn.com:1443/sap/bc/ui5/ui2/ushell/shells/abap/FioriLaunchpad.html#Sh...
- Use Debug Sou... :  Select specific modules

At the bottom of the dialog, there are three buttons: "Open Diagnostics", "Activate Support Assistant", and "Close".

<https://sapui5.hana.ondemand.com/versionoverview.html>

Version	Maintenance Status	End of Maintenance	SAP_UI version*	Front-end Server*
1.78 (2005)	Maintenance	Q1/2021	7.55	SAP FIORI FES 2020 FOR S/4HANA
1.77 (2004)	Out of maintenance		Cloud only	Cloud only
1.76 (2003)	Out of maintenance		Cloud only	Cloud only
1.75 (2002)	Out of maintenance		Cloud only	Cloud only
1.74 (2001)	Out of maintenance		Cloud only	Cloud only
1.73 (1912)	Out of maintenance		Cloud only	Cloud only
1.72 (1911)	Out of maintenance		Cloud only	Cloud only
1.71 (1910)	Maintenance	Long-term Maintenance, Q4/2027	7.54	SAP Fiori FES 6.0 (SAP Note 2775163)
1.70 (1909)	Out of maintenance		Cloud only	Cloud only
1.69 (1908)	Out of maintenance		Cloud only	Cloud only
1.68 (1907)	Out of maintenance		Cloud only	Cloud only
1.67 (1906)	Out of maintenance		Cloud only	Cloud only
1.66 (1905)	Out of maintenance		Cloud only	Cloud only
1.65 (1904)	Out of maintenance	Q1/2020	7.54	SAP Fiori FES 6.0 (SAP Note 2775163)
1.64 (1903)	Out of maintenance		Cloud only	Cloud only

## SAP Fiori LL11 – Consultants should know about OData troubleshooting | SAP Blogs

Wednesday, April 19, 2017 2:53 PM

<https://blogs.sap.com/2013/11/13/sap-fiori-ll11-consultants-should-know-about-odata-troubleshooting/>

# SAP Fiori LL11 – Consultants should know about OData troubleshooting

November 13, 2013 | 5,785 Views |



[Masayuki Sekihara](#)

SAP Fiori Lessons Learned 11  
Consultants should know about OData troubleshooting

### Background:

SAP Fiori apps are out of the solution but you face several issues because main functions are in backend ERP and each customer has different backend setup/configuration. OData is the communication channel to the backend servers via get/post/put method.

### Lessons Learned:

Understanding OData and backend function are must requirements for consultants.

- Application consultants should learn about OData technical and runtime behavior
- Technical consultants should learn about ERP application functions
- Both application consultants and technical consultants should work together

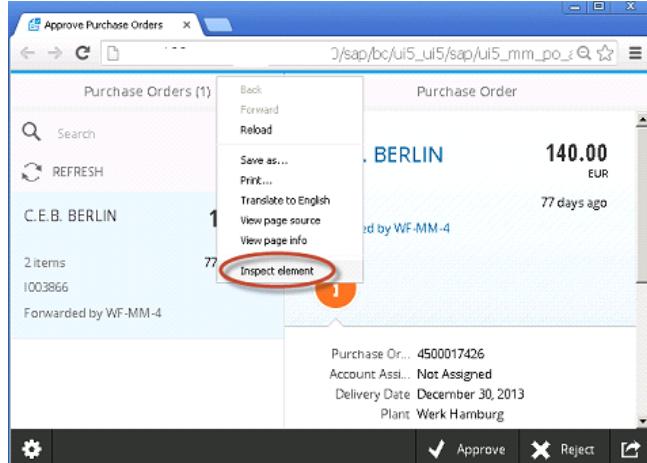
Consultants should know following steps.

#### Step 1. Identity the OData service call

1.1 Run the app

1.2 Inspect element

Right click -> Inspect element (Chrome), F12 (IE), then go to Network tab



Ignore the warning or error message in the Console tab at this point in time. Focus on OData troubleshooting.

1.3 Refresh the app or browser

#### 1.4 Find the last called OData URI

Scroll down to the bottom of inspect element and find the OData [/sap/opu/odata/sap/..](/sap/opu/odata/sap/) from bottom.

[http://<host>.<domain>:<port>/sap/opu/odata/sap/GBAPP\\_POAPPROVAL;mo/WorkflowTaskCollection\(SAP\\_\\_Origin='ONE\\_800',WorkitemID='000001104681'\)/HeaderDetails?\\$expand=ItemDetails,Notes,Attachments,ItemDetails/Limits](http://<host>.<domain>:<port>/sap/opu/odata/sap/GBAPP_POAPPROVAL;mo/WorkflowTaskCollection(SAP__Origin='ONE_800',WorkitemID='000001104681')/HeaderDetails?$expand=ItemDetails,Notes,Attachments,ItemDetails/Limits)

#### Step 2. Test OData in the Gateway client

##### 2.1 Copy & Paste the OData URI

Transaction: /IWFND/GW\_CLIENT. You should logon with the application user same as Fiori app logon.

##### 2.1 Check the OData response

If http response is not 200, you may have some connection setting issue.

If ttp response is 200 but OData service does not return application data, you should go Step.5 debug section.

#### Step 3. Check error log

##### 3.1 Transaction /IWFND/ERROR\_LOG

Line	Entr...	Date	Time	User	T100 Error ID	T10...	Error ...	ICF Node	B	Error Text
5	1	13.11.2013	10:25:11	BLACKM	/IWFND/OM_MGW033		1	odata	<input type="checkbox"/>	Fehler beim Parsen
4	1		10:18:21	MANAGER	/IWFND/OM_MGW033		2	odata	<input type="checkbox"/>	Fehler beim Parsen
3	1		09:27:14	BLACKM	/IWFND/OM_MGW033		2	odata	<input type="checkbox"/>	Fehler beim Parsen
2	1		07:23:21	BLACKM	/IWFND/OM_MGW033		1	odata	<input type="checkbox"/>	Error while parsing a
1	1		06:27:22	BLACKM	/IWFND/OM_MGW053		1	odata	<input type="checkbox"/>	Missing customizing;

Select the "Error Context"

Error Context

Ex...	Name	Value
..ERROR_CONTEXT	..ERROR_INFO	Missing customizing; contact your system administrator
..SERVICE_INFO	...NAMESPACE	/IWFND/
	...VERSION	0001
	...SERVICE_NAME	RMTSAMPLEFLIGHT
	...REQUEST_DIRECTION	Consumer to Gateway
	...AGENT	/IWFND/MGW_RMT

Call Stack helps you to set external break points.

S...	Event Type	Event	Program	Line...
2...	METHOD	FIND_SVC_DESTINATION_OLD	/IWFND/CL_MGW_DEST_FINDER=====CP	80
1...	METHOD	GET_MODEL	/IWFND/CL_MGW_MED_MDL_LOAD=====CP	70
1...	METHOD	/IWFND/IF_MED_MDL_LOAD~LOAD_STRUCTURAL_MODEL	/IWFND/CL_MGW_MED_MDL_LOAD=====CP	16
1...	METHOD	GET_EXTERNAL_MODEL	/IWFND/CL_MED_MDL_DB_ACCESS=====CP	16
1...	METHOD	GET_META_DATA_FOR_EXT_MODEL	/IWFND/CL_MED_MDL_DB_ACCESS=====CP	13
1...	METHOD	/IWFND/IF_MED_MDL_PERSIST RE~GET_META_DATA_MODEL	/IWFND/CL_MED_MDL_DB_ACCESS=====CP	46
1...	METHOD	CREATE_CLUSTERED_MODEL	/IWFND/CL_MED_MDL_PROVIDER=====CP	85
1...	METHOD	GET_META_MODELS	/IWFND/CL_MED_MDL_PROVIDER=====CP	80
1...	METHOD	GET_SHARED_META_MODELS	/IWFND/CL_MED_MDL_PROVIDER=====CP	10
1...	METHOD	GET_SERVICE_GROUP	/IWFND/CL_MED_MDL_PROVIDER=====CP	94
1...	METHOD	/IWFND/IF_MED_PROVIDER~GET_SERVICE_GROUP	/IWFND/CL_MED_MDL_PROVIDER=====CP	3
9	METHOD	GET_SERVICE_GROUP_METADATA	/IWFND/CL_TRANSACTION_HANDLER=CP	15

3.2 Transaction /IWFND/APPS\_LOG

SAP NetWeaver Gateway Application Logs

External ID of the Log				
	Nu...	Altern ID	GSDO Type	Operation
005056A2046C1EE3938488A02795B2F2	8			
Technical message	8			
/IWFND/MGW_RMT	1			
/IWFND/CL_MGW_DEST_FINDER=====CP	1			
FIND_SVC_DESTINATION_OLD	1			
000002	1			
Metadata access	2			
/IWFND/CL_MGW_MED_MDL_LOAD=====CP	2			
GET_MODEL	2			
000003	1			
000004	1			
OData Lib 1.0 Handler	4			
SAP Netweaver Gateway Logger	1			

T... Msg... Message Text  
2 Missing customizing; contact your system administrator

Reference: [Troubleshooting a SAP Netweaver Gateway Service](#)

Step 4. Find the Runtime Data Provider class

4.1 Transaction /IWFND/MAINT\_SERVICE

Activate and Maintain Services

Service Catalog

Type	Technical Service Name	Ver.	Service Description	Ext...
ZWCNT/EMPLOYEEETIMESHEET		1	Employee Timesheet Recording	EMF
ZWCNT/SG_ERPSELLS		1	Service Document for ERP SALES	ERP
BEP ZQBAPP_POAPPROVAL		1	SAP Purchase Order Approval (MM-PUR)	GBA
RFP 712ABP_PRREREQ461		1	S&P Purchase Requisition Approval (MM-PRR)	GBA

System Aliases

Add System Alias Remove System Alias Customizing Service Implementation

**Display Service**

Service Information	
Technical Service Name	GBAPP_POAPPROVAL
Service Version	1
Description	SAP Purchase Order Approval (MM-PUR)
External Service Name	GBAPP_POAPPROVAL
Namespace	
Data Provider Class	CL_GBAPP_APV_PO_RDP

4.2 Transaction SE24  
Open the Data Provider Class. Go to Property tab.

**Class Builder: Display Class CL\_GBAPP\_APV\_PO\_RDP**

Properties Interfaces Friends Attributes Methods Events Types AI

Superclass /IWBEP/CL\_MGW\_PUSH\_ABS\_DATA Modeled only

Description Runtime class for PO approval

Inst.Generation Public Final

General Data

Fixed point arithmetic Unicode checks active

Shared Memory-Enabled

Message Class

Program status

Category General Object Type

Package GBAPP\_APV\_PO

Forward declarations  
CL\_GBAPP\_APV\_PO\_MDP

4.3 Transaction SE80  
Open the package.

Object Name

- Class Library
  - Classes
    - CL\_GBAPP\_APV\_PO\_API
    - CL\_GBAPP\_APV\_PO\_MDP
    - CL\_GBAPP\_APV\_PO\_MDP\_EXAMPLE
    - CL\_GBAPP\_APV\_PO\_RDP
      - Superclasses
      - Attribute
      - Methods
        - Inherited Methods
        - Redefinitions
          - /IWBEP/IF\_MGW\_APPL\_SRV\_RUNTIME~EXECUTE\_ACTION
          - /IWBEP/IF\_MGW\_APPL\_SRV\_RUNTIME~GET\_ENTITYSET
          - /IWBEP/IF\_MGW\_APPL\_SRV\_RUNTIME~GET\_EXPANDED\_ENTITY
          - /IWBEP/IF\_MGW\_APPL\_SRV\_RUNTIME~GET\_STREAM

Class -> Runtime Data Provider Class -> Method -> Redefinitions  
The example OData URI has &expand option, so you should look at the method GET\_EXPANDED\_ENTITY.

HTTP Method	Base URL plus	Query String	XML Body	OData Operation	ABAP Method
GET	Nothing			Handled by the Gateway Framework	
GET	Entity Set Name	None or \$filter		QUERY	GET_ENTITYSET
GET	Entity Set Name	Key Predicate		READ	GET_ENTITY
PUT	Entity Set Name	Key Predicate	Yes	UPDATE	UPDATE_ENTITY
POST	Entity Set Name		Yes	CREATE	CREATE_ENTITY
DELETE	Entity Set Name	Key Predicate		DELETE	DELETE_ENTITY
GET/POST	Action Name	Variable parameter format		Custom Action	EXECUTE_ACTION

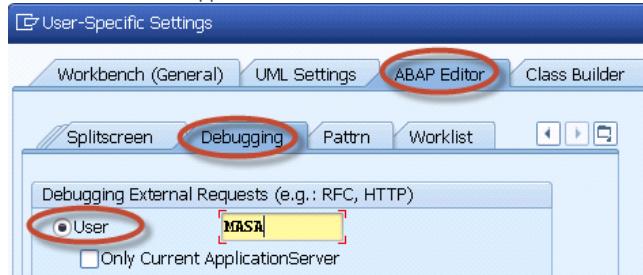
#### Step 5. Set External break points and debug

##### 5.1 Check the user

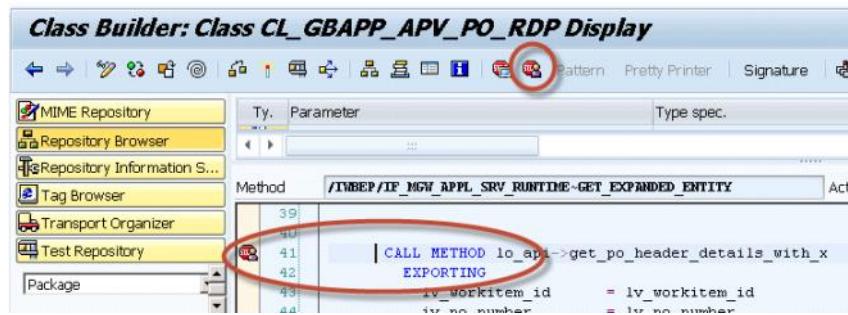
Go to Utilities -> Settings



Make sure the user is application user.



##### 5.2 Set external break points



##### 5.3 Debug

Test the OData URI from Gateway Client. You can now debug the code. Most of case, issue is related with ERP customizing or master data. Each customer has different customizing setting and master data.

Regards,  
Masa

SAP Rapid Innovation Group – RIG

Inserted from <<https://blogs.sap.com/2013/11/13/sap-fiori-f11-consultants-should-know-about-odata-troubleshooting/>>

# How to find installed SAPUI5 runtime version | SAP Blogs

Wednesday, April 18, 2018 9:00 AM

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# How to find installed SAPUI5 runtime

# version

June 26, 2017 | 6,363 Views |



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SAPUI5

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Introduction : Many times while building SAPUI5 applications a design time and run-time SAPUI5 version mismatch can cause application issues. This blog will help you check the version of SAPUI5 run-time.

Target Audience : Beginners and experts alike

Date : 27.06.2017

1. In Google Chrome (when an SAPUI5 App is running) :  
Open F12 Developer Tools -> Console -> Type sap.ui.version -> Hit enter -> View the SAPUI5 version displayed
2. In SAP ABAP Stack :Open the ABAP WAS URL [http://\[host\]:\[port\]/sap/public/bc/ui5\\_ui5/](http://[host]:[port]/sap/public/bc/ui5_ui5/) in your browser. This will display all the installed versions of the SAPUI5 library.

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1. [Vivek Kumar June 27, 2017 at 2:36 am](#)

Press Ctrl, Alt, Shift together and then press 'P'. You will get SAPUI5 version, Core version, JQuery version etc.

like (1)

2. [Sarjeet Singh June 27, 2017 at 4:11 am](#)

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# Debugging ui5 application

Thursday, November 30, 2017 3:55 PM



Debugging  
UI5



## Debugging UI5 application

### Step 1

Open Google Chrome browser in Incognito mode

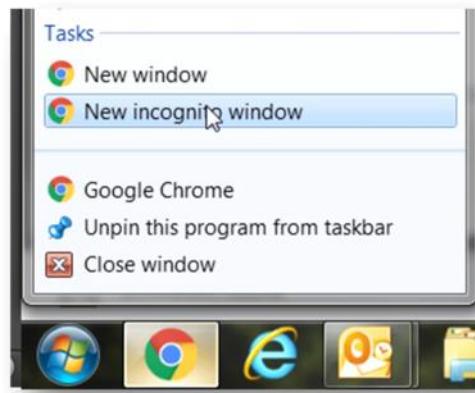


Figure 1 Incognito

Or we can open Incognito from an already opened browser window as shown below.

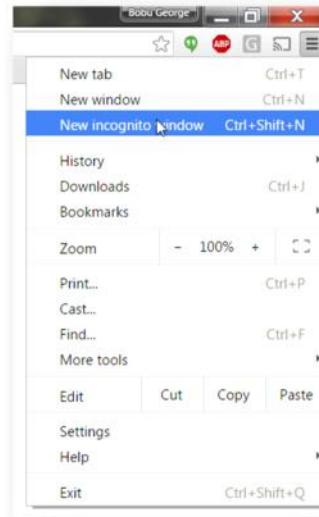


Figure 2 Incognito

### Step 2

Hit the application url in the browser

[http\(s\)://<gateway\\_server\\_address>:<gateway\\_port>/sap/bc/ui5\\_ui5/dol/ap\\_ui5/index.html](http(s)://<gateway_server_address>:<gateway_port>/sap/bc/ui5_ui5/dol/ap_ui5/index.html)

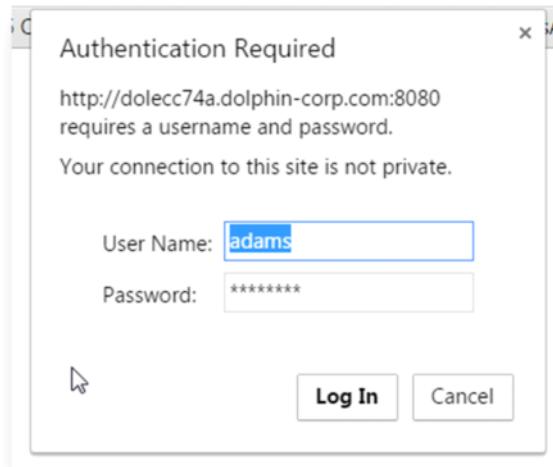


Figure 3 Login to gateway server

It is very important to have this login prompt. This will make sure that we are indeed taking the correct user in consideration for the testing. If the login prompt is not appearing, please close all the browser sessions that are open and restart from Step 1.

## Debugging UI5 application

### Step 3

Enable browser debugging

Right click anywhere on the screen, and bring up the menu.

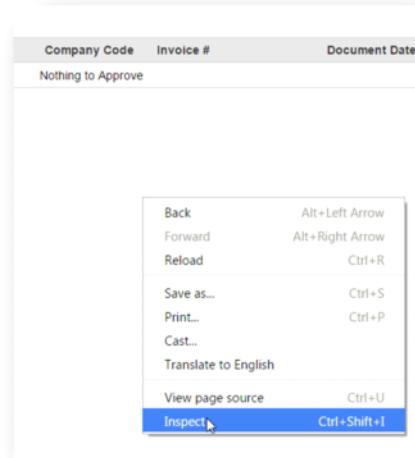


Figure 4 Opening the developer tools

You can also bring the debugging sessions by using the short cut key **CTRL + SHIFT + I** or as shown below.

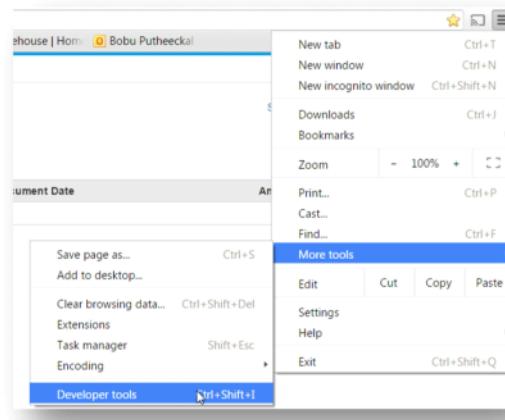


Figure 5 Opening the developer tools



## Debugging UI5 application

You will see the screen as shown below

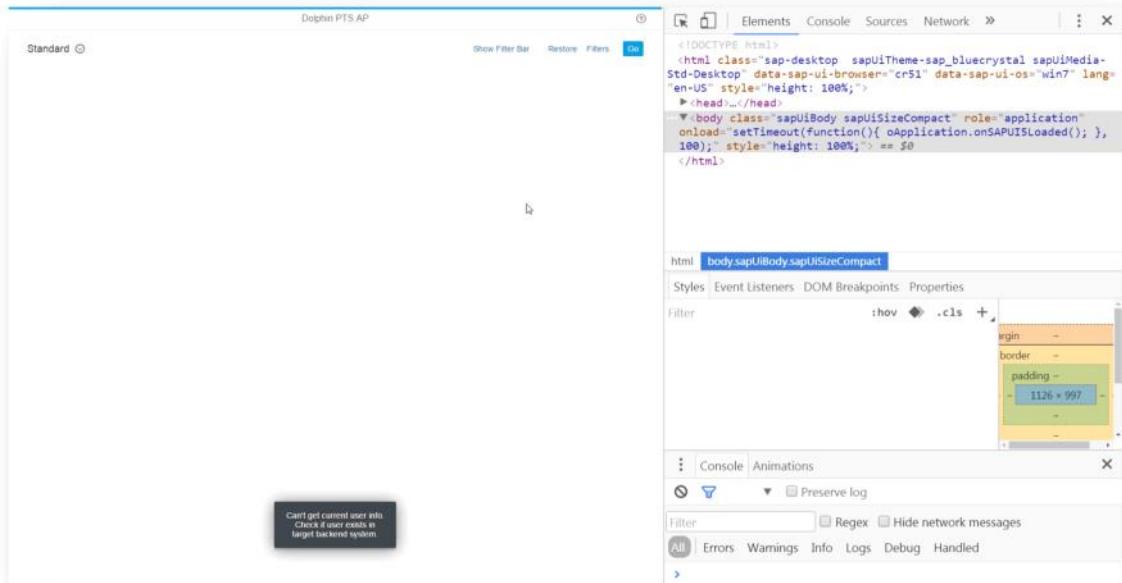


Figure 6 Developer options opened



## Debugging UI5 application

Open the **Network** tab

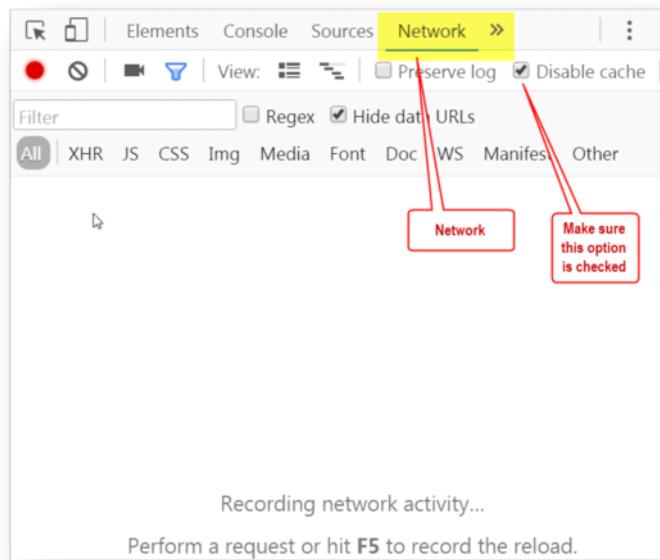


Figure 7 Network tab in Developer options

Use **Filter On** and give a filter value **odata**.

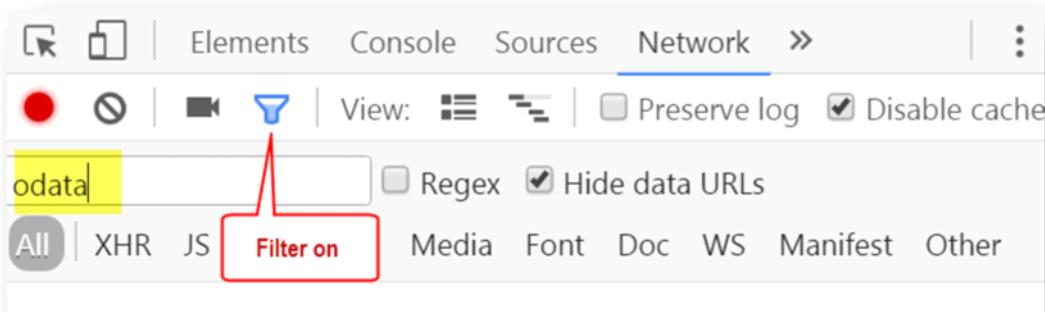


Figure 8 Filtering network request



## Debugging UI5 application

Once the above settings are in place, refresh the browser to start capturing the network requests. You should be seeing something like the below. There will be many requests to the server from the browser, but we are mainly interested in odata related requests, that why we put the filter on.

Name	Method	Time	Timeline – Start Time
\$metadata	GET	1.07 s	[Timeline Bar]
UserListSet?\$filter=Xuser%20eq...	GET	720 ...	[Timeline Bar]
StatusSet	GET	745 ...	[Timeline Bar]
Tracks?\$skip=0&\$top=50&\$filte...	GET	764 ...	[Timeline Bar]

## Debugging UI5 application

### Step 4

#### Collecting and sending data

In the below example, we see all the odata requests executed successfully (Status code: 200), but may not have brought the desired results.

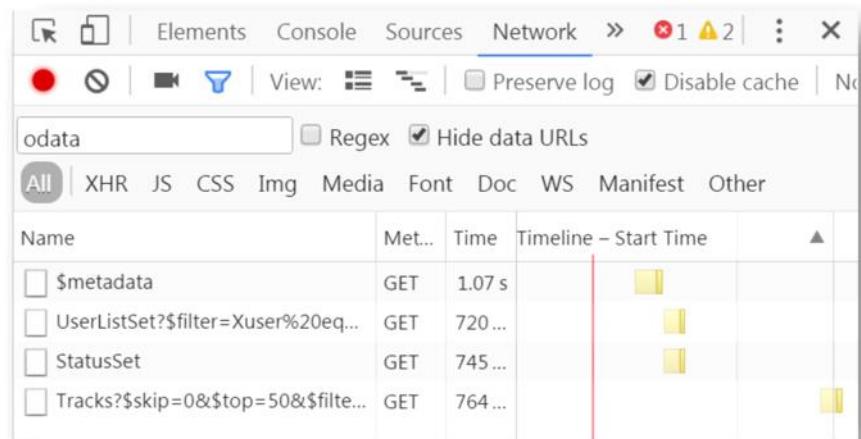


Figure 9 Odata requests status 200 ok

In the below example, we see some requests executed unsuccessfully (Status code: 500).

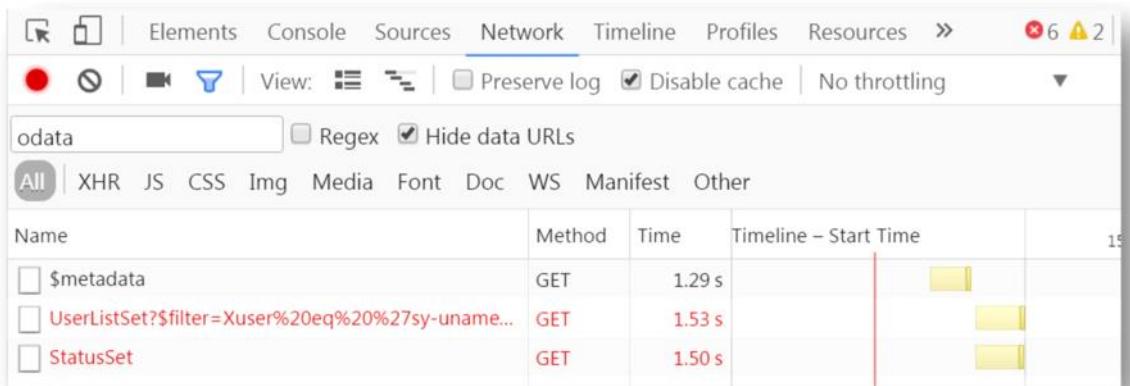


Figure 10 Odata requests ended in status 500 error

## Debugging UI5 application

In either of the cases, click on each row to get the **Header**, **Preview** and **Response** information.

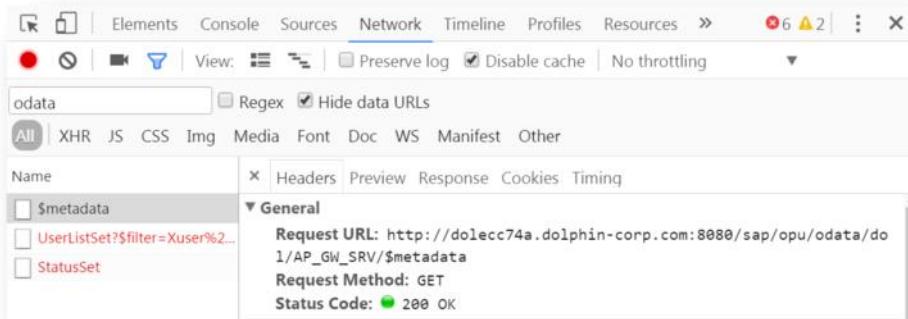


Figure 11 Header information

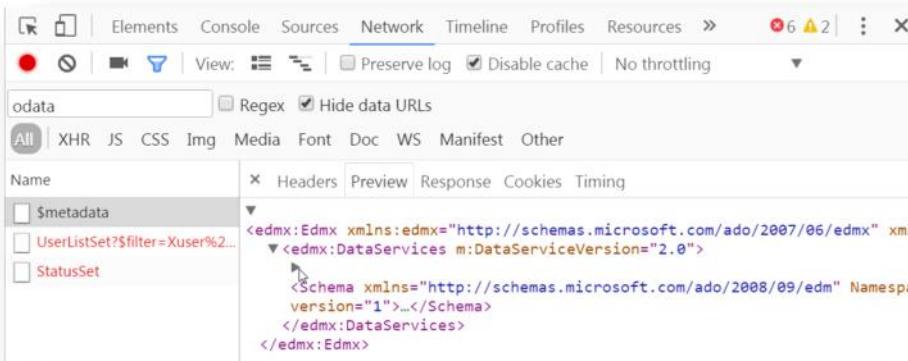


Figure 12 Preview information

## Debugging UI5 application

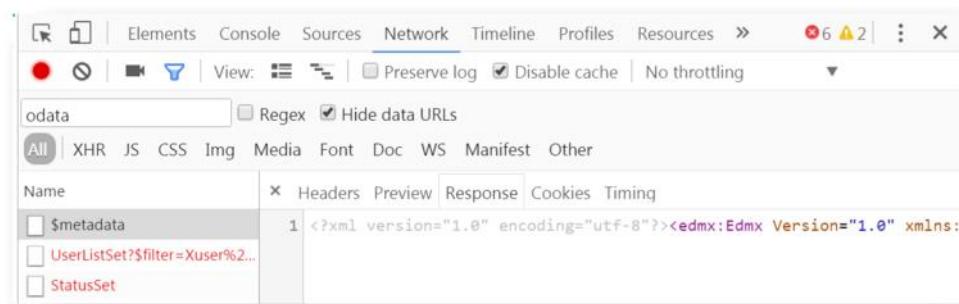


Figure 13 Response information

When capturing the information, it is important to take the full screenshot of both **Header** and **Preview** tabs as it has all the information (some key details are in the bottom of the screen). Screenshots are better for **Headers** and **Preview**, but full text copy can be performed from the **Response** tab.

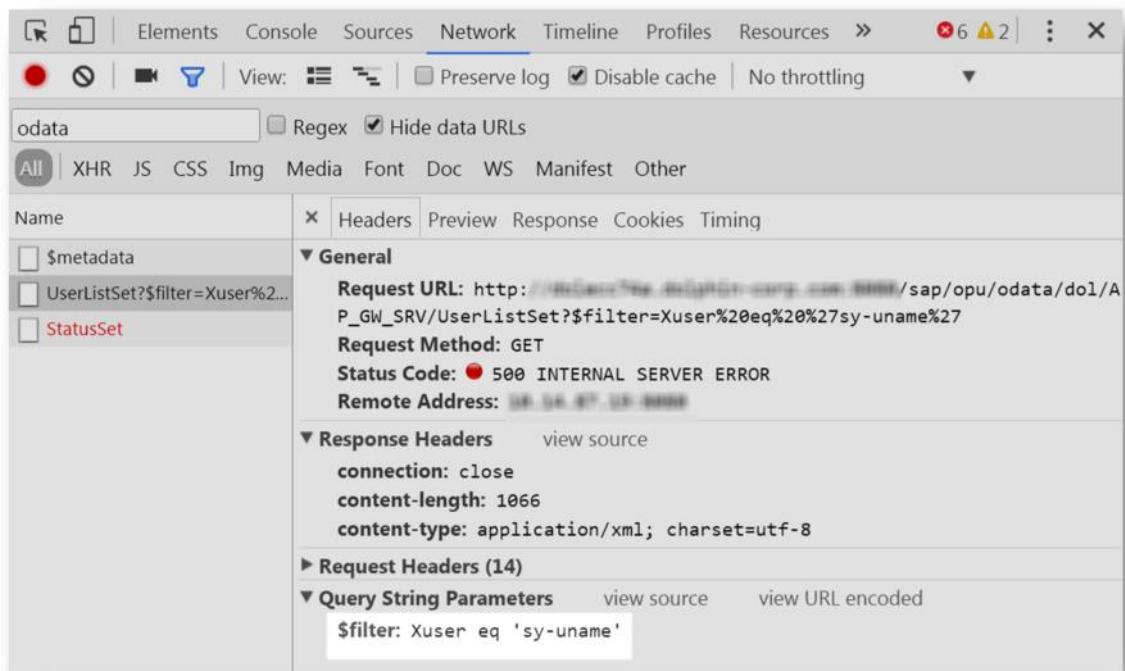


Figure 14 Details from the Header information

## Debugging UI5 application

### Step 5

#### Error details from ECC and Gateway

In the gateway use the transaction **/o/IWFND/ERROR\_LOG**, look for any errors under the logged in user and the time. Make sure the details of the error are fully captured. You may also have to check for any errors in the ECC server using the transaction st22.

**SAP NetWeaver Gateway: Error Log**

Re-Select

Line	Entr.	Date	Time	User	T100 Error ID	T10...	Error ..	ICF Node B	Error Text
5	1	06.08.2016	18:40:37	ADAMS	/IWFND/CM_CONSUMER101	5	odata		No authorization to access Service '/DOL/AP_GW_SRV_0001'
4	1			ADAMS	/IWFND/CM_CONSUMER101	5	odata		No authorization to access Service '/DOL/AP_GW_SRV_0001'
3	1			ADAMS	/IWFND/CM_CONSUMER101	15	odata		No authorization to access Service '/DOL/AP_GW_SRV_0001'
2	1		17:24:16	ADAMS	/IWFND/CM_CONSUMER101	9	odata		No authorization to access Service '/DOL/AP_GW_SRV_0001'
1	1		17:24:12	ADAMS	/IWFND/CM_CONSUMER101	6	odata		No authorization to access Service '/DOL/AP_GW_SRV_0001'

**Error Context**

Ex... Name	Value
..ERROR_CONTEXT	No authorization to access Service '/DOL/AP_GW_SRV_0001'
..ERROR_INFO	See SAP Note 1797736 for error analysis
..ERROR_RESOLUTION	<a href="https://service.sap.com/sap/support/notes/1797736">https://service.sap.com/sap/support/notes/1797736</a>
...SAP_NOTE	
...LINK_TO_SAP_NOTE	
.../INVFND/CX_ACCESS_CHECK	
...M_SRSG_NAME	
...M_SERVICE_NAME_SPACE	
...M_SERVICE_EXTERNAL_NAME	
...M_ICF_ROOT_NODE_NAME	
...M_SERVICE_IDENTIFIER	/DOL/AP_GW_SRV_0001
...M_SERVICE_VERSION	0000
...SERVICE_INFO	
...NAMESPACE	/DOL/
...SERVICE_NAME	AP_GW_SRV
...VERSION	0001
...SYSTEM_INFO	
...REQUEST_URI	/sap/opu/odata/do/AP_GW_SRV>StatusSet
...REMOTE_ADDRESS	
...APPLICATION_SERVER	
...HUB_VERSION_INFO	System E7A/800, NW Release 7.40, SAP_GWFND SP10, Internal GWFND Version 011

Figure 15 Gateway error logs

# Dolphin UI5 web tech doc

Friday, December 1, 2017 3:15 PM



Dolphin\_PT  
S-AP\_We...



**Implementation & Maintenance  
Guide  
Process Tracking System (PTS)  
for SAP Accounts Payable  
Advanced Approvals  
Release 7 Q1/2 2017**

Dolphin Enterprise Solutions Corporation  
(dba Dolphin)

Document Release Date: 10/19/2017

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## 1 Overview

The core functionality provided by the Process Tracking System (PTS-AP) Advanced Approvals includes Web Approvals, Simple Email, optional Check/Payment Request and optional Expense Report Add-ons. Advanced Approvals are offered with two different web interfaces; NetWeaver Gateway and Classic WebDynpro on NetWeaver Java. This document provides the details of the installation and configuration steps necessary for the successful deployment of PTS-AP Advanced Approvals.



## 2 Delivered Objects

This section describes the objects included with the Advanced Approvals add-on solution. The basis and DBA groups in your IT organization may use this information for routine maintenance operations.

### 2.1 ECC Objects

View package /DOL/APWEB in transaction SE80 to see the objects included with the Advanced Approvals add-on solution.

The screenshot shows the SAP Object Navigator interface. At the top, there are buttons for back, forward, search, and edit object. Below that is a list of system modules: MIME Repository, Repository Browser, Repository Information System, Tag Browser, and Transport Organizer. A dropdown menu shows 'Package' selected, and the path '/DOL/APWEB' is entered. Below this is a toolbar with various icons. The main area is a table with two columns: 'Object Name' and 'Description'. The table shows the contents of the /DOL/APWEB package:

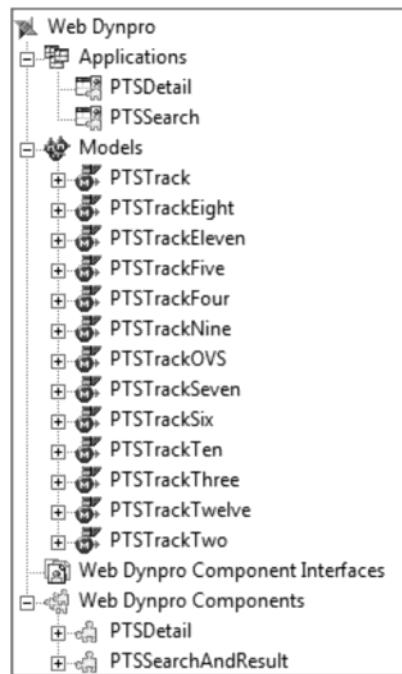
Object Name	Description
✓ /DOL/APWEB	Dolphin PTS-AP: Web Add-on
▸ Dictionary Objects	
▸ Class Library	
▸ Programs	
▸ Function Groups	
▸ Transactions	

### 2.2 NetWeaver Java Objects

This section describes the objects created via the SAP NetWeaver Java development environment only. This is a Web Dynpro Java application which has been released on both NetWeaver 2004 (SP9 or higher) and 2004s (SP7 or higher).



The following picture illustrates the structure of the application (Applications, Components, and Models)





### 3 Deployment

**Note:** SAP Web AS version 7.00 or higher is required.

#### 3.1 ECC

The Advanced Approvals license key must be loaded for the Add-On to function. Transaction /DOL/LIC\_UPLOAD is used to load the license key. The key must be loaded one time in each system. Transaction code /DOL/LIC\_INFO can be used to view all loaded license keys.

**Note:** The license transport must be the **first** transport imported with any new installation or upgrade.

#### 3.2 NetWeaver Gateway

The following steps must be taken for the Advanced Approvals to function if you have selected the NetWeaver Gateway (UI5) interface.

##### 3.2.1 Requirements

These are the requirements for NetWeaver Gateway:

NetWeaver Gateway 2.0 updated to SP12

Hana Cloud Platform Only:

Hana Cloud Connector (latest version)

Additionally, if Active Directory authentication integration is needed ADFS 2.0 is required.

UI5 on-premise only:

The following is needed

SAP\_UI release 740 SP-Level 9 or higher

Component	Release	SP-Level	Support Package	SPP-Level	Support Package Patch	Type	Short Description of Component
SAP_UI	740	0009	SAPK-74009INSAPUI	0000	-		User Interface Technology

Please refer to the following SAP documentation for the browser compatibility:  
[https://help.sap.com/saphelp\\_nw74/helpdata/en/91/f079dc6f4d1014b6dd926db0e91070/content.htm](https://help.sap.com/saphelp_nw74/helpdata/en/91/f079dc6f4d1014b6dd926db0e91070/content.htm)

##### 3.2.2 Transports

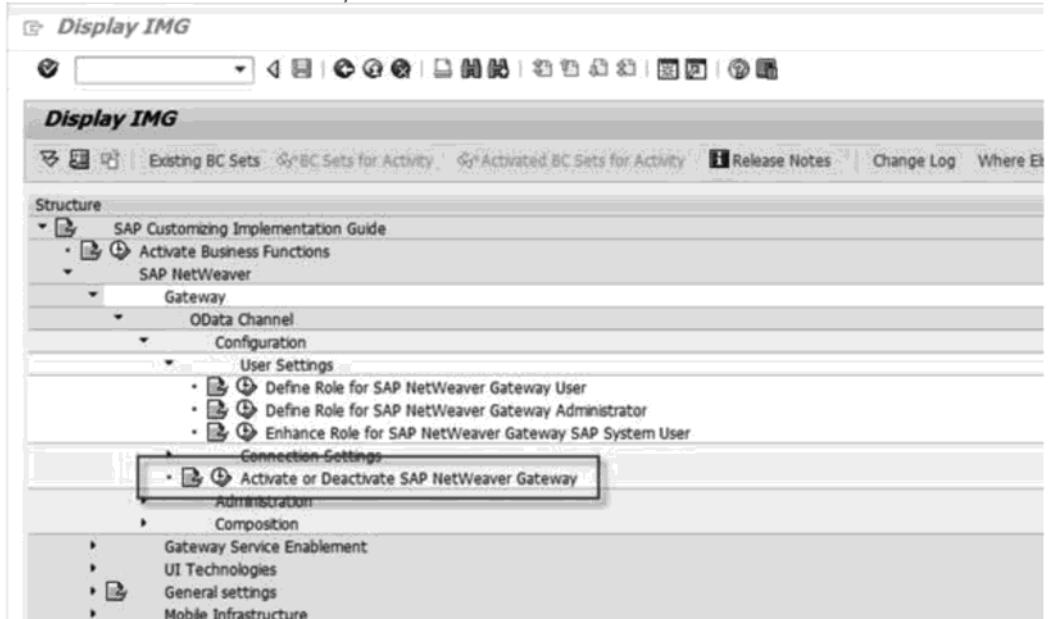
If the package is delivered as external transport files, follow the standard external transport import procedures established by your SAP Basis team. Also, note that all



PTS transports should always go in with options "Overwrite" and "Ignore Invalid Component Version" checked.

### 3.2.3 Post Transport Steps in the Gateway

1. Ensure the NetWeaver Gateway is activated



2. In the transaction /n/IWFND/GW\_CLIENT, enter "/sap/opu/odata/DOL/AP\_GW\_SRV", and then click the button for "Maintain Service".



**SAP NetWeaver Gateway Client**

HTTP Method: GET  
Request URI: /sap/opu/odata/dol/ap\_gw\_srv  
Protocol: HTTP

**HTTP Request**  
Header Name Value

**HTTP Response**  
Header Name Value

**Activate and Maintain Services**

**Service Catalog**

Type	Technical Service Name	Service Description	External Service Name	Namespace	Soft
BEP	/DOL/AP_GW_SRV	1 /DOL/CL_AP_GW_DPC_EXT	AP_GW_SRV	/DOL/	

- On the next screen, assign the system alias to the /DOL/AP\_GW\_SRV\_0001 service by clicking on the "Add System Alias" button. on lower right frame:

**System Aliases**

SAP System Alias	Description	Default	Metadata	User Role
------------------	-------------	---------	----------	-----------

- Enter the values per the screenshot below. (Note: The system alias is customer and system specific and will be different for you.)

- Service Doc Identifier: /DOL/AP\_GW\_SRV\_0001
- SAP System Alias: <customer- and system- specific alias>
- Default system: X

New Entries: Overview of Added Entries							
Assign SAP System Aliases to OData Service							
Service Doc Identifier	User Role	Host Name	SAP System Alias	Default System	Metadata Default	Tech. Svc. Name	Ext. Service Name
/DOL/AP_GW_SRV_0001			8d0_001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	/DOL/AP_GW_SRV	AP_GW_SRV

If no Alias exists, you will need to create one. Call transaction SPRO and go to SAP NetWeaver -> Gateway -> Former Development -> Generic Channel -> Configuration -> Connection Settings -> SAP NetWeaver Gateway to SAP System -> Manage SAP System Aliases.



Click on "New entries" and enter the customer specific and system specific information. Ensure you select an RFC connection of type "ABAP" (see transaction SM59).

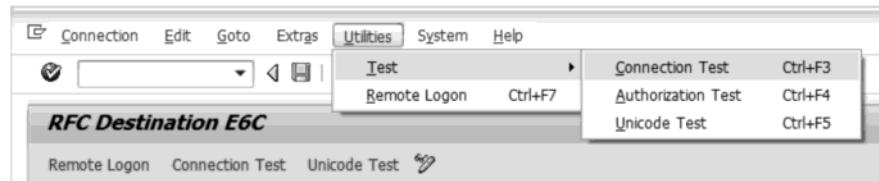
SAP System Alias	Description	Local GW	For Local App	RFC Destination	Software Version	System ID	Client	WS Provider System
BWD_991	System alias for BWD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	BWDCLNT500	BW			

Here is a listing of RFC's of type "ABAP" in the customer specific SAP landscape.



RFC Connections	Type	WL act..	Comment
ABAP Connections	3	-	
BW Development system	3	-	BW Client for After Import
BWD	3	-	
<b>BWDCLNT500</b>	3	-	BW Development System
BWDEV	3	-	BWDev
BWP	3	-	
BWPCLNT500	3	-	BW Production
DEVCLNT300	3	-	SAP Development System
DEVCLNT300_DIALOG	3	-	SAP Development System
DYNAMIC_DEST_CALLBACK_WHITELIST	3	-	Callback Whitelist for Dynamic Destinations
PRDCLNT300	3	-	R/3 DEV 300
PRDCLNT300_DIALOG	3	-	R/3 PRD 300
SAPNET_RFC	3	-	
SAPNET_RTCC	3	-	Automatically created destination to SAP
SAPOSS	3	-	SAP OCS Server (CSS)
SDCC_OSS	3	-	Automatically generated Destination to SAP
SMPCLNT800	3	-	Solution Manger
SM_SMPCLNT800_TRUSTED	3	-	Generierte Destination für CUST_SYNCH
SM_SOLCLNT001_BACK	3	-	Generated Destination
SOLCLNT800	3	-	CUA
TMSADM@BWD.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
TMSADM@BWP.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
TMSADM@BWT.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
TMSSUP@BWD.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
TMSSUP@BWP.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
TMSSUP@BWT.DOMAIN_BWD	3	-	TMS Communication Interface *generated*
Internal Connections	I		
SNA/CPI-C connections	S		
TCP/IP connections	T		
Connections via ABAP Driver	X		

Check that the RFC connection is successful (Utilities->Test->Connection Test and Utilities->Test ->Authorization Test)



Once everything is properly linked the Alias section should look like this (again note that aliases are customer and system specific and your values will be different):

System Aliases				
SAP System Alias	Description	Default	Metadata	User Role
BWD_001	System alias for BWD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

- Once you've assigned the alias to the service, activate the ICF node in the bottom left panel

SAP System Alias	Description	Default	Metadata	User Role	Host Name
WWW_001	Dolphin system Alias WWW	<input checked="" type="checkbox"/>	<input type="checkbox"/>		



6. Execute tcode SICF to activate the Dolphin UI5 application and Gateway services (ap\_ui5, ui5\_ui5 and file\_upload). In the bottom window, expand Default Host ->SAP->bc>ui5-ui5->dol->ap\_ui5 Right click service ap\_ui5 and activate the service.

▼  ui5	SAPUI5 Application Handler SAPUI5 Applic...
▼  dol	namespace
•  ap_ui5	PTS AP SAPUI5

Repeat the same for the "/sap/opu/odata//DOL" and "/sap/bc/dol/" nodes (choose to activate the sub-nodes as well).

7. Using SM30, add the RFC destination in table /DOL/AP\_GW\_CONF with the configuration name BACKEND\_RFC\_DESTINATION.

Display View "Dolphin PTS-AP: Gateway Services Configuration": Overview			
Dolphin PTS-AP: Gateway Services Configuration			
PTS Project ID	Name	Value	Short Description
DEMO	BACKEND_RFC_DESTINATION	E6C	<input checked="" type="checkbox"/> SM59 ECC Default Destination if ECC is remote

8. When everything is setup you should be able to go back to the service and run it in the Netweaver Gateway Client and see the http response like



in the screenshot below:

The screenshot shows the SAP NetWeaver Gateway Client interface. In the 'HTTP Request' section, the URL is set to /sap/opu/odata/dol/ap\_gw\_srv/. The 'HTTP Response' section displays the following XML content:

```

<?xml version="1.0" encoding="utf-8"?>
<app:service xml:lang="en"
  <app:base href="http://www.w3.org/2007/app" />
  <app:atomBase href="http://www.w3.org/2005/Atom" />
  <app:linkType href="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" />
  <app:ns href="http://www.sap.com/Protocols/SAPData" />>
<app:workspace>
  <atom:title type="text">Data</atom:title>
  <app:collection sap:createable="false" sap:updatable="false" sap:deletable="false" />
  <app:collection sap:content-version="1" href="#SubscriptionCollection" />
  <atom:title type="text">SubscriptionCollection</atom:title>
  <app:member-type>Subscription</app:member-type>
</app:collection>
<app:collection sap:createable="false" sap:updatable="false" sap:deletable="false" />
<atom:title type="text">ETTO1Collection</atom:title>
<app:member-type>NotificationCollection</app:member-type>
</app:collection>
<app:collection sap:createable="false" sap:updatable="false" sap:deletable="false" />
<atom:title type="text">ETTO1Collection</atom:title>
<app:member-type>ETTO1</app:member-type>
</app:collection>
<app:collection sap:createable="false" sap:updatable="false" sap:deletable="false" />
<atom:title type="text">TrackRFCCollection</atom:title>
<app:member-type>TrackRFC</app:member-type>
</app:collection>
<app:collection sap:createable="false" sap:updatable="false" sap:deletable="false" />
<atom:title type="text">TrackRFCCollection</atom:title>
<app:member-type>TrackRFC</app:member-type>
</app:collection>

```

#### 9. To add APUI5 as a Fiori Tile:

- First import the transport (E7AK900146) contained in dolphinapui5\_tile\_semantics.zip.
- In the FLP admin ([http://gatewayserver:port/sap/bc/ui5\\_ui5/sap/arsvc\\_upb\\_admn/main.html](http://gatewayserver:port/sap/bc/ui5_ui5/sap/arsvc_upb_admn/main.html)), select the catalog you want to add the Dolphin Tile to and click on Target Mapping -> Create Target Mapping.)

Semantic Object	Action	Target
Vendor	displayBalance	✓
Vendor	managePaymentBlocks	✓
phip	display	✓

[Create Target Mapping](#)



- c. Add the following details (URL: /sap/bc/ui5/ui5/dol/ap\_ui5/) on the target mapping and click "Add":

Semantic Object	Action	Desktop
Vendor	displayBalance	✓
Vendor	managePaymentBlocks	✓
pmap	display	✓

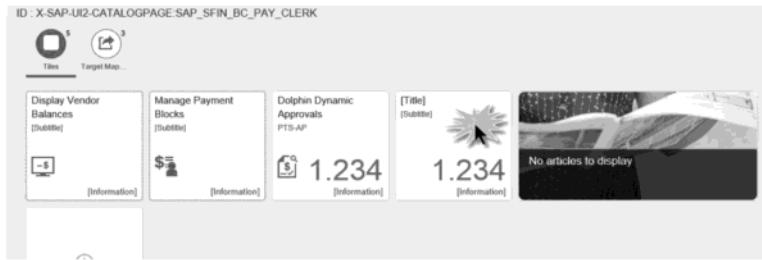
Create Target Mapping

- d. Return to the catalog, click on Tiles tab and click on Add Tile icon:

ID : X-SAP-UI2-CATALOGPAGE:SAP\_SFIN\_BC\_PAY\_CLERK

- e. Click on "App Launcher – Dynamic".

- f. Click on the new draft Tile.



g. A blank form will be displayed.

Configure 'App Launcher - Dynamic'

<b>General</b>	<b>Dynamic Data</b>	<b>Navigation</b>
Title: <input type="text"/>	Service URL: <input type="text"/>	Use semantic object navigation: <input checked="" type="checkbox"/>
Subtitle: <input type="text"/>	Refresh Interval in Seconds: <input type="text"/>	Semantic Object: <input type="text"/>
Keywords: <input type="text"/>	Action: <input type="text"/>	
Icon: <input type="text"/> sap-icon://fiori	Parameters: <input type="text"/>	
Information: <input type="text"/>	Target URL: <input type="text"/>	
Number Unit: <input type="text"/>		

h. Fill in as below:

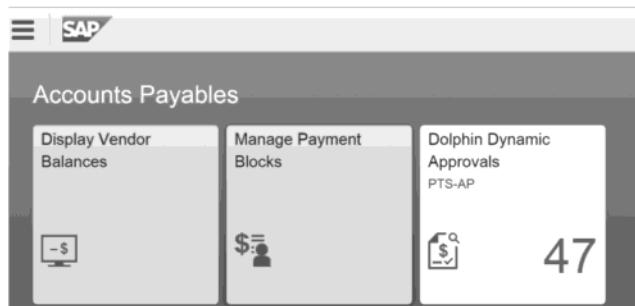
Service URL:  
`/sap/opu/odata/dol/AP_GW_SRV/Tracks/$count?$filter=MyApprovals%20eq%20true`

ICON: sap-icon: //Fiori2/F0252

Configure 'Dolphin Dynamic Approvals'

<b>General</b>	<b>Dynamic Data</b>	<b>Navigation</b>
Title: <input type="text"/> Dolphin Dynamic Approvals	Service URL: <input type="text"/> /sap/opu/odata/dol/AP_GW_SRV/Tracks/\$count?\$filter=MyApprovals%20eq%20true	Use semantic object navigation: <input checked="" type="checkbox"/>
Subtitle: <input type="text"/> PTS-AP	Refresh Interval in Seconds: <input type="text"/>	Semantic Object: <input type="text"/> phap
Keywords: <input type="text"/> AP, Dolphin, PTS	Action: <input type="text"/> display	
Icon: <input type="text"/> sap-icon://fiori/F0252	Parameters: <input type="text"/>	
Information: <input type="text"/>	Target URL: <input type="text"/> /sap/opu/display	
Number Unit: <input type="text"/>		

i. Add this file to the group using this catalog and the final output would show as in the example below:



### 3.2.4 Post Product Reimport Steps

After a product reimport, if any caching issues are suspected, perform the following actions on the NetWeaver Gateway system to clear the cache:

- o Call transaction code /IWFND/CACHE\_CLEANUP
- o Call transaction code SE38 or SA38 to execute program /UI2/DELETE\_CACHE\_AFTER\_IMP
- o Delete the contents of the Dolphin table /dol/ap\_gw\_cache from SM30

### 3.2.5 Post Product Reimport Steps

The following SAP standard programs should be run from se38 after Gateway/ui5 upgrade transports have been applied in the system.

1. /UI2/DELETE\_CACHE

Enter '\*' in the Username field and select both the checkboxes as shown below:

Delete entity set from cache	
<input style="width: 20px; height: 20px; vertical-align: middle;" type="button" value="..."/>	
Selection	
User Name	*
Enter URL (optional)	<input type="text"/>
<input checked="" type="checkbox"/> Delete in all clients	
<input checked="" type="checkbox"/> Show output	



2. /UI2/CHIP\_SYNCHRONIZE\_CACHE

Run the report. No specific input selection is required.

3. /UI2/DELETE\_CACHE\_AFTER\_IMP

Run the report. The output of this report will provide the cache entries deleted after import.

4. /UI2/INVALIDATE\_CLIENT\_CACHES

Select all users when running this report.

**/UI2/INVALIDATE\_CLIENT\_CACHES**

UI2 Client Caches Invalidation	
<input checked="" type="radio"/> For all users	
<input type="radio"/> For user	SLESHA

5. /UI2/INVALIDATE\_GLOBAL\_CACHES

Select 'Execution mode' when running this report.

**UI2 Global Caches Invalidation**

UI2 Global Caches Invalidation	
<input type="radio"/> Test Mode	
<input checked="" type="radio"/> Execution Mode	

6. /UI5/APP\_INDEX\_CALCULATE



Use this report to calculate the SAPUI5 application index for SAPUI5 repositories which can contain SAPUI5 applications, components, or libraries.  
Select "All SAPUI5 Repositories" and run this report.

**Calculation of SAPUI5 Application Index for SAPUI5 Repositories**

Display All Logs    Display SAPUI5 Rep.-Related Logs    Display SAPUI5 Component-Specific Logs    Display General Logs

Based on All SAPUI5 Repositories  Based on Single SAPUI5 Repository

All SAPUI5 Repositories  
 Depending on Expiry Period

Expiry Period - Hours    
Expiry Period - Minutes

Execution of this report takes approximately 30-40 seconds. Following is an example of the output of this report from our system.

**Calculation of SAPUI5 Application Index for SAPUI5 Repositories**

Display All Logs    Display SAPUI5 Rep.-Related Logs    Display SAPUI5 Component-Specific Logs    Display General Logs

Calculation of SAPUI5 Application Index for SAPUI5 Repositories

Calculation for all SAPUI5 repositories done

Number of SAPUI5 repositories: 151

Number of SAPUI5 application index entries created: 151  
Number of SAPUI5 application index entries updated: 0  
Number of SAPUI5 application index entries deleted: 0

No errors occurred



### 3.3 NetWeaver Java

#### 3.3.1 EAR/SCA deployment

Web application can be delivered either as self-contained EAR file for easy SDM deployment directly on J2EE server, or as SCA, so that it can be imported as external software components in a dedicated track on your NWDI environment. Additionally, a jexcel file is delivered to enable spreadsheet uploading. The jexcel file should be deployed before the EAR file.

The SC name is dolphin-corp\_PTSAp whereas DC name is dolphin-corp.com\PTS\_AP.

Two applications corresponding to two components are PTSSearch and PTSDetail.

Test the deployment by logging on to:

`http://<NWASserver>:<port>/webdynpro/dispatcher/dolphin-corp.com/pts_ap/PTSSearch`

This application allows PTS invoice search as illustrated in the following figure.



PTSDetail - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://dolsolman4a:50100/webdynpro/dispatcher/con Google

Getting Started Latest Headlines

Dolphin Process Tracking System (PTS) - Accounts Payable

dolphin

Search Criteria

System Data

Tracking Record Number:	From	To
Process Status:	From	To
Receipt Date:	From	To

Document Data

Vendor Number:	From	To	
Vendor Name:	From	To	
Company Code:	From	To	
Document Number:	From	To	
Fiscal Year:	From	To	
Reference Number:	From	To	
Reference Date:	From	To	
Currency:	From	To	
Amount:	From	To	
Payment Due Date:	From	To	
Purchasing Group:	From	To	
Purchase Order:	From	To	
Variable Field:	From	To	
Service #:	From	To	
Express Processing:	From	To	
FI Document Type:	<input checked="" type="checkbox"/> Credit Memo	<input checked="" type="checkbox"/> Invoice	
Maximum Results:	00000050	Search	Clear

Results Hitlist

Information	Image	PTS Record	Receipt Date	Status	Vendor/Creditor #	Vendor/Creditor Name	Company Code	Accounting Docu
[Details]	[View]	00000265	4/20/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000219	3/30/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000155	3/13/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000154	3/13/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000153	3/13/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000149	3/12/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000148	3/12/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000144	3/12/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000141	3/12/2007	060	1000	C.E.B. BERLIN	1000	
[Details]	[View]	00000140	3/9/2007	060	1000	C.E.B. BERLIN	1000	

Row 1 of 26

Done

To test detail application, click on "Detail" button. A screen similar to the following will appear:



Dolphin Process Tracking System (PTS) - A/P

Invoice Actions

[View Image] [Approve] [Reject] [Send Email] [Back to Search Result] [Exit]

Header Information

PTS-AP Record

PTS-AP Record 00000459	Receipt Date 04/2007
Vendor# 3710	Vendor Name SONORAN PRODUCTS, INC.
Amount 2,868.09 USD	
Company Code 3000	Due Date
Invoice# S-6884	Invoice Date 11/30/2000

Line Item Information

PTS-AP Record

Line Item Coding

G/L	Cost Ctr	Amount	Order	Material	D/C
100000		2,868.09			Debit
Row 1 of 1					

[1] [Add Line Items] [Delete Line]

Invoice Notes and Comments

ADAMS 20070804 171834 - I am putting it all against petty cash..

[Save] [Clear]

PTS Process History

Date	Time	Status Code	Status Description	User	Document Item
8/4/2007	11:37:20 AM	01S	Received - Duplicate	VISHAL	000000
8/4/2007	12:42:50 PM	020	Resubmit	JOHND	000000
8/4/2007	12:43:54 PM	020	Resubmit	JOHND	000000
8/4/2007	1:48:24 PM	060	Waiting for approval	JOHND	000000
8/4/2007	5:18:39 PM	061	Approved	ADAMS	000000

Row 1 of 6

PTS-AP Record Approval Chain

Add Adhoc Approver

Seq	Org object	Curr	Decision
1	ADAMS	A	
2	GEORGEW	X	



### 3.3.2 JCO Destinations

The following JCO destinations need to be setup for Dolphin application to function:

A screenshot of a software interface showing a table of JCO destinations. The table has columns for Name, Status, Create, Preview, Edit, Test, Ping, and Remove. Two rows are visible: 'WD\_PTSTRACK\_MODELDATA\_DEST' and 'WD\_PTSTRACK\_RFC\_METADATA\_DEST'. Both rows have the status 'OK'. The 'Create' button is greyed out for both. The 'Preview', 'Edit', 'Test', 'Ping', and 'Remove' buttons are visible and functional. At the bottom of the table, there is a message 'Row 1 of 2' and navigation icons.

The JCO destinations should be defined using Web Dynpro / Content Administrator from J2EE engine's home page.

For user authentication with User/Password method, a dedicated CPIC user should be entered in the logon tab and the specific data tab is left to whatever the default values are. Appendix A summarizes the authorizations required by CPIC user.

When both destinations are defined, perform ping and test to ensure that destinations are active.

For JCO pool settings, account for an average 4 sessions for each concurrent user.



The screenshot shows a Fiori application interface for creating a JCo Destination. The main panel displays two existing destinations: 'WD\_PTSTRACK\_MODELDATA\_DEST' and 'WD\_PTSTRACK\_RFC\_METADATA\_DEST'. A modal dialog titled 'Create new JCo Destination' is open, showing three steps: 'General Data' (selected), 'J2EE Cluster', and 'Connection Type'. The 'User Authentication' section is filled with the following details:

Used Method:	User / Password
Name:	DOLPHIN_BAPI_USER
Password:	*****
Confirm Password:	*****
Language:	English

At the bottom of the modal are buttons for 'Previous', 'Next >', 'Finish', and 'Cancel'. To the right of the modal, a 'General' tab of a destination configuration screen is visible, showing the same two destinations listed. The footer of the application includes a copyright notice and a page number.

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Refer to

<https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/3103eb90-0201-0010-71af-be6f4a6f61d1> for best practices on JCO destination settings.

More details on using WD content administrator can be found on SAP help portal, or  
[https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/com.sap.nw.wpc.runtime.docs/library/web-dynpro-java/\\_web-dynpro-java/7.0/Portal%20Integration/How%20to%20Use%20the%20Web%20Dynpro%20Content%20Administrator.pdf](https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/com.sap.nw.wpc.runtime.docs/library/web-dynpro-java/_web-dynpro-java/7.0/Portal%20Integration/How%20to%20Use%20the%20Web%20Dynpro%20Content%20Administrator.pdf)

### 3.3.3 UME

The approver's user ID as selected in SAP during approver selection should match the user ID of the logged in Web Dynpro application user.

Any SAP supported method for user authentication and user store, e.g. ABAP store, AD store, local store, AD store including SSO is supported by Dolphin as long as above condition is met.

Assignment of role for ui5 users:

Dolphin does not need any special end-user role in the gateway system. BASIS can assign the users baseline Fiori role. The most commonly used role template is /IWFND/RT\_GW\_USER. This is the Role template for enabling all users, and user groups, to access all OData services in the SAP NetWeaver Gateway system. This role is maintained for users and their authorizations in the Profile Generator using transaction PFCG. This is a single role.

If a more fine-tuned role is needed, please refer to <https://help.sap.com/viewer/68bf513362174d54b58cddec28794093/7.5.8/en-US/4a5d22518bc72214e1000000a44176d.html>. The Dolphin gateway service name is /DOL/AP\_GW\_SRV\_001 .

For the security role for the Dolphin RFC user in ECC or S/4, please refer to the Appendix A.

### 3.3.4 ARFC2 Destinations Definition for NetWeaver 7.3

The ARFC2 destinations need to be setup for Dolphin application for NW 7.3 to function. They should be defined using NetWeaver Administrator/ Configuration



tab -> Destinations from J2EE engine's home page as shown in the following screenshot:

The screenshot shows the SAP NetWeaver Administrator interface with the 'Destinations' tab selected. The left sidebar lists several views: Authentication and Single Sign-On, User Management Engine, Trusted Systems, SSL, and Certificates and Keys. The main content area displays a list of destinations with their details. One destination, 'WD\_PTSTRACK\_MODELDATA\_DEST', is highlighted.

Destination	Destination Type
WD_PTSTRACK_MODELDATA_DEST	RFC Destination
WD_PTSTRACK_RFC_METADATA_DEST	RFC Destination

To utilize the SAP NetWeaver portal 7.3 compatible EAR, customers' needs to be on at least Dolphin PTS-AP 5.0 Q4 2012 release.

Create these two RFC destinations using create button:

The screenshot shows the 'Destinations: Destinations' creation screen. It includes a 'Destination List' table with two entries: 'WD\_PTSTRACK\_MODELDATA\_DEST' and 'WD\_PTSTRACK\_RFC\_METADATA\_DEST', both categorized as 'RFC Destination'. Below the table are buttons for 'Create...', 'Remove', 'Remove All', and 'Refresh'.

Destination	Destination Type
WD_PTSTRACK_MODELDATA_DEST	RFC Destination
WD_PTSTRACK_RFC_METADATA_DEST	RFC Destination

The information that needs to be entered in connection and transport tab is shown in the screenshots on next page for both the destinations.

For user authentication, User/Password method with dedicated CPIC user should be entered in the logon tab and the specific data tab is left to whatever the default values are.

Once both destinations are defined, perform ping and test to ensure that destinations are active.



### Destinations: Destinations

Favorites Related Links Go To Support Details

Show: All Destinations

#### Destination List

Create Remove Remove All Refresh

##### Destination

- DASdefault
- SLD\_Client
- SLD\_DataSupplier
- WD\_PTSTRACK\_RFC\_METADATA\_DEST
- WD\_PTSTRACK\_MODELDATA\_DEST

	Destination Type
HTTP Destination	
HTTP Destination	
HTTP Destination	
RFC Destination	
RFC Destination	

#### Destination Detail

Edit Ping Destination

RFC Destination WD\_PTSTRACK\_RFC\_METADATA\_DEST

Connection and Transport Logon Data Specific Data

##### Connection

Load Balancing:  Yes  No  
 Local System Connection:   
 Target Host:   
 System Number:  E6C  
 System ID:  dolecc60a  
 Message Server:   
 Message Server Service:   
 Logon Group:  PUBLIC  
 Gateway Host:   
 Gateway Service:

##### SNC

SNC:  Active  Inactive  
 QoS:  Privacy Protection  
 SNC Partner Name:

### Destinations: Destinations

Favorites Related Links Go To Support Details

Show: All Destinations

#### Destination List

Create Remove Remove All Refresh

##### Destination

- DASdefault
- SLD\_Client
- SLD\_DataSupplier
- WD\_PTSTRACK\_RFC\_METADATA\_DEST
- WD\_PTSTRACK\_MODELDATA\_DEST

	Destination Type
HTTP Destination	
HTTP Destination	
HTTP Destination	
RFC Destination	
RFC Destination	

#### Destination Detail

Edit Ping Destination

RFC Destination WD\_PTSTRACK\_MODELDATA\_DEST

Connection and Transport Logon Data Specific Data

##### Connection

Load Balancing:  Yes  No  
 Local System Connection:   
 Target Host:  dolecc60a  
 System Number:  02  
 System ID:  E6C  
 Message Server:   
 Message Server Service:   
 Logon Group:   
 Gateway Host:   
 Gateway Service:

##### SNC

SNC:  Active  Inactive  
 QoS:  Privacy Protection  
 SNC Partner Name:

Test the deployment by logging on to:

[http://<NWASserver>:<port>/webdynpro/resources/dolphincorp.com/pts\\_ap/PTSSearch](http://<NWASserver>:<port>/webdynpro/resources/dolphincorp.com/pts_ap/PTSSearch)



## 4 PTS Application Configuration

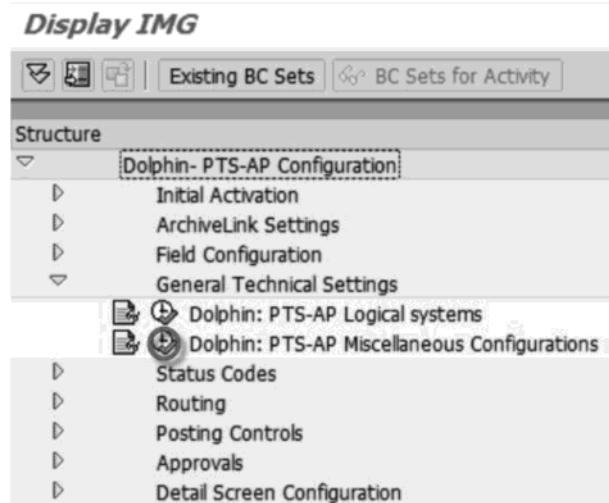
This section describes all steps necessary to activate the PTS-AP after the transport files have been imported successfully into the system and the development class /DOL/AP has been checked for completeness. It is recommended to verify that all data dictionary objects and ABAP/4 workbench objects in development class /DOL/APWEB are generated and activated in the system.

### 4.1 PTS Table Maintenance

Following tables in PTS-AP core system have to be maintained to activate the solution: /DOL/AP\_T08 and /DOL/AP\_T09

#### 4.1.1 Miscellaneous Configuration Table (Activity: Dolphin: PTS-AP Miscellaneous Configurations)

1. Select activity **General Technical Settings** → **Dolphin: PTS-AP Miscellaneous Configurations**.



2. The Miscellaneous configurations table (/DOL/AP\_T08) is used for various PTS-AP settings in the form of name-value pairs. Verify that all standard values are



maintained in the table /DOL/AP\_T08 for your PTS project. The following entries are available in the standard PTS-AP:

Status	Description
AA_SIMPLE_EMAIL_ACTIVE	Value = 'X' to make simple email feature active for only Non-Sap users. Value = 'GLOBAL' to activate for all
AA_SIMPLE_EMAIL_CLASS	Technical setting only. Custom Inbound class defined in SO50 for custom handling for Simple email inbound mail.
AA_SIMPLE_EMAIL_CUSTCLASS	Customer Class for custom methods
AA_SIMPLE_EMAIL_IMAGE	Value = 'LINK' to include invoice as a link. Value = ATTACH to include invoice as an attachment. Value = 'X' for both link and attachment. If active, the setting will be in effect for all emails, both simple and regular.
AA_SIMPLE_EMAIL_NOLINES	When active, send simple email even with no coding lines
AA_SIMPLE_EMAIL_NOTESM	Custom method for attaching inbound notes.
AA_SIMPLE_EMAIL_REPLY	'X' to send reply if successful. (If error, a reply is always sent.)
AA_SIMPLE_EMAIL_STATUS	Value = 661. Sub-status for Simple email decision
ADHOC_APPROVAL_EXIT	User exit for implementing customized adhoc approval user insert
ADHOC_MAIL_FORMAT	Format (MIME or Space for Text) for the adhoc mail from AP2N. Default or inactive is TEXT.
ADHOC_MAIL_TEMPLATE	Template prefix to use if not /DOL/ for the adhoc mail from AP2N
ALPHA_GLDROPDWN	Don't delete leading zero in dropdown search for GL on web
APPROVAL_EMAIL	Set to 'BATCH' if original approval e-mails are not to be sent out as individual e-mails
APPROVAL_EMAIL_FORMAT	Set to 'MIME' to use HTML templates for email texts. Value = 'TEXT' to use standard text.



APPROVAL_EMAIL HOLDER	"X" and active to add '&' around the placeholders (example &Y1&)
APPROVAL_EMAIL_TEMPLATE	Template prefix to use for customized templates
APPROVAL_SUBSTATUS_ONCE	Active and "X" to see sub-status selection for web approvals
CODING_VALIDATION_EXIT	User exit for implementing customized web line-item validation
EARMARKEDFUND_FIELDS	Dynamic assignment for earmark fund fields
EMAIL_OPEN_AMT_ONLY	"X" and active to send regular web approval email rather than simple email approval when there are insufficient funds on the PO
ESCALATION_EMAIL	Set to 'BATCH' if escalation e-mails are not to be sent out as individual e-mails
FI_PASS_UUID	If Active pass UUID to SAP Transaction screen for non-PO invoices
GATEWAY_PUSH_DEST	List the destination to send push notifications when approval emails are sent.
IMAGE_PROXY_URL	Image proxy URL for web. Sets the image URL used by the web application to be prefixed by this proxy URL, with the original image URL passed as a query string after being escaped
IMAGE_URL_FIND_REPLACE1	Find and replace URL for the web. Allows certain parts (or whole) image URL to be replaced by another string. (for classic web where the image server is behind the firewall and needs to be accessed via a reverse proxy server)
MIRO_PASS_UUID	If active pass UUID to SAP Transaction screen for PO invoices
ML81_FRONTEND	Check ML81N S_TCODE security for SE acceptance from Web. Need SSO authentication for this to work (as opposed to CPIC user).



MOVE_ON_SUBSTITUTION	To move the current user's MyApproval items to the substitute immediately upon saving new substitute from MySettings. This option should only be used if the batch job for batch substitution and effective dates concept is not used
REMINDER_EMAIL	Set to 'BATCH' if reminder e-mails are not to be sent out as individual e-mails
STATIC_EMAIL_SENDER	SAP User ID which can be used as "Sender" of the e-mails sent out from PTS. Default sender is A/P user's SAP user ID.
STATIC_V_EMAIL_SENDER	WF-BATCH or the desired SAP userid. The sender Email address for the vendor email function will be the address associated with the SAP userid in SU01. (If inactive, the sender address is the email of the last user who sent the vendor email.)
SUBSTITUTE_STATUS	Value = 601.. Active for 'Substitution Done' added to history when a substitute approves the record.
WBS_MASKED_FORMAT_ACTIVE	When active, WBS will display in masked format on the web just as it does within R/3.
WEBLINK	<p>URL to the web application's detail application. e.g. "http://&lt;server&gt;:&lt;port&gt;/webdynpro/dispatcher/dolphin-corp.com/PTS_AP/PTSDetail?qsimgatstart=true&amp;qsrecno= "</p> <p>Note: This is the link that appears in the approval emails and the record number is filled in by the ABAP programming for email generation.</p>



WEBURL_MYAPPROVALS	Netweaver MyApprovals URL: "http://<server>:<port>/webdynpro/dispatcher/dolphin-corp.com/PTS_AP/PTSSearch?myapprovals=X
WEB_ACTIVATE_GLVALIDATION	UI5 My Approvals URL: "http://<server>:<port>/sap/bc/ui5/ui5/dol/apui5/index.html?destination=E6C&myApprovals=
WEB_ALLOW_MASS_ACTION	"X" to validate GL. Custom FM is required with this activation.
WEB_APPLY_LINE_BUKRS	For UI5, when this is active, mass approval/rejection will be available for approvals with the same sub-status
WEB_AUTO_POST	'X' to apply line co. code to header if header co. code is blank after approval/coding
	'X' to auto-post after final approver if coding passes validations
WEB_BUTTONDESC_APPROVE	VALUE = Text of the Approve button
WEB_BUTTONDESC_HELP	VALUE = Text of the Help button
WEB_CHKGL_TAXCOD	Enforces tax code based on G/L settings. This check is not carried out by SAP BAPI. This entry makes tax code a required field.
WEB_CODER_DISABLE	'X' to disable coder entry from mySettings
WEB_CODING_REQD	If 'X', this forces web approver to provide at least one valid line of coding while approving
WEB_COLDESC_XREF1	Assign label to XREF1 column field in line-item coding for non-PO invoices.  <i>In general, any coding table field can be assigned an alternate column header by adding WEB_COLDESC_&lt;fieldname&gt; entry in T08 table for your project. Refer to T11 table for all possible line fields.</i>
WEB_DEBUG_METHODS	The methods which needs to be used on to the NWA logs, use csv
WEB_DEBUG_SEVERITY	Strictly used for testing
WEB_DEBUG_XML	Strictly used for testing



WEB_DISABLE_ADHOC	Disable Adhoc approval feature
WEB_DISABLE_EXCELTEMPLATE	"X" to disable excel template upload button on classic web & detail screen
WEB_DISABLE_MYAPPROVAL	Disable MyApprovals Option on Search Application. Disables button and checkbox.
WEB_DISABLE_ONE_SUB_POPUP	Active with value 'X' to have the substatus selection pop up not appear if there is only one sub-status
WEB_DOC_TYPE_ACC_ASSIGN	List of PO types that will be treated as framework POs with MAA functionality
WEB_DOC_TYPE_ASSIGN_CAT	List the account assignment category(s) to use as an indicator of MAA. Historically, this determination was based on the PO type only.
WEB_EDIT_PHVVALU1	<p>Make VVALU1 field in PTS record header tab editable during approvals.</p> <p>Currently VVALU, VVALU1, VVALU2, VVALU3, payment method, payment reference, tax code and company code (PTS header tab fields) can be made editable by adding WEB_EDIT_PH&lt;fieldname&gt; entry in T08 table for your project.</p>
WEB_EMAIL_LINK	Same as WEblink if "Send E-Mail" link on web detail page needs to use URL from this table instead of WebDynpro Java API. This is useful when PTS application is deployed as portal iView and SSO is needed.
WEB_ENABLE_ADDMANAGER	Enable Add Manager Button
WEB_ENABLE_ADDREVIEWER	Enable Ad Hoc Approver Button. Reviewer is a special feature that may require a custom user-exit development. Please contact your Dolphin implementation team before activating this option
WEB_ENABLE_APPLYTEMPLATE	"X" to enable the Apply Template button for web approvals (Applies to classic web, CR and ER)
WEB_ENABLE_FORWARD	"X" to enable the Forward button



WEB_ENABLE_GL_TAB	"X" to enable GL tab for PO entries
WEB_ENABLE_HELPFRAME	"X" to Auto display HELP on web CR
WEB_ENABLE_IMAGEFRAME	Enable Image display on separate frame on same web page
WEB_ENABLE_MYSETTINGS	Enable MySettings Button
WEB_ENABLE_PAYEEDETAIL	'X' to enable the Payee Details tab on the payment request screen
WEB_ENABLE_REJ2LAST	Enable "Reject to Last" button
WEB_ENABLE_SUBSTATUS	Enable sub-status popup during approval
WEB_FETCH_CCFROM	Default the co. code field in header and coding line (when blank) from this field. Possible value so far: 'KOSTL'
WEB_FILTER_VVALU	'X' to filter the T07 entries to those where the VVALU contains 'web', 'Web', or 'WEB'
WEB_FLDDESC_PHKIDNO	<p>The text description for the field KIDNO in the detail screen on the web.</p> <p><i>In general any field description text can be indicated by WEB_FLDDESC_PH&lt;fieldname&gt; entry in T08 table.</i></p>
WEB_FORWARD_LOOP	When a web user selects next agent via the "forward" button, the record will come back to sender after next agent Approves the record
WEB_FORWARD_STATUS	The sub-status value assigned to "Forward" button on web. Existence of this entry activates the button. When the recipient of the forwarded record approves, status 61 is removed and replaced with this sub-status.
WEB_HELP_LINK_DETAIL	URL to the client specific help documentation for PTS AP Detail screen. This is only required when using custom help documents. Custom help files may be hosted outside the NetWeaver (Sharepoint, other internal <small>directories, etc.</small> )



WEB_HELP_LINK_SEARCH	URL to the client specific help documentation for PTS AP Search screen. This is only required when using custom help documents. Custom help files may be hosted outside the NetWeaver (Sharepoint, other internal directory, etc.)
WEB_HIDE_BUKRSSL	<p>Hide Company Code field for browser only. This is for the selection screen on web only.</p> <p><i>In general, header tab field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;SL entry in T08 table for your project. Refer to T01 table for all possible line fields.</i></p>
WEB_HIDE_1_BUKRSSL	<p>Hide Company Code field for <b>tablets</b> only. This is for mobile application add-on only.</p> <p><i>In general, header tab field can be hidden by adding WEB_HIDE_1_&lt;fieldname&gt;SL entry in T08 table for your project. Refer to T01 table for all possible line fields.</i></p>
WEB_HIDE_2_BUKRSSL	<p>Hide Company Code field for <b>mobile phones</b> only. This is for mobile application add-on only.</p> <p><i>In general, header tab field can be hidden by adding WEB_HIDE_2_&lt;fieldname&gt;SL entry in T08 table for your project. Refer to T01 table for all possible line fields.</i></p>
WEB_HIDE_ACTIVITYPL*	<p>Hide Activity field in -"Invoice" line tab for PO invoices on web. (See following screen shot) This will also control the PO details grid in the SAPGUI detail screen</p> <p><i>In general, any PO lines tab field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;PL entry in T08 table for your project.</i></p>



WEB_HIDE_ACTIVITY <del>PLA</del> *	Hide Activity field in PO account assignment line tab.  <i>In general, any PO account assignment tab field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;PLA entry in T08 table for your project.</i>
WEB_HIDE_ACTIVITY <del>POL</del> *	Hide Activity field in PO Based line tab.  <i>In general, any PO based line tab field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;POL entry in T08 table for your project.</i>
WEB_HIDE_ACTIVITY <del>SEL</del> *	Hide Activity field in SE line tab.  <i>In general, any SE line tab field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;SEL entry in T08 table for your project.</i>
WEB_HIDE_AUFNR <del>PP</del> *	Hide Internal Order# field in posted document line-item coding.  <i>In general, any posted document line table field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;PP entry in T08 table for your project. Refer to T11 table for all possible line fields.</i>
WEB_HIDE_AUFNR <del>T</del> *	Hide Internal Order# field in line-item coding for non-PO invoices.  <i>In general, any coding table field can be hidden by adding the WEB_HIDE_&lt;fieldname&gt;T entry in T08 table for your project. Refer to T11 table for all possible line fields.</i>
WEB_HIDE_AUFNR <del>TF</del> *	Hide Internal Order# field in posted line-item coding.  <i>In general, any posted document line table field can be hidden by adding the WEB_HIDE_&lt;fieldname&gt;TF entry in T08 table for your project. Refer to T11 table for all possible line fields.</i>



WEB_HIDE_EMAIL	Disable E-Mail button on detail page
WEB_HIDE_EXIT	Disable Exit button on all pages
WEB_HIDE_HELP	Disable Help button on all pages
WEB_HIDE_IHNAME1	<p>Hide NAME1 field in Posted SAP record header tab.</p> <p><i>In general, any Posted SAP record header tab field can be hidden by adding WEB_HIDE_IH&lt;fieldname&gt; entry in T08 table.</i></p>
WEB_HIDE_IMAGE_URLSL	Hide Image URL. This is for mobile application only.
WEB_HIDE_MENGEAAM	<p>Hide Menge field in pop up template table</p> <p><i>In general, any table field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;AAM entry in T08 table</i></p>
WEB_HIDE_PDFSL	Active and 'X' to hide the link to the document in the search results list.
WEB_HIDE_PHVVALU1	<p>Hide VVALU1 field in PTS record header tab.</p> <p><i>In general, any PTS header tab field can be hidden by adding WEB_HIDE_PH&lt;fieldname&gt; entry in T08 table.</i></p>
WEB_HIDE_POVPURCHORG	<p>Hide PurchOrg field in PO record header tab.</p> <p><i>In general, any PO header tab field can be hidden by adding WEB_HIDE_PO&lt;fieldname&gt; entry in T08 table.</i></p>
WEB_HIDE_REJECT	Hide the Reject button
WEB_HIDE_VVALU1\$	<p>Hide VVALU1 field in PTS Search Application.</p> <p><i>In general, any search field can be hidden by adding WEB_HIDE_&lt;fieldname&gt;S entry in T08 table. Refer to T01 table for all possible fieldnames.</i></p>
WEB_LIMIT_SEARCH	Value = PART_OF_CHAIN or PART_OF_COST_CENTER. Active to secure access for SAP and non-SAP web users to PTS records on the web.



WEB_LINEITEM_TEMPLATE	URL for excel template to be used for classic web excel upload.
WEB_LOGO_SRC	<p>Source for logo. Set it to "null" if Dolphin logo is not to be shown. Set it to ~SAPIcons&lt;image file name.gif or jpg&gt; to set it to your company's logo (assuming logo file exists on J2EE server path:</p> <pre>\\"&lt;server&gt;\saploc\&lt;SID&gt;\&lt;Instance&gt;\j2ee\cluster\server0\temp\webdynpro\web\sap.com\tc~wd~dispwda\global\sapicons</pre> <p>For NW 7.3:</p> <pre>\\"&lt;server&gt;\saploc\&lt;SID&gt;\&lt;Instance&gt;\j2ee\cluster\apps\sap.com\tc~wd~dispwda\servlet_jsp\webdynpro\resources\sap.com\tc~wd~dispwda\root\global\sapicons</pre>
WEB_MAX_FILE_SIZE	This setting limits the size of files that can be attached on the web. Recommended default is active with 1000000 (1MB)
WEB_MAX_OVS_HITS	Defines the maximum size of the returned rows for the OVS (drop down) searches
WEB_NOTES_OPT_ACCEPT	"X" to make notes optional when accepting
WEB_NOTES_OPT_FORWARD	"X" to make notes optional when forwarding
WEB_NOTES_OPT_REJECT	"X" to make notes optional when rejecting
WEB_NOTES_OPT_REJECT2LAST	"X" to make notes optional when rejecting to last approver
WEB_NOTE_CHARSET	Character set for encoding Notes (TCP00A maps to code page), default to UTF-8
WEB_ONLOAD_MYAPPROVALS	When active, the UI5 web link will open to My Approvals search results
WEB_OVS_AUFNR	Enable match-code search on line item coding block
WEB_OVS_AWSYS	Enable match-code search on logical system field in PTS Header tab
WEB_OVS_BANKKEY	Enable match-code search on bank key field
WEB_OVS_BUKRS	Enable match-code search on co.code# field in PTS Header tab



WEB_OVS_EGRUP	Enable match-code search on equity group field
WEB_OVS_FISTL	Enable match-code search on funds center field in line item coding block
WEB_OVS_FKBER	Enable functional area dropdown on line-item coding block
WEB_OVS_GEBER	Enable match-code search on funds field in line item coding block
WEB_OVS_GLACC	Enable G/L dropdown on line-item coding
WEB_OVS_GSBER	Enable business area dropdown on line-item coding block
WEB_OVS_KBLNR	Enable earmarked fund code dropdown on line-item coding block
WEB_OVS_KOSTL	Enable cost center dropdown on line-item coding block
WEB_OVS_LIFNR	Enable match-code search on vendor# field in Payment Request application
WEB_OVS_MWSKZ	Enable tax code dropdown on line-item coding block
WEB_OVS_NPLNR	Enable network dropdown on line-item coding block
WEB_OVS_PERNR	Enable personnel number dropdown on line-item coding block
WEB_OVS_PPRCT	Enable partner profit center dropdown on line-item coding on Payment Request and detail screen
WEB_OVS_PRCTR	Enable profit center dropdown on line-item coding on Payment Request and detail screen
WEB_OVS_PROJK	Enable WBS dropdown in line-item coding block
WEB_OVS_RECID	Enable Recovery Indicator field dropdown in line-item coding block
WEB_OVS_RZAWE	Enable match-code search on payment method# field in PTS Header tab
WEB_OVS_SGENR	Enable Building Number dropdown on line-item coding block
WEB_OVS_SGRNR	Enable Property Number dropdown on line-item coding block



WEB_OVS_SWENR	Enable Site Number dropdown on line-item coding block
WEB_OVS_TXJCD	Enable tax jurisdiction code dropdown on line-item coding block
WEB_OVS_VBEL2	Enable Sales Document dropdown on line-item coding block
WEB_OVS_VBUND	Enable Trading Partner Company ID dropdown on line-item coding block
WEB_OVS_VNAME	Enable Joint Venture dropdown on line-item coding block
WEB_OVS_VORNR	Enable Activity dropdown on line-item coding block
WEB_OVS_VVALU	Enable VVALU dropdown in PTS Header tab
WEB_OVS_WBS	Enable WBS element dropdown on line-item coding block
WEB_OVS_XREF1	Enable XREF1 dropdown on line-item coding block
WEB_PREVIEW_PDF_FORM	See Appendix B for Check Request for details
WEB_PTSAAPP_URL	PTS WebApp Search screen URL
WEB_READONLY_BUKRST	<p>Make company code field read-only in line-item coding for non-PO invoices.</p> <p><i>In general, any coding table field can be made read only by adding WEB_READONLY_&lt;fieldname&gt;T entry in T08 table for your project. It is possible that previous table may not include all possible line fields. Refer to T11 table for all possible line fields</i></p>
WEB_REQD_GLACCT	<p>Make G/L account line coding field required on web.</p> <p><i>In general, any coding table field can be made required by adding WEB_REQD_&lt;fieldname&gt;T entry in T08 table. It is possible that previous table may not include all possible line fields. Refer to T11 table for all possible line fields</i></p>



WEB_RFC_USER	Used in PO BAPI enhancement to call RFC to other AWSYS
WEB_SHORT_NAME	"X" to clear all text including and following the @. So, that the userid will match the T09 table entries when the fully qualified userid is used to validate the SAP user.
WEB_SORT_ORDER	A (ascending) or D (descending) for sort order of PTS Records in Web Search. D is default if this entry is not defined.
WEB_SUBSTITUTE_DISABLE	'X' to disable substitution entry from mySettings
WEB_SUBS_DATES_ENABLE	'X' to enable effective date fields on substitution for in mySettings
WEB_SUBS_LEVEL_CHECK	'X' for the system to check the substitute's approval level and if the level is found lower than the approver's prevent the substitution
WF_AUTO_DISP_NOTES	'X' for the web to automatically display image notes as a popup on the PTS detail screen during approval
Soft Escalation Settings	Refer to next section for soft escalation settings

Following are screen shots of the various sections affected by the WEB\_HIDE\* values:

WEB\_HIDE\_PD<fieldname> and WEB\_REQD\_PD<fieldname>

Possible fields for WEB\_HIDE\_PD<fieldname> and WEB\_REQD\_PD<fieldname>:  
 Name, Rep\_Name, Name\_4, State, Name\_3, City, Region, Postl\_Code, Country, BANK, BANK\_CTRY, BANK\_ACCT, BANK\_NO, INSTR\_KEY, CTRL\_KEY, PO\_BOX, STREE2

WEB\_HIDE\_<fieldname>PLA



#### Line Item Information

	Item	G/L Acct	Cost Ctr	Order	Profit Ctr	Network	WBS element
	00010	891000					

Possible fields for WEB\_HIDE\_<fieldname>PLA: Activity, Amt, Costctr, Glacct, Network, Orderno, Perc, Poitem, Profitctr, wbs

WEB\_HIDE\_<fieldname>PL

Invoice						
	Purch.Doc.	Item	Material	Quantity	BUn	Tx

Possible fields for WEB\_HIDE\_<fieldname>PL: BUKRS, ITEM, MAT, MATGRP, PLANT, PRICE, QTY, TEXT

WEB\_HIDE\_<fieldname>POL

	Item	Short text	PO quantity	Net price	Material	CoCd	Plnt	Matl Group
	00010	Sunny Sunny 01	50	5		5000	5000	00207

Possible fields for WEB\_HIDE\_<fieldname>POL: Ebeln, Ebelp, LFSNR, Matnr, Meins, Menge, Mwsrz, Netwr

WEB\_HIDE\_<fieldname>T



**Line Item Information**

Line Item Coding														
G/L *	G/L Description	Cost Ctr	Amount *	WBS Element	Material	Jurisdict. Code	CoCd	D/C	Text	Tx	Assignment	JAMIS #		

Possible fields for WEB\_HIDE\_<fieldname>T : See table /DOL/AP\_T11

WEB\_HIDE\_<fieldname>PP

**Line Item Information**

Posted Document																	
CoCd	Cost Ctr	G/L	Order	Amount	Profit Ctr	WBS Element	Functional Area	Ref.key 1	Tx	Assignment	Jurisdict. Code	Text	Ref key 2	Material	Bus. Area	UoM	Quantity
3000		160000		200		00000000							20110322			0	
3000		100000		200		00000000										0	

Possible fields for WEB\_HIDE\_<fieldname>PP : See table /DOL/AP\_T11

WEB\_HIDE\_PH<fieldname>

**Header Information**

PTS-AP Record		Purchase Order	
PTS-AP Record	00000665	Receipt Date	6/7/2011
Vendor#	5700	Vendor Name	J.P.I. SYSTEMS CORP.
Amount	1,000.00	USD	
Company Code	5000	Due Date	6/7/2011
Invoice#	TEST47	Invoice Date	6/7/2011
PO#	4500017345	Payment Reference	
Payment Method		Unplanned Freight	0.00
Payment term	0001	Custom1	
Custom	CAPEX	Current Status	Sent for Approval / Actic
Custom2			

Possible fields for WEB\_HIDE\_PH<fieldname>: Any header field previous

WEB\_HIDE\_PO<fieldname>



**Header Information**

PTS-AP Record	Purchase Order	<input type="button" value="&lt;"/>	<input type="button" value="&gt;"/>	<input type="button" value="Q"/>
PO Number	4500017345	Created By	SAMTHA	<input type="button" value="C"/>
Document Date	6/7/2011 <input type="button" value="C"/>	Created On	6/7/2011 <input type="button" value="C"/>	<input type="button" value="U"/>
Company Code	5000	Payment Terms	0001	<input type="button" value="D"/>
Purchasing Organization	5000	Purchasing Group	500	<input type="button" value="I"/>
Vendor Name	J.P.I. Systems Corp.	Currency	JPY	<input type="button" value="S"/>

Possible fields for WEB\_HIDE\_PO<fieldname> include: CompanyCode, CreatedBy, CreatedOn, Currency, DocumentDate, Number, PaymentTerms, PurchGroup, PurchOrg, VendorName

WEB\_HIDE\_IH<fieldname>

**Header Information**

PTS-AP Record	Posted Document	<input type="button" value="&lt;"/>	<input type="button" value="&gt;"/>	<input type="button" value="Q"/>
Document Type	KR	Document Status	<input type="button" value="C"/>	<input type="button" value="U"/>
Invoice Number	1900000002	Company Code	3000	<input type="button" value="D"/>
Invoice Date	3/22/2011 <input type="button" value="C"/>	Fiscal Year	2011	<input type="button" value="I"/>
Currency	USD <input type="button" value="C"/>	Reference Document	SJM_TST_1.4	<input type="button" value="S"/>

Possible fields for WEB\_HIDE\_IH<fieldname> include: BELNR BLDAT, BUKRS, EBELN, LIFNR, NAME1, WAERS, WRBTR

WEB\_HIDE\_<fieldname>S



## Dolphin Process Tracking System (PTS) - Accounts Payable

[Search/Refresh] [Show Search] [My Approvals] [My Submissions] [Create Payment Request] [My Settings] [Help]

### Search Criteria

#### System Data

Tracking Record Number: From  To

Process Status: From  To

Receipt Date: From  To

Last Activity Date: From  To

#### Document Data

Vendor Number: From  To

Vendor Name: From  To

Company Code: From  To

Document Number: From  To

Fiscal Year: From  To

Reference Number: From  To

Possible fields for WEB\_HIDE\_<fieldname>S include: RECNO, STATS, RCDAT, STDAT, LIFNR, NAME1, BUKRS, BELNR, GJAHR, XBLNR, XBLDT, WAERS, WRBTR, DUEDT, POSTDAT, EKGRP, EBELN, VVALU, VVALU1, LBLNI, KOSTL, AUFNR

### 4.1.2 Approver Registration Table (Activity: Dolphin: PTS-AP Approver registration Table)

Refer to *Implementation & Maintenance Guide Process Tracking System (PTS) for SAP Accounts Payable*.

**Note:** When the approver's web access is checked, the validity period of the user is also checked.

### 4.1.3 Approver Authorization Table (Activity: Dolphin PTS-AP: Approver authorization table)

1. Select activity **Approvals → Dolphin: PTS-AP Approver Authorization**.



**Display IMG**

Existing BC Sets BC Sets for Activity Activated BC

Structure

Dolphin- PTS-AP Configuration

- Initial Activation
- ArchiveLink Settings
- Field Configuration
- General Technical Settings
- Status Codes
- Routing
- Posting Controls
- Approvals

- Dolphin: PTS-AP Approver Registration
- Dolphin: PTS-AP Group Approvers
- Dolphin: PTS-AP Approval Level Vs Amount
- Dolphin: PTS-AP Approver Authorization
- Dolphin: PTS-AP Approvals Cost Center/GL Restrictions
- Dolphin: PTS-AP Approver Cost Center Restrictions

Detail Screen Configuration

2. Use this table (/DOL/AP\_T17) to create authorizations for approvers. The table consists of Authorization object, Authorization, the object type and the Approvers User ID.

This table is used in conjunction with the AUTH\_XXX setting in the Miscellaneous Configurations table and the Approvers Registration table. The Approvers User ID can be individual userids or departments from the Approver Registration table.

For example: For web only user Caroline, in order to limit web access by company code the following entries would be required:

```
/DOL/AP_T08 AUTH_BUKRS is active with value F_BKPF_BUK  
/DOL/AP_T09 has a valid entry for userid CAROLINE  
/DOL/AP_T17 has a valid entry for userid CAROLINE
```



Data Browser: Table /DOL/AP_T17 Select Entries 1					
Check Table...					
Table: /DOL/AP_T17		Displayed Fields: 5 of 5 Fixed Columns:			
		List Width [ 5 ]			
	MANDT	AUTHOBJ	AUTHO	OBJTP	OBJID
<input type="checkbox"/>	800	F_BKPF_BUK	T-I355034200		CAROLINE

## 4.2 Background Batch Job

/  
/DOL/AP\_EMAIL\_BATCH should be scheduled to run as a background job if BATCH is selected for APPROVAL\_EMAIL, ESCALATION\_EMAIL, or REMINDER\_EMAIL. This job should be scheduled to run daily before midnight. Leave current date blank and the system will set it to the current date automatically, or in the variant use sy-date which will also set it to the current date.

**Note:** When BATCH mode is selected for APPROVAL\_EMAIL, ESCALATION\_EMAIL, or REMINDER\_EMAIL, the batch e-mail is a daily digest of all of the user's activities for that day whether it previously went out in single mode or not.



### 4.3 Email Configuration

Emails are sent for approval notification, approval reminder, approval escalation and manager notification or "soft escalation" (See Soft Escalation below). Generally, emails can be sent singularly or in batch mode. Exceptions are indicated in the relevant sections below. The email's subject and body can be configured. Additionally, approval emails can include a link for web approval, or they can allow for direct approval via email, referred to as "simple email". Also, there is the added feature whereby a user can request and receive a PTS record status via email. This section will cover the configuration for each of these options.

**Note:** Refer to *Implementation & Maintenance Guide Process Tracking System (PTS) for SAP Accounts Payable for Sending Email to Vendor or Scanner when Requesting Rejection.*

#### 4.3.1 Soft Escalation

##### Overview

Soft escalation is a feature that can be activated through T08 configuration. When soft escalation is activated, two kinds of reminder emails are sent: the first regular reminder email is sent to the approver. After that, a special "cc email" is sent to both the approver and his/her manager. The default body of the cc email has one sentence: "This email is copied to your manager(s)". This text is configurable (see following section).

**Note:** Soft escalation is only available with Single mode, not with Batch mode.

##### How to activate soft escalation?

Soft escalation will be activated when the MAX\_Rem\_COPY value in /DOL/AP\_T08 is set to a number greater than 0. The ADD\_MANAGER\_AT\_TOP setting should be deactivated.

##### How are regular emails sent with soft escalation activated?

The regular approval and first reminder emails will be sent in the same manner with or without soft escalation activated. Each approver will get one initial email, followed by up to a certain number of reminder or reminder copy emails, and this maximum number of reminders to be sent to an approver is determined by T08's MAX\_Rem value. When this max number is reached, the next approver in the chain will get one initial email, followed by the same maximum number of reminders. This cycle repeats itself with every level approver, including the last approver. The PTS record is then escalated (returned) to AP.



With soft escalation, an option exists to terminate this cycle before the last approver. When T08's STOP\_Rem\_WITH\_CC value is set to 'X', the regular reminder emails will be stopped when all the cc emails have been sent.

#### How are cc emails sent?

When the approver gets his/her initial email and first reminder emails, no cc emails are sent.

Starting from the 2<sup>nd</sup> reminder, a cc email is sent to the approver and his/her immediate manager (1<sup>st</sup> level manager), rather than the normal reminder email. The maximum number of cc emails sent for an approver at any level is determined by the T08's MAX\_Rem\_COPY value.

CC emails can be copied to the managers in the hierarchy above the approver. The maximum number of levels copied is determined by the T08's MAX\_Rem\_COPY\_LEVEL value.

For example, the following T08 configuration:

Name	Value	Note
DEADLINE	7200	2 hours
MAX_Rem	7	Up to 5 reminders will be sent to the approver.
MAX_Rem_COPY	3	2 cc emails sent to each level of manager.
MAX_Rem_COPY_Level	2	2 levels of managers will be copied to.

The following will happen:

Deadline	Approver	1 <sup>st</sup> Level Manager	2 <sup>nd</sup> Level Manager
Start	Initial email		
2 hrs	1 <sup>st</sup> Reminder		
4 hrs	CC Email	CC Email 1-1	
6 hrs	CC Email	CC Email 1-2	
8 hrs	CC Email	CC Email 1-3	
10 hrs	CC Email	CC Email 2-1	CC Email 2-1
12 hrs	CC Email	CC Email 2-2	CC Email 2-2
14 hrs	CC Email	CC Email 2-3	CC Email 2-3
16 hrs	Escalate to the next level approver or to AP		

**Note:** The same cycle will happen for the next level approver.



Note the relationship of the three T08 values: MAX\_Rem, MAX\_Rem\_COPY and MAX\_Rem\_COPY\_LEVEL. The previous table shows that in order for all cc mails to be sent, MAX\_Rem should be set to a value that equals MAX\_Rem\_COPY \* MAX\_Rem\_COPY\_LEVEL + 1.

#### **How to stop reminders when all emails have been sent?**

If the previous T08 settings are changed so that MAX\_Rem = 8, and the choice is to not have any reminder email sent after CC Email 2-3 is sent, simply set the T08 'STOP\_Rem\_WITH\_CC' value to 'X'.

#### **What to do with more unique requirements?**

The calculation formula listed in the previous section is the standard offer in terms of soft escalation, and is implemented as a function module: /DOL/AP\_GET\_CC\_MANAGERS. If a different formula is required, a custom function can be developed, and the name can be entered in the value for T08's CC\_MANAGER\_FUNCTION\_EXIT.

### **4.3.2 E-Mail Text Maintenance**

The language of the e-mail body and subject for both original and reminder e-mails is configurable in PTS. There are two methods by which this can be accomplished: Standard Text (SO10) and MIME (SMW0).

#### **4.3.2.1 Standard Text (SO10)**

This is based on standard text concept where text is maintained for pre-defined text values, in any language supported by SAP.

Configuration: In /DOL/AP\_T08 the setting APPROVAL\_EMAIL\_FORMAT should be set to 'TEXT' or made inactive to use standard text.

Use the following steps to create various standard texts required by PTS.

**Note:** MIME is the recommended mail format. However, the /DOL/ standard texts are supplied. If custom standard texts are desired, then follow the following steps.

Step 1. Call transaction SO10 to enter following data, click the Create button. For a full list of possible text names see section 4.3.2.4. Rather than /DOL/xxx the custom texts will be Y4AP\_XYZ\_XXX where XYZ is your custom package name. Ask your Dolphin consultant or the Dolphin Support Center for the proper naming convention for your company.



Standard Text

Text Name	<input type="text" value="Y4AP_ACME_APPTSINV_BODY"/>
Text ID	ST Standard text
Language	EN

Step 2. Enter your custom text:

**Change Standard text: Y4AP\_L3\_APPTSINV\_BODY Language EN**

Insert Line Format Page 

Step 3. Click the Save button.

#### 4.3.2.2 Transport of Standard Text

When saving a new standard text or changing an existing text, there is no prompt for transport request. Either create the standard text in the new system or transport it. Standard texts can be transported in the following manner:

1. Create a customizing transport request using transaction SE10.
2. Open the report program RSTXTRAN, and enter the customizing task (under the customizing request) in the input field Name of correction. Enter the standard text's object, name, ID, and language in the following



input fields. Then click the Execute button. (If you have multiple standard texts to transport, you can enter something like '/DOL/AP\*' in the name field. This will create a list of all standard texts whose names start with "/DOL/AP".)

3. Make sure to check all those that you want to transport and uncheck those that you do not. Then click the continue icon, and then the "Trsfr texts to corr." Button.
4. Answer "YES" in the following question "Transfer texts to the correction?" If successful, the system will indicate so.
5. The remaining procedures are the same as those for a regular transport request.

For more details, see SAP Help document and SAP Note 3355.

#### 4.3.2.3 MIME (SMW0)

Mime texts are also available as an alternative to maintaining standard texts for email content. Using MIME templates allows more flexibility in content and formatting. MIME is the recommended email format.

Configuration: In /DOL/AP\_T08 the setting APPROVAL\_EMAIL\_FORMAT set to active with value 'MIME' will use the web template for the email texts instead of standard text. All other settings will default to the standard text.

**Note:** /DOL/ standard texts are supplied. If custom standard texts are desired, then follow the following steps.

- 1) Custom templates can be created via transaction SMW0. Rather than /DOL/xxx the custom texts should be named Y4AP\_XYZ\_xxx where XYZ is your custom package name. Ask your Dolphin consultant or the Dolphin Support Center for the proper naming convention for your company.





### SAP Web Repository: Object selection

HTML templates for WebRFC

Package	/DOL/APWEB
Object name	/DOL/APPTSINV_BODY to
Object description	to

~wwwtmp.HTM - Notepad

```
<HTML>
<BODY>
You have an invoice from vendor &T01-NAME1& for amount Z5 that requires your
attention due to the following reason:<br>
<b>Z6</b>
<br>

<br>Upon review, please accept or reject the document.
<br>

<br>For approvals that do not require coding you can use the links below
and respond by email. <a href="Y2">View Image</a>
<a href="mailto:Y1?subject=APPROVE:Z1&body=Notes:>Approve</a>
<a href="mailto:Y1?subject=REJECT:Z1&body=Notes:>Reject</a>
<a href="mailto:Y1?subject=REJECTLAST:Z1&body=Notes:>Reject to Last</a>
<br>
<br>
&T11&
<br>
<br>When responding by e-mail, do not alter the e-mail address or
subject, however you can provide any notes for AP in the e-mail body.
<br>
<br>If the document does not have any PO associated, please fill in the
required cost center number/order number and general ledger account
(G/L) number in the email body. If you reject the invoice please include the
reason in the email body.
<br>

<br>Please respond within 3 days. Compliance with Corporate Policies is
required when approving an invoice.
<br>
<br>For web access use the following link to view PTS record &T01-RECNO&:
<a href=
Z2
>Web Approval</a>
<br>
<br>For further help, click on any of the "Help" buttons on the PTS
Screens or use the <a href="http://web_approval_help@ourcompany.com">
```

- 2) Maintain the body in your preferred editor and upload it back.

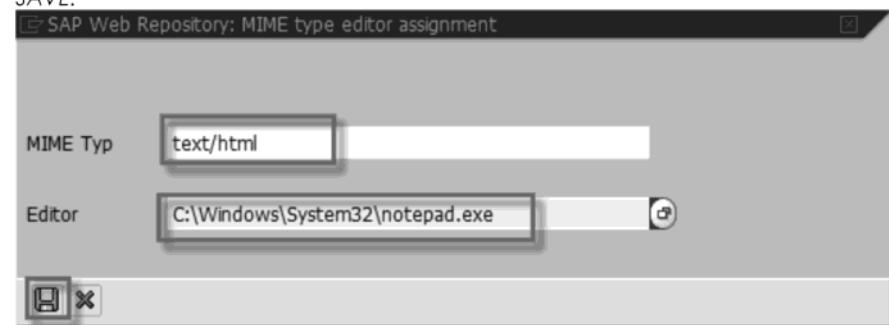


The first time SMW0 is used, a MIME editor will have to be assigned. From the SMWO SAP Web Repository: Object Display screen, choose *Settings* -> *Assign MIME editor*.

The screenshot shows the SAP Web Repository interface. The menu bar has 'Settings' selected. A context menu is open over an object named 'APPTSINVES\_BODY'. The menu options are 'Assign MIME editor' (highlighted), 'Delete assignments', and 'Maintain MIME types'. Below the menu, there is a table titled 'Obj.type' with one row: 'HTML templates for WebRFC'. The table contains three columns: Obj. name, Pack., and Date. The first row has values: '/DOL/APPTSINVES\_BODY', '/DOL/APWEB', and '02/29/2012'. The description column is partially visible.

Obj. name	Pack.	Date	Description
/DOL/APPTSINVES_BODY	/DOL/APWEB	02/29/2012	Body of regular invoice appro...

Enter the *MIME type* as *text/html* and give the path of the editor you wish and *SAVE*.



#### 4.3.2.4 Text Names

The following table provides for a list of all standard /DOL/ texts and templates.



Obj. name	Pack.	Date	Description
/DOL/APPTSADHOC_BODY	/DOL/APWEB	19.07.2016	Body of adhoc email
/DOL/APPTSADHOC_SUB	/DOL/APWEB	19.07.2016	Subject of adhoc email
/DOL/APPTSError	/DOL/APWEB	22.10.2015	Body of Status Update
/DOL/APPTSError_Sub	/DOL/APWEB	12.11.2015	Subject of Simple email error
/DOL/APPTSINVES_BODY	/DOL/APWEB	23.04.2014	Body of regular invoice approval escalation emails
/DOL/APPTSINVES_BODY_EM	/DOL/APWEB	23.04.2014	Body of escalation notifications for simple e-mail
/DOL/APPTSINVES_SUB	/DOL/APWEB	25.11.2014	Subject of regular invoice approval escalation emails
/DOL/APPTSINV_BODY	/DOL/APWEB	23.04.2014	Body of regular invoice approval notifications
/DOL/APPTSINV_BODYBT	/DOL/APWEB	23.04.2014	Body for batched e-mail
/DOL/APPTSINV_BODYBT_EM	/DOL/APWEB	16.11.2015	Body for batched with simple e-mail approval
/DOL/APPTSINV_BODYBT_EM_ES	/DOL/APWEB	29.06.2015	Test Spanish extension
/DOL/APPTSINV_BODYCC	/DOL/APWEB	20.01.2016	Body for copied e-mail (soft escalation)
/DOL/APPTSINV_BODYREM	/DOL/APWEB	23.04.2014	Body of reminder notifications for regular invoices
/DOL/APPTSINV_BODYREM_EM	/DOL/APWEB	20.01.2016	Body of reminder notifications for simple e-mail
/DOL/APPTSINV_BODY_EM	/DOL/APWEB	17.11.2015	Body of regular invoice approval notifications for simple e-mail
/DOL/APPTSINV_BODY_EM_ES	/DOL/APWEB	29.06.2015	Test spanish text for single email
/DOL/APPTSINV_SUB	/DOL/APWEB	04.02.2015	Subject of regular invoice approval notifications
/DOL/APPTSINV_SUBBT	/DOL/APWEB	29.03.2013	Subject for batched e-mail
/DOL/APPTSINV_SUBCC	/DOL/APWEB	20.01.2016	Subject for copied e-mail (soft escalation)
/DOL/APPTSINV_SUBREM	/DOL/APWEB	01.03.2016	Subject of reminder notifications for regular invoices
/DOL/APPTSRV_BODY	/DOL/APWEB	30.12.2015	Vendor Email Body
/DOL/APPTSRV_BODY_DE	/DOL/APWEB	02.08.2016	Vendor Email Body German
/DOL/APPTSRV_SUB_C	/DOL/APWEB	29.12.2015	Vendor credit subject
/DOL/APPTSRV_SUB_I	/DOL/APWEB	29.12.2015	Vendor invoice subject
/DOL/APPTSSA_BODY	/DOL/APWEB	23.04.2014	Body of service acceptance notifications
/DOL/APPTSSA_BODYREM	/DOL/APWEB	23.04.2014	Body of reminder notifications for service acceptance
/DOL/APPTSSA_BODYREM_EM	/DOL/APWEB	20.01.2016	Body of reminder notifications for service acceptance
/DOL/APPTSSA_BODY_EM	/DOL/APWEB	30.06.2015	Body of Service entry acceptance notification for simple e-mail
/DOL/APPTSSA_SUB	/DOL/APWEB	23.04.2014	Subject of service acceptance notifications
/DOL/APPTSSA_SUBREM	/DOL/APWEB	20.01.2016	Subject of reminder notifications for service acceptance
/DOL/APPTSSE_BODY	/DOL/APWEB	23.04.2014	Body of Service entry acceptance notification
/DOL/APPTSSE_BODY_EM	/DOL/APWEB	30.06.2015	Body of Service entry acceptance notification for simple e-mail
/DOL/APPTSSE_SUB	/DOL/APWEB	23.04.2014	Subject of Service entry acceptance notification
/DOL/AP_EMAIL_CC_BODY	/DOL/APWEB	29.02.2016	Dolphin AP : Text for the CC email body.

**Note:** If BATCH mode is selected, Batch emails use the same template for approval, reminder, and escalation and everything is included on the email whether it may have previously gone out in single mode or not.

Follow these instructions to create standard texts in other languages (e.g. Japanese, Korean, Spanish, etc.) for SO10 and SMW0:

**SO10:** The Text Names and Text ID would be the same, the only difference when entering data on the SO10 initial screen would be the language. For Japanese, select 'JA'; for Korean, select 'KO'.

For example:



**Standard Text: Request**

--	--

**Standard Text**

Text Name	Y4AP_ACME_APPTSINV_BODY_JA
Text ID	ST Standard text
Language	JA

Display   Change   Create

Depending on your language configuration, you might need to log on to the Japanese system to create the Japanese standard texts, and the Korean system for the Korean texts.

**SMWO:** To maintain a different language, create a new object with the text name suffixed with an underscore and the two character language key. For example to create a Spanish email body add '\_ES' to the template name so Y4AP\_XYZ\_APPTSINV\_BODY\_EM would become Y4AP\_XYZ\_APPTSINV\_BODY\_EM\_ES.

#### 4.3.2.5 Placeholders

Placeholders have a different usage depending on the email type. Pay attention to the correct locations of the placeholders. It would be advisable to check with the language translators for the correct position of placeholders. However, the placeholders themselves should not be translated.

##### Single emails

NOTE: For MIME templates, if miscellaneous entry APPROVAL\_EMAIL HOLDER is active with a value of 'X', all placeholders will be enclosed with ampersands (&).

Placeholder	For:	Can Be Used In:	Length
-------------	------	-----------------	--------



Z1	PTS record number	Single email body and subject line	8
Z2	Web link to the document's detail screen	Body only	Max 255
Z3	Vendor name	Body and subject line	Max 35
Z4	Invoice reference number	Body and subject line	Max 16
Z5	Invoice amount	Body only	N/A
Z6	Sub status description	Body only	N/A
&REM&	Number of reminders	Subject line	N/A
&SYSID&.	System ID	Body and subject line (with MIME only)	N/A
&TNOTE&	PTS record notes	Body only (with MIME only)	N/A
&T01-FIELDNAME&	Any field in the /DOL/AP_T01 table	Body only	N/A
&T10&	Approvers list from /DOL/AP_T10 table	Body only (with MIME only)	N/A
&T11&	Account coding	Body only (with MIME only)	N/A

**Note:** When using Z1, Z3 and/or Z4 in the subject line, pay attention to the fact that the maximum length of the subject line is 50 characters, and a subject line longer than 50 will get truncated.

**Note:** Z1 – Z6 placeholders are not available for Vendor Emails.

#### Batch email

Placeholder	For:	Can Be Used In:	Length
Z1	Recipient name	Batch email body	Max 80
Z2	Web link to My Approvals screen	Batch email body only	Max 255
Z3	List of PTS records to be processed by the approver	Batch email body	N/A

#### Simple email

Placeholder	For:	Can Be Used In:	Length
Y1	Recipient address (from SO50)	Simple email body only	Max 240

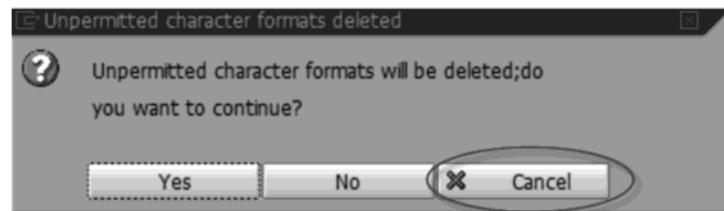


Y2	Web link to view image	Simple email body only	Max 255
----	------------------------	------------------------	---------

#### Status email

Placeholder	For:	Can Be Used In:	Length
&T01- FIELDNAME&	Any field in the /DOL/AP_T01 table	Request status email	Max
&T02&	PTS record history	Request status email	N/A
&T10&	PTS approval Chain	Request status email	N/A
&TNOTE&	PTS record notes	Request status email	N/A

**Note:** When using transaction SO10 to edit the "Request status" email, the following message may appear:



Simply select 'Cancel' and continue.

#### 4.3.3 Simple E-mail Configuration

Simple Email is a feature whereby the approver will have the ability to submit his/her decision via email by selecting a link with his/her decision. If simple email is selected, a check is made to see if there is at least one line of coding. If the coding exists, the simple email template is sent. If no coding exists, the simple email is not sent, but rather the regular email is sent to force approvers to the web for the necessary coding.

#### Prerequisites

Inbound Email in SAP must be configured in order to use Simple Email Approvals. See OSS note 455140 for instructions on how to set up mail.

In transaction SO50, create the Exit rule for inbound processing of simple email approvals:



Communication Type: Internet Mail

Recipient address:

USER@sapserver (where sapserver is the fully qualified name of the sap server, So for example, our SAP server is dolecc60a.dolphin-corp.com, so the email would be smtpuser@ dolecc60a.dolphin-corp.com)

Give a similar email address in SU01 for the SMTP user. The exchange connector will forward any mail for the SAP server to SAP where it will be picked up.)

Document Class: \*

Exit Name: /DOL/APWEB\_INBOUND\_MAIL

Configuration: Make the following settings active with the following values in /DOL/AP\_T08

AA\_SIMPLE\_EMAIL\_ACTIVE = X or GLOBAL (Required)

AA\_SIMPLE\_EMAIL\_IMAGE = 'LINK', 'ATTACH', or 'X' (defines whether the invoice image is sent as a link and attachment or both)

AA\_SIMPLE\_EMAIL\_REPLY = X (Optional)

AA\_SIMPLE\_EMAIL\_STATUS = 661 (Optional)

APPROVAL\_EMAIL = Single or BATCH (Required)

Additionally the following standard texts must be maintained:

/DOL/APTSINVES\_BODY\_EM

/DOL/APTSINV\_BODYREM\_EM

/DOL/APTSINV\_BODY\_EM

/DOL/APPTSADHOC\_BODY\_EM

Your Basis team will want to consider the cleanup procedures for inbound emails if you will use Simple Email Approvals. Refer to this SCN link:  
<http://scn.sap.com/thread/3419715>.

**Note:** For those with EHP6 support pack 7.31, in the SXPARAMS table, the param MULTIPART/ALTERNATIVE is set to HTML by default. This must be changed to "Prefer text" for the inbound emails to record notes properly.

**Note:** The port settings in the ICM parameters may need to be set to 25\$\$ and not just port 25, depending upon the SAP system set up.

#### 4.3.4 Request Status Via E-mail

A feature of the Advanced Approvals is the ability to obtain the status of a PTS record via email.



In order to request a status of a PTS record, inbound email must be configured in the SAP system. See OSS note 455140 for instructions on how to set up mail.

Configuration: The text must be maintained for /DOL/APPTSSTATUS either with SO10 or SMW0.

In transaction SO50 create the Exit rule for inbound processing of request status email approvals:

Communication Type: Internet Mail

Recipient address:

USER@sapserver (where sapserver is the fully qualified name of the sap server, for example dolecc60b.dolphin-corp.com)

(Note: This must be the email address the request is addressed to)

Document Class: \*

Exit Name: /DOL/APWEB\_INBOUND\_MAIL

#### 4.3.5 Custom wording option

The option exists with customization to have customer specific text for each template. The templates must be saved with the prefix Y4AP\_ or Y4AP\_XXX\_ where XXX is the project name. Under this naming convention, the prefix is followed by the core template name, followed by \_EM (if simple email is selected), followed by \_ZZ (where ZZ is the selected language). For example for project DOL, a template could be customized and named Y4AP\_DOL\_APPTSINV\_BODY\_EM\_EN. If a particular language text is not maintained, the system will try to use the default language English (EN). Thus, the customer is expected to maintain at least the English version.

Prefix	Core Name	Suffix 1 – Simple Email link when active	Suffix 2 – Language Key
Y4AP_	APPTSINV_BODY		DE
Y4AP_XXX	APPTSINV_BODY	EM	EN

**Note:** For custom wording the miscellaneous configuration must be active for field APPROVAL\_EMAIL\_TEMPLATE with a value of Y4AP or Y4AP\_XXX\_ where XXX is the project name.

**Note:** For simple email, the miscellaneous configuration must be active for field AA\_SIMPLE\_EMAIL\_ACTIVE with a value of 'X'.



#### 4.3.6 Reason code specific option

Custom templates can also be reason code specific. Under this configuration, a specific email text will be sent when an approval is sent with a specific status 60 sub-status. Under this naming convention, the custom prefix is followed by the core template name, followed by \_EM (if simple email is selected), followed by \_### (where ### is the specified sub-status), followed by \_ZZ (where ZZ is the selected language). The template must have a suffix equivalent to the sub-status inserted between the simple email and the language key. For example, to send a specific text in Spanish when the approval is sent with sub-status 750 "Tax Issues", the template could be customized and named Y4AP\_APPTSINV\_BODY\_EM\_750\_ES.

Prefix	Core Name	Suffix 1 – Simple Email link when active	<b>Suffix 2 – Reason code</b>	Suffix 3 – Language Key, default to EN
Y4AP_	APPTSINV_BODY		<u>750</u>	<u>DE</u>
Y4AP_XXX	APPTSINV_BODY	_EM	<u>750</u>	<u>EN</u>

**Note:** For custom wording, the miscellaneous configuration must be active for field APPROVAL\_EMAIL\_TEMPLATE with a value of Y4AP or Y4AP\_XXX\_ where XXX is the project name.

**Note:** For simple email, the miscellaneous configuration must be active for field AA\_SIMPLE\_EMAIL\_ACTIVE with a value of 'X'.

### 4.4 Substitution

PTS-AP's handling of approver substitutions involves a few scenarios, with different configurations. Following is a description of the three scenarios:

#### 4.4.1 Standard Approach

The standard approach allows approvers to activate their substitutes for a certain period.

##### Configurations and Other Prerequisites

T08-CUSTOM\_SUB = 'X'.  
T08-WEB\_ENABLE\_MYSETTINGS = 'X'  
T08-WEB\_SUBSTITUTE\_DISABLE de-activated  
T08-WEB\_SUBS\_DATES\_ENABLE = 'X'.

##### Expected Behaviors



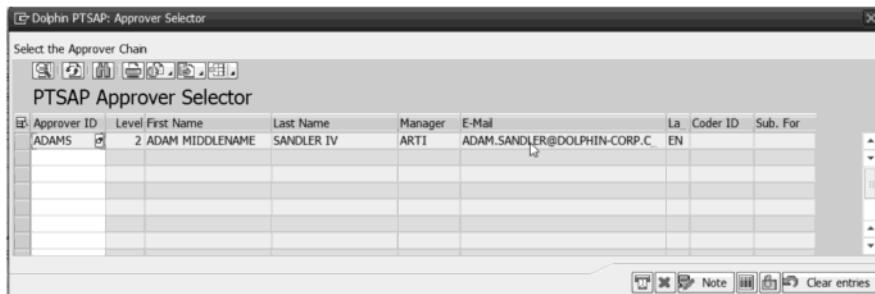
The approvers specify their substitutes on the web for a certain period. When the button My Settings is pressed, a pop-up will display the substitute status, if any, such as the substitute ID, dates and whether the substitute is active. (He/she can also specify his/her coder here (the coder functionality is not covered here)). Note: the dates and the active checkbox apply only to the substitution relationship.

Example: Suppose that today is 01/21/2011. Approver ADAMS will be out of office for a month. The approver goes to the web, opens My Settings and saves GEORGEW as his/her active substitute for the period from 01/21/2011 to 02/21/2011.

The substitution data is saved in the Approver Registration table (/DOL/AP\_T09):

Dolphin: PTS-AP approver registration table													
Approver's ID	Last name	First name	De..	T..	Man..	Email	Lang	Level	Substitute's ID	Coder's ID	Subs Active	Start Date	End Date
ADAMS	Smith	Adams	PTS			ADAMS@DOLEN	99	GEORGEW			<input checked="" type="checkbox"/>	01/21/2011	02/21/2011

Thereafter, all new approval chains built during the period will send approvals to both ADAMS and GEORGEW. ADAMS will show as the approver in the selection screen and will not be replaced by GEORGEW.



What about those approval chains already built in which ADAMS is an approver, but has not yet had a chance to handle? These existing approval requests will also be seen by the active substitute. If the substitute approves the record, the substitute sub-status will appear in the history log.

When ADAMS comes back, he can de-activate the substitution relationship by going to the web's My Settings, clearing the Substitute Activate checkbox and pressing SAVE. Thereafter, the substitute will no longer see the original approver's records.

#### 4.4.2 Simplified Approach

The simplified approach allows approvers to activate their substitutes, without specifying the validity period.

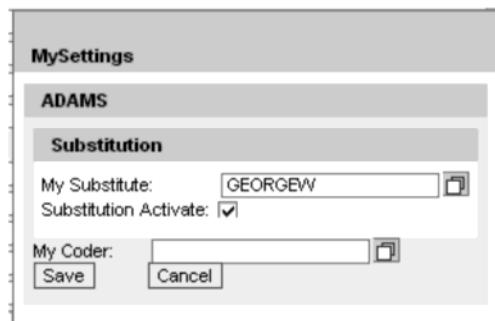
##### Configurations and Other Prerequisites

T08-CUSTOM\_SUB = 'X'.  
T08-WEB\_ENABLE\_MYSETTINGS = 'X'  
T08-WEB\_SUBSTITUTE\_DISABLE de-activated  
T08-WEB\_SUBS\_DATES\_ENABLE = de-activated  
T08-MOVE\_ON\_SUBSTITUTION = 'X'

##### Expected Behaviors

Approvers can specify their substitutes on the web. When My Settings button is opened, it will show the substitute status, if any, such as the substitute ID, and whether the relationship is active. But, My Settings does not have the date range fields.

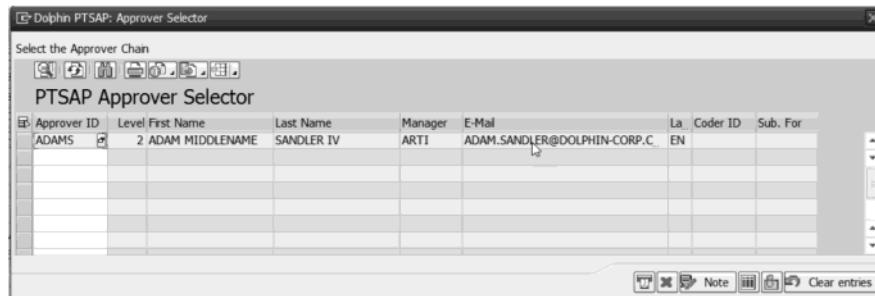
Suppose that Approver ADAMS will be out of office for a month and needs to have GEORGEW as his/her active substitute. He/she can open My Settings, enter the data as shown in the following and click SAVE:



The substitution data is saved in the Approver Registration table (/DOL/AP\_T09):

XUSER	LNAME	FNAME	DEPT	P_M...	EMAIL	LANG	APRL...	SUBS_ID	CODER_ID	SUBS_ACTIVE	SUBS_BEG_DA...	SUBS_END_DA...
ADAMS	Smith	Adams	PTS		ADAMS.E		99	GEORGEW		X		

Thereafter, all new approval chains built will send records to both ADAMS and GEORGEW, that is, until ADAMS comes back and de-activates the substitution. When an AP clerk enters ADAMS as the initial approver on the Approver Selector, ADAMS will display as the approver.



As for those approval chains already built in which ADAMS is an approver, but he/she has not yet had a chance to handle, These existing approval requests will also be seen by the active substitute. If the substitute approves the record, the substitute sub-status will appear in the history log.

When ADAMS comes back, he can de-activate the substitution relationship by going to the web's My Settings, clearing the Substitute Activate checkbox and



pressing SAVE. Thereafter, the substitute will no longer see the original approver's records.

#### Standard SAP Workflow Substitution Approach

When choosing this approach, it is recommended that substitution profile "/DOL/AP" is used so that the substitution relationships set up for non-PTS-AP workflows will not impact our PTS-AP workflows, and vice-versa.

#### Configurations and Other Prerequisites

T08-SUBSTITUTE\_PROFILE = /dol/ap

Create the substitute profile by transaction code SPRO, then following the menu path: SAP Web Application Server >> Business Management >> SAP Business Workflow >> Basic Settings >> Substitute profile >> Define substitute profile:

Subs.profile	Substitute Profile
/DOL/AP	Dolphin PTS-AP

(For those with Web Package, My Settings can be configured in the same way as described for T09-based substitution. For example, the validity date fields can be hidden.)

Maintain Substitution in SAP Business Workplace. To maintain substitute from SAP Business Workplace, use transaction code SBWP, follow the following menu path: Settings >> Workflow Settings >> Maintain Substitutes, highlight your user ID and click the Create Substitute button: (For those with Web Package, substitution can also be maintained in My Settings.)

#### Expected Behaviors

When AP enters the approver ID on the traditional Approver Selector screen, the system will not replace the approver ID with the substitute ID. When approval request is a work item to be executed in SAP R/3, the work item will be visible to both the approver and his/her substitute. In other words, both the approver and his/her substitute will see the PTS record under My Action List.

Substitutes can be created, activated or de-activated, and the validity dates can be changed on My Settings. When a substitute is maintained via My Settings, expect the following additional behavior: My Settings will display the current active substitute, if any. If the validity dates are hidden or left blank when creating a substitute, the system will automatically fill use today's date as the start date and 12/31/2999 as the end date.



#### 4.4.3 Other Options

There are a few related options available:

##### **Preventing Lower Level Substitute**

Configuration needed: T08-WEB\_SUBS\_LEVEL\_CHECK = 'X'.

With the previous configuration in place, the system will check the substitute's approval level and if the level is found lower than the approver's, will prevent the set up with an error message shown as follows:

TERRI with a lower level 03 cannot be selected as substitute;

This feature is available in both Standard and Simplified Approaches.

##### **WF Administrator Maintaining Substitute for Approver**

A workflow administrator with authorizations to maintain the Approver Registration table (/DOL/AP\_T09) can set up the substitute for any approver in case he/she forgets to do so. Use transaction code /DOL/AP\_SPRO, click the execute button for Approver Registration, and enter the substitute's data.

With standard configurations, the expected behavior is exactly the same no matter if the substitute is set up by the approver via My Settings or by the WF administrator using /DOL/AP\_SPRO.



## Appendix A: Background User Authorization for Advanced Approval

### Dolphin PTS Fiori/UI5 to SAP Communication Security

The connection between the PTS Fiori / UI5 application and ECC is established through RFC protocol. This RFC connection to ECC can be made using a single CPIC user.

The following screen shots illustrate the CPIC concept from the user perspective:

A Web user logs into the Fiori / UI5-based Dolphin web application and is authenticated, either through a manual login or via an SSO solution for Fiori / UI5 applications, should one exist. The Fiori/UI5 Advanced Approval application will display a list of invoices that are assigned to this user. In a background process, the Web Application logs into SAP as a CPIC user, however the calls to the Dolphin PTS solution in SAP contain the USER ID of the logged on individual. In this example, the user logs in as BILL.

**Log On**

E-Mail: Bill  
Password:   
Forgot password?

**Dolphin PTS-AP - Demo**

**2. Information records are displayed for user BILL.  
Source is SAP and invoice is assigned to BILL**

**Dolphin PTS AP**

**My Approvals**

**INVOICE**

Dolphin Office Supplies  
PO Box 100  
Headline, AL 77021  
Phone: 330-545-2556 | Fax: 330-545-2556  
www.dolphinofficesupplies.com

Invoice: 1205060VER  
09/02/2012

Ship To:  
GES 16 Inc  
1230 16th Street Avenue  
New York, NY 10019  
Phone: 330-545-4006  
Fax: 330-545-4222

Line Item	Description	Unit Price	Total
1	Toner	165.00	165.00



As shown in transaction SM04, there are only RFC connections from User CS\_CPIC, and not BILL.

**Dolphin Process Tracking System (PTS)-AP - InfoCenter 1 hits**

My Action List FI doc MM doc PO Vendor FBL1N Check WF log Agent Image Note History Change Doc Forward Reporting Hit Lists

Stage	Message	Record	Receipt Date	Status	Status Description	Ref number	Ref date	Amount	Last Sub-status	Last Sub Status description	Last Activity
		00004732	02/25/2016	060	Sent for Approval /	1206560VER	09/05/2012	185.000.00	720	PO vs Invoice price issue	20160225

PTS-API: Detail Screen  
Bill Jones

1. PTS Record 4732 is assigned to user BILL, however BILL is not a named SAP user.

User List

Clnt User	Terminal	Transaction	Time	Class	Type	Replicate
800 CS_CPIC	10.14.07.24		09.29.48	1	RFC	0
800 CS_CPIC	10.14.07.24		09.25.43	1	RFC	1
800 JOHN	pete-d530		09.20.05	1	RFC	1
800 JOHN	pete-d530	SM04	09.30.29	3	GUI	20
800 CS_CPIC	10.14.07.24		11.30.19	1	RFC	1
800 CS_CPIC	10.14.07.24		10.37.52	1	RFC	1
800 CS_CPIC	10.14.07.24		11.30.19	1	RFC	1

\*\*\* 7 users logged on with 9 nodes \*\*\*

2. Web interface logs in to SAP as a CPIC user (CS\_CPIC), not BILL

All actions recorded by Dolphin PTS are tagged with the User ID of the Fiori/UI5 user BILL and not the CPIC user.



### Dolphin Process Tracking System (PTS)-AP - InfoCenter 1 hits

The screenshot shows the PTS-AP - InfoCenter interface. On the left, a 'Hit Lists' table displays a single record: Stage: Message, Record: 00004732, Receipt Date: 02/25/2016, Status: Rejected, Ref number: 1206580/VER, Ref date: 09/05/2012, Amount: 185.000.00, Last sub-status: T20. A 'Display note' window is open, showing a message from 'BILL (Bill Jones)' dated 02/29/2016 21:56:33 EST: 'Please do not pay this invoice. The supplier has used the incorrect price per unit.' On the right, a detailed view of the record shows fields like Record: 00004732, Company code: 3000, Document no.: 10, Fiscal year: 0000, and a log of exceptions with columns: Exception Date, Time, Status, User, Description, and Item.

Exception Date	Time	Status	User	Description	Item
02/25/2016	00:48:36	1	NO-TOUCH	Validated	
02/25/2016	00:48:37	10	Invoice Gateway	Received	
02/25/2016	00:48:34	149	Invoice Gateway	AEI Preemptive price tolerance failure	
02/25/2016	00:48:34	177	Invoice Gateway	Missing GR for a GRN Invoice	
02/25/2016	00:48:45	60	Invoice Gateway	Sent for Approval / Action	
02/25/2016	00:48:46	600	Invoice Gateway	Pre Approval	
02/25/2016	00:48:46	720	Invoice Gateway	P-O or Invoice price issue	
02/29/2016	21:56:59	62	Bill Jones	Rejected	

### Required Authorizations

Note: If communication is via a fixed RFC user, the background user needs the following authorizations. If single sign-on (SSO) is used, users will need these authorizations.

Authorization Object	Activity	Properties
<b>RFC Authorization</b>		
S_RFC (Authorization check for RFC access)	Execute	<b>RFC name:</b> 0002, 0003, 3006, 3006_HRO, 1011, BDL5, BUS1001, LC01, RFC1, SDTX, SYST, SYSU, SZAK, ACC4, ACC6, ATSV, BAPI_REL, BAPT, BATG, BBPIV, CADR, LC01, MEWP, MRM_BAPI, OPTD, OPTV, RFC1, SDTX, SOA1, SOC3, SYST, SYSU, SSCV, /DOL/*, RFC2, SDIFRUNTIME, SDDO, FACI, MLBO <b>RFC type:</b> FUGR
<b>Data Access</b>		
S_TABU_DIS (Table Maintenance)	Display	<b>Authorization group:</b> &NC&, FA, FB12, FB21, FC, FC01, FC03, FC21, FCOR, KA, MA, MCMR, SC, SS, FA, MA, SA, VA (&NC& 'non classified table': used for view M_KOSTN)
<b>Image Access</b>		
S_WFAR_OBJ	03, 04, 70	<b>OAARCHIV Value *</b> <b>AOOBJEKTE Values:</b> BKPF, BUS2081, LFA1 and /DOL/APPTS <b>OADOKUMENT Value:</b> /DOL/*
<b>Substitute Setup</b>		
PLOG	*	<b>plvar:</b> 01 <b>infotype:</b> 1001



Authorization Object	Activity	Properties
		subtype: A210 others: *
<b>File Access</b>		
S_DATASET (Authorization for File Access)	Delete	<b>File name:</b> Full Authorization <b>Program name:</b> SAPLARCHIVOBJECT
<b>G/L Account</b>		
F_SKA1_BES (G/L Account: Account Authorization)	Display	<b>Authorization group:</b> Full authorization
F_SKA1_BUK (G/L Account: Authorization for Company Codes)	Display	<b>Company code:</b> Full Authorization
F_SKA1_KTP (G/L Account: Authorization for Charts of Accounts)	Display	<b>Chart of accounts:</b> Full Authorization
<b>Accounting Document</b>		
F_BKPF_BLA (Accounting Document: Authorization for Document Types)	Display Pre-enter	<b>Authorization group:</b> Full authorization
F_BKPF_BUK (Accounting Document: Authorization for Company Codes)	Change Display Pre-enter	<b>Company code:</b> Full Authorization
F_BKPF_BUP (Accounting Document: Authorization for Posting Periods)	N/A	<b>Authorization group:</b> Full authorization
F_BKPF_GSB (Accounting Document: Authorization for Business Areas)	Display Pre-enter	<b>Business Area:</b> Full authorization
F_BKPF_KOA (Accounting Document: Authorization for Account Types)	Display Pre-enter	<b>Account type:</b> Full Authorization
<b>Vendor</b>		



Authorization Object	Activity	Properties
F_LFA1_APP (Vendor: Application Authorization)	Display	<b>Customer and vendor:</b> Full authorization
F_LFA1_BEK (Vendor: Account Authorization)	Display	<b>Authorization group:</b> Full Authorization
F_LFA1_BUK (Vendor: Authorization for Company Codes)	Display	<b>Company code:</b> Full Authorization
F_LFA1_GEN (Vendor: Central Data)	Display	N/A
F_LFA1_GRP (Vendor: Account Group Authorization)	Display	<b>Vendor acc. group:</b> Full Authorization
<b>Transfer Price</b>		
K_TP_VALU (Transfer Price Valuations)	Display	<b>Controlling area:</b> Full authorization <b>Valuation view:</b> Legal valuation
<b>Purchase Order</b>		
M_BEST_BSA (Document Type in Purchase Order)	Display	<b>Customer and vendor:</b> Full authorization
M_BEST_EKG (Purchasing Group in Purchase Order)	Display	<b>Customer and vendor</b> Full Authorization
M_BEST_EKO (Purchasing Organization in Purchase Order)	Display	<b>Customer and vendor</b> Full Authorization
M_BEST_WRK (Plant in Purchase Order)	Display	<b>Customer and vendor</b> Full Authorization
<b>Invoice</b>		
M_RECH_EKG (Invoice Release: Purchasing Group)	Display	<b>Purchasing group:</b> Full Authorization
M_RECH_SPG (Invoices: Blocking Reasons)	Change	<b>Blocking reason:</b> Full authorization
M_RECH_WRK (Invoices: Plant)	Display Pre-enter	<b>Customer and vendor</b> Full Authorization
<b>Vendor</b>		



Authorization Object	Activity	Properties
F_LFA1_APP (Vendor: Application Authorization)	Display	<b>Customer and vendor:</b> Full authorization
F_LFA1_BEK (Vendor: Account Authorization)	Display	<b>Authorization group:</b> Full Authorization
F_LFA1_BUK (Vendor: Authorization for Company Codes)	Display	<b>Company code:</b> Full Authorization
F_LFA1_GEN (Vendor: Central Data)	Display	N/A
F_LFA1_GRP (Vendor: Account Group Authorization)	Display	<b>Vendor acc. group:</b> Full Authorization
<b>Service Entry</b> (only for PTS-AP Service Entry Add- On)		
S_TCODE	N/A	<b>Values:</b> ML81, ML81N







WEB_CR_OVERWRITE_TEMPLATE	"X" to allow values from the account assignment model to be overwritten by the user. Note: classic web CR only
WEB_CR_SIMULATE_PDF	"X" to create and attach a PDF to the PTS record when a payment request is saved and there is no attachment
WEB_DEFAULT_BLANKLINE	"X" to default a blank coding line for the requestor to add coding. Note: classic web CR only
WEB_DEFAULT_COCD	Value = company code defaulted in the Payment Request creation screen. (Value can be overwritten by the user.) Note: classic web CR only
WEB_DEFAULT_CONTACT_TYPE	Value = The default value for contact type in C Note: classic web CR only
WEB_DEFAULT_CURRENCY	Value = Default currency for Payment Request. (Default is blank if no value)
WEB_DEF_PAYEETAB_CR	'X' to set the default value for contact type in CR. Note: classic web CR only
WEB_DISABLE_COPY	'X' to disable and hide the Copy button for the Payment Request. Note: copy feature not available in ui5 CR
WEB_DISABLE_EXCELTEMPLATE	'X' to disable and hide the Excel Template button from the Payment Request. This setting will hide the button on BOTH the details screen as well as the classic web.
WEB_ENABLE_APPLYTEMPLATE	Enable the Apply Template Button on the Classic Web (Applies to Web Approval, CR, and ER) Note: classic web apps only
WEB_ENABLE_CR	Enable Create CR button on CR
WEB_ENABLE_HELPFRAME	'X' to display help screen side by side with Payment Request Note: classic web CR only



WEB_ENABLE_MYDRAFTS	Enable My Drafts button on PTS web search screen. This enables 'My Drafts' button for both Payment Request and Expense Report.
WEB_ENABLE_MYSUBMISSIONS	Enable My Submissions button on PTS web search screen. This enables 'My Submissions' button for both Payment Request and Expense Report.
WEB_ENABLE_PAYEEDETAIL	Enable the payee details tab to allow the Payment Request submitter to request payment to a one time vendor, an overnight contact, or an accounts receivable contact
WEB_ENABLE_SAVEDRAFT	Enable functionality to save a draft. This enables both Payment Request and Expense Report draft options.
WEB_FLDDESC_PDNAME	The text description for the field KIDNO in the Payment Request Payee detail tab on the web.  <i>In general, any field description text can be indicated by WEB_FLDDESC_PD&lt;fieldname&gt; entry in T08 table.</i>
WEB_HELP_LINK_CR	URL to the client specific help documentation for PTS AP Payment Request screen. This is only required when using custom help documents. Custom help files may be hosted outside the NetWeaver (Sharepoint, other internal directory, etc.)
WEB_HIDE_PDNAME	Hide NAME field in Payment Request payee details tab.  <i>In general, any payee details field can be hidden by adding WEB_HIDE_PD&lt;fieldname&gt; entry in T08 table.</i>



WEB_PREVIEW_PDF_FORM	If active and 'X', a hotlink will be made available to allow a PDF preview of the current PTS record details as a dummy attachment on the detail screen on various web/mobile interfaces. Value can also be 'server:port' with server as the IP address. Note: Output device must be maintained.
WEB_REQD_PDName	Make NAME a required field in Payment Request payee details tab.  <i>In general, any payee details field can be made required by adding WEB_HIDE_PD&lt;fieldname&gt; entry in T08 table.</i>
WEB_REQD_PHVVALU1	Make VVALU1 header field a required field for the Payment Request.  <i>In general, any PTS Payment Request header tab field can be made required by adding WEB_REQD_PH&lt;fieldname&gt; entry in T08 table.</i>

### Maintain Approver Authorization Table

See *Approver Authorization Table (Activity: Dolphin PTS-AP: Approver authorization table)* above for details regarding limiting authorizations for Check/Payment Request.



### Excel Import Templates

In order to upload coding via an Excel template on the classic web, the following setup and configuration needs to be done. The option is available unless hidden by activating WEB\_DISABLE\_EXCELTEMPLATE with value X in table /DOL/AP\_T08. This setting will hide the button on BOTH the classic web and the details screen. Note: this feature is not currently supported on the ui5 web applications.

The column headings in the excel template must match the ABAP field names. An example follows:

	A	B	C	D	E	F	G	H	I	J	K	L
1	BUKRS	GLACC	KOSTL	PROJK	AUFNR	VBEL2	POSN2	PRCTR	SGTXT	NETWR	SHKZG	
2	1000	100000									550	
3												



## Appendix C: Technical Guide for Expense Report

The Expense Report license key must be loaded for the Add-On to function. Transaction /DOL/LIC\_UPLOAD is used to load the license key. The key must be loaded one time in each system. Transaction code /DOL/LIC\_INFO can be used to view all loaded license keys.

Additional configuration is required for the Expense Report add-on. Note: Credit Card data is loaded from program RPRCCC00.

Note: this add-on is currently not supported on the ui5 application.

### Structures

The following structure is implemented in the PTS-AP Expense Report.

Structure	Description
/DOL/AP_ER_EXPTYPE	Dolphin PTS-AP: Expense type information

### Programs

One ABAP/4 report was created for PTS-AP Expense Report Add On.

Program	Description	Type	Transaction
/DOL/AP_ER_PURGE_PTRV_CCC	Allows the purging of credit card lines	Executable program	/DOL/AP_ER_PURGE_CC



This program should be run in the background to purge aged credit card records.

**Dolphin PTS-ER : Purge report for Old Credit Card Data**

<input type="button" value=""/>
<b>Enter Details:-</b>
Company Code <input type="text"/> to <input type="text"/> <input type="button" value=""/>
Approver's UserID <input type="text"/> to <input type="text"/> <input type="button" value=""/>
Age <input type="text"/>

### Maintain Sub-status Description Table

Select activity **Status Codes → Dolphin: PTS-AP Sub-status Descriptions**.

**Display IMG**

<input type="button" value=""/>	<input type="button" value=""/>	<input type="button" value=""/>	Existing BC Sets	<input type="button" value="BC Sets for Activity"/>	<input type="button" value="Activated BC S"/>
<b>Structure</b>					
Dolphin- PTS-AP Configuration					
Initial Activation					
ArchiveLink Settings					
Field Configuration					
General Technical Settings					
Status Codes					
• <input type="button" value=""/> Dolphin: PTS-AP Status Descriptions					
• <input type="button" value=""/> Dolphin: PTS-AP Sub-status Descriptions					
• <input type="button" value=""/> Dolphin: PTS-AP AEI Error Codes to Substatus Mapping					
• <input type="button" value=""/> Dolphin: PTS-AP Sub status priority table					
• Routing					
• Posting Controls					
• Approvals					
• Detail Screen Configuration					
• Expense Report Module Configuration					
• Non-SAP Master Data					

Set sub-statuses for core PTS-AP. Additionally, for status 60 a sub-status with 'ER' in the first text column indicates that sub-status is the default for Expense Report pre-approvals.



### Maintain Miscellaneous Configurations

Select activity **General Technical Settings → Dolphin: PTS-AP Miscellaneous Configuration**

#### Display IMG

The screenshot shows the SAP Fiori interface for maintaining miscellaneous configurations. The top navigation bar includes icons for back, forward, search, and existing BC sets, along with links for BC Sets for Activity and Activity. The main area is titled 'Structure' and displays a hierarchical tree of configuration items under 'Dolphin- PTS-AP Configuration'. The 'Miscellaneous Configurations' node is highlighted with a red circle, indicating it is the current focus. The tree structure includes:

- Dolphin- PTS-AP Configuration
  - Initial Activation
  - ArchiveLink Settings
  - Field Configuration
  - General Technical Settings
    - Dolphin: PTS-AP Logical systems
    - Dolphin: PTS-AP Miscellaneous Configurations** (highlighted)
    - Status Codes
    - Routing
    - Posting Controls
    - Approvals
    - Detail Screen Configuration
    - Expense Report Module Configuration

The Miscellaneous configurations table (/DOL/AP\_T08) is used for various PTS-AP settings in the form of name-value pairs. Following is a brief explanation of the additional settings required for the Expense Report Add-On.

Status	Description
ENTRY_WEB_ER_SIMULATE_ATT	Active to create smartform pdf for ER
ER_MAIL_FORMAT	Indicates whether to use the template for email text (Value = MIME) or to use standard text (Inactive or active with Value = blank) for ER email
ER_MAIL_TEMPLATE	Custom template prefix to use for ER email
WEB_ENABLE_APPLYTEMPLATE	Enable the Apply Template Button on the Classic Web (Applies to Web Approval, Payment Request, and Expense Report) Note: classic web apps only



WEB_ENABLE_ER	Enable Create Expense Report button on the classic web application
WEB_ENABLE_MYDRAFTS	Enable My Drafts button on PTS web search screen. This enables 'My Drafts' button for both Payment Request and Expense Report.
WEB_ENABLE_MYSUBMISSIONS	Enable My Submissions button on PTS web search screen. This enables 'My Submissions' button for both Payment Request and
WEB_ENABLE_SAVEDRAFT	Enable functionality to save a draft. This enables both Payment Request and Expense Report draft options.
WEB_ER_ADD_REPORT_FOR_APP	When active the Report For user will be added to the approval chain for expense reports
WEB_ER_APPROVER_MANDATORY	Enforce entry of approver for Expense Report
WEB_ER_FORCE_COUNTRY	If active and 'X', and the header currency does not match the line currency, the line item country will be a required input
WEB_ER_GLFROMWEB	If active and 'X', the GL assignments will always be sourced from within SAP, ignoring what came (or did not come) from the web
WEB_ER_HIDE_CC	"X" to hide the credit card
WEB_ER_HIDE_GLACC	"X" to hide the General Ledger Account
WEB_ER_HIDE_PHDTYPZ	"X" to hide the express flag
WEB_ER_HIDE_PHRCDAT	"X" to hide receipt date
WEB_ER_OVERWRITE_TEMPLATE	If active and 'X', the items table value will be overwritten with the template values
WEB_ER_REQD_CRG_TYPET	"X" for Payment method to be required
WEB_ER_REQD_EXP_AMOUNTT	"X" for Expense Amount to be required
WEB_ER_REQD_EXP_CURRENCYT	"X" for Expense Currency to be required
WEB_ER_REQD_EXP_LAND1T	"X" for Expense Country to be required



WEB_ER_REQD_GLACCT	"X" for G/L Account to be required
WEB_ER_REQD_KOSTLT	"X" for Cost Center to be required
WEB_ER_REQD_PHWRBTR	"X" for header Reimbursement Amount to be required
WEB_ER_REQD_SGTXTT	"X" for Line Item text to be required
WEB_ER_REQD_SPKZLT	"X" for Expense Type to be required
WEB_ER_SIMULATE_PDF	"X" to create and attach a PDF to the PTS record when an expense report is saved and there is no attachment
WEB_HELP_LINK_ER	URL to the client specific help documentation for PTS AP Expense Report screen. This is only required when using custom help documents. Custom help files may be hosted outside the NetWeaver (Sharepoint, other internal directory, etc.)

#### Maintain Travel Expense Types

Select activity **Expense Report Module Configuration → Dolphin: PTS-AP Travel Expense Types for Receipt**



### Display IMG

Existing BC Sets | BC Sets for Activity | Activated BC Sets for Activity

**Structure**

- Dolphin- PTS-AP Configuration
  - Initial Activation
  - ArchiveLink Settings
  - Field Configuration
  - General Technical Settings
  - Status Codes
  - Routing
  - Posting Controls
  - Approvals
  - Detail Screen Configuration
  - Expense Report Module Configuration
    - Dolphin: PTS-AP Travel Expense Types for Receipt
    - Dolphin: PTS-AP Expense Type to GL Mapping
    - Dolphin: PTS-AP Maintain User to Credit Card# Assignment
    - Dolphin: PTS-AP Assignment of Credit Card Transact. to Travel Expense Typ.

Table V\_T706B1 lists the expense types and descriptions and the active date ranges for each variant. Select the provision variant from the drop down list.

Determine Work Area: Entry

Work Area																			
Indiv or Per Diem/FR	From:																		
	To:																		
Trip Provision Variant	10																		
<input checked="" type="checkbox"/> Further select cond.   Append    																			
<input type="button" value="Restrictions"/>																			
<table border="1"> <thead> <tr> <th>TrProv.</th> <th>Name</th> </tr> </thead> <tbody> <tr><td>01</td><td>German accounting</td></tr> <tr><td>02</td><td>Swiss Accounting</td></tr> <tr><td>03</td><td>Austrian collective agree</td></tr> <tr><td>07</td><td>Canada Travel Accounting</td></tr> <tr><td>08</td><td>British Accounting</td></tr> <tr><td>09</td><td>Danish Accounting</td></tr> <tr><td>10</td><td>US accounting (docs)</td></tr> <tr><td>12</td><td>Belgian Accounting</td></tr> </tbody> </table>		TrProv.	Name	01	German accounting	02	Swiss Accounting	03	Austrian collective agree	07	Canada Travel Accounting	08	British Accounting	09	Danish Accounting	10	US accounting (docs)	12	Belgian Accounting
TrProv.	Name																		
01	German accounting																		
02	Swiss Accounting																		
03	Austrian collective agree																		
07	Canada Travel Accounting																		
08	British Accounting																		
09	Danish Accounting																		
10	US accounting (docs)																		
12	Belgian Accounting																		

Maintain the expense types for receipt.



### Change View "Travel Expense Types for Receipt": Overview

Expand <-> Collapse New Entries Delimit

Travel Expense Types for Receipt : US accounting (docs)

ExpensType	Name of Exp. Ty	Start Date	End Date
AIR	Airfare	01/01/1995	12/31/999
AIRP	Airfare (paid by company)	01/01/1995	12/31/999
BRFT	Breakfast	01/01/1995	12/31/999
DINN	Dinner	01/01/1995	12/31/999
ENT	Entertainment	01/01/1995	12/31/999
GAS	Fuel for Private Car	01/01/1995	12/31/999
HIL	Hotel	01/01/1995	12/31/999
HTLP	Hotel (Paid by Company)	01/01/1995	12/31/999
INTA	Airfare - Company Aircraft	01/01/1995	12/31/999

### Maintain Table for Flat Rate Expense Types

Using SM30 maintain table V\_T70681\_A for the given provision variant. This is where per diems and other flat expense types are maintained. Select the trip provision variant from the drop down list. Note the Individual or Per Diem type is pre-selected.

The screenshot shows the SAP Fiori interface for maintaining flat rate expense types. On the left, the 'Determine Work Area: Entry' dialog is open, showing 'Indiv.or Per Diem/FR' selected under 'Work Area'. Below it, 'Trip Provision Variant' is selected. A dropdown menu is open over the 'From:' field, with the value '10' highlighted. An arrow points from this dropdown to a list of 'Trip Provision Variant' entries on the right. The list shows 22 entries found, with the first few being:

TrProv...	Name
01	German accounting
02	Swiss Accounting
03	Austrian collective agree
07	Canada Travel Accounting
08	British Accounting
09	Danish Accounting
10	US accounting (docs)
12	Belgian Accounting



Maintain the expense types for Per Diems and Flat Rates.

#### *Change View "Travel Expense Types for Per Diems/Flat Rates": Overview*

[ Expand <-> Collapse] [New Entries] [ Delimit] [ ]

Travel Expense Types for Per Diems/Flat Rates : US accounting (docs)

ExpenseType	Travel Expense Type	Start Date	End Date	[]
FAK	Miles/km flat rate: car	01/01/1995	05/31/999	[] []
FAKC	Company Vehicle	01/01/1995	12/31/999	[] []
FAKP	Personal Vehicle	01/01/1995	12/31/999	[] []
UBPA	Accommodations per diem	01/01/1995	12/31/999	[] []
VERP	Per diem for meals	01/01/1995	12/31/999	[] []
VORK	Cash advance	01/01/1995	12/31/999	[] []
VORS	Advance	01/01/1995	12/31/999	[] []

#### Maintain Expense Types to GL Mapping

Select activity **Expense Report Module Configuration → Dolphin: PTS-AP Expense Type to GL Mapping**

##### *Display IMG*

[ Existing BC Sets] [ BC Sets for Activity] [ Activated BC Sets for Activity]

Structure	Dolphin- PTS-AP Configuration
	Initial Activation
	ArchiveLink Settings
	Field Configuration
	General Technical Settings
	Status Codes
	Routing
	Posting Controls
	Approvals
	Detail Screen Configuration
	Expense Report Module Configuration
	[] Dolphin: PTS-AP Travel Expense Types for Receipt
	[] Dolphin: PTS-AP Expense Type to GL Mapping
	[] Dolphin: PTS-AP Maintain User to Credit Card# Assignment
	[] Dolphin: PTS-AP Assignment of Credit Card Transact. to Travel Expense Typ.



Table /DOL/APWEB\_ER\_GL lists the expense types per variant and maps them to the GL account to be charged. This can be specific by country and can vary for different tax codes. The table fields are described as follows.

Field	Data Type	Length	Decimal	Description
MOREI	CHAR	2	0	Trip Provision Variant as configured in the previous section
SPKZL	CHAR	4	0	Travel Expense Type as configured in the previous section
LAND1	CHAR	3	0	Country Key if accounting differs by country
VAT	CHAR	1	0	Dolphin PTS-AP: VAT Flag
SHKZG	CHAR	1	0	Debit/ Credit Indicator
MWSKZ	CHAR	2	0	Sales Tax Code
COPY_KOSTL	CHAR	1	0	Don't Copy Cost Center (from header) Flag
CALC RATE	CURR	10	2	Reimbursement Amount (Enterprise Specific)
CALC WAERS	CUKY	5	0	Currency Key
SCGST	CHAR	1	0	Field Control - Entry is possible and mandatory or not, or entry is impossible and visible or invisible
SUB_TITLE	CHAR	20	0	Title
GLACC	CHAR	10	0	G/L Account Number

Add From and To in the 'Title' column to activate sub-lines functionality.

#### Routing Table (Activity: Dolphin: PTS-AP Routing)

Select activity **Routing → Dolphin: PTS-AP Routing**.



### Display IMG

The screenshot shows the SAP Fiori Display IMG configuration interface. The top navigation bar includes icons for back, forward, search, and existing BC sets, along with a link to BC Sets for Fiori. The main area is titled 'Structure' and displays a tree view of configuration items under 'Dolphin- PTS-AP Configuration'. The items listed are: Initial Activation, ArchiveLink Settings, Field Configuration, General Technical Settings, Status Codes, Routing, Dolphin: PTS-AP Routing (highlighted with a blue border), Posting Controls, Approvals, and Detail Screen Configuration.

Additional entries are required in the routing table (/DOL/AP\_T06) for the Expense Report add on. The table will link the project to the trip provision variant for each company code with the role 'EX'. An entry must be made for each country code trip provision combination. See below for an example entry.

RES Project ID	Sequence number	Role	Company Code	Spender	Spender	Currency	Amount	Doc. type	Version	Doc. type credit	Variable	Expense processing	Doc. type AP	Date	Object Type	Agent ID	Logical Spender
DNG	0361	EX	0100				0.00									95	
DNG	0362	EX	0100				0.00									10	

### Maintain User to Credit Card# Assignment

Select activity **Expense Report Module Configuration → Dolphin: PTS-AP Maintain User to Credit Card# Assignment**



### *Display IMG*

Existing BC Sets | BC Sets for Activity | Activated BC Sets for Activity

Structure

- ▷ Dolphin- PTS-AP Configuration
  - ▷ Initial Activation
  - ▷ ArchiveLink Settings
  - ▷ Field Configuration
  - ▷ General Technical Settings
  - ▷ Status Codes
  - ▷ Routing
  - ▷ Posting Controls
  - ▷ Approvals
  - ▷ Detail Screen Configuration
  - ▷ Expense Report Module Configuration
    - ▷ Dolphin: PTS-AP Travel Expense Types for Receipt
    - ▷ Dolphin: PTS-AP Expense Type to GL Mapping
    - ▷ Dolphin: PTS-AP Maintain User to Credit Card# Assignment
    - ▷ Dolphin: PTS-AP Assignment of Credit Card Transact. to Travel Expense Typ.

Table /DOL/APWEB\_ER\_US links the userid to the credit card number. List each userid with their credit card numbers. The table fields are described as follows:

Field name	Data Element	Type	Length	Description
CLIENT*	MANDT	CLNT	3	Client
XUSER *	/DOL/APR_USER_ID	CHAR	30	Dolphin: PTS-AP Approver's UserID
CARDNUM *	C_NUM	CHAR	19	Card#

#### Assignment of Credit Card Transactions to Travel Expense Types

Select activity **Expense Report Module Configuration → Dolphin: PTS-AP Assignment of Credit Card Transactions to Travel Expense Types**



### Display IMG

Existing BC Sets | BC Sets for Activity | Activated BC Sets for Activity

Structure

- ▼ Dolphin- PTS-AP Configuration
  - ▷ Initial Activation
  - ▷ ArchiveLink Settings
  - ▷ Field Configuration
  - ▷ General Technical Settings
  - ▷ Status Codes
  - ▷ Routing
  - ▷ Posting Controls
  - ▷ Approvals
  - ▷ Detail Screen Configuration
  - ▼ Expense Report Module Configuration
    - 📄 ⚡ Dolphin: PTS-AP Travel Expense Types for Receipt
    - 📄 ⚡ Dolphin: PTS-AP Expense Type to GL Mapping
    - 📄 ⚡ Dolphin: PTS-AP Maintain User to Credit Card# Assignment
    - 📄 ⚡ Dolphin: PTS-AP Assignment of Credit Card Transact. to Travel Expense Typ.



Table V\_T702B links the expense types per the credit card to the expense types per trip provision variant. Select the provision variant from the drop down list.

**Determine Work Area: Entry**

Work Area  
Trip Provision Variant  
10

Further select cond. Append

Trip Provision Variant (1) 22 Entries found

TrProv...	Name
01	German accounting
02	Swiss Accounting
03	Austrian collective agree
07	Canada Travel Accounting
08	British Accounting
09	Danish Accounting
10	US accounting (docs)
12	Rheian Accounting

Maintain an expense type for each credit card transaction key for the effective time period.

Trip Prov. Variant 10 US accounting (docs)

Assignment of Credit Card Transact.to Travel Expense Types

Card Company	Trans. Key	PC	Start Date	End Date	ExpTy	FP	SP
American Express	CAR.RENTAL	<input type="checkbox"/>	01/01/1996	12/31/9999	RCAR	10	
American Express	CAR.RENTAL	<input checked="" type="checkbox"/>	01/01/1996	12/31/9999	MISP	10	
American Express	COMMUNICAT	<input type="checkbox"/>	01/01/1996	12/31/9999	TELE	10	
American Express	COMMUNICAT	<input checked="" type="checkbox"/>	01/01/1996	12/31/9999	TELE	10	
American Express	FLIGHT....	<input type="checkbox"/>	01/01/1996	12/31/9999	AIR	10	
American Express	FLIGHT....	<input checked="" type="checkbox"/>	01/01/1996	12/31/9999	AIRP	10	

Check if the expense is paid by the company. Maintain the further processing selection. Also, maintain the service provider if required.



### Change View "Assignment of Credit Card Transact.to Travel Expense Type"

New Entries		
Trip Prov. Variant	10 US accounting (docs)	
Card Company	AX American Express	Start 01/01/1996
Transaction Key	CAR.RENTAL	End 12/31/9999
<input checked="" type="checkbox"/> Paid by Company		
Assignment of Credit Card Transact.to Travel Expense Types		
Travel Expense Type	MISP Other Expenses (Paid by Comp.)	
Service Provider		
Further Processing	10 Store Transaction in Document Pool	
Change Option for Expense Types (For Characteristic TRVPA-CCC=3)		
Changeability	Expense Type Cannot Be Changed	

Repeat for all expense types for all provision variants.

### Function Modules

Function Group	Function Module	Description
/DOL/APWEB_ER	/DOL/APWEB_ER_EXPTYPE	Dolphin PTS-AP: Expense type SVS
/DOL/APWEB_ER	/DOL/APWEB_ER_SUBMIT	Dolphin PTS-AP: Expense Report Add-on Creation
/DOL/APWEB_ER	/DOL/APWEB_ER_UNUSEDCCLINES	Dolphin PTS-AP: Unallocated credit card lines

### Credit Card Data

Credit card data is kept in the SAP table PTRV\_CCC and imported through report RPRCCCC00.



### Standard Text Templates

The following table details all standard text template names specific to the Expense Report add-on.

Name	Language	Description
/DOL/APWEB_ER_BODY_EM	EN	Aging credit card email body
/DOL/APWEB_ER_EMAIL_SUB	EN	Aging credit card email subject
/DOL/EMAIL_CC_BODY	EN	Credit card notice email body
/DOL/EMAIL_CC_SUB	EN	Credit card notice email subject

# SAP Fiori – SAP Fiori launchpad troubleshooting

Thursday, October 18, 2018 4:58 PM

## SAP Fiori – SAP Fiori launchpad troubleshooting

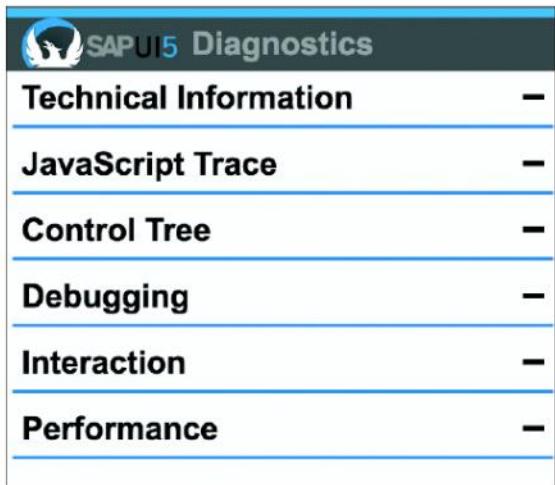
From <<https://blogs.sap.com/2014/07/29/sap-fiori-sap-fiori-launchpad-troubleshooting/comment-page-1/#comment-439880>>

<https://blogs.sap.com/2014/07/29/sap-fiori-sap-fiori-launchpad-troubleshooting/comment-page-1/#comment-439880>

1) sap-ui-debug=true

## The SAPUI5 Diagnostics Tool

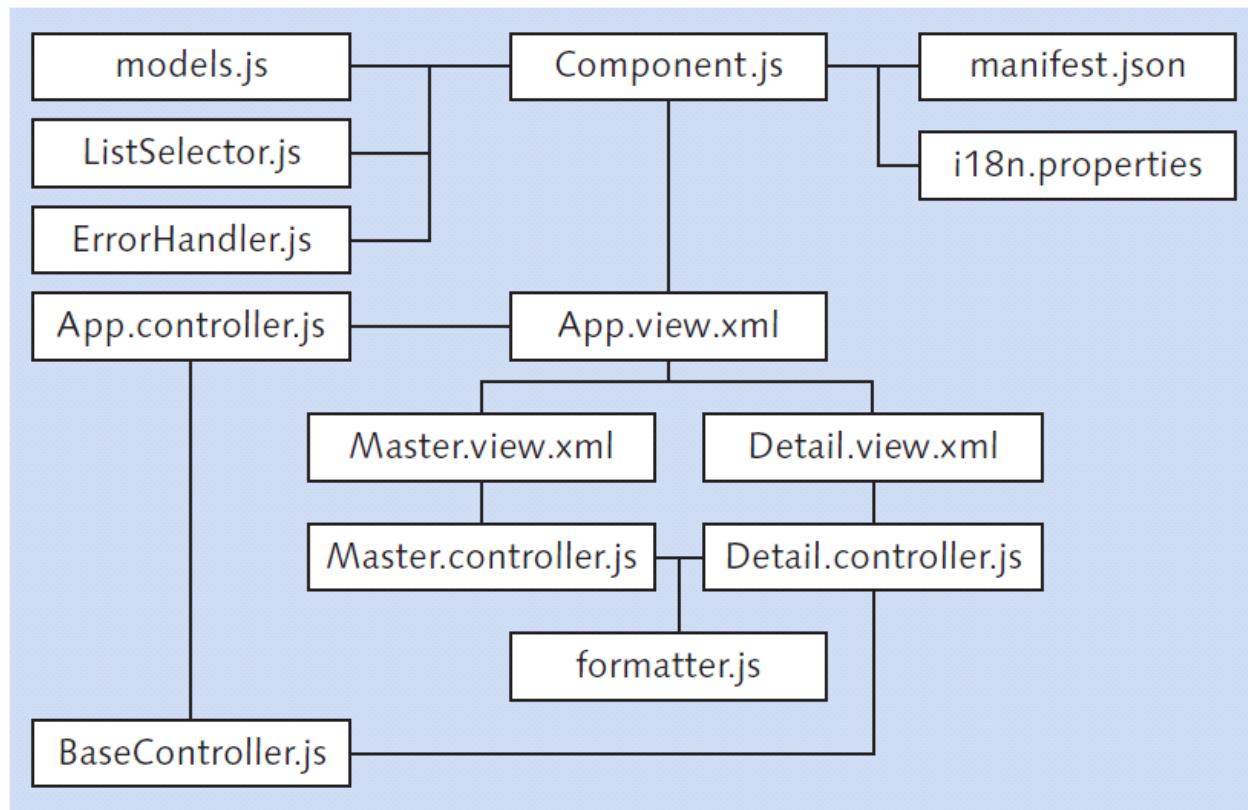
The SAPUI5 diagnostics tool (see [Figure 14](#)) is part of SAPUI5, and therefore available pretty much everywhere: You don't have to install anything. It comes with the runtime and can be invoked at any time. The SAPUI5 diagnostics tool is accessed by pressing **Ctrl + Alt + Shift + S**.



**Figure 14** SAPUI5 Diagnostic Tool

# Standard JS and XML file in a Fiori App

Wednesday, October 23, 2019 2:11 PM



**Figure 19** App Artifact Relationships

# Display SAP Gateway Logs - SAP Help Portal

Friday, June 5, 2020 12:47 PM

<https://help.sap.com/viewer/a7b390faab1140c087b8926571e942b7/7.51.4/en-US/d13ca7548c124e8986df37c0821a9ce5.html>

## Thank you for your feedback

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Highlighting results for ""

NoteSorry, machine translation for this topic has failed, please try again later. Note

## Display SAP Gateway Logs

Errors occurring in the launchpad or launchpad designer are written into an SAP Gateway message container.

You can use one of the SAP Gateway logs if you cannot analyse the error in the UI2 log (for example, for errors occurring because the user does not have the required authorization to call a service or because the service is inactive).

### Application Log: Display Logs for the SAP Gateway Runtime (transaction SLG1)

1. Start Application Log: Display Logs (transaction SLG1) in the ABAP system.
2. Enter the following data:
  - Object: /IWBEPEP/
  - Subobject: RUNTIM
  - External ID  
This is the transaction ID displayed in the error details in the browser.
3. Choose Execute.

### GW Backend Error Log (transaction /IWBEPEP/ERROR\_LOG)

1. Start GW Backend Error Log (transaction /IWBEPEP/ERROR\_LOG) in the ABAP system.
2. Choose Re-Select.
3. Enter the following data:
  - User ID
  - Date
  - Time interval
4. Choose Execute.

### SAP Gateway Error Log (transaction /IWFND/ERROR\_LOG)

1. Log on to the SAP Gateway server in case it is not installed in the back end.  
If SAP Gateway is installed in the back end, you can start the transaction directly in the back end.
2. Start Gateway Error Log (transaction /IWFND/ERROR\_LOG) in the ABAP system.
3. Choose Re-Select.
4. Enter the following data:
  - User ID
  - Date
  - Time interval
5. Choose Execute.

6. Select an error message.
7. To display the application log of SAP Gateway, choose Application Log.

#### Related Information

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# Gateway OData Service – troubleshooting and detailed tracing in ABAP | SAP Blogs

Friday, June 5, 2020 12:59 PM

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**Søren Hansen**

Posted on September 9, 2018 7 minute read

## Gateway OData Service – troubleshooting and detailed tracing in ABAP

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10 Likes 14,255 Views 7 Comments

Hi Experts,

I have recently come across a situation, where bad performance of one of my custom developed OData service caused a lot of issues, and where I was forced to think out-of-the-box to come up with ways to perform detailed tracing. And now I want to share these with you guys.

In this blog post I will show some tools for logging and tracing OData calls in the Gateway as well as in the SAP Backend. Furthermore, I will show how OData calls can be captured in the ABAP Runtime Analysis tool (SAT) in the SAP backend for very detailed analysis of all steps being carried out in the backend.

The Runtime Analysis Tool is known by most ABAP developers, but I will show how a capture can be scheduled, so an OData call from a browser can trigger the creation of a measurement for further analysis.

In SAT it is possible to view things like: Which DB tables are being updated, which coding blocks are being called, and how many times, as well as runtime in microseconds for each call, and much more.

### SAP Gateway Tracing

When working with SAP gateway OData services, most people come across the two most commonly used transactions for logging and tracing in SAP Gateway.

- /IWFND/ERROR\_LOG: Displays erroneous OData calls to the Gateway
- /IWFND/TRACES: Display Performance and Payload traces

In environments where the SAP Gateway and the SAP Backend system are in two distinct systems (using a Gateway Hub), these utilities are used on the SAP Gateway Hub (not the backend).

The screenshot shows the SAP Gateway: Error Log interface. The top navigation bar includes links for Help, Re-Select, Overview, and other system-related functions. The main area is titled 'Overview' and displays a table of error logs. The columns in the table are: Line, Entry, Date, Time, User, T100 Error ID, T100..., Error..., ICF Node..., Error Text, and several checkboxes for 'Resource not found for the segment' and 'DepartmentSet'. There are two entries listed:

Line	Entry	Date	Time	User	T100 Error ID	T100...	Error...	ICF Node...	Error Text
2	1	06.09.2018	10:00:06		/IWFND/CM_CONSUMER122	1	odata		Resource not found for the segment 'DepartmentSet'.
1	1		09:59:52		/IWFND/CM_CONSUMER122	1	odata		Resource not found for the segment 'DepartmentSet'.

The Error Log is a continuous log, that will display framework errors.

This screenshot shows the SAP Gateway Tracing Tools interface. The title bar says "SAP Gateway: Tracing Tools". Below it is a toolbar with icons for Error Log, Configuration, Performance Trace, and Payload Trace. The main area has sections for "Users & Request URI Prefix" (with two entries), "User Name" (set to [REDACTED]), and "Request URI Prefix" (empty). A "Available Log and Traces" section contains checkboxes for "Error Log Level" (set to "Secure"), "Performance Trace" (checked), and "Payload Trace" (checked).

Traces, which are user specific, must be enabled before they can be displayed.

The login user will be selected by default, but other users may be added by using the marked button.

Traces are active for a period of two hours, after which they will automatically be inactivated.

This screenshot shows the SAP Gateway Tracing Tools interface with the "Payload Trace" tab selected. The title bar says "SAP Gateway: Tracing Tools". Below it is a toolbar with icons for Error Log, Show Source, Download to PC, HTTP Header, HTTP Body, Replay, and Performance Trace. The main area displays a table titled "Payload Trace: Client 001 User [REDACTED]" showing various service calls. The columns include Service Call Info, Method, Proc. Time, Appl. Time, Req. Size, Resp. Size, Format, Date, Time, Expiry Date, and Status. The table lists multiple entries, mostly POST requests to "/sap/batch" with varying parameters like "sap-client=001".

Payload Trace is an excellent tool for displaying the raw OData requests (and responses) being performed on the system.

This screenshot shows the SAP Gateway Payload Trace interface. The title bar says "SAP Gateway: Payload Trace". Below it is a toolbar with icons for Error Log, Show Source, Download to PC, HTTP Header, HTTP Body, Replay, and Performance Trace. The main area shows a table for "Client 001" with columns for Date, Time, User, Call Type, Method, Service Call Info, and Transaction ID. It shows two rows: a request from 06.09.2018 at 10:36:35 and a response from the same time. Below this is a large text area showing raw HTTP traffic. The traffic consists of multiple GET requests with URLs like "/sap/batch?sap-client=001" and headers including "Content-Type: application/http", "Content-Transfer-Encoding: binary", and "Accept: application/json". Some lines are highlighted in red, indicating specific parts of the requests or responses.

In case of \$batch calls being used one http request may contain multiple OData requests. This makes it harder, in error situations, to pinpoint where the problem is.

In the above call 3 separate GET calls are being carried in one request.

In this view we see the raw data being passed from (request) and to (response) the client.

The screenshot shows the SAP Gateway: Performance Trace Summary interface. At the top, there is a table titled "Average Times (in milliseconds)" with columns: No. of Req..., Processing T..., SAP GW Hu..., RFC and Net..., SAP GW Bac..., Application. The data row shows values: 1, 261, 77, 2, 66, 116. Below this is a table titled "Detail (Time in milliseconds)" with columns: E..., Namespace..., Service Name, Location, Operation Name, Level, Destination, Processing T..., SAP GW Hu..., RFC and Net..., SAP GW Bac..., Application. The data rows show various operations like BATCH, PROCESS\_BATCH, PARALLELIZE\_QUE\_, and READ\_ENTITYSET across different service names and locations.

The corresponding Performance Trace display the 3 GetEntitySet calls, but with no details from the backend. Only the total processing time for each call

## SAP Backend

In the backend system there are 2 similar utilities for logging and tracing.

- /IWBEPError\_Log: Displays erroneous OData calls to the Gateway
  - /IWBEPETraces: Display Performance and Payload traces
- These will show similar info from the SAP Gateway framework, but in the backend system.

Note:

*I have found that, on older SAP versions, these may not start properly from the startscreen, but for some weird reasons they can be started from SE93 or by adding them as favorites.*

It is important to understand the way the Gateway framework works, to understand what we can use these tools for. When the SAP Gateway receives an OData request from a client it validates and deserialize the JSON request data into ABAP data. Then it identifies which Backend system the call should be routed to and calls the backend system via an RFC (function module), passing data in a mapped format. On the backend system, the Data Provider Class is called to execute the request.

The screenshot shows the SAP Gateway: Backend Tracing Tools interface. It has tabs for Configuration, Performance Trace, and Payload Trace. The Configuration tab is selected, showing a tree view under "Users" and a "User Name" input field. The Performance Trace and Payload Trace tabs are also visible. Below the tabs, there is a section titled "Available Log and Traces" with checkboxes for "Error Log Level" (set to "S Secure"), "Performance Trace" (checked), and "Payload Trace" (checked).

The Backend Traces can be enabled the same way as on the SAP Gateway.

Method	Proc. Time	Appl. Time	Req. Size	Resp. Size	Date	Time	Expiry Date	Status	
/sap/									
SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	11:03:34	20.09.2018	
/sap/	SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	11:00:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	12	1	4.254	2.633	06.09.2018	11:00:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	11	1	4.254	2.633	06.09.2018	10:57:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	11	1	4.254	2.633	06.09.2018	10:51:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	10:48:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	35	1	4.254	2.633	06.09.2018	10:45:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	60	50	4.254	2.633	06.09.2018	10:42:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	10:39:34	20.09.2018
/sap/	SRV/caseSearchSet?sap-client=001&filter=De... GET	97	85	6.086	4.220	06.09.2018	10:36:35	20.09.2018	
/sap/	SRV/caseSearchSet?sap-client=001&filter=De... GET	99	72	5.101	44.510	06.09.2018	10:36:35	20.09.2018	
/sap/	SRV/caseSearchSet?sap-client=001&filter=De... GET	165	116	4.250	176.749	06.09.2018	10:36:35	20.09.2018	
/sap/	SRV/\$batch?sap-client=001	POST	181	116	15.450	228.662	06.09.2018	10:36:35	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	9	0	4.236	3.477	06.09.2018	10:36:35	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	10	2	4.263	3.409	06.09.2018	10:36:34	20.09.2018
/sap/	SRV/\$batch?sap-client=001	POST	14	1	4.254	2.633	06.09.2018	10:36:34	20.09.2018
/SAP/	_SRV - GET_META_DATA		68	0	1.532	744	06.09.2018	10:36:34	20.09.2018

In the backend Payload Trace we will see separate measures for each OData call contained in \$batch multi requests. This will give us a little more detailed info than we got on the SAP Gateway. Requests of type \$batch with only a single measure in this list contains only one OData request.

```

<?xml version="1.0"?>
- <REQUEST_DATA>
  <FUNCTION_NAME>/IWBEPC/FM_MGW_HANDLE_REQUEST</FUNCTION_NAME>
  <HTTP_HEADER>
    - <HTTP>
      <NAME>sap-iw-bep-method</NAME>
      <VALUE>ES</VALUE>
    </HTTP>
    - <HTTP>
      <NAME>Content-Type</NAME>
      <VALUE>application/xml</VALUE>
    </HTTP>
    - <HTTP>
      <NAME>sap-iw-bep-sub_opid</NAME>
      <VALUE>X</VALUE>
    </HTTP>
    - <HTTP>
      <NAME>sap-iw-qe-version</NAME>
      <VALUE>SEP731_12013001</VALUE>
    </HTTP>
    <HTTP_HEADER>
    <HTTP_BODY>
      <!-- xml version="1.0" encoding="utf-8"-->
      <?xml version="1.0" encoding="utf-8"?>
      <!-- abap xmlns:abap="http://www.sap.com/abapxml" version="1.0"-->
      <abap:values>
        <abap:values>
          <CONTEXT>

```

When the payload is examined, we will now see request payloads in XML format. This is the data format being passed to the RFC Function Module from the SAP Gateway, after the json request has been deserialized.

Method	Proc. Time	Appl. Time	Req. Size	Resp. Size	Date	Time	Expiry Date	Status	
/sap/									
SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	11:06:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	11:03:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	12	1	4.254	2.633	06.09.2018	11:00:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	11	1	4.254	2.633	06.09.2018	10:57:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	11	1	4.254	2.633	06.09.2018	10:54:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	11	1	4.254	2.633	06.09.2018	10:51:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	10:48:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	35	1	4.254	2.633	06.09.2018	10:45:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	60	50	4.254	2.633	06.09.2018	10:42:34	20.09.2018	
SRV/\$batch?sap-client=001	POST	10	1	4.254	2.633	06.09.2018	10:39:34	20.09.2018	
SRV/	caseSearchSet?sap-client=...	GET	97	85	6.086	4.220	06.09.2018	10:36:35	20.09.2018
SRV/	caseSearchSet?sap-client=...	GET	99	72	5.101	44.510	06.09.2018	10:36:35	20.09.2018
SRV/	caseSearchSet?sap-client=...	GET	165	116	4.250	176.749	06.09.2018	10:36:35	20.09.2018
SRV/	\$batch?sap-client=001	POST	181	116	15.450	228.662	06.09.2018	10:36:35	20.09.2018
SRV/	\$batch?sap-client=001	POST	9	0	4.236	3.477	06.09.2018	10:36:35	20.09.2018
SRV/	\$batch?sap-client=001	POST	10	2	4.263	3.409	06.09.2018	10:36:34	20.09.2018
SRV/	\$batch?sap-client=001	POST	14	1	4.254	2.633	06.09.2018	10:36:34	20.09.2018
/SAP/	_SRV - GET_META_DATA		68	0	1.532	744	06.09.2018	10:36:34	20.09.2018

In the Performance Trace, we will also see distinct measures for each OData sub request of a \$batch request containing multiple requests.

SAP Gateway: Backend Performance Trace

Line No	Subcalls	Level	Class	Method	Duration (ms)	Net Time (ms)
1	1	1	/IWBEPE/SAPLFGR_MGW_CLIENT_IF	/IWBEPE/FM_MGW_HANDLE_REQUEST	99	7
2			>Request Payload Size	6086 Bytes		
3			>Response Payload Size	4220 Bytes		
4	2	2	/IWBEPE/CL_MGW_REMOTE_HANDLER	GET_ENTITY_SET	92	3
5		3	/IWBEPE/CL_MGW_MED_PROVIDER	GET_SERVICE_METADATA	4	4
6			DPC_EXT	GET_ENTITYSET	85	85

By double clicking an entry we can examine the path to the Data Provider Class executing the request call.

But still we cannot get detailed analysis data on what is happening in the Data Provider Class.

## ABAP Runtime Analysis (SAT)

To get very detailed runtime analysis data, of what actions are being performed in the Data Provider Class we can use the ABAP Runtime Analysis tool.

This is done in transaction SAT in the backend system.

**Runtime Analysis**

Measurement

OO The test times are reliable

Short Description: DEFAULT

Settings

Variant: DEFAULT

In Dialog

- Transaction: [ ]
- Program: [ ]
- Function Module: [ ]
- Eval. Immediately

In Parallel Session

- Switch On/Off
- Evaluate Immediately

For User/Service

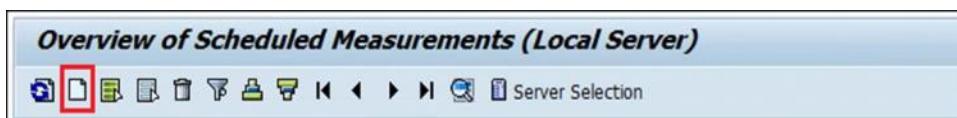
**Schedule**

Data Formatting

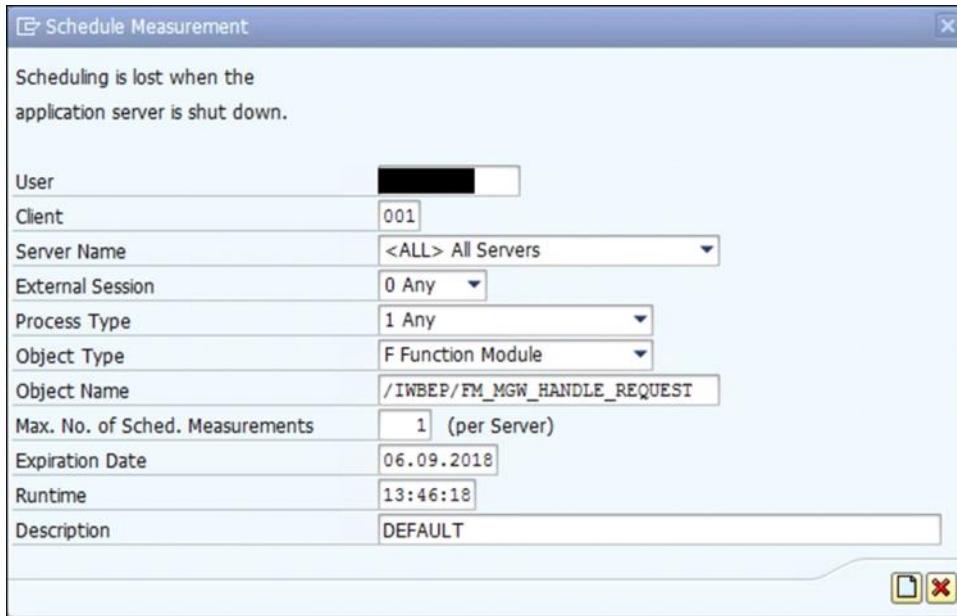
Determine Names of Internal Tables

In SAT you can analyze code being executed from a Transaction, Program or a Function Module. In Gateway context we don't really have any of these directly. But since SAP Gateway calls are always being passed to the backend system via an RFC (Function Module) call, even when the Gateway is located on the backend system, we can use this to enable the Runtime Analysis.

For this we use the scheduling utility (marked in red).



Click the create icon.



Enter the Function Module '/IWBEPM/WM\_MGW\_HANDLE\_REQUEST' and other values as shown above or change to suit your needs. (See below how to find this Function Module).

Press Enter.

Overview of Scheduled Measurements (All Servers)											
Server Name	Client	Measur. ID	User	Sessn	ProcessCat	Object Type	Object Name	Scheduled	Started	Errors	Status
001	001	1	001	Any	Any	Function Module	/IWBEPM/WM_MGW_HANDLE_REQUEST	1	1	0	Executed
001	001	2	001	Any	Any	Function Module	/IWBEPM/WM_MGW_HANDLE_REQUEST	1	0	0	In Process

From the overview, we now see an old measurement already executed, and our new one in status 'In Process', which means it is ready for capture.

### How to find the Function Module:

SAP Gateway: Backend Performance Trace						
<a href="#">Error Log</a> <a href="#">Source Code</a> <a href="#">Request URI</a> <a href="#">Payload Trace</a>						
Client 001 User [REDACTED] Status OK						
Line No	Subcalls	Level	Class	Method	Duration (ms)	Net Time (ms)
1	1	1	/IWBEPM/WM_MGW_CLIENT_IF	/IWBEPM/WM_MGW_HANDLE_REQUEST	99	7
2				>Request Payload Size	6086 Bytes	
3				>Response Payload Size	4220 Bytes	
4	2	2	/IWBEPM/CL_MGW_REMOTE_HANDLER	GET_ENTITY_SET		3
5	3	3	/IWBEPM/CL_MGW_MED_PROVIDER	GET_SERVICE_METADATA		4
6	3	3	OPC_EXT	GET_ENTITYSET	85	85

Previously we saw the call stack of the Backend Performance Trace. As explained earlier, the call stack on the backend always starts with the RFC Function Module, so from here we can find it in the Method column.

### Start capture

Go to your browser or other client and make the OData call.

Overview of Scheduled Measurements (All Servers)													
Server Name	Client	Measur. ID	User	Session	ProcessCat	Object Type	Object Name	Scheduled	Started	Errors	Status	Exp. Date	Expir.Time
[REDACTED]	001	1	[REDACTED]	Any	Any	Function Module	/IWBEP/FM_MGW_HANDLE_REQUEST	1	1	0	Executed	13.08.2018 15:44:42	
[REDACTED]	001	2	[REDACTED]	Any	Any	Function Module	/IWBEP/FM_MGW_HANDLE_REQUEST	1	1	0	Executed	06.09.2018 13:46:18	

The status is now changed to 'Executed'

Runtime Analysis													
Tip & Tricks													
Meas. Evaluate													
Own Measurements													
Status	Meas.	Date	MeasTime	Tr...	Delete Date	Kurzbeschreibung	Name of Trace Object	Trace User	Runtime [Mi...	Size [Bytes]	Aggregation	Host	System
06.09.2018	05:12:09	06.09.2018	12:50:19	04.10.2018	DEFAULT	/IWBEP/FM_MGW_HANDLE_REQUEST	/IWBEP/FM_MGW_HANDLE_REQUEST	[REDACTED]	0	30.000	Per Call Post	[REDACTED]	SEP 001

Now go to the Evaluate tab of SAT, to find your measurement.

Double-click it.

Runtime Analysis: Display Measurement													
Profile: Trace Results													
Data/Time	06.09.18 / 12:50:19	Object	/IWBEP/FM_MGW_HANDLE_REQUEST	User	[REDACTED]	Description	DEFAULT	System	[REDACTED]				
Profile	Selec...	Number	Net [micros]	Net [%]		Gross [micros]	Net [micros]	Gross %	Net [%]	Statement/Event			
Routine Measurement		10,225	188,977	100,00		189,289	0	100,00	0	Runtime Analysis On			
Internal Processing Block		8,304	59,403	31,43		134,962	62	71,30	0,65	/IWBEP/FM_MGW_HANDLE_REQUEST			
External Processing Block		1	62	0,03		134,964	23	0,02	0,02				
Data Accesses Internal		130	17,894	9,46		133,996	24	76,79	0,01	Call M. (O(124)*IWBEP/FM_MGW_REMOTE_HANDLER)->GET_IT			
Data Accesses External		1,399	102,244	55,44		132,518	15	70,81	0,01	Call M. (O(125)*IWBEP/FM_MGW_LOCAL_HANDLER)->GET_IT			
Miscellaneous		419	286	0,15		131,966	1	69,72	<0,01	Call M. (O(125)*IWBEP/FM_MGW_RT_DEF_BACD)->/IWBEP/F			
Load / Generate		118	1,273	0,67		131,965	4	69,72	<0,01	Call M. (O(136)*IWBEP/FM_MGW_PUSH_ABS_DATA)->/IWBEP/F			
Runtime Analysis		1	0	0,00		131,961	67	69,71	0,00	Call M. (O(136)*IWBEP/FM_MGW_ABS_DATA)->/IWBEP/F_M			
Not Assigned		57	7,827	4,14		122,797	34	4,02	0,02	Call N. (O(124)*ZCL_SODATA_POST_FROG)->ZCL_SODATA_POST_FROG			
						122,725	9,594	44,48	5,07	Call N. (O(125)*ZCL_SODATA_POST_FROG)->ZCL_SODATA_POST_FROG			
						50,581	2,996	26,72	1,59	Fetch ZECS_LONGTEXT			
						30,946	204	16,35	0,11	Call M. (O(187)*ZCL_SODATA_POST_FROG)->GET_CASH			
						29,845	204	16,35	0,11	Call M. (O(187)*ZCL_SODATA_POST_FROG)->GET_CASH			
						340	27,187	27,187	14,36	14,39	DB Fetch ZECS_LONGTEXT		
						25,497	21	4,27	0,21	DB Fetch ZECS_LONGTEXT			
						25,828	8	13,64	<0,01	Call M. (O(203)*ZCL_SODATA_FACADE->CREATE_FEED_PROVIDER			
						25,240	450	13,33	0,21	Call M. (O(203)*ZCL_SODATA_FACADE->CREATE_FEED_PROVIDER)			
						20,296	20,296	10,72	10,72	DB Fetch ZECS_LONGTEXT			
						20,069	1,537	10,60	0,82	Call M. (O(203)*ZCL_SODATA_FACADE->CREATE_FEED_PROVIDER)			
						19,841	1,543	10,59	1,00	Call M. (O(203)*ZCL_SODATA_FACADE->CREATE_FEED_PROVIDER)			
						204	18,511	13,053	9,78	9,78	Call M. (O(203)*ZCL_SODATA_FACADE->CREATE_FEED_PROVIDER)		
						17,524	7,006	9,26	3,71	Call M. (O(187)*ZCL_SODATA_POST_FROG)->GET_CASH			
						11,135	13,135	6,94	6,93	DB Fetch ZECS_LONGTEXT			
						11,446	3,317	6,15	0,76	Fetch ZECS_LONGTEXT			

Now you can make a deep dive into the measurement, and see how many times each coding block has used, as well as examining which coding blocks have been called, and much more.

This tool is a very advanced tool, providing very detailed info about the runtime details in the backend system.

## Debugging an Odata call

For completeness I will also show how you can debug an Odata call.

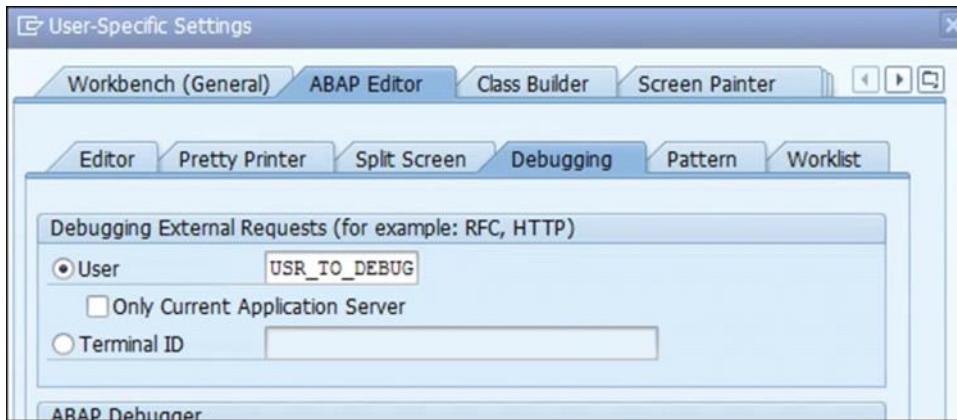
ABAP Workbench												
Changed ABAP Workbench												
Activity	01, 02, 03, 04, 05											
Package	*											
Object name	*											
Object Type	DEBUG											
Authorization group	ABAP/4 pro	*										

ACTIVI  
DEVCLASS  
OBJNAME  
OBJTYPE  
P\_GROUP

To perform external debugging in ABAP both the debug user (performing the debug) AND the debuggee (user being debugged) must BOTH have debug authorizations, as displayed above.

*It is not necessary to have authorization for all above activities, but I am not sure which are the minimum needed activities.*

Go to transaction SE80, and choose Utilities -> Settings.



Set the user you want to debug and press Enter.

```

Method CASESEARCHSET_GET_ENTITYSET Active
1 lv_user      TYPE xubname,
2 lv_deptid    TYPE zeccos_depmnt_id,
3 lv_actpl     TYPE c,
4 lv_dept      TYPE c,
5 lv_allcomm   TYPE c,
6 lv_objlink   TYPE c.
7
8 FIELD-SYMBOLS: <filter>      LIKE LINE OF it_filter_select_options,
9      <entityset>  LIKE LINE OF et_entityset,
10     <temp>       TYPE /iwbep/s_cod_select_option,
11     <case>        TYPE zcl_eccos_case_search_util->typ_s_range_case_id,
12     <user>        TYPE zcl_eccos_case_search_util->typ_s_range_user_id,
13     <deptid>     TYPE zcl_eccos_case_search_util->typ_s_range_dept_id,
14     <txtstring>   TYPE zcl_eccos_case_search_util->typ_s_range_txt_string.
15
16 IF NOT it_filter_select_options IS INITIAL.
17   LOOP AT it_filter_select_options ASSIGNING <filter>.
18     CASE <filter>-property.
19       WHEN 'CaseID'.
20         MOVE CORRESPONDING <temp> TO <case>.
21         APPEND INITIAL LINE TO lv_case ASSIGNING <case>.
22         MOVE CORRESPONDING <temp> TO <case>.
23         MOVE <temp>-low TO lv_casedid.
24         MOVE <case>-id = lv_casedid.
25         zcl_eccos_case_handler->convert_case_id_external( lv_casedid ).
26         <case>-id = lv_casedid.
27   ENDLOOP.
28
29 ENDIF.
30
31
32
33
34
35
36
37
38
39
40
41
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```

Find the Data Provider Class method you want to debug, and position the cursor on the line where the breakpoint should be placed.



Click the icon for External Break Point to set it.

```

Method CASESEARCHSET_GET_ENTITYSET Active
1 lv_deptid    TYPE zeccos_depmnt_id,
2 lv_dept      TYPE c,
3 lv_allcomm   TYPE c,
4 lv_objlink   TYPE c.
5
6 FIELD-SYMBOLS: <filter>      LIKE LINE OF it_filter_select_options,
7      <entityset>  LIKE LINE OF et_entityset,
8      <temp>       TYPE /iwbep/s_cod_select_option,
9      <case>        TYPE zcl_eccos_case_search_util->typ_s_range_case_id,
10     <user>        TYPE zcl_eccos_case_search_util->typ_s_range_user_id,
11     <deptid>     TYPE zcl_eccos_case_search_util->typ_s_range_dept_id,
12     <txtstring>   TYPE zcl_eccos_case_search_util->typ_s_range_txt_string.
13
14 IF NOT it_filter_select_options IS INITIAL.
15   LOOP AT it_filter_select_options ASSIGNING <filter>.
16     CASE <filter>-property.
17       WHEN 'CaseID'.
18         MOVE CORRESPONDING <temp> TO <case>.
19         APPEND INITIAL LINE TO lv_case ASSIGNING <case>.
20         MOVE CORRESPONDING <temp> TO <case>.
21         MOVE <temp>-low TO lv_casedid.
22         MOVE <case>-id = lv_casedid.
23         zcl_eccos_case_handler->convert_case_id_external( lv_casedid ).
24         <case>-id = lv_casedid.
25   ENDLOOP.
26
27
28
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```

When the user executes the call, the debugger will open once the Break Point is hit by the user.

In the above screen dump, it is shown where the RFC Function Module is located in the call stack. It can also be seen, that this system is a hybrid system, where the SAP Gateway and Backend is in the same system, since the call stack includes all the Gateway calls as well.

I hope some of these insights are useful for some of you guys.

Søren Hansen, Senior Mobile Consultant, 2BM A/S, Denmark

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Is there a transaction code (workload statistics) in ECC or a UPL/SCMON info provider that captures how many calls a particular gateway service is receiving per day, month year?

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[Rainer Winkler](#)

[September 20, 2019 at 4:30 pm](#)

Thank you for the helpful post.

I learned also that the entity tag contains the body of the http request encoded with base64.

BR Rainer

- Like(0)



[Dharmesh Kumar](#)

[October 22, 2019 at 3:19 pm](#)

Very useful information, Thank you for sharing.

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Visual Text

Paragraph

Inserted from <<https://blogs.sap.com/2018/09/09/gateway-odata-service-troubleshooting-and-detailed-tracing-in-abap/>>

# SAP GATEWAY:Performance Analysis of ODATA service call | SAP Blogs

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**S Chatterjee**

Posted on January 13, 2016 1 minute read

## SAP GATEWAY:Performance Analysis of ODATA service call

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### Performance Trace Analysis

Performance trace analysis is a function used to display ODATA service call information.

Standard active trace is valid for two hours and hence records the information of all ODATA calls made within two hours from the activation of the trace.

All service calls listed contains information like triggering date and time of call, expiry date and the status.

The status given by green traffic light resembles successful execution of the ODATA call and red light on the contrary resembles error with the execution of ODATA call.

1. Go to Tcode /IWFND/TRACES ,access **SAP Netweaver Gateway-Tracing Tools** and set Performance Trace '**Active**' and Payload Trace '**Active**' in the Configuration tab.

SAP NetWeaver Gateway: Tracing Tools

Configuration Performance Trace Payload Trace

User Name [REDACTED]  
Request URI Prefix [REDACTED]

Available Log and Traces

Error Log Level	Secure
Performance Trace	Active
Payload Trace	Active

Alternatively, it can be accessed SAP Netweaver Client as below,

Goto -> Trace Tools,

Gateway Client Edit Goto Metadata System Help

SAP NetWeaver C

Trace Tools Explore Payload File Back F3

HTTP Method GET POST PUT PATCH MERGE DELETE Reuse H

Request URI [REDACTED]

Protocol HTTP HTTPS Test Group Test Case

HTTP Request

Header Name	Value
-status_code	200
-status_reason	OK

HTTP Response

Header Name	Value
-status_code	200
-status_reason	OK

2. Go to Tcode /IWFND/GW\_CLIENT and execute a url as,

SAP NetWeaver Gateway Client

Execute Select Maintain Service Service Implementation EntitySets Add URI Option

HTTP Method GET POST PUT PATCH MERGE DELETE Reuse HTTP Connection (e.g. for Soft State)

Request URI [REDACTED] Multiple Rows

Protocol HTTP HTTPS Test Group Test Case

HTTP Request

Header Name	Value
-status_code	200
-status_reason	OK

HTTP Response

Header Name	Value
-status_code	200
-status_reason	OK

3. Revisit Tcode /IWFND/TRACES and check the Tab Performance Trace as,

SAP NetWeaver Gateway: Tracing Tools

Configuration Performance Trace Payload Trace

Client [REDACTED] User [REDACTED]

Service Call Info

Date	Time	Expiry Date	Status
[REDACTED]	11.09.2015	12:51:53	13.09.2015

Double click the selected service call and generate the Performance Trace summary as below,

**Average Times (in milliseconds)**

No. of Req...	Processing Ti...	GW Hub Syst...	RFC and Netw...	GW Backend ...	Application
1	538	177	205	30	126

**Detail (Time in milliseconds)**

Ex... Namespace	Service Name	Location	Operation Name	Level	Destination	Processing Ti...	GW Hub Syst...	RFC and Netw...	GW Backend ...	Application
[REDACTED]	***Hide_due_to_secure_log_...	Hub Syst...	READ_ENTITYSET	1	[REDACTED]	538	177	205	30	126
[REDACTED]	***Hide_due_to_secure_log_...	Hub Syst...	LOAD_METADATA...	2	[REDACTED]	0	0	97	9	0
[REDACTED]	***Hide_due_to_secure_log_...	Hub Syst...	LOAD_METADATA...	2	[REDACTED]	0	0	69	7	0
[REDACTED]	***Hide_due_to_secure_log_...	Hub Syst...	READ_ENTITYSET	2	[REDACTED]	0	0	39	14	126

Click on Tab Trace Details and generate the detailed view as,

**SAP NetWeaver Gateway: Performance Trace**

**Client [REDACTED] User [REDACTED] Status OK**

Line No.	Subcalls	Level	Location	Class	Method	Duration (ms)	Net Time (ms)
1	1	1	Hub System	/IWVND/CL_SODATA_HTTP_HANDLER	HANDLE_REQUEST	538	33
2				>Request Payload Size	0 Bytes		
3				>Response Payload Size	5783 Bytes		
4	2	2	Hub System	/IWVND/CL_SODATA_ROOT_HANDLER	DISPATCH	505	11
5	2	3	Hub System	/IWVND/CL_MED_MDL_PROVIDER	GET_SERVICE_GROUP	265	83
6	1	4	Hub System	/IWVND/CL_MGW_REQUEST_MANAGER	Call Backend - [REDACTED]	106	97
7	1	5	Backend	REMOTE_FUNCTION_MODULE	/IWBEPIFM_MGW_HANDLE_REQUEST	9	3
8				>RFC Request Size	1478 Bytes		
9				>RFC Response Size	45851 Bytes		
10	6	6	Backend	/IWBEPIFM_MGW_REMOTE_HANDLER	GET_META_DATA	6	6
11	1	4	Hub System	/IWVND/CL_MGW_REQUEST_MANAGER	Call Backend - [REDACTED]	76	69
12	1	5	Backend	REMOTE_FUNCTION_MODULE	/IWBEPIFM_MGW_HANDLE_REQUEST	7	1
13				>RFC Request Size	30662 Bytes		
14				>RFC Response Size	6249 Bytes		
15	1	6	Backend	/IWBEPIFM_MGW_REMOTE_HANDLER	GET_TEXT	6	6
16		7	Backend	/IWBEPIFM_MGW_MED_DOK_TX_LOAD	GET_TEXTS		
17	3	3	Hub System	/IWVND/CL_SODATA_PROCESSOR	READ	227	3
18	4	4	Hub System	/IWVND/CL_MGW_PROVID_DELEGATOR	GET_DATA_PROVIDER		
19	1	4	Hub System	/IWVND/CL_MGW_REQUEST_MANAGER	Call Backend - [REDACTED]	179	99
20	1	5	Backend	REMOTE_FUNCTION_MODULE	/IWBEPIFM_MGW_HANDLE_REQUEST	140	1
21				>RFC Request Size	3627 Bytes		
22				>RFC Response Size	3066 Bytes		
23	2	6	Backend	/IWBEPIFM_MGW_REMOTE_HANDLER	GET_ENTITY_SET	139	6
24	7	7	Backend	?/O...?/R... TRANSFER ORDER DOK FXT	GET ENTITYSET	126	126

#### 4. Similar approach for Payload Trace Analysis,

**SAP NetWeaver Gateway: Tracing Tools**

**Client [REDACTED] User [REDACTED]**

Service Call Info	Method	Date	Time	Expiry Date	Status
[REDACTED]	GET	11.09.2015	12:51:53	13.09.2015	[Green]

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[Deborshi De Sarkar](#)

[January 14, 2016 at 7:50 am](#)

Thanks Suprio. It is Very Useful Document.

- Like(1)



[Yuvraj Shanmugam](#)

[December 14, 2016 at 9:55 am](#)

Hi Suprio,

Very clear and to the point.

Thanks for writing the blog.

Do you also know how to interpret the trace?

For eg., What is the difference between Duration and Net time?

- Like(0)



[David Nguyen](#)

[March 10, 2020 at 9:22 pm](#)

How would you use the same method setting up the trace in SAP Cloud Platform Integration?

Thanks

David

- Like(0)

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Visual Text

Paragraph

Inserted from <<https://blogs.sap.com/2016/01/13/sap-gatewayperformance-analysis-of-odata-service-call/#:text=Performance%20trace%20analysis%20is%20a,the%20activation%20of%20the%20trace,>>

# Debugging Dolphin UI5

Tuesday, January 30, 2018 6:49 AM



Debugging  
Dolphin UI5

## Component-preload.js (Headers)

The screenshot shows the Network tab in the Chrome DevTools. A single request for 'Component-preload.js' is selected. The Headers section displays the following:

```
Request URL: https://sapui5nps.tcc.etcn.com:8001/sap/bc/ui5_ui5/ds1/ag_u15/-20170530181202/-Component-preload.js
Request Method: GET
Status Code: 404 NOT FOUND - REQUESTED RESOURCE OUTDATED
Remote Address: 151.118.166.101:8001
Referer Policy: no-referrer-when-downgrade
```

The Response Headers section shows:

```
content-length: 36
content-type: text/html; charset=utf-8
date: Mon, 11 Nov 2018 15:44:00 GMT
last-modified: Mon, 11 Nov 2018 15:44:00 GMT
server: SAP HTTP/1.1/20170530181202
x-content-type-options: nosniff
x-frame-options: SAMEORIGIN
x-xss-protection: 1; mode=block
```

Request Headers section shows:

```
Accept: text/plain, */*; q=0.01
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Authorization: Basic ZT4H4T4E4B0U3JUw9PjD21wffC
Cache-Control: no-cache
Connection: keep-alive
Cookie: sap-user-context=>ap-client=100; MYAPS002=>QvDFBAdnfADkAOAA=>DEAQAA2ADEA1AgACAA1ZACAA1yvADAPVADABvVUARAgIgCAAA1AgACAA1BaAyPgAvDEAvuAvDEAvuAvDIA1QyAOIARQfAAAACAYA1AgQ4CQDQA2fAPsugFgC5qL5h3SQQHd4C6jC5q5wTATE1W4uG85sLw1tQ4wCw73zGz1znuQcBHWMD4EAgBPhouoJEPwAgS1AvDwVeggg18cCBHATA1BgvrGfCgufFud47x1zInchQdQhQCS5553510QfNta1Bgvrx1Qw0BQJQvCvH7rnf9g2jT2M0PwCfAUvHAnNs
Host: sapui5nps.tcc.etcn.com:8001
Pragma: no-cache
Referer: https://sapui5nps.tcc.etcn.com:8001/sap/bc/ui5_ui5/ds1/ag_u15/Index.html
```

The bottom of the screenshot shows the JavaScript console with several errors related to the component loading process.

## Component-preload.js (Preview)

Screenshot of the SAP Fiori Network Profiler tool showing a failed request for 'Component-preload.js'. The Headers tab shows a status of 'File dcl ap\_us5 Component-preload.js NOT found!'. The Network tab lists the file as 'Component-preload.js' with a status of '404 - NOT FOUND - REQUESTED RESOURCE OUTDATED'. The Console tab shows multiple error messages related to the missing file.

```

15 requests | 1011 KB transferred | Finish 4:47 s | DOM...
Console What's New
top Filter Default levels
Hide network Preserve log Show timestamps Autocomplete from history
Log XMLHttpRequests
Selected context only
User messages only
2017-11-30 15:44:08.124209 'dcl/ap : ./ - sap.ui.ModuleSystem
▶ [Deprecation] Synchronous XMLHttpRequests on the main thread is deprecated because of its detrimental effects to the end user's experience. For more help, check https://xhr.spec.whatwg.org/
▶ GET http:///Component-preload.js From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ GET http:///Component-preload.js From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ Failed to load '/Component-preload.js' From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ Uncaught Error: Failed to load '/Component-preload.js' From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
at Object.d.sap_require (jquery.sap.global.js:1:3940)
at x (Component-preload.js:1:1003)
at t (Component-preload.js:1:1115)

```

## Component-preload.js (Response)

Screenshot of the SAP Fiori Network Profiler tool showing a failed request for 'Component-preload.js'. The Headers tab shows a status of 'File dcl/ap\_us5 Component-preload.js NOT found!'. The Network tab lists the file as 'Component-preload.js' with a status of '404 - NOT FOUND - REQUESTED RESOURCE OUTDATED'. The Console tab shows multiple error messages related to the missing file.

```

15 requests | 1011 KB transferred | Finish 4:47 s | DOM...
Console What's New
top Filter Default levels
Hide network Preserve log Show timestamps Autocomplete from history
Log XMLHttpRequests
Selected context only
User messages only
2017-11-30 15:44:08.124209 'dcl/ap : ./ - sap.ui.ModuleSystem
▶ [Deprecation] Synchronous XMLHttpRequests on the main thread is deprecated because of its detrimental effects to the end user's experience. For more help, check https://xhr.spec.whatwg.org/
▶ GET http:///Component-preload.js From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ GET http:///Component-preload.js From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ Failed to load '/Component-preload.js' From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
Caused by: undefined
▶ Uncaught Error: Failed to load '/Component-preload.js' From ./Component-preload.js: 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED
at Object.d.sap_require (jquery.sap.global.js:1:3940)
at x (Component-preload.js:1:1003)
at t (Component-preload.js:1:1115)

```

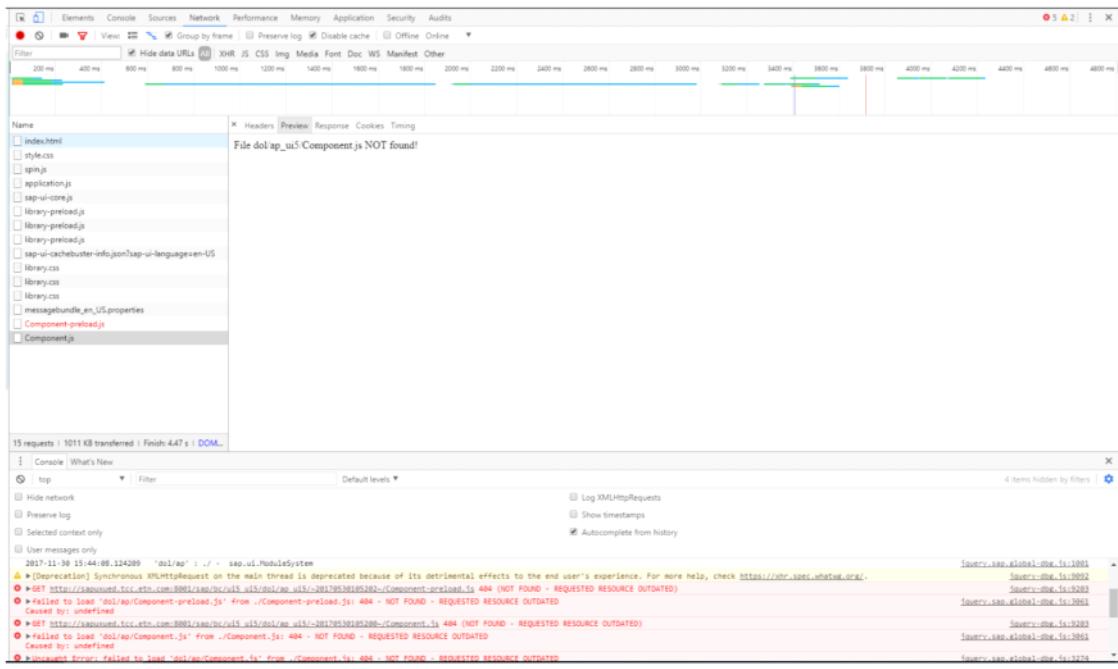
## Component.js (Headers)

The screenshot shows the SAP Fiori Debugger interface. The main window displays the Headers tab for a request to Component.js. The Headers section lists several key headers:

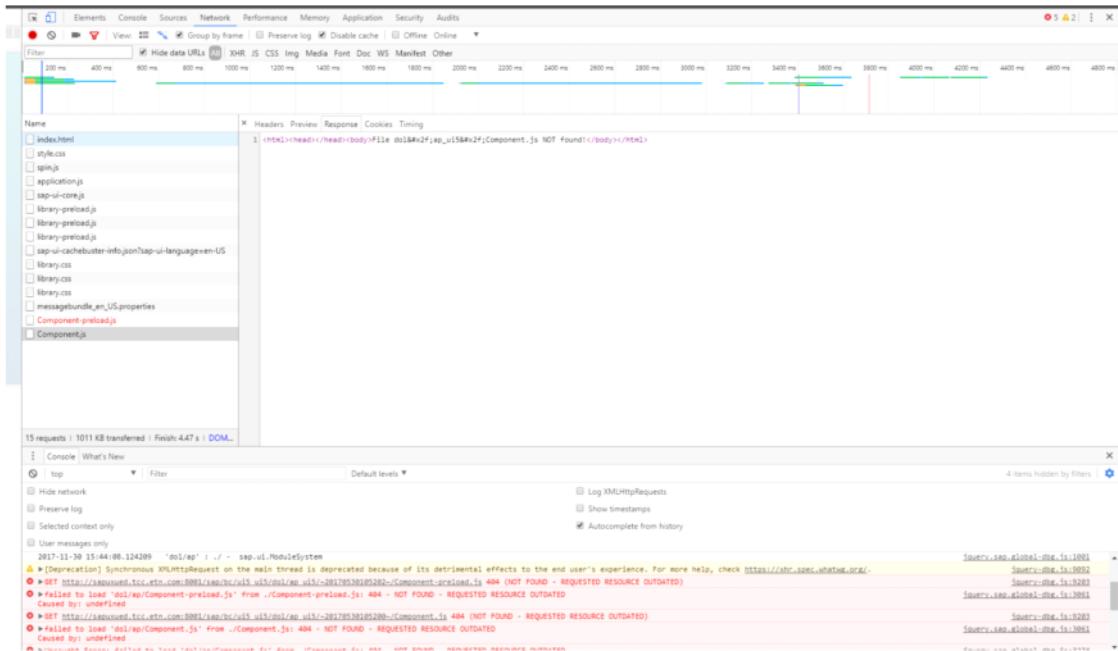
- Content-Type: text/html; charset=utf-8
- Accept: \*/\*
- Accept-Language: en-US,en;q=0.9
- Accept-Encoding: gzip, deflate
- Cache-Control: no-cache
- Host: sapui5.hana.ondemand.com:8881
- Pragma: no-cache
- Referer: http://sapui5.hana.ondemand.com/1.60.0/test-resources/sap/ui/test/index.html
- User-Agent: Mozilla/5.0 (iPhone; CPU iPhone OS 9\_1 like Mac OS X) AppleWebKit/601.1 (KHTML, like Gecko) Version/9.0 Mobile/13B143 Safari/601.1

The Network tab at the top shows a timeline of network activity with several requests and responses. One notable entry is a failed request for 'index.html' with a status code of 404 - NOT FOUND - REQUESTED RESOURCE OUTDATED.

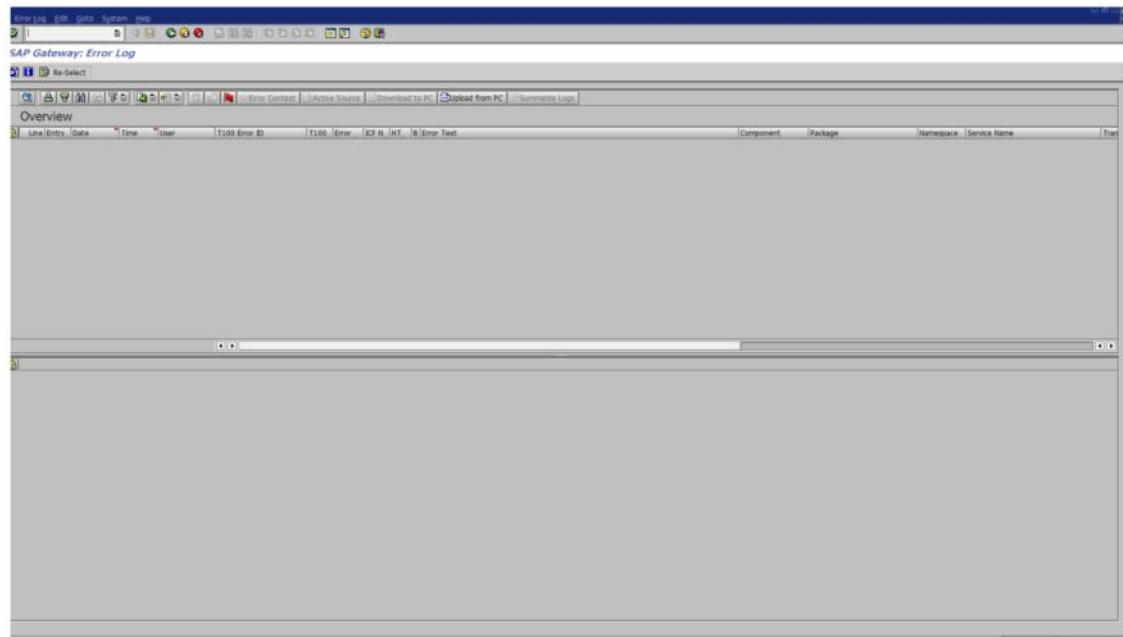
## Component.js (Preview)



## Component.js (Response)



**Gateway error log :-**



# SAP Analytics Cloud Connectivity Guidelines - SAP Analytics Cloud - Community Wiki

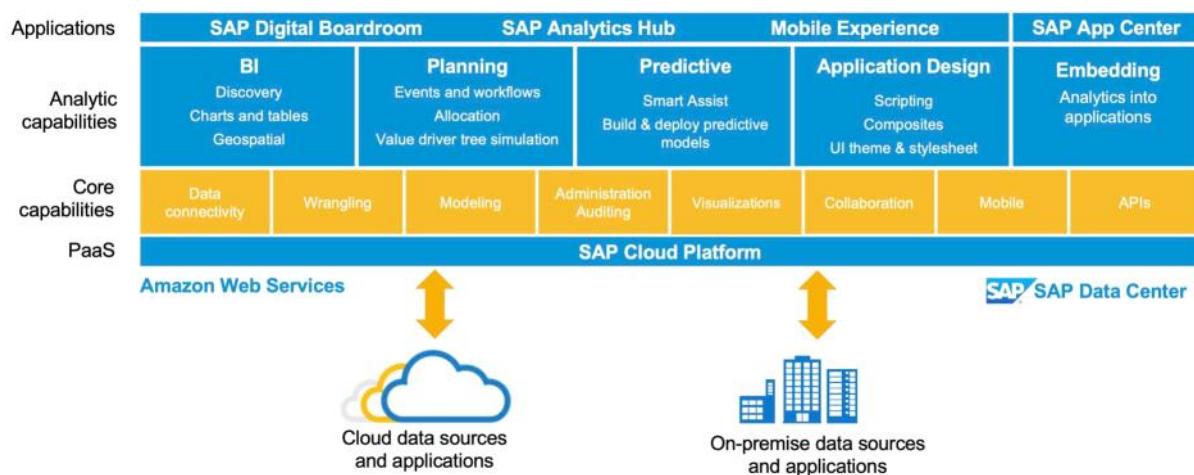
Friday, March 5, 2021 12:30 PM

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<https://wiki.scn.sap.com/wiki/display/BOC/SAP+Analytics+Cloud+Connectivity+Guidelines>

## 1. Foreword

SAP Analytics Cloud is a new generation of Software-as-a-Service (SaaS) that redefines analytics in the cloud by providing all analytics capabilities for all users in one product. It is built natively on the SAP HANA Cloud Platform for extreme performance, and it allows customers to simplify access to a new public cloud experience that they can trust.



## Figure 1 : SAP Analytics Cloud Overview

SAP Analytics Cloud combines Business Intelligence, Predictive, Planning and Digital Boardroom capabilities to analyze all data from your landscape, on-premise or in the cloud.

SAP Analytics Cloud (SAC) is a public **Software-as-a-Service (SaaS)** enabling access to on-premise and cloud data sources. Furthermore, SAP Analytics Cloud provides live connection (online) and data acquisition (batch) connectivity, two ways for accessing your data located anywhere in your information system landscape:

- In SAP Analytics Cloud, you can create models from data sources in on-premise or cloud systems, build stories based on those models, and perform online analysis without any data replication. This feature allows SAP Analytics Cloud to be used in scenarios where data cannot be moved into the cloud for security or privacy reasons, or your data already exists on a different cloud system.
- You can also create connections to remote systems to allow data acquisition by SAP Analytics Cloud. Data is imported (copied) to SAP Analytics Cloud HANA in-memory Database, and changes made to the data in the source system don't affect the imported data.
- Furthermore, SAP Analytics Cloud provides SAML 2 capabilities to enable Single Sign-on simplifying authentication to SAP Analytics Cloud but also to connected Data Sources from your landscape.

Most of our customers want to get all the benefits of such hybrid architecture. This document is intended to help you by explaining connectivity, gathering all required links and delivering tips & tricks, best practices, warnings, experienced by our customers and partners.

## 2. The importance of managing a Connectivity project

To get all above mentioned SAP Analytics Cloud benefits, you have first to connect your on-premise or cloud data sources. SAP Analytics Cloud is a public Cloud Software-as-a-Service you want to connect to your secured back-end. Then, connection settings require people within different areas of expertise from your organization to ensure a smooth and under controlled deployment: