



Programs available in the DELTA System

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Introduction

The DELTA format (DEscription Language for TAXonomy) is a flexible method for encoding taxonomic descriptions for computer processing. The DELTA System is an integrated set of programs based on the DELTA format. For more information, see [Overview of the DELTA System](#).

The programs were originally written for Microsoft Windows by the CSIRO Division of Entomology, and were ported by The Atlas of Living Australia (ALA) to run under Windows or Mac OS X. The ALA version is available at [Open DELTA downloads](#).

This document gives short descriptions of the programs available in the CSIRO DELTA System, and provides information on how to obtain the full documentation for each program. For an index to documentation files, see [DELTA documentation](#).

For instructions on downloading and installing Intkey (an app for interactive identification and information retrieval) or the complete DELTA System, see [Installing and running the programs of the DELTA System](#). The 'DELTA sample data', which are designed to illustrate the use of the DELTA System, are downloaded with the programs.

For the revision history, see [Revision history of the Delta System](#),

Programs for 64-bit or 32-bit Windows

'Help' for '.bat' files, other than **subroutines**, can be displayed by entering '*name* /?' in a command window, e.g. 'confor /?'.

Basic operations

confor.bat. Runs confor32.exe.

confora.bat. Runs ALA (Open DELTA) Confor.

confor32.exe. Translates DELTA format into other formats. Documented in [User's guide to the DELTA System](#).

The 'sample' folder contains many examples of Confor directives files, including:

check. Check the characters and items files.

omitrtf. Produce new DELTA-format files, omitting RTF marks and inserting implicit values.

printc. Print the character list as plain text.

- printch.** Print the character list as HTML. Example:
delta-intkey.com/citeswood/de/www/charsx.htm (CITESwoodID: Beschreibungen, Illustrationen, Identifikation, und Abruf von Informationen).
- printer.** Print the character list as RTF.
- printir.** Print the DELTA-format descriptions (items) as RTF.
- printn.** Print the taxon names as plain text.
- printnr.** Print the taxon names as RTF.
- summary.** Print a summary of character values in the data matrix.
- todis.** Translate into Dist format (for generating distance matrices).
- tohen.** Translate into Hennig86 format (for cladistic analysis; see web.archive.org/web/20160416033356/www.cladistics.org/education/hennig86.html).
- toint.** Translate into Intkey format (for interactive identification and information retrieval).
- tokey.** Translate into Key format (for generating conventional identification keys).
- tonat.** Translate into natural language as plain text.
- tonatd.** Translate into natural language as plain text – diagnostic descriptions.
- tonath.** Translate into natural language as HTML, with a separate file for each taxon. An index file is also produced. Example: delta-intkey.com/anatox/index.htm (*Anastrepha* and *Toxotrypana*).
- tonatr.** Translate into natural language as RTF.
- tonatsr.** Translate into natural language as RTF, with a separate file for each taxon.
- tonatsrd.** Translate into natural language as RTF, with a separate file for each taxon – diagnostic descriptions.
- tonex.** Translate into Nexus format (for cladistic analysis; see en.wikipedia.org/wiki/Nexus_file).
- uncoded.** Print a list of unrecorded characters for each taxon.
- conforqw.bat.** Used by the DELTA Editor to run confor32.exe.
- dataver.bat.** Updates data release date in ‘markhtm’, ‘toint’, and ‘tonath’. May be invoked by runall.bat (q.v.).
- dateuu.exe.** Obtains the current date. The program is ‘date.exe’ from UnxUtils (sourceforge.net/projects/unxutils/), renamed to avoid conflict with the standard Windows command ‘date’. Enter ‘dateuu --help’ for help.
- delta.exe.** DELTA Editor. GUI for editing DELTA data, and running Confor, Dist, and Key. Documented in *User’s guide to the DELTA Editor*, which also contains an introduction to using the DELTA System. DELTA text files, such as ‘specs’, ‘chars’, and ‘items’, can also be edited directly in any text editor, and the programs can be run in a command window – see *Installing and running the programs of the DELTA System*.
- dist.bat.** Runs dist32.exe.
- dist32.exe.** Generates a distance matrix for phenetic analysis. Documented in *User’s guide to the DELTA System*.
- distqw.bat.** Used by the DELTA Editor to run dist32.exe.
- findprog.bat.** Displays the location of an executable file on the ‘path’.
- getimages.bat.** Downloads the complete set of character and taxon images for a dataset.
- intkey.bat.** Runs intkey5.exe. For example, in a command window in the folder ‘\delta\sample\’, ‘intkey my.ink’ opens the personalized initialization file ‘my.ink’.
- intkey5.exe.** App for interactive identification and information retrieval. The app has built-in help, which is also available in *User’s guide to Intkey*. For more information and examples, see *Intkey example: differences*, *Intkey example: identification*, *Butterflies and moths: demonstration of an interactive key*.
- itemnames.bat.** Copies complete item names, optionally including the delimiters, from ‘items’ to ‘names.txt’.
- jfif.bat.** Adds JFIF tags to .jpg files.
- key.bat.** Runs key32.exe.
- key32.exe.** Generates conventional (printed) keys. Documented in *User’s guide to the DELTA System*. For an example, see *Insects of Britain and Ireland: the families of Coleoptera – conventional key*.
- keyqw.bat.** Used by the DELTA Editor to run key.exe.
- lcase.bat.** Converts file names in the current or specified directory to lower case.

lcaser.bat. Converts file names in the current or specified directory to lower case, except for certain file types, e.g. '.doc' '.pdf'.

listpath.bat. Lists, one component per line, the contents of an environment variable whose components are separated by ';'. For usage, enter 'listpath /?'.

noarc.bat. Clears archive attribute for files in various subfolders: www, info, etc..

omitimplicit.bat. Removes implicit values that have been explicitly coded.

sample.bat. Copies files from the DELTA sample data to the current folder.

sortnames.bat. Produces a sorted list of taxon names in file 'sortednames.txt'.

sleep.exe. Pauses a batch program for a specified number of seconds.

to.bat. Changes the default folder. The name of the new folder is obtained by concatenating a name taken from the environment variable 'cdpath' and the name specified on the command line. If the variable 'cdpath' is not defined, it is set to '.;.;\.'

Example. If 'cdpath' contains '.;.;\tx;\tx\britin;D;E;', then 'to col' changes to the first folder found in the list

```
.\col
..\col
\col
\tx\col
\tx\britin\col
D:\col
E:\col
```

Set the environment variable 'cdpath' as follows.

Close any command windows that are open. Open the Control Panel.

- *In Windows XP:* choose 'System'; in the 'System Properties' dialog, select the 'Advanced' tab.
- *In later versions of Windows:* choose 'System and Security > System > Advanced System Settings', and supply administrator login information if prompted.

Click 'Environment Variables'. In the 'System variables' box, click 'New' (or, if 'cdpath' is already defined, select it and click 'Edit'). Enter 'cdpath' in the 'Variable name' box, and in the 'Variable value' box, enter the required folders, separated by semicolons. Always include the 'DELTA' folder (usually 'c:\delta') to allow easy access to the sample data.

To check that 'cdpath' has been correctly set, open a command window, and enter the DELTA command 'listpath cdpath'. You should see a listing of the 'cdpath' environment variable, with one item per line. Also, try 'to sample'. This should take you to the DELTA sample data.

tsv2del.bat. Converts a file of tab-separated values to a DELTA items file.

unzip.exe. Unzipping program by Info-ZIP (infozip.sourceforge.net). For usage summary, enter 'unzip -?' (note '-', not '/'). For complete help, see 'unzip.txt'.

uz.bat. Unzips a zipfile, and then deletes it.

uzip.bat. Unzips a zipfile.

zip.exe. Zipping program by Info-ZIP (infozip.sourceforge.net). For usage summary, enter 'zip -?' (note '-', not '/'). For complete help, see 'zip.txt'.

zipdir.bat. Zips data files into a zipfile whose name includes the current date. Use for backup, and for sending files to collaborators.

Automated operations

These programs automate various operations, such as generating Web packages, so that they can be carried out easily and quickly. However, they are not essential. The operations can be carried out 'manually' by running 'Actions' in the DELTA Editor or in a command window, and zipping files as necessary.

General programs

General versions of these programs are in the main DELTA folder (usually C:\delta). They will be suitable for most datasets, but if a special version is needed, copy the general version from the DELTA folder to the data folder, and edit the copy as necessary.

finish.bat. Copies general files to Confor output folders, clears archive attributes in those folders, deletes temporary files, and converts file names to lower case. Called by runall.bat, which is specific to each data folder.

webadd.bat. Generates lists of files required for the components of a Web package. Called by webgen.bat.

webgen.bat. Prepares distribution files for a Web package.

Special programs

These programs require special versions for each dataset. For examples, see the DELTA sample data, normally in 'C:\delta\sample\'. The 'sample' versions can be adapted to other datasets – see comments in the files.

natreord.bat (32-bit Windows only). Generates descriptions with a different character order.

runall.bat. Runs all action sets (directives files) required for distribution of the dataset on the Web.

If there is a parameter (e.g. 'runall x'), the revision date is set to the current date.

webnam.bat. Sets dataset name and folder names for uploading a DELTA Web package. Called by webgen.bat.

Programs for 32-bit Windows only

confor16.exe. Original version of Confor, previously named 'conforqw.exe'.

delfor.exe. Data-maintenance program, superseded by the DELTA Editor. Documented in [User's guide to the DELTA System](#).

Delfor can still be useful in some circumstances, e.g. to apply the same character reorder to separately maintained subsets of the data, or to apply different reorders temporarily. For examples of directives files, see files 'reorder', 'tidy', and 'natord1' in the 'sample' folder.

dismis.bat. Removes 'misinterpreted' states from an 'items' file.

dist16.exe. Original version of Dist, previously named 'distqw.exe'.

features.bat. Extracts 'features' from a DELTA characters file 'chars' in the current folder.

intimate.bat. Runs intimat5.exe.

intimat5.exe. Image-annotation program, superseded by the DELTA Editor. Documented in [User's guide to the DELTA System](#).

key16.exe. Original version of Key, previously named 'keyqw.exe'.

movenew.exe. After running Delfor, renames 'current' files to 'old', and 'new' files to 'current'.

nex2del.bat. Converts a Nexus data matrix to a DELTA items file.

notckey.bat. Removes from the items file values not used for conventional keys.

nsim.exe. Lists nearest neighbours of taxa. Documented in [DELTA classification programs](#).

omitimp.bat. Removes explicitly recorded, 'implicit' attributes from an 'items' file, except for attributes containing other states or comments.

pclass.exe. Agglomerative clustering. Documented in [DELTA classification programs](#).

reorditm.bat. Reorders an 'items' file.

summge.bat. Generates genus descriptions by summarizing species descriptions.

summsp.bat. Generates species descriptions by summarizing specimen descriptions.

ted.exe. A text editor. Ted 'box programs' (macros or scripts, file extension '.box') are used in several '.bat' files.

transnt.exe. Converts Dist output to the format used by the NTSYS-pc package. Authors Juan Elvira and Antonio G.-Valdecasas. For more information, see 'transnt.txt'.

The program prompts for the names of the input and output files, and for various parameters. Press 'Enter' to move to the next input field.

Subroutines

These are called by other '.bat' programs, and are not usually run directly by the user. They all run in 64-bit or 32-bit Windows. For usage, see comments in the files.

addfil_.bat. Checks existence of a file, and appends its name to a temporary file.

checkdate_.bat. Checks a date and fills in missing parts.

checkfile1_.bat. Checks whether a single file exists.

chkdiq_.bat. Checks existence of a folder (without message if not found).

chkdir_.bat. Checks existence of a folder, and displays a message if not found.

chkfil_.bat. Checks existence of a file, and displays a message if not found.

chkfiq_.bat. Checks existence of a file (without message if not found).

chkw32_.bat. Checks for 32-bit Windows.

chkwmi_.bat. Checks for WMIC.

copfil_.bat. Checks existence of a file and folder, and copies the file to the folder. If the copy succeeds, a message is displayed.

copfiq_.bat. Checks existence of a file and folder, and copies the file to the folder. If the copy succeeds, no message is displayed.

copfsd_.bat. Checks existence of a file and folder, and copies the file to the folder. If the copy succeeds, no message is displayed.

currentpath_.bat. Gets the current path and subfolder.

getinn_.bat. Prompts user; default response is 'No'.

getiny_.bat. Prompts user; default response is 'Yes'.

getlongdate_.bat. Gets the current date in the format 'd MMMM yyyy', e.g. '2nd July 2016'.

jrepl.bat. Carries out a regular-expression search and replace in a file. Documented in 'jrepl.txt'. Author Dave Benham.

lowercase_.bat. Converts a string to lower case.

showfilenamesize_.bat. Display a file name (name+type) and size.

showfilepathsize_.bat. Display a full file name (drive+path+name+type) and size.

today_.bat. Gets the date for today or yesterday, depending on the current hour. The purpose is to allow the day's work to be associated with the same day (within reason), regardless of whether one has worked past midnight.

updver_.bat. Updates version date in a text file.

webdataexc_.bat. Sets variable 'webdataexc' containing the name of the exclusion file for generating the zipfile for the DELTA-format data files. Called by webgen.bat.

webink_.bat. Generates intkeyw.ink, the Web form of intkey.ink.