

***IMS***  
***to***  
***dL4***  
***Converter***

**Dynamic Concepts' suite of conversion utilities for those migrating from  
IMS to dL4™**

The IMS Converter requires **dL4** version **5.2.1** or higher. Contact Dynamic Concepts if a **dL4** upgrade is required.

**WARNING:** Before performing a conversion of any IMS data or program files, perform a full backup of these files. The IMS Converter will make changes directly to these files. The IMS Converter will change the IMS files **IN PLACE**; the existing IMS programs and data files will be permanently changed.

## **IMS Converter Installation**

To install the IMS converter, perform the following steps:

1. Login as the user that will be performing the conversion or as "root" if the conversion tools will be shared by multiple users.
2. Copy the distribution file (such as "FF\_ims2dl4\_1.7.2.Z") to any directory of your choice. If you are logged in as "root" to perform a shared installation, copy the distribution file to /usr/lib.
3. Select the directory from step 2 as the current directory using the "cd" command:

```
cd directory
```

4. If the distribution file has a ".Z" extension, uncompress the file using the command "uncompress filename.Z". If the file has an extension of ".z", rename the file with an uppercase "Z" before uncompressing the file.
5. Unpack the distribution file using the command "cpio -imcdv <filename". If an error message is displayed, try using the command "cpio -imdudv <filename" or, if that command fails, "cpio -imdudvHodc <filename".
6. Delete the distribution file or move it to a backup directory.

These steps create a subdirectory named "ims2dl4" and unpack the converter files into that directory.

## IMS to dL4 Conversion

To convert IMS data or program files, enter dL4 SCOPE and run the IMS program:

```
$ scope
.
.
.
# ims2dl4/ims
```

The IMS Conversion Menu, as shown below, should now be on the screen.

```
          M a s t e r   M e n u
"IMS/BASIC" to "dL4" Conversion Package 1.7.2
-----
```

Prog#	Prog. Name	Program Description
-----	-----	-----
00		Exit IMS/BASIC Conversion Package
01	IMSXFER	Convert Formatted/Contiguous/Indexed Files
02	IMSSAVE	Save Text Files as BASIC Programs

Desired selection ? \_\_

Enter the desired program number (Prog#) to invoke the correct conversion utility. Each individual conversion program has its own help screen(s). Once you have entered a program, type '?' to call the help screens.

### Program #00 - Exit

Enter '00' to exit the IMS Converter and return to the **dL4** scope prompt (#).

### Program #01 - IMSXFER

**IMSXFER:** Convert Formatted, Contiguous, and Indexed Files

**WARNING:** IMSXFER WILL CONVERT, NOT COPY, ALL IMS DATA FILES. IT IS STRONGLY SUGGESTED THAT A BACKUP BE DONE BEFORE ANY CONVERSION.

NOTE: IMS filenames ending with the '@' symbol will be modified by IMSXFER. The utility will strip off the '@' symbol so that the resulting filename can be recognized by **dL4**.

IMSXFER is used to scan a directory, converting all (or selected) IMS/BASIC files to dL4 files. Any file which is not an IMS formatted, contiguous, or indexed file is silently ignored. There are two different ways to run IMSXFER:

1. Enter all switches and options on one line at the main prompt.
2. Press [RETURN] to convert all IMS files in the current directory.

When using the former, you must specify the directory containing the files to be converted (e.g. "/usr/data/3"). Other switches and options as shown below can also be included.

Note that any filenames containing upper-case characters are converted to all lower-case characters.

### Theory of Operation:

FORMATTED files are converted to equivalent dL4 formatted files using the format map in the file's header.

CONTIGUOUS files are converted by simply overwriting the IMS file header with an equivalent dL4 file header.

INDEXED files are converted by copying all data records, copying all keys, and then deleting those data records not in-use. For non-bit-mapped files, there will be additional unused records under dL4; namely, all records which were occupied by index blocks under IMS.

The resulting converted files have a <J> attribute if they contain IMS BCD numbers, or a <Q> attribute if they contain IRIS BCD numbers.

The /U option can be used to convert only in-use records in indexed files, reassigning data record numbers and thereby compressing the file. This option can be used only when the indexed files are known to follow the traditional layout; i.e. all keys point to data records in the same file, all in-use records are pointed to by at least one key, and no significant data exists in deleted records.

**Exception:** The /U option has no effect on index-only or record-only files. For such files, the current record numbers of the keys or records are preserved regardless of /U.

The /S option should be used to convert files that contain IRIS string data if IMS was being used in the "strip 8th bit of characters" mode. If that mode was used, files may contain a mix of character data with some original data fields containing IRIS ASCII (high bit on) and other fields containing normal 7-bit ASCII. If such files are converted without the /S option, the string data will appear to be corrupted.

**NOTE:** If converting IMS revision3 indexed files, IMSXFER must guess at the block size (BUFSIZ) and long-alignment (LONGALIGN) of the native CPU based on the contents of each file. If these values are known, it is best to patch them into IMSXFER (see program comments). Valid values for BUFSIZ are 512, 1024, 2048, or 4096. LONGALIGN should be 1 if 'long's are aligned on 4-byte boundaries, or 0 for no alignment.

### Command examples:

```
/usr/data/1: (AP.*)  
/usr/data/files: /C /L=errorlog
```

### General format:

IMSXFER dir: <switches>

dir: Convert files in directory "dir"  
/A Ignore high bit (0x80) in all string data  
/8 Use ANSI character set in converted files  
/C Confirm each file before transfer  
/F-file Read key filter definitions from "file"  
/H or ? These instructions  
/L Output to printer "\$LPT"  
/L=\$file Output to device "\$file"  
/L=file Create and output to "file"  
/S Ignore high bit (0x80) in IRIS string data  
/U Convert in-use records only (indexed files)  
(abc\*) Transfer files beginning with "abc"  
(\*xyz) Transfer files ending with "xyz"  
(ab\*z) Transfer files beginning with "ab" and ending with "z"  
(\*ijk\*) Transfer files containing "ijk"  
Up to 10 different filename selections are permitted

## **Program #02 - IMSSAVE**

**IMSSAVE:** Multi-File LOAD and SAVE of Text Files

IMSSAVE creates a command file as "IMSSORT"+<port#>, containing a LOADSAVE command for each file. There are two different ways to run IMSSAVE:

1. Enter all switches and options on one line at the main prompt.
2. Press [RETURN] for individual prompts on the commonly-used options.

When using the former, you must specify the source directory containing the text files (e.g. "/usr/ims/src") and the destination directory to contain the saved BASIC programs (e.g. "/usr/pgms/3"). Other switches and options as shown below can also be included.

If using individual prompts, you will be asked separately to enter the source and destination directories, as well as some other commonly-used switches.

The source directory will be scanned for all text files containing BASIC programs and the command file generated. At the end of the scan, the command file is automatically executed. By default, it is assumed that any include files reside in the source directory. Before running the converted programs, the dL4 library file "ims2dl4/imscalls.lib" should be copied to the destination directory.

The /N option can be used to select only those text files that have line numbers. This option is normally used when the source directory contains a mix of program source files with line numbers and non-program source files that do not contain line numbers.

The /S option is used to convert IMS source text files to dL4 source text files rather than dL4 program files.

### **Command examples:**

```
/usr/ims/src:-/usr/pgms/1: (AP.*)  
/usr/ims/src:-/usr/progs: /R /L=errorlog
```

### **General format:**

IMSSAVE src:-dest: <switches>

src:-dest: Transfer files from directory "src" to directory "dest"  
/C Confirm each file before transfer  
/H or ? These instructions  
/L Output to printer "\$LPT"  
/L=\$file Output to device "\$file"  
/L=file Create and output to "file"  
/N Source files have line numbers  
/R Replace destination file if it already exists  
/S Perform source-to-source conversion  
(abc\*) Transfer files beginning with "abc"  
(\*xyz) Transfer files ending with "xyz"  
(ab\*z) Transfer files beginning with "ab" and ending with "z"  
(\*ijk\*) Transfer files containing "ijk"  
Up to 10 different filename selections are permitted

