TROUBLESHOOTING SAP SECURITY IN S/4 HANA WITH FIORI

HAVING BEEN AT THE COAL FACE AND LIVED THROUGH SOME OF THE EARLIEST S/4 HANA PROJECTS, SOME OF THE WORLDS FOREMOST EXPERTS SHARE THEIR LEARNINGS OF THE PROBLEMS YOU CAN FACE AND HOW TO RESOLVE THEM

AN ORANGE PAPER

BY

PUMPKIN CONSULTING

WHO ARE PUMPKIN CONSULTING?

Pumpkin began life back in 2004, way before IT security or cyber became cool.

We were amongst the pioneering generation that professionalized SAP security and helped shape it into what it is today which gives us a unique perspective on the full range of problems clients can encounter with SAP security.

What we do ultimately comes down to two things; managing the risk of running a key financial system like SAP and making sure security doesn't get in the way of you managing your business or perish the thought, stop the business from operating.

Our vast experience makes us the perfect partner for all technical implementation requirements, long term and day-today support and audit remediation works. Unashamed people pleasers, we're a friendly bunch, work with a smile on our faces and genuinely want and do the best thing for our clients.

ORANGE PAPER SUMMARY

OVERVIEW

This orange paper (we don't do white papers) provides some informal yet hopefully informative insights into the type of things that can go wrong with security in S/4 HANA with Fiori and how you might go about resolving them.

WHO IS THIS ORANGE PAPER FOR?

This is technical subject matter, make no mistake about it. If that's your bag, please read on. If on the other hand, you don't yet know how to interpret the output from SU53, maybe try one of our blog posts instead.

CONTENTS

In this, our first publication of anything S/4 related, we start right at the beginning by looking at the new transactions introduced for diagnosing authorisation problems.

We cover an age old problem you'll recognise as a seasoned SAP security pro; whether a reported issue is related to authorisations or not.

We conclude this paper with a look at some of the common problems we've encountered so far in this relatively new technology.

Enjoy!

HEADS-UP: A LOT OF FRUSTRATION, BLOOD, SWEAT AND TEARS WENT IN TO LEARNING THIS STUFF THE HARD WAY. DO YOURSELF A FAVOUR AND LEARN IT THE EASY WAY WITH US

INTRODUCTION

TAKE ME THERE
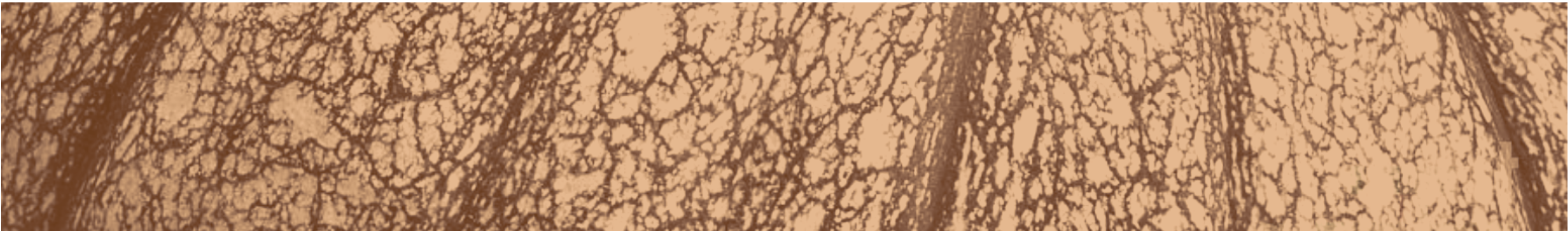
USEFUL DIAGNOSTICS

TAKE ME THERE

IT'S NOT YOU, IT'S ME
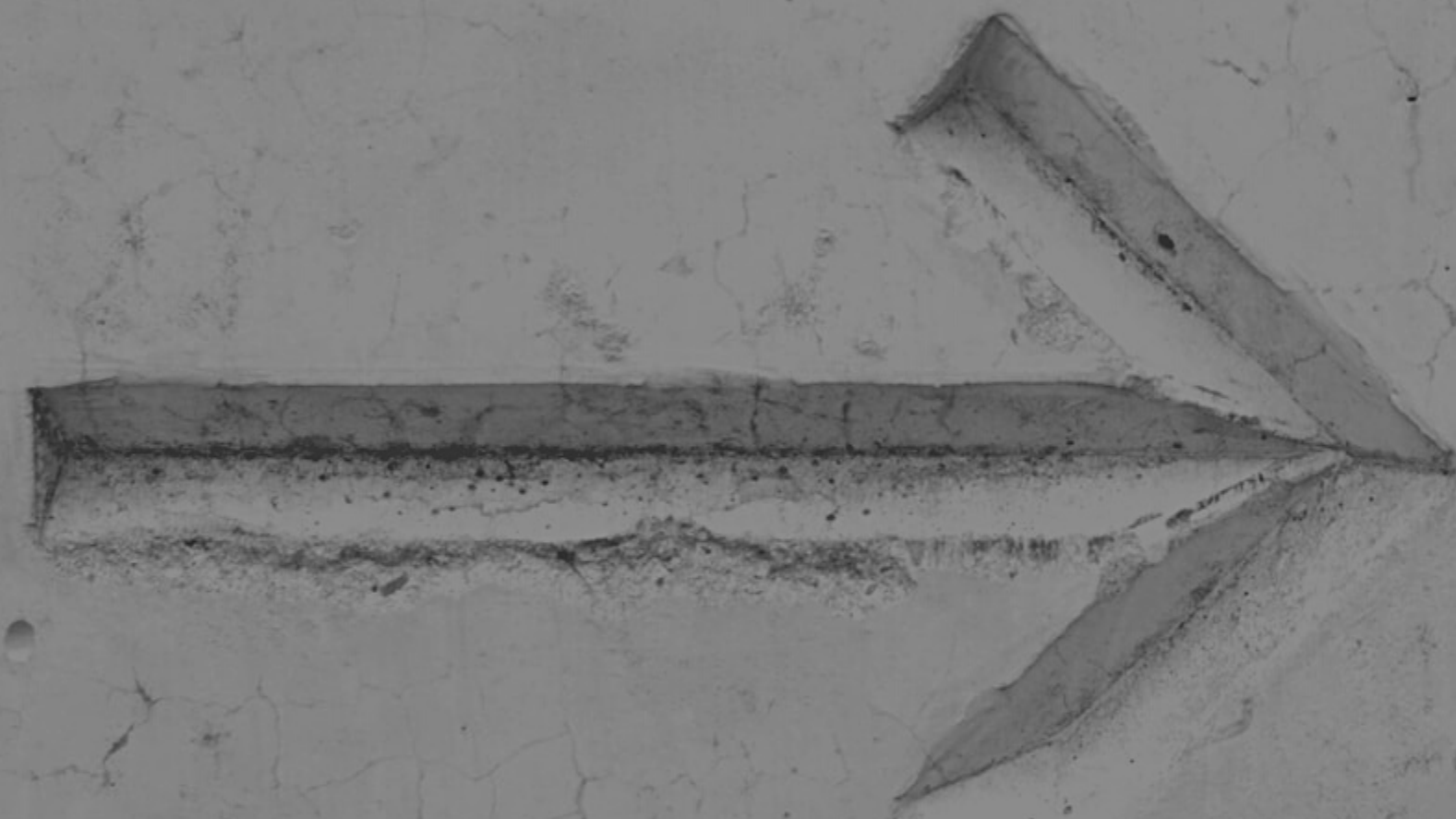
TAKE ME THERE

COMMON ERRORS

TAKE ME THERE

In what could be a world first, we've created
an interesting look at best practice and
useful stuff to know as we delve into the
murky depths of.....

Error resolution in S/4 Hana with Fiori tiles

INTRODUCTION

We'll help you troubleshoot some of the common errors associated with S/4 security and suggest some of the corrections required.

When the Fiori catalogue is first built, copying the original tile and adding to bespoke catalogs, errors when executing the tiles for the first time will be commonplace. This is not unlike when you're adding transactions to a role where not all the authorisations for the standard authorisation checks are imported into the role, masses of authorisation failures can be commonplace. At least in that scenario, you'd be fairly sure that we're dealing with authorisation issues, here though, there could be several things wrong,

These are some of the most difficult errors you are often confronted with in Fiori. Often when using for first time, a Fiori tile can display any of the following errors.

TIMES OUT (HANGS AND DOESN'T LOAD)

RECEIVE COMPLICATED ERROR MESSAGES

MISSING LINKS/ OPTIONS PRESENTED IN TILE

It's recommended that you try to execute each app for the first time yourself with a test ID to catch the issues above at source. This document will focus on these initial errors you get when building and adding new tiles.

USEFUL TRANSACTIONS

A summary of the transactions you'll find most useful for error resolution

Transaction: SU53

Yes, this can still be used and in the back end it will pick up many errors related to standard authorisation objects. The first step we'd suggest is to create a tile version of SU53 in Fiori for users to access easily.

SU53 will often however show no values missing if an apps hangs, does not open or shows no expected links and you receive error message '*App could not be opened either due to an incorrect SAP Fiori Launchpad configuration or a missing role assignment*'

Transaction: STAUTHTRACE

If you get no result from SU53, you might be tempted to trace the issue yourself with full access and if the app opens, check the log.

This can be very hard. You will see a lot of S_SERVICE objects and many false failures. It can result in a lot of time wasted and is not recommended.

It is more useful to have switched on to track user's errors

Transaction: /IWFND/ERROR_LOG

This will show failures by user ID and can often highlight if it is an error with service activation (SICF).

it can also show missing authorisations. It can state here that a user is missing access to query types when running reports. Objects SDDLVIEW or RS_COMP

Transaction: /UI2/FLPCM_CUST

Your main build transaction is obvious, but you will also be using this for error resolution along with the standard SAP Fiori Library linked here:

SAP Fiori Apps Reference Library (ondemand.com)

A SECURITY PROBLEM?

We SAP security folk have long been blamed for system issues when our friends in functional or Basis support teams don't have an answer for what's going on

WORKING OUT IF AN ISSUE *REALLY* IS AN AUTHORISATION ISSUE

It's important not to waste too much time and quickly find if the error relates to authorisations or Basis set up of Fiori apps.

The first step in an implementation is for the functional teams to identify the Fiori apps required and to request the Basis team to activate the services relating to these. Basis will not simply activate all apps in the system as there are thousands and it can't be done en mass.

It can be time consuming and many are not needed by clients, so the team needs to identify their requirements

When adding Fiori apps to catalogs, assigning to users and roles, you will not know if the app is activated until the app is selected for the first time.

Always have your own user (in the development system) with wide access assigned which includes all the relevant SAP standard Catalogs required for the project. If an App loads successfully under this ID, it has already been activated by Basis.

TOP TIP

Transaction /IWFND/ERROR_LOG can also help with this scenario. This transaction shows error logs for users and you will see your ID or test ID here and if you have selected an app and it doesn't load because of service activation, the error message will read like:

No service found for namespace '', name 'MM_SUPPLIER_INVOICE_LIST_ACC_SRV', version '0001'

This will indicate it is not activated and you can provide this information to Basis and no other action is required from the security team.
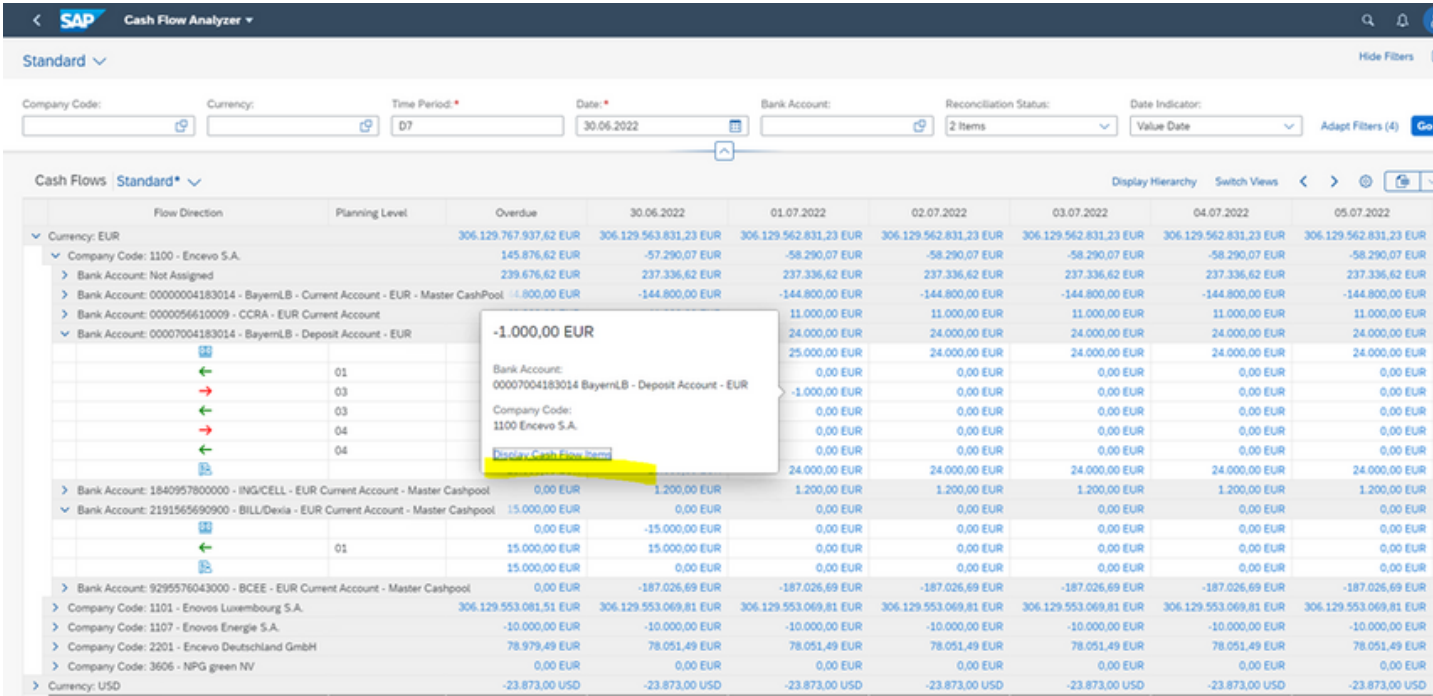
TYPES OF ERRORS

A quick look at the types of errors you'll be expecting to see

Error 1: Test user is not shown all the required options when compared with the function IT roles/users with extended wide access

App: Cash Flow Analyzer
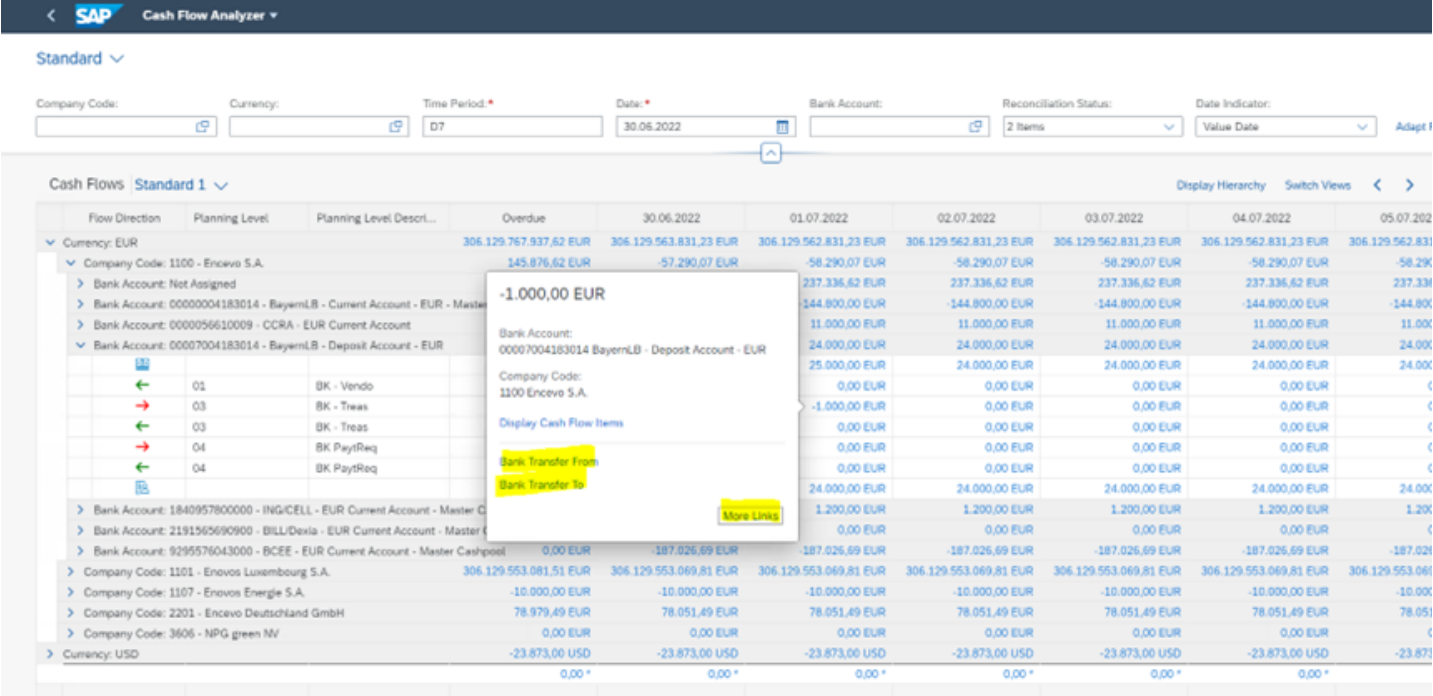
Issue: When selecting a line cash amount, 'Bank Transfer To' and 'Bank Transfer From' are not displayed as options

Test user view:

Full access user view*:

*with role containing full SAP catalogue (SAP_TC_FIN_CM_COMMON)

Endless tracing of your own user ID does not help with this issue. But when adding full catalogue to test ID it worked (even without generation).

To solve this, you need to be aware of the differences between:

Tile/Target Mapping Combinations

In your launchpad content transaction /UI2/FLPCM_CUST you see options of Tile and TM. The Tile is the visual representation available to users, displayed on their home page.

TM is for when an app should not be launched from the launchpad home page but from another app (app-to-app navigation), no tile is needed.

So, from the information above on this issue, we can guess that some TM (Target Mapping Matching Text) could be missing.

>>>

Here's a breakdown of the combination of tile and TM you may see:

Value	Description
Tile + TM	The entry is a tile/target mapping combination. If several tiles have the same intent as a single target mapping and vice versa, a new row is created for each combination.
Tile only	There is no matching target mapping in the same catalog. For example, when an application of type URL should be launched, no target mapping is needed.
TM only	There is no matching tile in the same catalog. For example, when an app should not be launched from the launchpad home page but from another app (app-to-app navigation), no tile is needed.

So in our example, the app 'Cash Flow Analyser' is the tile and from the data, you can select it and go into another app, using the selection of 'Bank Transfer'. Clicking here this takes the user into the app Called 'Bank Transfers'

ds4ci.sap.creos.net:4300/sap/bc/ui2/flp/

Make Bank Transfers ▾
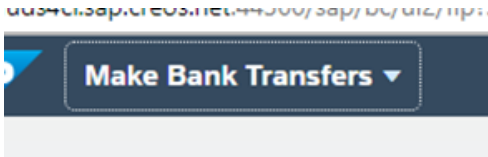
Even if the user has both of these apps in their access, it still needs the TM access to be added, so it gives the user the option to jump from one app to another. Without it you don't even get the option and the user would have to go back to the home screen and then select it.

Finding the Missing TM

Sometimes it can be quite simple to find, with just looking in your customising transaction (/UI2/FLPCM_CUST), searching for the app name under tab 'Tiles and Target Mapping'. This shows that the app has lots of *TM only* values and by checking the custom catalogue, you may have added only the first tile and TM value. All other relevant TM values then need adding separately as well. See below for an example.

Other missing TM values can be more difficult, and you need to search around In SAP standard catalogs. The SAP Standard Catalogue can be found in the SAP Reference Library (link on the right).

1. Search for the app name, in this instance 'Cash Flow Analyzer'
2. Select Implementation Tab along top, Configuration Sub section drop down and then and under Technical Catalog(s) heading you will find catalogue name: SAP_TC_FIN_CM_COMMON and its Semantic Object, 'Cashflow'
3. View this in /UI2/FLPCM_CUST transaction, catalogues are ordered by Semantic Object Name

Looking through these can show if any TM only values are listed that might match up with your requirement and some trial and error could be needed, added to catalogue, relaunching Fiori and checking for changes

Click for SAP Ref Library

Catalogs	Tiles/Target Mappings	Roles

Search Tiles/Target Mappings CASH FLOW ANALYZER Go

Add Reference to Catalog | Check Services | Show Usage in Catalogs | Show Usage in Roles

Tile / Target Mapping Combinations (8 of 15120)

| St...	T/T...	T/TM Match	Semantic Object	Action	Title/Subtitle/Information	App T...	Application Ressource	SAP Fiori ID
🟩		Tile + TM	CashFlow	analyzeFlow	Cash Flow Analyzer	UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowBank		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowBankAccount		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowBankCompany		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowBankCountry		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowBankGroup		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowCompanyCode		UI5	fin.cash.flow.analyzer	F2332
		TM only		analyzeFlowCurrency		UI5	fin.cash.flow.analyzer	F2332

Error 2: User opens an app and selects options available in and an error message is returned

App: Manage Credit Memo Request

Issue: With the tile open, when selecting "Create credit memo Request", an error message appears
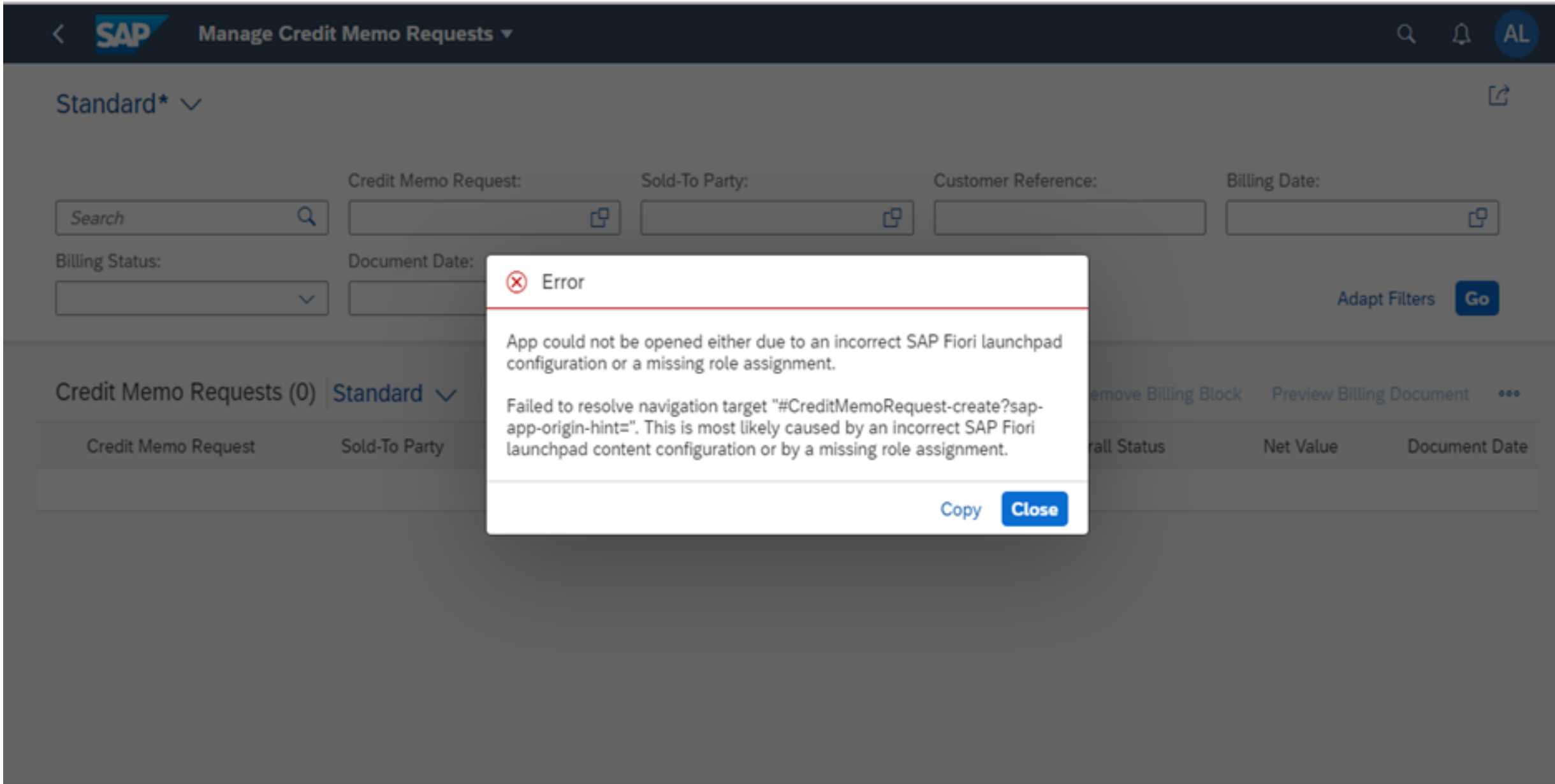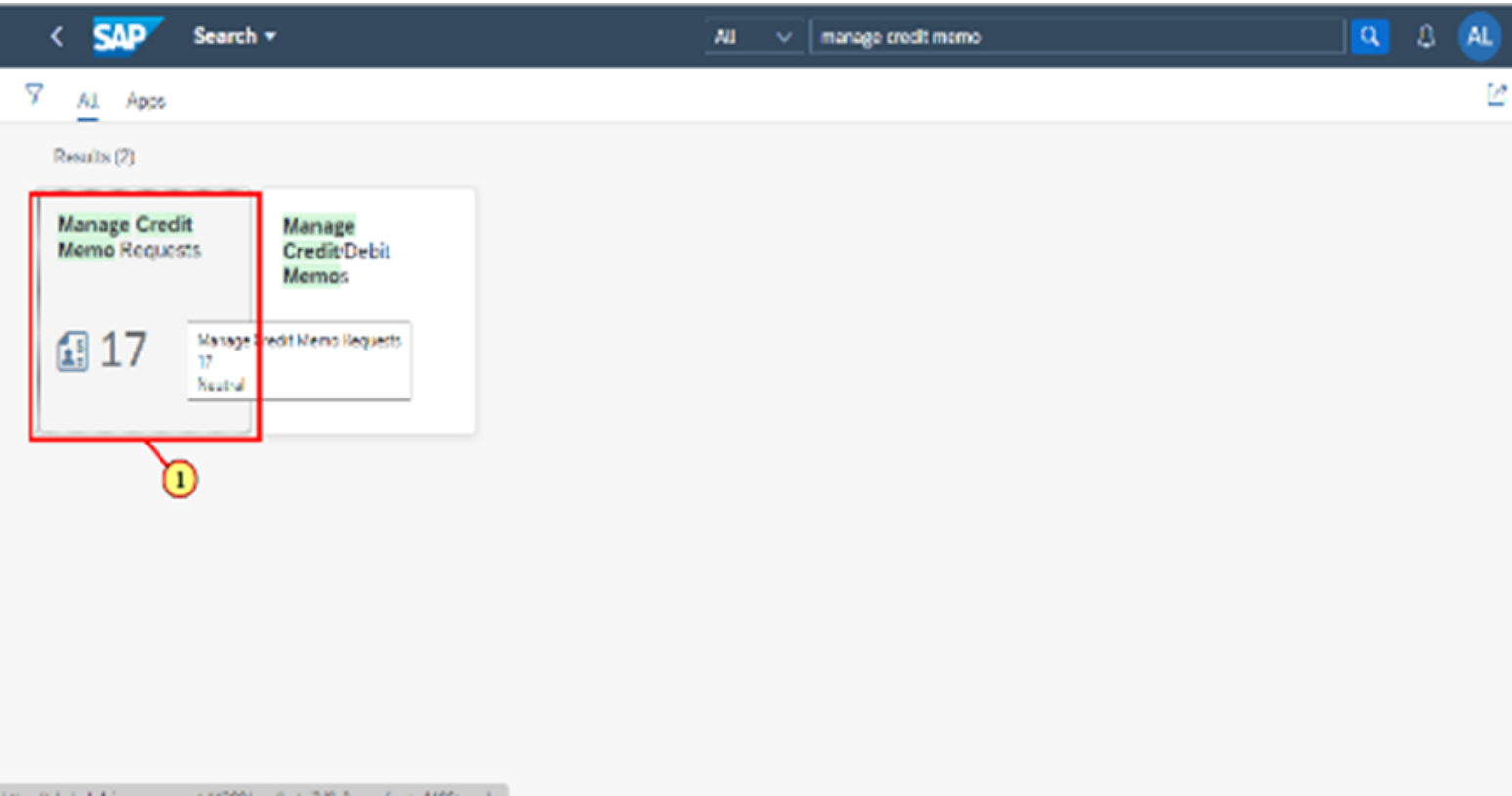
When the tile is open and the user selects "Create credit memo Request", the following message can appear appears:-

'App could not be opened either due to an incorrect SAP Fiori Launchpad configuration or a missing role assignment'

The error is found when a group of similar connected/linked apps are required. It is often found when you assign an app with title 'Manage', in this example "Manage Credit Memo Request".

Even if the role has access in the 'Activity' field to create, change and display, you still need to assign corresponding apps.

It's similar to a cockpit transaction in the GUI, where you often have to also add other transactions that are called in the background, as an authorization default in a role.

As shown below, the catalog that was called by the other Tile has been added in.

Some are TM only access like before and some Tile and TM.

TIP: You don't have to add this access to a group, so the user sees Tile 'Create Memo Request' on their home page. This forces the user to use designated central App 'Manage' and doesn't congest the users home screen with too many unnecessary apps.
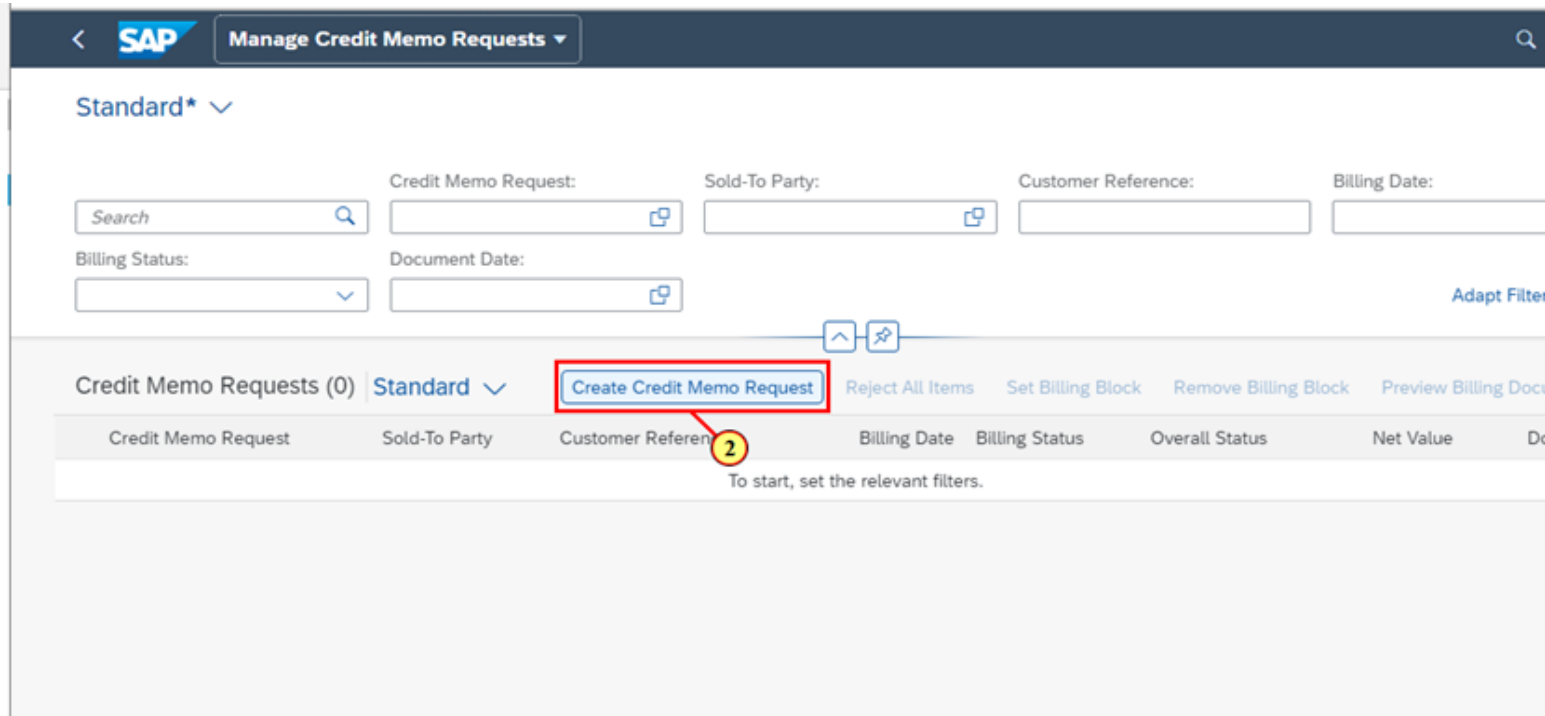
TM only	CreditMemoRequest	create	Create Credit Memo Request
Tile + TM		createCMRManual	Create Credit Memo Requests - W/o Preceding Document
Tile + TM		display	Display Credit Memo Request
Tile + TM		manage	Manage Credit Memo Requests

Error 3: Functional/ business search for a tile and can't find the required app

Example: app ID F3172: Manage Tax Items
Issue: Searching for an app is unsuccessful, although it exists

The functional team or business users search for a Tile and they can't find the app required. They request it and you add it, but this Fiori app has no Tile reference at all.

Here, you'll need to explain to the team that this is only called from another app, maybe some reporting app. Here we cannot always advise what app it's called from; the functional team should be able to assess this themselves with their knowledge of the processes and steps.

We'll have more insights to share on similar topics going forward. If there's a topic or particular issue you'd like us to cover, get in touch

We hope you found some of these thoughts helpful. Our hope is that these informal, yet informative orange papers can provide some insight, tips and food for thought to point you in the right direction.

Of course, we would be lying if we didn't also want to blow our own trumpet and celebrate the Pumpkin way ultimately encouraging you to choose us to accompany you on your SAP authorisation improvement journey; we are a business after all.

Please do not hesitate to get in touch with us. We are as friendly as say we are or your money back.

About the author

Sam Dewil has vast experience across the whole spectrum of SAP security from S/4 to GRC and beyond. He's never happier than when he's problem solving or building and loves to get his hands dirty.

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