ThinkPad Thunderbolt 3 Dock
User Guide

ⓘ http://www.lenovo.com/safety

Note: Before using this information and the product it supports, ensure that you read and understand the warranty information in the documentation that comes with the product.

Contents

Chapter 1. About the dock

This chapter contains product information for the ThinkPad® Thunderbolt™ 3 Dock (hereafter called dock).

Product description

The dock is a portable expansion module that enables you to easily connect your computer to the Ethernet and multiple devices, such as a headset, a microphone, a monitor, and Universal Serial Bus (USB) devices.

You can set up your work area by connecting your computer to the dock with the Thunderbolt 3 cable, connecting multiple devices to the dock, and configuring the dock on your computer. Then, you are ready to use the multiple devices each time you connect your computer to the dock. The dock can also supply power to your computer when it is connected to the computer.

Your option package includes the following:

- ThinkPad Thunderbolt 3 Dock
- Power adapter
- Power cord
- Thunderbolt 3 cable
- Warranty poster

Contact your place of purchase if any item is missing or damaged. Be sure to retain your proof of purchase and packing material. They might be required to receive warranty service.

Dock controls, connectors, and indicators

The following illustration helps you locate and identify the controls, connectors, and indicators on your dock.
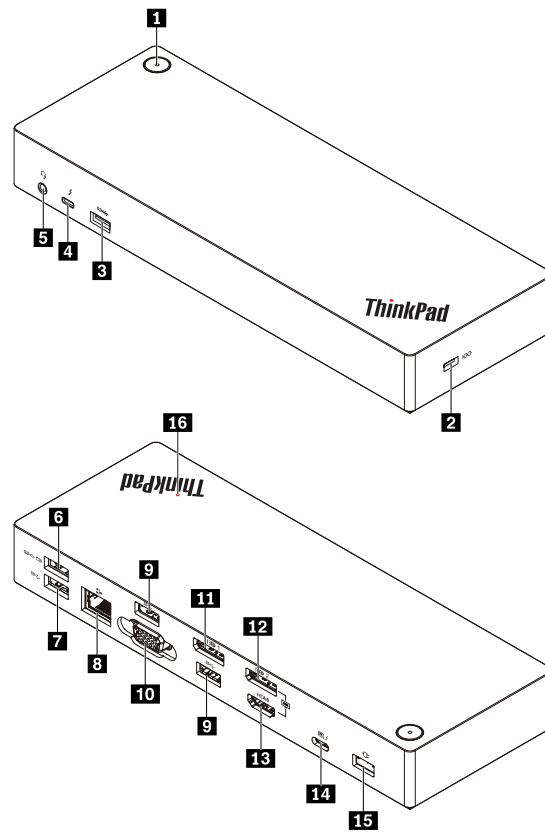
Figure 1. Dock controls, connectors, and indicators

1 Power button with indicator	**2** Security-lock slot
3 USB 3.0 connector	**4** Thunderbolt 3 connector
5 Headset and microphone combo connector	**6** Always On USB 3.0 connector
7 USB 3.0 connector	**8** Ethernet connector
9 USB 3.0 connector	**10** Video graphics array (VGA) connector
11 DisplayPort® (DP) connector	**12** DisplayPort connector
13 High-Definition Multimedia Interface™ (HDMI™) connector	**14** Thunderbolt 3 connector
15 Power connector	**16** Indicator in ThinkPad logo

Notes:

- Do not use the DP connector **12** and HDMI connector **13** at the same time.
- For the wireless keyboard and mouse, it is recommended that you connect the keyboard/mouse USB receiver to the USB 3.0 connector **9** located above the VGA connector on the dock.

1 Power button with indicator

- Power button

    – When the dock is disconnected from the computer, press the power button to turn off the dock.

    – When the dock is connected to the computer, the power button on the dock has the same functions as the power button of the computer. You can use the power button on the dock to turn on, turn off, sleep,

hibernate, or wake up the computer after you define what power button does on your computer. To change what the power button does, do the following:

1. Go to Control Panel and then change the view of the Control Panel from Category to Large icons or Small icons.

2. Click **Power Options → Choose what the power buttons do.**

3. Follow the instructions on the screen to complete the operation.

• Power button indicator

The indicator in the power button shows the dock status and computer status:

– **Amber**: The dock is on and ready to connect to the computer; or the dock is on and the computer is in hibernation mode or off.

– **Off**: The dock is off.

– **White**: The dock is on and the computer is on or in sleep mode.

2 Security-lock slot

To protect your dock from theft, lock your dock to a desk, table, or other fixtures through a security cable lock that fits this security-lock slot.

Note: You are responsible for evaluating, selecting, and implementing the locking device and security feature. Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of the locking device and security feature.

3 7 9 USB 3.0 connector

Connect USB 3.0 compatible devices, such as a USB storage device or a USB printer.

4 Thunderbolt 3 connector

Connect Thunderbolt 3 or USB-C compatible devices to the dock, such as a Thunderbolt 3 or USB-C compatible external monitor or storage device. You also can connect a DP, HDMI, or VGA monitor to this connector if you have a suitable convert cable available.

5 Headset and microphone combo connector

Connect headphones or a headset with a 3.5-mm (0.14-inch), 4-pole plug.

6 Always On USB 3.0 connector

Charge some mobile digital devices and smartphones when the dock is connected to the power supply.

The Always on USB 3.0 connector can supply power up to 2.4 A during the charging process.

8 Ethernet connector

Connect the dock to an Ethernet LAN with an Ethernet cable.

10 VGA connector

Connect a VGA-compatible video device, such as a VGA monitor.

11 12 DP connector

Connect a high-performance monitor, a direct-drive monitor, or other devices that use a DP connector.

13 HDMI connector

Connect a high-performance monitor, a direct-drive monitor, or other devices that use an HDMI connector.

14 Thunderbolt 3 connector

Connect the dock to your computer by a Thunderbolt 3 cable.

15 Power connector

Connect the dock to the power adapter.

16 LED indicator in ThinkPad logo

This red indicator stays on when the dock is connected to power.

Statement on USB transfer rate

Depending on many factors such as the processing capability of the host and peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and will be slower than the data rate listed below for each corresponding device.

USB device	Data rate (Gbit/s)
3.1 Gen 1 (3.0)	5

Main features

- Supported USB devices: five USB 3.0 devices, and one Thunderbolt 3 or compatible device
- Supported external monitors: two DP monitors, an HDMI monitor, a VGA monitor, and a USB-C monitor
- Supported operating system: Windows® 10
- Network connection: Gigabit Ethernet speed
- Supported functions on some Lenovo computers:

  - Preboot eXecution Environment (PXE)

  - Media Access Control (MAC) address Pass Through

  - Wake on LAN

  Notes:

  - For more information about these functions, see "Using the Ethernet connector" on page 9.

  - For detailed computer model information, go to http://www.lenovo.com/accessoriesguide, and download **Network function support – Option Compatibility Matrix**.

Maximum resolutions

To achieve better display experience, it is recommended that you connect no more than three external monitors to the dock at a time. When you connect three external monitors, your computer display is disabled.

Note: When you connect two or more external monitors to the dock, the Thunderbolt 3 connector works only on some Lenovo computers. For detailed computer model information, go to http://www.lenovo.com/support/docks and click **ThinkPad Thunderbolt 3 Dock**.

- One external monitor
  - DP: 3840 x 2160 pixels / 60 Hz
  - HDMI: 3840 x 2160 pixels / 30 Hz
  - Thunderbolt 3: 3840 x 2160 pixels / 60 Hz
  - VGA: 1920 x 1200 pixels / 60 Hz
- Two external monitors simultaneous
  - DP1 and DP2 / HDMI: DP1 3840 x 2160 pixels / 30 Hz; DP2 / HDMI 3840 x 2160 pixels / 30 Hz
  - DP1 and Thunderbolt 3: DP1 3840 x 2160 pixels / 60 Hz; Thunderbolt 3 3840 x 2160 pixels / 60 Hz
  - DP1 and VGA: DP1 3840 x 2160 pixels / 30 Hz; VGA 1920 x 1200 pixels / 60 Hz
  - DP2 / HDMI and Thunderbolt 3: DP2 3840 x 2160 pixels / 60 Hz; HDMI 3840 x 2160 pixels / 30 Hz; Thunderbolt 3 3840 x 2160 pixels / 60 Hz
  - DP2 / HDMI and VGA: DP2 / HDMI 3840 x 2160 pixels / 30 Hz; VGA 1920 x 1200 pixels / 60 Hz
  - Thunderbolt 3 and VGA: Thunderbolt 3 3840 x 2160 pixels / 60 Hz; VGA 1920 x 1200 pixels / 60 Hz
- Three external monitors simultaneous
  - DP1, DP2 / HDMI, and Thunderbolt 3: DP1 3840 x 2160 pixels / 30 Hz; DP2 / HDMI 3840 x 2160 pixels / 30 Hz; and Thunderbolt 3 3840 x 2160 pixels / 60 Hz
  - DP1, DP2 / HDMI, and VGA: DP1 3840 x 2160 pixels / 30 Hz; DP2 / HDMI 1920 x 1080 pixels / 60 Hz; and VGA 1920 x 1080 pixels / 60 Hz
  - DP2 / HDMI, Thunderbolt 3, and VGA: DP2 / HDMI 3840 x 2160 pixels / 30 Hz; Thunderbolt 3 3840 x 2160 pixels / 60 Hz; and VGA 1920 x 1200 pixels / 60 Hz

Chapter 2. Setting up the dock

This section provides instructions on how to connect the dock to your computer, and how to install and uninstall the device driver.

Installing the device driver on Windows operating systems

The dock device driver is preinstalled on some Lenovo computers. In this situation, the dock is ready for use after you connect it to an ac power source and your computer. For the detailed computer model information, go to http://www.lenovo.com/support/docks and click **ThinkPad Thunderbolt 3 Dock**.

You also can download the latest dock device driver from the Lenovo Web site. Go to http://www.lenovo.com/support/docks, click **ThinkPad Thunderbolt 3 Dock**, and download the driver installation file. Then follow the instructions on the screen to install the device driver.

Connecting the dock to your computer

Note: To enable the dock when connected to the computer for the first time, do either of the following:

- Confirm the change when prompted if you have the administrator privilege.
- Enter the ThinkPad Setup program (BIOS) and go to the **Config** menu. Select **Thunderbolt(TM) 3 ➙ Security level ➙ No Security**. The dock will be enabled automatically.

To connect the dock to your computer, do the following:

Note: Ensure that you use the Thunderbolt 3 cable and power adapter that come with your dock.

1. Connect the ac power adapter to the power cord **1**.
2. Connect the ac power adapter to the power connector of the dock **2**.
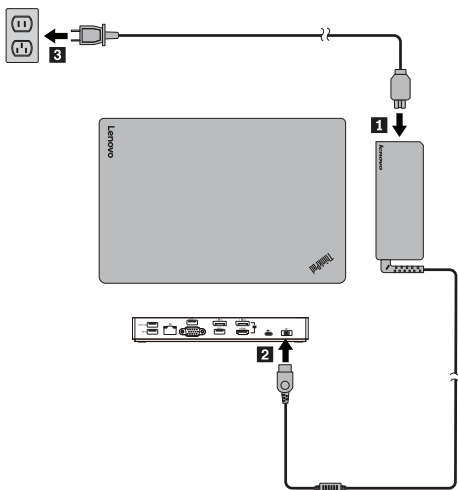3. Connect the power cord to an electrical outlet **3**.

Figure 2. Connecting the dock to the power supply

4. Connect one end of the Thunderbolt 3 cable to the dock **1**.
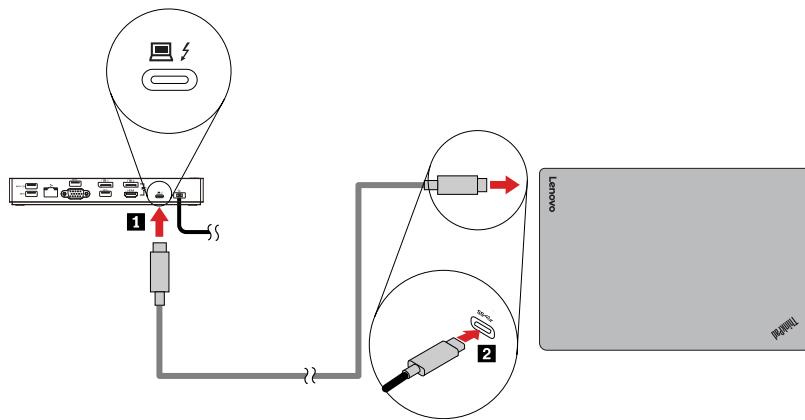5. Connect the other end of the Thunderbolt 3 cable to the computer **2**.

Figure 3. Connecting the dock to the computer

Note: The dock supplies power to the computer when it is connected to the computer.

Uninstalling the device driver from Windows operating systems

To uninstall the device driver, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.

2. Click **Control Panel**, and then change the view of Control Panel to Category.

3. Click **Uninstall a program ➙ ThinkPad Thunderbolt 3 Dock USB Audio**, and then right-click to select **Uninstall**.

4. Click **ThinkPad Thunderbolt 3 Dock Ethernet driver**, and then right-click to select **Uninstall**.

5. Follow the instructions on the screen to uninstall the device driver.

6. If necessary, restart your computer.

Chapter 3. Using the dock

This chapter provides instructions on how to use the connectors on the dock:

- "Using the headset and microphone combo connector" on page 9
- "Using the Ethernet connector" on page 9
- "Using the video output connectors" on page 10

The dock expands the connection capability of your computer. You can connect devices to the appropriate connectors on the dock after your computer is turned on. Normally it takes several seconds for the computer to recognize new devices.

The dock simplifies the connection between your computer and multiple devices. For example, you can connect the USB devices and external monitors to the dock rather than the computer. When you want to take your computer away, you can disconnect the computer from the dock rather than remove the USB devices and external monitors. When you come back, simply connect your computer to the dock to resume all previous connections and start working at once.

Using the headset and microphone combo connector

The headset and microphone combo connector on the dock is automatically enabled when you have successfully connected the dock to your computer and installed the device driver. However, if you cannot hear anything from the headset connected to the headset and microphone combo connector on the dock, you can manually enable the headset and microphone combo connector on the dock.

To manually enable the headset and microphone combo connector on the dock, do the following:

1. Right-click the speaker icon in the Windows notification area. A pop-up menu opens.
2. Click **Playback devices** to select a USB audio line-out device, and then click the **Recording** tab to select a USB audio line-in device.
3. Click **OK**.

Note: To apply the new settings, restart the applications that are using the audio devices.

Using the Ethernet connector

To use the Ethernet connector on the dock, connect the dock to a standard 10 Mbps, 100 Mbps, or 1000 Mbps network.

There are two indicators on the top of the Ethernet connector.

Indicator activity	Working status of the dock
The right indicator stays on in green.	Connected to the Ethernet
The left indicator keeps flashing in amber.	Transferring data

The Ethernet connection on the dock supports the following functions on some Lenovo computers. For the supported computer list, go to www.lenovo.com/accessoriesguide, and download **Network function support – Option Compatibility Matrix**.

- Preboot eXecution Environment

The PXE technology makes the computer more manageable by enabling the computer to start from a server.

• MAC address Pass Through

  Your dock MAC address is the same as that of your computer, after enabling the MAC address Pass Through function.

• Wake on LAN

  The network administrator can turn on a computer from a management console by using the Wake on LAN function. When the Wake on LAN function is enabled, many operations, such as data transfer, software updates, and flash updates of the UEFI BIOS, can be done remotely without remote attendance. The updating process can perform after normal working hours and on weekends, so that the users are not interrupted during work, and the LAN traffic is kept to a minimum. It saves time and increases productivity.

You can enable these functions through configuring the BIOS on your computer by do the following:

1. Restart the computer. When the ThinkPad logo is displayed, press F1. The ThinkPad Setup program starts.

2. Select **Config** ➙ **Network**. The **Network** submenu is displayed.

3. Select a corresponding option for the desired feature.

4. Press the F10 key to save and exit.

Note: For more information about configuring the BIOS, refer to the user guide that comes with your computer.

Using the video output connectors

The video output connectors on the dock include: two DP connectors, an HDMI connector, a Thunderbolt connector, and a VGA connector. To use the video output connectors, connect an external monitor to the connector on the dock using a corresponding cable.

The dock works in the following three video output modes:

By default, the dock works in the extend mode. The first time you connect the dock to your computer, the resolution of your computer and the connected monitor is changed to the default. You can configure your external monitors to your needs:

Extend mode

When the dock is in the extend mode, it splits your display across two monitors. Your computer monitor becomes the primary display and the external monitor becomes the secondary display. By default, the external monitor display is on the right side of the computer monitor display.

In the extend mode, you can drag and drop windows from one display to the other. You also can increase productivity by doing the following:

• Reading e-mails on one display and opening the attachments on the other
• Expanding a spreadsheet across two displays

- Increasing your work area by putting all the palette and toolbars on the other display when you are doing graphics editing
- Keeping the desktop on one display and watching videos on the other

To enter the extend mode, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.
2. Depending on your Control Panel mode, do one of the following:
   - Click **Display** ➙ **Change display settings**.
   - Click **Appearance and Personalization** ➙ **Display** ➙ **Change display settings**.
3. In the **Multiple displays** drop-down list box, select **Extend these displays**.
4. Follow the instructions on the screen to complete the setting.

Mirror mode

When the dock is in the mirror mode, it clones your computer screen to the external monitor. The dock automatically selects the settings (screen resolution, color quality, and refresh rate) for the external monitor, which achieves optimal resolution based on your computer.

To enter the mirror mode, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.
2. Depending on your Control Panel mode, do one of the following:
   - Click **Display** ➙ **Change display settings**.
   - Click **Appearance and Personalization** ➙ **Display** ➙ **Change display settings**.
3. In the **Multiple displays** drop-down list box, select **Duplicate these displays**.
4. Follow the instructions on the screen to complete the setting.

Single-display mode

When the dock is in the single-display mode, you can show your desktop on only one screen.

To enter the single-display mode, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.
2. Depending on your Control Panel mode, do one of the following:
   - Click **Display** ➙ **Change display settings**.
   - Click **Appearance and Personalization** ➙ **Display** ➙ **Change display settings**.
3. In the **Multiple displays** drop-down list box, select **Show desktop only on 1** or **Show desktop only on 2**.

   Note: You might need to change to the duplicate mode and then you can choose **Show desktop only on 1** or **Show desktop only on 2**.
4. Follow the instructions on the screen to complete the setting.

If you select **Show desktop only on 1**, your computer display will be on and the external monitor will turn off. However, the other functions such as audio, Ethernet, and USB connection can still work although the external monitor is off. If you select **Show desktop only on 2**, the external monitor will be on and your computer display will turn off.

Rotating the external monitor display

The dock enables you to rotate only your external monitor display as you want.

To rotate the external monitor display, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.
2. Depending on your Control Panel mode, do one of the following:
   - Click **Display → Change display settings**.
   - Click **Appearance and Personalization → Display → Change display settings**.
3. In the **Orientation** drop-down list box, select one of the following options:
   - **Landscape**: The external monitor display remains the same as your computer monitor display.
   - **Portrait**: The external monitor display rotates 90 degrees to the left.
   - **Landscape (flipped)**: The external monitor display becomes upside-down.
   - **Portrait (flipped)**: The external monitor display rotates 90 degrees to the right.
4. Follow the instructions on the screen to complete the setting.

Note: You also can continually click **Portrait** or **Portrait (flipped)** until the display becomes upside-down.

Setting the resolution of the external monitor

To set the resolution of the external monitor, do the following:

1. From the desktop, move the pointer to the bottom-left corner of the screen, and then search **Control Panel** in the search box.
2. Depending on your Control Panel mode, do one of the following:
   - Click **Display → Change display settings**.
   - Click **Appearance and Personalization → Display → Change display settings → Advanced display settings**.
3. In the **Resolution** drop-down list box, move the slider up to increase or down to decrease the resolution of the external monitor.
4. Follow the instructions on the screen to complete the setting.

Chapter 4. Troubleshooting

This chapter provides some troubleshooting hints and tips to assist you if you experience any problems with the dock. Check the following items first to try to solve the problem.

General

1. **The dock does not work after connected to a computer with the provided Thunderbolt 3 cable.**

   a. Ensure that the dock is well powered by its power adapter. The dock always needs an external power adapter for operation, because it does not take power from the Thunderbolt 3 connector attached to your computer.

   b. Ensure that the device driver of the dock is well installed; if not, install the device driver and restart the computer.

   c. Ensure that the Thunderbolt 3 connector on your computer works well.

2. **The 2.4 GHz wireless keyboard or 2.4 GHz wireless mouse function is interrupted. The mouse pointer lags or it cannot move. Some characters are lost when you input by the keyboard.**

   - Ensure that you connect your 2.4 GHz device receiver to the USB 3.0 connector located above the VGA connector on the dock.

   - Avoid connecting another USB 3.0 device next to the connector with the receiver attached.

3. **The charging speed becomes slow, after I connect my device (such as a mobile phone) to the dock for charging.**

   Ensure that you connect your mobile phone to the Always On USB 3.0 connector. Disconnect the dock from the computer, the charging speed might become faster.

4. **My mobile phones or other USB devices cannot be charged after I connect it to the Always On USB 3.0 connector.**

   It is recommended that you can disconnect the dock from the computer and then you can charge the mobile phones or other USB devices.

5. **The mouse and keyboard cannot wake up my computer when connected to the Always On USB 3.0 connector.**

   Ensure that your mouse or keyboard is connected to another USB connector on the dock instead of the Always On USB 3.0 connector.

6. **My computer cannot be charged after I connect it to the dock.**

   Ensure that you use the power adapter that shipped with the dock.

Video output

1. **The external monitor display is blank.**

   - Ensure that the computer connected to the dock is running correctly and is not in standby or hibernation mode. When the computer is in standby or hibernation mode, the external monitor display is always blank.

   - Ensure that the device driver is installed following the installation instructions.

   - Ensure that the following connections are correct:

     – The connection between the Thunderbolt 3 cable and your computer

     – The connection between the Thunderbolt 3 cable and the dock

     – The connection between the power adapter, the dock, and the electrical outlet

     – The connection between your video cable to the dock and the external monitor

If the problem persists, disconnect all connections of the dock, and uninstall the dock device driver. Then, reinstall the device driver and the dock. See Chapter 2 "Setting up the dock" on page 7.

2. **I cannot play back videos on the external monitor but can play them back on the computer monitor.**

   Some computers do not support the Certified Output Protection Protocol (COPP), and you cannot play back the protected videos on the external monitor connected to the dock.

   To play back videos on the external monitor, you can connect the external monitor to the VGA or DP connector on your computer, and extend the display to the external monitor. For more information about configuring the display settings, see "Setting the resolution of the external monitor" on page 12.

3. **The images on the external monitor flutter.**

   Check the display resolution of the computer and ensure that the resolution is supported by the dock.

4. **The computer can play back Web flashes. However, when you drag the window to the external monitor and maximize the playback window, the playback stops.**

   To solve the problem, update your Adobe Flash Player program to the latest version.

5. **The external monitor display is blank, or the images on the external monitor flutter.**

   Connect no more than three external monitors at a time.

Audio

I cannot hear anything through my computer speakers or I cannot use the audio connectors on the computer.

By default, ThinkPad and other Lenovo computers use the headset and microphone combo connector on the dock and disable built-in audio connectors when the dock is connected.

To enable the built-in audio connectors on your computer, do the following:

1. Right-click the **Volume** icon in the Windows notification area.

2. Select **Sounds**, and the Sound window is displayed.

3. Click the **Playback** tab to select a built-in audio device, and then click the **Recording** tab to select another built-in audio device.

See "Using the video output connectors" on page 10 for more information.

Note: To apply the new settings, restart the applications that are using the audio devices. The settings you have adjusted will be saved until you change the settings next time.

Appendix A.   Accessibility information

Documentation in accessible formats

Lenovo provides electronic documentation in accessible formats, such as properly tagged PDF files or HyperText Markup Language (HTML) files. Lenovo electronic documentation is developed to ensure that visually impaired users can read the documentation through a screen reader. Each image in the documentation also includes adequate alternative text to explain the image so that visually impaired users can understand the image when they use a screen reader.

To open and view PDF files, your computer must have the Adobe Reader program installed. The Adobe Reader program also is available for download at:
http://www.adobe.com

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