

Customizing and Using the LabVIEW™ Lesson Manager

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Overview of the Lesson Manager

The **Lesson Manager** window is an alternate interface for LabVIEW that an instructor can use to organize and present custom or example VIs to students or novice users. The **Lesson Manager** window replaces the **Getting Started** window in LabVIEW.

The **Lesson Manager** window allows users to easily navigate through classroom laboratory examples (labs) using a three-tiered organizational structure. A lab consists at a minimum of a LabVIEW project file (.lvproj) and top-level VI, but a lab also can contain other LabVIEW and non-LabVIEW files.

The **Lesson Manager** window, shown in Figure 1, contains the following components. Refer to the *LabVIEW Help* for more information about the **Lesson Manager** window components.

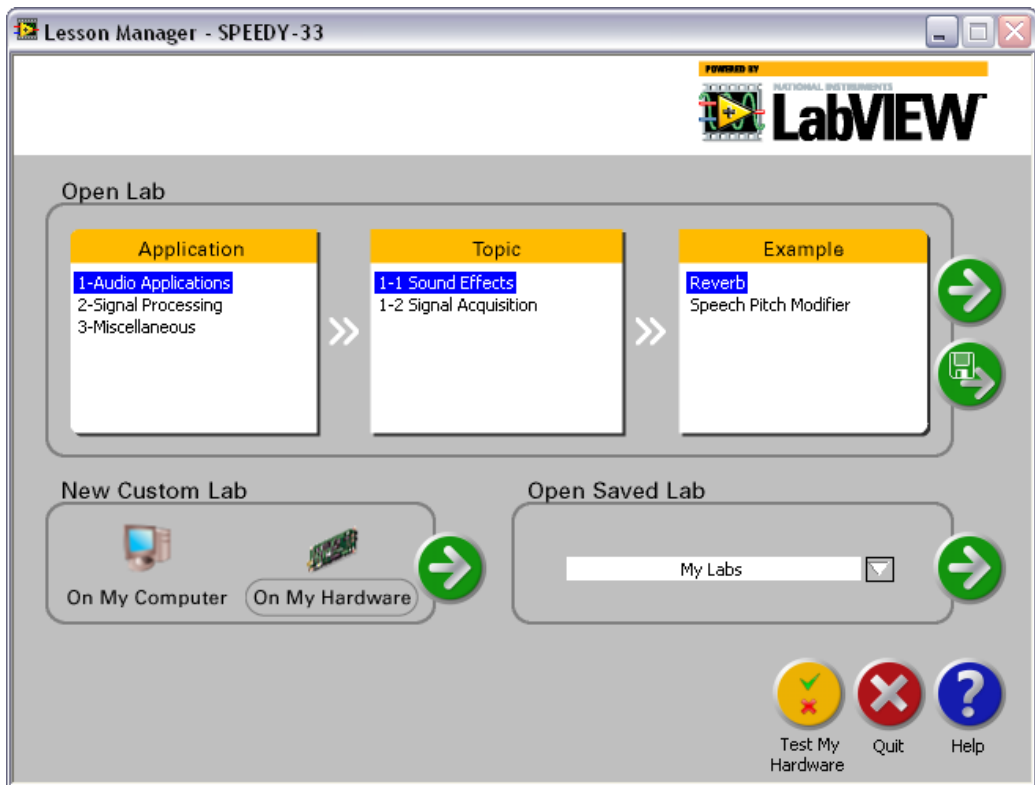


Figure 1. The Lesson Manager Window for the SPEEDY-33 Target

- **Open Lab section**—Opens labs that the instructor provides or copies the lab and opens the copy.
- **New Custom Lab section**—Creates labs for the default, non-Windows target device or the host computer.
- **Open Saved Lab section**—Opens a dialog box to browse for labs that you save. Select **My Labs** in the pull-down menu to open the My Labs directory on the hard disk. Select **Browse to Last Folder Opened** in the pull-down menu to browse for LabVIEW projects in the last directory a user opened with LabVIEW.
- **Test My Hardware button**—Runs a quick diagnostic to make sure that the host computer can connect to the target device and that the device is operating properly.
- **Quit button**—Exits LabVIEW. Make sure to save any projects or labs you create or change before quitting LabVIEW.
- **Help button**—Opens the *LabVIEW Help*.

Before you can use the **Lesson Manager** window in a classroom setting, you must do the following:

1. Set up the default hardware target for new labs that students create through the **New Custom Lab** section of the **Lesson Manager** window. By default, the target is SPEEDY-33. Refer to the *Setting the Default Target Hardware* section for information about setting the default non-Windows hardware target.
2. Create a Windows shortcut to launch LabVIEW with the **Lesson Manager** window. By default, you can open the **Lesson Manager** window by double-clicking `LessonManager.vi` located in the `labview\Targets\NI\DSP\LessonManager` directory. Refer to the *Creating a Windows Shortcut for the Lesson Manager* section for information about creating a Windows shortcut for the Lesson Manager.
3. Create and organize the LabVIEW projects and VIs that you want to use as labs in the classroom. By default, the **Lesson Manager** window lists labs you store in the `labview\Targets\NI\DSP\LessonManager\Sample Labs` directory. Refer to the *Creating and Organizing Labs for the Lesson Manager* section for information about organizing the student labs.
4. (Optional) Change the storage location of the labs that appear in the **Lesson Manager** window, the location of the `My Labs` directory, and the background image of the **Lesson Manager** window. Refer to the *Customizing the Lesson Manager* section for information about customizing the **Lesson Manager** window.

Setting the Default Target Hardware

The Lesson Manager supports one non-Windows target when creating new labs through the **New Custom Lab** section of the **Lesson Manager** window. By default, this target is the SPEEDY-33.

Complete the following steps to change the default non-Windows target for the Lesson Manager.

1. Log on as an administrator or as a user with administrator privileges.
2. Close LabVIEW if LabVIEW is running.
3. Open the `LessonManager.ini` file, located in the `labview\Targets\NI\DSP\LessonManager` directory, in any text editor. For better readability, do not use word wrap features in the text editor when editing the `LessonManager.ini` file.

4. Modify the following line in the `LessonManager.ini` file to specify the new default DSP target:

`Default Target=x`

where `x` is the default non-Windows target.

Modify the line by replacing `x` with a target entry from the list of hardware devices in the following table.

Module	Target	Default Target Entry
DSP Module	NI SPEEDY-33	target1
DSP Module	Texas Instruments 6711 DSK	target2
DSP Module	Spectrum Digital 6713 DSK	target3
DSP Module	Spectrum Digital 6416 DSK	target4
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF531	target5
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF532	target6
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF533	target7
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF534	target8
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF536	target9
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF537	target10
Embedded Module for Blackfin Processors	Analog Devices ADSP-BF538	target11

For example, change the line to `Default Target=target1` so that the Lesson Manager uses the NI SPEEDY-33 by default.

Refer to ni.com/info and enter the info code `changehw` for the latest list of non-Windows targets that the Lesson Manager supports.

5. Save and close the `LessonManager.ini` file in a text-only format. Make sure that the text editor does not change the extension of the `LessonManager.ini` file.

The next time you open the **Lesson Manager** window, the default non-Windows target appears in the title bar.

Creating a Windows Shortcut for the Lesson Manager

You can launch LabVIEW with the **Lesson Manager** window or the **Getting Started** window. Create a desktop shortcut to launch LabVIEW with the **Lesson Manager** window. Otherwise, select **Start»All Programs»National Instruments»LabVIEW»LabVIEW** to launch LabVIEW with the default **Getting Started** window.

Complete the following steps to create a shortcut to the Lesson Manager on the desktop of a computer.

1. Log on as an administrator or as a user with administrator privileges.
2. Close LabVIEW if LabVIEW is running.
3. Browse to `labview\Targets\NI\DSP\LessonManager` using Windows Explorer.
4. Right-click the `LessonManager.vi` file and select **Create Shortcut** from the shortcut menu.
5. Drag the new shortcut to the Windows desktop.
6. Right-click the shortcut and select **Rename** from the shortcut menu.
7. Type a new name, such as `LabVIEW for the Classroom`, and press the <Enter> key to save the name.



Tip (Windows XP) You also can right-click the `LessonManager.vi` and select **Send To»Desktop (create shortcut)** from the shortcut menu to create a shortcut.

Creating and Organizing Labs for the Lesson Manager

You use LabVIEW projects and VIs to illustrate concepts and provide hands-on labs for students. These labs can help reinforce key concepts that you teach in class.

After you create a set of labs for your curriculum, you must name, organize, and write-protect the project files and VIs to display the labs in the **Lesson Manager** window.

Naming Labs

Each lab has at least two associated files—a LabVIEW project file (`.lvproj`) and a LabVIEW VI (`.vi`).

The project and the top-level VI must have the same filename to be compatible with the **Lesson Manager** window. For example, when you create a new LabVIEW project and VI for the classroom, you must save both the project and the VI with the same filename as follows:

- VI (lab) filename: `My Example.vi`
- Project filename: `My Example.lvproj`



Note A project can contain more than one VI, but the top-level VI must have the same name as the project to work properly with the **Lesson Manager** window.

Similarly, if a student creates a new lab through the **New Custom Lab** section of the **Lesson Manager** window, the student needs to save the LabVIEW project and the top-level VI with the same name. The name of the LabVIEW project appears by default in the dialog box that the **Open Saved Lab** section of the **Lesson Manager** window displays.



Tip Select **File»Save All** in the **Project Explorer** window to save both the VI and the project when you finish making edits.

Organizing and Storing Labs

The **Lesson Manager** window uses a file storage hierarchy to populate the **Application**, **Topic**, and **Example** column entries. You determine the items that appear in the columns in the **Open Lab** section of the **Lesson Manager** window by naming and organizing folders and files on disk as shown in Figure 2.

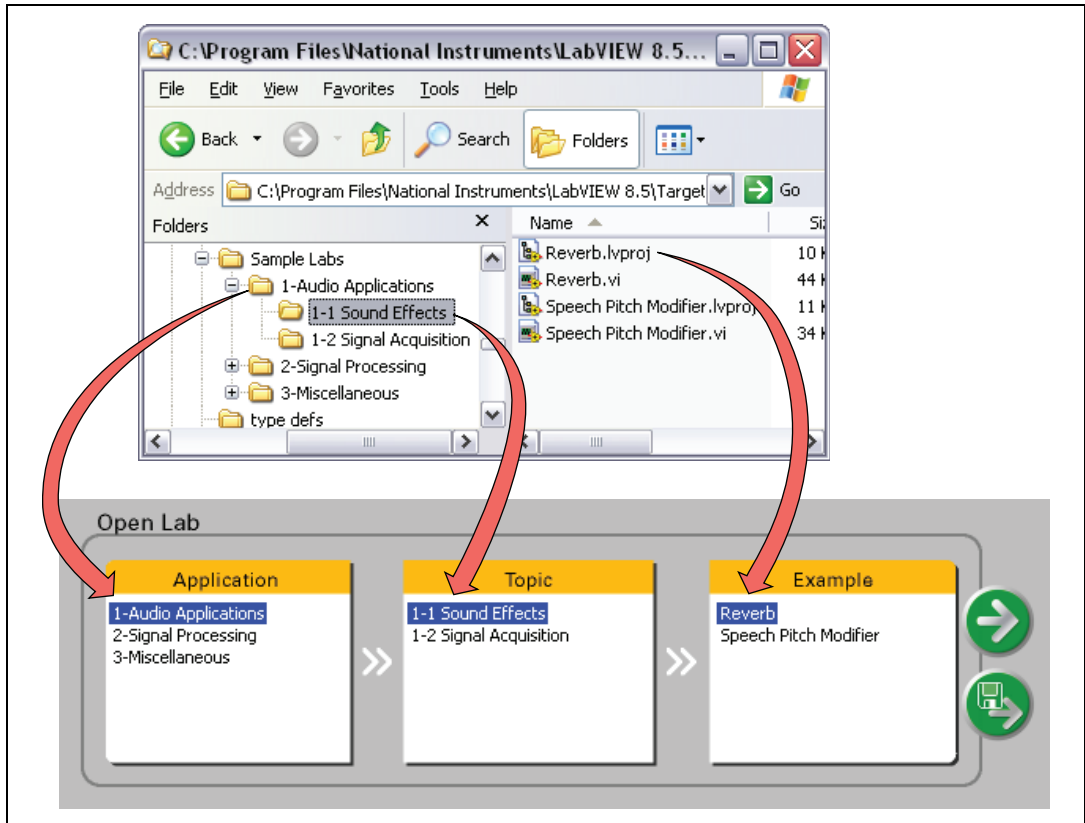


Figure 2. Organizing Labs for the Lesson Manager Window

The default location of the Sample Labs folder is labview\Targets\NI\DSP\LessonManager\Sample Labs, but you can change this location. Refer to the [Changing the Location of the Lesson Manager Labs Directory](#) section for information about changing the folder location.

Keep the following in mind when you name and organize the folders and labs:

- Each folder located directly within the `Sample Labs` folder appears as an item in the **Application** column of the **Lesson Manager** window.
- Each folder in the labs folder must contain at least one folder to populate the **Topic** column of the **Lesson Manager** window.
- Finally, each folder at the **Topic** level must contain the LabVIEW project and VI files for the labs. These labs appear in the **Example** column of the **Lesson Manager** window.



Note The names of the items in the **Application**, **Topic**, and **Example** columns come directly from the names of the folders and files in the labs directory.

Write-Protecting Labs

After you save the project and VIs for the Lesson Manager labs, you need to protect the files from accidental editing or erasure by write-protecting the entire Lesson Manager labs directory.

Complete the following steps to write-protect the Lesson Manager labs directory.

1. Log on as an administrator or as a user with administrator privileges.
2. Open Windows Explorer.
3. Navigate to the Lesson Manager labs directory. By default, the Lesson Manager labs directory is located at `labview\Targets\NI\DSP\LessonManager\Sample Labs`.
4. Right-click the directory and select **Properties** from the shortcut menu.
5. Click the **General Tab**.
6. In the **Attributes** section, place a checkmark in the **Read-only** checkbox.
7. Click the **Apply** button.
8. Select **Apply Changes to this folder, subfolder and files** and click the **OK** button in the dialog box that appears.
9. Click the **OK** button to close the **Properties** dialog box.



Note To delete a lab, first remove the read-only attribute of the file. Follow the above steps, but remove the checkmark in step 6. Now you can delete the VI and project files.



Caution Make sure to reapply the read-only attribute to the labs directory when you finish making changes. If you do not make the directory read-only, students can delete or alter the labs.

Customizing the Lesson Manager

You can change the following items to customize the Lesson Manager.

- The storage location of the labs that appear in the **Lesson Manager** window
- The default location of the My Labs directory where students can save custom labs
- The background graphic of the **Lesson Manager** window

Changing the Location of the Lesson Manager Labs Directory

The **Lesson Manager** window populates the **Application**, **Topic**, and **Example** columns with LabVIEW projects and VIs located in the labs directory. The **Lesson Manager** window automatically updates the lists every time you launch LabVIEW using the Lesson Manager.

The default location of the Lesson Manager labs directory is `labview\Targets\NI\DSP\LessonManager\Sample Labs`. Refer to the [Organizing and Storing Labs](#) section for information about storing the labs within the Lesson Manager labs directory.

Complete the following steps to change the location of the Lesson Manager labs directory.

1. Log on as an administrator or as a user with administrator privileges.
2. Close LabVIEW if LabVIEW is running.
3. Open the `LessonManager.ini` file, located in the `labview\Targets\NI\DSP\LessonManager` directory, in any text editor. For better readability, do not use word wrap features in the text editor when editing the `LessonManager.ini` file.
4. Add or modify the following line to the end of the file to specify the new default location:

```
Lab Location=x
```

where *x* is the path to the Lesson Manager lab directory.

For example, change the line to `Lab Location=C:\New Labs` so that the **Lesson Manager** window searches the `C:\New Labs` directory for the directories and files containing the labs. Refer to the [Organizing and Storing Labs](#) section for information about the necessary directory structure of the labs directory.

5. Save and close `LessonManager.ini` in a text-only format. Make sure that the text editor does not change the extension of the `LessonManager.ini` file.

Next time you launch LabVIEW with the **Lesson Manager** window, labs from the new location appear in the **Open Lab** section.

Changing the Location of the My Labs Directory

The `My Labs` directory is the default location for saving labs that students modify using the **Copy & Go** button in the **Open Lab** section of the **Lesson Manager** window. A student can access the `My Labs` directory using the pull-down menu in the **Open Saved Lab** section of the **Lesson Manager** window.

LabVIEW creates the `My Labs` directory in the `C:\Documents and Settings\<user>\My Documents\LabVIEW Data\` directory by default, where `<user>` is the Windows account running LabVIEW. For example, if each student logs on to the classroom computer using a different login, LabVIEW creates a separate `My Labs` directory for each student.

Complete the following steps to change the location of the `My Labs` directory.

1. Log on as an administrator or as a user with administrator privileges.
2. Close LabVIEW if LabVIEW is running.
3. Open the `LessonManager.ini` file, located in the `labview\Targets\NI\DSP\LessonManager` directory, in any text editor. For better readability, do not use word wrap features in the text editor when editing the `LessonManager.ini` file.
4. Add or modify the following line to the end of the file to specify the new default location:

```
My Labs Location=x
```

where `x` is the path to the `My Labs` directory.

For example, change the line to `My Labs Location=Q:` so that LabVIEW creates the `My Labs` directory on the `Q:` network drive.

5. Save and close `LessonManager.ini` in a text-only format. Make sure that the text editor does not change the extension of the `LessonManager.ini` file.

Changing the Lesson Manager Window Background Image

You can change the background image of the **Lesson Manager** window. By default, the **Lesson Manager** window uses the LessonManager_658x471.bmp file, shown in Figure 3, located in the labview\Targets\NI\DSP\LessonManager directory.

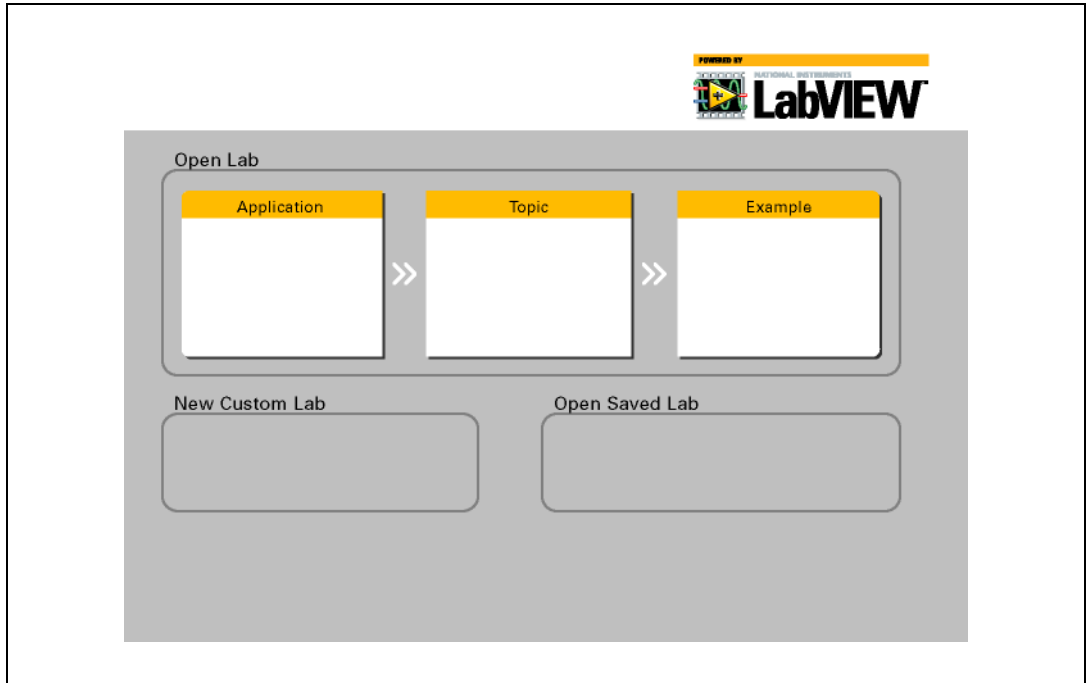


Figure 3. The LessonManager_658x471.bmp Image

Notice that the background image contains the titles for the different sections of the **Lesson Manager** window such as the **Application**, **Topic**, and **Example** list columns. You must include titles in the new image you create, so use the LessonManager_658x471.bmp file as a template to create a new background image for the **Lesson Manager** window.

Complete the following steps to change the **Lesson Manager** window background image.

1. Open LessonManager_Edit.vi, located in the labview\Targets\NI\DSP\LessonManager directory.
2. Switch to the block diagram and double-click the Lesson Manager VI to open the Lesson Manager VI without running the Lesson Manager.
3. Select **Edit>Select All** from the front panel window of the Lesson Manager VI.



4. Click the **Reorder** button, shown at left, in the front panel window toolbar, and select **Unlock** to unlock the items on the front panel window.
5. Click the background image to select the object.
6. Press the <Delete> key to delete the background image.
7. Open the new background image in an image editor program and copy the image to the Windows clipboard.
8. Select **Edit»Paste** to paste the new background image in the Lesson Manager VI.
9. Click the **Reorder** button and select **Move To Back** to move the new background image behind all the other objects in the front panel window.
10. Align the background image with the controls on the front panel.
11. Select **Edit»Select All**.
12. Click the **Reorder** button and select **Lock** to lock the items on the front panel window.
13. Save and close the Lesson Manager VI. The new image appears as the background graphic the next time you use the Lesson Manager VI to launch LabVIEW.

Where to Go from Here

National Instruments provides many resources to help you succeed with your NI products. Use the following resources as you start exploring LabVIEW and the Lesson Manager.

Refer to the *LabVIEW Help* for information about LabVIEW and the LabVIEW Lesson Manager, and refer to the **Context Help** window for information about using controls, VIs, and functions.

- *LabVIEW Help*—Available by selecting **Help»Search the LabVIEW Help** in LabVIEW. Click the **Index** tab and enter `lesson manager window` for topics describing the Lesson Manager.
- **Context Help** window—Available by selecting **Help»Show Context Help** or by pressing the <Ctrl-H> keys.

Visit ni.com/academic for other academic and training resources.

Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

National Instruments corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504.

National Instruments also has offices located around the world to help address your support needs. For telephone support in the United States, create your service request at ni.com/support and follow the calling instructions or dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

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Czech Republic 420 224 235 774, Denmark 45 45 76 26 00,
Finland 385 (0) 9 725 72511, France 01 57 66 24 24,
Germany 49 89 7413130, India 91 80 41190000, Israel 972 3 6393737,
Italy 39 02 413091, Japan 81 3 5472 2970, Korea 82 02 3451 3400,
Lebanon 961 (0) 1 33 28 28, Malaysia 1800 887710,
Mexico 01 800 010 0793, Netherlands 31 (0) 348 433 466,
New Zealand 0800 553 322, Norway 47 (0) 66 90 76 60,
Poland 48 22 3390150, Portugal 351 210 311 210, Russia 7 495 783 6851,
Singapore 1800 226 5886, Slovenia 386 3 425 42 00,
South Africa 27 0 11 805 8197, Spain 34 91 640 0085,
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