SAP Fiori User Experience running on IBM i

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SAP Fiori User Experience running on IBM i – Agenda

- Introduction to SAP Fiori and how to use it
- Hardware and configuration of the system used for the live demo
- Introduction to the Convergent Invoicing application
- Life demonstration of SAP Fiori running on IBM i
- Database performance optimizations for the live demo system
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Introduction

What is SAP Fiori, what is it not?

- No replacement for SAP GUI
- Browser-based apps running dedicated tasks
- More mobile: mobile devices + PC
- Better customer experience:
  more productive
  faster
  ease of use
  no needless functions/options/apps
Fiori: - Started in a browser.
- Configurable like a portal.
- SAP and customer apps.

Fiori user: Restricted access by roles.
SAP Fiori Landscape

- Examples for a test system and a production system:

Test system:
- ABAP (SAP Netweaver)
- Fiori / SAPUI5
- SAP Gateway
- SAP Business Suite

Intranet

Production system:
- ABAP (SAP Netweaver)
- Fiori / SAPUI5
- SAP Gateway
- SAP Business Suite

DMZ
- SAP Web Dispatcher
- Firewall

Internet
- Browser

Frontend server
- Intranet
- Browser

Backend server
SAP Fiori Minimum Releases

ABAP-Frontend-Server:
- SAP NW 7.5x
- SAP NW 7.40 SPS07 or higher
- SAP NW 7.31 SPS05 (better SPS08) or higher

ABAP-Backend-Server:
- SAP NW 7.5x
- SAP NW 7.4x
- SAP NW 7.31 SPS01 or higher
- SAP NW 7.03 SPS01 or higher
- SAP NW 7.02 SPS06 or higher
- SAP NW 7.01 SPS03 or higher
- SAP NW 7.0 SPS18 or higher
SAP Fiori Links, Books, Training – Small Selection

Links
- SAP Fiori Apps Reference Library: https://fioriappslibrary.hana.ondemand.com/sap/fix/externalViewer/
- SAP Community Network SAP Fiori: https://go.sap.com/community/topic/fiori.html
- SAP Fiori apps library: https://www.sap.com/fiori-apps-library

SAP books (SAP Press) in German language
- SAP Fiori: Implementierung und Entwicklung
- Einführung in SAPUI5: Mobile Apps für SAP entwickeln
- SAP Gateway und OData: Schnittstellenentwicklung für SAP Fiori, SAPUI5, HTML5, Windows u.v.m.

SAP training
- SAP training: https://training.sap.com (search for: Fiori, OData, SAPUI5)
- Curriculae:
  SAP Fiori (https://training.sap.com/g/en/curriculum/fiori-sap-fiori-g-en?)
  SAP SAPUI5 (https://training.sap.com/g/en/curriculum/sapui5-sap-sapui5-g-en)
  SAP Fiori Administration (https://training.sap.com/g/en/curriculum/uxfadm-sap-fiori-administration-g-en)
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SAP Fiori on IBM i: Live Demo System

IBM i Server:
- CPU: 8 (Power7+, SMT-4)
- RAM: 64 GB
- 1.1 TB SSD
- IBM i V7R3

SAP Fiori System:
- ERP6 EHP7 (NW 7.4 SPS14) (Frontend + Backend in one SAP system)
- SAP Kernel 7.45 DCK PL 213

**Diagram:**
- ABAP (SAP Netweaver)
  - Fiori / SAPUI5
  - SAP Gateway
  - SAP Business Suite
- Intranet
- Browser
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SAP Convergent Invoicing

- SAP Convergent Invoicing = Components Billing and Invoicing
- Integration with applications:
  - SAP Convergent Charging
  - SAP Customer Relationship Management
  - Contract Accounts Receivable and Payable
Invoicing Manager – Analyze Unbilled Items

Fiory Apps Library → By Line of Business → Sales → Invoicing Manager (Convergent Invoicing) → Analyze Unbilled Items

Requirements:
• SAP ERP 6.0 EHP 7 SP11, SAP Note 2136479

Key Features:
• Displaying the total amount of unbilled items within a time period.
• Selecting unbilled items by amount or number.
• Grouping of unbilled items by Bill Starting From, Type of Billable Item, status of the billable item, and subprocess.
• Selection of the currency in which the system displays the items.
• Option for creating your own tiles with threshold values.
• Sending of information by e-mail.
SAP Fiori Launchpad

Semantic Object: BillableItem
Action: displayUnbilled
Parameters: numberUnit='EUR'

https://<host>:443/sap/bc/ui5_ui5/ui2/ushell/shells/abap/FioriLaunchpad.html#
Unbilled Items – Selection Options

Data Selection:
- Amount
- Number of Items

Grouping:
- By Bill Starting From
- By Billable Item Type
- By Status of Billable Item
- By Subprocess

Granularity:
- Days
- Calendar Weeks
- Months
- Quarters
- Years
Selecting further Options
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Screenshot 1: Life demonstration of SAP Fiori running on IBM i
Screenshot 2: Life demonstration of SAP Fiori running on IBM i
Screenshot 3: Life demonstration of SAP Fiori running on IBM i
Screenshot 4: Life demonstration of SAP Fiori running on IBM i
Screenshot 5: Life demonstration of SAP Fiori running on IBM i
Screenshot 6: Life demonstration of SAP Fiori running on IBM i
Screenshot 7: Life demonstration of SAP Fiori running on IBM i
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Performance Considerations for Selected Fiori App

**SAP Note 2140406** – Release Information Note: SAP Fiori for FI-CA-INV: Analysis of unbilled items

… The SAP Fiori App *Analysis of unbilled items* analyzes your entire dataset. The size of the dataset has a major impact on the response time. …

**ABAP program RFKKBIXBITSAMPLE**
Creation of Billable Items for Testing

**Table /1FE/0HRAT2IT**
50,019,700 rows
45.4 GB
Most Expensive SQL Statement

```
SELECT SUM("BIT_AMOUNT") "BIT_AMOUNT", SUM("BIT_COUNTER") "BIT_COUNTER", "BIT_CURR" "BIT_CURR"
FROM "/1FE/25BITUNINV" "DYNINFOSET"
WHERE "BILL_FIRST" BETWEEN ? AND ?
AND "MANDT" = ?
GROUP BY "BIT_CURR"
WITH UR
OPTIMIZE FOR ALL ROWS
```

- /1FE/25BITUNINV is a CDS view.
- With the used host variables, 49,190,469 out of 50,019,700 rows where selected from the underlying table.
Tools for Query Performance Analysis

ABAP Programm RSDB4CDSTOOLS
Object Dependency Analysis:

Visual Explain:

Legend:
- 'Object does not exist on database'
- 'Object of type table'
- 'Object of type view'
- 'Object of type view with parameters'
- 'Object of type function'
- 'Object of type global variable'
- 'Object of type DDL source'
- 'Object of type created global temporary table'
- 'Object of type trigger'

Object Trees:
/IFE/25BITINV [V] / /IFE/25BITINV [DDLS]
/IFE/24BITINV [V] / /IFE/24BITINV [DDLS]
/IFE/23BITINV [V] / /IFE/23BITINV [DDLS]
/IFE/22BIT0IT [V] / /IFE/22BIT0IT [DDLS]
/IFE/21HRAT0IT [V] / /IFE/21HRAT0IT [DDLS]
/IFE/0HRAT0IT [T]
/IFE/21HRFL0IT [V] / /IFE/21HRFL0IT [DDLS]
/IFE/0HRFL0IT [T]
/IFE/22BIT2IT [V] / /IFE/22BIT2IT [DDLS]
/IFE/21HRAT2IT [V] / /IFE/21HRAT2IT [DDLS]
/IFE/0HRAT2IT [T]
/IFE/21HRFL2IT [V] / /IFE/21HRFL2IT [DDLS]
/IFE/0HRFL2IT [T]
/IFE/22BIT4UNINV [V] / /IFE/22BIT4UNINV [DDLS]
/IFE/22BIT4IT [V] / /IFE/22BIT4IT [DDLS]
/IFE/21HRAT4IT [V] / /IFE/21HRAT4IT [DDLS]
/IFE/0HRAT4IT00 [T]
/IFE/21HRFL4IT [V] / /IFE/21HRFL4IT [DDLS]
/IFE/0HRFL4IT00 [T]
DFKKINV_TRIG [T]
Optimization Options for IBM i

Measurements with 8 CPUs Power7+ and 64 GB main storage:

<table>
<thead>
<tr>
<th>Setup (~50 Million Rows)</th>
<th>Run Time (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original (no optimization)</td>
<td>47.3</td>
</tr>
<tr>
<td>Symmetric Multiprocessing (SMP)</td>
<td>21.7</td>
</tr>
<tr>
<td>SMP &amp; Encoded Vector Indexes (EVI)</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Activation of SMP: Profile parameter `dbs/db4/dbsl_tablehint0 = Table = '/1FE/25BITUNINV' ? ParallelDegree=MAX`

Activation of EVIs: `CREATE ENCODED VECTOR INDEX ... ... KEEP IN MEMORY YES`

Define memory pool *SHRPOOL1 (4 GB)

QAQQINI: `QQPARAM = 'MEMORY_POOL_PREFERENCE, QQVAL = '*NAME *SHRPOOL1'`
Questions? – Thank You!

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