

Running CADfix in Batch Mode

CADfix V8.1

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1. Introduction

CADfix can be run in a pure batch mode from the command line environment on both Windows and UNIX systems to provide an automatic point-to-point translator for different data exchange applications.

In batch mode no CADfix graphical user interface is seen and any process output is directed to the command window and session log files.

A CADfix batch run can process either a single file or multiple files.

This document provides instructions for running CADfix in the automatic batch mode.

2. Pre-requisites for Running CADfix in Batch Mode

A valid licenced installation of the CADfix data exchange product is required to run CADfix in batch mode. The CADfix licence file should include the required product import and export options.

Note that if CADfix is being supplied as part of a vendor application integration for an OEM program then a dedicated application specific installation CD may have been supplied.

3. Running CADfix in Batch on Windows

To run CADfix in batch mode from the MS-DOS prompt the following command can be used:

```
"C:\Program Files\CADfix 8.1\bin\runcadconsole.exe" -wait
    -BATCH -config wizard.cwc cube.sat
```

The above command will run the CADfix batch executable 'runcadconsole.exe' and process the file 'cube.sat' using the CADfix Wizard settings specified in the CADfix Wizard Control (cwc) file 'wizard.cwc'.

In this case a single file 'cube.sat' is processed, but it is also possible to specify multiple CAD files on the command line, for example:

```
"C:\Program Files\CADfix 8.1\bin\runcadconsole.exe" -wait
    -BATCH -config wizard.cwc cube.sat test.igs housing.x_t
```

will process the ACIS SAT file 'cube.sat', the IGES file 'test.igs', and the Parasolid file 'housing.x_t'. It is also possible to use the '-models' option (see section 5) to specify a text file containing a list of CAD files to process.

A full description of the command line options is provided in section 5 of this document.

The CADfix batch executable 'runcadconsole.exe' is located in the 'bin' directory of the CADfix installation. The path to the CADfix batch executable should be changed according to the specific location of your CADfix installation. Quotation marks must be used as shown above if the path to the CADfix bin directory contains spaces.

The example shown assumes that the cwc file and CAD data file both exist in the directory from which the CADfix batch run is initiated. If this is not the case then path names should be included in the command string as necessary.

When the CADfix batch command is executed you will see the progress messages displayed in the MS-DOS window from where the application was launched.

3.1. Windows BAT File Integration

For integration within a parent application the CADfix batch process could be initiated from within a Windows BAT file.

The following example is a simple Windows .BAT script called 'batchrun.bat' with only two required arguments; %1 is the cwc file name and %2 is the list of files to process.

The contents of the Windows batch run file are as follows:

```
rem set top level cadfix directory
set FEES_TOP=D:\Program Files\CADfix 8.1
echo Running CAD translator in batch mode, Please wait...
"%FEES_TOP%\bin\runcadconsole.exe" -wait -BATCH -config %1 -models %2
```

The script would then be run as shown:

```
D:\users\arc>batchrun.bat wizard.cwc files.list
```

The log files created (see section 7) and messages reported by the CADfix batch run can be captured and presented to the user as required by the parent application.

4. Running CADfix in Batch on UNIX

Before running CADfix in batch on a UNIX machine you need to make sure that your CADfix user environment is set up as it would be for a normal CADfix interactive run, i.e. the CADfix set-up script has been run using the command:

```
source cadfix_setups (see CADfix installation guide for more information)
```

On a UNIX system the command to run CADfix in batch is:

```
cadfix -BATCH -config batch.cwc test.stp
```

This will run CADfix in batch using the Wizard control file 'batch.cwc' and will process the STEP file 'test.stp' in the launch directory. A full description of the command line options is given in section 5 of this document.

The user does not need to specify the path to the CADfix executable because the required environment variables have already been set if the 'cadfix-setups' file has been sourced correctly.

On the UNIX platform, instead of specifying an explicit filename in the command line, the user could use a wildcard character to process all files in the local directory, for example:

```
cadfix -BATCH -config batch.cwc *.igs
```

will process all files with the extension '.igs' in the local directory.

It is also possible to specify multiple CAD files on the command line, for example:

```
cadfix -BATCH -config batch.cwc cube.sat test.igs housing.x_t
```

will process the ACIS SAT file 'cube.sat', the IGES file 'test.igs', and the Parasolid file 'housing.x_t'. It is also possible to use the '-models' option (see section 5) to specify a text file containing a list of CAD files to process.

For integration within a parent application the CADfix batch process command can be run from within a UNIX shell script if required.

5. CADfix Batch Input Options

This section provides more information on the batch command line options. Please note that these options are case sensitive and should be used exactly as defined below

-wait	This should appear as the first command line option. The option is only valid on Windows and ensures that the command window DOS prompt will wait for the CADfix run to complete before becoming available for use. We recommend that this option is always used on Windows. This is not required on the UNIX platform because the command window will automatically wait for the process to complete (unless it is manually put into background).
-BATCH	Always required for batch processing and should be specified in upper case as shown. Instructs CADfix to run in a pure batch mode with no user interface displayed. If this option is not included then the CADfix Wizard GUI will appear on the screen and progress messages will be displayed within it.
-config <cwc_file>	Identifies the CADfix Wizard control (.cwc) file that should be used to control the automatic model processing options and run parameters. The <cwc_file> argument is the name of the cwc file, for example wizard.cwc . If the file does not exist in the directory location from which the CADfix run was invoked then the full path name to the cwc file should be specified. More information on the cwc file is provided in section 6.
-models <files.txt>	<p>This option allows the user to specify the name of a file containing a list of CAD files for batch processing. In this example files.txt is used but any valid file name could be used, for example models.dat.</p> <p>The contents of files.txt should be a list of CAD file names, for example:</p> <pre>test.igs lid.igs casting.sat bracket.stp housing.igs</pre> <p>The full path name to the CAD files should be included if they do not exist in the local directory from which the CADfix run was started.</p>
-merge <filename>	This option prepares CADfix for the merging of batch files into a single database on import. The <filename> is the name of an existing CADfix database into which all the import files will be merged or a the name of a new database.
-exportfile <filename>	Optional argument to specify the name of the file to be exported. If not defined then CADfix will define the export filename from the imported model name with a suffix of _cf (configurable via the .cwc file) added. This option can only be used when processing one model at a time. This option does NOT work for CADDs export which creates a folder not a file.
-workingdir <directory>	Optional argument to specify the name of the working directory to be used to export model to. Exported models will be written to this directory and have the same name as the input file but with a suffix of _cf (configurable via the .cwc file) added.
-damemory <number>	Optional argument to specify the memory used by CADfix during the batch processing. The value is given in Words, for example 16777216 for 64MB and 8388608 for 32MB. This is the same as setting the memory buffer using the CADfix Preferences window in interactive mode.

6. CADfix Wizard Control File (.cwc)

The cwc file controls the operation of the CADfix Wizard automatic processing during the batch run. Options exist for the CADfix Import, Repair, Transform, Prepare and Export processes.

The cwc file allows you to specify the operations that should be performed, set any fixed tolerances and processing options required, specify export options and export file names.

The individual stages of the CADfix translation process can be turned on or off. For example the 'Prepare for Export' stage can be set ON:

```
prepare [0, 1] : 1
```

or turned OFF by changing the 1 to a 0:

```
prepare [0, 1] : 0
```

As well as controlling whether or not an individual process is run, the cwc file also gives access to the Wizard processing options for each stage. The following extract from a cwc file shows the Wizard options that are available for the Repair stage:

```
repair [0, 1] : 1
repair,maxTol [DEFAULT, value] : DEFAULT
repair,buildOption [SOLIDS, FACES, SOLIDS+FACES, UNKNOWN] : UNKNOWN
repair,boundUntrimmed [AUTO, ALWAYS, NEVER] : AUTO
repair,approximateSurfaces [0, 1] : 0
repair,allowVoids [0, 1] : 0
```

A cwc file can be modified to customise the batch process for specific customer application requirements as necessary. For example, the batch process could be set to stop if a solid body is not constructed during the initial repair stage, or it may be set to continue to prepare and export regardless of the repair result.

It is not recommended that customers manually edit the cwc file.

A cwc file should be supplied by TranscenData to meet the specific model processing requirements as determined during discussions about your specific CADfix application and the desired integration. A series of cwc files may be supplied for use in different usage scenarios.

An example cwc file is included in appendix 1 of this document.

7. Files Generated During a CADfix Batch Run

This section lists the files that are likely to be created during a CADfix batch run.

Batch Run Log - e.g. batch12683.log

Overall batch run log file giving a brief summary for each model processed during the run. This is the same text as normally appears in the command window during a batch run. A unique number is given for every log file generated based upon the machine process number of the batch run. The example in Appendix 2 shows the batch log file for the processing of three CAD models.

Import Log - e.g. test_IGESimport.log

Log file for the original CAD import process into CADfix. Usually only relevant if problems or failures have been encountered during the file import stage. See example in Appendix 3.

Individual Model Processing Log - e.g. test_wizard.log

Detailed log file of the Wizard processing for an individual model. Useful if a model fails to repair successfully and the user wants to review the processing undertaken. See example in Appendix 4.

CADfix Model Database File - e.g. test.fbm

CADfix binary database file for the model being processed. Could be deleted upon completion of a run or stored for opening in CADfix in a future batch run.

CADfix Model Database Backup File - e.g. test.fbm#1

Intermediate CADfix database backup file. Can usually be deleted after the run has been completed.

CADfix Command Level Log - e.g. test.fbl

CADfix command level log file. Sometimes useful information is contained in this file and would be used by Transcendata for debugging purposes, but in general this file can be deleted after the batch run is complete.

CADfix Export/Translated File - e.g. test_cf.x15

Resulting file exported from CADfix. In this case an ANSYS neutral file (.x15) has been created. The file suffix “_cf” indicates that the file was written by CADfix. The suffix used can be controlled by a cwc file option.

Appendix 1: Example CADfix CWC File

```

cwc,version                               : 810.0000

preferredUnits                             [MM, CM, M, INCH, FOOT] : MM
workSet                                    [ALL, value] : ALL
outputDirectory                            [DEFAULT, path] : DEFAULT
continueOnError                            [0, 1] : 1
saveBetweenOps                             [0, 1] : 0
saveOnExport                              [0, 1] : 0
diagnosticCheck                            [ALWAYS, FAIL, NEVER] : FAIL
qualityStandard                            [nocheck, jama45, jamaALL] : nocheck

import                                     [1] : 1

import,system                              [IGES, STEP, STL, ACIS] : IGES
import,colours                             [0, 1] : 1
import,layers                              [0, 1] : 1
import,labels                              [0, 1] : 1
import,userAttrs                            [0, 1] : 0
import,assemblies,mode                     [COMPLETE, EACH, SELECTED] : COMPLETE
import,assemblies,subpartid                [value] : NULL
import,assemblies,explode                  [0, 1] : 0
import,assemblies,emptyComponents          [0, 1] : 1
import,autoGroup,colour                    : {{apply 0} {type {}}}
import,autoGroup,layer                     : {{apply 0} {type {}} {value ANY}}
import,temporaryFiles                      [0, 1] : 1
import,convertUnits                        [OFF, MM, CM, M, INCH, FOOT] : OFF
import,scaleModel                          [OFF, value] : OFF

##### IGES Import parameters #####
import,iges,useDefaults                    [ON, OFF] : ON
import,iges,definitionEntities             [ON, OFF] : DEFAULT
import,iges,blankedEntities               [ON, OFF] : DEFAULT
import,iges,freeLines                     [ON, OFF] : DEFAULT
import,iges,freeLinesFont                  [0, 1, 2, 3, 4, 5] : DEFAULT
import,iges,constructionGeom              [ON, OFF] : DEFAULT
import,iges,linesAsNURBS                  [ON, OFF] : DEFAULT
import,iges,splitCreasedNURBS             [ON, OFF] : DEFAULT
import,iges,turningAngle                   [value] : DEFAULT
import,iges,splitClosedNURBS              [ON, OFF] : DEFAULT
import,iges,pcurves                        [PREF, GAPS, ON, OFF] : DEFAULT
import,iges,calcGoodTol                   [ON, OFF] : DEFAULT
import,iges,mergeDuplicates                [ON, OFF] : DEFAULT
import,iges,boundUntrimmed                 [ON, OFF] : DEFAULT
import,iges,completeBoundaries             [ON, OFF] : DEFAULT
import,iges,stitchFaces                    [ON, OFF] : DEFAULT
import,iges,buildBodies                    [ON, OFF] : DEFAULT
import,iges,extraAttributes                [ON, OFF] : DEFAULT
##### END #####

##### STEP Import parameters #####
import,step,freeLines                      [0, 1] : DEFAULT
import,step,freeSurfs                      [0, 1] : DEFAULT
import,step,freeFaces                      [0, 1] : DEFAULT
import,step,splitDiscontinuous             [0, 1] : DEFAULT
import,step,splitAngle                     [value] : DEFAULT
##### END #####

##### VDafs Import parameters #####
import,vdafs,freeLines                     [0, 1] : DEFAULT
import,vdafs,freeSurfs                     [0, 1] : DEFAULT
import,vdafs,freeFaces                     [0, 1] : DEFAULT
import,vdafs,splitDiscontinuous            [0, 1] : DEFAULT
import,vdafs,splitAngle                    [value] : DEFAULT
##### END #####

##### STL Import parameters #####
import,stl,mergeVertices                    [DEFAULT, YES, NO] : DEFAULT
import,stl,facettedSurfaces                [DEFAULT, YES, NO] : DEFAULT
##### END #####

##### ACIS Import parameters #####
import,acis,freeLines                      [0, 1] : DEFAULT
import,acis,freeSurfs                      [0, 1] : DEFAULT
import,acis,freeFaces                      [0, 1] : DEFAULT
import,acis,splitDiscontinuous             [0, 1] : DEFAULT
import,acis,splitAngle                     [value] : DEFAULT
##### END #####

##### DXF/DWG Import parameters #####
import,dxf,freeLines                       [0, 1] : DEFAULT
import,dxf,freeSurfs                       [0, 1] : DEFAULT
import,dxf,freeFaces                       [0, 1] : DEFAULT
import,dxf,splitDiscontinuous              [0, 1] : DEFAULT
import,dxf,splitAngle                      [value] : DEFAULT
##### END #####

```

```

##### Parasolid Import parameters #####
import,parasolid,freeLines [0, 1] : DEFAULT
import,parasolid,freeSurfs [0, 1] : DEFAULT
import,parasolid,freeFaces [0, 1] : DEFAULT
import,parasolid,units [MM, CM, M, INCH, FOOT] : MM
import,parasolid,splitDiscontinuous [0, 1] : DEFAULT
import,parasolid,splitAngle [value] : DEFAULT
import,parasolid,explodeAssembly [0, 1] : DEFAULT
##### END #####

##### CADDs Import parameters #####
import,cadds,freeLines [0, 1] : DEFAULT
import,cadds,freeSurfs [0, 1] : DEFAULT
import,cadds,pointTol [value] : DEFAULT
import,cadds,nameByPart [0, 1] : 1
##### END #####

##### CATIA4 Import parameters #####
import,catia,importNoShows [0, 1] : DEFAULT
import,catia,importNoPicks [0, 1] : DEFAULT
import,catia,importOnlyRoot [0, 1] : DEFAULT
import,catia,importOnlyMasterWorkspace [0, 1] : DEFAULT
import,catia,dittosAsAssembly [0, 1] : DEFAULT
import,catia,useAnalyticSurfs [0, 1] : DEFAULT
import,catia,freeLines [0, 1] : DEFAULT
import,catia,freeSurfs [0, 1] : DEFAULT
import,catia,freeFaces [0, 1] : DEFAULT
import,catia,splitDiscontinuous [0, 1] : DEFAULT
import,catia,splitAngle [value] : DEFAULT
import,catia,importer [value] : DEFAULT
##### END #####

##### CATIA5 Import parameters #####
import,catia5,importHidden [0, 1] : DEFAULT
import,catia5,freeLines [0, 1] : DEFAULT
import,catia5,freeSurfs [0, 1] : DEFAULT
import,catia5,freeFaces [0, 1] : DEFAULT
import,catia5,importer [value] : DEFAULT
##### END #####

##### UG Import parameters #####
import,ug,importHidden [0, 1] : DEFAULT
import,ug,freeLines [0, 1] : DEFAULT
import,ug,freeSurfs [0, 1] : DEFAULT
import,ug,freeFaces [0, 1] : DEFAULT
import,ug,units [MM, CM, M, INCH, FOOT] : MM
import,ug,importer [value] : DEFAULT
##### END #####

##### Inventor Import parameters #####
import,inventor,freeLines [0, 1] : DEFAULT
import,inventor,freeSurfs [0, 1] : DEFAULT
import,inventor,freeFaces [0, 1] : DEFAULT
##### END #####

##### SW Import parameters #####
import,sw,freeLines [0, 1] : DEFAULT
import,sw,freeSurfs [0, 1] : DEFAULT
import,sw,freeFaces [0, 1] : DEFAULT
import,sw,importHidden [0, 1] : DEFAULT
import,sw,importSuppressed [0, 1] : DEFAULT
##### END #####

##### ProE Import parameters #####
import,proe,freeLines [0, 1] : DEFAULT
import,proe,freeSurfs [0, 1] : DEFAULT
import,proe,freeFaces [0, 1] : 0
##### END #####

##### ANSYS Import parameters #####
import,ansys,freeLines [0, 1] : DEFAULT
import,ansys,freeSurfs [0, 1] : DEFAULT
import,ansys,splitDiscontinuous [0, 1] : DEFAULT
import,ansys,splitAngle [value] : DEFAULT
##### END #####

##### AGPS Import parameters #####
import,agps,freeLines [0, 1] : DEFAULT
import,agps,freeSurfs [0, 1] : DEFAULT
import,agps,splitDiscontinuous [0, 1] : DEFAULT
import,agps,splitAngle [value] : DEFAULT
import,agps,keepTempEntities [0, 1] : DEFAULT
import,agps,pcurveToXYZTol [value] : DEFAULT
##### END #####

```

```

repair [0, 1] : 0

repair,maxTol [DEFAULT, value] : DEFAULT
repair,buildOption [SOLIDS, FACES, SOLIDS+FACES, UNKNOWN] : SOLIDS
repair,boundUntrimmed [AUTO, ALWAYS, NEVER] : AUTO
repair,approximateSurfaces [0, 1] : 0
repair,allowVoids [0, 1] : 0
repair,keepUnused [0, 1] : 0
repair,deleteUnusedFaces [0, 1] : 0

transform [0, 1] : 0

transform,joinFaces,apply [0, 1] : 0
transform,joinFaces,angle [value] : 1.0
transform,joinFaces,resolution [value] : 50.0
transform,joinFaces,change [DEFAULT, value] : DEFAULT
transform,joinEdges,apply [0, 1] : 0
transform,joinEdges,angle [value] : 1.0
transform,collapse,apply [0, 1] : 0
transform,collapse,type [FACES, EDGES] : EDGES
transform,collapse,length [DEFAULT, value] : DEFAULT
transform,holes,removeHoles [0, 1] : 0
transform,holes,plugHoles [0, 1] : 0
transform,holes,type [ALL, THROUGH, BLIND, COMPLEX] : THROUGH
transform,holes,checkSize [0, 1] : 1
transform,holes,size [DEFAULT, value] : DEFAULT
transform,holes,xsect [0, 1] : CIRC
transform,holes,delete [0, 1] : 1
transform,removeSeams,apply [0, 1] : 0
transform,removeSeams,pln [0, 1] : 0
transform,removeSeams,cyl [0, 1] : 1
transform,removeSeams,con [0, 1] : 1
transform,removeSeams,sph [0, 1] : 0
transform,removeSeams,tor [0, 1] : 0
transform,deleteFilletts,apply [0, 1] : 0
transform,deleteFilletts,radmax [DEFAULT, value] : DEFAULT
transform,deleteFilletts,type [CONST, VARY] : VARY
transform,deleteFilletts,facemod [NEW, REDEF] : REDEF

prepare [0, 1] : 0

##### GenericIGES Prepare parameters #####
'Short edges' , R-ED-TI : {{apply 0}} {tol DEFAULT}}
'Tiny faces' , R-FA-TI : {{apply 0}} {areamin DEFAULT}}
'Narrow faces' , R-FA-NA : {{apply 0}} {widthmin DEFAULT}}
'Surface simplification' , R-SU-SIM : {{apply 1}} {tol DEFAULT} {type all}}
'Edge simplification' , R-CU-SIM : {{apply 1}} {tol DEFAULT}}
'Non-NURBS surfaces' , R-FA-AN : {{apply 1}}
'Non-NURBS edges' , R-ED-AN : {{apply 1}}
'Rational NURBS surfaces' , R-SU-RAT : {{apply 0}} {tol DEFAULT}}
'Rational NURBS curves' , R-CU-RAT : {{apply 0}} {tol DEFAULT}}
'High-degree surfaces' , R-SU-HD : {{apply 1}} {tol DEFAULT} {degree 5}}
'High-degree curves' , R-CU-HD : {{apply 1}} {tol DEFAULT} {degree 5}}
'Dense NURBS surface definition' , R-SU-KNT : {{apply 0}} {tol DEFAULT}}
'Dense NURBS curve definition' , R-CU-KNT : {{apply 0}} {tol DEFAULT}}
'Non-tangent patches' , R-SU-NT : {{apply 1}} {tol DEFAULT} {angle 0.1} {factor 3}}
'Non-tangent segments' , R-CU-NT : {{apply 1}} {tol DEFAULT} {angle 0.1}}
'Non-smooth patches' , R-SU-NS : {{apply 0}} {ratio 1E-009}}
'Non-smooth segments' , R-CU-NS : {{apply 0}} {ratio 1E-009}}
'Curve parameterisation' , R-CU-PCN : {{apply 0}} {condition SPEED} {rate 3.0} {tol DEFAULT}}
'Surface parameterisation' , R-SU-PCN : {{apply 0}} {condition SPEED} {rate 3.0} {tol DEFAULT}}
'Folded curves' , R-CU-FO : {{apply 1}} {tol DEFAULT}}
'Oversize surfaces' , R-FA-TRM : {{apply 1}} {percent 5}}
'Closed surfaces' , R-SU-CL : {{apply 1}} {tol DEFAULT}}
'Degenerate surfaces' , R-SU-DC : {{apply 0}} {tol DEFAULT}}
'Large edge-surface gap' , R-FA-EG : {{apply 1}} {tol DEFAULT} {lock NOLock}}
'Smooth surfaces' , R-SU-SMO : {{apply 0}} {tol DEFAULT}}
'Undersize surfaces' , R-FA-XTN : {{apply 1}} {undersize 0.9999}}
'Seamless faces' , R-FA-SEA : {{apply 1}}
'Missing surfaces' , R-FA-EMD : {{apply 0}} {tol DEFAULT}}
'Sharp edge angle' , R-LO-SA : {{apply 0}} {angle 2.0}}
'Unshare' , R-MO-POP : {{apply 0}}
##### END #####

export [0, 1] : 0

export,system [GenericIGES, IGESforIDEAS12..] : GenericIGES
export,fileSuffix [value] : _cf
export,fileExtension [DEFAULT, value] : DEFAULT
export,always [0, 1] : 0
export,restoreModel [0, 1] : 1
export,sendLabels [OFF, NAME, XASG, TYPART, COMBO] : XASG
export,sendColours [OFF, ON] : ON
export,sendLayers [OFF, ON] : ON
export,sendUserAttrs [OFF, ON] : ON
export,sendGeomForm [OFF, XASG, AUTO] : OFF

```

```
##### GenericIGES Export parameters #####
export,iges,minres                [DEFAULT, value] : DEFAULT
export,iges,mode                  [TRIM, BOUND, BREP] : TRIM
export,iges,pcurves               [ON, OFF, ONLY]  : PDUMMY
export,iges,pcurvefit             [LINEAR, CUBIC, BEST] : CUBIC
export,iges,form                  [OFF, ANA, SOR]   : SOR
export,iges,shapeTrim             [ON, OFF]       : OFF
export,iges,defColour             [OFF, K, B, G, C, R, M, Y, W] : R
export,iges,dirLabel              [ON, OFF]       : OFF
##### END #####
```

Appendix 2: Example of a CADfix Batch Log File for Multiple Model Processing

```
#####
##                                     ##
## Record of batch job started at 13:56 11 Jul 2011           ##
##                                     ##
## Batch files:                                               ##
##   C:/users/arc/Benchmarks/CTIF/test.igs                    ##
##   C:/users/arc/Benchmarks/CTIF/lid.igs                     ##
##   C:/users/arc/Benchmarks/CTIF/housing.igs                 ##
##                                     ##
#####
```

```
Importing model:
  C:/users/arc/Benchmarks/CTIF/test.igs
```

```
Processing model:
  C:/users/arc/Benchmarks/CTIF/test.fbm
```

```
Repairing...
```

```
Preparing...
```

```
Exporting geometry (ANSYS)...
```

```
Geometry exported to file:
  C:/users/arc/Benchmarks/CTIF/test_cf.x15
```

```
Updated model saved to:
  C:/users/arc/Benchmarks/CTIF/test.fbm
```

```
Log file written to:
  C:/users/arc/Benchmarks/CTIF/test_wizard.log
```

```
Model processing complete
```

```
Total elapsed time: 00:00:40
```

```
-----
```

```
Importing model:
  C:/users/arc/Benchmarks/CTIF/lid.igs
```

```
Processing model:
  C:/users/arc/Benchmarks/CTIF/lid.fbm
```

```
Repairing...
```

```
Preparing...
```

```
Exporting geometry (ANSYS)...
```

```
Geometry exported to file:
  C:/users/arc/Benchmarks/CTIF/lid_cf.x15
```

```
Updated model saved to:
  C:/users/arc/Benchmarks/CTIF/lid.fbm
```

```
Log file written to:
  C:/users/arc/Benchmarks/CTIF/lid_wizard.log
```

```
Model processing complete
```

```
Total elapsed time: 00:01:09
```

```
-----
```

```
Importing model:
  C:/users/arc/Benchmarks/CTIF/housing.igs
```

```
Processing model:
  C:/users/arc/Benchmarks/CTIF/housing.fbm
```

```
Repairing...
```

```
Preparing...
```

```
Exporting geometry (ANSYS)...
```

```
Geometry exported to file:
  C:/users/arc/Benchmarks/CTIF/housing_cf.x15
```

```
Updated model saved to:
  C:/users/arc/Benchmarks/CTIF/housing.fbm
```

Log file written to:
C:/users/arc/Benchmarks/CTIF/housing_wizard.log

Model processing complete

Total elapsed time: 00:00:33

```
#####  
##                                     ##  
## Batch job completed at 13:58      ##  
##                                     ##  
#####
```

Appendix 3: Example of CADfix IGES Import Log File

THE FILE CONTAINS IGES DATA

```

-----
* Message * SET - Y1 created
----- THE START SECTION : ---
PTC IGES file: 80007b_n.igs
-----

READING DIRECTORY ENTRY :    50
READING DIRECTORY ENTRY :   100
READING DIRECTORY ENTRY :   150
READING DIRECTORY ENTRY :   200
READING DIRECTORY ENTRY :   250
READING DIRECTORY ENTRY :   300
READING DIRECTORY ENTRY :   350
READING DIRECTORY ENTRY :   400
READING DIRECTORY ENTRY :   450
READING DIRECTORY ENTRY :   500
READING DIRECTORY ENTRY :   550
NUMBER OF DIRECTORY ENTRIES READ :    590
PROCESSING PARAMETER DATA OF ENTITY :    50, RECORD :    212
PROCESSING PARAMETER DATA OF ENTITY :   100, RECORD :    533
PROCESSING PARAMETER DATA OF ENTITY :   150, RECORD :    906
PROCESSING PARAMETER DATA OF ENTITY :   200, RECORD :   1184
PROCESSING PARAMETER DATA OF ENTITY :   250, RECORD :   1491
PROCESSING PARAMETER DATA OF ENTITY :   300, RECORD :   1825
PROCESSING PARAMETER DATA OF ENTITY :   350, RECORD :   2160
PROCESSING PARAMETER DATA OF ENTITY :   400, RECORD :   2501
PROCESSING PARAMETER DATA OF ENTITY :   450, RECORD :   2885
PROCESSING PARAMETER DATA OF ENTITY :   500, RECORD :   3247
PROCESSING PARAMETER DATA OF ENTITY :   550, RECORD :   3571
NUMBER OF PARAMETER DATA RECORDS PROCESSED :   3757
Resolving    548 forward pointer references
PROCESSING FORWARD POINTER :    50 OF TOTAL :   548
PROCESSING FORWARD POINTER :   100 OF TOTAL :   548
PROCESSING FORWARD POINTER :   150 OF TOTAL :   548
PROCESSING FORWARD POINTER :   200 OF TOTAL :   548
PROCESSING FORWARD POINTER :   250 OF TOTAL :   548
PROCESSING FORWARD POINTER :   300 OF TOTAL :   548
PROCESSING FORWARD POINTER :   350 OF TOTAL :   548
PROCESSING FORWARD POINTER :   400 OF TOTAL :   548
PROCESSING FORWARD POINTER :   450 OF TOTAL :   548
PROCESSING FORWARD POINTER :   500 OF TOTAL :   548
Resolving    510 forward pointer references
PROCESSING FORWARD POINTER :    50 OF TOTAL :   510
PROCESSING FORWARD POINTER :   100 OF TOTAL :   510
PROCESSING FORWARD POINTER :   150 OF TOTAL :   510
PROCESSING FORWARD POINTER :   200 OF TOTAL :   510
PROCESSING FORWARD POINTER :   250 OF TOTAL :   510
PROCESSING FORWARD POINTER :   300 OF TOTAL :   510
PROCESSING FORWARD POINTER :   350 OF TOTAL :   510
PROCESSING FORWARD POINTER :   400 OF TOTAL :   510
PROCESSING FORWARD POINTER :   450 OF TOTAL :   510
PROCESSING FORWARD POINTER :   500 OF TOTAL :   510
Resolving    510 forward pointer references
PROCESSING FORWARD POINTER :    50 OF TOTAL :   510
PROCESSING FORWARD POINTER :   100 OF TOTAL :   510
PROCESSING FORWARD POINTER :   150 OF TOTAL :   510
PROCESSING FORWARD POINTER :   200 OF TOTAL :   510
PROCESSING FORWARD POINTER :   250 OF TOTAL :   510
PROCESSING FORWARD POINTER :   300 OF TOTAL :   510
PROCESSING FORWARD POINTER :   350 OF TOTAL :   510
PROCESSING FORWARD POINTER :   400 OF TOTAL :   510
PROCESSING FORWARD POINTER :   450 OF TOTAL :   510
PROCESSING FORWARD POINTER :   500 OF TOTAL :   510
Resolving    218 forward pointer references
PROCESSING FORWARD POINTER :    50 OF TOTAL :   218
PROCESSING FORWARD POINTER :   100 OF TOTAL :   218
PROCESSING FORWARD POINTER :   150 OF TOTAL :   218
PROCESSING FORWARD POINTER :   200 OF TOTAL :   218
Warning 27
Unable to resolve 218 forward pointers.
DELETING TEMPORARY GEOMETRY
IGES FILE TRANSLATION COMPLETE

REPAIRING IGES MODEL
Merging points at 7.806231E-03
Number of points merged out:    303
Completing loops, gaps: 3.9E-02, on shape: 7.8E-01
Merging lines at 7.806231E-03
Warning 576:
Discontinuity at point Q114 of line U59
Warning 576:
Discontinuity at point Q110 of line U167

```

```

Number of lines deleted:      89
Number of lines merged:      89
Healing NURBS lines
89 NURBS lines healed to 1.0E-04
Orienting surfaces
...oriented surface V1
...oriented surface V2
...oriented surface V3
...oriented surface V4
...oriented surface V5
...oriented surface V6
...oriented surface V7
...oriented surface V8
...oriented surface V9
...oriented surface V10
...oriented surface V11
...oriented surface V12
...oriented surface V13
...
...
...
...oriented surface V28
...oriented surface V29
...oriented surface V30
...oriented surface V31
...oriented surface V32
...oriented surface V33
...oriented surface V34
...oriented surface V35
...oriented surface V36
...oriented surface V37
...oriented surface V38
Building bodies
... traced shell of 38 surfaces
... traced shell of 38 surfaces
... forming shells into bodies
* Message * BODY - W1 created
REPAIRING COMPLETE

303 points packed
127 lines packed
2 bodies packed
P L S B SE SH T LI PH MA CS Z TX RD CV SQ

```

Appendix 4: Example of Individual Model Wizard Log File

```
#####
##
## Wizard summary log file for model:
## C:/users/arc/Benchmarks/CTIF/test.fbm
##
## Requested operations:
## Repair : YES
## Transform : NO
## Prepare : YES (Target system - ANSYS)
## Export : YES (Target system - ANSYS)
## CADfix 8.1
#####
```

```
Importing model...

Importing file from IGES (0.382Mb)...

Reading directory entries

Processing parameter data

Resolving pointers, pass: 1
Resolving pointers, pass: 2
Resolving pointers, pass: 3
Resolving pointers, pass: 4

Deleting construction geometry

Re-establishing point connectivity

Validating face definitions

Re-establishing edge connectivity

Orienting faces

Re-establishing face connectivity

Writing model database...

Import log written to file:
C:/users/arc/Benchmarks/CTIF/test_IGESimport.log

Opening model (0.122Mb)...

Assessing model status... DONE

Elapsed time: 00:00:18

TOPOLOGICAL REPAIR

Re-assessing model size

Splitting closed NURBS surfaces
new surfaces created: 0

Checking edge connectivity
poorly connected edges found: 0
degenerate edges found: 0

Checking for unembedded faces
unembedded faces found: 0

Checking face integrity

    Healing sloppy edges

    Normalising NURBS surfaces

    Splitting closed NURBS surfaces
    new surfaces created: 0
    surfaces that failed: 0

    Fixing partially collapsed faces
    partially collapsed faces fixed: 0 (unfixed: 0)

    Fixing unclosed loops

    Orienting faces

    Checking for non-finite-area faces
    non-finite-area faces found: 0
```

```

Completed face integrity checks
Checking integrity of existing solid bodies
    Checking for voids
    voids removed: 0
    Orienting existing solid bodies
Building new solid bodies
    Failed to build any new solid bodies
Work set has been successfully repaired
Removing all unused parts
TOPOLOGICAL REPAIR COMPLETED
Elapsed time: 00:00:11
PREPARE FOR EXPORT (ANSYS)
Fixing closed NURBS surfaces
Fixing unembedded faces
Trimming back NURBS surfaces
Fixing discontinuous NURBS surfaces
Healing sloppy faces
Checking model integrity
Orienting faces
Checking for failures... DONE
Work set still contains some surfaces that are either FOLDED or TWISTED.
Bad entities placed in set BAD1.
PREPARE FOR EXPORT COMPLETED
Elapsed time: 00:00:07
EXPORT (ANSYS)
Exporting geometry...
Geometry exported to file:
  C:/users/arc/Benchmarks/CTIF/test_cf.x15
EXPORT COMPLETED
Elapsed time: 00:00:02
##### REPORT #####
MODEL      C:/users/arc/Benchmarks/CTIF/test.fbm
STATUS     PARTIAL
IMPORT     SUCCESS - Model imported from C:/users/arc/Benchmarks/CTIF/test.igs
REPAIR     SUCCESS - Model successfully repaired
TRANSFORM  NONE - Not requested
PREPARE    PARTIAL - Model partially prepared
EXPORT     SUCCESS - Geometry exported to file: C:/users/arc/Benchmarks/CTIF/test_cf.x15
##### END #####

```