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# Application Support Facility for z/OS V3 R3

## Technical Overview

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May 2003



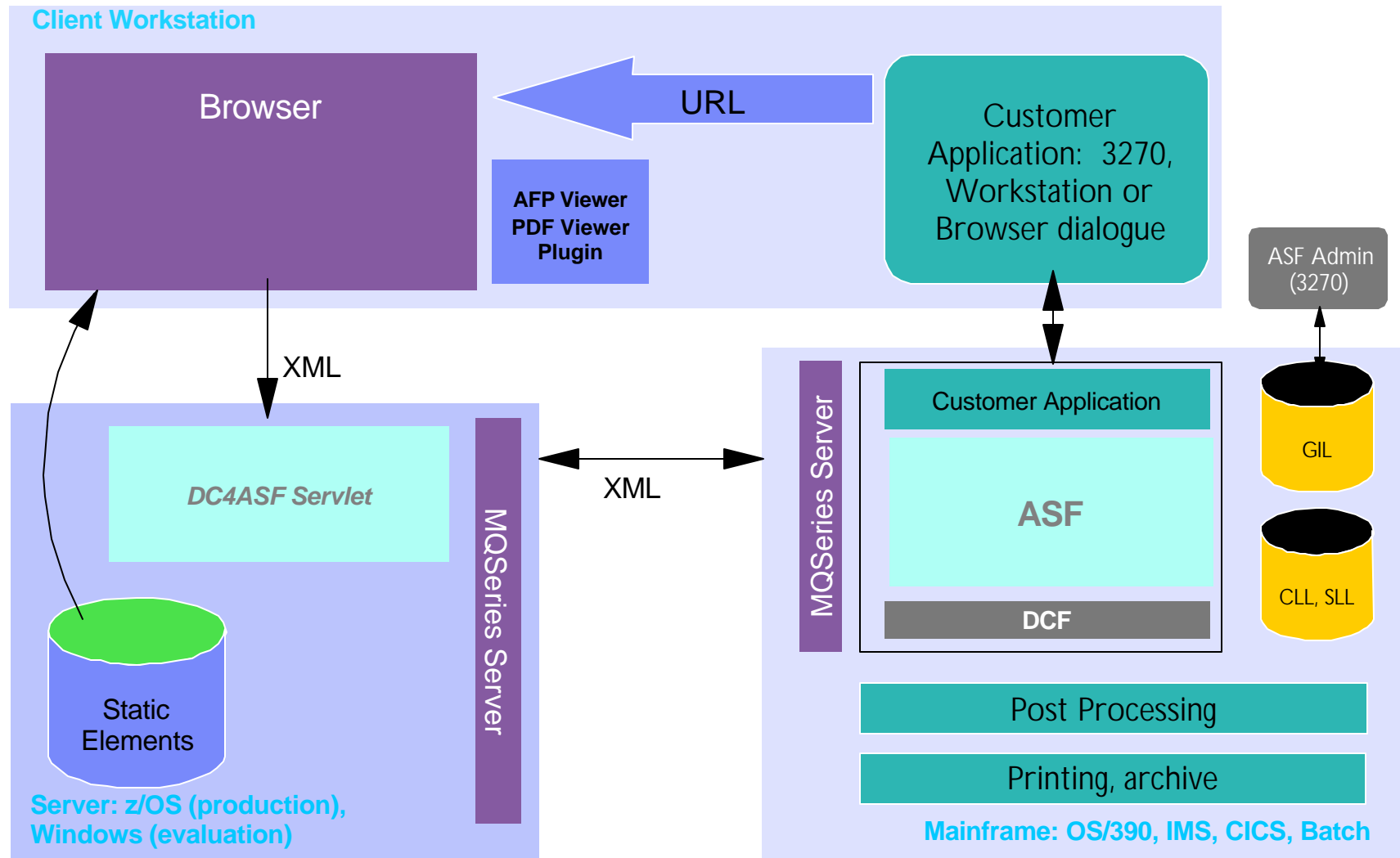
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<http://www.ibm.com/software/applications/office/asf/>

# Agenda

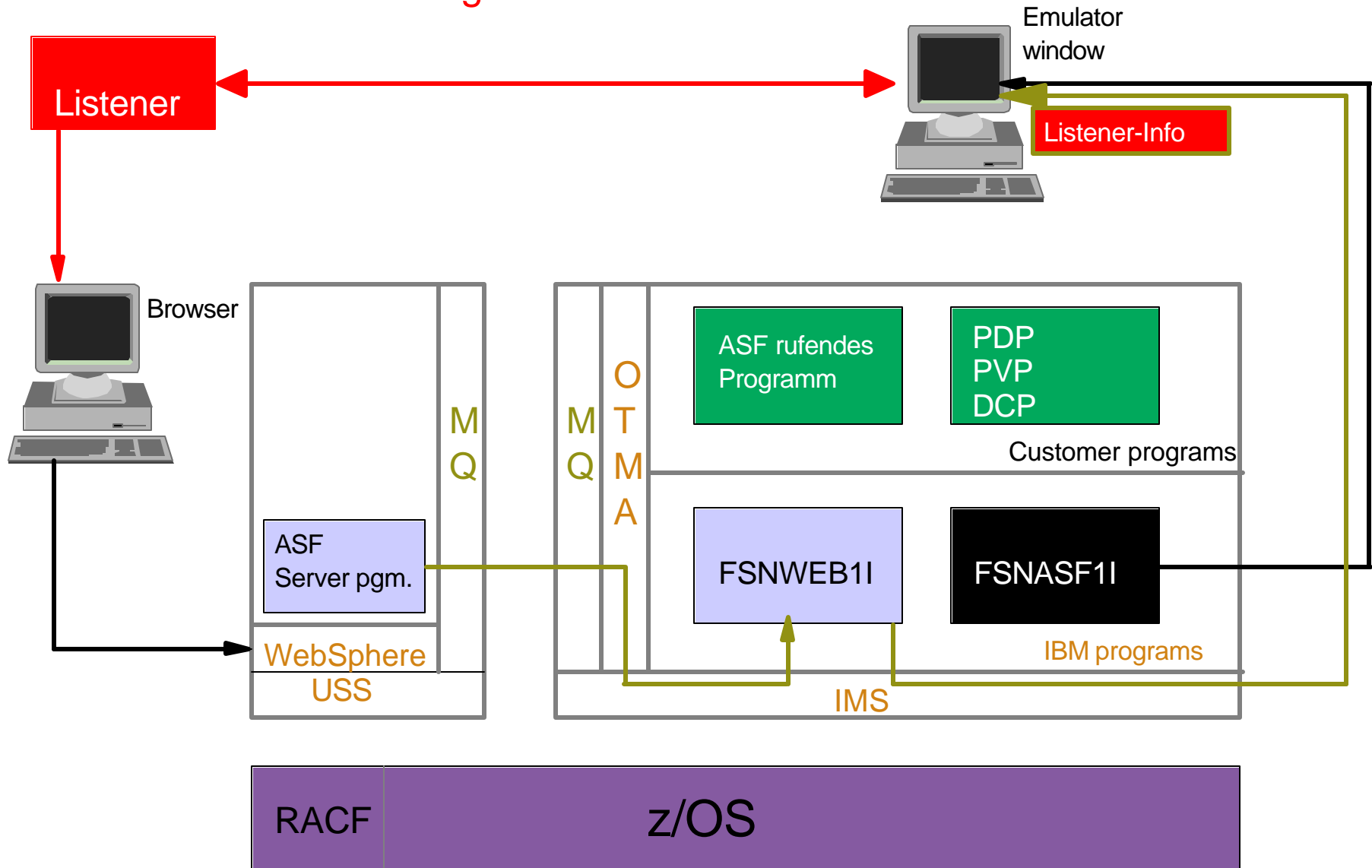
- Web client architecture
- 3270 and Web client interface
  - ▶ Similarities
  - ▶ Differences
- Migration
- DCF / HTML Conversion

# ASF Web Client - Architecture



# Integration of 3270 World and GUI

"Small brother is watching emulator"



# Invoking Web Client from Other Applications

- From 3270 applications
  - ▶ Take today's applications calling 3270 ASF
  - ▶ Use well-known SIB Type 1 API
  - ▶ Invoke Web Client
    - Take different transaction code
    - Or make use of ASF user profile option
- From workstation applications
  - ▶ Invoke Web client by passing a URL

## 3270 and GUI: What They Have in Common

- **Databases**
  - ▶ UPL, GIL, SLL, CLL
- **3270 Administration**
  - ▶ Browser content is defined in GIL records
  - ▶ Known processing options in LTDs, SPs, ...
- **Concepts**
  - ▶ Access concept
    - Status, owner, access code
  - ▶ Letter-request record (LRR)
  - ▶ Creation of documents from LRR records

## 3270 and GUI: What They Have in Common

- Customer programs interacting with ASF
  - ▶ Calling ASF with SIB Type 1 (or SIB Type 0)
  - ▶ Parameter-Determination-Program
  - ▶ Post-processing
  - ▶ Certain exits (plausibility checking)
  
- Creation of print output
  - ▶ CLL processing
    - Utility FSNCEXP or continuous formatting
  - ▶ Creation of DCF input, DCF formatting
    - Utility FSNBDCF
    - Continuous formatting

# New Functions Available in Web Client (1)

- Interactive creation of documents
  - ▶ Clear indication of mandatory items
    - Red frames for checkboxes & parameter fields
    - Use "Ctrl + n" to jump to the next red box/field
  - ▶ Clear indication of completed items
    - Blue frames for checkboxes & parameter fields
    - Properties indicate when and by whom this paragraph has been edited



## New Functions Available in Web Client (2)

- Paragraph selection
  - ▶ Presentation of the document structure
    - Visualize the position of paragraphs
    - Complex documents (LTD in LTD)
    - Identify preselected/mandatory paragraphs
  - ▶ Ability to change the document structure
    - Move paragraphs using drag & drop
    - Copy & paste (clipboard)
  - ▶ Search for additional paragraphs
    - Ability to search by keywords (DB2 only)

## New Functions Available in Web Client (3)

- Individual paragraphs and preview
  - ▶ Editing in the document structure
    - Inserting individual paragraphs
    - Changing paragraphs
    - Multiple editor-sessions in parallel
  - ▶ Spell-checking
    - Server-based dictionaries
  - ▶ Support of speech-based text entry
  - ▶ Preview (Quick, AFP, or PDF)

## New Functions Available in 3270 ASF (1)

- Database listings (DB2-based)
  - ▶ Cross-reference searches
  - ▶ Search for occurrence of certain text strings
- GIL Maintenance
  - ▶ New fields for Web Client front-end
  - ▶ Definition of keywords
  - ▶ LTD options: First/last paragraph
  - ▶ SP option: paragraph with formatting info

## New Functions Available in 3270 ASF (2)

- UPL Maintenance
  - ▶ Remove options for discontinued components
  - ▶ Option for use of ASF Web Client
- Processing options
  - ▶ Multi-segment LRRs only
  - ▶ Resume of Web LRRs in 3270 environment
  - ▶ Resume of 3270 LRRs in Web environment
- LRR Layout
  - ▶ SLL: 3270 LRRs unchanged, Web-LRRs new
  - ▶ CLL: unchanged

## Migration (1)

- Updates to ASF V3 R3 databases
  - ▶ If using VSAM or DL/I DBs
    - Unload of ASF V3 R2. GIL, SLL
    - Reload into ASF V3 R3. GIL, SLL
  - ▶ If using DB2
    - Adding of new columns is sufficient
  
- Updates to ASF exits if using Web client
  - ▶ "Adapt" user exits ("Adapt" = copy & change)
    - Plausibility exit
    - Termination exit
    - Deferred print exit

## Migration (2)

- SIB structure unchanged
- Additional Tx codes & program names
- Changes in customer programs
  - ▶ Direct call of Web client program with SIB
  - ▶ Alternative:
    - Call of FSNASF1 + Web client flag in UPL
  - ▶ Optional (to exploit new functions)
    - New reserved parameters for SIB 1



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# Editor and DCF / HTML Conversion



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# Challenge

- "Round-trip" conversion:
  - ▶ DCF -> Editor-Format -> DCF
- in this context means
  - ▶ DCF, GML
  - ▶ Customer-defined DCF-macros and GML-tags
- Use of such macros and tags in the editor
  - ▶ Mark text and "tag" it (HTML to DCF)
  - ▶ Visual presentation of a tag in the editor (DCF to HTML)



## Solution

- Conversion of DCF into editor format (HTML)
  - ▶ Two steps
    - Java syntax parser
    - XSL stylesheet
  - ▶ Can add customization in DocXSLConversion.xml
- Conversion of editor-format (HTML) into DCF
  - ▶ Two stage conversion:
    - XSL stylesheet
    - Java builder
- Customer-defined stylesheets can be included
  - ▶ Provide look and feel of other customer applications

# Components

- On the client workstation
  - ▶ Editor (combo-box for own GML-tags)
- On the server
  - ▶ DocXSLConversion.xml
  - ▶ doch2d.xsl, docd2h.xsl, customer-specific stylesheets
- On the host
  - ▶ Few ASF-provided DCF macros

## Example of Tag Definition (1)

### DocXSLConversion.xml: User tags for the editor combo-box

```
<CONFIGSECTION editable="N" colorcode="Y">
  <USERTAG name="Keep" outputtag="DIV"/>
  <USERTAG name="FormOff"
outputtag="XMP"/>
  <USERTAG name="Seite" outputtag="DIV"/>
  <USERTAG name="Absatz" outputtag="DIV"/>
  <USERTAG name="Fett" outputtag="SPAN"/>
  <USERTAG name="Normal"
outputtag="SPAN"/>
  <USERTAG name="Gross" outputtag="SPAN"/>
  <USERTAG name="Klein" outputtag="SPAN"/>
</CONFIGSECTION>
```

### DocXSLConversion.xml: User tags that are to be converted

```
<ZEILE custom="Y" end="self" term="line"/>
<ABSATZ term="line" p="Y" end="imp" endtag="N" ends="-" custom="Y"/>
<FETT term="line" p="N" end="endtag" endtag="N" ends="-" custom="Y"/>
<NORMAL term="line" p="N" end="-" endtag="Y" ends="FETT"
custom="Y"/>
```

## Example of Tag Definition (2)

docd2h.xsl: direct conversion of user tags

```
<xsl:template match="ZEILE">
  <br/>
</xsl:template>
<xsl:template match="ABSATZ">
  <p>

<xsl:apply-templates/>
  </p>
</xsl:template>
<xsl:template match="FETT">
  <strong>

<xsl:apply-templates/>
  </strong>
</xsl:template>
```

## Example of Tag Definition (3)

### docd2h.xsl: Display attributes of combo-box tags

```
<xsl:template name="userstyles">
  <xsl:element name="STYLE">
    <xsl:text>.Fett{font-weight:bold}</xsl:text>
  </xsl:element>
  <xsl:element name="STYLE">
    <xsl:text>.Normal{font-weight:normal;font-size:10pt}</xsl:text>
  </xsl:element>
  <xsl:element name="STYLE">
    <xsl:text>.Klein{font-size:8pt}</xsl:text>
  </xsl:element>
  <xsl:element name="STYLE">
    <xsl:text>.Mager{font-weight:200}</xsl:text>
  </xsl:element>
  <xsl:element name="STYLE">
    <xsl:text>.Gross{font-size:11pt}</xsl:text>
  </xsl:element>
  <xsl:element name="STYLE">
    <xsl:text>.Wech{display:none}</xsl:text>
  </xsl:element>
</xsl:template>
```

# XSL

- The eXtensible Style sheet Language
- <http://www.w3c.org/Style/XSL/>

## DCF / HTML Conversion Summary

- Only standard DCF commands and GML tags are converted automatically
- Customer-defined tags and commands must be configured
- Customer-defined stylesheet support available
  - ▶ Direct conversion (into HTML) of customer defined commands and tags
  - ▶ Presentation of tags that are not to be converted

## Summary

- Evolution versus revolution
  - ▶ ASF V3 R3 supports both 3270 users and Web client users
    - Move users or groups of users at your own pace
  - ▶ Web client can be initiated from your existing business application (3270 or GUI)
- Enhancements have been made to the existing 3270 interface
- Many new functions are available only in the new Web client
- Migration must be planned
  - ▶ Impact depends on amount of customization that currently exists