

Chapter 7

Mac-to-Windows Bank Converter

The Mac-to-Windows Bank Converter is designed to assist users and bank providers in migrating LXR•TEST 5.0 and 5.1 Macintosh question banks to Windows. LXR•TEST for Macintosh has been around for many years (since 1986 to be exact), and there exists a large number of banks for the Mac. These Mac banks are a valuable source of content for Windows users. Although the Converter currently supports migration only from the Mac to Windows, it is envisioned that future versions LXR•TEST may support bi-directional bank conversion—or require no separate conversion at all.

This Bank Converter chapter is organized in four sections:

Installation instructions on installing and setting up the software.

Overview general information about the conversion process.

Tutorial step-by-step guide to building an interactive test and extracting scoring data.

Reference a quick access to the commands and features.

Installation

System Requirements The *Mac-to-Windows Bank Converter* is designed to operate on any IBM/Compatible PC that is supported by LXR•TEST 5.0 or 5.1 for Windows.

Installing the Software The *Mac-to-Windows Bank Converter* is stored in a compressed format on a separate Converter disk. During

the installation, the files are expanded and copied to your hard drive. Approximately 1 megabytes of disk storage is required.

Note: LXR•TEST must be installed prior to installing the Converter. The converter then must be installed in the same directory as your LXR•TEST program. The default directory is C:\LXRT-EST. If you have placed your LXR•TEST program elsewhere, you will need to install the Converter in that same directory.

1. Start Windows as you normally would.
2. Insert the Program Disk into your disk drive. Within the Windows Program Manager, **choose Run...** from the File menu. Enter “B:SETUP” in the Command Line box. **Click OK.** (Substitute “A:SETUP” if you are installing from your A: drive.)
3. Follow the instructions presented in the setup dialogs and press Continue to proceed with the installation. When finished, you will **click OK** to return to Windows. (The setup program creates a logfile.out file that indicates the location of each file placed on your system.)

Overview

Why Conversion in the First Place? Although the *overall* structure of question banks (where and how things are stored) are identical between Mac and Windows, there some *detail* differences. Most of these are due to inherent differences between the two operating environments. For example, on a Macintosh, a “PICT” type graphic may be stored at a certain location in a question. Since the Windows operating system does not recognize a “PICT” type graphic (rather it has its own graphic types), these graphics need to be converted so they can be displayed and printed. Also, text fonts, tabs and rulers are handled somewhat differently between the two systems. The Converter is designed to resolve such differences as much as possible and make the necessary question bank changes for use with LXR•TEST for Windows.

Note: LXR•TEST/Mac 5.0 and 5.1 score, student lookup and grading table files require NO conversion. These files may be moved from Mac to Windows and directly used by LXR•TEST/Win-

dows.

LXR•TEST Question Bank Files The question bank files themselves can be moved directly from the Mac to your Windows computer—either by disk or over a network. The Converter operates directly on the existing Mac file. The only requirement is that the Mac question bank must be in LXR•TEST 5.0 or later format.

Text Conversion The Converter performs all the necessary translation of fonts, sizes, styles, rulers and tabs for all question text. If the Mac bank you are converting uses the standard set of TrueType fonts that come with a Mac system, the TrueType fonts that come with your Windows 3.1 should be sufficient. However, if specialized fonts were used in the Mac bank, then these typefaces would need to be available for Windows. Alternatively, you may need to instruct the Converter to substitute a different Windows font for the Mac font. Font substitution is discussed in detail in the reference section.

Graphics Conversion If the Mac bank you are converting has any *graphics*, you have several choices to consider. You may choose to use the built-in graphics conversion software which is integrated with the Converter or you may use one or more third-party graphics conversion software tools which directly interface with the Converter.

Note: If your graphics exist in a TIFF format within your Mac question banks, no conversion is necessary from Mac to Windows under version 5.1.

The graphics issue primarily is one of getting Mac PICT graphics to a graphic format supported by Windows. The PICT graphics format is really a “meta-format”—that is, it can contain both “bitmap” and “object” images. Bitmap and object graphics are sometimes referred to as “raster” and “vector.” Basically a bitmap image is one that consists of a series of “dots” (generated by “paint” programs). An object image is one that is represented algebraically (generated by “drawing” programs). Why do you care? You may care because some third party graphics conversion tools may operate better with one graphic type than with another. You may also care because the quality and size of your images can vary dramatically depending on the type of graphics that are being converted and method of conversion being used.

Built-in Graphics Conversion The Converter includes built-in software (Accusoft™) that will convert LXR•TEST *bitmap* PICT graphics to Windows-compatible DIB (Device Independent *Bitmap*) graphics. It will not convert object PICT graphics. Since you may not know whether the Mac PICT graphics are in bitmap or object format, we introduced an LXR•TEST/Mac export option to convert all graphics to a bitmap format which can be accommodated by the Converter. This export (bitmap) option is available only with a LXR•TEST/Mac 5.0.8 or later revision. If you use the export bitmap option, you will have a choice of 72, 144 or 300 dots per inch resolution. A higher resolution setting will provide greater graphic detail but consume more disk space (e.g. result in larger question bank files).

LXR•TEST 5.0.8/Mac Export Dialog

Check only when using the built-in (Accusoft) graphics converter

Converts non equation graphics to bitmap (exporting to use under Windows)

Do NOT check if using MathType on Windows

Sets image resolution when converting pictures to bitmaps (exporting to use under Windows)

The Converter also has the option to extract each graphic and copy it as a separate file into a picture directory (*bank.pf*) where “*bank*” is the name of the Windows bank. The Converter will place graphic markers in the question edit boxes to identify the number of the picture that needs to be converted and pasted. For example, the first picture file will be named “PICT001.PCT” and the number “001” will be placed

in a picture frame in each item. If you choose to convert these graphics later, you will need to convert these Mac PICT images and manually repaste them in the new Windows question bank at the proper locations.

Third-Party Graphics Conversion The Converter also currently interfaces to three different third-party products which perform graphics translation: Graphic Tools!TM, ImagePalsTM and HiJaakTM. LXR•TEST supports three primary graphic formats under Windows: TIFF, DIB and WMF (Windows Meta-File). Only the WMF format provides a true *object* graphic format (similar to PICT on the Mac). For some graphics the WMF format provides both superior quality and reduced graphic sizes.

The following table provides additional information on supported graphic conversion tools:

Product	Contact	Notes
Accusoft™	Logic eXtension Resources Voice: (909) 980-0046 Fax: (909) 987-8706	<ul style="list-style-type: none"> • Built-in to the Converter (no additional purchase required). • Converts <i>bitmap</i> PICTs to <i>DIB</i>. (LXR Note: Fast, accurate conversion of <i>bitmap</i> (only) PICTs to <i>DIB</i>. Requires that Mac bank be exported as “bitmap” using LXR•TEST/Mac 5.0.8 or later.)
Graphic Tools!™	DeltaPoint Voice: (408) 375-4700 Fax: (408) 648-4000	<ul style="list-style-type: none"> • Must be purchased and installed separately. • Converts <i>both bitmap and object</i> PICT formats to <i>WMF</i>. (LXR Note: This is the only product that currently offers direct conversion of <i>all</i> PICTs to the <i>WMF</i> (object) format. Excellent graphic conversion fidelity, small bank sizes, good conversion speed.)
ImagePals™	U-Lead Systems, Inc. Voice: (310) 523-9393 Fax: (310) 523-9399	<ul style="list-style-type: none"> • Must be purchased and installed separately. • Converts <i>both bitmap and object</i> PICT formats to <i>DIB</i>. (LXR Note: Good, fast conversion of <i>all</i> PICTs to <i>DIB</i>.)
HiJaak™	Inset Systems Voice: (203) 740-2400 Fax: (203) 775-5634	<ul style="list-style-type: none"> • Must be purchased and installed separately. • Converts <i>both bitmap and object</i> PICT formats to <i>DIB</i>. LXR Note: The traditional DOS and Windows graphic conversion tool. Somewhat slower than others.

Note: LXR has chosen leading graphic conversion vendors to provide the best possible translation of your Mac graphics to windows-compatible graphics. However, the results of graphics translation will vary depending on your specific graphics and the

graphics conversion program you've selected. Regardless of the fidelity of the conversion, you will need to review—and likely edit—some of the graphics after the conversion. If you have specific feedback regarding how a graphic is converted by a third-party product, you should contact that graphics conversion software vendor. If you have any other questions or suggestions regarding the Converter itself—or the Converters built-in converter (Accusoft), you should contact LXR.

Equation Conversion If the Mac bank you are converting has any equations created by MathType, you will want to also have the MathType 3.0 (or later) program installed on your Windows computer. If the Converter finds MathType on your Windows computer—and encounters any MathType equations during the conversion—the Mac-based equation will be directly translated to a Windows-based equation editable by MathType for Windows. If MathType is not found on your Windows machine, all equations are treated just like any other Mac graphic.

Note: The LXR Converter uses the MathType server to convert MathType equations in Mac format to MathType equations in Windows format. Before using the Converter, start the MT Server and make sure the delay option is set to “Forever.”

For additional information on MathType contact your LXR•TEST dealer or:

Design Science: Voice: (310) 433-0685, Fax: (310) 433-6969.

Movie Conversion In order to use a Mac QuickTime™ movie in Windows, the movie must have been saved in a special format before being transferred to your Windows computer. To do this, you will need to run the Apple Movie Converter program on a Mac (in the Apple QuickTime Starter Kit) and save the movie with the “*Make movie self-contained*” radio button selected and “*Playable on non-Apple computers*” checked.

Unlike graphics, movies are not stored directly within the item itself. Rather, each movie is stored in a separate file. Each item in a question bank that contains a movie, stores a path name reference to the external movie. When the Converter encounters a movie reference

within an item, it changes the reference to a subdirectory name of “QTMOVIES” within the current bank directory. In other words, after conversion, LXR•TEST will expect all movies used by the bank to be in a subdirectory called “QTMOVIES”—not anywhere else. For example, if you have a bank in a directory called “C:\LXRTEST\SAMPLES”, the movies for the bank must be placed in a subdirectory called “C:\LXRTEST\SAMPLES\QTMOVIES” (converter does not place movies).

Tutorial

This tutorial will guide you through the basic process of converting a Mac question bank file to a Windows question bank. You need to have access to a Mac question bank file in LXR•TEST 5.0 format to complete this tutorial.

Note: There are many ways to get a Mac bank to your Windows computer depending on your configuration. For those with networks that connect both Macs and PCs, you simply need to copy the bank from a Mac on your network to your PC. If you don't have access to such a network, you may use Apple File Exchange on a Mac and transfer the Mac bank to a DOS formatted disk. Then take this disk to your PC. Remember DOS limitations in file naming conventions. LXR•TEST uses the “.BNK” file extension to identify its banks in Windows.

1. Copy a Macintosh question bank file to your PC's hard disk.

Tip! If you attempt to convert the Mac file directly from your floppy disk your conversion time will increase dramatically! Place the bank on your hard disk for better performance.

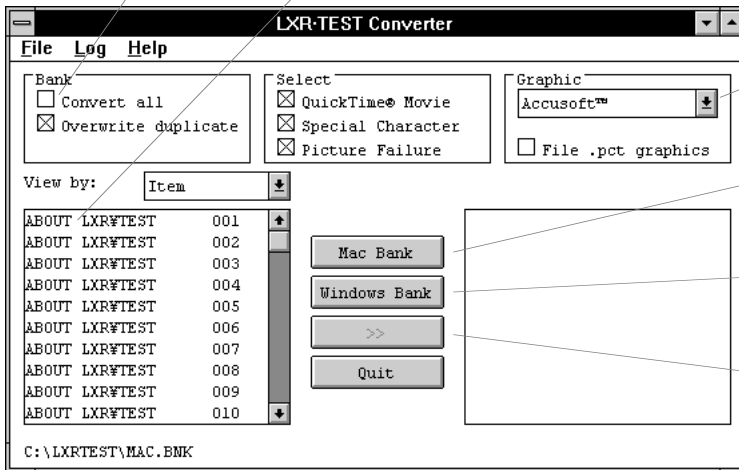
2. Confirm that you have enough disk space to create an updated copy of your bank. The newly converted Windows bank will be at least as large as the Mac—and can be considerably larger if the bank contains many graphics. Additional space will also be required for temporary files used by LXR•TEST and any graphic conversion programs.
3. **Double-click** the *Converter* program icon.



4. **Click the *Mac Bank* button.** A standard Open file dialog will appear. Select the desired Mac question bank and **click *OK***. The Mac bank file name will appear below the panel of the left list.

Click to highlight all items

Click to highlight individual items




Specify graphics conversion software

Click first to open a Mac bank


Click second to open a Windows bank

Click to convert highlighted items

5. **Click the *Windows Bank* button**  . A standard Open file dialog will appear. Select a new or existing Windows question bank name and **click *OK***. The Windows bank file name will appear below the panel of the right list. (You must open the Mac bank before you will be able to open a Windows bank.)
6. **Check the *Convert All* checkbox** to highlight all Mac items. If you only want to convert a subset of items, then highlight them individually.

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7. In the Graphic list box choose your preferred graphics conversion tool. The first time you choose a tool, the Converter will prompt you for its location on your hard disk. The chosen graphics conversion tool (if any) will be used for converting any Mac “PICT” graphics to Windows-compatible graphics. Or, you may choose None to ignore pictures.

If you activate the “File.pct graphics” checkbox, all images will be stored as individual graphics in Mac PICT format. They will be placed in a “BANK.PF” subdirectory (where BANK is the name of your Windows test bank).

8. **Click** the *Convert* button  . The Converter will begin the translation process.

During the conversion process, a log file is created with information relating to the conversion.

9. **Choose *Show Log*** from the File menu to review any conversion errors that may have been noted.

Note: If your log file shows “Error cp 17. Failed to reformat question,” you should open the newly converted bank in LXR•TEST and perform the Reformat Question option under Global Changes (Utilities menu). This will automatically reflow text into the edit boxes of each item.

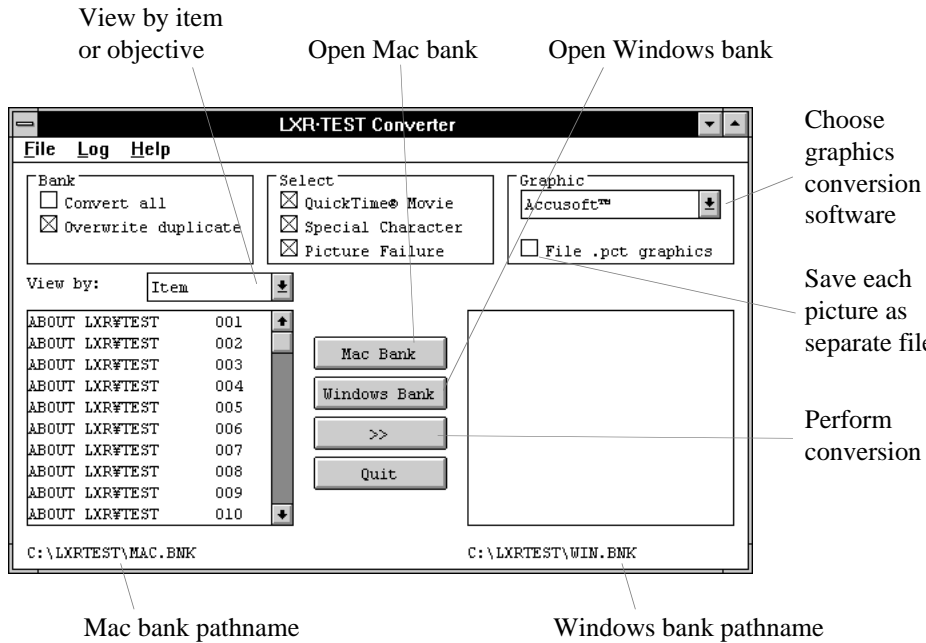
10. Quit the Converter by **choosing *Quit*** (File menu).

After your conversion is complete, you can open your new Windows bank with your LXR•TEST 5.0 Windows program. Be sure and inspect all questions that were selected by the Converter.

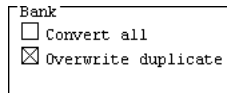
Reference

This Mac-to-Windows Bank Converter Reference section is designed to facilitate your access to each of the converter’s functions

Converter Window



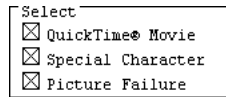
Bank Options The *Bank Options* contains two options for question conversion. The first checkbox, *Convert all*, is a convenient method of selecting all questions in the item bank, without having to click on each question or objective individually.




The *Overwrite duplicate* checkbox instructs the Converter to overwrite any existing Windows items with identical items being transferred from the Macintosh question bank.

Select Options The *Select Options* allows you to choose three types of conditions for selecting converted items. If a condition you checked occurs, a statement will be recorded in the Log file, showing

the error message and its question number and the converted item will be marked as selected in the Windows bank.

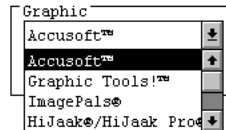


The *QuickTime® Movie* checkbox detects when a QuickTime movie is embedded in a question.

The *Special Character* option identifies non-transferable characters. Certain Mac keyboard characters have no equivalent in the Windows (such as ) . The Log file will show the location and ASCII code of any non-mappable characters encountered.

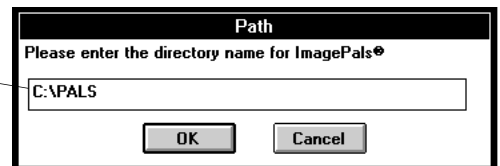
The *Picture Failure* warns of any identifiable conversion error.

Graphic Options The *Graphic Options* allows you to specify which third party software is to be used to translate the Mac graphics (PICT) to Windows graphics. Choose the name in the list box of the graphics conversion tool you want the Converter to use.



If the Converter is unable to find the graphics conversion program a dialog will be presented for you to specify the name of the directory where the third-party graphic conversion tool is installed.

Enter the directory name where the graphic conversion tool is installed



If *None* is highlighted, no graphic translation will take place.

If you check the *File.pct graphics* checkbox, the Converter will save pictures from your Mac bank to individual Mac graphic files in a *bank.pf* subdirectory. This allows you to use other graphic conversion programs if so desired.

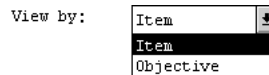
Tip! If you are unsatisfied with the quality of a converted graphic, try using a different graphics conversion program and reconvert these items with the *Overwrite duplicate* checkbox checked.

*Accusoft*TM is the built-in graphics conversion module provided by LXR with the Converter. It requires that your bank be exported with the “PICT to bitmap” option checked in LXR•TEST (Macintosh) 5.0.8 or later.


For additional information on third-party graphics conversion products refer to the table in the previous section.



The *File.pct graphics* checkbox directs the Converter to save pictures from your Mac bank to individual Mac graphic files in a *BANK.PF* subdirectory. This allows you to use other graphic conversion programs if so desired.

View by This list box allows you to select questions by item or by objective.




View by *Item* will list each individual question sorted by question ID (objective and sequence number). View by *Objective* will list objective names only. When selecting by objective, all questions within that objective group will be selected and converted.

View by: 

ABOUT LXR#TEST	001	
ABOUT LXR#TEST	002	
ABOUT LXR#TEST	003	
ABOUT LXR#TEST	004	
ABOUT LXR#TEST	005	
ABOUT LXR#TEST	006	
ABOUT LXR#TEST	007	
ABOUT LXR#TEST	008	
ABOUT LXR#TEST	009	
ABOUT LXR#TEST	010	

Items displayed individually

View by 

ABOUT LXR#TEST
ALGEBRA
ENGLISH
FIGURE
GEOMETRY
INSTRUCTIONS M/C
MOVIE

Item displayed in objective groups

Mac Question Bank Panel This left panel displays all questions in the selected Macintosh question bank, displayed by question ID or objective. The Mac file name is shown just below the panel.

Windows Question Bank Panel This right panel shows all questions in the current Windows question bank. The Windows file name is shown just below the panel.

Mac Bank Button Displays a standard Windows Open dialog box to open a Macintosh question bank.

Tip! You can combine two or more Mac question banks into one Windows question bank.

Windows Bank Button Displays a standard Windows Save As dialog box to save your converted questions to either a new question bank or an existing Windows question bank. A Mac questions file needs to be selected before selecting the Windows file.

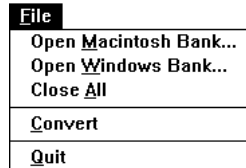
Convert Button

Quit Button Exits the program.

Menus

File

The *File* menu represents an alternative method of performing the same functions described previously in the Converter Window elements section.



Open Macintosh Bank Opens a Mac question bank (same as Mac Bank button).

Open Windows Bank Opens a Windows question bank (same as Windows Bank button). If this option is dimmed, you need to select a Mac questions file before selecting the Windows question bank file.

Close All *Closes all* open Converter windows.

Convert *Converts* selected Mac questions to Windows format (same as Convert button).

Quit *Quits* the Converter (same as Quit button).

Log

The *Log* menu provides access to the converter log file. The converter log file shows status information and errors resulting from bank conversion attempts.



Show Log Displays status information for the Converter. Such information might include failures of picture conversions, existence of non-mappable characters, use of QuickTime movie files and times of conversion. To generate some of these messages, refer to the *Selection box*. Log file information is retained until cleared out by the *Clear Log* command (Log menu).

Tip! You should read the contents of the log file after every conversion.

Hide Log Closes the log file window.

Clear Log Erases contents of current log file.

Save Log File... Saves the contents of the converter log to a file. A standard *Save As* dialog box is displayed for inputting the log's file name. The log is cleared after being saved.

Help The *Help* menu contains information regarding program version and date.



About LXR•TEST Converter Displays various information about the Converter.

Font Substitution Control

The Converter is preset to automatically accommodate the proper translation of the most popular Mac fonts and characters to their corresponding Windows equivalents. This “font mapping” feature is controlled by entries in a converter text file called “*LXRCONV.SET*”. You may wish to print this file to view “factory” font conversion settings. Once you understand the fundamentals of how fonts are “mapped,” you can add or edit your own font and character substitution information in this file as desired.

Note: You should not normally need to delve into these font substitution “internals.” This information is intended for advanced users in special text conversion circumstances.

LXRCONV.SET File Definition

Font table —————
Mac font =Windows font

Group table —————
Windows font = character
group exception table

Character table —————
Mac character =
Windows character

Picture table —————
bank pathname =
last picture number

Path table —————
default search location
for conversion tools

```
[Fonts]
Courier=CourierNew
Geneva=Arial
. . .

[Groups]
Arial=StandardTrueTypeFont
Courier=StandardBitmapFont
. . .

[StandardTrueTypeFont]
0x80=0xC4
0x81=0xC5
. . .

[Pictures]
C:\LXRTEST\SAMPLE.BNK=43
C:\LXRTEST\WIN.BNK=71

[Path]
C:\HJPRO\
C:\GT!\
C:\PALS\
```

Fonts Table The *Fonts Table* assigns a *Macintosh* font to a *Windows* font. In the above illustration, the Mac Geneva font is to be substituted with the Windows *Arial* font.

A couple of font conversion rules apply:

1. A Windows font of the same name as the Mac font will be used if it exists, unless there is an overriding entry in the Font Table. Notice in the above illustration, an entry in the Font Table directs converting Mac Courier to Windows New Courier. This table entry will take precedence and all Mac Courier fonts will become New Courier under Windows.
2. If no font is designated in the font table, the *Arial* font will be used.

Groups Table The *Groups Table* assigns each Windows font to a specific Character Table. Fonts contain an array of characters each of

which has a numbered position. Different classes of fonts (e.g. TrueType and Bitmap)—can have a different displayed character for the same character number. The Groups Table instructs one of three general Character Tables for the converter to use in making the translation. TrueType fonts are designated to use the *Standard TrueType* table. Bitmap fonts are assigned to the *Standard Bitmap* table and other special fonts are assigned to a *StraightCopy* table. Fonts that are not assigned to any Character Table will default to using the *Standard TrueType* Character Table.

Character Tables [Standard TrueType/Standard Bitmap/ Straight-Copy] The three built-in character tables are used to assign a specific character (identified by its hexadecimal number) on the Mac to a specific character on Windows. Any character not listed in a table assumes its same hexadecimal number position on Windows, so these character tables only deal with exceptions where the character number is not the same on both Mac and Windows. The converter can translate a Mac character to a character in a different font by appending “.*fontname*” to the Windows hexadecimal character number (where *fontname* is the name of the Windows font).

Picture Table The *Picture Table* stores the number of the last picture converted in each Windows bank (no effect on font conversion).

Path Table The *Path Table* stores the default path to locate third-party graphic conversion tools (no effect on font conversion).