

# ThinkVision

## LT1421 Wide Flat Panel Monitor User's Guide



*lenovo*

# Product number

1452-DB6

1452-DS6

## **First Edition ( 06 2011)**

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# Safety information

## General Safety guidelines

For tips to help you use your computer safely, go to:

<http://www.lenovo.com/safety>

Before installing this product, read the Safety Information.

مج، يجب قراءة دات السلامة

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 **Safety Information** (安全信息)。

Prije instaliranja ovog proizvoda obavezno pročitajte sigurnosne upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Ennen kuin asennatt ämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקין מוצר זה, קרא את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto produktu si prečítajte bezpečnostné informácie.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

សូមអានព័ត៌មានល្អិតល្អន់ មុនពេលចាប់ផ្តើមបញ្ចូលកម្មវិធី

安裝本產品之前，請先閱讀「安全資訊」。

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## Chapter 1. Getting started

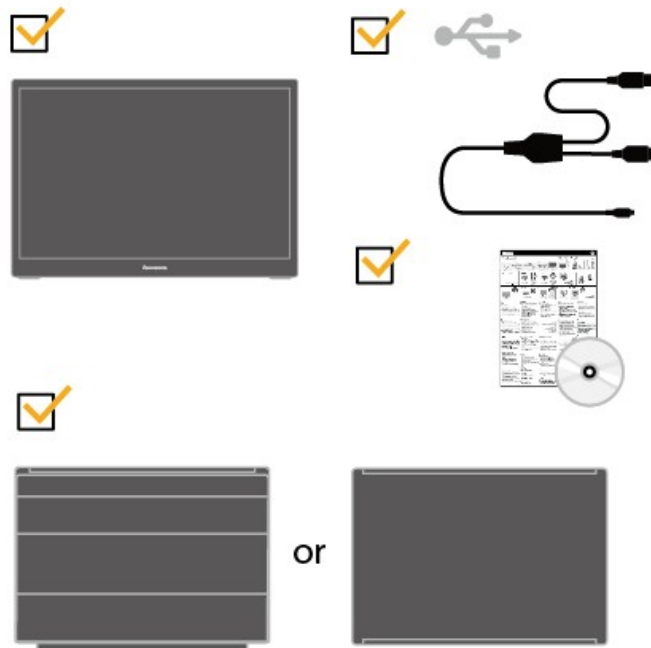
This User's Guide contains detailed information on the ThinkVision® LT1421 Wide Flat Panel Monitor. For a quick overview, please see the Setup Poster that was shipped with your monitor.

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### Shipping contents

The product package should include the following items:

- Information Flyer
- Reference and Driver CD
- USB Cable
- Protective Case or Screen Protector (Alternative)
- Flat Panel Monitor



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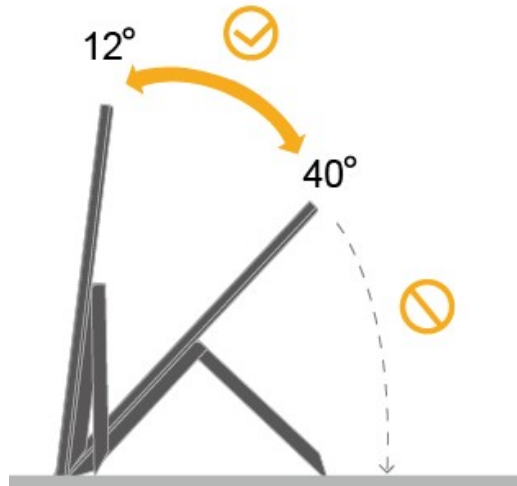
## Product overview

This section will provide information on adjusting monitor positions, setting user controls, and using the cable lock slot.

### Types of adjustments

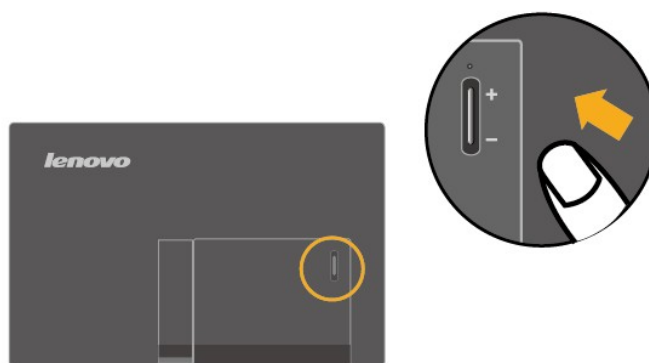
#### Tilt

Please see the illustration below for an example of the tilt range.



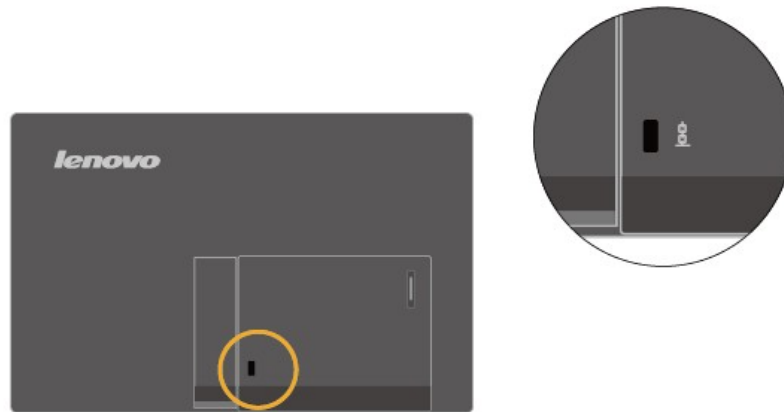
#### User controls

Your monitor has brightness control on the back which are used to adjust the display.



## Cable lock slot

Your monitor is equipped with a cable lock slot located on the rear of your monitor. Please follow the instructions that came with the cable lock to attach it.



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## Setting up your monitor

This section provides information to help you set up your monitor.

### Connecting and turning on your monitor

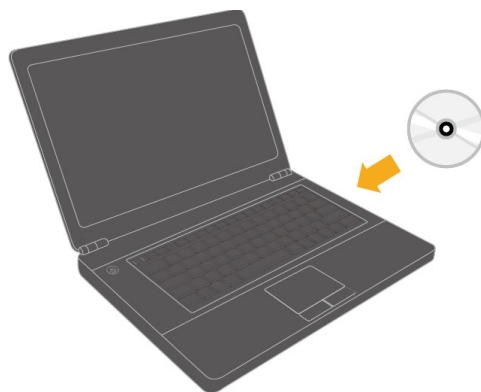
**Note:** Be sure to read the Safety Information located in the Monitor Safety, troubleshooting and Warranty Guide before carrying out this procedure.

1. Power on the computer.

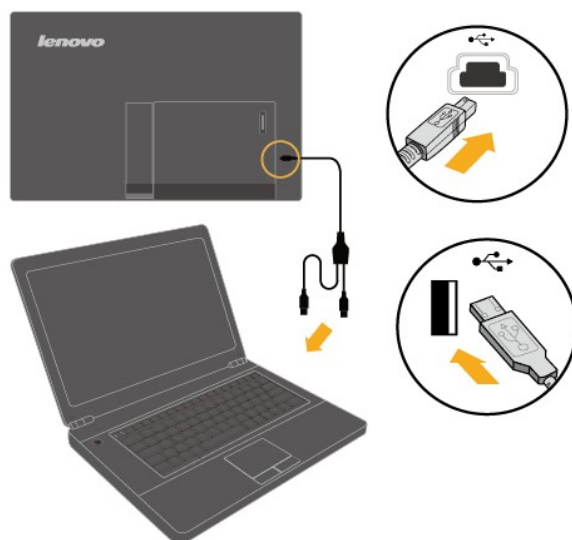


2. To install the monitor driver, insert the Reference and Driver CD, click **Install driver**, and follow the on-screen instructions.

For detailed Setup steps, please see " Chapter 4".



3. Connect the USB cable to the USB port of the back of the monitor and the other two ends to the appropriate USB ports on your computer . How to work with LT1421 Wide USB monitor , please see " Chapter 4".





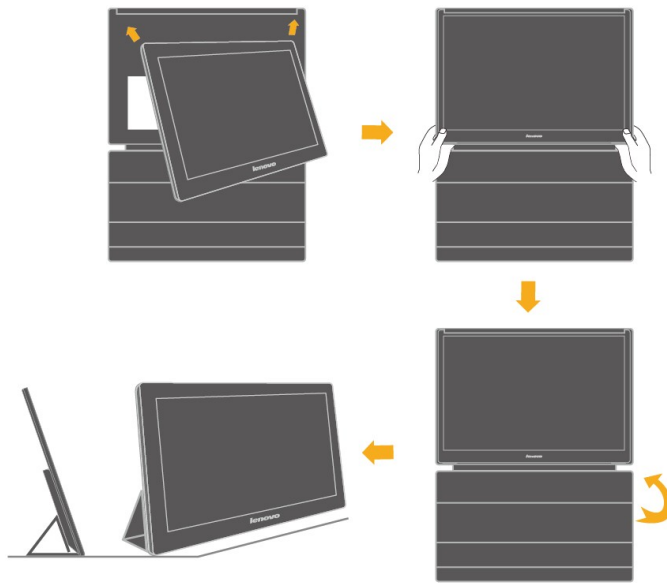
4. Using the convertible protective case or screen protector.

A convertible protective case or a screen protector is attached to the USB monitor to help protect it during transportation or storage. The protective case also can be used as the stand instead. Here is the illustrations as follows:

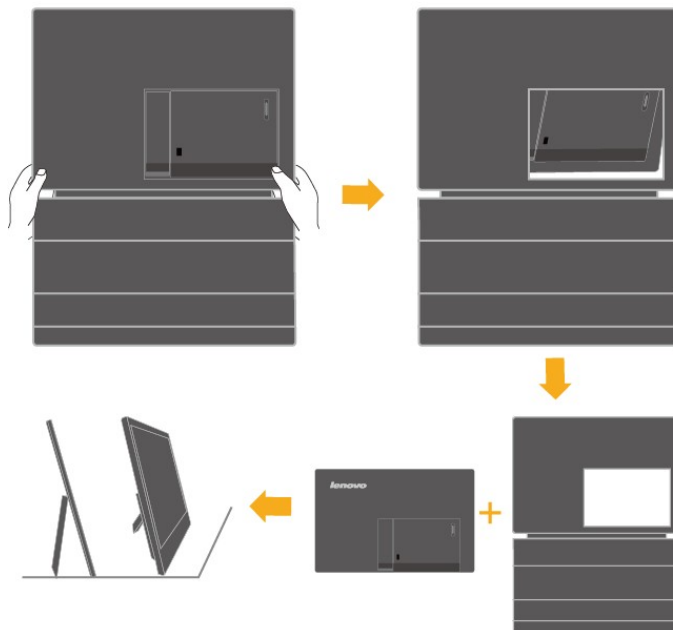
(1) If protective case is attached:

When using:

1) Case assembly and be used as a stand:

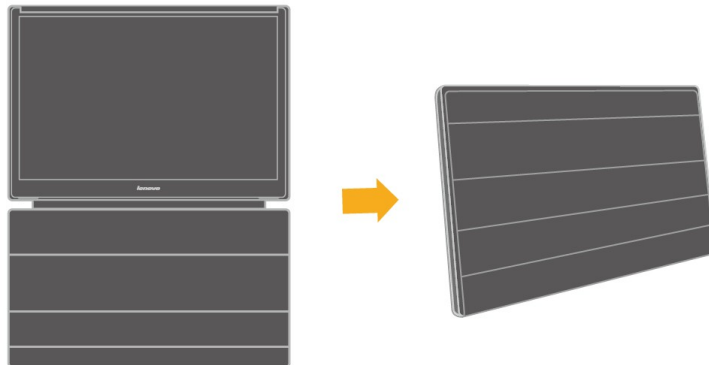


2) Case detaching and using the monitor stand itself.



On storage or transportation:

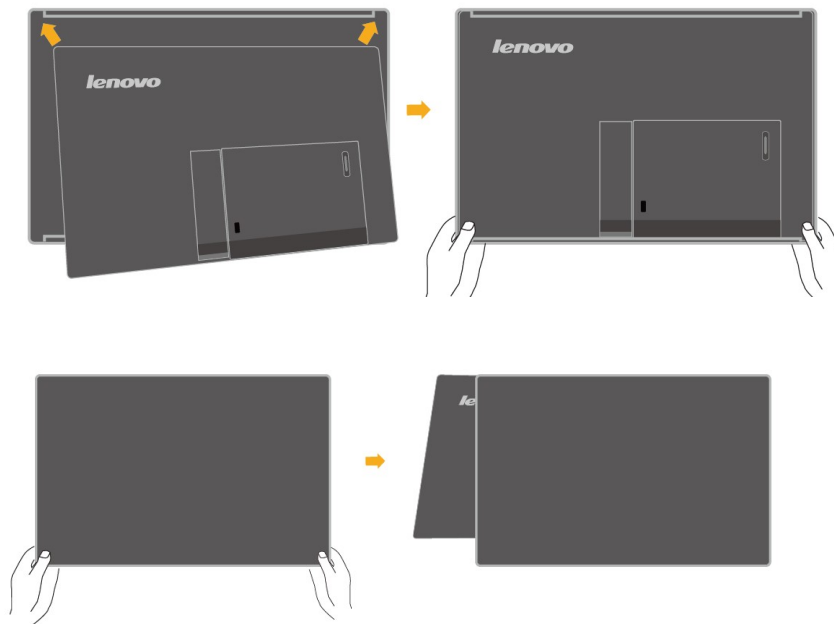
Place the case cover to the front of the monitor.



(2) If screen protector is attached:

The screen protector is just used to protect the screen from damage when storage or transportation.

Screen protector assembly and detaching:



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## Registering your option

Thank you for purchasing this Lenovo® product. Please take a few moments to register your product and provide us with information that will help Lenovo to better serve you in the future. Your feedback is valuable to us in developing products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the following Web site: <http://www.lenovo.com/register>

Lenovo will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

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## Chapter 2. Adjusting and using your monitor

This section will give you information on adjusting and using your monitor.

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### Comfort and accessibility

Good ergonomic practice is important to get the most from your personal computer and to avoid discomfort. Arrange your workplace and the equipment you use to suit your individual needs and the kind of work that you perform. In addition, use healthy work habits to maximize your performance and comfort while using your computer.

For more detailed information on any of these topics, visit the Healthy Computing Web site at: <http://www.lenovo.com/healthycomputing>

### Arranging your work area

Use a work surface of appropriate height and available working area to allow you to work in comfort.

Organize your work area to match the way you use materials and equipment. Keep your work area clean and clear for the materials that you typically use and place the items that you use most frequently, such as the computer mouse or telephone, within the easiest reach.

Equipment layout and setup play a large role in your working posture. The following topics describe how to optimize equipment setup to achieve and maintain good working posture.

### Positioning and viewing your monitor

Position and adjust your computer monitor for comfortable viewing by considering the following items:

- **Viewing distance:** Optimal viewing distances for monitors range from approximately 510mm to 760mm (20 in to 30 in) and can vary depending on ambient light and time of day. You can achieve different viewing distances by repositioning your monitor or by modifying your posture or chair position. Use a viewing distance that is most comfortable for you.
- **Monitor height:** Position the monitor so your head and neck are in a comfortable and neutral (vertical, or upright) position. If your monitor does not have height adjustments, you might have to place books or other sturdy objects under the base of the monitor to achieve the desired height. A general guideline is to position the monitor such that the top of the screen is at or slightly below your eye-height when you are comfortably seated. However, be sure to optimize your monitor height so the line of site between your eyes and the center the monitor suits your preferences for visual distance and comfortable viewing when your eye muscles are in a relaxed state.
- **Tilt:** Adjust the tilt of your monitor to optimize the appearance of the screen content and to accommodate your preferred head and neck posture.
- **General location:** Position your monitor to avoid glare or reflections on the screen from overhead lighting or nearby windows.

The following are some other tips for comfortable viewing of your monitor:

- Use adequate lighting for the type of work you are performing.
- Use the monitor brightness, contrast, and image adjustment controls, if equipped, to optimize the image on your screen to meet your visual preferences.
- Keep your monitor screen clean so you can focus on the screen's contents.

Any concentrated and sustained visual activity can be tiring for your eyes. Be sure to periodically look away from your monitor screen and focus on a far object to allow your eye muscles to relax. If you have questions on eye fatigue or visual discomfort, consult a vision care specialist for advice.

## Quick tips for healthy work habits

The following information is a summary of some important factors to consider to help you remain comfortable and productive while you use your computer.

- **Good posture starts with equipment setup:** The layout of your work area and the setup of your computer equipment have a large effect on your posture while using your computer. Be sure to optimize the position and orientation of your equipment by following the tips outlined in "Arranging your work area" on page 2-1 so you can maintain a comfortable and productive posture. Also, be sure to use the adjustment capabilities of your computer components and office furniture to best suit your preferences now and as your preferences change over time.
- **Minor changes in posture can help avoid discomfort:** The longer you sit and work in front of your computer, the more important it is to observe your working posture. Avoid assuming any one posture for an extended period of time. Periodically make minor modifications in your posture to help deter any discomforts that might arise. Make use of any adjustments that your office furniture or equipment provide to accommodate changes in posture.
- **Short, periodic breaks help ensure healthy computing:** Because computing is primarily a static activity, it is particularly important to take short breaks from your work. Periodically, stand up from your work area, stretch, walk for a drink of water, or otherwise take a short break from using your computer. A short break from work gives your body a welcome change in posture and helps to ensure you remain comfortable and productive while you do work.

## Accessibility information

Lenovo is committed to providing greater access to information and technology to people with disabilities. With assistive technologies, users can access information in the way most appropriate to their disability. Some of these technologies are already provided in your operating system; others can be purchased through vendors or accessed at:

<http://www-03.ibm.com/research/accessibility/requests/accvpat.nsf/lenovo-bidx?OpenForm>

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## Understanding power management

Power management is invoked when the computer recognizes that you do not use your mouse or keyboard for a user-definable period. There are several states as described in the table below.

For optimal performance, unplug the USB cable to switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

Table 2-1. Power indicator

State	Power Indicator	Screen
On	Green	Normal
Off	Off	Blank

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## Caring for your monitor

Be sure to turn off the power before you perform any maintenance on the monitor.

**Do not:**

- Apply water or liquid directly to your monitor.
- Use solvents or abrasives.
- Use flammable cleaning materials to clean your monitor or any other electrical equipment.
- Touch the screen area of your monitor with sharp or abrasive items. This type of contact may cause permanent damage to your screen.
- Use any cleaner which contains an anti-static solution or similar additives. This may harm the coating of the screen area.

**Do:**

- Lightly dampen a soft cloth with water and use this to gently wipe the covers and the screen.
- Remove grease or finger marks with a damp cloth and a little mild detergent.

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## Chapter 3. Reference information

This section contains monitor specifications, troubleshooting information, and service information.

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### Monitor specifications

Table 3-1. Monitor specifications for type-model 1452-DB6,1452-DS6

Dimensions	Height	217.9 mm (8.58 in)
	Depth	22.0 mm (0.87 in)
	With	335.0 mm (13.19 in)
Stand	Tilt range	Range: 12°~40°
Image	Viewable image size	354.3 mm (13.95 in)
	Maximum height	173.95 mm (6.85 in)
	Maximum width	309.4mm (12.18 in)
	Pixel pitch	0.2265 mm (0.0089 in) (V)
Power input	Supply voltage	5V DC
	Max supply current	1A
Power consumption Note: Power consumption figures are for the monitor and the power supply combined.	Max Consumption	5W
	Typical Consumption	4.2W
	Sleep Consumption	<0.3W
Video input	Input signal	USB 2.0
	Data rates	480Mbps(max)
Supported Display Modes	Native Resolution	1366 x 768 at 60 Hz
Temperature	Operating	0° to 40°C (32° to 104° F)
	Storage	-20° to 60°C (-4° to 140° F)
	Shipping	-20° to 60°C (-4° to 140° F)
Humidity	Operating	10% to 80%
	Storage	5% to 95%
	Shipping	5% to 95%

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## Troubleshooting

If you have a problem setting up or using your monitor, you might be able to solve it yourself. Before calling your dealer or Lenovo, try the suggested actions that are appropriate to your problem.

*Table 3-2. Troubleshooting*

<b>Problem</b>	<b>Possible cause</b>	<b>Suggested action</b>	<b>Reference</b>
The image quality is unacceptable.	The USB cable is not connected with the monitor or system completely.	Be sure the USB cable is firmly plugged into the system and monitor.	"Connecting and turning on your monitor" on page 1-3
The power indicator is not lit and there is no image.	<ul style="list-style-type: none"><li>• There is no power at the outlet.</li><li>• The USB cable is loose or disconnected with the monitor or system.</li></ul>	<ul style="list-style-type: none"><li>• Try using another electrical outlet.</li><li>• Be sure the USB cable is connected properly.</li></ul>	"Connecting and turning on your monitor" on page 1-3
One or more of the pixels appear discolored	This is a characteristic of the LCD technology and is not an LCD defect.	If there are more than five pixels missing, contact the Customer Support Center.	Appendix A, "Service and Support," on page A-1

### Getting further help

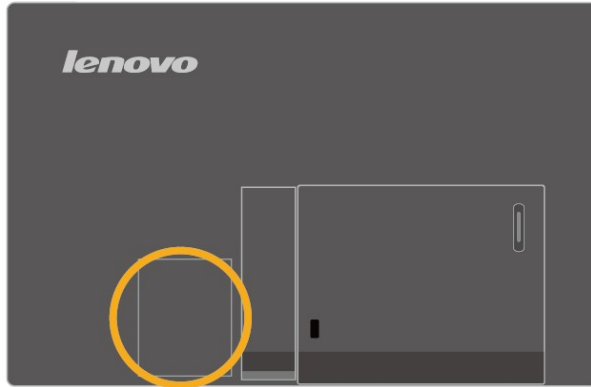
If you still can't solve your problem, please contact the Customer Support Center. For more information on contacting the Customer Support Center, please see Appendix A, "Service and Support," on page A-1.

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## Service information

### Product numbers

The product number for your monitor is located on the rear of the monitor as shown below.



### Customer responsibilities

The warranty does not apply to a product which has been damaged due to accident, misuse, abuse, improper installation, usage not in accordance with product specifications and instructions, natural or personal disaster, or unauthorized alterations, repairs or modifications.

The following are examples of misuse or abuse and not covered by warranty:

- Images burned on to the screen of a CRT monitor. Burned image is preventable by utilizing a moving screen saver or power management.
- Physical damage to covers, bezel, base and cables.
- Scratches or punctures on monitor screens.

### Service parts

The following parts are for use by Lenovo service, or Lenovo authorized dealers, To support the customer warranty. Parts are for service use only. The table below shows information for model 1452-DB6,1452-DS6.

Table 3-3. List of service parts

FRU (Field Replaceable Unit) Part number	Description	color	Machine Type Model (MTM)
03X7924	LT1421 Wide-FRU Monitor	Raven Black	1452-DB6
03X7936	LT1421 Wide-FRU Monitor	Raven Black	1452-DS6
03X7925	LT1421 Wide-FRU USB cable(1.8m,RoHS)	Raven Black	1452-DB6 1452-DS6
03X7926	LT1421 Wide-FRU Case	Raven Black	1452-DB6
03X7935	LT1421 Wide-FRU Screen Protector	Raven Black	1452-DS6



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## Chapter 4. Working with LT1421 Wide USB monitor

This section contains instructions to install the monitor driver and display information settings.

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### Driver Installation

#### PC Requirements

Lenovo DisplayLink software can be used on PCs, from Netbooks, Notebooks/Laptops to Desktops. The driver will run on processors ranging from Atom N270 based PCs, basic single Core CPUs, and of course the latest Dual, Quad Core and Core i3/i5/i7 CPUs.

The performance of the software is dependent upon the processing power available, as well as the operating system in use. More capable systems offer higher performance.

Lenovo DisplayLink software is available for PCs running one of the following Windows operating systems:

- Windows 7 (32-bit or 64-bit)
- Windows Vista with Service Pack 1 or 2 (32-bit or 64-bit)
- Windows XP Home or Professional (including Tablet edition) with Service Pack 2 or 3

**Note:** 64-bit editions of XP are not supported. No Windows Server editions are supported. Mac OS X support can be found at <http://www.displaylink.com/mac>

To use the Lenovo DisplayLink driver on Windows 2000, please use v5.3 of DisplayLink software.

Recommended typical system requirements are:

#### Windows 7

For Windows 7, the Windows Experience Index (WEI) is a useful measure of hardware level. The WEI is accessible from Computer > Properties, or from Control Panel > System.

The recommended typical hardware requirements for the PC are:

- WEI score of at least 3 in the 'Graphics; Desktop performance for Windows Aero' category.
- Overall WEI score of at least 3 as recommended by Microsoft.
- At least one USB 2.0 port.
- 30 megabytes (MB) of free disk space.
- Computer screen for use with the Lenovo DisplayLink device, if it is not integrated.
- Network access for software downloads, or access to a CD-ROM drive.

#### Windows Vista

For Windows Vista, the Windows Experience Index (WEI) is a useful measure of hardware level. The WEI is accessible from Computer > Properties, or from Control Panel > System.

The recommended typical hardware requirements for the PC are:

- WEI score of at least 3 in the 'Graphics; Desktop performance for Windows Aero' category.
- Overall WEI score of at least 3 as recommended by Microsoft.
- At least one USB 2.0 port
- 30 megabytes (MB) of free disk space.
- Computer screen for use with the Lenovo DisplayLink device, if it is not integrated.
- Network access for software downloads, or access to a CD-ROM drive.

If the PC specification is below this, performance will be lower (or CPU loading higher than acceptable).

#### Windows XP

- For 1-2 monitors, business usage, productivity target. This may not provide full frame rate DVD playback at full screen.
- 1.2GHz Single Core CPU
- 512MB memory
- For 3 monitors where 1 could run DVD video while also targeting productivity and business apps. Will support only 1 video of DVD resolution at full screen:
- 1.6GHz CPU

- 1GB memory
- For 6 screens where 1 screen can run full screen DVD video:
- 1.8GHz Core Duo
- 1GB memory
- At least one USB 2.0 port.
- 30 megabytes (MB) of free disk space.
- Computer screen for use with the Lenovo DisplayLink device, if it is not integrated.
- Network access for software downloads, or access to a CD-ROM drive.

### **Graphics Card Support (Windows Vista/Windows 7)**

On Windows Vista and Windows 7, Lenovo DisplayLink software interacts closely with the primary graphics card. Lenovo DisplayLink support and test a single graphics card (GPU) installed in a PC from all major GPU vendors (Intel, ATI, NVidia and Via)

The following GPU configurations may exhibit compatibility issues on Windows 7 and Vista in certain circumstances:

- Switchable Graphics (ATI/Intel)
- Switchable Graphics (ATI/ATI)
- Switchable Graphics (NVIDIA/Intel)
- NVIDIA SLI in SLI mode

Other GPU configurations, including the following, are currently unsupported and will not function on Windows 7/Vista:

- Hybrid Graphics
- Hybrid SLI
- Hybrid Crossfire
- Crossfire
- SLI not in SLI mode
- Multiple WDDM 1.1 graphics drivers active at once

### **Graphics Card Support (Windows XP)**

All graphics cards are supported on Windows XP.

### **Supported Languages**

The following languages are supported in version 5.4, on all supported operating systems:

- Arabic
- Bahasa Indonesian
- Bulgarian
- Chinese (Traditional)
- Chinese (Simplified)
- Croatian
- Czech
- Danish
- Dutch
- English
- Finnish
- French
- Greek
- German
- Hungarian
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese
- Russian
- Slovak

- Slovenian
- Spanish
- Swedish
- Turkish

Unsupported languages default to English.

## Installing the Lenovo DisplayLink USB Graphics Software

The following section shows you how to install the DisplayLink USB Graphics software on different operating systems.

**Note:** If you have v3.x, R4.1 or R4.2 DisplayLink software installed you must uninstall it, using the Windows Add/Remove Programs feature, before installing this release. Devices will continue working after this release is installed.

### To Install the Lenovo DisplayLink USB Graphics on Windows 7

The preferred method of installation is using Windows 7's Windows Update facility.

**1.** Connect your Lenovo DisplayLink device via the USB cable to your PC. Windows detects the new hardware and automatically downloads the driver.

**2.** Once downloaded, the install will run. The Lenovo DisplayLink software end user licence agreement window opens.

**3.** Click *I Accept*. The DisplayLink Core software installs.

**Note:** The screen may flash or go black during the install.

Alternatively you may install the software from a website download or CD-ROM:

**Important!** Do not connect a DisplayLink device/screen to your PC before the install.

1. Insert the reference and driver CD into your CD drive, the CD will run automatically.
2. Click **Install drivers**. (Please Click allow or execute if the warning Window appears).

The DisplayLink software end user licence agreement window opens.

**3.** Click *I Accept*. DisplayLink Core software and Lenovo Display Adapter installs.

**Note:** The screen may flash or go black during the install. No message will be shown at the end of the install.

**4.** Connect your DisplayLink device via the USB cable to your PC. Installing device driver message

The Windows User Account Control window opens.

**5.** Click *Yes*. DisplayLink automatically installs the device. The DisplayLink software end user licence agreement window opens (see above).

**6.** Click *I Accept*. The DisplayLink USB Graphics software installs, without notification that it has completed.

**Note:** On some machines you may need to reboot before you can use your DisplayLink enabled device.

### To Install the Lenovo DisplayLink USB Graphics on Windows Vista

**Important!** Do not connect a DisplayLink device/screen to your PC before the install.

1. Insert the reference and driver CD into your CD drive, the CD will run automatically.
2. Click **Install drivers**. (Please Click allow or execute if the warning Window appears).

The DisplayLink software end user licence agreement window opens.

**3.** Click *I Accept*. DisplayLink Core software and Lenovo Display Adapter installs.

**Note:** The screen may flash or go black during the install.  
No message will be shown at the end of the install.

4. Connect your DisplayLink device via the USB cable to your PC.  
Installing device driver message

The Windows User Account Control window opens.

5. Click *Yes*.

DisplayLink automatically installs the device.

The DisplayLink software end user licence agreement window opens (see above).

6. Click *I Accept*.

The DisplayLink USB Graphics software installs, without notification that it has completed.

**Note:** On some machines you may need to reboot before you can use your DisplayLink enabled device.

#### To Install the Lenovo DisplayLink USB Graphics on Windows XP

**Important!** Do not connect a DisplayLink device/screen to your PC before the install.

1. Insert the reference and driver CD into your CD drive, the CD will run automatically.
2. Click **Install drivers**. (Please Click allow or execute if the warning Window appears).

The DisplayLink software end user licence agreement window opens.

3. Click *I Accept*.

DisplayLink Core software and Lenovo Display Adapter installs.

**Note:** The screen may flash or go black during the install.

4. Connect your DisplayLink device via the USB cable to your PC.

Windows installs the DisplayLink device.

**Note:** The screen may flash or go black during the install.

## USB Monitor Display Information settings

The language shown in pictures below is decided by your operating system : (Unsupported languages default to English)

### Using the DisplayLink Software


This section describes how to use DisplayLink's Software. The section is divided into sub-sections relating to your operating system.

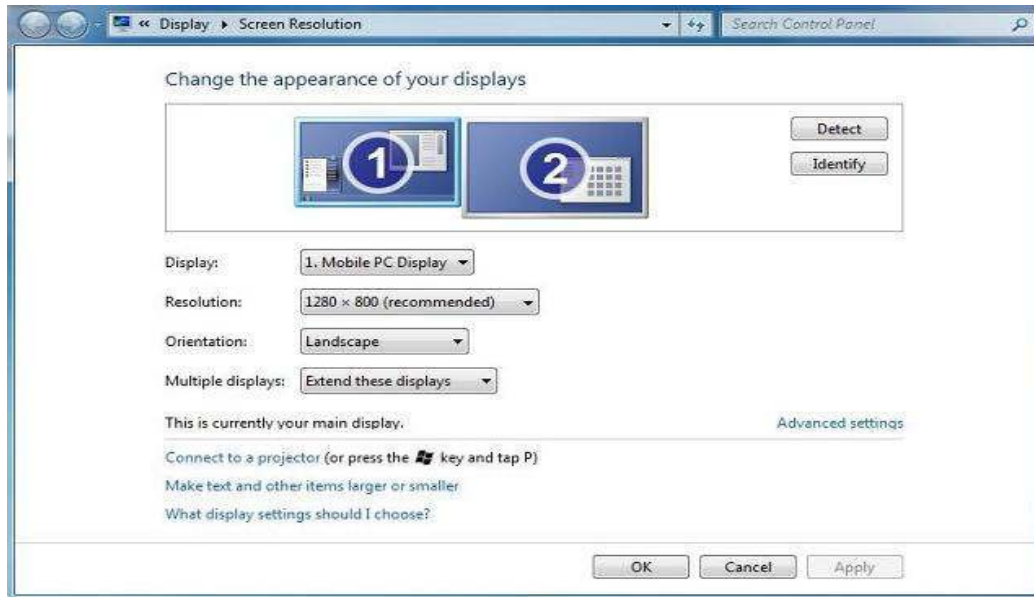
*Note: The terminology for mirror mode, can vary between operating systems and the DisplayLink GUI. The terms "Clone", "Mirror" and "Duplicate" essentially all provide the same function of cloning the pixels from one display to another.*

#### Windows 7 - Controlling the Display

On Windows 7, you can configure a DisplayLink device through the use of Windows Display Properties (WDP). WDP provides a simple method to attach, rotate, duplicate or extend screens as well as modify screen resolution.

#### To open WDP

1. Right click on the DisplayLink icon .
2. Click *Advanced Configuration*.
3. WDP opens.



### Setting the Display

Follow this procedure to set the display.

#### To set the display

1. Open *Screen Resolution*.
2. Set the display options. Refer to the table below for details on each option.

Table 4-1. WDP Options

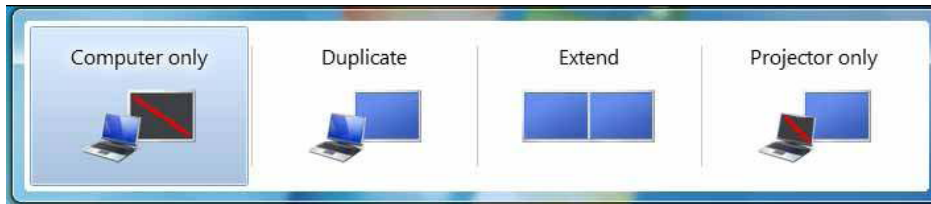
Menu	Sub-Menu	Description
Display		Use the drop down list to select a display to be configured.
Resolution		Use the drop down list and user the slider to choose a resolution.
Orientation	Landscape	Sets the display to landscape view.
	Portrait	Sets the display to portrait mode.
	Landscape (flipped)	Sets the display to upside down landscape mode.
	Portrait (flipped)	Sets the display to upside down portrait mode.
Multiple displays	Duplicates these displays	Reproduces the main display on the second display.
	Extend these displays	Extends the main display onto the secondary display.
	Show Desktop only on 1	The desktop appears on the display marked 1. The display marked 2 becomes blank.
	Shows Desktop only on 2	The desktop appears on the display marked 2. The display marked 1 becomes blank.

To control the behaviour of an attached DisplayLink display, it is also possible to use Windows Key+P to display a menu (and cycle through it) to switch mode.

#### To control the Display

1. Select the Windows Key+P.

The following menu appears.



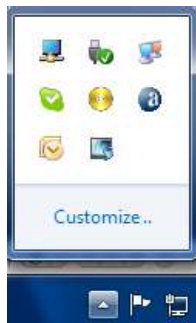
2. Click on one of the options.  
The display updates to reflect your choice.

### The DisplayLink Icon Application

You can configure the behaviour of the DisplayLink USB Graphics through the DisplayLink icon application on the taskbar, where present.

#### To show the DisplayLink Manager menu

1. From the taskbar, click the *Show hidden icons* arrow to show all available icons.



2. Click the DisplayLink icon .

A menu appears with several options, as described in the following table.


Table 4-2 DisplayLink menu

Menu	Description
Check for updates	Connects to the Windows Update and checks for newer versions and downloads them, if available.
Optimize for Video	Select this option for better movie playback performance on the DisplayLink enabled displays. Only select this option when playing back video content. <b>Note:</b> Text may appear less clear when enabled.
Advanced	Configuration Opens the Windows Display Properties (WDP)

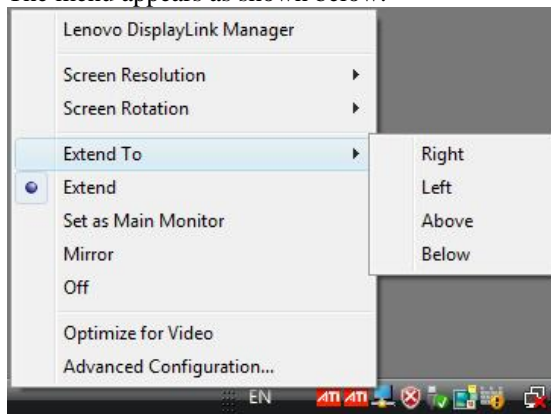
### Windows Vista and Windows XP – Controlling the Display

When devices are attached, an icon appears in the taskbar. This gives you access to the DisplayLink manager menu.

#### To use the DisplayLink Manager Menu

1. Click the DisplayLink icon  on the taskbar.

The menu appears as shown below.



2. Select an option from the menu, using the following table for the options available.

Table 4-3 DisplayLink menu

Menu Option	Sub-menu Option	Description
Screen Resolution		Displays a list of available resolutions. Some resolutions may be enclosed by [ ]. Please see, Inferred Modes.
Screen Rotation	Normal	No rotation is applied to the DisplayLink display
	Rotated Left	Rotates the extended or mirrored display by 270 degrees.
	Rotated Right	Rotates the extended or mirrored display by 90 degrees.
	Upside-Down	Rotates the extended or mirrored display by 180 degrees.
Extend To	Right	Extends the display to the right of the main display.
	Left	Extends the display to the left of the main display.
	Above	Extends the display above of the main display.
	Below	Extends the display below the main display.
Extend		Extends your desktop onto the secondary display.
Set as Main Monitor		Sets the secondary display as the main display.
Notebook Monitor Off		Switches off the display of an attached notebook and makes the DisplayLink display primary.
Mirror		Copies what is on the main display and reproduces it on the secondary display.
Off		Switches off the secondary display.
Optimize for Video (Vista and Windows 7 Only)		Configures the secondary display for optimum full screen video performance output. <b>Note:</b> Text may appear less clear.
Advanced Configuration		Opens the Display Settings window.

## **Additional Information**

The following section provides additional information on the use of the DisplayLink USB Graphics software.

### **Monitor Calibration**

DDC/CI is not supported on displays with integrated DisplayLink technology, for example mini monitors.

### **Media Playback**

On Windows 7, Vista and Windows XP (in extend modes), the DisplayLink USB Graphics device can display media files and DVDs using the following media players:

- Windows Media Player 11 (<http://www.microsoft.com/windows/windowsmedia/default.mspx>)
- WinDVD 8 ([www.intervideo.com](http://www.intervideo.com))
- PowerDVD 7 ([www.cyberlink.com](http://www.cyberlink.com))
- RealPlayer 11 ([www.real.com](http://www.real.com))

The DisplayLink USB Graphics device can display media files and DVDs using most media players. Media playback in mirror mode (XP) or in Basic mode (Vista and Windows 7) is not recommended.

### **Using Multiple DisplayLink USB Graphics devices**

The software supports up to six simultaneously USB attached screens. It is also possible that different sets of screens are being used at different times, for example two in the office and two at home. The software saves each screen's display profile separately. This allows for different physical positioning, or different resolutions, of connected monitors in the office and the home.

### **Standby and Hibernate, Shut down and Restart**

If the PC that the DisplayLink USB Graphics device is connected to is placed into standby or hibernate mode, the display goes blank. When the PC is again powered up (and unlocked if necessary) the connected monitor returns to the same mode as it was before stand by or hibernation.

If the PC is shut down, restarted and logged in, again the connected display returns to the same mode as it was before shutdown.

### **DisplayLink USB Graphics with Multiple Users**

DisplayLink USB Graphics work with multiple users on the PC. The mode settings are saved for each user so each can use their own desktop configuration.

### **Disconnecting the DisplayLink USB Graphics**

If the DisplayLink USB Graphics device is powered off or the USB cable is removed from the computer, the display blanks. All windows and icons move to the primary screen.

On reconnection or powering up of the DisplayLink USB Graphics device, the display returns to the same mode as it was before disconnection. However, windows and icons that were previously on the screen will not be moved back.



## Error Messages

DisplayLink USB Graphics software occasionally displays user messages in a bubble in the notification area. The table below lists the user messages and their description.

Table 4-4 DisplayLink menu

Message	Description
Insufficient system resources exist to complete the requested service	This can occur when entering extend mode with low system resources. The PC does not have enough memory to start an extend display. Close down any unused applications. The situation may also be improved by rebooting the PC.
The requested allocation size was too large	This can occur if trying to mirror a primary display with a resolution above 2300x1700 (4:3) or 2600x1500 (16:9).
Incompatible Display Driver	This message will appear if the primary graphics card drivers installed are not WDDM compatible. Windows 7 is not designed to operate without WDDM drivers. Download and install the latest Windows 7 (WDDM) drivers for your primary graphics card.
The system cannot write to the specified device	This warning may be displayed in Windows XP after changing the display mode several times (e.g. Extend/Dock mode) from the DisplayLink GUI. If this happens, detach and reattach the device to restore normal operation.

## Troubleshooting

This section provides tips for correcting problems, should any occur. It also describes how to contact Lenovo should you encounter problems that you cannot resolve.

Before you call Lenovo, please read the troubleshooting advice in this manual and in your computer *User's Manual*. You may also want to consult with your system administrator or company technical support staff.

### Precautions for Microsoft® Windows®

- This product does not support 3D programs or Blue-Ray Disk.
- Due to the configurations of computers and Windows® operating systems available, functionality may differ slightly than stated in the user manual. This may be due to the computer manufacturer's BIOS and other custom configurations of the hardware, pre-installed software or operating system installed at time of production. If you have specific problems, you may need to contact the computer manufacturer to inquire about BIOS, hardware driver or operating system updates.
- The Fn + F5 functionality detailed in the electronic User's Guide for your Lenovo computer only controls the internal video controller of your computer.
- The Lenovo LT1421 Wide USB Monitor utilizes an advanced video graphics controller to display the video. However, due to USB 2.0 transfer speed limitations, some or all portions of DVD playback may appear slow or choppy. This is not a malfunction of the Lenovo LT1421 Wide USB monitor. Move the video playback from the Lenovo LT1421 Wide USB monitor to your computer display for optimal video performance when viewing DVDs.
- On Windows® XP systems, DVDs may not display correctly on the Lenovo LT1421 Wide USB monitor. Use your computer's built-in monitor to view DVDs.

- In some software application programs that utilize certain direct draw commands such as some 2D-Games, the display on the Lenovo LT1421 Wide USB monitor will not be supported. If you want to play these games in full screen, we suggest you disconnect the Lenovo LT1421 Wide USB monitor.
- This product is unable to enter full screen DOS mode when using the Lenovo LT1421 Wide USB monitor.

**Problem show**

<i>Problem</i>	<i>Solution(s)</i>
The monitor does not turn on	Check the connections. Make sure the USB cable is firmly connected to the monitor. Disconnect and reconnect the USB cable. Check the condition of the USB cable. If the cable is frayed or damaged, replace the cable. If the connectors are soiled, wipe them with a clean cloth.
The screen is blank, although the power is on	Make sure the USB cable is properly connected to the computer. Make sure the computer is on and working. The computer may be in sleep or power-saving mode, or displaying a blank screen saver. Move the mouse to "wake up" the computer.
The picture "bounces" or moves in a wave-like pattern	Move electrical devices that may cause electrical interference away from the monitor.

Minor issues can generally be resolved by:

- unplugging and re-plugging the DisplayLink device,
- changing the display mode via the DisplayLink GUI, or,
- changing the display mode via Windows Display Properties.

On Windows 7/Vista WDDM (Aero and Basic)

DisplayLink software works closely with the graphics card and there may be interoperability issues with some graphics cards. If this happens:

1. Try to upgrade to the latest graphics drivers.
2. Try to upgrade to latest DisplayLink software.
3. Report the issue via your support channel.
4. If necessary, boot into Safe Mode and use Windows' Backup and Restore Center to recover.

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## Appendix A. Service and Support

The following information describes the technical support that is available for your Product, during the warranty period or throughout the life of the product. Refer to your Lenovo Statement of Limited Warranty for a fully explanation of Lenovo warranty terms.

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### Registering your option

Register to receive product service and support updates, as well as free and discounted computer Accessories and content. Go to:  
<http://www.lenovo.com/register>

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### Online technical support

Online technical support is available during the life of your product through the Lenovo Support Web site at  
[http://support.lenovo.com/en\\_US/research/hints-or-tips/detail.page?LegacyDocID=MIGR-50454](http://support.lenovo.com/en_US/research/hints-or-tips/detail.page?LegacyDocID=MIGR-50454)

Product replacement assistance or exchange of defective components also is available during the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your option is installed in a Lenovo computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

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### Telephone technical support

Installation and configuration support through the Customer Support Center will be withdrawn or made available for a fee, at Lenovo's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

- Option name
- Option number
- Proof of purchase
- Computer manufacturer, model, serial number, and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

### Worldwide telephone list

Phone numbers are subject to change without notice. For the most current phone Numbers, go to <http://www.lenovo.com/support/phone>

Country or Region	Telephone Number
Africa	Africa: +44 (0)1475-555-055 South Africa: +27-11-3028888 and 0800110756 Central Africa: Contact the nearest Lenovo Business Partner
Argentina	0800-666-0011 (Spanish)
Australia	131-426 (English)
Austria	Warranty service and support: 01-211-454-610 (German)
Belgium	Warranty service and support: 02-225-3611 (Dutch, French)
Bolivia	0800-10-0189 (Spanish)
Brazil	Sao Paulo region: (11) 3889-8986 Outside Sao Paulo region: 0800-701-4815 (Brazilian Portuguese)
Brunei	801-1041 (English, Bahasa Melayu)
Canada	Toronto: 416-383-3344 Outside Toronto: 1-800-565-3344 (English, French)
Chile	Toll Free: 188-800-442-488 800-361-213 (Spanish)
China	86-10-58851110 800-990-8888 (Mandarin)
China (Hong Kong S.A.R.)	ThinkCentre® Commercial PC: 8205-0333 Multimedia Home PC: 800-938-228 (Cantonese, English, Mandarin)
China (Macau S.A.R.)	ThinkCentre Commercial PC: 795-9892 Multimedia Home PC: 0800-336 (Cantonese, English, Mandarin)
Colombia	1-800-912-3021 (Spanish)
Costa Rica	0-800-011-1029 (Spanish)
Croatia	0800-0426
Cyprus	+357-22-841100
Czech Republic	+420-2-7213-1316
Denmark	Warranty service and support: 7010-5150 (Danish)
Dominican Republic	1-866-434-2080 (Spanish)
Ecuador	1-800-426911 (Spanish)
Egypt	+202-35362525
El Salvador	800-6264 (Spanish)
Estonia	+372 6776793 +372 66 00 800
Finland	Warranty service and support: +358-800-1-4260 (Finnish)
France	Warranty service and support (hardware): 0810-631-213 Warranty service and support (software): 0810-631-020 (French)

Country or Region	Telephone Number
Germany	Warranty service and support: 01805-00-46-18 (German)
Greece	+30-210-680-1700
Guatemala	1800-624-0051 (Spanish)
Honduras	Tegucigalpa: 232-4222 San Pedro Sula: 552-2234 (Spanish)
Hungary	+36-1-382-5716 +36-1-382-5720 (English, Hungarian)
India	1800-425-2666 +91-80-2535-9182 (English)
Indonesia	021 5238 823 Local number only: 001-803-606-282 DID (Direct Inward Dialing): +603 8315 6859 (English, Bahasa Indonesia)
Ireland	Warranty service and support: 01-881-1444 (English)
Israel	Givat Shmuel Service Center: +972-3-531-3900 (Hebrew, English)
Italy	Warranty service and support: +39-800-820094 (Italian)
Japan	Toll Free: 0120-20-5550 International: +81-46-266-4716  The above numbers will be answered with a Japanese language voice prompt. For telephone support in English, please wait for the Japanese voice prompt to end, and an operator will answer. Please say "English support please," and your call will be transferred to an English-speaking operator.  PC software: 0120-558-695 Overseas calls: +81-44-200-8666 (Japanese)
Korea	1588-6782 (Korean)
Latvia	+371 7070360
Lithuania	+370 5 278 66 00
Luxembourg	+352-360-385-343 (French)
Malaysia	Local number only: 1800-88-1889 DID: +603 8315 6855 (English, Bahasa Melayu)
Malta	+35621445566
Mexico	001-866-434-2080 (Spanish)
Middle East	+44 (0)1475-555-055
Netherlands	+31-20-514-5770 (Dutch)
New Zealand	0800-733-222 (English)
Nicaragua	001-800-220-1830 (Spanish)
Norway	Warranty service and support: 8152-1550 (Norwegian)
Panama	Lenovo Customer Support Center: 001-866-434-2080 (Toll Free) 206-6047 (Spanish)

Country or Region	Telephone Number
Peru	0-800-50-866 (Spanish)
Philippines	1800-1601-0033 (English, Filipino)
Poland	+48-22-878-6999 (Polski)
Portugal	+351-21-892-7046 (Portuguese)
Romania	+4-021-224-4015
Russia	Moscow: +7-(495)-258-6300 Toll Free: +8-800-200-6300 (Russian)
Singapore	Local number only: 800-6011-343 DID: +603 8315 6859 (English)
Slovakia	+421-2-4954-5555
Slovenia	+386-1-200-50-60 (Slovenian)
Spain	91-714-7983 0901-100-000 (Spanish)
Sri Lanka	+9411 2493547 +9411 2493548 (English)
Sweden	Warranty service and support: 077-117-1040 (Swedish)
Switzerland	Warranty service and support: 0800-55-54-54 (German, French, Italian)
Taiwan	886-2-8723-9799 0800-000-700 (Mandarin)
Thailand	Local number only: 1-800-060-066 66 2273 4088 DID: +603 8315 6857 (Thai, English)
Turkey	00800-4463-2041 (Turkish)
United Kingdom	Standard warranty support: 08705-500-900 (English)
United States	1-800-426-7378 (English)
Uruguay	000-411-005-6649 (Spanish)
Venezuela	0-800-100-2011 (Spanish)
Vietnam	For Northern Area and Hanoi City: 844 3 946 2000 or 844 3 942 6457 For Southern Area and Ho Chi Minh City: 848 3 829 5160 or 844 3 942 6457 (Vietnamese, English)

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Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

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## Recycling information

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products.

For information on recycling Lenovo products, go to:

<http://www.lenovo.com/lenovo/environment/recycling>

### 環境配慮に関して

#### 本機器またはモニターの回収リサイクルについて

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また、同法により、家庭で使用済みとなったパソコンのメーカー等による回収再資源化が2003年10月1日よりスタートしました。詳細は、<http://www.ibm.com/jp/pc/service/recycle/pcrecycle/> をご参照ください。

#### 重金属を含む内部部品の廃棄処理について

本機器のプリント基板等には微量の重金属（鉛など）が使用されています。使用後は適切な処理を行うため、上記「本機器またはモニターの回収リサイクルについて」に従って廃棄してください。

## Collecting and recycling a disused Lenovo computer or monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial waste and should be properly disposed of by an industrial waste disposal contractor certified by a local government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at [www.ibm.com/jp/pc/service/recycle/pcrecycle/](http://www.ibm.com/jp/pc/service/recycle/pcrecycle/). Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, visit the Lenovo Web site at [www.ibm.com/jp/pc/service/recycle/personal/](http://www.ibm.com/jp/pc/service/recycle/personal/).



## Disposing of Lenovo computer components

Some Lenovo computer products sold in Japan may have components that contain heavy metals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

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- ThinkPad
- ThinkVision

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## Turkish statement of compliance

The Lenovo product meets the requirements of the Republic of Turkey Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (EEE).

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EEE Yönetmeliğine Uygundur.

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