Taleo Connect Client

Version 2.1.0

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Taleo Connect Platform

The Taleo Connect Client is one of three components in Taleo’s innovative Taleo Connect integration platform.

Taleo Connect Server

The Taleo Connect Server is the core component of the Taleo Connect Platform and is embedded in most Taleo products. It enables Taleo products to expose, through a secure gateway, their rich set of business services as industry standard web services. The Taleo Connect Server offers a series of generic integration services including data loading and extraction.

Taleo Connect Middleware

The Taleo Connect Middleware component is built on a state-of-the-art commercial middleware system that provides customers with high-quality integration processes characterized by guaranteed delivery, superior quality of service, custom transformations, and scheduled daily or weekly processes coupled with advanced monitoring and alerting features.

Taleo Connect Client

The Taleo Connect Client is a thin, stand-alone product that resides in a customer’s environment. It allows Taleo customers to exchange data with their Taleo product(s) using industry standard formats and easily design, implement, and execute simple to complex integration processes.
Product Overview

The Taleo Connect Client combines:

- A user-friendly and professional development environment to design and configure simple to complex integration scenarios.
- A powerful and flexible workflow-like integration engine that can communicate with the Taleo environment using multiple file formats.

Development Environment

The Taleo Connect Client’s design and configuration environment is built with the powerful and extensible Rich Client Platform (RCP) from the Eclipse foundation. RCP is the standard for Java client user interface development offering a professional grade experience to the end user.

The Taleo Connect Client offers the user three perspectives:

1. **Design**: Build import and export specifications and create complex integration processes using a workflow-like engine.

2. **Runtime**: Execute the integration process with the click of a button, see the progress of the process, and analyze the results.

3. **Console**: Monitor the integration processes running within the Taleo products.

All the user tasks are either wizard driven or based on natural client application behavior such as drop-down menus and drag-and-drop functionality.

The Taleo Connect Client ships with a number of feature packs that contain the full business model of the various Taleo products and standard content for easy implementation of import and export processes.

Integration Engine

The Taleo Connect Client communicates with Taleo products using the proprietary Taleo message format that is based on industry standards such as XML, SOAP, and WS-Addressing. It also supports custom message formats through client-side or server-side transformations since customer systems usually only support their own formats.

The Taleo Connect Client shields the complexity of the asynchronous integration process from the customer and provides a synchronous-like behavior that can integrate into other business processes.

Documentation Strategy

There are three documents available for the Taleo Connect Client. Each addresses a particular need and audience.
User guide

This document offers a high-level overview of the Taleo Connect Client and an in-depth look at the functional concepts involved in creating and executing integration processes. It is addressed to anyone interested in working with the Taleo Connect Client and should be considered mandatory reading before installing or using the product.

Online help

The online help included with the Taleo Connect Client details all aspects of the application. Each perspective, editor, view, and preference is documented. All of the regular features of online help are offered: table of contents, searching, and bookmarks. As well, most of the product features support contextual help by using the special Help view.

Training presentation

This document offers a hands-on and sequential approach to describing the Taleo Connect Client. The overview covers the features most likely needed in standard integration processes.
Welcome Wagon

This is the first of three actual business cases that we will present to help customers quickly and efficiently address their integration needs. To learn how the actual implementation of the integration processes would occur for this specific business case, go to the Business Case Implementations chapter, Welcome Wagon section.

Business Need

American Computers, Inc. is a mid-size company located in Detroit, MI that prides itself in its personal touch with regards to human resources. As witness to this commitment, each and every new employee receives a welcome basket provided by a local retailer, Gifts On Request. The company hires a few dozen people every week and needs to send their address information to Gifts On Request in a Microsoft Excel file. So American Computers, Inc. must find a way to extract the name, address, and phone numbers of the employees hired in the last week and provide this information to Gifts On Request.

Taleo Connect Solution

Since American Computers, Inc. uses the Taleo Professional product to handle the recruiting part of its human resource management, all of the required information is accessible through the Taleo Connect Server embedded in this product. The Taleo Connect Client can access the employee list by sending a T-SOAP¹ message containing a Taleo SQ-XML² extraction expression defining the proper criteria. The name, address, and, phone numbers of the new employees can then be saved to CSV file format that can be opened directly in Microsoft Excel. The IT Department of American Computers, Inc. can configure the Taleo Connect Client to execute this process with the information provided by Taleo customer support.

¹ Taleo uses a proprietary extension of the industry standard SOAP message format called T-SOAP. This format is truly an extension as all T-SOAP messages are also SOAP messages. The extension covers certain header elements required to communicate with the Taleo environment and the specification of the body as Taleo integration instructions.

² The Taleo Connect Platform uses a powerful and flexible proprietary query language called SQ-XML to extract data from the various Taleo products. More information about this language is available on the Taleo web site in the integration section.
ERP System Update

This is the second of three actual business cases that we will present to help customers quickly and efficiently address their integration needs. To learn how the actual implementation of the integration processes would occur for this specific business case, go to the Business Case Implementations chapter, ERP System Update section.

Business Need

Cassivi Tools is a blue-collar industry from the heartland that specializes in large manufacturing equipment. They have been running a commercial ERP system for their supply chain management for several years and also use the same system as a human resource system of record. They recently subscribed to the Taleo Professional product to optimize their recruitment process and to start moving to Internet-based technology. Because of cost and legacy issues, the ERP system remained the system of record for all newly hired employees. The ERP system does not support web services and requires a proprietary text file format to import employee data. With the current IT restrictions at Cassivi Tools, the only way to submit a text file to update the ERP system is through an FTP site accessible only within the internal corporate network.

Taleo Connect Solution

As in the preceding example, the Taleo Connect Client can easily access the required information using an appropriate T-SOAP request message containing an SQ-XML extraction expression. The Taleo Connect Server only supports standard XML and CSV formats, but this is not a problem because the Cassivi Tools IT Department can use the provided XSL transformation feature in the Taleo Connect Client to convert the employee information into the proprietary legacy format of the ERP system. Finally, the IT Department can customize the default behavior of the Taleo Connect Client to transfer the retrieved information to the ERP system’s FTP site.
Global Recruiting

This is the third of three actual business cases that we will present to help customers quickly and efficiently address their integration needs. To learn how the actual implementation of the integration processes would occur for this specific business case, go to the Business Case Implementations chapter, Global Recruiting section.

Business Need

RC Marketing is a small but global advertising company that frequently hires contributors from all over the world. They make extensive use of Taleo Professional’s multilingual career sites to attract the best people in their own language. Therefore, the requisitions (job offers) must be translated into several languages. To do this efficiently, RC Marketing outsources this work. The outsourcers return the translations to RC Marketing in an Excel spreadsheet. RC Marketing would like an automated way to update their existing requisitions in all required languages without having to copy and paste the texts manually into the Taleo Professional Staffing WebTop.

Taleo Connect Solution

The Taleo Connect Client fully supports uploading information into Taleo products from Excel spreadsheets saved as CSV (character or comma separated values) files. In addition, the feature pack for the Taleo Professional 7.0 includes standard specifications for requisition imports that can easily be adapted to this particular case.
Eclipse RCP Framework

The Taleo Connect Client integration development environment is based on the Eclipse foundation’s Rich Client Platform project (http://www.eclipse.org). It is important to understand the underlying concepts of this framework before going through the features in the Taleo Connect Client.

Underlying Concepts

A perspective is a logical grouping of elements that organizes the work for the user in a clear and uncluttered fashion (including views, toolbars, and menu items).

An editor is a user interface that allows a user to create and update a particular part of the integration process. Multiple editor types and instances may be opened in a single perspective.

A view is a read-only auxiliary element that offers information about the active editor. As such, views react to selections within the active editor and to changes to different editor instances.

A preference is a setting that affects the user experience within the application. All preferences have a default value set by Taleo that can be changed by the user and preserved between work sessions.
Design Perspective

The design perspective is where the integration process workflow is built and where you determine how to extract information from or upload information to the Taleo environment. A specific editor is offered for each of these activities.

Configuration Editor

The configuration editor enables the user to create the actual integration process that sends the request file to the Taleo product and retrieves the response file. This workflow may include one or more pre- or post-processing steps, which reduce dependency on proprietary Taleo formats.

Export Editor

The Export Editor uses a business model from a particular Taleo product to create a specification for information to be extracted. Each export is based on a root entity from which all fields and relations are defined. Exports support any number of filtering criteria and sorting keys, and support multilingual and custom fields.

Import Editor

The Import Editor creates a specification to upload CSV (character or comma separated values) files into a Taleo product. Each column in the CSV file is associated with a field in the particular Taleo product business model. As with the Export Editor, each instance is linked to a specific root entity in the model. Import specifications also offer support of multilingual and custom fields.
The runtime perspective is mostly used during the development of a new integration process. With a single click, you can execute an integration workflow, as defined in a configuration file, to process a particular request message into a response file. The progress of the workflow can be followed from a styled HTML monitoring view. Request and response files can be accessed via external text or file editing applications. In a production environment, this type of process would be triggered by a system event or a timed task. As such, the execution would not occur through the user interface.
Console Perspective

The console perspective is an optional part in the integration process and offers a real-time view of all integration processes being handled by a Taleo product (that has a Taleo Connect Server embedded). This perspective distinguishes between the message and the document contained in the message. The former being the communication wrapper for the latter that actually contains the business instructions as individual records.

Message List Viewer

The console perspective uses a single editor, the message list viewer, that lists all the messages in a Taleo product matching a particular criteria. This perspective offers multiple views that analyze each message from different angles.
Integration Engine
Workflow Concept

The Taleo Connect Client is built as a highly specialized workflow engine based on the standard request-response message exchange pattern.

Each integration process is defined by a workflow configuration that specifies a sequence of steps that each contribute to the exchange of information between the customer and the Taleo environment. The workflow configuration also defines the behavior of the Taleo Connect Client in regards to monitoring and alerting.

Each instance of an integration process is represented by a workflow execution.

During a particular workflow execution, a pipeline is transferred between each step containing information on the current state of the request and response messages. In addition to the current pipeline, each step has access to the workflow configuration when executing its part in the overall integration process.

Each workflow execution produces a workflow result that can be monitored during and at the completion of the overall integration process.
Workflow Type

The Taleo Connect Client supports several types of integration processes. Each workflow type is defined by the communication strategy and the message type (or format). Taleo recommends using the Product communication type and the T-SOAP message type.

Communication Types

The communication type defines where the integration instructions are sent within the Taleo environment.

Product
The request message is sent directly to the target Taleo product. After the message is processed, the response message can be retrieved from the Taleo product itself.

Middleware
The request message is sent to the generic gateway of our middleware platform. The message is then analyzed, verified, transformed (if needed), and routed to the proper Taleo product. The response message is also retrieved from the middleware environment, possibly after other transformations.

Mixed (deprecated)
The request message is sent to the middleware and routed to the Taleo product. The response message is then retrieved directly from the target Taleo product.

This option is not recommended because the two first communication types almost always offer better integration conditions.

Message Types

The message type defines how the integration instructions are sent to the Taleo environment. This places NO limitations on the format of the original request message or the final response message. It simply describes the messaging format used between the Taleo Connect Client and the Taleo environment.

T-SOAP
Standard Taleo messages are exchanged between the Taleo Connect Client and the Taleo environment. Any transformations from or to customer specific formats and/or encoding occur within the Taleo Connect Client workflow.

RS-XML
This is the functional equivalent to the T-SOAP case, except it uses the legacy Taleo message format. This type is available mostly for backwards compatibility reasons. Unless recommended by Taleo technical staff, new integration projects should use the T-SOAP message type.
Other Formats

The messages exchanged with the Taleo environment could be in any format or encoding. The transformations required—for processing the messages by Taleo products—must occur in the Taleo environment itself, as such, this option is only available for the Middleware communication type.
Configuration

Workflows can be created or edited using the Configuration Editor within the Taleo Connect Client. Each workflow requires a configuration to be executed; however, depending on the complexity level and the specialization of the processing, the same configuration can be used for several integration processes.

The configurations are saved to files with *_cfg.xml extensions for use at execution time. The exact specifications of the configuration XML structure are defined in the TaleoConnectClient.xsd schema.
Execution

In a Production environment, a Taleo Connect Client workflow is typically executed using a command line script. There are three possible uses (they are same for all operating systems; shown here for Windows):

TaleoConnectClient.bat

[Configuration]: Absolute or relative location of the file containing the workflow configuration.

[RequestMessage]: Absolute or relative location of the file containing the request message (optional if the information is provided in the configuration).

[ResponseMessage]: Absolute or relative location of the file to contain the request message (optional if the information is provided in the configuration).

Examples

> TaleoConnectClient.bat Configuration.xml RequestMessage.xml ResponseMessage.xml
> TaleoConnectClient.bat Configuration.xml RequestMessage.xml
> TaleoConnectClient.bat Configuration.xml

The first example is the typical use of the Taleo Connect Client where both the request and response message files are specified explicitly. The workflow configuration usually contains only communication information that applies to a variety of different messages.

The second example is typical of a scheduled integration process where the request message varies and the response message file is generated based on the timestamp (i.e. NewCandidates_2005-11-11.xml).

The last example is typical of a specialized workflow with extensive pre and/or post-processing that only applies to a single integration process. In this situation, the request and response files are often known and can thus be specified in the configuration itself.

It is also possible to execute a Taleo Connect Client workflow from within another Java application. To do so, the host application must match the environment constraints defined in the TaleoConnectClient.bat script and invoke the com.taleo.integration.client.Client.execute() method.

Monitoring

The Taleo Connect Client generates a workflow status at the initialization of a workflow execution, after each step and again at the completion of the workflow. This status can be monitored in several ways, including the raw XML serialization or pre-configured text and HTML versions of the result. It is also possible to provide an XSL transformation to create a customized view on the workflow status (for viewing in a portlet for example).

The HTML monitoring page currently offers the most complete and user-friendly view of the workflow execution and various information on the pipeline. Errors can also be examined from this view.

The structure of the workflow result is defined in the TaleoConnectClient.xsd schema. It basically consists of the overall status of the workflow, the error details (if applicable), a copy of the workflow configuration, and the results of each of the individual steps.
Logging

The Taleo Connect Client logs all pertinent workflow events through the Apache Jakarta Commons-Logging project. The default configuration is to collect this log information using the Apache Logging Log4J project, which is configurable using the `log4j.properties` file in the `log` folder.

In the current version of the Taleo Connect Client, the monitoring feature was designed to replace almost all uses of the logging feature. It is recommended to always enable and consult the monitoring files before scanning the log files.

The two main reasons for using logging in the current version are:

- **Integration process progression from the Taleo product:** Currently, the monitoring files do not show the progress information (record or instruction count) from the Taleo product processing the request message. By default, the logging will show this information at each invocation of the Poll step (available for Product communication type only).

- **Advanced debugging of the HTTP communication:** By enabling the logging of the HTTP communication stream, it is possible to see every single byte of information transferred to and from the Taleo environment. This is useful at implementation time or for certain technical investigations.

Error Handling

The current version of the Taleo Connect Client has significantly improved error handling. Examining errors with the monitoring feature should enable customers to diagnose and correct most of the potential problems with workflow executions.

Each error generated by the Taleo Connect Client is identified by a unique and stable code that can be used in automated processes. Each code corresponds to a specific human-readable description. In several error scenarios, a reason is available that describes the particular context of the problem.

Workflow errors may also have any number of details of different types. When the problem occurs during a step, both the step’s unique identifier and human-readable name are included as details. If the error was caused by a Java language exception, the stack trace is provided as a detail. In addition, several problems offer a troubleshooting tip as an error detail. Finally, generic messages are often added as details to clarify the context of the problem. The numerical error code used in previous versions of the client is included as a detail when possible.
Workflow Execution Error Displayed on the HTML Monitoring Page

Workflow Execution Error, Workflow Error Details Section
Temporary Files

The Taleo Connect Client uses a series of temporary files during the workflow execution. These files allow the integration process to support large transformations by streaming the content of one version of the message to another. By default, the files are created in the standard temporary folder provided by the operating system and are deleted when the workflow execution is completed (successfully or not).

At implementation time or for certain technical investigations, it may be useful to keep these temporary files. This basically provides a snapshot of the request and response message before and after every workflow step. The XML version of the workflow result contains the specific location of each temporary file used in the execution.
Monitoring

The Taleo Connect Client enables end users to track the progress and inspect the final status of workflow executions using the monitoring feature. The feature is based on the workflow result information that is updated at each step of the workflow execution. This information can be saved to disk in its original XML format, in a text or HTML formatted version, or in a custom format using an XSL transformation.

Configuration

Folder and File Name Pattern

The main configuration required to enable the monitoring feature is selecting the complete location of the monitoring files. The first step is to select the folder where the monitoring files for the workflow configuration will be created. The folder can be any location accessible by the process running the Taleo Connect Client. The second step is to select the pattern for the monitoring file names. It is possible to re-use the workflow execution identifier or specify a custom pattern for the file name. Here are a few typical scenarios:

- The workflow identifier is defined as ExtractNewHires-[NOW] and the process is executed every hour. As such, to keep proper records, the monitoring file can directly re-use this identifier.
  
  Example of HTML monitoring file name: ExtractNewHires-20051015-1432.html

- The workflow identifier is defined as ExtractNewHires-[NOW] but the process is executed every night. Here the monitoring needs are to examine during the day if the nightly execution went smoothly. In order to simplify this task, the monitoring file can specify a fixed file name like ExtractNewHires. In this way, the IT staff can define a browser bookmark that remains the same for all executions.
  
  Example of HTML monitoring file name: ExtractNewHires.html

- The workflow identifier is defined as [UUID], and the workflow configuration applies to a variety of request messages. This is a good choice to ensure uniqueness but a bad one to recognize a process. Here the monitoring needs focus on finding the correct file for each process. A good choice for the monitoring file pattern is then ([FILE]-[NOW]). In this way, a simple glance at the monitoring folder will determine what request message was sent and when.
  
  Example of HTML monitoring file name: LoadRequisitions-2005.05.12T23h12m.html

Using a variable workflow identifier and a fixed monitoring file name pattern is the recommended configuration when designing and implementing a workflow. Since the integration process is launched multiple times and no record keeping is required, this allows the implementer to simply refresh the monitoring information in a browser without looking for the correct file.
HTML Format
The HTML format is the recommended choice for the monitoring feature. This format is the easiest to use and offers all of the usually required information. It allows the quick detection of errors and also graphically shows the progress of the workflow execution.

In order for an HTML monitoring file to display correctly it must be created in a folder with the proper web resources (i.e. containing the web folder distributed in the monitoring folder).

Although the HTML monitoring page will display in most browsers, the content is optimized for viewing within Microsoft's Internet Explorer, version 6.0 or better.

The HTML format SHOULD NOT be used as part of an automated process as Taleo does not guarantee the stability of the produced format. If workflow result information is required to make decisions in an automated process, then a custom monitoring file should be used.

Text Format
The text format offers an abbreviated view on the workflow result information and should only be used in environments where a HTML page is not appropriate:

- LINUX or UNIX based environments accessible only through command line access.
- Environments that prevent the access to the HTML page or web resources.

The text format SHOULD NOT be used as part of an automated process as Taleo does not guarantee the stability of the produced format. If workflow result information is required to make decisions in an automated process, then a custom monitoring file should be used.

Custom Format
This format offers the end user the ability to customize the view on the monitoring information. This can be useful in several ways, in particular:

- The monitoring information is to be displayed in a portlet, but using the company styling (not the Taleo branding provided in the default HTML format).
- An automated process examines the workflow result and thus a stable (and presumably simpler) format must be created.

XML Format
The XML format is a direct serialization of all the information containing in the workflow result, as such it is the most complete format. However, the information is not provided in a user-friendly manner. This format will normally only be used at design time when building a custom monitoring transformation. However, it may be used directly in automated processes if the application reading the information supports XML structures. The XML format is also the only one containing the temporary file locations used by each of the step executions.
Basic Information

The basic monitoring information can be seen in the left hand column of the HTML monitoring format and consists of the overall state of the workflow execution and the individual step statuses.

- If the workflow execution is completed, then all steps will also be completed.
- If the workflow execution is in progress, then a subset of all steps will be completed.
- If the workflow execution is in error, then a particular step may also be in error. However, certain error scenarios occur at the initialization or finalization of the workflow execution, hence either no steps or all steps will have been completed.
Workflow Information

The workflow information is provided in the first section of the HTML monitoring format and consists of the workflow identifier for this execution, the type of the workflow, the start, end and duration of the execution (when applicable). In addition, the original location of the request message file and the target location of the response message file are also shown. The presence of the response message target location DOES NOT imply that the file was actually created. This is only the case if the workflow execution completed will success.

<table>
<thead>
<tr>
<th>General Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td><strong>Start</strong></td>
</tr>
<tr>
<td>Message</td>
<td>File location</td>
</tr>
<tr>
<td>Request</td>
<td>EbsathwaxH688.xml</td>
</tr>
<tr>
<td>Response</td>
<td>Newlines-29851119-1603.csv</td>
</tr>
</tbody>
</table>

Workflow Information in the HTML Monitoring View

Step Related Information

The HTML monitoring file offers a complete section of step related information. A graphical overview of the step progress groups all pre- and post-processing steps in a single aggregated icon. The detailed tabular view then shows the start, end, and duration (when applicable) as well as the request and response message information when appropriate.

<table>
<thead>
<tr>
<th>Step details</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td><strong>Start</strong></td>
</tr>
<tr>
<td>Step</td>
<td>T-SOAP</td>
</tr>
<tr>
<td>Generate ID</td>
<td>16:03:24</td>
</tr>
<tr>
<td>Send</td>
<td>16:03:25</td>
</tr>
<tr>
<td>Poll</td>
<td>16:03:25</td>
</tr>
<tr>
<td>Retrieve</td>
<td>16:03:25</td>
</tr>
<tr>
<td>Step SOAP</td>
<td>16:03:25</td>
</tr>
<tr>
<td>Convert Encoding</td>
<td>16:03:25</td>
</tr>
<tr>
<td>Finish</td>
<td>CSV</td>
</tr>
</tbody>
</table>

Step Related Information in the HTML Monitoring View

Error Handling Information

Workflow Execution Error, Workflow Error Details Section
Default Monitoring

There is a special case of workflow monitoring that handles the case where an error occurs before the initialization of the workflow execution. In such cases, the monitoring configuration detailed above is not known and as such, a default behavior has to be defined. In the current release, this behavior is to create a text and HTML monitoring file named `WorkflowProblem.html` in the `monitoring` subfolder of the current folder.

The typical situations where the default monitoring is used are:

- The workflow configuration file location is invalid and the configuration is not found.
- The workflow configuration file is invalid. This cannot happen when using the Configuration Editor UI application, but may occur if the XML configuration file is edited manually.
- The request and/or response file were required by the configuration but not specified in the command line arguments.

These situations almost only occur during implementation time, so this is not a concern for production environments. However, when designing and creating a new process, it is useful to check for the presence of the default monitoring file if no results seem to be generated.
Alerting

The Taleo Connect Client Monitoring feature is very helpful to get detailed information about the workflow execution of an integration process during its execution. However, when processes are scheduled to run at times where it is not practical for a user to monitor the execution, an e-mail report can help the user stay informed on the status of the integration processes. The Taleo Connect Client enables end users to get such notifications via the Alerting feature by sending notifications upon each workflow completion or only upon failures. The end user can choose to receive e-mails as text or in a custom format using an XSL transformation.

Configuration

General information

First, the information that needs to be configured for the Taleo Connect Client to be able to send e-mail notifications is the address of the mail server being used. The mail host must be specified on the Alerting page, General section.

Enabling notifications

The Taleo Connect Client can send notifications when the workflow execution completes (regardless of its status), when it encounters an error, or both. For example, if the end user is only interested in getting e-mail notifications when an error occurs, only that notification can be activated. Each notification must then be separately configured (see next section).

E-mail message information

For each enabled notification, the user can configure the information needed to create the e-mail message that will be sent when the event occurs.
Recipients
E-mail notifications can be sent to one or more recipients. Recipients can be added to the “To” or “CC” e-mail field. If more than one recipient must be specified in a given field, separate the recipients with a comma.

Recipients can be added either with their e-mail address or with their name and address. Here are sample valid recipient configurations:

- jsmith@domain.com
- John A. Smith <jsmith@domain.com>
- John A. Smith <jsmith@domain.com>, it@domain.com

Subject
The subject of each e-mail notification can be set to provide details on the particular workflow execution. The subject field is a pattern that can include placeholders for information that changes each execution. This can make it easier for the recipient(s) of the notification to understand the context of the notification. Here are a few examples:

- The subject is defined as Completed export ([NOW]). If the recipient is not expecting to receive notifications about multiple integration processes, simply including the current date/time in the subject is sufficient.
  Actual subject sample: Completed export (04-20-2006 08:32:00 AM)
- The subject is defined as [FILE] completed. If the recipient may receive notifications about multiple integration processes, the date/time alone will not be sufficient to distinguish notifications quickly in an e-mail reader. Including the name of the request file can help in that case.
  Actual subject sample: NewHireExtraction completed
- The subject is defined as Integration completed. Since a single integration process is in use, the recipient simply wants to be notified when it completes and does not need any additional details.
  Actual subject sample: Integration completed

Text e-mail body
The body of the text e-mail notification contains a textual representation of the workflow execution, similar to the format used in text monitoring files. Using this format gives the end user a complete execution report that is guaranteed to work with most e-mail readers.
Custom e-mail body

Using a custom body allows the end user to customize the content of e-mail notifications sent by Taleo Connect Client. This can be useful in several ways:

- When the e-mail notifications are sent to recipients who have little knowledge of the technical details of the integration process, a cleaner formatting allows them to quickly grasp the relevant information.
- When the e-mail notifications are sent to an automated system that may perform other actions based on the workflow result. Thus, a stable and controlled format is required.

To build the custom e-mail body, an XSL style sheet must be specified, which is applied to the XML format of the workflow execution result (see Monitoring section). The result of the XSL transformation is included in the body of the e-mail notification. The content-type of the e-mail must be specified and can be either HTML (text/html) or text (text/text).

Configure the Body in a Custom E-mail Notification

<table>
<thead>
<tr>
<th>Use custom e-mail body</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>XSL</td>
<td><code>EmailNotification.xsl</code></td>
</tr>
<tr>
<td>Content-type</td>
<td><code>text/html</code></td>
</tr>
</tbody>
</table>

*Configuring the Body in a Custom E-mail Notification*
HTTP Proxy

In certain corporate networks, IT policies enforce the use of a proxy to funnel all external HTTP requests. This is an important part of the overall network security.

The Taleo Connect Client fully supports the use of an HTTP proxy both in the runtime execution script and through the design environment. The configuration of the HTTP proxy follows the Java standard documented at http://java.sun.com/j2se/1.4.2/docs/guide/net/properties.html (these are the same specifications as for the new 1.5 version).

According to these specifications, the configuration of the HTTP proxy is done at the JRE level; that is the runtime environment in which the integration process is invoked. The connectivity information is passed as system properties in either the runtime execution script or the design environment initialization file.

Hence, assuming the corporate HTTP proxy is available at proxy.acme.net on port 3128, the TaleoConnectClient.bat script should be changed to add

```
%JAVA_HOME%\bin\java.exe -Dhttp.proxyHost=proxy.acme.net -Dhttp.proxyPort=3128
-Djava.endorsed.dirs=%IC_HOME%\lib\endorsed ...
```

Please note that we also fully support the http.nonProxyHosts property as defined in the Java specifications.

If the use of an HTTP proxy is required also in the design environment, then the following lines should be added to the TaleoConnectClient.ini file:

```
-vmargs
-Djava.endorsed.dirs=lib/endorsed
-Dorg.apache.commons.logging.Log=org.apache.commons.logging.impl.Log4JLogger
-Djavax.xml.transform.TransformerFactory=net.sf.saxon.TransformerFactoryImpl
-Dhttp.proxyHost=proxy.acme.net
-Dhttp.proxyPort=3128
```

In previous versions, the configuration of the HTTP proxy was done in the client configuration file itself. This is no longer supported in favor of the standard way described above (see the Migration section for more details).

Certain implementations support the https.proxyHost property although it is not part of the Java standard. The Taleo Connect Client only supports http.proxyHost, which is used for all HTTP requests (HTTP or HTTPS protocol).
Processing
Pre-processing Steps

The main objective of the pre-processing steps is to initiate the integration process by gathering all the required information and construct a valid request message in the Taleo format.

Convert Encoding

This step converts the encoding of the file containing the request message. The configuration specifies the expected encoding and the target encoding. This step may be required because the Taleo Connect Platform only supports UTF-8 encoding.

Select Generate BOM (byte order mark) to assign a signature character code to the encoding.

Validate Encoding

This step scans the file containing the request message to enforce the validity of the specified encoding in the configuration. This is a convenience step that isolates this validation for an easier diagnosis. Even if this step is not included in the workflow, the Send step will validate the request message to enforce the mandatory UTF-8 encoding for the Taleo Connect Platform; as such, it is always optional.

Prepare Export

This step transforms a specification created in the Export Editor into a standard T-XML document. This is a required step when the request file is in the SQ-XML format generated by the Export Editor.

Prepare Import

This step converts a CSV source file into a T-XML import document. The load specification created in the Import Editor is used to execute the conversion. The process is relatively straightforward, creating a structured view of the imported information based on the Taleo product business model and assigning values based on the individual column specifications. This is a required step when the request file is in CSV format and the Product communication type is selected.

Wrap SOAP

This step wraps a T-XML document in a T-SOAP message for transmission to a Taleo product. This is a required step after both the Prepare Export and Prepare Import steps.

Generate ID

This step generates a unique identifier and inserts it into the request message provided in the pipeline. The presence of such an identifier in the request message is mandatory in the T-SOAP format and is a pre-requisite for all integration processes. This step is useful if the customer system does not create such a value in the original request message file or for data extraction scenarios where the request file is re-used for each execution.

NOTE: The Wrap SOAP step covers this when using import or export specifications.
Custom Steps

The main objective of custom steps is to provide functionality that is not available in the set of pre- or post-process steps in the current version of Taleo Connect Client.

The implementer can access the current pipeline as well as the entire workflow configuration when executing a custom step. In addition, the configuration of the custom steps allows any extra information to be passed to the custom step Java code, in name/value pairs.
Processing Steps

The main objective of the processing (or communication) steps is to send a request message to the Taleo environment and retrieve a corresponding response message.

The following three mandatory processing steps are at the core of any Taleo Connect Client workflow are Send, Poll, and Retrieve. These steps share three common configuration categories that have only slight variations between them: Endpoint Information, Authentication Information, and Quality Information. The Wizard will correctly populate most of the information.

Endpoint Information

The endpoint information configures where the Taleo Connect Client is to send or retrieve the messages. Basically, this information represents the dispatcher URL for the web services exposed by either the Taleo middleware or the Taleo product.

Authentication Information

The authentication information configures how the Taleo Connect Client authenticates itself to invoke the Taleo environment web services. Currently, only the HTTP Basic Authentication scheme is supported.

Quality Information

The quality information determines the robustness of the integration process driven by the Taleo Connect Client. Although crucial for the polling step, certain values apply to all processing steps. Basically the quality information determines how many times the step’s web service is invoked before the process is considered in error. The polling step offers a few extra configurations given its special circumstances of almost always having to invoke the status web service several times.
Post-processing Steps

The main objective of the post-processing steps is to convert or transform the information in the Taleo format response message to a proper format for the customer system and complete the integration process.

Strip SOAP

This step removes the envelope used in the message transmission, which follows the SOAP web service standard. The SOAP envelope contains communication related information that is rarely useful in the customer’s business integration process.

In this step, if the selected output format (mode) for a T-SOAP type export request is CSV, it is possible to directly store the results in a CSV file. The drawback is that the process will only succeed if CSV data is returned. There are two specific cases where Taleo Connect Client will provide an error:

1. The format of the request query is incorrect.
2. An application error occurred on the server during the execution of the query.

In both cases, since the SOAP envelope was discarded during the process, the actual error message is lost. As these errors are mostly detected at implementation time, it is sufficient to remove the step and re-execute the file to assess the problem.

Convert Encoding

This step converts the encoding of the file containing the response message. The configuration specifies the expected encoding and the target encoding. This step may be required because the Taleo Connect Platform only supports UTF-8 encoding.

Transform Using XSL

This step converts the response message information using a standard XSL transformation. Because the Taleo Connect Client is designed to support large files (for example, high volumes of extracted data) the XSL transformation is not applied directly to the response message. Since XSL technology does not support large transformations (because all information must be loaded in memory prior to the actual transformation), this step executes the transformation on a record by record basis. The provided XSL will apply only to a particular XML record structure, not the entire response message.

Transform Using Java (deprecated)

In version 2.0, the Transform Using Java step was offered. This step is no longer supported in version 2.1; it has been replaced by using an XSLT based transformation with the powerful Saxon 8B engine that supports the latest XSLT 2.0 specification. If ever XSLT 2.0 does not offer the required features for the transformation, then a normal custom step can be written to address the need, based on the entire response document.
Custom Steps

The main objective of custom steps is to provide functionalities that are not available in the set of pre- or post-process steps in the current version of Taleo Connect Client.

The implementer can access the current pipeline as well as the entire workflow configuration when executing a custom step. In addition, the configuration of the custom steps allows any extra information to be passed to the custom step Java code, in name/value pairs.
## Pipeline Restrictions

<table>
<thead>
<tr>
<th>Step</th>
<th>Workflow type</th>
<th>Request message</th>
<th>Supported Pipeline</th>
<th>Response message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Message format</td>
<td>File encoding</td>
<td>Message format</td>
</tr>
<tr>
<td>PRE-PROCESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convert encoding</td>
<td>Any</td>
<td>Any</td>
<td>As configured²</td>
<td></td>
</tr>
<tr>
<td>Validate encoding</td>
<td>Any</td>
<td>Any</td>
<td>As configured²</td>
<td></td>
</tr>
<tr>
<td>Prepare export</td>
<td>T-SOAP only</td>
<td>SQ-XML</td>
<td>UTF-8</td>
<td></td>
</tr>
<tr>
<td>Prepare import</td>
<td>T-SOAP only</td>
<td>CSV</td>
<td>UTF-8</td>
<td></td>
</tr>
<tr>
<td>Wrap SOAP</td>
<td>T-SOAP only</td>
<td>T-XML</td>
<td>UTF-8</td>
<td></td>
</tr>
<tr>
<td>Generate ID</td>
<td>T-SOAP or RS-XML</td>
<td>T-SOAP/RS-XML</td>
<td>UTF-8</td>
<td></td>
</tr>
<tr>
<td>PROCESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Send</td>
<td>Any</td>
<td>T-SOAP/RS-XML²</td>
<td>UTF-8</td>
<td></td>
</tr>
<tr>
<td>Poll</td>
<td>Any</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrieve²</td>
<td>Any</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POST-PROCESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strip SOAP</td>
<td>T-SOAP only</td>
<td></td>
<td>T-SOAP</td>
<td>UTF-8</td>
</tr>
<tr>
<td>Transform Using XSL</td>
<td>T-SOAP only</td>
<td></td>
<td>T-SOAP</td>
<td>UTF-8</td>
</tr>
<tr>
<td>Convert encoding</td>
<td>Any</td>
<td></td>
<td>Any</td>
<td>As configured²</td>
</tr>
</tbody>
</table>

a. Custom steps allow any format and any file encoding by default. Implementers can override the `getSupportedPipeline()` method to specify custom restrictions.

b. The encoding related steps specify the expected encoding of the message in their configurations.

c. If the message type is Other, there is no restriction here.

d. The retrieve step will always (assuming no errors occur during the step execution) create a response message in the T-SOAP (or RS-XML) format with a UTF-8 file encoding in the Product communication type. However, when using the Middleware communication type, the response file may be of any format and encoding.
Business Case Implementations
Welcome Wagon

We will now revisit the Welcome Wagon business case to see how an actual implementation of the integration processes would occur with the Taleo Connect Client.

Business Requirements

We first need to look at the detailed requirements of this business case. After further investigation with the IT staff at American Computers, Inc., we now have the following points to address:

1. The extraction of the new employees should be done every weekday at 04:00 a.m.
2. The extracted data should be sent via e-mail to Gifts On Request on the morning of the same day.
3. Gifts On Request expects a file in the following format:
   Full Name, Complete Address, Phone Number
   John A. Smith, "123 Main Street, Detroit, MI, 22540", 123-456-7890
4. Gifts On Request is expecting the file to be in the ISO-8859-1 encoding.

Taleo Connect Solution

The complete set of files required to run this business case can be found in your Taleo Connect Client directory under docs\examples\WelcomeWagon.

Overall process

The Taleo Connect Client does not handle scheduling so requirement #1 will be handled by a timed script managed by the IT Department at American Computers, Inc. This script will invoke the Taleo Connect Client with the proper configuration.

The current version of the Taleo Connect Client does not handle “push” like post-processing steps; this is planned for upcoming versions. In the meantime, to handle requirement #2, this implementation will use a manual process to send the file to Gifts On Request. A member of the HR staff will check every morning for the file created on a network shared drive. If the file is present, then he or she will send it directly to Gifts On Request as an e-mail attachment using Microsoft Outlook.

Export request

The Taleo Connect Client can be used to create the export request needed to extract the required information from the Taleo product. In this case, the Taleo Connect Client comes with an export template that can be used as-is to extract the information. You can alter the fields if needed by moving them or by dragging them from the entity view. Taleo implementation consultants can also provide the required expertise to customize the export further when needed.

Since the desired final CSV format is natively supported by the Taleo Connect platform, this format will be used directly for the extracted data. Using the Export Wizard, the new hire template can be found under the PreselectionApplication entity (It is not a Candidate template because we are also interested in the requisition information, hence we need to export the application itself). After the Wizard creates the export specification you must save it to a file with an _sq.xml extension.
Configuration

The Taleo Connect Client can be used to create the configuration file that defines the integration process and communicates with the Taleo product. In this case, the Configuration Wizard can completely build the required configuration by selecting all of the default options and the newly defined export specification on the last page. A proper environment is also required to complete the Wizard.
Pre-processing
Both the Prepare Import and Wrap SOAP steps are included in the workflow by the Wizard. These are mandatory pre-processing steps when using an Export specification.

Processing
The environment file provided to the Wizard is used to fully configure the process steps, including the connectivity information. You may want to adjust the quality settings of the Poll step after executing the process a few times.

Post-processing
The response message provides the extracted data in the required CSV format, since this is natively supported by the Taleo Connect Platform. However, it is wrapped in the mandatory SOAP envelope (required for web service communication). Hence, the first post-processing step of the workflow strips the SOAP envelope. This meets requirement #3 as the SQ-XML extraction expression already formats the information in the correct sequence. The Taleo Connect Server uses a Microsoft Excel compatible escaping strategy, so the requirement is completely met.

Because the Taleo Connect Platform only supports UTF-8 encoding, the CSV file generated by the previous post-processing step does not meet requirement #4. Another post-processing step must be added to change the file encoding to the customer specified value of ISO-8859-1.

Final configuration
You can find the final configuration required for this business case in the documentation bundle provided with the Taleo Connect Client distribution.
Taleo Connect Client

General Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Start</th>
<th>Finish</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-SOAP</td>
<td>2006-04-26 09:33:58</td>
<td>2006-04-26 09:34:09</td>
<td>0.02 s</td>
</tr>
</tbody>
</table>

Message File Location:

- Request: ExportNewsLines-20060426-093357.csv
- Response: NewsLines-20060426-093358.csv

Step details

<table>
<thead>
<tr>
<th>Name</th>
<th>Start</th>
<th>Finish</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>09:33:58</td>
<td>09:34:09</td>
<td>0.02 s</td>
</tr>
<tr>
<td>Prepare Export</td>
<td>09:33:57</td>
<td>09:33:58</td>
<td>0.0 s</td>
</tr>
<tr>
<td>Wrap SOAP</td>
<td>09:33:58</td>
<td>09:33:58</td>
<td>0.045 s</td>
</tr>
<tr>
<td>Send</td>
<td>09:33:58</td>
<td>09:34:09</td>
<td>0.045 s</td>
</tr>
<tr>
<td>Fetch</td>
<td>09:34:09</td>
<td>09:34:09</td>
<td>0.024 s</td>
</tr>
<tr>
<td>Stop SOAP</td>
<td>09:34:09</td>
<td>09:34:09</td>
<td>0.024 s</td>
</tr>
<tr>
<td>Convert Encoding</td>
<td>09:34:09</td>
<td>09:34:09</td>
<td>0.024 s</td>
</tr>
<tr>
<td>Finish</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HTML Monitoring Page for the Welcome Wagon Business Case
ERP System Update

We will now revisit the ERP System Update business case to see how an actual implementation of the integration processes would occur with the Taleo Connect Client.

Business Requirements

We first need to look at the detailed requirements of this business case. After further investigation with the IT staff at Cassivi Tools, we now have the following points to address:

1. The extraction of the new employees should be done every week day at 10:00 PM.
2. The extracted data should be immediately posted to the ERP system via FTP.
3. The ERP system is expecting the following format:

   \[
   \text{INSERT EMPLOYEE:First Name|Middle Initial|Last Name} \\
   \text{E-MAIL:e-mail address} \\
   \text{STREET ADDRESS:street address;CITY:city;STATE:state code;ZIPCODE:zipcode} \\
   \]

   

   \[
   \text{INSERT EMPLOYEE:JohnAI Smith} \\
   \text{E-MAIL:jsmith@freemail.com} \\
   \text{STREET ADDRESS:123 Main Street;CITY:Detroit;STATE:MI;ZIPCODE:22540} \\
   \]

   Note: This is, of course, a simplification of the actual information required for a true ERP system.

4. The ERP system will accept the file in UTF-8 encoding.

Taleo Connect Solution

The complete set of files required to run this business case can be found in your Taleo Connect Client directory under \texttt{docs\examples\ERPSystem}.

Overall process

Same comments as in the Welcome Wagon scenario; however, the IT staff at Cassivi Tools will themselves implement a simple FTP file transfer as a Taleo Connect Client custom step instead of using a manual process. This will be described further in the post-processing section.

Export request

As in the Welcome Wagon scenario, the Taleo Connect Client can be used to create the export request needed to extract the required information from the Taleo product. The New Export Wizard can be used to create an export request and the Export Editor can then be used to add the required projections. For the filtering, the Taleo Connect Client provides a Daily New Hire filter template that can be simply added to the export request as-is. Additionally, since the desired final format is custom to the ERP system and thus not natively supported by the Taleo Connect Platform, the extracted data is provided in XML format to enable an XSL transformation.
Configuration

The Taleo Connect Client can be used to create the configuration file that defines the integration process and communicates with the Taleo product. In this case, the Configuration Wizard can completely build the required configuration by selecting all of the default options and the newly defined export specification on the last page. A proper environment is also required to complete the Wizard.
Pre-processing
Both the Prepare Import and Wrap SOAP steps are included in the workflow by the Wizard. These are mandatory pre-processing steps when using an Export specification.

Processing
The environment file provided to the Wizard is used to fully configure the process steps, including the connectivity information. You may want to adjust the quality settings of the Poll step after executing the process a few times.

Post-processing
The format expected by the ERP system is custom and thus a post-processing transformation step will be required. Since the ERP format is well-structured and the information is not very complex, a standard XSL transformation is the most appropriate choice. The XML format returned by the Taleo Connect Server can be determined based on the SQ-XML extraction in order to write the XSL transformation. As noted in the step description, in order to handle large amounts of data, the XSLT must only apply to a particular record. The step execution will handle the cycling through the entire set of extracted records. The XSL transformation step will also strip the SOAP envelope as part of its execution.

Requirement #4 is met natively by the Taleo Connect Platform as all extracted data is persisted by default in UTF-8 encoding.

To fully automate the integration process, requirement #2 will also be handled by the Taleo Connect Client, using a custom step coded by the IT staff at Cassivi Tools. This step will pick up the converted file in its current location and send it to the ERP system's FTP site. In order to promote the re-use of this custom step, its configuration will specify the connectivity information of the FTP site. In this way, if ever this information changes, only the configuration will need to be modified using the Configuration Editor UI (the custom step code would not need to be recompiled).

Final configuration
You can find the final configuration required for this business case in the documentation bundle provided with the Taleo Connect Client distribution.

Workflow Configuration for the ERP System Update Business Case
HTML Monitoring Page for the ERP System Update Business Case
Global Recruiting

We will now revisit the Global Recruiting business case to see how an actual implementation of the integration processes would occur with the Taleo Connect Client.

Business Requirements

The translation team provides the material in three languages: English (en), French (fr), and Spanish (es). The values in parentheses are the locale codes used to identify the languages in the Taleo products (they correspond to the flag icons used when entering multilingual information through the Staffing WebTop). The translated text arrives in a Microsoft Excel file (translations.xls) that is saved as a comma separated file (translations.csv); this is a standard Microsoft Excel feature.

NOTE: To make the implementation text lighter, only the requisition title is handled. Adding the other relevant fields is straightforward.

Taleo Connect Solution

The complete set of files required to run this business case can be found in your Taleo Connect Client directory under docs\examples\GlobalRecruiting.

Overall process

Based on the structure of the source material, an import specification is made to link the various information elements to the Taleo business model. An integration process is then designed using a workflow that handles such imports. The results of the import are returned in a Taleo standard T-SOAP response file.

Import request

Since the import specification is specific to the current scenario, we will use the Import Wizard to create a blank specification for the requisition entity.
You now have the following situation in the Design perspective:

The default information on the General page is fine for this example as the source file values are separated with comma characters and a header line is present.
Switching to the Column page, we need four entries, one for each of the columns in the source file. The requisition number seen in the Taleo Professional Staffing WebTop is labeled ContestNumber in the business model; we can drag that field to the column list to create our first mapping.
The requisition number (we added a header for convenience) will serve to find the requisition, so it must be marked as a key column in the Search section. This column is not multilingual, so there is no option to select in the Locale section.

Next, we need three columns for the Title field, which is in the related JobInformation entity. Again we use a header to provide a more readable alias for the column. The titles are being updated, so we do not search for them. However, each column needs to be in a specific locale, so we use that option in the Locale section.
Configuration
The Taleo Connect Client can be used to create the configuration file that defines the integration process and communicates with the Taleo product. In this case, the Configuration Wizard can completely build the required configuration by selecting all of the default options and the newly defined import specification on the last page. A proper environment is also required to complete the Wizard.

Pre-processing
Both the Prepare Import and Wrap SOAP steps have been included in the workflow by the Wizard. These are mandatory pre-processing steps when using an Import specification.
Processing
The environment file provided to the Wizard was used to fully configure the process steps, including the connectivity information. You may want to adjust the quality settings of the Poll step after executing the process a few times.

Post-processing
There are no post-processing steps required as the response message simply contains the status of the requested updates.

Final configuration
You can find the final configuration required for this business case in the documentation bundle provided with the Taleo Connect Client distribution.

Workflow Configuration for the Global Recruiting Business Case

HTML Monitoring Page for the Global Recruiting Business Case
Appendices
Taleo Connect Client Installation

This Appendix covers the steps that are required to successfully install the Taleo Connect Client application. These steps should be followed in the sequence presented, although some of them may be done in parallel. Information on the XML request file is also provided.

Account Creation

Taleo Support can provide customers with a fully configured account on their Taleo product to execute integration processes. This account is delivered in the form of an environment file (see below) along with a user/password combination for a user with the System Integration or System Integrator role.

NOTE: This is a very powerful account as it allows access to import and export data directly from Taleo products. The account information should be kept secure at all times and not be used for any other use then to drive the integration processes.

If using the Middleware communication strategy, the account information is also provided as an environment file with a user that has access to the Taleo middleware.

Environment Files

A Taleo Connect Client environment file contains the connectivity details of your Taleo product in an easy to read and edit format. If you do not have such a file, you can easily create one given the proper access to the Taleo Professional Administrator WebTop. You will need the URL to access your Taleo Professional web site and a user with the System Integration role. You can create such a user when logging in as a System Administrator.

NOTE: This is a power user role as it allows access to import and export data directly from the Taleo products. The account information should be kept secure at all times and not be used for any other use than to drive the integration processes.

Suppose this information is [http://acme.taleo.net](http://acme.taleo.net) and the user information is integrator/password. The environment file should then be a text file named acme_env.properties and containing the following line:

```properties
product=https://integrator:password@acme.taleo.net/servlets/ServiceDispatcher?ServiceName=IntegrationManagementService
```

You may also elect to never write the password in clear text, so the following is also acceptable

```properties
product=https://integrator@acme.taleo.net/servlets/ServiceDispatcher?ServiceName=IntegrationManagementService
```

When using such an environment file, you will be prompted for the password when required. In the configuration files, the password is not in clear text. The encryption used is difficult, but not impossible to break. As such, the configuration files should also be kept in a secure location.
Connection Authorization

This section only applies to integration processes using the middleware communication strategy.

For security reasons, connections to the Taleo integration server from Taleo Connect Client can only be made from trusted IP addresses. Customers must therefore provide the integration support specialist with the pertinent IP address, or IP address range if the computer or server uses a dynamic IP. If customers use a firewall, they have to provide the integration support specialist with the outgoing IP address or IP address range rather than the IP address of the computer or server.

Pre-installation

The Taleo Connect Client requires Java Runtime Environment (JRE) version 1.4.2 exactly. Unfortunately, the Client currently does not support the most recent 1.5 version (also known as Java 5.0). The Windows installer ships with an appropriate version of the JRE, so there should be no extra steps. When installing the UNIX/LINUX runtime binary files, a pre-installed JRE is required. Customers using a UNIX computer or server should make sure to install the appropriate version of the Java Runtime Environment for their version of UNIX.

Installation

The Taleo Connect Client ships as two different files. The first is a standard Windows installer. Simply double click the TaleoConnectClient.exe file and follow the on-screen instructions (there are no complex choices, only the typical pages of any product installer). You are prompted for a password to proceed with the installation, which is provided by Taleo Customer Support.

The second deliverable is a bundle of the binary files required to execute integration processes in a UNIX/LINUX environment. Simply unpack the TaleoConnectClient.tar.gz file to a new folder on the UNIX/LINUX system.

Using the Client

Each time you use the Client, you are prompted to connect to your Taleo product. In the following dialog, you can select your environment file and then optionally enter your authentication information (if not present in the environment file itself):

![Image of the Client interface]

If your connectivity information is incorrect or your Taleo product is not available, then you cannot access the Design environment. There is no such prompt when using the runtime execution script.
Migration

Version 2.0

Installation
The core of Taleo Connect Client has remained the same since the 2.0 version. However, the user interface has been entirely revamped. In addition, the Client now comes with a proper Windows installer that creates the required folder structure. We recommend that you install the new Client in a different location than the 2.0 version. You can keep your configuration files in their current location or move them.

Deployment
The configuration files have been upgraded since the 2.0 version. A few mandatory elements have been added and some features deprecated (see Limitations section). Both the user interface and the execution script will automatically upgrade the configuration with no manual intervention. It is recommended to explicitly migrate your old configuration files by simply opening them in the Configuration Editor and saving them again.

All of the request files used with version 2.0 will also function with version 2.1.
The execution script has the same name and accepts all of the same parameters.

Limitations
Taleo Connect Client, version 2.0 only supported the Mixed communication type, which is now deprecated. If your Taleo environment is already configured in this fashion, then your integration processes will continue to work through version 2.1. You will see diagnostic information indicating that the communication type is deprecated.

Taleo Connect Client, version 2.0 allowed the explicit configuration of an HTTP proxy through the configuration file. This is no longer available or supported in version 2.1. We have harmonized the behavior of the Client with the Java standards (see HTTP Proxy section). The procedure to migrate this feature given the following 2.0 configuration:

is to add the following startup parameters in the client execution script (TaleoConnectClient.bat):
-Dhttp.proxyHost=proxy.acme.net -Dhttp.proxyPort=3128

The most important limitation, the use of the Extract builder files, is documented below.
Extract builder
The Extract (or extraction) Builder is no longer supported in version 2.1. It has been replaced with the Export Editor feature within the centralized Design environment. The format of the extract files is not compatible with the Export Editor. However, the generated request files can still be sent using Taleo Connect Client (just as any other request file).

Version 1.0

Installation
Taleo Connect Client has been completely rewritten since version 1.0. As such, it is recommended to install version 2.1 in a different location.

Deployment
The integration process configuration in the 1.0 version were contained in Properties files (*.properties). Except for the limitations stated below, these files are fully supported in the current version. However, we strongly recommend migrating these configurations to the 2.1 level to enable the monitoring feature and, if necessary, access the new processing steps. This is a straightforward process: simply open the Properties file (File/Open/Legacy Configuration); adjust the configuration; and save to a *_cfg.xml file. The other alternative is to directly invoke the execution script with the legacy configuration files. This will work seamlessly with the exceptions of the points noted in the limitations.

All of the request files used with version 1.0 also function with version 2.1.

The execution script has been renamed from riscient.bat to TaleoConnectClient.bat. However, it accepts the same three parameters.

Limitations
Taleo Connect Client, version 1.0 only supported the Mixed communication type, which is now deprecated. If your Taleo environment is already configured in this fashion, then your integration processes will continue to work through version 2.1. You will simply see diagnostic information indicating that the communication type is deprecated.

Taleo Connect Client, version 1.0 allowed the explicit configuration of an HTTP proxy through the configuration file. This is no longer available or supported in version 2.1. We have harmonized the behavior of the Client with the Java standards (see HTTP Proxy section). You may leave the proxy.* properties in the file but they will be ignored. The procedure to migrate this feature from the following legacy configuration file:

...  
proxy.host=proxy.acme.net  
proxy.port=3128  

is to add the following startup parameters in the client execution script:

- Dhttp.proxyHost=proxy.acme.net  -Dhttp.proxyPort=3128
How to Execute Taleo Connect Client from a Java Application

It is possible to run Taleo Connect Client from another Java program. To do so, you must insure that the calling program's JVM is running with the proper environmental variables and then call the execute() method of the class.

Execution Environment

In order for the Taleo Connect Client to execute correctly, the proper execution environment must be available. Specifically, the same environment created by the TaleoConnectClient.bat script must be duplicated. Overall, this means that all libraries in the lib folder of the product must be included in the class path of the calling Java application and the log folder itself must be part of the class path for the logging system to be enabled. There are two system properties also required to configure the logging and XML parsing systems.

Execution Entry Point

The correct entry point to execute the Taleo Connect Client is: com.taleo.integration.client.Client.execute(). The JavaDoc provided for this method in the docs/api folder of the product describes the behavior and parameter values.