



# **TCC\_Touchpoints**

## **Deployment model for TCC integrations**

Version 2.2

By  
**Taleo Technical Services**

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## Table of contents

Table of contents .....	2
Confidential Information .....	3
1. Introduction .....	6
2. Disclaimer .....	6
3. Features.....	6
4. Folder structure .....	7
5. Installation .....	9
6. Configuration.....	9
7. Naming conventions.....	10
8. Execution in batch mode .....	11
9. Execution in GUI mode.....	12
10. Deployment checklist .....	13
11. Developer notes .....	14
12. Troubleshooting tips .....	16
13. Known limitations .....	17
14. License agreement.....	18

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## Revision history

No.	Date	By	Description
1.0	2009-11-26	Romain Guay	<ul style="list-style-type: none"><li>• Initial draft.</li></ul>
1.1	2009-11-30	Romain Guay	<ul style="list-style-type: none"><li>• Added option to run in TCC GUI.</li></ul>
1.2	2009-12-05	Romain Guay	<ul style="list-style-type: none"><li>• Added some details in the Developer notes.</li></ul>
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1.4	2010-02-12	Romain Guay	<ul style="list-style-type: none"><li>• Added disclaimer and license agreement.</li></ul>
1.5	2010-02-24	Romain Guay	<ul style="list-style-type: none"><li>• Added a tool to parameterize configuration files for use with TCC_Touchpoints.</li><li>• Changed symbol ALERTING_MAIL_ON_SUCCESS_TO to ALERTING_MAIL_ON_COMPLETE_TO</li></ul>

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1.6	2010-03-20	Romain Guay	<ul style="list-style-type: none"> <li>• Added a comment about running under Unix.</li> </ul>
1.7	2010-03-23	Romain Guay	<ul style="list-style-type: none"> <li>• Added troubleshooting tips.</li> <li>• Added TEMP_FOLDER symbol and \temp subfolder in the package.</li> </ul>
1.8	2010-04-14	Romain Guay	<ul style="list-style-type: none"> <li>• Enhanced the procedure to create multiple Net-Change repositories.</li> </ul>
1.9	2010-04-15	Romain Guay	<ul style="list-style-type: none"> <li>• Added a comment in section 10 regarding setting up a new project and excluding files from source repository.</li> </ul>
1.10	2010-04-16	Romain Guay	<ul style="list-style-type: none"> <li>• Adjusted comments in section 10.</li> </ul>
1.11	2010-05-15	Romain Guay	<ul style="list-style-type: none"> <li>• Replaced the NET_CHANGE_CONFIG variable by NETCHANGE_REPOSITORY and dropped the /net-change/configuration folder.</li> </ul>
1.12	2010-06-29	Stephan Belanger	<ul style="list-style-type: none"> <li>• Adjusted comments in section 10.</li> </ul>
1.13	2010-07-07	Romain Guay	<ul style="list-style-type: none"> <li>• Updated the license agreement.</li> <li>• Added TCC_Loop.bat, TCC_Loop_FTP.bat, TCC_Loop.sh, TCC_Loop_FTP.sh.</li> <li>• Removed FTP_List.sbat and FTP_List.sh.</li> </ul>
1.14	2011-02-07	Romain Guay	<ul style="list-style-type: none"> <li>• Fixed typos and formatting.</li> </ul>
1.15	2011-02-26	Romain Guay	<ul style="list-style-type: none"> <li>• Added FTP_RETRY_NUMBER, FTP_RETRY_INTERVAL and FTP_RETRY_FACTOR variables.</li> </ul>
1.16	2011-04-15	Romain Guay	<ul style="list-style-type: none"> <li>• Added a “Known limitations” section.</li> <li>• Added LOG_FOLDER variable.</li> </ul>
1.17	2011-05-04	Romain Guay	<ul style="list-style-type: none"> <li>• Added Ant installation procedure.</li> </ul>
1.18	2011-05-31	Romain Guay	<ul style="list-style-type: none"> <li>• Added TODAY environment variable.</li> </ul>
1.19	2011-08-28	Romain Guay	<ul style="list-style-type: none"> <li>• Added the “featurepacks” subfolder to hold the feature packs used in the project.</li> </ul>
2.0	2012-01-19	Romain Guay	<ul style="list-style-type: none"> <li>• Major rewrite for version 2.0.</li> <li>• Introduce the multiple configuration boards approach.</li> <li>• Enhancements to TCC_GUI.bat</li> </ul>

2.1	2012-03-14	Romain Guay	<ul style="list-style-type: none"><li>• Correcting typos and phrasing.</li><li>• Added runtime symbols in the configuration board when running TCC_GUI.bat. The configuration board is now copied in the /temp folder in this mode.</li></ul>
2.2	2012-04-11	Romain Guay	<ul style="list-style-type: none"><li>• Modified the way to add runtime symbols when running TCC-GUI.bat so the configuration board does not have to be copied in /temp and can be edited directly.</li></ul>

# 1. Introduction

This document presents TCC\_Touchpoints, the proposed deployment model for TCC integrations. It includes a number of best practices to standardize and simplify TCC integrations packaging and deployment.

## 2. Disclaimer

Taleo Services delivers this package with source code and does not provide ongoing support or maintenance after initial delivery. Like any open source object, Customer is allowed to edit the code for its own purposes and takes responsibility of the initial and ensuing code maintenances. Taleo Services can provide assistance, for a cost if further assistance is needed.

## 3. Features

TCC\_Touchpoints offers the following features.

- All configuration information is centralized in one global environment file and a number of zone-specific configuration board files. This ensures an optimal split of configuration settings and makes it very easy to switch from one environment to the other.
- All integrations related files are packaged under the same root folder (TCC\_Touchpoints) and all paths are set as relative. The only external dependency is the TCC installation folder and, in the case of Unix, the Java home folder. This means that deployment consists in copying this root folder anywhere and simply editing the environment and configuration board files.
- The configuration files use standardized symbols. The list of those symbols can be customized for specific needs.
- Supports deployment under Windows and Unix/Linux.
- If necessary, configuration allows for multiple net-change integrations on the same entity.
- Loop over a list of local or FTP input files to process.
- Automatic archiving of input files after processing (for local files only, not FTP).
- Cleanup of old log, monitor, outbound, archive, error and temp files.
- Offer a means to run TCC GUI using the defined environment and making those variables available to the integrations.

## 4. Folder structure

The basic folder structure is represented below. Many of these folders are configurable and can be set differently according to customer preferences.

**/bin** - Root directory for batch scripts.

**/Windows** - Windows batch scripts

- /core** - Scripts that are part of the infrastructure and shared among all integrations. Those are not meant to be run directly.
- *Archive.bat* – Archive input files after processing.
  - *Cleanup.vbs* – VBScript to implement Cleanup.bat (see below).
  - *GetDateTime.bat* – Read date and time from the system.
  - *log4j.xml* – Logging configuration.
  - *Init.bat* – Initialize the environment.
  - *Init\_net-change.bat* – Initialize the Net-Change configuration.
  - *TCC.bat* – Main batch file to run TCC.
  - *TCC\_Loop.bat* – Batch file to run TCC by looping over input files with a timestamp.
  - *TCC\_Loop\_FTP.bat* – Batch file to run TCC by looping over input files with a timestamp, from an FTP server.

**/GUI** - Files to run TCC GUI using the defined environment.

- *TCC\_GUI.bat* – Run TCC in GUI mode.

**/tools** - Helper tools.

- *EncryptPassword.bat* – Encrypt a password using AES128 policy.
  - *Parameterize\_config.bat* – Parameterize a configuration file for use within TCC\_Touchpoints.
- 
- *Cleanup.bat* – Delete old log, monitor, outbound, archive, error and temp files.
  - *Environment.bat* – Global environment file.
  - *DailyLimits.bat* – Sample integration to obtain daily import and export limits as well as actual count.
  - *\*.bat* – All other are integration-specific entry points.

**/Unix** - Unix/Linux shell scripts

- /core** - Scripts that are part of the infrastructure and shared among all integrations. Those are not meant to be run directly.
- *Archive.sh* – Archive input files after processing.
  - *log4j.xml* – Logging configuration.
  - *Init.sh* – Initialize the environment.
  - *Init\_net-change.sh* – Initialize the Net-Change configuration.
  - *TCC.sh* – Main batch file to run TCC.

- *TCC\_Loop.sh* – Batch file to run TCC by looping over input files with a timestamp.
- *TCC\_Loop\_FTP.sh* – Batch file to run TCC by looping over input files with a timestamp, from an FTP server.
- *Cleanup.sh* – Delete old log, monitor, outbound, archive, error and temp files.
- *Environment.sh* – Global environment file.
- *\*.sh* – All other are integration-specific entry points.

**/xsl** - XSL transformations used within batch scripts.

- *GetDefaultHost.xsl* – Get the default host from the current configuration board file.
- *GetSymbolValue.xsl* – Get a symbol value from the current configuration board file.
- *Parameterize\_config.xsl* – Used with /tools/Parameterize\_config.bat
- *SetupConfigBoard.xsl* – Setup the configuration board when running in GUI mode.

**/configboards** - Directory for configuration board files.

**/customdictionaries** - Directory for custom dictionary files.

**/data** - Directory for data files.

- /archive** - Directory where inbound files are moved after successful processing.
- /error** - Directory where inbound files are moved after failure.
- /inbound** - Directory for inbound data used for import into Taleo.
- /outbound** - Directory for outbound data, export or import results from Taleo.

**/doc** - Directory for documentation.

**/featurepacks** - Directory for feature packs (\*.fp or \*.pip) used in the project.

**/lib** – Directory for Java extensions (if applicable).

**/log** - Directory for logging files.

**/lrd** - Directory for last run date files.

**/monitor** - Directory for monitoring files.

**/net-change** - Directory for Net-Change repositories.

- /repository** – Default Net-Change repository.

**/scripts** - Root directory for TCC script files.

- /\*** - All subfolders are integration-specific.

**/temp** - Directory for temporary files.



## 5. Installation

TCC\_Touchpoints folder can be installed at any convenient location on your computer. Since all paths are defined as relative, it can be moved around and does not have to be at the same location on different computers.

However, we recommend installing it in a different location than TCC itself, so the two are independent. You could install a new version of TCC without touching your integrations.

## 6. Configuration

- Edit the `/configboards/*_brd.xml` files (typically one per zone) and set the appropriate values in all relevant sections. Here is the default content of a configuration board file:

```
<?xml version="1.0" encoding="UTF-8"?>
<cli:BoardConfig xmlns:cli="http://www.taleo.com/ws/integration/client">
  <cli:BaseBoard/>
  <cli:Symbols>
    <!-- ===== -->
    <!-- Net-Change settings -->
    <!-- ===== -->
    <cli:Symbol name="NETCHANGE_CREATE_THRESHOLD"></cli:Symbol>
    <cli:Symbol name="NETCHANGE_UPDATE_THRESHOLD"></cli:Symbol>
    <cli:Symbol name="NETCHANGE_DELETE_THRESHOLD">10%</cli:Symbol>
    <!-- ===== -->
    <!-- Mail settings -->
    <!-- ===== -->
    <cli:Symbol name="MAIL_HOST"></cli:Symbol>
    <cli:Symbol name="MAIL_PORT">25</cli:Symbol>
    <cli:Symbol name="ALERTING_MAIL_FROM"></cli:Symbol>
    <!-- Note: Email addresses are comma separated. -->
    <cli:Symbol name="ALERTING_MAIL_ON_COMPLETE_TO"></cli:Symbol>
    <cli:Symbol name="ALERTING_MAIL_ON_COMPLETE_CC"></cli:Symbol>
    <cli:Symbol name="ALERTING_MAIL_ON_ERROR_TO"></cli:Symbol>
    <cli:Symbol name="ALERTING_MAIL_ON_ERROR_CC"></cli:Symbol>
    <!-- ===== -->
    <!-- FTP settings -->
    <!-- ===== -->
    <cli:Symbol name="FTP_HOST"></cli:Symbol>
    <cli:Symbol name="FTP_PORT">21</cli:Symbol>
    <cli:Symbol name="FTP_USER"></cli:Symbol>
    <!-- Note: Password must NOT be encrypted. -->
    <cli:Symbol name="FTP_PASSWORD"></cli:Symbol>
    <cli:Symbol name="FTP_INBOUND_FOLDER"></cli:Symbol>
    <cli:Symbol name="FTP_OUTBOUND_FOLDER"></cli:Symbol>
    <cli:Symbol name="FTP_RETRY_NUMBER">0</cli:Symbol>
    <cli:Symbol name="FTP_RETRY_INTERVAL">0</cli:Symbol>
    <cli:Symbol name="FTP_RETRY_FACTOR">0</cli:Symbol>
  </cli:Symbols>
  <cli:Endpoints>
    <cli:EndpointBoardConfig Name="...TODO..." Default="true">
      <cli:EndpointServer>
        <cli:Protocol>HTTPS</cli:Protocol>
      </cli:EndpointServer>
    </cli:EndpointBoardConfig>
  </cli:Endpoints>
</cli:BoardConfig>
```

```

        <cli:Host>...TODO...</cli:Host>
        <cli:Port>443</cli:Port>
    </cli:EndpointServer>
    <cli:EndpointAuthentication>
        <cli:BasicAuthentication>
            <cli:User>...TODO...</cli:User>
            <cli:Password policy="AES128">...TODO...</cli:Password>
        </cli:BasicAuthentication>
    </cli:EndpointAuthentication>
</cli:EndpointBoardConfig>
</cli:Endpoints>
</cli:BoardConfig>

```

- This file can be edited in a text editor or using TCC, as described in section 9. To fully benefit from TCC\_Touchpoints deployment model, it will typically contain a single endpoint named by the Taleo host and set to Default="true".
- Edit the */bin/Windows/Environment.bat* (or */bin/Unix/Environment.sh*) file and set the TCC home folder and the current configuration board to use according to the target environment (staging, production or other). Other sections of that file can also be configured if needed such as Java, folder, proxy and cleanup settings.
- Add the feature packs (\*.fp or \*.pip) that are needed to build your integrations into the */featurepacks* folder. Having the feature packs defined this way makes the project more self-contained and ensures more consistency in the testing and deployment. Note that .pip files can only be used with TCC 11B and later versions.

## 7. Naming conventions

It is recommended that integration files naming follows these rules, where:

<touchpoint> is a name identifying the topic of the integration (NewHire, Candidate, User, etc.) and

<operation> is the performed operation (export, merge, net-change, move, etc.).

Variations of those conventions are allowed if they help clarify the intent of the integration.

### For imports

- Load file <touchpoint>\_<operation>\_ld.xml
- Config file <touchpoint>\_<operation>\_cfg.xml
- Batch file <touchpoint>\_<operation>.bat
- Data file <touchpoint>\_<operation>\_<yyyymmdd\_hhmmss>.csv

or <touchpoint>\_<operation>.csv

- Result file result\_<touchpoint>\_<operation>\_<yyyymmdd\_hhmmss>.csv

Note that a date/time stamp in data file name forces using the looping mechanism implemented in *TCC\_Loop.bat* (or *TCC\_Loop.sh*). Also, when using net-change, we usually don't expect a date/time stamp in the name as it is not worth processing all files since only the last one contains the latest picture of the data.

### For exports

- Query file <touchpoint>\_<operation>\_sq.xml
- Config file <touchpoint>\_<operation>\_cfg.xml
- Batch file <touchpoint>\_<operation>.bat
- Result file result\_<touchpoint>\_<operation>\_<yyyymmdd\_hhmmss>.csv

## 8. Execution in batch mode

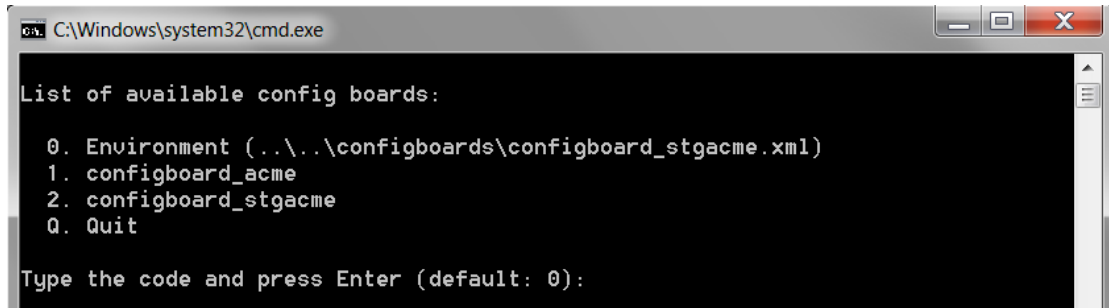
- For testing, you can run the individual integrations under */bin/Windows* (or */bin/Unix*).
- Reminder: Under Unix, you must first convert shell scripts (in */bin/Unix* and */bin/Unix/core*) into Unix format and make them executable with the following commands:

```
dos2unix *.sh
chmod 755 *.sh
```

- In production, you may want to schedule the integrations individually or all together using a main batch, according to your exact needs.
- For all net-change integrations, you need to run the setup once using the actual input file, after deploying in a given environment. From then on, the ongoing net-change can be run on schedule.
- For import integrations, each successful run will move or copy the input file into the */data/archive* folder. It will add a timestamp to the name if sent to archive in "copy" mode (see */bin/Windows/core/Archive.bat*). In case of failure, the same file will be moved or copied to the */data/error* folder instead.
- You can schedule the */bin/Windows/Cleanup.bat* (or */bin/Unix/Cleanup.sh*) daily and it will delete log, monitor, outbound, archive, error and temporary files that are older than the *RETENTION\_DAYS* variable.

## 9. Execution in GUI mode

- To facilitate running these integrations in the TCC GUI, you can use the `/bin/Windows/GUI/TCC_GUI.bat`. This will prompt for the configuration board file to use, if there is more than one:



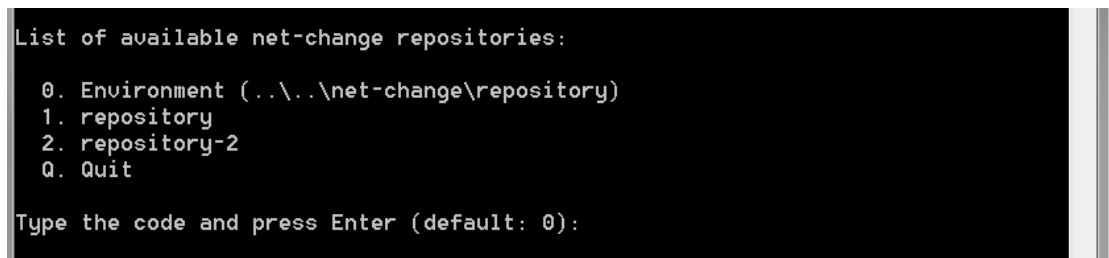
```
C:\Windows\system32\cmd.exe

List of available config boards:

 0. Environment (..\..\configboards\configboard_stgacme.xml)
 1. configboard_acme
 2. configboard_stgacme
 0. Quit

Type the code and press Enter (default: 0):
```

- It will also prompt for the Net-Change repository folder to use, if there is more than one:

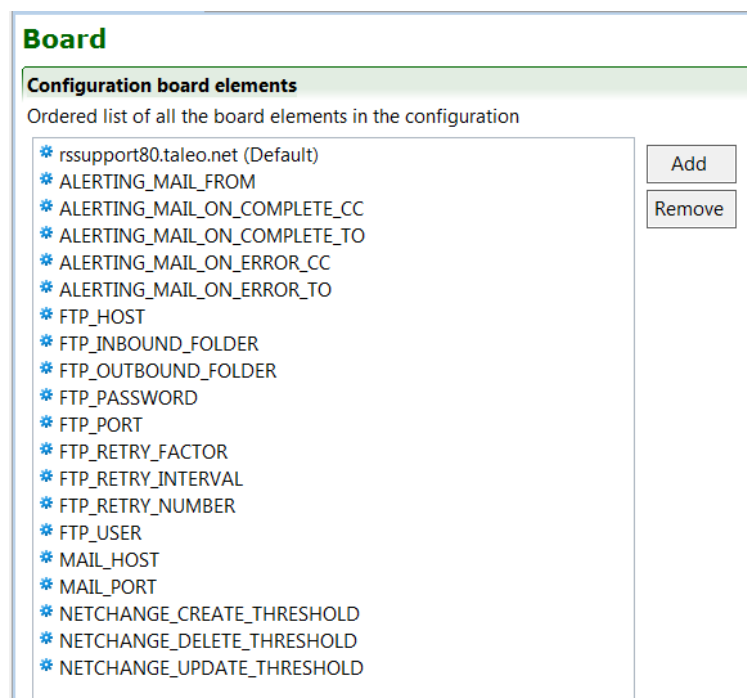


```
List of available net-change repositories:

 0. Environment (..\..\net-change\repository)
 1. repository
 2. repository-2
 0. Quit

Type the code and press Enter (default: 0):
```

- You can then review and edit the content of the selected configuration board file using File/Open/Configuration Board, as shown below.



- Other symbols remain available although they are not defined in the configuration board; those are set from the environment (see section 11 for a complete list).
- New symbols can also be defined in the configuration board for specific integration needs.
- When running in the GUI, the monitor files always go into the /monitor folder under TCC home, because this folder contains the CSS to display HTML correctly in TCC.
- When opened this way, you can use TCC to set the last run dates as usual in the Prepare Last Run Date pre-processing step. It will update in the folder specified in the LASTRUNDATE\_FOLDER variable.
- You can also synchronize the custom fields and it will update in the folder specified in the CUSTOM\_DICTIONARIES\_FOLDER variable.
- Note that the feature packs that are available in TCC are only those that are present in the /featurepacks folder.
- WARNING – If you have more than one Net-Change repository, pay attention to the one that is selected when starting TCC-GUI.bat. This is the one that will be used for the whole session. You need to restart TCC-GUI.bat to use another repository.

## 10. Deployment checklist

Follow these steps to deploy the TCC\_Touchpoints package on a different server.

1. Copy the TCC\_Touchpoints root folder to the target server<sup>1</sup>. Within this copy, delete the following folders:
  - /data/archive
  - /data/error
  - /data/outbound
  - /log
  - /monitor
  - /net-change
  - /temp
2. Create or edit the /configboards/ *yourzone\_brd.xml* file and set the appropriate values for all variables according to the target zone.
3. Edit the /bin/Windows/Environment.bat (or /bin/Unix/Environment.sh) and set the TCC\_HOME and CONFIG\_BOARD to use:
 

```

REM -----
REM           TCC HOME
REM -----
SET TCC_HOME=C:\Program Files\Taleo Connect Client

REM -----
      
```

<sup>1</sup> Alternatively, you can use the Ant distribution script described hereafter.

```
REM                                CONFIGURATION BOARD
REM -----
SET CONFIG_BOARD=yourzone_brd.xml
```

4. Review other sections of the Environment file for specific settings.
5. Edit the files found in the */lrd* folder to set the desired last run date. You can also simply delete those files and the last run dates will default to 24 hours back from now.
6. Copy the data files in the */data/inbound* folder.
7. For Net-Change integrations, make sure you run the Net-Change setup once before the regular Net-Change.
8. In production, you will want to schedule the integrations to run as required using your favorite scheduling tool, Windows Scheduled Tasks, Crontab on Unix or other tool.

### Using Ant to create a distribution

Optionally, to facilitate the deployment, you can use the ANT script included in the package (using *TCC\_Touchpoints/dist.bat*). This script will create a distribution excluding the folders that you typically don't want to carry over. To create a distribution, simply follow these steps:

- (First time only) Download and install Apache Ant from <http://ant.apache.org/bindownload.cgi>.
  - Unzip the downloaded file.
  - Set the ANT\_HOME system environment variable.
  - Add %ANT\_HOME%\bin to the PATH system environment variable.
- Run *TCC\_Touchpoints/dist.bat*. The distribution will be available in the */dist* subfolder.
- Copy this distribution to the target server and continue with step 2 above.

## 11. Developer notes

- Review the */bin/Windows/Environment.bat* (or */bin/Unix/Environment.sh*) and */configboards/\*\_brd.xml* files with the customer and set the appropriate values in all relevant sections.
- If some environment variables need to be specific per integration, you can override their value after the call to *Environment.bat* (or *Environment.sh*) in the specific integration batch file.

- Synchronize the UDFs in TCC and make sure the custom dictionary files are present in the */customdictionaries* folder under TCC\_Touchpoints. Note: This will happen automatically if you start TCC with the TCC\_GUI.bat.
- Develop your integration in a subfolder of /scripts and write a batch file for it in the */bin/Windows* (or */bin/Unix* folder).
- Use "/" and NOT "\" when you define paths in configuration files, so that your scripts run as well in Windows and Unix.
- Make sure your configuration file uses the default endpoint for Send, Poll and Retrieve.
- Use the following symbols where appropriate. Note that two of them (IN\_FILE and OUT\_FILE) will be left unresolved in GUI mode.

[CFGFOLDER]	Path to the configuration file. This variable is built in TCC and set at runtime.
[NOW]	Current date/time (yyyymmdd_hhmiss) Note: This variable is also built in TCC, but its value is set in the batch files in order to have a common value among the monitor, outbound and archive files.
[TODAY]	Current date (yyyymmdd)
[LOOP_INDEX]	Loop index when looping over input files using a pattern. Always 0 when running in GUI mode.
[LOG_FOLDER]	Path to the log folder
[MONITOR_FOLDER]	Path to the monitor folder
[TEMP_FOLDER]	Path to the temporary files folder
[TALEO_HOST]	Name of Taleo host (e.g. acme.taleo.net)
[TALEO_ZONE]	Name of Taleo zone (e.g. acme)
[IN_FILE] – batch only	Name of the input file. Unresolved in GUI mode.
[OUT_FILE] – batch only	Name of the output file. Unresolved in GUI mode.
[INBOUND_FOLDER]	Path to the inbound folder
[OUTBOUND_FOLDER]	Path to the outbound folder
[NETCHANGE_CREATE_THRESHOLD]	Net-Change create threshold
[NETCHANGE_UPDATE_THRESHOLD]	Net-Change update threshold
[NETCHANGE_DELETE_THRESHOLD]	Net-Change delete threshold
[MAIL_HOST]	Mail host
[MAIL_PORT]	Mail port
[ALERTING_MAIL_FROM]	Email sender address
[ALERTING_MAIL_ON_COMPLETE_TO]	Addresses to send complete notifications
[ALERTING_MAIL_ON_COMPLETE_CC]	Addresses to cc complete notifications
[ALERTING_MAIL_ON_ERROR_TO]	Addresses to send error notifications
[ALERTING_MAIL_ON_ERROR_CC]	Addresses to cc error notifications

[FTP_HOST]	FTP host
[FTP_PORT]	FTP port
[FTP_USER]	FTP username
[FTP_PASSWORD]	FTP password (unencrypted)
[FTP_INBOUND_FOLDER]	FTP inbound folder
[FTP_OUTBOUND_FOLDER]	FTP outbound folder
[FTP_RETRY_NUMBER]	FTP number of retries
[FTP_RETRY_INTERVAL]	FTP interval (seconds) between retries
[FTP_RETRY_FACTOR]	FTP multiplier of the retry interval between each attempt

- Other symbols can be defined for specific needs, directly in the configuration board files.
- The `/bin/Windows/tools/Parameterize_config.bat` tool can be used to set the common symbols in your configuration file which can then be reviewed and finalized manually to fit your exact needs.
- If multiple Net-Change integrations are needed on the same entity:

In your batch file, right after the call to `Environment.bat`, set the specific location of the Net-Change repository for Net-Change setup and ongoing Net-Change, as follows:

```
REM Set the environment variables.
Call Environment.bat

REM Set the specific Net-Change repository.
SET NETCHANGE_REPOSITORY=%NETCHANGE_FOLDER%\repository_xyz
```

- The Unix scripts have been developed and tested with **bash**. It shouldn't be a problem using a different interpreter but slight changes might be needed to some of the scripts. To change the interpreter, modify the first line of all `.sh` files (`#!/bin/bash`) with the path of your interpreter, for example: `#!/bin/ksh`.

## 12. Troubleshooting tips

First thing to do when a batch file is not behaving as expected is to run it within a command prompt that you open separately and drag the batch file in it instead of simply double clicking the batch file. This way, you can read the messages before the file closes.

### Common error messages

- *'Environment\_\*.bat' is not recognized as an internal or external command, operable program or batch file.* This means that the specific environment file you are trying to execute is not available.



- ***The TCC\_HOME path ... does not exist.*** This indicates that your TCC\_HOME path is not valid.
- ***The device is not ready.*** This happens when you run a batch file on a remote server from a network drive on your desktop. You must log on the remote server and execute batch files from there.
- ***The configuration provided in the XML file refers to an unknown Taleo product.*** The feature pack you are using for that integration is not in the */featurepacks* folder or the feature pack is a .pip file and the version of TCC you are using is prior to 11B.

### **Other tricks**

- ***TCC behaves strange when started the normal way (not with TCC-GUI.bat).*** This may be caused by the fact the command window that opens with TCC\_GUI.bat was closed manually instead of letting it close automatically. Doing that prevents the *TCC\_HOME\TaleoConnectClient.ini* to be reset to its original state. To fix that, simply delete *TaleoConnectClient.ini* and rename *TaleoConnectClient.ini.bak* to *TaleoConnectClient.ini*.

## **13. Known limitations**

- If integration-specific symbols are needed, different symbols must be defined in the configuration board. This can be discussed with a consultant to find the best solution.
- When saving the configuration board from TCC GUI, comments in the XML will be lost.
- The NOW variable is overridden in the batch files, consequently the formatting functions for that variable that are found in the configuration files do not work anymore.

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