

# Resume Parsing



## **SAP enhancement package 3 for SAP ERP 6.0**



## Copyright

© Copyright 2007 SAP AG. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.

IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, Informix, i5/OS, POWER, POWER5, OpenPower and PowerPC are trademarks or registered trademarks of IBM Corporation.

Adobe, the Adobe logo, Acrobat, PostScript, and Reader are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries. Oracle is a registered trademark of Oracle Corporation.

UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group. Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.

HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.

Java is a registered trademark of Sun Microsystems, Inc.

JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.

MaxDB is a trademark of MySQL AB, Sweden.

SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

## Table of Contents

Copyright .....	2
Introduction .....	4
Prerequisites .....	4
System Configuration and Customization .....	5
Integration using SAP Netweaver XI .....	7
Solution Overview .....	7
Message Interface Overview .....	8
Using Resume Parsing.....	9
Appendix A.....	12
Test Case 1: Registered Candidate Creates the Profile .....	12
Test Case 2: Unregistered Candidate Creates the Profile .....	15

## Introduction

As of **SAP E-Recruiting, Enhancement Package 3 (ERECRUIT 603), Business Function HCM, SAP E-Recruiting 1** customers can integrate existing SAP E-Recruiting functionality with services offered by external vendors of their choosing to enable candidates to perform Resume Parsing from within SAP E-Recruiting.

Building upon the new functionality that this integration offers, your enterprise can significantly simplify the administration of candidate profiles by allowing candidates to upload and parse a chosen resume - that is, extract and save the data contained within it - to overwrite an existing profile or create a new profile directly, without performing intermediate data entry by means of the Application Wizard. By reducing the effort and time that is required of prospective candidates to apply for job postings, Resume Parsing also permits your enterprise to abbreviate the application process, to attract candidates with higher qualifications (and less time) and to meet or exceed its Talent Management objectives.

## Prerequisites

Because this new functionality is predicated on the integration of SAP E-Recruiting with services offered by external vendors, only customers who are willing to retain the services of such vendors can productively implement Resume Parsing.

## System Configuration and Customization

In order to implement Resume Parsing, perform the Customizing settings for this function in Customizing for **SAP E-Recruiting**, by means of the various activities summarized below.

In Customizing for **SAP E-Recruiting** (PA-ER), choose:

- **Technical Settings -> SAP Business Partner -> Define Business Partner Role for Vendors**

In the first step of this activity, define the business partner role for the resume parsing vendor(s) in question.

In the second step of this activity, maintain business partner information for the vendor(s).

- **Technical Settings -> User Interfaces -> Settings for User Interfaces with Web Dynpro ABAP -> Backend Candidate -> Assign Values to Interface Parameters (Web Dynpro ABAP)**

In this activity, configure Resume Parsing parameters **FILTER\_CAND\_ORIG\_RSM (Switch: Filter Out Resumes from 'Attachments' Screen)** and **RSP\_IN\_UNREG\_AWZD (Resume Parsing in Application Wizard)** in accordance with the requirements of your enterprise.

- **Technical Settings -> User Interfaces -> Settings for User Interfaces with Web Dynpro ABAP -> Flexibilization -> Backend -> Start Pages -> Create Structuring Elements for Second Level**

If your enterprise wishes to implement Resume Parsing functionality, then you must perform specific settings in this activity to ensure that the Resume Parsing user interface is inserted into the existing candidate start page's second-level navigation. If you do not perform these settings (specified below), then the Resume Parsing user interface will remain hidden.

Field	Entry
ID Level	2
Description	Resumes
OTR Alias	PAOC_RCF_UI_SELF_SERVICES/RESUMES
Web Dynpro Component	HRRCF_C_RESUMEPARSING_UI
Web Dynpro Window	WDW_MAIN
Inbound Plug	SECOND_LEVEL

- **Basic Settings -> Attachment Types -> Identify Attachment Type as Resume**

In this activity, you specify the attachment type that candidates use to upload their resumes and the attachment type that contains the resumes that are created by vendors using resume parsing.

- **Recruitment -> Applicant Tracking -> Activities -> Set Up Resume Parsing Activities ->Assign Vendors to Activity**

In this activity, assign the resume parsing vendor(s) to standard activity type 6110 (**Resume Parsing by Vendor**).

- **Recruitment -> Applicant Tracking -> Activities -> Set Up Resume Parsing Activities ->BAdI: Define Default Activity Type**

In this optional activity, create and activate an implementation of Business Add-In (BAdI) HRRCF00\_GET\_DEFAULT\_ACT\_TYPE to determine the default activity type to be used in conjunction with Resume Parsing.

- **Recruitment -> Applicant Tracking -> Activities -> Set Up Resume Parsing Activities ->Specify Formatted Resume File Handling**

In this activity, you specify, per resume parsing vendor, the manner in which formatted resume files are to be handled.

- **Recruitment -> Applicant Tracking -> Activities -> Set Up Resume Parsing Activities ->BAdI: Perform Resume File Encoding**

In this optional activity, create and activate an implementation of Business Add-In (BAdI) HRRCF00\_ENCODE to determine the file encoding method - for example, base 64 - to be used in conjunction with Resume Parsing.

## Integration using SAP Netweaver XI

In order to implement Resume Parsing, you must familiarize yourself with the SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI), which enables data to be communicated between resume parsing vendors and your enterprise.

General SAP NetWeaver XI documentation is provided online, in the SAP Library, at:

[http://help.sap.com/saphelp\\_nw70/helpdata/en/0f/80243b4a66ae0ce10000000a11402f/frameset.htm](http://help.sap.com/saphelp_nw70/helpdata/en/0f/80243b4a66ae0ce10000000a11402f/frameset.htm)

---

### Solution Overview

E-recruiting system sends information to the parser's system via XI server. The parser's system receives the data message, extracts the resume, parses it and sends back the parsed resume along with any formatted resumes.

The communication between the two systems is synchronous. E-recruiting system sends an outbound message to the parser's system via XI and expects an inbound message containing the parsed resume back, synchronously.

The SOAP attachment of the outbound message contains the unparsed resume while the attachment of the inbound message can, optionally, contain the parsed resumes formatted in a particular file format such as Portable Document Format (PDF). The parsed resume in an xml form is included in the body of the message itself.

For the inbound message, the solution provides a mapping object to map from HR-XML message structure to SAP XML message structure. However, the parsers may use HR-XML structure or any other message structure. Furthermore, the parser may use SAP-delivered mapping, their mapping or no mapping.

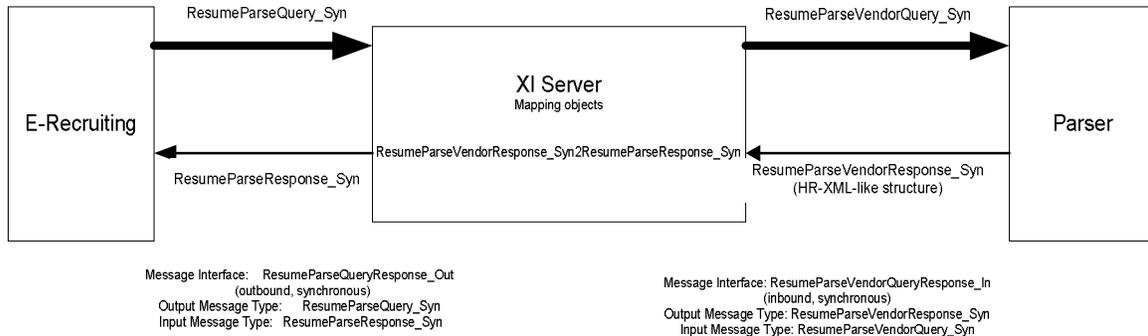
SAP message also includes communication-related information on top of the resume that is to be parsed. It is expected that the parser provides a proper mapping from their proprietary transaction envelope structure to the corresponding SAP message elements.

This XI solution expects information coming back from the parser to be in the form that the infotype can readily accept. For example, if the corresponding infotype field accepts a code, it is expected that the parser sends back the code and not the text that was read from the resume. Hence, when required, the parser is expected to standardize and normalize the information harvested from the resume into the form required by the infotype before sending it back to E-recruiting system.

The delivered mapping objects are based on the release 2.5 of HR-XML Resume schema and all its sub-schemas. The summary of the schemas can be found in the appendix.

The solution requires XI between E-recruiting and the parser's system.

## Message Interface Overview



One productive message interface and two message types will be delivered: the outbound-synchronous `ResumeParseQueryResponse_Out`, `ResumeParseQuery_Syn` and `ResumeParseResponse_Syn`.

One testing message interface and one testing message type will be delivered: `ResumeParseVendorQueryResponse_In` and `ResumeParseVendorResponse_Syn`. In the graphic above, the input message type `ResumeParseVendorQuery_Syn` refers to the message type `ResumeParseQuery_Syn`.

One sample message mapping object will be delivered:  
`ResumeParseVendorResponse_Syn2ResumeparseResponse_Syn`.

**NOTE:** Configuration of XI parts are covered in a separate document.

## Using Resume Parsing

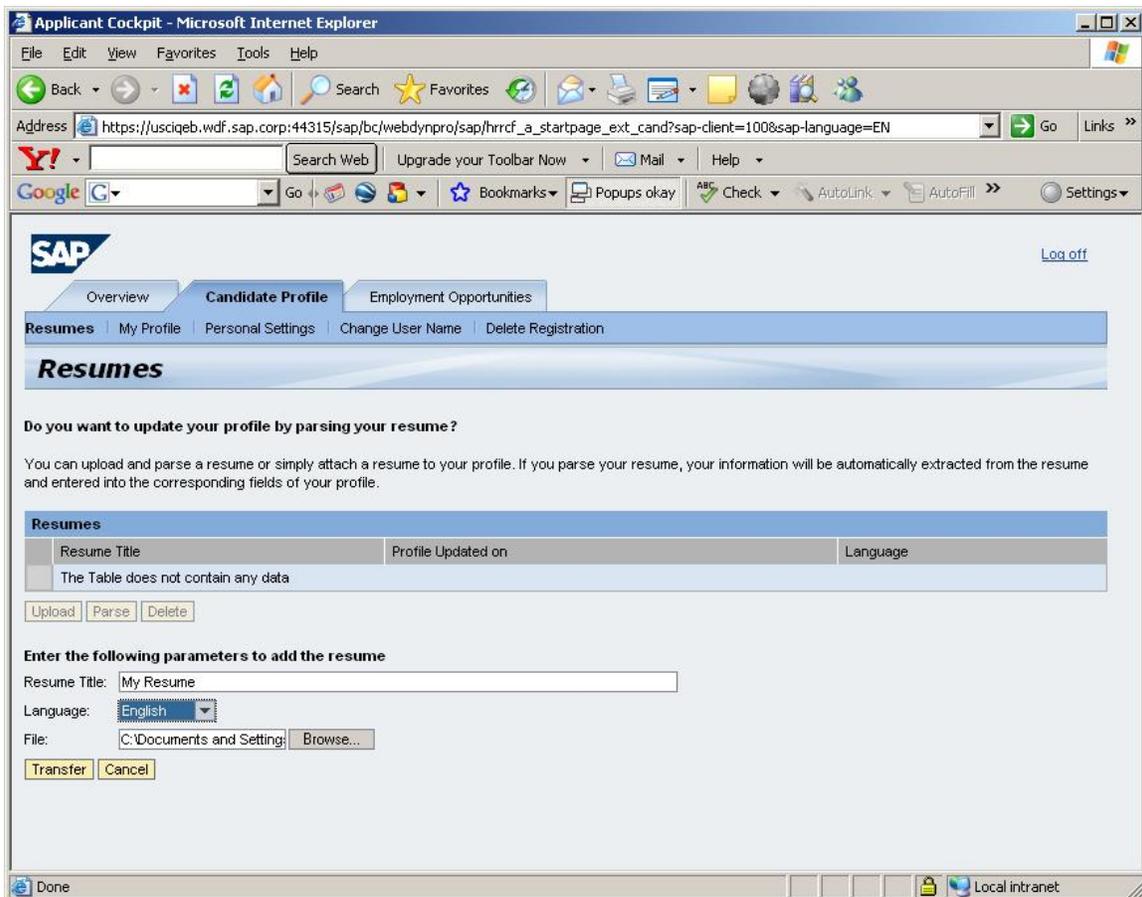
Once Customizing is complete, Resume Parsing is used in the following manner.

1. The candidate chooses **Resumes** from his or her candidate profile in the second navigation level.

The system displays a view that allows candidates to maintain their resumes.

2. The candidate chooses **Upload**.

The system displays a view that requires the candidate to enter the title of his or her resume and to assign a language to it. The candidate chooses **Browse...** to determine the file path of the required resume.



3. The candidate chooses **Transfer** when he or she is satisfied with the information entered.

Using the file path named, the system uploads the resume and displays it with the appropriate title.

4. The candidate selects the table entry that is assigned to the resume. The candidate then chooses **Parse**.

The system extracts all data from the selected resume that could be relevant for further profile maintenance - such as communication data, work experience, education, and qualifications - and displays an overview of the parsed data for the candidate to check.

5. The candidate checks the overview of the parsed data. If the candidate is satisfied with the values displayed, he or she chooses **Update Profile**.

The screenshot shows the SAP Applicant Cockpit interface in a Microsoft Internet Explorer browser window. The browser address bar shows the URL: `https://uscigeb.wdf.sap.corp:44315/sap/bc/webdynpro/sap/hrrcf_a_startpage_ext_cand?sap-client=100&sap-language=EN`. The page title is "Applicant Cockpit - Microsoft Internet Explorer".

The main content area displays the "Candidate Profile" tab. Underneath, there are navigation tabs: "Overview", "Candidate Profile", and "Employment Opportunities". Below these are links for "Resumes", "My Profile", "Personal Settings", "Change User Name", and "Delete Registration".

The "Resumes" section is active, showing a table with the following data:

Resume Title	Profile Updated on	Language
MY RESUME		English

Below the table are buttons for "Upload", "Parse", and "Delete". There are also "Update Profile" and "Cancel" buttons.

A "Profile Data from Resume" window is open, displaying the following personal data:

Personal Data	
First Name	Mianka
Last Name	Amsler
Middle Name	Hoppe
Name affix	
Name Prefix	von
Gender	
Date of Birth	
Form of Address	

- **Note**

Otherwise, the candidate can choose **Cancel**.

The system updates the candidate's profile using the parsed data and asks the candidate to return to the profile maintenance to make any necessary corrections on the individual tab pages.

6. The candidate then checks all information in the profile. The candidate can enter information faster, as the fields are now prefilled with values from the parsed resume.

The screenshot displays the 'Applicant Cockpit - Microsoft Internet Explorer' window. The browser address bar shows the URL: [https://uscqeb.wdf.sap.corp:44315/sap/bc/webdynpro/sap/hrrcf\\_a\\_startpage\\_ext\\_cand?sap-client=100&sap-language=EN](https://uscqeb.wdf.sap.corp:44315/sap/bc/webdynpro/sap/hrrcf_a_startpage_ext_cand?sap-client=100&sap-language=EN). The page title is 'Applicant Cockpit - Microsoft Internet Explorer'. The SAP logo is visible in the top left corner. The navigation tabs include 'Overview', 'Candidate Profile', and 'Employment Opportunities'. The 'Candidate Profile' tab is selected, and the sub-tabs are 'Resumes', 'My Profile', 'Personal Settings', 'Change User Name', and 'Delete Registration'. The 'My Profile' section is active, showing a progress bar with 8 steps: 1. Personal Data, 2. Education/Training, 3. Work Experience, 4. Qualifications, 5. Preferences, 6. Attachments, 7. Overview and Release, and 8. Completed. The 'Personal Data' step is highlighted. Below the progress bar, there is a 'Previous step' button and a 'Education/Training' button. The main content area is titled 'What is your personal data and how can we contact you?'. It contains several form fields: 'Form of Address: -- Select --', 'Title: -- Select --', 'Second Title: -- Select --', 'Name Affix: -- Select --', 'First Name: Mianka', 'Second Name: Hoppe', 'Last Name: \* Amster', 'Name Prefix: von', 'Gender: Unknown', and 'Date of Birth:'. Below this, there is a 'Permanent Residence' section with fields for 'Street/House Number: 3475 Deer Creek Road', 'Street/House Number 2: PO Box 78', 'Country: USA', and 'Region: California'. The browser status bar at the bottom shows 'Done' and 'Local intranet'.

Once the candidate has checked all of the entries, he or she sets the status of the profile to **Released**.

Using the parsed data and any corrections that the candidate made, the system finally updates the profile.

## Appendix A

### Test Case 1: Registered Candidate Creates the Profile

#### Description

Registered candidate creates the profile by parsing his or her resume.

#### Preparation

- Verify that the business partner role for vendors (RCFVEN) is defined and the vendor business partner information is maintained
  - *IMG: SAP E-Recruiting -> Technical Settings -> SAP Business Partner -> **Define Business Partner Role for Vendors***
- Verify that a customizing switch (FILTER\_CAND\_ORIG\_RSM) is defined to filter the resume attachments from the existing Attachments user interface and handle them only within the new Resume Parsing user interface
  - *IMG: SAP E-Recruiting -> Technical Settings-> User Interfaces-> Settings for User Interface with Web Dynpro ABAP-> Backend Candidate -> **Assign Values to Interface Parameters (Web Dynpro ABAP)***
- Verify that the a customizing switch (RSP\_IN\_UNREG\_AWZD) is defined to insert Resume Parsing user interface into the existing application wizard. (This is a mandatory configuration for the application wizard that is used for the unregistered candidate.)
  - *IMG: SAP E-Recruiting-> Technical Setting-> User Interfaces-> Settings for User Interface with Web Dynpro ABAP-> Backend Candidate -> **Assign Values to Interface Parameters (Web Dynpro ABAP)***
- Check if the Resume Parsing user interface (ID Level 2 = 14) is added into the existing Candidate Start Page's second level navigation. (Registered candidate)
  - *IMG: SAP E-Recruiting-> Technical Settings-> User Interfaces-> Settings for User Interface with Web Dynpro ABAP-> Flexibilization-> Backend-> Start Pages-> **Define Start Pages***
- Verify that the "formatted" resume (or a resume file built by the vendor using the parsed data) is identified as an attachment type.
  - *IMG: SAP E-Recruiting-> Basic Settings-> Attachment Types-> **Identify Attachment Type as Resume***
    - Entry: Object Type NA (Candidate)
    - Object Subtype 0001 (Resume)
- Verify that all three new IMG activities below a new IMG node are set up.
  1. Assign a vendor to each activity type they have defined for resume parsing and flag the default vendor to be used for the background resume parsing activity creation.

- *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> **Set Up Confirmation Activities->Set Up Parsing Activity-> Assign Vendor to Activity***
  
- 2. Verify that the configuration is completed to define whether the formatted resume returned by the vendor should be kept, or if it is kept only when the user decides to update his or her profile with the parsed data.
  - *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> Set Up Confirmation Activities->**Set Up Parsing Activity-> Specify Formatted Resume File Handling***
  
- 3. If the resume parsing vendor you are using requires some file encoding or conversion of the input resume file before it is sent to them for parsing, verify that BAdI HRRCF\_ENCODE is implemented to provide that encoding.
  - *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> Set Up Confirmation Activities-> **Set Up Parsing Activity-> BAdI: Resume File Encoding***
  
- Verify that the XI configuration to the resume parsing service provider has been established or that a simulation has been established

## Execution

1. Register and create the user name/password in Talent Warehouse.
2. Select "Resumes".
3. Choose "Upload".
4. Choose "Browse" and locate the resume file.
5. Specify a language (optional).
6. Enter a resume title (optional).
7. Choose "Transfer".
8. Highlight the attached resume.
9. Choose "Parse"
10. Preview the profile data presented in PDF format and print it.
11. Choose to use the presented data to create a profile.

## Check

- The 2nd level navigation bar has a "Resume" tab.
  
- The "Education" tab of the profile contains the same education information as in the preview of the profile data.
  
- The "Work Experience" tab of the profile contains the same work experience information as in the preview of the profile data.
  
- The "Qualifications" tab of the profile contains the same qualifications information as in the preview of the profile data.
  
- The "Personal Data" tab of the profile contains the same personal information (first name, last name, and so on) as in the preview of the profile data.
  
- The "Personal Data" tab of the profile contains the same telephone information as in the preview of the profile data.
  
- The original resume is presented as an attachment with correct date of the profile update.

- The "Attachment" tab of the profile does not have a resume attached.
  
- The "Attachment" tab of the profile does not allow you to attach the 'Resume' attachment type. There is no option to select an attachment type for resumes (typically "Resume") from the dropdown list of attachment types.

## Test Case 2: Unregistered Candidate Creates the Profile

### Description

Unregistered candidate creates the profile by parsing his/her resume.

### Preparation

- Verify that the business partner role for vendors (RCFVEN) is defined and the vendor business partner information is maintained
  - *IMG: SAP E-Recruiting -> Technical Settings -> SAP Business Partner -> **Define Business Partner Role for Vendors***
- Verify that a customizing switch (FILTER\_CAND\_ORIG\_RSM) is defined to filter the resume attachments from the existing Attachments user interface and handle them only within the new Resume Parsing user interface
  - *IMG: SAP E-Recruiting -> Technical Settings-> User Interfaces -> Settings for User Interface with Web Dynpro ABAP-> Backend Candidate -> **Assign Values to Interface Parameters (Web Dynpro ABAP)***
- Verify that the a customizing switch (RSP\_IN\_UNREG\_AWZD) is defined to insert Resume Parsing user interface into the existing application wizard. (This is a mandatory configuration for the application wizard that is used for the unregistered candidate.)
  - *IMG: SAP E-Recruiting-> Technical Setting-> User Interfaces-> Settings for User Interface with Web Dynpro ABAP-> Backend Candidate -> Assign Values to Interface Parameters (Web Dynpro ABAP)*
- Check if the Resume Parsing user interface (ID Level 2 = 14) is added into the existing Candidate Start Page's second level navigation. (Registered candidate)
  - *IMG: SAP E-Recruiting-> Technical Settings-> User Interfaces-> Settings for User Interface with Web Dynpro ABAP-> Flexibilization-> Backend-> Start Pages-> **Define Start Pages***
- Verify that the "formatted" resume (or a resume file built by the vendor using the parsed data) is identified as an attachment type.
  - *IMG: SAP E-Recruiting-> Basic Settings-> Attachment Types-> **Identify Attachment Type as Resume***

Entry: Object Type NA (Candidate)

Object Subtype 0001 (Resume)

- Verify that all three new IMG activities below a new IMG node are set up.
  1. Assign a vendor to each activity type they have defined for resume parsing and flag the default vendor to be used for the background resume parsing activity creation.

- *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> Set Up Confirmation Activities-> **Set Up Parsing Activity-> Assign Vendor to Activity***
2. Verify that the configuration is completed to define whether the formatted resume returned by the vendor should be kept, or if it is kept only when the user decides to update his or her profile with the parsed data.
- *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> Set Up Confirmation Activities-> **Set Up Parsing Activity-> Specify Formatted Resume File Handling***
3. If the resume parsing vendor you are using requires some file encoding or conversion of the input resume file before it is sent to them for parsing, verify that BAdI HRRCF\_ENCODE is implemented to provide that encoding.
- *IMG: SAP E-Recruiting-> Recruitment-> Applicant Tracking-> Activities -> Set Up Confirmation Activities-> **Set Up Parsing Activity-> BAdI: Resume File Encoding***
- Verify that the XI configuration to the resume parsing service provider has been established or that a simulation has been established

## Execution

1. Apply for the existing position as an unregistered candidate.
2. Select "Attach".
3. Choose "Browse" and locate the resume file.
4. Specify a language (optional).
5. Enter a resume title (optional).
6. Choose "Transfer".
7. Highlight the attached resume.
8. Choose "Parse".
9. Preview the profile data presented in PDF format and print it.
10. Choose to use the presented data to create a profile.
11. Click "Continue".

## Check

- The "Education" tab of the profile contains the same education information as in the preview of the profile data.
- The "Work Experience" tab of the profile contains the same work experience information as in the preview of the profile data.
- The "Qualifications" tab of the profile contains the same qualifications information as in the preview of the profile data.
- The "Personal Data" tab of the profile contains the same personal information (first name, last name, and so on) as in the preview of the profile data.
- The "Personal Data" tab of the profile contains the same telephone information as in the preview of the profile data.
- The original resume is presented as an attachment with the correct date of profile updates.
- The "Attachment" tab of the profile does not have a resume attached.

- The "Attachment" tab of the profile does not allow you to attach the 'Resume' attachment type. There is no option to select an attachment type for resumes (typically "Resume") from the dropdown list of attachment types.